INJURY & ILLNESS PREVENTION PROGRAM FOR CONSTRUCTION

All Ohio Sealants Inc. Client Number ***A205006_001***

29 CFR § 1903.1 – The Purpose and Scope of OSHA

The OSH Act requires, in part, that every employer covered under OSHA to furnish to his employees a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees. OSHA also requires that employers comply with occupational safety and health standards and that employees comply with standards, rules, regulations, and orders issued which are applicable to their own actions and conduct.

Key Points of the OSH Act

The United States Congress finds that personal injuries and illnesses arising out of work situations impose a substantial burden upon, and are a hindrance to, interstate commerce in terms of lost production, wage loss, medical expenses, and disability compensation payments.

The United States Congress declares it to be its purpose and policy, through the exercise of its powers to regulate commerce and to provide for the general welfare, to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources in the following manner:

- By encouraging employers and employees in their efforts to reduce the number of occupational safety and health hazards at their places of employment and to stimulate employers and employees to institute new and to perfect existing programs for providing safe and healthful working conditions.
- By providing that employers and employees have separate but dependent responsibilities and rights with respect to achieving safe and healthful working conditions.
- By authorizing the Secretary of Labor to set mandatory occupational safety and health standards applicable to businesses affecting interstate commerce.
- By building upon advances already made through employer and employee initiative for providing safe and healthful working conditions.
- By providing medical criteria which will assure insofar as practicable that no employee will suffer diminished health, functional capacity, or life expectancy as a result of his work experience.
- By providing for the development and promulgation (Enacting into Law) of occupational safety and health standards.
- By providing an effective enforcement program which will include a prohibition against giving advance notice of any inspection and sanctions for any individual violating this prohibition.
- By encouraging the States to assume the fullest responsibility for the administration and enforcement of their occupational safety and health laws.
- By providing for appropriate reporting procedures with respect to occupational safety and health which procedures will help achieve the objectives of OSHA and accurately describe the nature of the occupational safety and health problem.
- By encouraging joint labor-management efforts to reduce injuries and disease arising out of employment.

29 USC 654 – Duties (The General Duty Clause)

- Each employer will furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees.
- Each employer will comply with occupational safety and health standards promulgated under OSHA.
- Each employee will comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to OSHA Act which are applicable to his own actions and conduct.

NOTE: From 29 USC 652 “Definitions” – The term "occupational safety and health standard" means a standard which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide safe or healthful employment and places of employment.

Safety Program Procedures

1. Post the General Safety Rules in a prominent location at each location as well as your main facility.
2. Provide a copy of the Safety Program for all workplaces.
3. Add map of facility and evacuation route to the Emergency Response Program.
4. Post the Request for Training in a conspicuous location.
5. **Note** Accident Investigation Forms are included.
6. **Note** OSHA Log 300 included (On CD).
7. Bloodborne Pathogen section is included (annual training needs to be done for employees).
8. CPR & First Aid section included (this information is general in nature; no individual should ever exceed their level of first aid training).
9. Sample Material Safety Data Sheet included. Be sure to compile SDSs for any chemicals the Company uses and make available to all employees in the office and at the workplace. Your Company is responsible for maintaining a current chemical inventory list.
10. Orientation Checklist - Initial Orientation must be conducted for all employees. (English/Spanish Orientation included). These forms are to be included and signed by all new hires. (Make copies for employees to sign at the orientation meeting.)
11. Safety Meeting Minutes. After any Safety Training, have employees sign the training roster, 3-hole punch the form, and file it in the manual.

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Company Policy Statement and Program Components

All Ohio Sealants Inc.

4311 Bellwood Dr. NW

Canton, Ohio 44708

The designated safety coordinator for All Ohio Sealants Inc. is:

Keith Maxey

Injury & Illness Prevention Policy Statement

The safety and health of our employees is the first consideration in operating this business. Without question, it is every employee's responsibility at all levels.

It is the intent of this Company to comply with all laws. To do this, we must constantly be aware of conditions in all work areas that can produce injuries. No employee is required to work at a job they know is not safe or healthful. Your cooperation in detecting hazards and, in turn, controlling them, is a condition of your employment. Inform your supervisor immediately of any situation beyond your ability or authority to correct.

Prevention of occupationally-induced injuries and illnesses is of such consequence that it will be given precedence over operating productivity, whenever necessary. To the greatest degree possible, management will provide all mechanical and physical activities required for personal safety and health, in keeping with the highest standards.

We will maintain an occupational safety and health program conforming to the best practices of organizations of this type. To be successful, such a program must embody proper attitudes towards injury and illness prevention on the part of supervisors and employees. It also requires cooperation in all safety and health matters, not only between supervisor and employee, but also between each employee and their co-workers.

Our objective is a safety and health program that will reduce the number of injuries and illnesses to an absolute minimum, not merely in keeping with, but surpassing, the best experience of operations similar to ours. Our goal is zero accidents and injuries.

Our safety and health program includes:

- Providing mechanical and physical safeguards to the maximum extent possible.
- Conducting a program of safety and health inspections to find and eliminate unsafe working conditions or practices, to control health hazards, and to fully comply with OSHA safety and health standards for every job.
- Training all employees in good safety and health practices.
- Providing necessary personal protective equipment, and instructions for proper use and care.
- Developing and enforcing safety and health rules, and requiring that employees cooperate with these rules as a condition of employment.
- Investigating, promptly and thoroughly, every accident to find out what caused it, and correct the problem so it will not happen again.

We recognize that the responsibilities for occupational safety and health are shared:

This employer accepts responsibility for leadership of the safety and health program, for its effectiveness and improvement, and for providing the safeguards required to ensure safe work conditions.

Supervisors are responsible for developing proper attitudes toward safety and health in themselves and in those they supervise, and for ensuring that all operations are performed with the utmost regard for the safety and health of all personnel involved, including themselves.

Employees are responsible for wholehearted, genuine operations of all aspects of the safety and health program – including compliance with the rules and regulations – and for continuously practicing safety and health while performing their duties.

All Ohio Sealants Inc. will see that all employees are properly instructed and supervised in the safe operation of any machinery, tools, equipment, process, or practice which they are authorized to use or apply while at work.

Production is never so urgent that we cannot take the time to do our work safely.

Program Goals

The primary goal of All Ohio Sealants Inc. is to continue operating a profitable business while protecting employees from injuries or illness. This can be achieved by delegating responsibility and accountability to all involved in this Company's operation.

Responsibility: Having to answer for activities and results.

Accountability: The actions taken by management to insure the performance of responsibilities.

To reach our goal of a safe workplace everyone needs to take responsibility and be held accountable.

Owner Name Signature Date

Benefits of achieving our goals are:

- Minimizing of injuries and accidents.
- Minimizing the loss of property and equipment.
- Elimination of potential fatalities.
- Elimination of potential permanent disabilities.
- Elimination of potential OSHA fines.
- Reductions in Workers' Compensation costs.
- Reductions in operating costs.
- Having the best "Safety and Health" conditions possible in the workplace.

This Company is committed to building an effective safety and health plan, putting it in writing, and integrating it into the entire operation.

Management Commitment

The management of All Ohio Sealants Inc. is committed to the Company's safety policy, and to provide direction and motivation by:

- Appointing Safety Coordinator(s) and/or Safety Committee Chairmen.
- Establishing Company safety goals and objectives.
- Developing and implementing this written Safety and Health program.
- Ensuring total commitment to the Safety and Health program.
- Facilitating employees' safety training.
- Establishing responsibilities for management and employees to follow.
- Ensuring that management and employees are held accountable for performance of their safety responsibilities.
- Establishing and enforcing disciplinary procedures for employees.
- Reviewing the Safety and Health program annually, and revising or updating as needed.

Labor & Management Accountability

All employees, both labor and management, need to understand their responsibilities under OSHA rules and be held accountable for complying with the rules as well as the Company's related policies.

Remember, it is the employer's responsibility to provide a safe and healthful work environment for their employees. However, holding everyone accountable for their part in workplace safety and health is critical for a successful injury and illness prevention plan.

Assignment of Responsibility

The Safety Coordinator(s)

It will be the duty of the Safety Coordinator to assist the Supervisor/Foreman and all other levels of Management in the initiation, education, and execution of an effective safety program including the following:

- Introducing the safety program to new employees.
- Following up on recommendations, suggestions, etc., made at the "Weekly" safety meetings. All topics of safety concerns must be documented accordingly.
- Assisting the personnel in the execution of standard policies.
- Conducting safety inspections on a periodic basis.
- Addressing all hazards or potential hazards as needed.
- Preparing monthly accident reports and investigations.
- Maintaining adequate stock of first aid supplies and other safety equipment to insure their immediate availability.
- Making sure there is adequate number of qualified "First Aid Certified" people on the work site.
- Becoming thoroughly familiar with OSHA regulations and local and state safety codes.

- Defining the responsibilities for safety and health of all subordinates and holding each person accountable for their results through the formal appraisal system and where necessary, disciplinary procedures.
- Emphasizing to employees that accidents create unnecessary personal and financial losses.

Safety Committee and Safety Meetings

The Committee will consist of representatives from management and non-management employees with the scheduled person as the chairman. The committee is a forum, created for the purpose of fostering safety and health through communication.

The responsibilities of Safety Committee Members include:

- Discussing safety policies and procedures with management and making recommendations for improvements.
- Reviewing accident investigation reports on all accidents and "near-misses".
- Identifying unsafe conditions and work practices and making recommendations for corrections.

NOTE: Refer to the succeeding section for instructions on Safety Committee protocols.

All employees of All Ohio Sealants Inc. will attend and participate in the "Weekly" safety meetings. The safety meeting will be conducted by the designated Safety Coordinator/Supervisor/Foreman. Problems that have arisen, or that are anticipated, will be discussed along with any other safety and health topics. The meeting will be kept a valuable educational experience by:

- Starting and stopping according to schedule.
- Keeping the meetings moving.
- Using illustrated material and demonstrations to make the point.
- Discussing each topic thoroughly, providing handouts if possible.
- Evaluating accidents, injuries, property losses, and "near misses" for trends and similar causes to initiate corrective actions.

The designated Safety Coordinator/Supervisor/Foreman must document all aspects of any safety and health training.

Employee Involvement

Employees are required to work in compliance with the safety rules, report all accidents and near misses, and report all unsafe conditions or unsafe practices. To demonstrate this employer's commitment to support the employees in these responsibilities, the employer will do the following:

Communication System:

- Encourage employees to inform the employer about workplace hazards without fear of reprisal.
- Establish and maintain a centrally located "Safety Bulletin Board" where current, relevant information may be easily reviewed by employees.
- Schedule general employee meetings at which time safety is freely and openly discussed by those present. These meetings will be regular, scheduled, and announced to all employees and managers to achieve maximum attendance. The purpose of these meetings is safety, and the concentration will be on:
- Occupational accident and injury history at our work sites, with possible comparison to other locations in the Company.
- Feedback from the Safety Committee.
- Guest speakers concerned with workplace safety and health.
- When possible, brief audio-visual materials that relate to our business.
- Conduct training programs for communicating with employees.

- Provide a safety suggestion box so that employees, anonymously if desired, can communicate their concerns with management.
- Document all communication efforts to demonstrate that an effective communication system is in place.

Hazard Identification & Control

Periodic inspections and procedures for correction provide methods of identifying existing or potential hazards in the workplace, and eliminating or controlling them. Hazard control is essential to an effective safety and health plan. We will be sure to look at safe work practices and ensure that they are being followed, and that unsafe conditions or procedures are identified and corrected properly and promptly.

Employees are encouraged to report possible hazardous situations, knowing their reports will be given prompt and serious attention.

Workplace equipment and personal protective equipment will be maintained in good, safe working condition.

Hazards, where possible, will be corrected as soon as they are identified. For those that cannot be immediately corrected, a target date for correction will be set. The employer will provide interim protection for workers while hazards are being corrected. A written tracking system will be established to help monitor the progress of the hazard correction process.

Accident/Incident Investigation

Employers and safety committees are required to investigate or assign responsibility for investigating accidents. Accidents/incidents will be investigated by trained individuals, with the primary focus of understanding why the accident or incident occurred, and what actions can be taken to preclude recurrence. The focus will be on solutions and never on blame. They will be in writing, and adequately identify the causes of the accident or near-miss occurrence.

Worker Training

Training is another essential element of any injury and illness prevention plan. OSHA rules require each employer to train workers for any job or task they are assigned.

Our plan includes training and instruction:

- For all employees when they are first hired.
- For all new employees for each specific task.
- For all employees given new job assignments for which training has not already been received.
- Whenever new substances, processes, procedures, or equipment are introduced into the workplace and present a new hazard.
- Whenever new personal protective equipment or different work practices are used on existing hazards.
- Whenever the employer is made aware of a new or previously unrecognized hazard.
- For all supervisors to ensure they are familiar with the safety and health hazards to which employees under their immediate direction and control may be exposed.

An effective safety and health plan requires proper job performance by everyone in the workplace.

As the employer, we must ensure that all employees are knowledgeable about the materials and equipment with which they work, what known hazards are present, and how they are controlled.

Periodic Program Evaluation

A periodic review is scheduled to look at each critical component in our safety and health plan to determine what is working well and what changes, if any, are needed. All employees are encouraged to participate by keeping the employer informed of their concerns regarding the elements of this safety and health plan.

The success of this safety and health plan is dependent upon two things: First, the employer must provide a safe and healthful environment in which the employee has the opportunity to work safe, and second, the employee must choose to work safe.

Supervisor/Foreman

The Supervisors and/or Foremen will establish an operating atmosphere that insures that safety and health is managed in the same manner and with the same emphasis as production, cost, and quality control. This will be accomplished by:

- Regularly emphasizing that accident and health hazard exposure prevention are not only moral responsibilities, but also a condition of employment.
- Identifying operational oversights that could contribute to accidents which often result in injuries and property damage.
- Participating in safety and health related activities, including routinely attending safety meetings, reviews of the facility, and correcting employee behavior that can result in accidents and injuries.
- Spending time with each person hired explaining the safety policies and the hazards of his/her particular work.
- Ensuring that initial orientation of "new hires" is properly carried out.
- Making sure that if a “Competent Person” is required, that one is present to oversee, and instruct employees when necessary.
- Never short-cutting safety for expediency, or allowing workers to do so.
- Enforcing safety rules consistently, and following Company’s discipline and enforcement procedures.
- Conducting daily job-site inspections and correcting noted safety violations.

Employees

It is the duty of each and every employee to know the safety rules, and conduct his work in compliance with these rules. Disregard of the safety and health rules will be grounds for disciplinary action up to and including termination. It is also the duty of each employee to make full use of the safeguards provided for their protection. Every employee will receive an orientation when hired and receive a copy of any COMPANY Safety and Health Programs. Employee responsibilities include the following:

- Reading, understanding and following safety and health rules and procedures.
- Signing the Code of Safe Practices and any other policy acknowledgements.
- Wearing Personal Protective Equipment (PPE) at all times when working in areas where there is a possible danger of injury.
- Wearing suitable work clothes as determined by the supervisor/foreman.
- Performing all tasks safely as directed by their supervisor/foreman.
- Reporting ALL injuries, no matter how slight, to their supervisor/foreman immediately and seeking treatment promptly.
- Knowing the location of first aid, firefighting equipment, and safety devices.
- Attending any and all required safety and health meetings.
- Not performing potentially hazardous tasks, or using any hazardous material until properly trained, and following all safety procedures for those tasks.
- STOPPING AND ASKING QUESTIONS IF EVER IN DOUBT ABOUT THE SAFETY OF ANY OPERATION

Policy Statement

All Ohio Sealants Inc. Safety Committee members are:

Keith Maxey and as designated by Keith Maxey.

The Safety Committee will meet a minimum of 4 times per year.

Introduction

All Ohio Sealants Inc. is committed to accident prevention in order to protect the safety and health of all our employees. Injury and illness losses due to hazards are needless, costly and preventable. To prevent these losses, a joint management/worker safety committee will be established. Employee involvement in accident prevention and support of safety committee members and activities is necessary to ensure a safe and healthful workplace for all employees.

Purpose

The purpose of our safety committee is to bring workers and management together in a non-adversarial, cooperative effort to promote safety and health in the workplace. The safety committee will assist management and make recommendations for change.

Organization

There will be, in most cases, an equal number of employee and employer representatives. However, there may be more employee representatives than employer representatives if both groups agree. Employee representatives will be volunteers or elected by their peers. If no employees volunteer or are elected, they may be appointed by management. Employer representatives will be appointed. Safety committee members will serve a continuous term of at least one year. Committee membership terms will be staggered so that at least one experienced member is always on the committee.

Extent of Authority

It must be clearly understood that the safety committee advises management on issues that will promote safety and health in the workplace. Written recommendations are expected from the safety committee and they will be submitted to management. In turn, management will give serious consideration to the recommendations submitted and will respond in writing to the committee within a reasonable time.

Functions

- Committee meetings and employee involvement.
- Hazard assessment and control.
- Safety and health planning.
- Evaluation of accountability system.
- Evaluation of management commitment to workplace safety and health.
- Evaluation of accident and incident investigation program.
- Safety and health training.

Recommendations

All recommendations submitted to management must be written and should:

- Be clear and concise.
- Provide reasons for implementation.
- Give recommended options.
- Show implementation costs and recommended completion dates.
- List benefits to be gained.

Procedures

The committee's plan of action requires procedures by which the committee may successfully fulfill its role. Procedures developed should include but not be limited to:

- Meeting date, time, and location (Safety Committee Meeting Agenda).
- Election of chairperson and secretary.
- Order of business.
- Records (Safety Committee Meeting Minutes).

Duties of each member must include, but not be limited to:

- Reporting unsafe conditions and practices.
- Attending all safety and health meetings.
- Reviewing all accidents and near-misses.
- Recommending ideas for improving safety and health.
- Working in a safe and healthful manner.
- Observing how safety and health is enforced in the workplace.
- Completing assignments given to them by the chairperson.
- Acting as a work area representative in matters of health and safety.
- Others as determined by COMPANY safety and health needs.

The Safety Coordinator(s) and/or Safety Committee Members

All Ohio Sealants Inc. has designated: Keith Maxey as the Company Safety Coordinator, with Company Safety Committee Members being: Keith Maxey and as designated by Keith Maxey

Safety Coordinator Keith Maxey
Safety Coordinator
Safety Coordinator
Safety Committee Chair
Safety Committee Vice-chairman
Safety Committee Alternate Chair/Vice-chair

Their cell phone and office phone numbers are:

Safety Person's Name	Office Phone #	Cell Phone #

It will be the duty of the Safety Coordinator to assist the Supervisor/Foreman and all other levels of Management in the initiation, education, and execution of an effective safety program.

Safety Committee Operations

The purpose of a safety committee is to bring workers and managers together to achieve and maintain a safe, healthful workplace. Effective safety committees find solutions to problems that cause workplace accidents, illnesses, and injuries. And fewer accidents, injuries, and illnesses mean lower Workers' Compensation claims costs and insurance rates.

Understand a Safety Committee's Seven Essential Activities

To create an effective safety committee, it must be built on a foundation of management commitment and must be accountable for achieving its goals. The committee must do the following:

- Involve employees in achieving the committee's goals.
- Identify workplace hazards.
- Review reports of accidents and near misses.
- Keep accurate records of committee activities.
- Evaluate its strengths and weaknesses.

1. Commitment

The committee will not survive without management support. Management demonstrates support by encouraging employees to get involved in achieving a safe, healthful workplace and by acting on the committee's recommendations.

Representatives demonstrate commitment by attending committee meetings, following through on their assigned tasks, and encouraging other employees to get involved in identifying hazards.

2. Accountability

Representatives should understand that the committee expects them to contribute; each representative shares responsibility for accomplishing safety committee goals, which benefit everyone who works for the COMPANY.

The safety committee is also responsible for monitoring how management holds employees accountable for working safely and for recommending ways to strengthen accountability.

3. Employee Involvement

To become effective, a safety committee needs help from everyone in The COMPANY. The safety committee must have a method for employees to report hazards and to offer safety suggestions.

Ways the safety committee can encourage employees to get involved:

- Encourage employees to report hazards and unsafe work practices to a safety-committee representative.
- Act on employee suggestions and recognize their contributions to a safer workplace.
- Promote the committee's activities and accomplishments.
- Make sure employees know that you are starting a safety committee. Tell them why you are starting the committee, describe its role in the Company's safety-and-health program, and explain management's commitment to the committee.
- You can inform employees in a memo or a newsletter, by e-mail, or – better yet – meet with them to promote the committee and to answer questions.

4. Hazard Identification

- Ensure that representatives know how to recognize hazards and understand basic principles for controlling them.
- Focus on identifying hazards and unsafe work practices that are likely to cause serious injuries.
- Conduct thorough workplace inspections at least quarterly.
- Document hazards during quarterly inspections and discuss how to control them at regular safety-committee meetings.
- Include employer and employee representatives on the inspection team.

5. Accident Investigation

The committee must have a procedure for investigating all workplace accidents, illness, and deaths. It is not necessary for the committee to conduct accident investigations or to participate in investigations; however, the committee should ensure that management does so. The committee should also carefully review accident reports to help management identify accident causes and determine how to control them.

6. Recordkeeping

The following documents are required for the safety committee's file:

- Accurate minutes of each safety committee meeting
- Committee reports, evaluations, and recommendations
- Management's response to committee recommendations
- Employee safety suggestions and hazard concerns

7. Evaluation

An effective safety committee periodically evaluates their strengths and weaknesses, and the evaluation helps them set new goals.

At least once a year, schedule a safety-committee meeting to accomplish the following: identify the committee's achievements over the past 12 months, review essential activities, and set goals for the next 12 months.

Start With Your Primary Place of Employment

When you are starting a safety committee, you should do so at your Company's primary place of employment - the workplace where management controls the budget and can act on the safety committee's recommendations.

Do you have mobile or satellite sites?

If you have workplaces that are not primary places of employment – construction sites or field offices, for example – you can have one central safety committee at your primary place of employment that represents all of the other workplaces.

Determine How Many Representatives will Serve on the Committee

The minimum number of representatives on your safety committee needs to be effective depends on the number of employees in your Company, for example:

Number of Employees	Number of Representatives
Up to 20	At least 2
More than 20	At least 4

Your safety committee can have more than the minimum number of representatives.

Determine Who Will Serve on the Committee

Your safety committee should have an equal number of employee and employer representatives and must have a chairperson elected by the representatives.

Other matters to consider about who will serve on the committee:

Employee representatives can volunteer to serve on the committee or their peers can elect them. If your collective bargaining agreement has procedures for selecting representatives, follow those procedures.

Employer representatives represent the employer. You can have more employee representatives on the committee than employer representatives if no one objects – but not a majority of employer representatives. You can choose any employee to serve as an employer representative.

- Representatives' jobs should reflect the Company's major job classifications.
- Representatives must be paid their regular wages for safety committee meetings and safety-related training sessions.
- Each representative must serve at least one year on the committee.

How to Determine Who Does What on the Committee

Your safety committee must have a chairperson and a recorder – someone to take minutes at each meeting. The committee does not have to have a vice-chair; however, someone should be available to prepare an agenda and conduct committee business in the chair's absence. The following table summarizes the duties of the chairperson, vice-chair, recorder, and other committee representatives.

Representatives' Duties and Responsibilities

Chairperson

- Schedules monthly meetings
- Develops agendas for meetings
- Conducts monthly meetings

Vice-chair

- Assumes chair's duties when the chair is absent
- Coordinates training for new representatives
- Performs other duties assigned by the chair

Recorder

- Takes minutes at each meeting
- Distributes copies of minutes to representatives
- Posts minutes for other employees to review
- Maintains the safety-committee file
- Keeps minutes and agendas on file for three years

Other Committee Representatives

- Report employees' safety and health concerns to the committee
- Report accidents, near miss incidents, and unsafe workplace conditions to the committee
- Suggest items to include in the monthly meeting agenda
- Encourage other employees to report workplace hazards and suggest how to control them
- Establish procedures for conducting quarterly workplace inspections and for making recommendations to management to eliminate or control hazards
- Help management evaluate the Company's safety-and-health program and recommends how to improve it
- Establish procedures for investigating the causes of accidents and near-miss incidents

Set Practical Goals for the Committee

Purpose and goals: put them in writing

The purpose of your safety committee is to bring workers and managers together to achieve and maintain a safe, healthful workplace. But you will need to narrow the focus, set goals, and specify what the committee will do.

Train the Representatives

What representatives need to know:

Representatives must understand the purpose of the safety committee, how to apply OSHA's safety rules, and how to conduct safety-committee meetings. They must also have training in hazard identification and the principles of accident investigation.

Representatives should know whom to contact for information or for help on workplace safety-and-health matters. Two sources are your workers' compensation insurance carrier and OSHA.

Who can do the training? You can do the training if you are confident you can accomplish the objectives, or you can choose someone who has training experience and understands the objectives.

Hold Regular Meetings

Require Participation

Each representative must help the committee accomplish its goals. Make sure representatives understand that they will be committing to attending monthly meetings and to participating in committee activities.

Set a Repeating Meeting Schedule

Your committee should meet at least once a month. Setting a regular time, date, and place for meetings - for example, 10 a.m.-noon, the first Tuesday of each month - makes it easier for everyone to remember.

Establish Ground Rules

Ground rules keep meetings orderly and efficient. All representatives should understand them and the chairperson should enforce them. Important ground rules:

- Keep the discussion focused on agenda topics.
- Listen to others and let them finish before responding.
- Cooperate to achieve effective solutions.
- Finish the meeting on time.

Follow a Written Agenda

The agenda outlines the meeting's discussion topics. The chairperson should understand the agenda topics and keep the discussion focused on them. Send copies of the agenda to representatives a few days before the meeting so they can review it.

Take Accurate Minutes

Accurate meeting minutes are important because they document the committee's accomplishments. The representative who has this responsibility should be able to grasp the main points of a discussion and record them quickly.

Meeting minutes should include the following:

- A brief summary of the discussion of each topic
- A copy of committee reports, evaluations, and recommendations
- A copy of management's response to committee recommendations

Remember to send a copy of the minutes to each representative promptly after the meeting and to post a copy where other employees can see it. If your Company has field offices, send a copy to each field office. Keep a copy of each meeting's minutes on file for three years.

Conducting the Meeting

Effective meetings start on time. Make sure the meeting room is ready; allow extra time if you need to set up tables, rearrange chairs, or clean up after others have met. Before getting down to business, start the meeting on the right track by doing the following:

- Distribute the agenda. Make sure everyone has a copy of the agenda and any other handouts.
- Review the ground rules. You may not need to review the ground rules at every meeting, but consider doing so or the benefit of guests and new representatives.
- Make introductions. No one likes to feel left out at a meeting. Welcome new representatives and guests.
- Review the minutes from the last meeting. Request additions or corrections to last month's minutes. Update the minutes to reflect the changes.
- Review the agenda topics. Give representatives and guests the opportunity to suggest changes or to add discussion topics to the agenda.

Unless the representatives agree to continue the meeting, end it at the scheduled time. You can discuss unfinished items during the next meeting or later with concerned representatives. Before you finish, thank guests for coming and schedule the next meeting.

How to Do It

How to accomplish four important activities that helps you take care of safety committee business.

1. How to Write Bylaws
2. How to Prepare an Agenda
3. How to Record Minutes
4. How to Identify Workplace Hazards

How to Write Bylaws

Bylaws state the committee's purpose, define its essential activities, and describe how it conducts its regular business. Your safety committee does not have to have bylaws, but they can give the committee stability as new representatives come on board and others leave.

Bylaws can be as simple or as complex as you want to make them. They are usually organized in sections; each section defines a specific committee function, as in the following example:

What To Include In Your Safety Committee Bylaws	
Function	**Information to Include**
Name, Purpose, Goal, Objectives	State committee's purpose, its goals, and its objectives. Make them clear and keep them brief.
Membership	• State how many representatives will serve on the committee. • Describe how the representatives are selected to serve on the committee. • State how long representatives will serve on the committee.
Officers and Representatives: Duties and Responsibilities	Describe duties and responsibilities of each: • The chair • The vice-chair • The recorder • The other representatives
Training	State what the representatives need to know to fulfill their responsibilities and describe how they will receive their training.
Meetings	Define the following: • The schedule for regular committee meetings. • Who must attend the meetings. • The requirements for preparing and distributing the agenda and the minutes. • The procedures for voting on committee decisions.
Employee Involvement	• State how the committee will involve employees in achieving a safe, healthful workplace. • Describe how employees should report hazards and unsafe practices to the committee. • Describe how employees can submit ideas for controlling or eliminating hazards.
Accident Investigation	• State the committee's role in investigating near-misses and accidents. • Describe how representatives will review accidents and near-miss incidents. • Describe how the committee will report recommendations for controlling hazards.
Workplace Inspections	• State how the committee will conduct regular workplace inspections. • Include the schedule for quarterly workplace inspections. • Identify who will conduct the inspections. • Describe how the committee will report hazard-control recommendations to management.
Evaluation	State how the committee will evaluate the safety-and-health program and assess its activities.

Safety Committee Bylaws: An Example

Although your safety committee does not have to have Bylaws, they can give the committee stability by stating, in writing, how the committee conducts its business. Bylaws can be as simple or complex as you want to make them. This example shows the bylaws of the imaginary ***XYZ Construction Company's*** safety committee.

Name

The name of the committee is the XYZ Safety Committee.

Purpose

The purpose of the XYZ Safety Committee is to bring all XYZ Construction Company employees together to achieve and maintain a safe, healthful workplace.

Goal

The goal of the XYZ Safety Committee is to eliminate workplace injuries and illnesses by involving employees and managers in identifying hazards and suggesting how to prevent them.

Objectives

The XYZ Safety Committee has four objectives:

- Involve employees in achieving a safe, healthful workplace.
- Promptly review all safety-related incidents, injuries, accidents, illnesses, and deaths.
- Conduct quarterly workplace inspections, identify hazards, and recommend methods for eliminating or controlling the hazards.
- Annually evaluate the XYZ Construction Company's workplace safety-and-health program and recommend to management how to improve the program.

Representatives

The XYZ Safety Committee will have ten voting representatives. Five of the representatives will represent employees and five will represent management. Employee representatives can volunteer or their peers can elect them. Management representatives will be selected by management.

Each representative will serve a continuous term of at least one year. Terms will be staggered so that at least one experienced representative always serves on the committee.

Chair and Vice-chair

The XYZ Safety Committee will have two officers: chair and vice-chair. One officer will represent labor and one officer will represent management.

Terms of Service

Chair and vice-chair will each serve a one-year term.

Duties of the Chair

- Schedule regular committee meetings.
- Approve committee correspondence and reports.
- Develop written agenda for conducting meeting.
- Supervise the preparation of meeting minutes.
- Conduct the committee meeting.

Duties of the Vice-chair

- In the absence of the chair, assume the duties of the chair.
- Perform other duties as directed by the chair.

Election of Chair and Vice-chair

The election of a new chair or vice-chair will be held during the monthly committee meeting before the month in which the incumbent's term expires.

If the chair or vice-chair leaves office before the term expires, an election will be held during the next scheduled safety-committee meeting; the elected officer will serve for the remainder of the term.

Training

New representatives will receive training in safety-committee functions, hazard identification, and accident-investigation procedures.

Meetings

Monthly schedule — The XYZ Safety Committee will meet the third Tuesday of each month, except when the committee conducts quarterly workplace safety inspections.

Attendance and Alternates

Each representative will attend regularly scheduled safety committee meetings and participate in quarterly workplace inspections and other committee activities. Any representative unable to attend a meeting will appoint an alternate and inform the chair before the meeting. An alternate attending a meeting on behalf of a regular representative will be a voting representative for that meeting.

Agenda

The agenda will prescribe the order in which the XYZ Safety Committee conducts its business.

The agenda will also include the following when applicable:

- A review of new safety and health concerns
- A status report of employee safety and health concerns under review
- A review of all workplace near misses, accidents, illness, or deaths occurring since the last committee meeting.

Minutes

Minutes will be recorded at each committee meeting and distributed via e-mail to all XYZ Construction Company employees.

The committee will submit a copy of the minutes to the XYZ Construction Company personnel office; the office will retain the copy for three years. All reports, evaluations, and recommendations of the committee will be included in the minutes. The minutes will also identify representatives who attended monthly meeting, and representatives who were absent.

Voting Quorum

Six voting representatives constitute a quorum. A majority vote of attending representatives is required to approve all safety-committee decisions. Issues not resolved by majority vote will be forwarded to management for resolution.

Employee Involvement

The XYZ Safety Committee will encourage employees to identify workplace-health-and-safety hazards. Concerns raised by employees will be presented to the committee in writing; the committee will review new concerns at the next regularly-scheduled monthly meeting.

Safety Log

The committee will maintain a log of all employee concerns, including the date received, recommendations to management, and the date the concern was resolved.

Response

The committee will respond to employee concerns in writing and work with management to resolve them. The committee will present written recommendations for resolving concerns to management. Within 60 days of receipt of the written recommendations, management will respond in writing to the committee indicating acceptance, rejection, or modification of the recommendations.

Incident and Accident Investigation

The XYZ Safety Committee will review new safety- or health-related incidents at its next regularly-scheduled meeting. Safety-related incidents include work-related near misses, injuries, illnesses, and deaths. When necessary, the committee will provide written recommendations to management for eliminating or controlling hazards.

Workplace Inspections

The XYZ Safety Committee will conduct quarterly workplace inspections of all Company facilities in March, June, September, and December.

Written Report

The committee will prepare a written report for management that documents the location of all health or safety hazards found during inspection. The report will recommend options for eliminating or controlling the hazards.

Within 60 days of receipt of the written report, management will respond in writing to the committee, indicating acceptance, rejection, or proposed modification of the recommendations.

Evaluation

The XYZ Safety Committee will evaluate the Company's workplace-safety-and-health program annually and provide a written evaluation of the program to management. The committee will also evaluate its own activities each December and use the evaluation to develop an action plan for the next calendar year.

NOTE: In the "Attachments" Chapter of this Injury & Illness Prevention Manual you will find a master copy of the following forms for Company use:

- Safety Committee By-Laws
- Safety Committee Checklist

How to Prepare an Agenda

The Purpose of the Agenda

The agenda, usually prepared by the safety-committee chairperson, is an outline of topics the representatives will discuss during a monthly meeting. The agenda helps structure the meeting and reminds representatives of their responsibilities – for example, special reports or other assigned tasks.

Preparing the Agenda

Most meetings should follow an agenda that includes the following topics:

- Introductions of new representatives and guests.
- Review of last meeting's minutes for addition or corrections.
- Old business – discussion of items not covered or resolved during the last meeting.
- New business – discussion of new items the committee needs to address or resolve.
- Employee suggestions – review and discussion of suggestions.
- Recommendations to management – review and discussion of recommendations to eliminate or control a hazard or to improve the Company's safety-and-health program.
- Next meeting – date, location, and time in preparing the agenda, ask committee representatives if they have items to include under new business, employee suggestions, or recommendations to management. Keep the agenda as brief as possible.

Distributing the Agenda

- Give committee representatives and other employees a chance to review the agenda three to five days before the meeting.
- Send copies of the agenda to committee representatives and management.
- Post the agenda where other employees can read it.

Using the Agenda

After representatives, management, and other employees have had a chance to comment on the agenda, prepare the final version and make enough copies for everyone attending.

Use the agenda to guide the meeting. If you cannot cover every topic during the meeting, schedule them for the next meeting under old business.

NOTE: In the "Attachments" Chapter of this Injury & Illness Prevention Manual you will find a master copy of the following forms for Company use:

- Safety Committee Meeting Agenda

How to Take Minutes

Why Minutes are Important

Minutes are the official record of the safety committee's activities, including recommendations to management and accomplishments. The content should be concise, clear, and well-organized.

NOTE: In the "Attachments" Chapter of this Injury & Illness Prevention Manual you will find a master copy of the following forms for Company use:

- Safety Committee Meeting Minutes

Who is Responsible for Minutes

Your committee should have a recorder who takes minutes at each meeting and, after the meeting, does the following:

- Distributes the minutes to representatives and management.
- Posts the minutes where other employees can read them.
- Keeps a copy of the minutes on file for three years.
- Ensures that all employees have the opportunity to respond to the minutes.

What to Include in the Minutes

Organize the minutes so that they follow the meeting agenda. Information to include in the minutes:

- Date, time, and place of the meeting.
- Names of attending representatives, guests, and representatives unable to attend.
- A summary of each agenda item discussed.
- Employee suggestions and reports of hazards.
- The committee's recommendations to management.
- Management's response to committee recommendations.

After the meeting, review and edit the minutes. Type a clean copy and post it where employees are likely to see it, or distribute it to all employees.

Send a copy of the minutes to employees at mobile worksites or field offices.

Keep the minutes for at least three years. You can file them in a notebook or a computer.

How to Identify Workplace Hazards

What to Do and How to Do It

Effective safety committees prove their worth by helping management keep workplace hazards under control. But you cannot control hazards until you identify them.

- Get training on how to identify workplace hazards.
- Conduct quarterly workplace inspections.
- Discuss the hazards at monthly safety-committee meetings, document them in the minutes, and report them to management.

Getting Trained

Work with a mentor. A safety-and-health specialist from your insurance carrier, for example, will attend a safety committee meeting, answer questions, and help representatives learn how to identify hazards.

Know the rules. Know what safety and health rules apply to your workplace. The rules can inform you about hazards and help you determine how to control them.

Conducting Quarterly Workplace Inspections

- Successful inspections involve walking, talking, listening, and writing:
- Walk around the workplace. Look for hazards and unsafe work practices that are likely to cause serious injuries. Focus on hazards rather than rule violations.
- Talk to employees. Ask them about hazards and unsafe conditions; be concerned and listen carefully.
- Take notes. What is the hazard? Where is the hazard? How could the hazard cause an accident and what could be the result? Who could be affected by the hazard?
- Report your findings. Organize your notes and summarize the important information in a report to the safety committee.

Getting Other Employees Involved

Concerned employees help the committee learn about workplace hazards and unsafe practices. Encourage them to report hazards and suggest how to control them.

Discussing Hazards at Safety Committee Meetings

The safety committee receives information about workplace hazards from quarterly inspections, from concerned employees, and from management. But the committee also needs to discuss how that information will lead to a safer, healthier workplace and the discussion should take place during a safety-committee meeting.

Reporting Hazards to Management

By reporting a hazard to management and recommending how to control or eliminate it, the committee acknowledges the hazard threatens a worker's safety.

A Safety Committee Evaluation Checklist

After you get your safety committee started, use the following checklist to determine if it is necessary to do any fine-tuning to make it more effective.

NOTE: In the "Attachments" Chapter of this Injury & Illness Prevention Manual you will find a master copy of the following forms for Company use:

- Safety Committee By-Laws
- Safety Committee Checklist
- Safety Committee Meeting Agenda
- Safety Committee Meeting Minutes

Chapter 3

General Safety Rules & Code of Safe Practices

Keith Maxey is responsible for the implementation and enforcement of the following safety rules. Disciplinary procedures will be enforced.

Employee Safety Training & Disciplinary Procedures

OSHA requires that employees be trained in the safe methods of performing their job. All Ohio Sealants Inc. is committed to instructing all employees in safe and healthful work practices. Awareness of potential hazards, as well as knowledge of how to control them, is critical to maintaining a safe and healthful work environment and preventing injuries. To achieve this goal, we will provide training to each employee on general safety issues and safety procedures specific to that employee's work assignment.

☐ Every new employee will be given instruction by their foreman in the general safety requirements of their job.

☐ A copy of our Code of Safe Practices will also be provided to each employee.

☐ Tailgate or toolbox safety training will be conducted at least every 10 working days.

☐ All training will be documented on the forms provided.

☐ Managers, supervisors, and foremen will be trained at least twice per year on various accident prevention topics.

Training provides the following benefits:

- Makes employees aware of job hazards
- Teaches employees to perform jobs safely
- Promotes two way communication
- Encourages safety suggestions
- Creates interest in the safety program
- Fulfills OSHA requirements

Employee training will be provided at the following times:

- All new employees will receive a safety orientation their first day on the job.
- All new employees will be given a copy of the Code of Safe Practices and required to read and sign for it.
- All field employees will receive training at tailgate or toolbox safety meetings held at the jobsite.
- All employees given a new job assignment for which training has not been previously provided will be trained before beginning the new assignment.
- Whenever new substances, processes, procedures, or equipment that represent a new hazard are introduced into the workplace.
- Whenever the Company is made aware of a new or previously unrecognized workplace hazard.
- Whenever management believes that additional training is necessary.
- After all serious accidents.
- When employees are not following safe work rules or procedures.

Training topics will include, but not be limited to:

- Employee's safety responsibilities
- General safety rules
- Code of Safe Practices
- Safe job procedures
- Use of hazardous materials
- Use of equipment
- Emergency procedures
- Safe lifting and material handling practices
- Use of boom and scissor lifts
- Use of fall-protection
- Contents of safety program

Documentation of Training

All employee safety training will be documented on one of the following three forms:

- New Employee Safety Orientation
- Specialized, formal employee training plans (confined spaces, fall protection, lockout/tagout, first aid, etc.)
- Tailgate/Toolbox Safety Meeting Report

The following informal training methods will be used. Actual demonstrations of the proper way to perform a task will be used in most cases, for example:

- Tell them how to do the job safely
- Show them how to do the job safely
- Have them tell you how to do the job safely
- Have them show you how to do the job safely
- Follow up to ensure they are still performing the job safely

Safety Communication

Employee safety communication procedures are designed to develop and maintain employee involvement and interest in the Safety and Health Program. These activities will also ensure effective communication between management and employees on safety related issues that is of prime importance to The Company.

The following are some of the safety communication methods that may be used:

- Tailgate/Toolbox safety training with employees that encourage participation and open, two-way communication.
- New employee safety orientation and provision of the Code of Safe Practices.
- Provision and maintenance of employee bulletin boards discussing safety issues, accidents, and general safety suggestions.
- Written communications from management or the Safety Coordinator, including memos, postings, payroll stuffers, and newsletters.
- Anonymous safety suggestion program.

Employees will be kept advised of highlights and changes relating to the safety program. The Foremen will relay changes and improvements regarding the safety program to employees, as appropriate. Employees will be involved in future developments and safety activities, by requesting their opinions and comments, as necessary.

All employee-initiated safety related suggestions will be properly answered, either verbally or in writing, by the appropriate level of management. Unresolved issues will be relayed to Keith Maxey, The Safety Coordinator.

All employees are encouraged to bring any safety concerns they may have to the attention of management. All Ohio Sealants Inc. will not discriminate against any employee for raising safety issues or concerns.

The Company also has a system of anonymous notification whereby employees who wish to inform the Company of workplace hazards without identifying themselves may do so by phoning or sending written notification.

Enforcement of Safety Policies

The compliance of all employees with The Company's Safety and Health Program is mandatory and will be considered a condition of employment.

The following programs will be utilized to ensure employee compliance with the safety program and all safety rules:

- Training programs
- Retraining
- Optional safety incentive programs
- Disciplinary action

Training Programs

The importance of safe work practices and the consequences of failing to abide by safety rules will be covered in the New Employee Safety Orientation and at Tailgate/Toolbox Safety meetings. This will help ensure that all employees understand and abide by The Company's safety policies.

Retraining

Employees that are observed performing unsafe acts or not following proper procedures or rules will be retrained by their foreman or supervisor. A Safety Contact Report may be completed by the supervisor to document the training. If multiple employees are involved, additional safety meetings will be held.

Safety Incentive Programs

Although strict adherence to safety policies and procedures is required of all employees, the Company may choose to periodically provide recognition of safety-conscious employees and jobsites without accidents through a safety incentive program.

Disciplinary Action

The failure of an employee to adhere to safety policies and procedures established by The Company can have a serious impact on everyone concerned. An unsafe act can threaten not only the health and well being of the employee committing the unsafe act but can also affect the safety of his/her coworkers and/or customers. Accordingly, any employee who violates any of the Company's safety policies will be subject to disciplinary action.

Note: Failure to promptly report any on-the-job accident or injury, on the same day as occurrence, is considered a serious violation of The Company's Code of Safe Practices. Any employee who fails to immediately report a work-related accident or injury, no matter how minor will be subject to disciplinary action.

Employees will be disciplined for infractions of safety rules and unsafe work practices that are observed, not just those that result in an injury. Often, when an injury occurs, the accident investigation will reveal that the injury was caused because the employee violated an established safety rule and/or safe work practice(s).

In any disciplinary action, the foreman should be cautious that discipline is given to the employee for safety violations, and not simply because the employee was injured on the job or filed a Workers' Compensation claim.

Violations of safety rules and the Code of Safe Practices are to be considered equal to violations of other Company policy. Discipline for safety violations will be administered in a manner that is consistent with The Company's system of progressive discipline. If, after training, violations occur, disciplinary action will be taken as follows:

- Oral warning. Document it, including date and facts on the "Safety Warning Report" form. Add any pertinent witness statements. Restate the policy and correct practice(s).
- Written warning. Retrain as to correct procedure/practice.
- Written warning with suspension.
- Termination

As in all disciplinary actions, each situation is to be carefully evaluated and investigated. The particular step taken in the disciplinary process will depend on the severity of the violation, employee history, and regard to safety. Foremen and supervisors should consult with the office if there is any question about whether or not disciplinary action is justified. Employees may be terminated immediately for willful or extremely serious violations. Union employees are entitled to the grievance process specified by their contract.

Note: Consistency in the enforcement of safety rules will be exercised at all times.

NOTE: In the "Attachments" Chapter of this Injury & Illness Prevention Manual you will find a master copy of the following forms for Company use:

- Disciplinary Safety Warning
- Code of Safe Practices Receipt

GENERAL SAFETY RULES

All Ohio Sealants Inc. employees will follow these safe practice rules, render every possible aid to safe operations, and report all unsafe conditions or practices to their supervisor.

Failure to abide by the Code of Safe Practices may result in disciplinary action up to and including termination.

Supervisors will insist that employees observe and obey every rule, regulation, and order necessary to the safe conduct of the work, and will take such action necessary to obtain compliance.

If you are unsure of the safe method to do your job, STOP and ask your supervisor. Ignorance is no excuse for a safety violation.

All employees will be given frequent accident prevention instructions. Instructions, practice drills and articles concerning workplace safety and health will be given at least once every _____ working days.

No one will knowingly be permitted to work while the employee's ability or alertness is impaired by fatigue, illness, and prescription or over the counter drugs. Employees who are suspected of being under the influence of illegal or intoxicating substances, impaired by fatigue or an illness, will be prohibited from working.

Anyone known to be under the influence of alcohol and/or drugs will not be allowed on the job while in that condition. Persons with symptoms of alcohol and/or drug abuse are encouraged to discuss personal or work-related problems with their supervisor/employer.

Employees should be alert to see that all guards and other protective devices are in proper places and adjusted, and will report deficiencies. Approved protective equipment will be worn in specified work areas.

Horseplay, scuffling, fighting and other acts that tend to have an adverse influence on the safety or well being of the employees are prohibited. Do not run in the workplace or in the shop or office area.

Work will be well-planned and supervised to prevent injuries when working with equipment and handling heavy materials. When lifting heavy objects, employees should bend their knees and use the large muscles of the leg instead of the smaller muscles of the back. Back injuries are the most frequent and often the most persistent and painful type of workplace injury.

Workers will not handle or tamper with any electrical equipment, machinery or air or water lines in a manner not within the scope of their duties, unless they have received instructions from their supervisor. Do not operate equipment that you are not familiar with. Do not attempt to use such equipment until you are fully trained and authorized.

Keep your work area clean, free of debris, electrical cords, and other hazards. Immediately clean up spilled liquids.

Always notify all other individuals in your area who might be endangered by the work you are doing.

A red tag system identifies equipment that is NOT to be operated, energized, or used. All lockout/tagout notices and procedures must be observed and obeyed.

Do not block exits, fire doors, aisles, fire extinguishers, first aid kits, emergency equipment, electrical panels, or traffic lanes.

Do not leave tools, materials, or other objects on the floor that might cause others to trip and fall.

Do not distract others while working. If conversation is necessary, make sure eye contact is made prior to communicating.

Employees will not enter manholes, underground vaults, chambers, tanks, silos, or other similar places that receive little ventilation, unless it has been determined that it is safe to enter.

Materials, tools, or other objects will not be thrown from buildings or structures until proper precautions are taken to protect others from the falling objects.

Employees will cleanse thoroughly after handling hazardous substances, and follow special instructions from authorized sources.

Gasoline or other flammable liquids will not be used for cleaning purposes.

No burning, welding, or other source of ignition will be applied to any enclosed tank or vessel, even if there are some openings, until it has first been determined that no possibility of explosion exists, and authority for the work is obtained from the foreman or superintendent.

Any damage to scaffolds, falsework, or other supporting structures will be immediately reported to the foreman and repaired before use.

Possession of firearms, weapons, illegal drugs or alcoholic beverages on Company or customer property or the workplace is strictly prohibited.

All injuries will be reported promptly to your supervisor so that arrangements can be made for medical and/or first-aid treatment.

Specific Safety Rules

Electrical Safety

Only trained, qualified, and authorized employees are allowed to make electrical repairs or work on electrical equipment or installations.

All electrical equipment and systems will be treated as energized until tested or otherwise proven to be de-energized.

All energized equipment and installations will be de-energized prior to the commencement of any work. If the equipment or installation must be energized for test or other purposes, special precautions will be taken to protect against the hazards of electric shock.

All equipment will be locked out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy-isolating device bearing a lock.

Safety grounds will always be used where there is a danger of shock from back feeding or other hazards.

Polyester clothing or other flammable types of clothing will not be worn near electrical circuits. Cotton clothing is much less likely to ignite from arc blast. Employees working on live circuits will be provided Nomex or equivalent fire resistant clothing.

Suitable eye protection must be worn at all times while working on electrical equipment.

Always exercise caution when energizing electrical equipment or installations. Take steps to protect yourself and other employees from arc blast and exploding equipment in the event of a fault.

All power tools will be grounded or double insulated. Tools with defective cords or wiring will not be used.

Metal jewelry should not be worn around energized circuits.

Extension and temporary power cords must be heavy duty and grounded. Frayed or defective cords will not be used.

Suitable temporary barriers or barricades will be installed when access to opened enclosures containing exposed energized equipment is not under the control of an authorized person.

Electrical installations must be protected from accidental contact by enclosures or tight fitting covers.

Circuits will not be overloaded with equipment or extension cords.

Metal measuring tapes, fish tapes, ropes or other metal devices are prohibited where they may contact energized parts of equipment or circuits.

Personal Protective Equipment (PPE)

Use the correct PPE for each job assignment. If you do not know, ask.

PPE will be maintained in good condition and cleaned regularly.

PPE will be stored properly when not in use to protect it from damage.

Damaged or broken PPE must be returned to your foreman for replacement.

Hard hats must be worn on jobsites, when required.

ANSI approved safety glasses must be worn when working with power tools, compressed air or gasses, chemicals or any other item that creates an eye injury hazard.

Face shields with safety glasses are recommended when grinding or working with hazardous chemicals.

Employees must wear industrial work shoes in the shop and on the jobsite. The shoes must have complete leather uppers and skid resistant soles and be in good condition. Steel toe protection is recommended.

Athletic style shoes, tennis shoes, open toe shoes, plastic or vinyl shoes or shoes with decorative accessories are not allowed.

Hearing protectors must be worn when working with loud equipment such as cut off saws, chain saws, air hammers or grinders.

Back support belts should be worn for heavy lifting tasks. They do not help you lift more, but may provide some protection from back injuries.

Be sure the protective clothing you wear will not hamper or restrict freedom of movement due to improper fit.

Long pants of heavy-duty material must be worn. No shorts or sweat pants are allowed.

Do not wear loose, torn or frayed clothing, dangling ties, finger rings, dangling earrings, jewelry items, or long hair unless contained in a hair net, while operating any machine that could cause entanglement.

If required, wear NIOSH approved respirators when applying adhesives, paint, welding, grinding or working with chemicals. Read the SDS to find out which types of respirators are required. Facial hair may not be permitted in certain circumstances.

Hazardous Materials and Chemicals

Read all warning labels and Material Safety Data Sheets (SDS) before using any chemicals. SDS contain personal protective equipment and safety information and are available from your foreman.

Hazardous materials will be handled in accordance with the SDS and label. If protective equipment is required, use it.

Eye protection must be worn when working with hazardous materials or chemicals.

Mixing of chemicals is prohibited at all times unless required by the label. Before you mix - review all SDS.

Always wash your hands thoroughly after handling chemicals and before eating or smoking, even if you were wearing protective gloves.

Never use solvents for hand cleaning. Use the non-toxic hand cleaners provided.

Store all hazardous materials properly in suitable containers that are properly labeled.

Use chemicals only in well-ventilated areas.

When using secondary containers, ensure that they are labeled as to their contents and hazards.

Do not disturb any asbestos. STOP work and tell your foreman. If you are not sure, STOP and ask.

Do not cut or weld stainless steel or galvanized metal without respiratory protection. These items create toxic fumes.

Work with lead, asbestos, cadmium, and other toxic compounds require special precautions. Do not attempt to perform this work without special equipment and training.

Fire Prevention and Housekeeping

Always take precautions to prevent fires which may be started, particularly from oily waste, rags, gasoline, flammable liquids, acetylene torches, improperly installed electrical equipment, and trash.

Firefighting equipment is to be inspected on a regular basis. All discharged, damaged or missing equipment is to be immediately reported to a supervisor. Tampering with fire equipment is prohibited.

Access to fire extinguishers must be kept clear at all times. Make note of the location of firefighting equipment in your work area.

Never use gasoline or flammable solvents for cleaning purposes.

Smoking is prohibited within 20 feet of where flammable substances are present.

In case of fire, employees will consider the safety of themselves and other individuals before saving property.

Keep your work areas free of debris. Remove useless material from the work area as fast as required to help reduce tripping hazards.

Maintain awareness of potential hazards when walking about the workplace.

Keep tools, materials and equipment out of walkways and stairways at all times.

Sharp wires or protruding nails must be kept bent.

Place tools and equipment so they will not fall from elevated areas.

Tie materials down at day's end so the wind will not blow it off the roof.

Fall Protection

Fall protection, such as standard railings or a safety harness and lanyard, will be used at all times, when working 6 feet or more above the level below.

Floor and wall openings, unfinished balconies, elevator shafts and similar areas must be railed, covered, or barricaded to prevent falls.

Never remove fall protection rails, covers, or barricades without permission from your foreman and special precautions. Always replace these items when finished with your task.

All safety harnesses will be the full body type with a shock-absorbing lanyard attached to a substantial anchorage capable of supporting twice the maximum load. Lanyards will be attached at the wearer's upper back. Body belts are not to be worn as fall protection.

Read and obey all manufacturers' instructions relating to your fall arrest system (safety harness and lanyard).

Inspect all components of your harness and lanyard prior to each use and after a fall. Defective equipment is not to be used. Lanyards must be destroyed after a fall and never reused.

Safety harnesses and lanyards should limit free fall distance to less than 4 feet and prevent contact with any level or objects below you.

Never use any part of a fall arrest system, such as a harness or lanyard, to hoist materials or for any other purpose.

Safety harnesses and shock absorbing lanyards are required to be worn at all times while in boom lifts.

Ladder Safety

Inspect the ladder before using it. If it is broken, throw it out. Never repair a broken ladder, get a new one. Keep portable stairways, ladders, and step stools in good condition and use them only in a safe manner.

Use the proper ladder for the job. Do not use “A” frame ladders as straight ladders. Make sure the ladder is tall enough to reach the work area. Do not use metal ladders for electrical work.

Do not place ladders in passageways, doorways, or any location where they might be hit or jarred, unless protected by barricades or guards.

Ladders should only be placed on hard level surfaces. Make sure the ladder feet are not placed on sandy, slippery, or sloping surfaces. Clean or sweep the area where the ladder feet will be and make sure the rubber feet are in good shape.

Ladder rungs and steps must be kept free of grease, oil, mud, or other slippery substances.

Arrange your work so you are able to face the ladder and use both hands while climbing. Do not carry tools or equipment while climbing a ladder. Climb the ladder, and then hoist the tools or equipment with a line or a hoisting device.

Avoid temporary ladders. Always use a commercially made, construction grade ladder of the proper length for the work being performed.

Secure portable ladders in place and at a pitch so the leveling indicator is in alignment or the distance from the wall to the base of the ladder is at least 1’ for every 4’ of height.

Straight ladders will be tied off the top of the ladder to prevent slipping.

Be aware of objects below you, move or cover sharp objects in case you fall. Cap or bend all rebar.

Do not stand on or work from the 2nd rung from the top or above. Also do not reach too far from the ladder. Keep your belt buckle between the side rails.

Extension ladders will extend at least 36" above the level being accessed.

On all ladders, do not step on cross bracing that is not intended to be used for climbing.

Scaffolds

Scaffolds are to be erected, dismantled, altered, or repaired by the scaffold contractor ONLY.

Inspect scaffolds prior to use and report any damage immediately to your foreman. Do not use damaged scaffolds.

You are not permitted to ride on rolling scaffolds being moved.

Always use guard railings on all scaffolds regardless of height.

Use only high quality planking on scaffolds and be sure the planks are secure to prevent shifting.

Always apply caster brakes and use outriggers when scaffolds are stationary.

Do not use planks, buckets, ladders. guard rails or other equipment as a temporary means of obtaining greater height off the scaffold.

Be aware of the objects below you; move or cover sharp objects in case you fall. Cap or bend all rebar.

Lockout/Tagout

All machinery and electrical equipment will be locked out and tagged prior to repair, cleaning, or adjustment unless power is necessary to perform the work. If so, other precautions, specified by your foreman, will be taken.

Use your own lock and key. No one else should have a key for your lock. Destroy all duplicate keys.

Maintain control of your key at all times to prevent unauthorized use.

Never remove another employee's lock or energize tagged equipment.

If multiple employees are working on the same equipment, each employee should install their own lock.

Notify all affected employees that lockout/tagout is required and reasoning.

If the equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).

Operate the switch, valve or other energy isolating devices so that the energy source(s) (electrical, mechanical, hydraulic, etc.) is disconnected or isolated from the equipment.

Stored energy, such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas or water pressure, etc. must also be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.

Lock-out all energy isolation devices with an individual lock.

After ensuring that no employees are exposed and as a check of having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate.

CAUTION: Return operating controls to neutral position after the test. The equipment is now locked-out. Install red lock-out tag on operating controls.

After repair is complete and the equipment is ready for testing or normal operation, check the equipment to see that all cover plates and safety devices have been reinstalled.

When the equipment is clear, remove all locks and tags. The energy isolating devices may be operated to restore energy to the equipment.

Boom and Scissor Lifts

Only trained and authorized employees are allowed to use boom or scissor lifts. If you are not trained, stay off.

Read and obey all manufacturers' instructions and safety precautions.

Inspect all lifts prior to use. Defective equipment will not be used.

A safety harness with shock absorbing lanyard must be worn while using boom lifts. Harnesses are not required for scissor lifts, provided guardrails are adequate and you do not leave the work platform.

Always stay inside the platform railing. Do not use planks or ladders to extend your reach.

Always lower the lift before moving.

Never use scissor lifts on uneven ground. They are designed for use primarily on concrete floors.

Hand and Power Tools

Proper eye protection must be worn when using hand and power tools.

Know your hand and power tool applications and limitations. Always use the proper tool for the job.

Inspect cords and tools prior to use. Do not use tools that are faulty in any way. Exchange them for safe tools immediately.

Power tools must be grounded or double insulated. All power tools are to be plugged into a grounded GFCI outlet.

Do not use power tools in damp, wet, or explosive atmospheres.

Do not lift, lower or carry portable electrical tools by the power cord.

Keep all safety guards in place and in proper working order.

Use clamps or vises to secure work pieces.

Do not force hand power tools. Apply only enough pressure to keep the unit operating smoothly.

Return all tools and other equipment to their proper place after use.

Unplug all power tools before changing bits and/or grinding disks.

Never leave chuck keys in the tool during operation.

Do not use a screwdriver as a chisel.

Before using sledges, axes, or hammers, be sure the handles are securely fastened with a wedge made of sound material.

Do not use a handle extension or 'cheater" on any wrench.

Files should be equipped with handles and should not be used as a punch or pry.

Trenching and Excavation

All excavations and trenches 5 feet deep or greater must be shored, sloped or benched to protect workers from hazards of moving earth. All trenching must be done in accordance with OSHA regulations.

Always locate underground utilities before digging. Also contact regional notification center in advance.

Do not work under loads handled by lifting or digging equipment.

Ladders will be provided for access to trenches and excavations 4 feet deep or greater. Use them.

Keep all spoil piles a minimum of 2 feet from the edge of the trench.

Barricade trenches or use caution tape to warn others of their presence.

Inspect all trenches and excavations daily, before work, to look for signs of shifting earth.

Cranes and Rigging

No employee is permitted to ride on loads, hooks, or slings of any crane, hoist or derrick.

Do not work or stand under any suspended load. Crane operators will avoid swinging loads over people.

Inspect all slings and chains prior to use. Do not use defective slings, chains, or rigging.

Welding and Cutting

Make sure your welding equipment is properly installed, grounded, and in good working condition.

Always wear protective clothing suitable for the welding or cutting to be done.

Always wear proper eye protection when welding, brazing, soldering or flame cutting. Once you remove your welding helmet, put on safety glasses.

Keep your work area clean and free of hazards. Make sure that no flammable, volatile or explosive materials are in or near the work area.

Handle all compressed gas cylinders with extreme care. Keep caps on when not in use. Make sure that all compressed gas cylinders are secured to the equipment carriage, wall or other structural supports. When compressed gas cylinders are empty close the valve, install the cap and return to correct bottle storage area.

Store compressed gas cylinders in a safe place with good ventilation. Acetylene cylinders and oxygen cylinders should be kept at least 20 feet apart.

Do not weld or cut in confined spaces without special precautions and your foreman's authorization.

Do not weld on containers that have held combustibles or flammable materials.

Use mechanical exhaust ventilation at the point of welding when welding lead, cadmium, chromium, manganese, brass, bronze, zinc or galvanized metals. These metals are highly toxic and their fumes should not be breathed.

Make sure all electrical connections are tight and insulated. Do not use cables with frayed, cracked or bare spots in the insulation.

When the electrode holder or cutting torch is not in use, hang it on the brackets provided. Never let it touch a compressed gas cylinder.

Dispose of electrode and wire stubs in proper containers since stubs and rods on the floor are a safety hazard.

Use weld curtains to shield others from the light rays produced by your welding.

Make sure all compressed gas connections are tight and check for leaks. Do not use hoses with frayed or cracked spots.

Keep your leads orderly and out of walkways. Suspend them whenever possible.

DO NOT WELD if leads or machine are in or near water.

Make sure a portable fire extinguisher is nearby.

Keep your work area clean and free of hazards. When flame cutting, sparks can travel 30-40 feet. Do not allow flame cut sparks to hit hoses, regulators or cylinders.

Use oxygen and acetylene or other fuel gases with the appropriate torches and tips only for the purpose intended.

Never use acetylene at a pressure in excess of 15 pounds per square inch. Higher pressure can cause an explosion.

Never use oil, grease, or any other material on any apparatus or thread fitting in the oxyacetylene or oxyfuel gas system. Oil and grease in contact with oxygen will cause spontaneous combustion.

Always use the correct sequence and technique for assembling and lighting the torch.

Always use the correct sequence and technique for shutting off a torch.

Company Vehicles

Only authorized employees are permitted to operate Company vehicles. Do not let anyone else drive your Company vehicle.

Company vehicles are to be used for Company business only. Personal, off duty and family use is prohibited.

Drive defensively and obey all traffic and highway laws.

Always wear your seat belt, whether the driver or a passenger.

Report all accidents to your supervisor as soon as possible and obtain a police report.

Keys must be removed from all unattended vehicles and the vehicles must be locked, unless parking inside the facility.

Do not jump from the cab or bed of Company vehicles. Always use the steps or a ladder.

Inspect your vehicle and report any defects or operating problems to your supervisor so that repairs can be made.

Smoking is prohibited during vehicle refueling.

If your driver's license is revoked or expired, immediately notify your supervisor and do not drive.

Traffic Safety

All employees exposed to traffic hazards are required to wear orange flagging garments (shirts, vests, jackets) at all times.

When possible, construction vehicles are to be placed between the employees and traffic to prevent vehicles from entering the work area and hitting members of the crew.

All traffic controls will be established in accordance with the Manual of Traffic Controls for Construction and Maintenance Work Zones.

Traffic controls are to be properly maintained throughout the workday. Signs and cones must be kept upright, visible and in their proper position at all times.

NOTE: In the “Attachments” Chapter of this Injury & Illness Prevention Manual you will find a master copy of the following forms for Company use:

- Disciplinary Safety Warning
- Code of Safe Practices Receipt

Notes:

Chapter 4

Accident Investigation Policy

Policy Statement

All Ohio Sealants Inc. is committed to investigating all accidents/incidents. Keith Maxey is responsible for ensuring that accident investigation policy is followed.

This company will investigate all lost-time injuries. Fatalities and catastrophes must be reported to OSHA within 8 hours. Serious accidents must be reported to OSHA within 24 hours.

Accidents and near miss incidents that result in personal injury, property damage, chemical spill, or other emergency situations will be immediately reported to the assigned supervisor at the time of the event and Emergency Medical Service, Fire Department, or Hazmat Services will be immediately summoned. Such events will be investigated and documented on the appropriate Company form. All forms will be fully completed and submitted to Keith Maxey for review and for discussion at the next scheduled Safety Committee meeting. These investigations demonstrate the company's commitment to providing a safe and healthful work environment. Disciplinary Policy will be enforced.

To ensure that accidents will be reported, employees must be encouraged to participate in the "fact-finding" process. The point emphasized must be that "hazardous conditions" and "unsafe practices" are an indication of a much bigger problem with a breakdown in the safety and health policy. The purpose of the accident investigation then becomes one that will uncover these system problems and provide solutions that will result in long term corrective action.

It is important to gather facts and interview witnesses as soon as possible after an accident to ensure the most accurate information is being recorded. The efficiency of the corrective measures is determined by the accuracy of the information gathered. The best place to conduct an interview is wherever the employee being interviewed feels most comfortable. The most important interviewing technique you can use to ensure accuracy is to "listen".

Note: Consider the event a "serious accident" if an employee is admitted to a hospital for treatment or observation as a result of injuries suffered from a workplace accident.

Accident Causes

Accidents occur when hazards escape detection during preventive measures, such as a job or process safety assessment, when hazards are not obvious, or as the result of combinations of circumstances that were difficult to foresee. A thorough accident investigation may identify previously overlooked physical, environmental, or process hazards, the need for new or more extensive safety training, or unsafe work practices.

The primary focus of any accident investigation should be the determination of the facts surrounding the incident and the lessons that can be learned to prevent future similar occurrences. The focus of the investigation should NEVER be to place blame. The process should be positive and thought of as an opportunity for improvement.

When Accident Investigations are Required

As a general rule, investigations should be conducted for:

- All injuries (even the very minor ones).
- All accidents with potential for injury.
- Property and/or product damage situations.
- All "Near Misses" where there was potential for serious injury.

Near miss and incident reporting and investigation allow you to identify and control hazards before they cause a more serious incident. Accident/incident investigations are a tool for uncovering hazards that either were missed earlier or hazards where controls were defeated. However, it is important to remember that the investigation is only useful when its objective is to identify root causes. In other words, every contributing factor to the incident must be uncovered and recommendations made to prevent recurrence.

Accident Investigation Plan

When a serious accident occurs in the workplace, everyone will be too busy dealing with the emergency at hand to worry about putting together an investigation plan, so the best time to develop effective accident investigation procedures is before the accident occurs.

The plan should include procedures that determine:

- Who should be notified of accident?
- Who is authorized to notify outside agencies? (fire, police, etc.)
- Who is assigned to conduct investigations?
- Training required for accident investigators:
- Who receives and acts on investigation reports?
- Timetables for conducting hazard correction.

Secure the Accident Scene

For a serious accident, the first action the accident team needs to take is to secure the accident scene so material evidence is not moved or removed. Material evidence has a tendency to walk off after an accident. If the accident is quite serious, OSHA may inspect and require that all material evidence be marked and remain at the scene of the accident.

Gather Information

The next step is to gather useful information about what directly and indirectly contributed to the accident. The following tools should be used to gather as much information as possible:

- Interview eye witnesses as soon as possible after the accident. Interview witnesses separately, never as a group.
- Interview other interested persons such as supervisors, co-workers, etc.
- Review related records such as:
  - Training records
  - Disciplinary records
  - Medical records (as allowed)
  - Maintenance records
  - OSHA 300 Log (past similar injuries)
  - Safety Committee records
- Document the scene with photographs, videotape, or sketches AND appropriate measurements.

Develop a Sequence of Events

Use the information gathered to develop a detailed step by step description of the accident. Make sure the accident is documented in enough detail to enable an individual unfamiliar with the situation to envision the sequence of events. Do not just describe the accident itself; include a description of events that led up to the accident.

Analyze the Accident

The next step is to determine the cause(s) of the accident. This is the most difficult step because first the events must be analyzed to discover surface cause(s) for the accident, and then, by asking "why" a number of times, the related root causes are uncovered. Remember, surface causes are usually pretty obvious and not too difficult to determine. However, it may take a great deal more time to accurately determine the weaknesses in the management system, or root causes, that contributed to the conditions and practices associated with the accident.

More on surface causes:

The surface causes of accidents are those hazardous conditions and individual unsafe employee/manager behaviors that have directly caused or contributed in some way to the accident.

Hazardous conditions may exist in any of the following categories:

- Materials
- Machinery
- Equipment
- Tools
- Chemicals
- Environment
- Workstations
- Facilities
- People
- Workload

It is important to know that most hazardous conditions in the workplace are the result of unsafe behaviors that produced them. Individual unsafe behaviors may occur at any level of the organization.

Some example of unsafe employee/manager behaviors include:

- Failing to comply with rules
- Using unsafe methods
- Taking shortcuts
- Horseplay
- Failing to report injuries
- Failing to report hazards
- Allowing unsafe behaviors
- Failing to train
- Failing to supervise
- Failing to correct
- Scheduling too much work
- Ignoring worker stress

More on root causes:

The root causes for accidents are the underlying system weaknesses that have somehow contributed to the existence of hazardous conditions and unsafe behaviors that represent surfaces causes of accidents. Root causes always pre-exist surface causes. Inadequately designed system components have the potential to feed and nurture hazardous conditions and unsafe behaviors. If root causes are left unchecked, surface causes will flourish!

Root causes may be separated into two categories:

System design weaknesses — Missing or inadequately designed policies, programs, plans, processes, and procedures will affect conditions and practices generally throughout the workplace. Defects in system design represent hazardous system conditions.

System implementation weaknesses — Failures to initiate, carry out, or accomplish safety policies, programs, plans, processes, and procedures. Defects in implementation represent ineffective management behavior.

System Design Weaknesses

- Missing or inadequate safety policies/rules
- Training program not in place
- Poorly written plans
- Inadequate process
- No procedures in place
- Develop Preventive Actions

System Implementation Weaknesses

- Safety policies/rules are not being enforced
- Safety training is not being conducted
- Adequate supervision is not conducted
- Incident/Accident analysis is inconsistent
- Lockout/Tagout procedures are not reviewed annually

Preventative Actions

This is the most important piece of any investigation. All of the work done to this point culminates with recommendations to prevent similar accidents from happening in the future. Recommendations should relate directly to the surface and root causes of the accident. These recommendations should include recommended actions such as:

- Engineering controls (for example, local exhaust ventilation or use of a lift assisting device).
- Work practice controls (for example, pre-plan work, and remove jewelry and loose fitting clothing before operating machinery).
- Administrative controls (e.g., standard operating procedures or worker rotation).
- Personal protective equipment (for example, safety glasses or respirators).

It is crucial that, after making recommendations to eliminate or reduce the surface causes, that the same procedure is used to recommend actions to correct the root causes. If root causes are not corrected, it is only a matter of time before a similar accident occurs.

Summary

A successful accident investigation determines not only what happened, but also finds how and why the accident occurred. Investigations are crucial as an effort to prevent a similar or perhaps more disastrous sequence of events. Research has shown that a typical accident is the result of many related and unrelated factors that somehow all come together at the same time. It is estimated that there are usually more than ten factors that contribute to a serious accident. Although, this combination of factors normally makes an investigation very time consuming and resource intensive, the good news is that the accident can normally be prevented by removing only a few of the contributing factors.

NOTE: In the "Attachments" Chapter of this Injury & Illness Prevention Manual you will find a master copy of the following form for Company use:

- Accident Incident Report

Chapter 5

Emergency Response Plan & Fire Prevention Procedures

§1910.38 – Emergency Action Plans
§1910.157 – Portable Fire Extinguishers – Fire Protection & Prevention
§1926.150 – Fire Protection

Policy Statement

All Ohio Sealants Inc. has implemented the following policy for the protection of our employees against emergency situations in the workplace such as fire/explosion hazards, and has appointed Keith Maxey to supervise Emergency Action Plans and Fire Protection/Prevention Programs:

All Ohio Sealants Inc. will have an Emergency Action Plan whenever an OSHA standard requires one. Emergency Action Plans will be in writing, posted in the workplace, and available to employees for review. The names and job titles of every person in the chain of command will be posted.

Keith Maxey will ensure that all employees at All Ohio Sealants Inc. are informed and trained in the following minimum elements for Emergency Action Plans:

- Procedures for reporting a fire or other emergency.
- Procedures for emergency evacuation for all areas of work, including type of evacuation and exit route assignments.
- Safe assembly areas designated for all work areas in the event of evacuation.
- Procedures to be followed by employees who remain to operate critical operations before they evacuate.
- Procedures to account for all employees after evacuation.
- Procedures to be followed by employees performing rescue or medical duties.
- The members in the chain of command who may be contacted by employees who need more information about the Plan or for an explanation of their duties under the Plan.

All Ohio Sealants Inc. will have and maintain an employee alarm system. The employee alarm system will use a distinctive signal for each purpose.

All Ohio Sealants Inc. will designate and train employees to assist in a safe and orderly evacuation of other employees.

Keith Maxey will review the Emergency Action Plan with each employee covered by the plan:

- When the plan is developed or an employee is initially assigned to a job.
- When the employee's responsibilities under the plan change.
- When any element of the Plan is changed.

All fire extinguishers will be inspected by Keith Maxey on a monthly basis; this inspection will be recorded and documented with the required annual maintenance check. Records of inspection will be kept on file in the office.

- Keith Maxey will ensure that all employees are trained in the proper operation of all types of fire extinguishers provided by the company.
- All employees will be trained in the hazards involved in incipient stage fire fighting. Employees are instructed to ensure the local emergency response service (Fire Department) is notified before attempting to extinguish any fire, and that if a fire is not immediately extinguished, or the fire recurs to evacuate immediately.
- Fire Protection/Prevention training will be required on initial hiring and annually thereafter.

Emergency Action/Response Plans

Plan for Workplace Emergencies

Emergency planning is the first step, and it can be challenging even if your workplace has few employees. You will need to determine what emergencies could affect your workplace, who will lead and make decisions during an emergency, and what procedures will ensure that employees respond appropriately. These elements are the foundation of a workplace emergency plan.

Emergency planning may not prevent emergencies, but it can protect lives, equipment, and property over the long term. This guide will help you plan for workplace emergencies so that you and your coworkers respond appropriately when an unlikely event happens.

Does OSHA Require Employers to Have Emergency Plans?

OSHA requires most employers to have emergency plans. Those that have more than 10 employees must have written plans. Those that have 10 or fewer employees do not have to put their plans in writing; however, they must ensure that their employees know what procedures to follow to protect themselves in an emergency.

Managing Workplace Emergencies

The Incident-Management System

You can learn much about planning for workplace emergencies from professional emergency responders. When someone calls 911 to report an emergency, he or she connects with a local network of fire, police, and other emergency service professionals who will respond as efficiently as possible. This network is part of a larger incident-management system that can respond to an emergency and accomplish the following:

- Identify, locate, and determine the extent of the emergency.
- Determine the resources necessary to manage and control the emergency.
- Coordinate command-and-control responsibilities between police and fire departments, hospitals and other medical service providers, government agencies, and on-site responders.
- Establish and maintain communication between on-scene emergency responders and other emergency service providers.
- Provide for the safety of victims.

An Incident-Management System for Your Workplace

With thoughtful planning, you can create a small-scale version of the incident management system used by professional responders. Your workplace will be ready to respond to any emergency – from a heart attack to an earthquake – and manage it in the most effective, efficient way possible. The essential parts of this system are your employees, your emergency plan, communication and emergency-response equipment, and your workplace.

Developing an Emergency Plan

Your goal is to create an emergency plan that ensures the well-being of everyone at your workplace in the most effective, efficient manner possible. But if you have never had to respond to a workplace emergency, how do you begin?

You begin by involving employees in the planning process, identifying emergencies that could affect your workplace, establishing an emergency chain of command, and developing emergency-response policy and procedures.

Involve Employees in the Planning Process

Perhaps the most important element of emergency planning is getting employees involved in the planning process; when employees participate, they will take the plan seriously and be more likely to respond appropriately during an emergency. From the start, they should be aware that the purpose of the plan is to ensure their safety.

Form a team to help you develop the plan; ask for volunteers to join the team.

Review the plan with your employees to ensure that they know the procedures to follow to respond safely in an emergency. Each employee should have a copy of the plan or know where to obtain one.

Encourage employees to report workplace hazards and unsafe work practices that could contribute to an emergency.

Identify Emergencies that Could Affect Your Workplace

Identify any external incident (outside your workplace) that could threaten employees or the public and any incident within your workplace that could cause an emergency.

Examples include the following:

- Earthquake: external
- Explosion: external or internal
- Fire: external or internal
- Hazardous-substance release: external or internal
- Medical: internal
- Weather-related event (hurricane, tornado, blizzard, etc.): external
- Threat of violence: external or internal

Keep in mind... Electrical, heating and cooling, and telecommunication-system failures can disrupt workplace activities and contribute to emergencies. What effect would each have on your workplace? Human error also contributes to many workplace emergencies; are your employees trained to do their jobs safely?

Establish a Chain of Command

A chain of command links one person with overall responsibility for managing an emergency to others responsible for carrying out specific emergency-response tasks. A chain of command establishes who is in charge and ensures that everyone in the chain responds to emergencies in an organized way.

At the top of the chain is the emergency scene commander, a trained employee who has overall responsibility for managing emergencies.

Just below the emergency scene commander are the volunteer emergency scene coordinators.

In an organization that has multiple buildings or workplaces, the chain of command might also include a facility manager, an emergency director, and other management units.

At many small- to medium-sized workplaces, the chain of command consists of an emergency scene commander and one or two volunteer emergency scene coordinators.

The Responsibilities of the Emergency Scene Commander

The emergency scene commander has overall command of a workplace emergency, including the following responsibilities:

- Assessing incidents to determine if it is necessary to order emergency response.
- Supervising emergency scene coordinators' activities during an emergency.
- Coordinating the activities of professional responders such as ambulance, police, and fire departments.
- Directing shutdown of critical workplace equipment or operations.
- Determining if an evacuation is necessary and managing an evacuation.

Keep in mind... The emergency scene commander should be an employee who has experience managing others, assessing complex events, and making effective decisions under difficult circumstances.

The Role of the Emergency Scene Coordinators

Emergency scene coordinators are responsible for coordinating other employees' activities during an emergency (guiding them to appropriate exits and safe areas during an evacuation, for example) and for other emergency-response tasks for which they have volunteered and been properly trained.

Generally, each coordinator should be responsible for about 20 employees within a designated work area, as shown in the following table.

Number of Emergency Scene Responders for Typical Workplaces		
Total Employees in Workplace	Emergency Scene Commander	Emergency Scene Coordinator
11-19	1	1
20-49	1	1-2
50-99	1	2-5
100-249	1	5-12
250+	1	12+

Emergency scene coordinators must know how to respond to all emergencies identified in your emergency plan, the evacuation procedures for your workplace, and how to use emergency communication equipment. They should also know CPR, first aid, and how to respond to threats of violence. Their primary responsibilities include the following:

- Checking rooms and other enclosed spaces for employees who may be trapped or unable to evacuate during an emergency.
- Knowing who may need assistance during an evacuation and how to assist them.
- Coordinating the emergency activities of employees.
- Ensuring that employees understand how to respond to workplace emergencies.
- Knowing the workplace layout, appropriate escape routes, and areas that employees must not enter during an evacuation.
- Verifying that employees are in designated safe areas after an evacuation.

Keep in mind... Establishing a chain of command minimizes confusion during an emergency. An effective chain of command helps ensure that responders manage an emergency in the most efficient way possible.

Develop a Policy and Procedure for Responding to Emergencies

The Policy

Create a short written policy that states the purpose of the plan and emphasizes that you are committed to ensuring the safety of employees and others at your workplace during an emergency. The following is an example:

"It is the policy of this organization to protect employees from physical harm, harassment, and intimidation. To provide a safe working environment for all employees, this organization is committed to establishing an effective emergency plan. The plan is based on an "Incident Management System" (IMS) that consists of volunteer employees trained to respond to any workplace emergency. The system is modeled on the IMS system used by fire, police, and emergency medical-service responders. It provides for overall command and control of any emergency incident. It improves communication between IMS personnel and the fire, police, and medical personnel who respond to a call for help. And it provides appropriate emergency assistance during the first few minutes it takes for emergency responders to arrive."

The Procedures

Procedures are instructions for accomplishing specific tasks. Emergency procedures are important because they tell employees exactly what to do to ensure their safety during an emergency. If your workplace has more than 10 employees, your emergency plan must describe in writing how you will accomplish each of the following tasks:

- Report emergencies to local fire and police departments.
- Inform the emergency chain of command of an emergency.
- Warn employees about an emergency.
- Conduct an orderly, efficient workplace evacuation.
- Assist employees, with disabilities or limited English-speaking skills during an evacuation.
- Shut down critical equipment, operate fire extinguishers, and perform other essential services during an evacuation.
- Account for employees at a designated safe area after an evacuation.
- Perform rescue and first aid that may be necessary during an emergency.

Keep in mind... If your workplace has 10 or fewer employees, you do not have to put these procedures in writing; however, you must ensure that employees know what procedures they must follow to protect themselves.

Other Critical Information

Include the following in your procedures:

- The names of the emergency scene commander, the emergency scene coordinators and others responsible for carrying out the plan, and how to contact them during an emergency.
- The name of the person who has the authority to order a workplace evacuation (typically, the emergency scene commander).
- The names and phone numbers of those who understand the emergency plan and will inform others about it (typically the emergency scene commander and the emergency scene coordinators).

Planning Considerations

Accounting for Employees after an Evacuation

Designate a meeting area a safe distance away from the emergency site and ensure that employees know they must meet there after they evacuate the workplace. An emergency scene coordinator should take a "Roll-Call" to identify employees not present.

Keep in mind... You will need to determine what information or assistance employees may need if they cannot return to the workplace after an evacuation.

Alerting Employees to an Emergency

You can use a public address system, portable radio, an alarm, an air-horn, or any other means that you know will reach and warn all employees. Alarms must be distinctive, be recognizable by all employees, and have a back-up power supply in case the primary power fails.

Keep in mind... You may need alarms that employees can hear and see.

Conducting Employee Rescues

It takes more than good intentions to save lives. Would-be rescuers can endanger themselves and those they are trying to rescue. During most emergencies, leave rescue work to professional responders who are appropriately trained and equipped. The exceptions? A catastrophe, such as a severe earthquake, may delay professional emergency responders for hours or days. Also, jobs such as handling hazardous substances or working in confined spaces could result in emergencies for which fire or police departments are not trained.

Find out what kind of emergencies local responders are trained and equipped to respond to. If they are unable to respond to emergencies unique to your workplace, your employees must be trained and able to respond promptly.

Coordinating with Multi-Employer Workplaces

If you share a building or worksite with other employers, consider working with them to develop a building-wide emergency plan. If a building-wide plan is not feasible, you should ensure that your plan does not conflict with the plans of the other employers in the building.

Developing Quick-Response Teams

A quick-response team consists of volunteer employees trained to handle workplace incidents that require immediate action, such as medical emergencies, threatening or violent people, and hazardous-substance releases. Consider the following in developing quick response teams:

- Types of incidents that require immediate action
- Roles and responsibilities of team members
- Communication and response procedures for the team

Educating Employees about Emergencies and Evacuations

To protect themselves during an emergency, all employees must understand the following elements of their emergency plan:

- The roles of the emergency scene commander and coordinators.
- How to respond to threats and intimidation.
- The method(s) for warning employees of emergencies.
- The method for contacting employees' next of kin after an emergency.
- The procedure for summoning emergency responders.
- The location of safe meeting areas.
- How to respond to an emergency and to an order to evacuate.

Educate new employees about the emergency plan when you hire them and keep all employees informed about any changes to the plan.

Train emergency scene coordinators in first aid and CPR, bloodborne-pathogen protection, and how to use rescue equipment.

Schedule regular drills so that employees can practice. Include outside fire and police departments in the drills when possible. Evaluate the effectiveness of each drill and identify activities that need strengthening. Share the results with all employees.

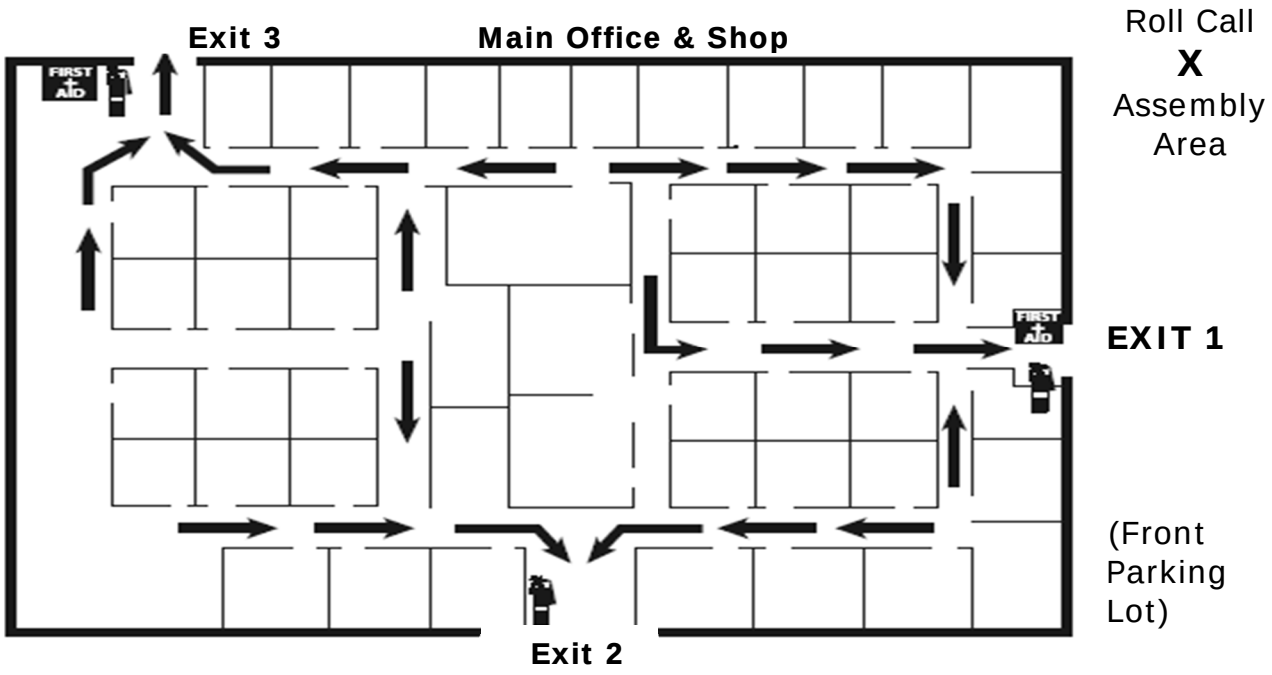
When a workplace emergency requires an evacuation, all employees must know to leave, what emergency exits to take, and where to meet. Employees may also need to know how to shut down critical equipment during an evacuation.

Establishing Evacuation Exits

Your workplace should have a primary evacuation exit and an alternate exit. Post diagrams that show the evacuation routes and the exits where all employees will see them. Identify the exits and the exit routes in your plan. Be sure characteristics of exits:

- Are clearly marked, well lit, and visible under emergency conditions.
- Are wide enough to accommodate employees during an evacuation.
- Are unobstructed and clear of debris at all times.
- Are unlikely to expose employees to other hazards.

Keep in mind... An essential part of your emergency plan is an evacuation diagram – a floor plan of your building that shows evacuation exits and describes the emergency evacuation procedure. Mark the exit routes and the "Roll-Call" assembly area on the diagram so that they are easy to see, **for example**:



Exit Routes

How would you escape from your workplace in an emergency? Do you know where all the exits are in case your first choice is too crowded? Are you sure the doors will be unlocked and that the exit access behind them will not be blocked during a fire, explosion, or other crisis? Knowing the answers to these questions could keep you safe during an emergency.

Workplace Exit Routes

Usually, a workplace must have at least two exit routes for prompt evacuation. But more than two exits are required if the number of employees, size of the building, or arrangement of the workplace will not allow a safe evacuation. Exit routes must be located as far away as practical from each other in case one is blocked by fire or smoke.

Requirements for Exits

Exits must be separated from the workplace by fire-resistant materials – that is, a one-hour fire-resistance rating if the exit connects three or fewer stories, and a two-hour fire-resistance rating if the exit connects more than three floors.

Exits can have only those openings necessary to allow access to the exit from occupied areas of the workplace or to the exit discharge. Openings must be protected by a self-closing, approved fire door that remains closed or automatically closes in an emergency.

- Keep the line-of-sight to exit signs clearly visible always.
- Install “EXIT” signs using plainly legible letters.

Safety Features for Exit Routes

- Keep exit routes free of explosives or highly flammable furnishings and other decorations.
- Arrange exit routes so employees will not have to travel toward a high-hazard area unless the path of travel is effectively shielded from the high-hazard area.
- Ensure that exit routes are free and unobstructed by materials, equipment, locked doors, or dead-end corridors.
- Provide lighting for exit routes adequate for employees with normal vision.
- Keep exit route doors free of decorations or signs that obscure their visibility of exit route doors.
- Post signs along the exit access indicating the direction of travel to the nearest exit and exit discharge if that direction is not immediately apparent.
- Mark doors or passages along an exit access that could be mistaken for an exit “Not an Exit” or with a sign identifying its use (such as “Closet”).
- Renew fire-retardant paints or solutions when needed.
- Maintain exit routes during construction, repairs, or alterations.

Design and Construction Requirements

- Exit routes must be permanent parts of the workplace.
- Exit discharges must lead directly outside or to a street, walkway, refuge area, public way, or open space with access to the outside.
- Exit discharge areas must be large enough to accommodate people likely to use the exit route.
- Exit route doors must unlock from the inside. They must be free of devices or alarms that could restrict use of the exit route if the device or alarm fails.
- Exit routes can be connected to rooms only by side-hinged doors, which must swing out in the direction of travel if the room may be occupied by more than 50 people.
- Exit routes must support the maximum permitted occupant load for each floor served, and the capacity of an exit route may not decrease in the direction of exit route travel to the exit discharge.
- Exit routes must have ceilings at least 7 ft., 6 in. high.

- An exit access must be at least 28 inches wide at all points. Objects that project into the exit must not reduce its width.

Providing Medical Assistance and First Aid

Is there a nearby emergency clinic or hospital that will admit victims of emergencies from your workplace? If not, make sure that emergency scene coordinators have appropriate first-aid training and supplies. The American Red Cross, insurance companies, and fire departments usually offer such training.

Recording Critical Employee Information

After a medical emergency, an employee may be unable to contact next of kin or other relatives. You should have access to employees' home telephone numbers, the names and telephone numbers of family members they want you to contact, physician names and phone numbers, and information employees give you about their medical conditions or medications. Many employers keep this information with employees' permanent employment records and update it yearly.

Reporting Fire and Other Emergencies

Your emergency plan must have a procedure for reporting fires and other emergencies to professional responders. Report all fires by calling 911. Fires are generally not reported to fire departments by fire alarms; most fire alarms warn only building occupants.

Keep in mind... The emergency scene commander should stay in a safe location to relay relevant information to professional emergency responders.

Selecting and Using Personal Protective Equipment

Personal protective equipment includes clothing and equipment that protects emergency responders against specific hazards. Examples include work gloves, goggles, hard hats, and respirators.

Properly used, personal protective equipment offers protection against a hazard but does not eliminate the hazard. If it fails or is not appropriate for a particular task, the user risks exposure. Appropriate, effective protection depends on selecting, wearing, and using the equipment properly – which can be challenging. The following steps highlight the procedures for selecting personal protective equipment:

- Identify emergency-related hazards for which personal protective equipment may be necessary; for example, those responding to medical emergencies need protection from bloodborne pathogens.
- Determine which personal protective equipment will protect users from the hazards; for example, latex gloves and face shields may be necessary to protect responders from bloodborne pathogens.
- Determine who will use the equipment; it is critical that the equipment fit the user and not cause allergic reactions or other health problems.
- Determine the conditions under which responders will use the equipment; the equipment must not fail under those conditions.
- Ensure that emergency responders know how to use the equipment. Whether they are wearing hard hats or atmosphere-supplying respirators, responders must know how the equipment will protect them and when it will not protect them. Responders must know how to wear, use, and maintain the equipment, and how to discard contaminated equipment.

Types of Emergencies

This section highlights emergencies that could affect workplaces and summarizes what to do when responding to them. Consider factors such as workplace size and location, number of employees, and the nature of their work in determining how to respond.

Earthquake

During an earthquake, people in most workplaces are at greatest risk from collapsing ceilings, windows, light fixtures, and other falling objects. If you are indoors, the safest response is to take cover under sturdy furniture or to brace yourself against an inside wall. Stay away from windows, skylights, bookcases, and other heavy objects. Protect your head and neck.

What to do:

- If indoors, stay there. Take cover under sturdy furniture or against inside walls.
- Do not use elevators.
- Stay away from windows, skylights, and other objects that could fall.
- Use stairways to leave the workplace if the order is given to evacuate.
- Be ready to rescue victims; professional responders may not be able to respond; remove victims to a triage area if possible.

Explosion

Any workplace that handles, stores, or processes flammable gasses, liquids, and solids is vulnerable. Explosions offer no warnings, causing disorganization and panic.

What to do:

- Try to establish communication with emergency scene coordinators.
- Assess damage to the workplace and estimate human casualties.
- Administer first aid if it is safe to do so.
- Do not use elevators.
- Evacuate following an established procedure.

Fire

Invite a local fire department representative to your workplace to help you identify fire hazards and to discuss how your workplace should respond to a fire. It is the byproducts of fire – smoke and fire gasses – that kill. A quick, orderly evacuation is the most effective response to an out-of-control fire.

What to do:

- Pull the fire alarm (or set off the predetermined signal).
- Call 911; tell the dispatcher the location and the nature of the emergency.
- Inform an emergency scene coordinator.
- Do not use elevators.
- Permit only trained responders to use fire extinguishers.

Keep in mind... If you permit emergency scene coordinators or other employees to use fire extinguishers, train them or ensure that they are properly trained in their use.

Hazardous-Substance Release

Hazardous substances include solvents, pesticides, paints, petroleum products, and heavy metals – any substance hazardous to health. Even if your workplace does not use hazardous substances, could it be affected by a nearby release or an accident on a local freeway? If so, make sure your emergency plan describes how the scene commander and coordinators will respond and notify fire and police departments.

What to do:

- Inform the emergency scene commander.
- Evacuate the area surrounding the release.
- Call 911; tell the dispatcher the location and the nature of the emergency.

If your workplace uses hazardous chemicals, OSHA's hazard communication rule requires you to inventory them, keep the manufacturer-supplied material safety data sheets, label the chemical containers, and train employees to protect themselves from the chemicals' hazards.

If your workplace is involved in hazardous-waste operations or responds to emergencies involving hazardous substances, you must have a written plan that describes how you will respond to hazardous-substance emergencies.

If employees must wear personal protective equipment during an emergency – chemical suits, gloves, hoods, boots, or respirators, for example – make sure that equipment will be available when they need it, that it fits them, and that they know how to use it.

Medical

The most likely workplace emergency is a medical emergency. A serious medical emergency such as cardiac arrest requires immediate attention – response time is critical. It is essential that medical first responders know how to perform first aid/CPR.

What to do:

- Call 911. Tell the dispatcher the location and the nature of the emergency.
- Do not move the victim.
- Notify an emergency scene coordinator for CPR or other first-aid tasks.
- Inform the emergency scene commander.
- Assist professional medical responders when they arrive.
- Inform the victim's supervisor.

Consider purchasing an automatic external defibrillator (AED) to treat victims in cardiac arrest. Until recently, AEDs were used primarily in hospitals and ambulances. Now they are portable, more affordable, and can be used by just about anyone after a short training session.

Weather-Related Event

Hurricanes, tornadoes, blizzards, and floods are likely to be the cause of weather-related workplace emergencies. Many communities experience floods following warm spring rain. Winter storms often bring strong winds, freezing rain, and snow that can cause structural damage and power outages.

What to do:

- Wait for instructions from the emergency scene commander; a power failure will slow communication.
- Tune a battery-powered radio to a station that broadcasts local news.
- Do not evacuate the workplace unless ordered to do so.

Threats of Violence

Threats of violence may be delivered in any form: face-to-face, by fax, e-mail, phone, or in writing. Threats can be directed toward the workplace or toward a specific person. Police departments, mental health professionals, and employee-assistance program counselors offer prevention information, security inspections, and employee training that help reduce the risk of workplace violence.

What to do:

- Inform an emergency scene coordinator.
- Activate a silent alarm if your workplace has one.
- Isolate the threatening person if it is possible to do so safely.
- Inform the emergency scene commander.

Bomb Threats

Take threats seriously. Do not use fire alarms or phones in the building – they generate radio waves that could trigger a bomb. If someone finds a package that may contain or that may be a bomb, he or she should note its size, shape, and whether it emits a sound, then notify the emergency scene commander. Call 911 from outside the building to report the emergency and determine if an evacuation is necessary. Use a communication method that does not generate radio waves to order the evacuation.

Consider offering threat-management training to one or more emergency scene coordinators and creating a threat quick-response team.

Terrorism

Although terrorist acts pose minimal risks to most workplaces, the devastating effects of recent acts have changed the perception of a "secure workplace" and added a new dimension to emergency planning. What distinguishes terrorist acts is the use of threats and violence to intimidate or coerce. Factors to consider in emergency planning include the following:

How do others perceive the mission of your organization in the following contexts?

- Political activities
- Business activities
- Economic activities
- Social responsibilities

How vulnerable are your critical resources from terrorist attack?

- Production machinery and equipment
- Mail and HVAC systems
- Electronic communication, power, data, and systems hardware
- Real estate and other physical property
- Finance and administrative transactions
- Employees at the workplace or at other locations

Do You Need an Emergency Plan?

Keep in mind... If your workplace has more than 10 employees, the plan must be in writing. If your workplace has 10 or fewer employees, the plan does not have to be written; however, you must ensure that employees know what procedures they must follow to protect themselves in an emergency.

OSHA Fire Protection and Means of Egress Standards

FIRE PREVENTION PLAN

(1) Development of a Fire Prevention Plan

(a) When another OSHA standard requires an employer to develop a fire prevention plan, the plan must comply with this section and cover each part of the workplace.

(b) The plan must be in writing, in the work area and available to employees on request; except that an employer with 10 or fewer employees in a workplace may use a verbal plan.

(2) Minimum Elements of a Fire Prevention Plan – A fire prevention plan must include:

(a) a list of all major fire hazards, including proper handling and storage procedures for hazardous materials, potential ignition sources and their control, and the type of fire protection equipment necessary to control each major hazard;

(b) Procedures to control accumulations of flammable and combustible waste materials;

(c) Procedures for regular maintenance of safeguards on heat producing equipment to prevent accidental ignition of combustible materials;

(d) Names or job titles of employees responsible for maintaining equipment to prevent or control sources of ignition or fires; and,

(e) Names or job titles of those responsible for control of fuel source hazards.

(3) Employee Information – The employer must:

(a) Inform employees of the fire hazards in their work area; and

(b) Review with each employee, when first assigned to a job, those parts of the fire prevention plan necessary for self-protection.

EMERGENCY ACTION PLAN

(1) Development of an Emergency Action Plan

(a) When another OSHA standard requires an employer to develop an emergency action plan, the plan must comply with this section and cover each part of the workplace.

(b) The plan must be in writing, in the work area and available to employees on request, except that an employer with 10 or fewer employees in a workplace may use a verbal plan.

(2) Minimum Elements of an Emergency Action Plan – An emergency action plan must include:

(a) Procedures for emergency evacuation, including type of evacuation and exit route assignments;

(b) Procedures to account for all employees after evacuation;

(c) Procedures for reporting a fire or other emergency;

(d) Procedures to follow for emergency operation or shut down of critical equipment before evacuation;

(e) Procedures to follow for rescue and medical duties; and,

(f) Names or job titles of employees to contact for more information about the duties of employees under the plan.

(3) Employee Alarm System – There must be a properly working employee alarm system. The alarm system must use a distinctive signal for each purpose and comply with 29 CFR 1910.165.

(4) Training – An employer must designate employees to assist in the safe emergency evacuation of other employees. These designated employees must receive training in emergency evacuation procedures.

(5) Employee Review – An employer must review the emergency action plan with each employee covered by it:

(a) When the plan is new or the employee is new to the job;

(b) When the employee's responsibilities under the plan change; and,

(c) When the plan changes.

EXITS AND EXIT ROUTES

(1) Application – This subpart does not apply to mobile workplaces, such as vehicles or vessels.

(2) Definitions

(a) Exit. The part of the exit route that is a way out of the workplace (Like a door, stairwell or vestibule).

(b) Exit Route. A continuous, unobstructed path from anywhere in a work area to the exit.

(3) General

(a) There must be permanent, unobstructed exit routes to get out of work areas safely during emergencies.

(b) There must be two or more exit routes depending on the size and layout of the work area and the number of people involved. A single exit route is acceptable only if all workers can get out through it safely during an emergency. Locate multiple exit routes apart from each other.

(4) Design

(a) An exit must have enough openings to permit access to, or exit from, occupied areas. An interior opening into an exit must have a self-closing fire door that remains closed. Each fire door, its frame, and its hardware must be listed or approved by a nationally recognized testing laboratory.

Note to paragraph (a): 29 CFR 1910.155(c)(3)(iv)(A) defines "listed," 29 CFR 1910.7 defines a "nationally recognized testing laboratory," and 29 CFR 1910.155 (c)(3) defines "approved."

(b) Walls or partitions that separate an exit from other areas must have at least a 1-hour fire resistance rating if the exit connects three stories or less. Materials that separate an exit must have at least a 2-hour fire resistance rating if the exit connects four stories or more.

(c) Exits must open from the inside without keys, tools or special knowledge. Devices that lock only from the outside are acceptable. There must be nothing on an exit door that could hinder its use during an emergency.

Note: You may lock or block an exit door from the inside in a mental, penal, or correctional institution, if supervisory personnel are continuously on duty and a plan exists to remove occupants during an emergency.

(d) An exit must lead directly outside or to a street, walkway, refuge area, or to an open space with access to the outside.

(e) Exit stairs that continue beyond the floor of exit discharge must have doors, partitions, or other effective means at the floor of exit discharge to assure that the direction of exit travel is clear to employees.

(f) Use only a side-hinged exit door to connect any room to an exit route. The door must swing out if the room can hold more than 50 persons or has highly flammable or explosive materials in it.

(g) Each exit route must be able to handle the maximum-permitted occupant load for each floor served by it. The capacity of a path to the exit must not decrease as people move toward the exit.

(h) The exit route must be at least 6 feet, 8 inches high at all points.

(i) An exit route must be at least 28 inches wide at all points between handrails and wider if needed to handle the occupant load.

(j) Objects that project into the exit route must not reduce the minimum height and width of the exit route.

(k) Repair or replace damaged or altered fire retardant coatings to keep their original retardant effectiveness.

(5) Access

(a) There must be unobstructed access to exit routes.

(b) Exit routes must not pass through or into lockable rooms or dead ends.

(c) Exit routes must be mostly level or have stairs or ramps.

(6) Outside and Refuge Areas

(a) The street, walkway, refuge area, or open space to which an exit leads must be large enough to accommodate all building occupants likely to use that exit.

(b) A refuge area must be:

(A) A space along an exit route protected from the effects of fire either by separation from other spaces within the building or by its location; or

(B) A floor with at least two spaces separated by smoke-resistant partitions, in a building where each floor is protected by an automatic sprinkler system. Automatic sprinkler systems must comply with 29 CFR 1910.159.

(7) Outside Exit Routes

(a) Outdoor exit routes must meet the requirements for indoor exit routes and these additional requirements:

(A) The exit route must have guardrails to protect unenclosed sides elevated above a lower surface;

(B) There must be a cover if accumulation of snow or ice is likely;

(C) The exit route must be reasonably straight, smooth, solid, level; and

(D) The exit route must have no dead ends longer than 20 feet.

(8) Condition of Exit Routes and Exits

(a) Exit routes must minimize danger to employees during emergencies.

(b) Exit routes must be free of highly flammable furnishings and decorations.

(c) An exit route must not require employees to travel toward materials that burn very quickly, emit poisonous fumes, or are explosive, unless those materials are effectively shielded from the exit route.

(d) Exit routes must have adequate lighting.

(e) Each exit must be clearly visible and must have a distinctive sign reading "Exit."

Install additional directional signs to exits where necessary.

(f) Exit doors must have no signs or decorations that obscure their visibility.

(g) The line-of-sight to an exit sign must be clear.

(h) If workers could mistake a “non-exit” for an exit, mark the non-exit, “Not an Exit” or mark it to indicate its real use.

(i) There must be enough reliable light on or from exit signs to allow them to be effective during emergencies.

(j) All safeguards to protect employees during an emergency (e.g., sprinkler systems, alarm systems, fire doors, exit lighting) must work properly.

(9) Exits during Construction and Repair

(a) Employees must not occupy an area under construction until an adequate number of exit routes that comply with these rules are available.

(b) Employees must not occupy an area during repair or alteration unless all exits and existing fire protection remain as effective as before the work. Alternate fire protection must provide an equivalent level of safety.

(c) Flammable or explosive materials used during construction or repair must not expose employees to hazards not otherwise present or impede emergency escape.

(10) Alarm System – There must be an operable employee alarm system with a distinctive signal to warn employees of fire or other emergencies, unless employees can see or smell a fire or other hazard so that it would provide adequate warning to them. The employee alarm system must comply with the requirements of 29 CFR 1910.165.

(11) Special Circumstances - Counterweights and Cold Storage Facilities

(a) There must be an enclosure or guard around counterweights that are near enough to passageways or work areas to cause a hazard. The guard or enclosure need only be sufficient to protect workers from contact with the counterweight when it moves.

(b) The doors on walk-in refrigerators, coolers and freezers must have latches or closer devices that open from the inside without a key or special knowledge or effort.

PORTABLE FIRE SUPPRESSION EQUIPMENT

§1910.157 PORTABLE FIRE EXTINGUISHERS

(a) Scope and Application – The requirements of this section apply to the placement, use, maintenance, and testing of portable fire extinguishers provided for the use of employees. Paragraph (d) of this section does not apply to extinguishers provided for employee use on the outside of workplace buildings or structures. Where extinguishers are provided but are not intended for employee use and the employer has an emergency action plan and a fire prevention plan which meet the requirements of §1910.38, then only requirements of paragraphs (e) and (f) of this section apply.

(b) Exemptions

(1) Where the employer has established and implemented a written fire safety policy which requires the immediate and total evacuation of employees from the workplace upon the sounding of a fire alarm signal and which includes an emergency action plan and a fire prevention plan which meet the requirements of §1910.38, and when extinguishers are not available in the workplace, the employer is exempt from all requirements of this section unless a specific standard in Part 1910 requires that a portable fire extinguisher be provided.

(2) Where the employer has an emergency action plan meeting the requirements of §1910.38 which designates certain employees to be the only employees authorized to use the available portable fire extinguishers, and which requires all other employees in the fire area to immediately evacuate the affected work area upon the sounding of the fire alarm, the employer is exempt from the distribution requirements in paragraph (d) of this section.

(c) General Requirements

(1) The employer will provide portable fire extinguishers and will mount, locate and identify them so that they are readily accessible to employees without subjecting the employees to possible injury.

(2) Only approved portable fire extinguishers will be used to meet these requirements.

(3) The employer will not provide or make available in the workplace portable fire extinguishers using carbon tetrachloride or chlorobromomethane extinguishing agents.

(4) The employer will assure that portable fire extinguishers are maintained in a fully charged and operable condition and kept in their designated places at all times except during use.

(5) The employer will remove from service all soldered or riveted shell self-generating soda acid or self-generating foam or gas cartridge water type portable fire extinguishers which are operated by inverting the extinguisher to rupture the cartridge or to initiate an uncontrollable pressure generating chemical reaction to expel the agent.

(d) Selection and Distribution

(1) Portable fire extinguishers will be provided for employee use and selected and distributed based on the classes of anticipated workplace fires and on the size and degree of hazard which would affect their use.

(2) The employer will distribute portable fire extinguishers for use by employees on Class A fires so that the travel distance for employees to any extinguisher is 75 feet (22.9 m) or less.

(3) The employer may use uniformly spaced standpipe systems or hose stations connected to a sprinkler system installed for emergency use by employees instead of Class A portable fire extinguishers, provided that such systems meet the respective requirements of §1910.158 or §1910.159, that they provide total coverage of the area to be protected, and that employees are trained at least annually in their use.

(4) The employer will distribute portable fire extinguishers for use by employees on Class B fires so that the travel distance from the Class B hazard area to any extinguisher is 50 feet (15.2 m) or less.

(5) The employer will distribute portable fire extinguishers used for Class C hazards on the basis of the appropriate pattern for the existing Class A or Class B hazards.

(6) The employer will distribute portable fire extinguishers or other containers of Class D extinguishing agent for use by employees so that the travel distance from the combustible metal working area to any extinguishing agent is 75 feet (22.9 m) or less. Portable fire extinguishers for Class D hazards are required in those combustible metal working areas where combustible metal powders, flakes, shavings, or similarly sized products are generated at least once every two weeks.

(e) Inspection, Maintenance and Testing

(1) The employer will be responsible for the inspection, maintenance and testing of all portable fire extinguishers in the workplace.

(2) Portable extinguishers or hose used in lieu thereof under paragraph (d)(3) of this section will be visually inspected monthly.

(3) The employer will assure that portable fire extinguishers are subjected to an annual maintenance check. Stored pressure extinguishers do not require an internal examination. The employer will record the annual maintenance date and retain this record for one year after the last entry or the life of the shell, whichever is less. The record will be available to the Assistant Secretary upon request.

(4) The employer will assure that stored pressure dry chemical extinguishers that require a 12-year hydrostatic test are emptied and subjected to applicable maintenance procedures every 6 years. Dry chemical extinguishers having non-refillable disposable containers are exempt from this requirement. When recharging or hydrostatic testing is performed, the 6-year requirement begins from that date.

(5) The employer will assure that alternate equivalent protection is provided when portable fire extinguishers are removed from service for maintenance and recharging.

(f) Hydrostatic Testing

(1) The employer will assure that hydrostatic testing is performed by trained persons with suitable testing equipment and facilities.

(2) The employer will assure that portable extinguishers are hydrostatically tested at the intervals listed in Table L-1 on page 23 of this section, except under any of the following conditions:

(i) When the unit has been repaired by soldering, welding, brazing, or use of patching compounds;

(ii) When the cylinder or shell threads are damaged;

(iii) When there is corrosion that has caused pitting, including corrosion under removable name plate assemblies;

(iv) When the extinguisher has been burned in a fire; or

(v) When a calcium chloride extinguishing agent has been used in a stainless steel shell.

(3) In addition to an external visual examination, the employer will assure that an internal examination of cylinders and shells to be tested is made prior to the hydrostatic tests.

(4) The employer will assure that portable fire extinguishers are hydrostatically tested whenever they show new evidence of corrosion or mechanical injury, except under the conditions listed in paragraphs (f)(2)(i)-(v) of this section.

(5) The employer will assure that hydrostatic tests are performed on extinguisher hose assemblies which are equipped with a shut-off nozzle at the discharge end of the hose.

The test interval will be the same as specified for the extinguisher on which the hose is installed.

(6) The employer will assure that carbon dioxide hose assemblies with a shut-off nozzle are hydrostatically tested at 1,250 psi (8,620 kPa).

(7) The employer will assure that dry chemical and dry powder hose assemblies with a shut-off nozzle are hydrostatically tested at 300 psi (2,070 kPa).

(8) Hose assemblies passing a hydrostatic test do not require any type of recording or stamping.

(9) The employer will assure that hose assemblies for carbon dioxide extinguishers that require a hydrostatic test are tested within a protective cage device.

(10) The employer will assure that carbon dioxide extinguishers and nitrogen or carbon dioxide cylinders used with wheeled extinguishers are tested every 5 years at 5/3 of the service pressure as stamped into the cylinder. Nitrogen cylinders which comply with 49 CFR 173.34(e)(15) may be hydrostatically tested every 10 years.

(11) The employer will assure that all stored pressure and Halon 1211 types of extinguishers are hydrostatically tested at the factory test pressure not to exceed two times the service pressure.

(12) The employer will assure that acceptable self-generating type soda acid and foam extinguishers are tested at 350 psi (2,410 kPa).

(13) Air or gas pressure may not be used for hydrostatic testing.

(14) Extinguisher shells, cylinders, or cartridges which fail a hydrostatic pressure test, or which are not fit for testing will be removed from service and from the workplace.

(15) (i) The equipment for testing compressed gas type cylinders will be of the water jacket type. The equipment will be provided with an expansion indicator which operates with an accuracy within one percent of the total expansion or .1 cc (.1 ml) of liquid.

(ii) The equipment for testing non-compressed gas type cylinders will consist of the following:

(A) A hydrostatic test pump, hand or power operated, capable of producing not less than 150 percent of the test pressure, which will include appropriate check valves and fittings;

(B) A flexible connection for attachment to fittings to test through the extinguisher nozzle, test bonnet, or hose outlet, as is applicable; and

(C) A protective cage or barrier for personal protection of the tester, designed to provide visual observation of the extinguisher under test.

(16) The employer will maintain and provide upon request to the Assistant Secretary evidence that the required hydrostatic testing of fire extinguishers has been performed at the time intervals shown in Table L-1.

Such evidence will be in the form of a certification record which includes the date of the test, the signature of the person who performed the test and the serial number, or other identifier, of the fire extinguisher that was tested. Such records will be kept until the extinguisher is hydrostatically retested at the time interval specified in Table L-1 or until the extinguisher is taken out of service, whichever comes first.

(g) Training and Education

(1) Where the employer has provided portable fire extinguishers for employee use in the workplace, the employer will also provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting.

(2) The employer will provide the education required in paragraph (g)(1) of this section upon initial employment and at least annually thereafter.

(3) The employer will provide employees who have been designated to use firefighting equipment as part of an emergency action plan with training in the use of the appropriate equipment.

(4) The employer will provide the training required in paragraph (g)(3) of this section upon initial assignment to the designated group of employees and at least annually thereafter.

Appendices to §1910.157 – PORTABLE FIRE EXTINGUISHERS

1. Scope and Application – The scope and application of this section is written to apply to three basic types of workplaces.

First, there are those workplaces where the employer has chosen to evacuate all employees from the workplace at the time of a fire emergency.

Second, there are those workplaces where the employer has chosen to permit certain employees to fight fires and to evacuate all other non-essential employees at the time of a fire emergency.

Third, there are those workplaces where the employer has chosen to permit all employees in the workplace to use portable fire extinguishers to fight fires.

The section also addresses two kinds of work areas. The entire workplace can be divided into outside (exterior) work areas and inside (interior) work areas. This division of the workplace into two areas is done in recognition of the different types of hazards employees may be exposed to during fire fighting operations.

Fires in interior work-places pose a greater hazard to employees; they can produce greater exposure to quantities of smoke, toxic gases, and heat because of the capability of a building or structure to contain or entrap these products of combustion until the building can be ventilated.

Exterior work areas, normally open to the environment, are somewhat less hazardous, because the products of combustion are generally carried away by the thermal column of the fire. Employees also have a greater selection of evacuation routes if it is necessary to abandon firefighting efforts. In recognition of the degree of hazard present in the two types of work areas, the standards for exterior work areas are somewhat less restrictive in regards to extinguisher distribution. Paragraph (a) explains this by specifying which paragraphs in the section apply.

2. Portable Fire Extinguisher Exemptions – In recognition of the three options given to employers in regard to the amount of employee evacuation to be carried out, the standards permit certain exemptions based on the number of employees expected to use fire extinguishers.

Where the employer has chosen to totally evacuate the workplace at the time of a fire emergency and when fire extinguishers are not provided, the requirements of this section do not apply to that workplace.

Where the employer has chosen to partially evacuate the workplace or the affected area at the time of a fire emergency and has permitted certain designated employees to remain behind to operate critical plant operations or to fight fires with extinguishers, then the employer is exempt from the distribution requirements of this section.

Employees who will be remaining behind to perform incipient fire fighting or members of a fire brigade must be trained in their duties. The training must result in the employees becoming familiar with the locations of fire extinguishers. Therefore, the employer must locate the extinguishers in convenient locations where the employees know they can be found. For example, they could be mounted in the fire truck or cart that the fire brigade uses when it responds to a fire emergency.

They can also be distributed as set forth in the National Fire Protection Association's Standard No. 10, “Portable Fire Extinguishers.” When the employer has decided to permit all employees in the workforce to use fire extinguishers, then the entire OSHA section applies.

3. Portable Fire Extinguisher Mounting – Previous standards for mounting fire extinguishers have been criticized for requiring specific mounting locations. In recognition of this criticism, the standard has been rewritten to permit as much flexibility in extinguisher mounting as is acceptable to assure that fire extinguishers are available when needed and that employees are not subjected to injury hazards when they try to obtain an extinguisher.

It is the intent of OSHA to permit the mounting of extinguishers in any location that is accessible to employees without the use of portable devices such as a ladder. This limitation is necessary because portable devices can be moved or taken from the place where they are needed and, therefore, might not be available at the time of an emergency.

Employers are given as much flexibility as possible to assure that employees can obtain extinguishers as fast as possible. For example, an acceptable method of mounting extinguishers in areas where fork lift trucks or tow-motors are used is to mount the units on retractable boards which, by means of counter-weighting, can be raised above the level where they could be struck by vehicular traffic. When needed, they can be lowered quickly for use. This method of mounting can also reduce vandalism and unauthorized use of extinguishers.

The extinguishers may also be mounted as outlined in the National Fire Protection Association's Standard No. 10, “Portable Fire Extinguishers.”

4. Selection and Distribution – The employer is responsible for the proper selection and distribution of fire extinguishers and the determination of the necessary degree of protection. The selection and distribution of fire extinguishers must reflect the type and class of fire hazards associated with a particular workplace.

Extinguishers for protecting Class A hazards – may be selected from the following types: water, foam, loaded stream, or multipurpose dry chemical.

Extinguishers for protecting Class B hazards – may be selected from the following types: Halon 1301, Halon 1211, carbon dioxide, dry chemicals, foam, or loaded stream.

Extinguishers for Class C hazards – may be selected from the following types: Halon 1301, Halon 1211, carbon dioxide, or dry chemical.

Combustible metal (Class D hazards) – fires pose a different type of fire problem in the workplace.

Extinguishers using water, gas, or certain dry chemicals cannot extinguish or control this type of fire. Therefore, certain metals have specific dry powder extinguishing agents which can extinguish or control this type of fire. Those agents which have been specifically approved for use on certain metal fires provide the best protection; however, there are also some “universal” type agents which can be used effectively on a variety of combustible metal fires if necessary.

The “universal” type agents include: Foundry flux, Lith-X powder, TMB liquid, pyromet powder, TEC powder, dry talc, dry graphite powder, dry sand, dry sodium chloride, dry soda ash, lithium chloride, zirconium silicate, and dry dolomite.

Water is not generally accepted as an effective extinguishing agent for metal fires. When applied to hot burning metal, water will break down into its basic atoms of oxygen and hydrogen. This chemical breakdown contributes to the combustion of the metal.

However, water is also a good universal coolant and can be used on some combustible metals, but only under proper conditions and application, to reduce the temperature of the burning metal below the ignition point. For example, automatic deluge systems in

magnesium plants can discharge such large quantities of water on burning magnesium that the fire will be extinguished.

The National Fire Protection Association has specific standards for this type of automatic sprinkler system. Further information on the control of metal fires with water can be found in the National Fire Protection Association's Fire Protection Handbook. An excellent source of selection and distribution criteria is found in the National Fire Protection Association's Standard No. 10. Other sources of information include the National Safety Council and the employer's fire insurance carrier.

5. Substitution of Standpipe Systems for Portable Fire Extinguishers – The employer is permitted to substitute acceptable standpipe systems for portable fire extinguishers under certain circumstances. It is necessary to assure that any substitution will provide the same coverage that portable units provide. This means that fire hoses, because of their limited portability, must be spaced throughout the protected area so that they can reach around obstructions such as columns, machinery, etc. and so that they can reach into closets and other enclosed areas.

6. Inspection, Maintenance and Testing – The ultimate responsibility for the inspection, maintenance and testing of portable fire extinguishers lies with the employer. The actual inspection, maintenance, and testing may, however, be conducted by outside contractors with whom the employer has arranged to do the work. When contracting for such work, the employer should assure that the contractor is capable of performing the work that is needed to comply with this standard.

If the employer should elect to perform the inspection, maintenance, and testing requirements of this section in-house, then the employer must make sure that those persons doing the work have been appropriately trained and to recognize problem areas which could cause an extinguisher to fail.

The employer may also check with the manufacturer of the unit that has been purchased and obtain guidelines on inspection, maintenance, and testing. Hydrostatic testing is a process that should be left to contractors or individuals using suitable facilities and having the necessary training.

Anytime the employer has removed an extinguisher from service to be checked or repaired, alternate equivalent protection must be provided. Alternate equivalent protection could include replacing the extinguisher with one or more units having equivalent or equal ratings, posting a fire watch, restricting the unprotected area from employee exposure, or providing a hose system ready to operate.

7. Hydrostatic Testing – As stated before, the employer may contract for hydrostatic testing. However, if the employer wishes to provide the testing service, certain equipment and facilities must be available. Employees should be made aware of the hazards associated with hydrostatic testing and the importance of using proper guards and water pressures.

Severe injury can result if extinguisher shells fail violently under hydrostatic pressure. Employers are encouraged to use contractors who can perform adequate and reliable service. Firms which have been certified by the Materials Transportation Board (MTB) of the U.S. Department of Transportation (DOT) or State licensed extinguisher servicing firms or recognized by the National Association of Fire Equipment Distributors in Chicago, Illinois, are generally acceptable for performing this service.

8. Training and education. This part of the standard is of the utmost importance to employers and employees if the risk of injury or death due to extinguisher use is to be reduced.

If an employer is going to permit an employee to fight a workplace fire of any size, the employer must make sure that the employee knows everything necessary to assure the employee's safety. Training and education can be obtained through many channels. Often, local fire departments in larger cities have fire prevention bureaus or similar organizations which can provide basic fire prevention training programs. Fire insurance companies will have data and information available. The National Fire Protection Association and the National Safety Council will provide, at a small cost, publications that can be used in a fire prevention program.

Actual fire fighting training can be obtained from various sources in the country. Some manufacturers of extinguishers conduct fire schools for customers in the proper use of extinguishers.

In meeting the requirements of this section, the employer may also provide educational materials, without classroom instruction, through the use of employee notice campaigns using instruction sheets or flyers or similar types of informal programs. The employer must make sure that employees are trained and educated to recognize not only what type of fire is being fought and how to fight it, but also when it is time to get away from it and leave fire suppression to more experienced fire fighters.

Table L-1	
Type of extinguishers	Test interval (years)
Soda acid (soldered brass shells) (until 1/1/82)	1
Soda acid (stainless steel shell)	5
Cartridge operated water and/or antifreeze	5
Stored pressure water and/or antifreeze	5
Wetting agent	5
Foam (soldered brass shells) (until 1/1/82)	1
Foam (stainless steel shell)	5
Aqueous Film Forming Foam (AFFF)	5
Loaded stream	5
Dry chemical with stainless steel	5
Carbon Dioxide	5
Dry chemical, stored pressure, with mild steel, brazed brass or aluminum shells	12
Dry chemical, cartridge or cylinder operated, with mild steel shells	12
Halon 1211	12
Halon 1301	12
Dry powder, cartridge or cylinder operated with mild steel shells	12

A Rule-by-Rule Summary

The following rules include OSHA's requirements for planning and responding to workplace emergencies.

Rule	What It Covers
Exits and Exit Routes	Requirements for exits that employees use during an emergency.
Employee Action Plan	All emergency action plans required by other OSHA rules. Requires a written plan for workplaces that have more than 10 employees; covers the written requirements, requirements for alarms, evacuations, and training.
Fire Prevention Plan	All fire prevention plans required by OSHA rules. Requires a written plan for workplaces that have more than 10 employees; covers the written requirements, requirements for housekeeping, training, and preventive maintenance.
Fire Brigades	Organizational, training, and personal protective equipment requirements for fire brigades established by an employer.
Portable Fire Suppression Equipment	Requirements for placing, using, maintaining, and testing portable fire extinguishers for employee use. Requirements for standpipe and hose systems.
Fixed Fire Suppression Equipment	Requirements for automatic sprinkler systems. Requirements for fixed extinguishing systems Requirements for dry chemical fixed extinguishing systems. Requirements for gaseous agent fixed extinguishing systems. Requirements for water, spray, and foam fixed extinguishing systems.
Other Fire Protective Systems	Requirements for fire detectors and fire detection systems. Requirements for employee alarm systems.
Process Safety Management	Requirements for controlling the of highly hazardous chemicals release of toxic, reactive, flammable, or explosive chemicals. Requires an emergency plan.
Hazardous Waste Operations and Emergency Response.	Requires an emergency plan for employers engaged in cleanup operations, operations at TSD facilities, and employers who respond to releases of hazardous substances.
Personal Protective Equipment	Requirements for eye and face protection Requirements for respiratory protection Requirements for head protection Requirements for foot protection Requirements for hand protection
Permit-Required Confined Spaces	Requirements for entry procedures, rescue and emergency services.
Toxic and Hazardous Substances (This section includes an extensive list chemicals)	Requirements for controlling employee exposure to hazardous substances. Requires an emergency plan, including appropriate personal protective equipment, for airborne releases. Training requirements on the appropriate actions employees must take if they may be involved in emergencies involving blood or other potentially infectious materials
Hazard Communication	Requirements for protecting employees who may be exposed to hazardous chemicals, including information on container warning labels, material safety data sheets, and training.
Medical Services & First Aid	Requirements for workplace first aid and emergency medical services.

Where to Find More Information

Emergency management guide for business and industry; Federal Emergency Management Agency (FEMA), www.fema.gov/library/bizindex.htm

How to Plan for Workplace Emergencies and Evacuations; U.S. Department of Labor Occupational Safety and Health Administration, www.osha.gov

NOTE: In the "Attachments" Chapter of this Injury & Illness Prevention Manual you will find a master copy of the following form for Company use:

- Emergency Action Plan

§1926.50 - Medical Services & First Aid

Medical Services & First Aid

All Ohio Sealants Inc. is committed to the safety and health of our employees and ensures the ready availability of medical personnel for advice and consultation on matters of workplace health.

In the absence of an infirmary, clinic, or hospital in near proximity to the workplace which is used for the treatment of all injured employees, a person or persons will be adequately trained to render first aid. Adequate first aid supplies will be adequately stocked and readily available to all employees.

First aid kits are located in/at: in the work trucks.

Policy Statement

It is the policy of All Ohio Sealants Inc. that training in first aid response is not a general requirement for employment, but that local emergency medical services are utilized for primary emergency medical care.

Medical services for employee evaluations, employment requirements, and special conditions of work are provided to employees at no cost as specified by OSHA.

In areas where 911 service is not available, employees will be notified of phone numbers to contact local emergency response medical services. Keith Maxey will be responsible for posting of emergency phone numbers at all workplaces. The phone numbers will be conspicuously posted in all work locations.

Injured employees are to be transported to medical facilities by emergency medical services. If emergency medical service is not available in a timely manner, the injured employee will be transported to the nearest medical service in a company vehicle by the job foreman.

Keith Maxey is the designated first aid provider and is responsible for rendering first aid in the event of an injury requiring immediate response when emergency medical services are not available, and will also be responsible for first aid training of any employee required.

Eye wash bottles are available wherever eye wash stations are not, for any employee required to work in an environment where exposure to eye hazards may exist. Wash facilities or drench barrels are available at each jobsite for employees.

First Aid Responsibility

All Ohio Sealants Inc. will ensure that first-aid trained personnel are available to provide quick and effective first aid.

Keith Maxey is responsible for making sure that first-aid training contains required subjects.

- First aid training will be kept current and documented.
- Ensure appropriate first-aid supplies are stocked and readily available.
- First aid stations will be provided when required.
- Ensure emergency washing facilities are functional and readily accessible.
- Inspect and activate emergency washing facilities.
- Make sure supplemental flushing equipment provides sufficient water.

NOTE: Some workplaces may be covered by separate, industry-specific first-aid rules.

Make sure your first-aid response plan:

- Fits your work location, type of work, and environmental conditions.
- Identifies the available emergency medical services and access numbers and where they are posted.
- Describes the type of first-aid training employees receive, if applicable.
- Identifies the location(s) of first-aid supplies and/or first-aid stations.
- Identifies the contents of first-aid kits.
- Describes how first-aid supplies or kits will be inspected and maintained.
- Describes how injured or ill employees will have access to first-aid trained employees.

Note: Employers who require their employees to provide first aid must comply with OSHA requirements for "Occupational Exposure to Bloodborne Pathogens".

Keep Current and Document Your First Aid Training

You must keep a written record of your employees' first-aid training by keeping rosters, first-aid cards, or certificates. You may store your documentation on a computer, as long as the information is readily available when requested by OSHA personnel.

Ensure Appropriate First Aid Supplies are Readily Available

You must:

  - Make sure first-aid supplies are readily available.
- Make sure first-aid supplies at your workplace are appropriate to:
  - Your occupational setting.
  - The response time of your emergency medical services.

Note: First-aid kits from your local retailer or safety supplier should be adequate for most non-industrial employers.

Make sure that first-aid supplies are:

- Easily accessible to all your employees.
- Stored in containers that protect them from damage, deterioration, or contamination. Containers must be clearly marked, not locked, and may be sealed.
- Able to be moved to the location of an injured or acutely ill employee.

Determine the type and quantity of first aid supplies necessary to treat injured workers and where these supplies should be located for easy accessibility. Be sure to have an appropriate number of kits available and do not hesitate to call your local emergency response team.

Eyewash / Washing Facilities

Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body will be provided within the work area for immediate emergency use.

Provide an emergency shower:

- When there is potential for major portions of an employee's body to contact corrosives, strong irritants, or toxic chemicals.
- That delivers water to cascade over the user's entire body at a minimum rate of 20 gallons (75 liters) per minute for fifteen minutes or more.

Provide emergency eyewash:

- When there is potential for an employee's eyes to be exposed to corrosives, strong irritants, or toxic chemicals.
- That irrigates and flushes both eyes simultaneously while the user holds their eyes open.

- With an on-off valve that activates in one second or less and remains on without user assistance until intentionally turned off.
- That delivers at least 0.4 gallons (1.5 liters) of water per minute for 15 minutes or more.

Note: You can determine whether chemicals in your workplace require emergency washing facilities by looking at the material safety data sheet (SDS) or similar documents. The SDS contains information about first-aid requirements and emergency flushing of skin or eyes.

Make sure emergency washing facilities:

- Are located so that it takes no more than ten seconds to reach.
- Are kept free of obstacles blocking their use.
- Function correctly.
- Provide the quality and quantity of water that is satisfactory for emergency washing purposes.
  - If water in emergency washing facilities is allowed to freeze, they will not function correctly. Precautions must be taken to prevent such an occurrence.
  - The travel distance to an emergency washing facility should be no more than 50 feet (15.25 meters).
  - Training in the location and use of your emergency washing facilities is required under the employer chemical hazard communication rule.
  - All emergency washing facilities using "not fit for drinking" (non-potable) water must have signs stating the water is "not fit for drinking."
  - For further information on the design, installations, and maintenance of emergency washing facilities, see American National Standards Institute (ANSI) publication Z358.1 - 1998, Emergency Eyewash and Shower Equipment.

Inspect and Activate Your Emergency Washing Facilities

Make sure all plumbed emergency washing facilities are inspected once a year to make sure they function correctly. Inspections should include:

- Examination of the piping.
- Make sure water is available at the appropriate temperature and quality.
- Activation to check that the valves and other hardware work properly.
- Checking the water flow rate.

Make sure plumbed emergency eyewashes and hand-held drench hoses are activated weekly to check the proper functioning of the valves, hardware, and availability of water.

Make sure all self-contained eyewash equipment and personal eyewash units are inspected and maintained according to manufacturer instructions.

- Inspections to check proper operation must be done once a year
- Sealed personal eyewashes must be replaced after the manufacturer's expiration date.

Note: Most manufacturers recommend replacing fluid in open self-contained eyewashes every 6 months. The period for sealed containers is typically 2 years.

Ensure Supplemental Flushing Equipment Provides Enough Water

Supplemental flushing equipment cannot be used in place of required emergency showers or eyewashes.

- Make sure hand-held drench hoses deliver at least 3.0 gallons (11.4 liters) of water per minute for 15 minutes or more.
- Make sure personal eyewash equipment delivers only clean water or other medically approved eye flushing solutions.

First Aid Response Plan Considerations

Availability of emergency medical services — Would your employees dial 911 or is there some other way to summon help?

Response time of emergency medical services — From the time an accident happened, how many minutes would it take trained medical people to get to an injured worker? Things to consider include:

How long would it take your employees to reach a phone to call 911? Are phones conveniently located in the work area or would they have to go to an office to call?

How far are the emergency medical services (hospital, fire station, etc.) from your work site?

How would emergency medical services get to your work site? They may only be 100 feet away, but if it is across a limited access road they may have go 5 miles in one direction to turn around and come back.

How bad is traffic? Are back-ups common at certain times?

How available are emergency medical services? If there is only one ambulance and one medical team, they may be out on another emergency. It could take a long time for someone to respond to your call.

How large and complex is your work place? How difficult would it be for emergency services to find the place where the injured worker is? You may want the emergency service to go to a central location (such as a reception area) and receive directions from there.

Contact your local emergency medical service and get their answers to these questions. You may find their responses are different from what you would expect.

Develop your First Aid Response Plan and put it in Writing

When developing and writing your first aid response plan, consider the following:

- Include the site and who is responsible for managing the plan. This includes updating the written plan as needed and making sure an adequate number of first aid trained employees available.
- Make sure a method is developed for summoning emergency medical services.
- Post a list of employees who are first aid trained.
- Describe the procedures employees should use to request first aid.
- Identify who is responsible for inspecting, stocking & maintaining first aid kits.

Train Your Employees

The First Aid Response Plan will not be effective if your employees do not know about it. You need to make sure your employees are informed of the First Aid Response Plan and what it says. Remember to train new or temporary employees as part of their safety orientation before they start work.

Your Responsibility

- Fit the First Aid Response Plan to your Business.
- Develop and Write your First Aid Response Plan.

NOTE: In the “Attachments” Chapter of this Injury & Illness Prevention Manual you will find a master copy of the following form for Company use:

- First Aid Response Plan

First Aid Kit Contents

During any serious injury situation, the first aid kit becomes the most vitally important toolbox at the workplace. Even if your people have had the finest first aid skills training available, these talents are mostly negated by the lack of emergency medical supplies to use when most needed.

The OSHA rule states: "First aid supplies will be easily accessible when required. The contents of a first aid kit will be placed in a weather proof container with sterile, individually sealed packages for each type of item and will be checked by the employer before being sent out on each job and at least weekly on each job to ensure that the expended items are replaced." In the event of an emergency medical situation caused by a serious injury accident, proper and prompt treatment can greatly reduce the severity of the injury and possibly prevent the death of a co-worker.

The suggested contents of an excellent first aid kit include:

- Decent quality first aid handbook with illustrations. This is your important quick reference guide.
- PPE: 3-Pair latex gloves; surgical masks, dust masks, or other needed face protection; clear eye protection or face shield.
- Large, sterile gauze pads (6 each: 2X2's, 3X3's, and 4X4's), compress dressings (4X8), 3 each.
- Rolled gauze bandages: 2" and 3" wide, 3 each.
- Woven Bandages, Knuckle Bandages, Fingertip Bandages, and large box assorted sizes "Band-Aids."
- Two elastic wrap bandages (ace wrap).
- 6 burn treatment single-use packages, 0.5 g. application.
- 1 eye covering bandages (for two eyes)
- Alcohol, peroxide, alcohol swabs, antiseptic spray and ointment, burn gel or cream, pain relief tabs, cotton balls and Q-tips, Ammonia Inhalant.
- Surgical or athletic tape; 1" and 2" wide, 2 rolls each.
- Self-activating cold packs, 4x5 inches
- Good quality eye-wash solution, with eye cup. Liquid antiseptic hand soap.
- Mouth-to-mouth barrier for CPR
- Blunt-nose surgical scissors, tweezers, safety pins, and BioHazard Bags.

Although no official inventory list exists, thoughtful consideration should be given to the specific working conditions the people will be directed to and adjustments to your Company's first aid supplies should be made. Knowing what to do in a medical emergency is important, but so is knowing what not to do. Be sure you always know where your first aid kit is.

NOTE: All personnel using CPR & First Aid techniques should be certified in an appropriate training format before using these skills. Never exceed the level of your first aid training.

Notes:

Chapter 7

Bloodborne Pathogens

§1910.1030 – Bloodborne Pathogens

§1910.1028 – Hazard Communication Standards for Employers

Policy Statement

All Ohio Sealants Inc. is committed to the safety and health of our employees and prohibiting the spread of bloodborne pathogens. Therefore, the following bloodborne pathogens safety plan has been adopted. In the event an employee is exposed to bloodborne pathogens all measures within this program will be provided to eliminate the spread of disease.

All Ohio Sealants Inc. has implemented this plan to ensure that no employee is exposed to hazardous Bloodborne Pathogens in the workplace. Keith Maxey is the Company administrator who has the overall supervisory responsibility for the effectiveness of this program and for maintaining medical and training records.

All Ohio Sealants Inc. will ensure that a copy of the Exposure Control Plan is kept at the office, in the workplace (if required), and available to employees at all times in accordance with §1910.1020(e).

- ☐ Upon initial hiring, all employees will be trained in exposure awareness and prevention techniques for bloodborne pathogens. Employees will receive refresher training annually, or if observed to commit unsafe acts regarding potentially infectious material, or when changing job conditions or assignments warrants it. Training records will include date of training, training content, attendance records including job title, and will be kept on file at the office for a minimum of 3 years.
- ☐ Employees with occupational exposure for the construction industry are limited to job duties that require workers to administer first aid and/or CPR when necessary. Employees trained in first aid and CPR and designated as First Aid Responders are considered at risk of occupational exposure due to the nature of these duties (e.g., assisting bleeding victims, resuscitation). Occupational exposure is defined as reasonably anticipated contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.
- ☐ The exposure determination will be made without regard to the use of personal protective equipment. All employees who, as a result of performing their job duties, must engage in activities where exposure to blood or other potentially infectious materials is reasonably anticipated are considered to have occupational exposure to bloodborne pathogen. Employees will take necessary precautions to avoid direct contact with body fluids.
- ☐ Personal Protective equipment will be available at all times to prevent exposure to infectious material for employees required to handle potentially hazardous material, perform first aid procedures, or to perform routine duties which may bring an employee into contact with potentially infectious material.
- ☐ Employees in job classifications in which they may possibly have occupational exposure to bloodborne pathogens, or material possibly containing bloodborne pathogens, will be given the opportunity to participate in the hepatitis B vaccine program.

☐ Universal precautions will be observed. Under circumstances in which differentiation between body fluids is difficult or impossible, all body fluids will be considered potentially infectious. The term "universal precautions" refers to a method of bloodborne disease control that requires all human blood and other potentially infectious materials to be treated as if known to be infectious HIV, HBV or other bloodborne pathogens.

☐ Any exposed sharp edges or devices which may cause laceration or puncture on machines, tools, or equipment will be eliminated or protected to prevent injury to personnel. All machine guards will be inspected daily to ensure that they are in place and secure to prevent injury to personnel and the spread of bloodborne pathogens.

☐ Any injury to personnel must be reported immediately to a supervisor, and unauthorized personnel will be restricted from the area where the injury occurred until it is determined that no threat of infection is present, or until properly trained personnel can dispose of any infectious material.

☐ If provision of handwashing facilities is not feasible, All Ohio Sealants Inc. will provide either an appropriate antiseptic hand cleanser in conjunction with cloth/paper towels or antiseptic towelettes. All employees are allowed access to proper restroom and sanitary facilities. Hand washing and disinfecting supplies are always available to employees either at restroom facilities or upon request.

☐ Blood-soaked bandages or other potentially infectious materials form the accident site must be put in properly marked, leak-proof bags for handling.

☐ Proper disposal containers for potentially infectious material are available as needed. Any such containers will be properly marked for biohazards and disposed of properly.

☐ Employees medical records are available to the employee to which they pertain, records will be kept confidential for company use only, unless release is authorized in writing by the employee.

Engineering and work practice controls will be used to eliminate or minimize employee exposure. Company assigned first aid responders will be trained in universal precautions and proper PPE use when giving first aid. Engineering controls will be examined and maintained or replaced on a regular schedule to ensure their effectiveness.

PPE is provided to our employees at no cost to them when the possibility of occupational exposure is present. PPE will be used unless, under rare circumstances, the employee(s) temporarily declined to use PPE.

Training in the use of the appropriate PPE for specific tasks or procedures is provided by All Ohio Sealants Inc.. PPE may be obtained by contacting Keith Maxey, who is responsible for ensuring that PPE is available.

All employees using PPE must observe the following precautions:

- Wash hands as soon as feasible after removing gloves or other PPE.
- Remove PPE after it becomes contaminated and before leaving the work area.
- Contaminated PPE must be properly handled or disposed of in properly marked, leak-proof bags. When PPE is to be decontaminated, proper handling precautions and procedures will be observed during this process.
- Wear appropriate gloves when it is reasonably anticipated that there may be hand contact with blood or OPIM, and when handling or touching contaminated items or surfaces; replace gloves if torn, punctured or contaminated, or if their ability to function as a barrier is compromised.
- Wear appropriate face and eye protection when splashes, sprays, spatters, or droplets of blood or OPIM pose a hazard to the eye, nose, or mouth.
- Remove immediately or as soon as feasible any garment contaminated by blood or OPIM, in such a way as to avoid contact with the outer surface.

Exposure Determination

All employees who, as a result of performing their job duties, must engage in activities where exposure to blood or other potentially infectious materials is reasonably anticipated are considered to have occupational exposure to bloodborne pathogen. Employees will take necessary precautions to avoid direct contact with body fluids.

The most common concern for spread of bloodborne pathogen in non-medical occupations is during the administration of first aid at the workplace. Employees designated as First Aid Responders are considered at risk of occupational exposure due to the nature of these duties (e.g., performing first aid, assisting bleeding victims, and resuscitation).

Contaminated Equipment

In order to prevent occupational exposure to blood or other potentially infectious material, all equipment or material that comes into contact with pathogens will be decontaminated. Contaminated equipment or other contaminated items are not to be placed or stored in areas where food is kept, and decontamination should be accomplished as soon as possible. Decontamination is not to take place in any area where food or drink is consumed. Cloths used to wipe contaminated equipment can be discarded as refuse unless they would somehow become contaminated to the extent that they would be considered regulated waste. A biohazard label is to be attached to any large contaminated equipment and is to state which portions are or remain contaminated. For smaller pieces of equipment, the biohazard label should be attached as above, and the piece of equipment should be placed in a bag prior to shipping.

EXAMPLES OF CONTAMINATED EQUIPMENT OR MATERIAL:

- Objects that may have been bled upon
- Bandages or gauze
- Equipment used during first aid

Personal Protective Equipment

Although employees are expected to avoid the handling of blood or other potentially infectious materials as well as contact with surfaces or items contaminated with such materials during the course of first aid administration, it is likely that the employee will be exposed to blood. Therefore, personal protective equipment such as gloves will be provided in the first aid kit.

These gloves are not to be washed or decontaminated for reuse. First Aid Responders are to include disposable resuscitation masks as well. Such equipment is to be used for the employee's protection in cases where the employee is expected to provide ventilator assistance. Decontaminant will also be available to all employees to decontaminate equipment.

Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up

All Ohio Sealants Inc. offers the hepatitis B vaccine and vaccination series to personnel with duties that may require the employee to come in contact with blood (i.e. first aid administration). This Company also offers post-exposure evaluation and follow-up after an exposure incident to any employee who suffers an exposure incident while performing duties on the job. All medical evaluations and procedures are to be made available at no cost to employees, at a reasonable time and place.

Hepatitis B Vaccination is available to employees at any Public Health Service facility where physical examinations are performed. All employees, whose job duties involve occupational exposure, are to be offered the hepatitis B vaccination. The vaccine will be made available after receiving training regarding blood borne pathogens and within 10 days of initial assignment of the employee to duties with occupational exposure. Personnel, even after training, may decline to receive the hepatitis B vaccine. In such case, the declining employee is to sign the declination statement. The employee can receive the vaccine after signing the declination statement if a change of mind occurs and if duties still involve those with occupational exposure. Management will assure that each employee scheduled for immunization at a Public Health Service facility is provided with the written opinion. These materials are to be taken by the employee to the evaluating physician for completion. The written opinion should be returned to the company office where the employee is assigned. A copy of medical records related to hepatitis B vaccination should be obtained by the employee or first aid provider before departing the facility where vaccination takes place. The employee should insert this copy of such records in a copy of Appendix D. Should an exposure incident occur, Appendix D, including the hepatitis B related records, serves as the materials for the Evaluating Physician and is to be given to the evaluating physician.

Post-exposure Evaluation and Follow-up — Management will instruct the compliance officer to seek medical attention in the same manner that it would be sought should any injury occur. **In the event of an exposure incident:**

- The employee is to immediately wash any skin with soap and water and flush mucous membranes with water when such areas have had contact with blood or other potentially infectious materials.
- The employee should then seek medical attention. It must be realized that any exposure incident is an event for which immediate attention must be sought, as the effectiveness of prophylaxis depends on the immediacy of its delivery.
- In addition, the employee who has had an exposure incident is to report such incident to his or her supervisor as soon as possible.

Information Provided to the Evaluating Physician — Post-exposure evaluation and follow-up are to be provided to the employee consistent with the OSHA requirements of 29 CFR 1910.1030. Therefore, upon presenting for evaluation, the employee will give to the physician the Materials for the Evaluating Physician. The instructions for the physician describe the requirements of 29 CFR 1910.1030 and instruct the physician to give the physician's written opinion to the employee to return to the Company. The evaluation results will become a part of the employee's confidential medical records. Records regarding any exposure incidents of Technical Center personnel will be maintained in a confidential manner.

Communication of Hazards to Employees

Labels and Bags — Biohazard labels must be affixed to bags containing any contaminated equipment or material. Bags will be disposed of as ordinary refuse unless in the rare instance when they are contaminated to the extent that they are considered regulated waste as defined by the standard.

Bags should be located in first aid kits and stocked regularly.

Information and Training

This employer will ensure that all employees with occupational exposure participate in a training program which must be provided at no cost to the employee and during working hours.

Training will be provided as follows:

- At the time of initial assignment to tasks where occupational exposure may take place.
- At least annually thereafter. Annual training for all employees will be provided within one year of their previous training.

This employer will provide additional training when changes such as modification of tasks or procedures or institution of new tasks or procedures affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created.

Material appropriate in content and vocabulary to educational level, literacy, and language of employees will be used.

The training program will contain at a minimum the following elements:

- An accessible copy of the regulatory text of this standard and an explanation of its contents.
- A general explanation of the epidemiology & symptoms of bloodborne diseases.
- An explanation of the modes of transmission of bloodborne pathogens.
- An explanation of the employer's exposure control plan and the means by which the employee can obtain a copy of the written plan.
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials.
- An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment.
- Information on the types, proper use, location, removal, handling, decontamination, and disposal of personal protective equipment.
- An explanation of the basis for selection of personal protective equipment.
- Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge.
- Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials.
- An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available.
- Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident.
- An explanation of the signs and labels and/or color coding.
- An opportunity for interactive questions and answers with the person conducting the training session.

The person conducting the training will be knowledgeable in the subject matter covered by the elements contained in the training program as it relates to the workplace that the training will address.

Recordkeeping

Medical Records

This employer will establish and maintain an accurate record for each employee with occupational exposure to Bloodborne Pathogens.

This record will include:

- The name and social security number of the employee.
- A copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination as required.
- A copy of all results of examinations, medical testing, and follow-up procedures as required.
- This employer's copy of the healthcare professional's written opinion.
- A copy of the information provided to the healthcare professional.

Confidentiality

This employer will ensure that employee medical records required are:

- Kept confidential.
- Not disclosed or reported without the employee's express written consent to any person within or outside the workplace except as may be required by law.

This employer will maintain the records for at least the duration of employment plus 30 years.

Employee Training Records

Training records will include the following information:

- The dates of the training sessions.
- The contents or a summary of the training sessions.
- The names and qualifications of persons conducting the training.
- The names and job titles of all persons attending the training sessions.

Employee training records will be maintained for 3 years from the date on which the training occurred.

Availability

This employer will ensure that all records required to be maintained will be made available upon request to OSHA for examination and copying.

Required employee training records will be provided upon request for examination and copying to employees, to employee representatives, and to OSHA.

Employee medical records required will be provided upon request for examination and copying to the subject employee, to anyone having written consent of the subject employee, and to OSHA.

Transfer of Records

Whenever this employer is ceasing to do business, this employer will transfer all records subject to this section to the successor employer. The successor employer will receive and maintain these records.

Whenever this employer is ceasing to do business and there is no successor employer to receive and maintain the records, this employer will notify affected current employees of their rights of access to records at least three (3) months prior to the cessation of this employer's business.

Investigation of Exposure Incidents

All exposure incidents will be investigated and proper accident/incident investigation procedures will be followed.

DECLINATION STATEMENT

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring Hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with Hepatitis B vaccine, at no charge to myself. However, I decline Hepatitis vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with Hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Employee Signature_____ Date_____

Evaluating Physician's Written Opinion

To the Evaluating Physician:

After you have determined whether there are contra-indications to vaccination of this employee with Hepatitis B vaccine, please state in the space below only:

(A) ____ If vaccine was indicated

(B) ____ If vaccine was received.

(All other findings are to remain confidential and are not to be included on this page)

Please return this sheet to this employee:

(Name of Employee)_____

Thank you for your evaluation of this employee.

_____ _____

Physician's name (printed) date

Physician's signature_____

Instructions for the Evaluating Physician

This employee may have suffered an exposure incident to a Bloodborne Pathogen. In accordance with the standard's provision for post exposure evaluation and follow up, the employer submits to you for the following evaluations:

- A copy of 29 CFR 1910.1030, Occupational Exposure to Bloodborne Pathogens;
- A description of the exposed employee's duties as they relate to the exposure incident;
- Documentation of the routes of exposure and circumstances under which exposure occurred;
- Results of the source individual's blood testing, if available; and
- All medical records relevant to this employee's appropriate treatment, including vaccination status.

After completing the evaluation, please:

- Inform the employee regarding the evaluation results and any follow up needed;
- Complete the attached written opinion form and give it to the employee. (This form will be maintained in the office to which the employee is assigned); and
- Send a copy of all evaluation results and records to:

U.S. Department of Labor - OSHA Office of Occupational Medicine Room N3653 200 Constitution Avenue, NW Washington, DC 20210 CONFIDENTIAL: MEDICAL RECORDS These copies will be maintained as part of the employee's confidential medical record in OSHA's Office of Occupational Medicine Medical Records Section.

Should you have any questions regarding the evaluations or medical records, please contact OSHA's Office of Occupational Medicine at (202) 219-5003.

Date exposure incident occurred? _____

Describe the circumstances under which the exposure incident occurred (what happened that resulted in the incident)

_____

_____

_____

What body fluid(s) were you exposed to? _____

_____

What was the route of exposure (e.g., mucosal contact, contact with non-intact skin, percutaneous)? _____

_____

Describe any personal protective equipment in use at time of exposure incident

_____

Did PPE fail? _____If yes, how? _____

_____

Identification of source individual(s) (names) _____

_____

Other pertinent information _____

_____

Chapter 8

Job Hazard Assessment

All Ohio Sealants Inc. is committed to providing a safe and hazard free workplace.

Keith Maxey will supervise regularly scheduled inspections of all jobsites and facilities for hazards on a weekly basis and will also include spot checks and random inspections.

Hazard Assessment Plan

All Ohio Sealants Inc. performs inspections of the facility and jobsites at least weekly and documents each one for review. Hazard evaluations include inspection of the area as well as work practices.

During the course of inspection, if a job hazard is identified it is immediately corrected. If the hazard is not immediately correctable, all appropriate personnel are notified and the hazard is clearly identified by signs, barricades, or other warnings.

Hazard evaluations are to be appropriately documented using the following provided forms or any means necessary.

All Ohio Sealants Inc. employees will be adequately trained in the hazard identification process up to and including the care and proper use of personal protective equipment.

What is a Job Hazard?

A Job hazard is the potential for harm. In practical terms, a job hazard is often associated with a condition or activity that, if left uncontrolled, can result in an injury or illness. Identifying job hazards and eliminating or controlling them as early as possible will help prevent injuries and illnesses.

A Job Hazard Assessment

A job hazard assessment is a technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between the worker, the task, the tools, and the work environment. Ideally, after you identify uncontrolled hazards, you will take steps to eliminate or reduce them to an acceptable risk level.

For a job hazard assessment to be effective, managers and supervisors must demonstrate their commitment to safety and health and follow through to correct any uncontrolled hazards identified. Otherwise, management will lose credibility and employees may hesitate to go to supervisors when dangerous conditions threaten them.

Jobs Appropriate for Hazard Assessment

A job hazard assessment can be conducted on many jobs in your workplace. Priority should go to the following types of jobs:

- Jobs with the highest injury or illness rates.
- Jobs with the potential to cause severe or disabling injuries or illness, even if there is no history of previous accidents.
- Jobs in which one simple human error could lead to a severe accident or injury.
- Jobs that are new to your operation or have undergone changes in processes and procedures.
- Jobs complex enough to require written instructions.

Where to Begin

Involve your employees. It is very important to involve your employees in the hazard assessment process. They have a unique understanding of the job, and this knowledge is invaluable for finding hazards. Involving employees will help minimize oversights, ensure a quality assessment, and get workers to "buy in" to the solutions because they will share ownership in their safety and health program.

Review your accident history. Review with your employees your workplace's history of accidents and occupational illnesses that needed treatment, losses that required repair or replacement, and any "near misses" – events in which an accident or loss did not occur, but could have. These events are indicators that the existing hazard controls (if any) may not be adequate and deserve more scrutiny.

Conduct a preliminary job review. Discuss with your employees the hazards they know exist in their current work and surroundings. Brainstorm with them for ideas to eliminate or control those hazards.

If any hazards exist that pose an immediate danger to an employee's life or health, take immediate action to protect the worker. Any problems that can be corrected easily should be corrected as soon as possible. Do not wait to complete your job hazard assessment. This will demonstrate your commitment to safety and health and enable you to focus on the hazards and jobs that need more study because of their complexity. For those hazards determined to present unacceptable risks, evaluate types of hazard controls.

List, rank, and set priorities for hazardous jobs. List jobs with hazards that present unacceptable risks, based on those most likely to occur and with the most severe consequences. These jobs should be your first priority for assessment.

Outline the steps or tasks. Nearly every job can be broken down into job tasks or steps. When beginning a job hazard assessment, watch the employee perform the job and list each step as the worker takes it. Be sure to record enough information to describe each job action without getting overly detailed. Avoid making the breakdown of steps so detailed that it becomes unnecessarily long or so broad that it does not include basic steps. You may find it valuable to get input from other workers who have performed the same job. Later, review the job steps with the employee to make sure you have not omitted something. Point out that you are evaluating the job itself, not the employee's job performance. Include the employee in all phases of the assessment – from reviewing the job steps and procedures to discussing uncontrolled hazards and recommended solutions.

Sometimes, in conducting a job hazard assessment, it may be helpful to photograph or videotape the worker performing the job. These visual records can be handy references when doing a more detailed assessment of the work.

Identifying Workplace Hazards

A job hazard assessment is an exercise in detective work. Your goal is to discover the following:

- What can go wrong?
- What are the consequences?
- How could it arise?
- What are other contributing factors?
- How likely is it that the hazard will occur?

To make your job hazard assessment useful, document the answers to these questions in a consistent manner. Describing a hazard in this way helps to ensure that your efforts to eliminate the hazard and implement hazard controls help target the most important contributors to the hazard.

Good hazard scenarios describe:

- Where it is happening? (environment)
- Who or what it is happening to? (exposure)
- What precipitates the hazard? (trigger)
- The outcome that would occur should it happen? (consequence)
- Any other contributing factors.

Rarely is a hazard a simple case of one singular cause resulting in one singular effect. More frequently, many contributing factors tend to line up in a certain way to create the hazard.

Here is an example of a hazard scenario:

In the metal shop (environment), while clearing a snag (trigger), a worker's hand (exposure) comes into contact with a rotating pulley. It pulls his hand into the machine and severs his fingers (consequences) quickly.

To perform a job hazard assessment, you would ask:

What can go wrong? The worker's hand could come into contact with a rotating object that "catches" it and pulls it into the machine.

What are the consequences? The worker could receive a severe injury and lose fingers and hands.

How could it happen? The accident could happen as a result of the worker trying to clear a snag during operations or as part of a maintenance activity while the pulley is operating. Obviously, this hazard scenario could not occur if the pulley is not rotating.

What are other contributing factors? This hazard occurs very quickly. It does not give the worker much opportunity to recover or prevent it once his hand comes into contact with the pulley. This is an important factor, because it helps you determine the severity and likelihood of an accident when selecting appropriate hazard controls. Unfortunately, experience has shown that training is not very effective in hazard control when triggering events happen quickly because humans can react only so quickly.

How to Correct or Prevent Hazards

After reviewing your list of hazards with the employee, consider what control methods will eliminate or reduce them. The most effective controls are engineering controls that physically change a machine or work environment to prevent employee exposure to the hazard. The more reliable or less likely a hazard control can be circumvented, the better. If this is not feasible, administrative controls may be appropriate.

This may involve changing how employees do their jobs. Discuss your recommendations with all employees who perform the job and consider their responses carefully. If you plan to introduce new or modified job procedures, be sure they understand what they are required to do and the reasons for the changes.

Before Starting a Job Hazard Assessment

The job procedures discussed in this chapter are for illustration only and do not necessarily include all the steps, hazards, and protections that apply to your industry. When conducting your own job safety assessment, be sure to consult the OSHA standards for your industry. Compliance with these standards is mandatory, and by incorporating their requirements in your job hazard assessment, you can be sure that your health and safety program meets federal standards.

Review the Job Hazard Assessment

Periodically reviewing your job hazard assessment ensures that it remains current and continues to help reduce workplace accidents and injuries. Even if the job has not changed, it is possible that during the review process you will identify hazards that were not identified in the initial assessment. It is particularly important to review your job hazard assessment if an illness or injury occurs on a specific job.

Based on the circumstances, you may determine that you need to change the job procedure to prevent similar incidents in the future. If an employee's failure to follow proper job procedures results in a "close call or near miss," discuss the situation with all employees who perform the job and remind them of proper procedures. Any time you revise a job hazard assessment, it is important to train all employees affected by the changes in the new job methods, procedures, or protective measures adopted.

When to Hire a Professional

If your employees are involved in many different or complex processes, you need professional help conducting your job hazard analyses. Sources of help include your insurance company, the local fire department, and/or private consultants with safety and health expertise. In addition, OSHA offers assistance through its regional and area offices and consultation services. Even when you receive outside help, it is important that you and your employees remain involved in the process of identifying and correcting hazards because you are at the workplace every day and most likely to encounter these hazards. New circumstances and a recombination of existing circumstances may cause old hazards to reappear and new hazards to appear. In addition, you and your employees must be ready and able to implement whatever hazard elimination or control measures a professional consultant recommends.

Hazard Control Measures

Information obtained from a job hazard assessment is useless unless hazard control measures recommended in the assessment are incorporated into the tasks. Managers and supervisors should recognize that not all hazard controls are equal. Some are more effective than others at reducing the risk.

The order of precedence and effectiveness of hazard control is the following:

- Engineering controls.
- Administrative controls.
- Personal protective equipment.

Engineering controls include the following:

- **Elimination/minimization of the hazard** – Designing the facility, equipment, or process to remove the hazard, or substituting processes, equipment, materials, or other factors to lessen the hazard.
- **Enclosure of the hazard** using enclosed cabs, enclosures for noisy equipment, or other means.
- **Isolation of the hazard** with interlocks, machine guards, blast shields, welding curtains, or other means.
- **Removal or redirection of the hazard** such as with local and exhaust ventilation.

Administrative controls include the following:

- Written operating procedures, work permits, and safe work practices.
- Exposure time limitations (used most commonly to control temperature extremes and ergonomic hazards).
- Monitoring the use of highly hazardous materials.
- Alarms, signs, and warnings.
- The "Buddy" system.
- Training.

Personal Protective Equipment

Protective equipment such as respirators, hearing protection, protective clothing, safety glasses, and hardhats is acceptable as a **control method** in the following circumstances:

- When engineering controls are not feasible or do not totally eliminate the hazard.
- While engineering controls are being developed.
- When safe work practices do not provide sufficient additional protection.
- During emergencies when engineering controls may not be feasible.

Use of one hazard control method over another higher in the control precedence may be appropriate for providing interim protection until the hazard is abated permanently. In reality, if the hazard cannot be eliminated entirely, the adopted control measures will likely be a combination of all three items instituted simultaneously.

COMMON HAZARDS & DESCRIPTIONS

Hazards	Hazard Descriptions
Chemical (Toxic)	A chemical that exposes a person by absorption through the skin, inhalation, or through the blood stream that causes illness, disease, or death. The amount of chemical exposure is critical in determining hazardous effects. Check Material Safety Data Sheets (SDS), and/or OSHA 1910.1200 for chemical hazard information.
Chemical (Flammable)	A chemical that, when exposed to a heat ignition source, results in combustion. Typically, the lower a chemical's flash point and boiling point, the more flammable the chemical. Check SDS for flammability information.
Chemical (Corrosive)	A chemical that, when it comes into contact with skin, metal, or other materials, damages the materials. Acids and bases are examples of corrosives.
Explosion (Chemical Reaction)	Self explanatory.
Explosion (Over Pressurization)	Sudden and violent release of a large amount of gas/energy due to a significant pressure difference such as rupture in a boiler or compressed gas cylinder.
Electrical (Shock/Short Circuit)	Contact with exposed conductors or a device that is incorrectly or inadvertently grounded, such as when a metal ladder comes into contact with power lines. 60Hz alternating current (common house current) is very dangerous because it can stop the heart.
Electrical (Fire)	Use of electrical power that results in electrical overheating or arcing to the point of combustion or ignition of flammables, or electrical component damage.
Electrical (Static/ESD)	The moving or rubbing of wool, nylon, other synthetic fibers, and even flowing liquids can generate static electricity. This creates an excess or deficiency of electrons on the surface of material that discharges (spark) to the ground resulting in the ignition of flammables or damage to electronics.
Electrical (Loss of Power)	Safety-critical equipment failure as a result of loss of power.
Ergonomics (Strain)	Damage of tissue due to overexertion (strains and sprains) or repetitive motion.
Ergonomics (Human Error)	A system design, procedure, or equipment that is error-provocative. (A switch goes up to turn something off).
Fall (Slip, Trip)	Conditions that result in falls (impacts) from height or traditional walking surfaces (such as slippery floors, poor housekeeping, uneven walking surfaces, exposed ledges, etc.)
Fire/Heat	Temperatures that can cause burns to the skin or damage to other organs. Fires require a heat source, fuel, and oxygen.
Mechanical/ Vibration (Chaffing/ Fatigue)	Vibration that can cause damage to nerve endings, or material fatigue that results in a safety-critical failure. (Examples are abraded slings and ropes, weakened hoses and belts.)
Mechanical Failure	Self explanatory; typically occurs when devices exceed designed capacity or are inadequately maintained.
Mechanical	Skin, muscle, or body part exposed to crushing, caught-between, cutting, tearing, shearing items or equipment.
Noise	Noise levels (>85 dBA 8 hr TWA) that result in hearing damage or inability to communicate safety-critical information.
Radiation (Ionizing)	Alpha, Beta, Gamma, neutral particles, and X-rays that cause injury (tissue damage) by ionization of cellular components.
Radiation (Non-Ionizing)	Ultraviolet, visible light, infrared, and microwaves that cause injury to tissue by thermal or photochemical means.
Struck By (Mass Acceleration)	Accelerated mass that strikes the body causing injury or death. (Examples are falling objects and projectiles.)
Struck Against	Injury to a body part as a result of coming into contact of a surface in which action was initiated by the person. (An example is when a screwdriver slips.)
Temperature Extreme (Heat/Cold)	Temperatures that result in heat stress, exhaustion, or metabolic slow down such as hypothermia.
Visibility	Lack of lighting or obstructed vision that results in an error or other hazard.
Weather Phenomena (Snow/Rain/ Wind/Ice)	Self explanatory.

JOB HAZARD ASSESSMENT CHECKLIST

The scope of your self-inspections should include the following:

Processing, Receiving, Shipping and Storage — equipment, job planning, layout, heights, floor loads, projection of materials, materials-handling and storage methods, and training for material handling equipment.

Building and Grounds Conditions — floors, walls, ceilings, exits, stairs, walkways, ramps, platforms, driveways, and aisles.

Housekeeping Program — waste disposal, tools, objects, materials, leakage and spillage, cleaning methods, schedules, work areas, remote areas, and storage areas.

Electricity — equipment, switches, breakers, fuses, switch-boxes, junctions, special fixtures, circuits, insulation, extensions, tools, motors, grounding, and national electric code compliance.

Lighting — type, intensity, controls, conditions, diffusion, location, and glare and shadow control.

Heating and Ventilation — type, effectiveness, temperature, humidity, controls, and natural and artificial ventilation and exhaust.

Machinery — points of operation, flywheels, gears, shafts, pulleys, key ways, belts, couplings, sprockets, chains, frames, controls, lighting for tools and equipment, brakes, exhausting, feeding, oiling, adjusting, maintenance, lockout/tagout, grounding, work space, location, and purchasing standards.

Personnel — experience training, including hazard identification training; methods of checking machines before use; type of clothing; personal protective equipment; use of guards; tool storage; work practices; and methods of cleaning, oiling, or adjusting machinery.

Hand and Power Tools — purchasing standards, inspection, storage, repair, types, maintenance, grounding, use, and handling.

Chemicals — storage, handling, transportation, spills, disposals, amounts used, labeling, toxicity or other harmful effects, warning signs, supervision, training, protective clothing and equipment, and hazard communication requirements.

Fire Prevention — extinguishers, alarms, sprinklers, smoking rules, exits, personnel assigned, separation of flammable materials and dangerous operations, explosive-proof fixtures in hazardous locations, and waste disposal.

Maintenance, including tracking and abatement of preventive & regular maintenance — regularity, effectiveness, training of personnel, materials and equipment used, records maintained, method of locking out machinery, and general methods.

Personal Protective Equipment — type, size, maintenance, repair, storage, assignment of responsibility, purchasing methods, standards observed, training in care and use, rules of use, and method of assignment.

Transportation — motor vehicle safety, seat belts, vehicle maintenance, and safe driver programs.

Review — evacuation routes, equipment, and personal protective equipment.

Job Safety Analysis (JSA)

Job safety analysis (JSA), also known as "job hazard analysis", is the first step in developing the correct procedure. In this analysis, each task of a specific job is examined to identify hazards and to determine the safest way to do the job.

Job safety analysis involves the following steps:

1. Select the job

2. Break down the job into a sequence of steps

3. Identify the hazards

4. Define preventive measures

The analysis should be conducted on all critical tasks or jobs as a first priority. Critical jobs include:

- those where frequent accidents and injuries occur
- those where severe accidents and injuries occur
- those with a potential for severe injuries
- new or modified jobs
- infrequently performed jobs, such as maintenance

Job safety analysis is generally carried out by observing a worker doing the job. Members of the joint health and safety committee should participate in this process. The reason for the exercise must be clearly explained to the worker, emphasizing that the job, not the individual, is being studied.

NOTE: In the “Attachments” Chapter of this Injury & Illness Prevention Manual you will find a master copy of the following form for Company use:

- Jobsite Safety Inspection & Report
- Job Safety Analysis Form
- Hazard Tracking Log

Chapter 9

Workplace Violence Prevention Program

Policy Statement

All Ohio Sealants Inc. has adopted the following policy to deal with any violence that may occur on the Company's premises and to ensure the safety of our employees.

Keith Maxey is responsible for the implementation and enforcement of the workplace violence prevention program. In the event this policy is violated disciplinary procedures will be enforced and legal action taken as needed.

- Threats, threatening behavior, or acts of violence against employees, visitors, guests, or other individuals by anyone on All Ohio Sealants Inc. property **will not be tolerated**.
- Any person who makes threats, exhibits threatening behavior, or engages in violent acts on Company property will be removed from the premises as quickly as safety permits and will remain off Company premises and/or jobsites pending the outcome of an investigation.

Reporting

- Management has assigned Keith Maxey as the contact person to report all incidents pertinent to this policy.
- Management and employees are responsible for notifying the contact person of any threats they have witnessed, received, or have been told that another person has witnessed or received. Personnel should also report behavior they regard as threatening or violent if that behavior is job-related or might be carried out on a company-controlled site.
- All Ohio Sealants Inc. response to incidents of violence will be fully investigated and documented as well as proper authorities being notified.
- Employees who apply for or obtain a protective or restraining order that lists company locations as protected areas must provide a copy of the petition and declarations used to seek the order and a copy of any temporary or permanent protective or restraining order that is granted. All Ohio Sealants Inc. has confidentiality procedures that recognize and respect the privacy of the reporting employee(s).

Compliance

- Our safety policies are based on past experience and current standards, and are also an integral part of the company's personnel rules. This means that compliance with the policies is a condition of employment and must be taken seriously.
- Failure to comply with the company policy regarding Workplace Violence or the Code of Safe Practices is sufficient grounds for disciplinary action up to and including termination.
- Management will conduct a risk assessment to evaluate the risks of workplace violence and the strengths and weaknesses of the existing policies.

Training

- **Management and supervisors will be trained**; and this training documented in the following areas:
  - How to properly deal with employee layoffs, job termination and disciplinary procedures.
  - How to recognize violent/dangerous situations and the appropriate measures to take.
  - How to prevent violence in the workplace.
  - The Company security and emergency response procedures.
  - How to respond to conflicts and problems in a manner that doesn't allow them to escalate.
- **Employees will be trained**; and this training documented in the following areas:
  - The rules for acceptable behavior and methods of discipline as outlined in the Company Code of Safe Practices.
  - Procedures for reporting workplace violence to the designated contact person.
  - Where to find a list of contacts and phone numbers available for all emergency situations.
  - How to identify potentially violent/dangerous situations or people and the company procedures that correspond.

Program Review

- This Workplace Violence Prevention Plan will be reviewed; and these reviews documented at least once a year or under the following circumstances:
  - Following a workplace violence incident or report.
  - Change in management.
  - Change of contact person.
  - To make needed changes or improvements to the policy.
  - To identify new training or refresher training needs.

We here at All Ohio Sealants Inc. believe safety is the first priority. NO negative action will ever be taken for reporting hazardous, dangerous, potentially dangerous, or violent situations. Our employees and the information involved will always remain confidential.

Workplace Violence Prevention Responsibilities

Keith Maxey is responsible for the implementation and enforcement of the workplace violence prevention program. While program success depends on the involvement of everyone, from ownership to employees, these responsibilities listed will be a guideline:

Ownership/Contact Person

- Administers all aspects of the workplace violence prevention program.
- Develops procedures to identify and remove potential risk factors of workplace violence.
- Assists in the workplace violence prevention training of employees.
- Coordinate necessary training for new and existing employees.
- Conducts inspections to identify high risk positions or work practices.
- Implement programs and activities that will develop and maintain incentives for and motivation of employees.
- Decides disciplinary action for repeat violators of prescribed procedures.
- Develops and maintains incident investigation reporting procedures.

- Investigates serious or reportable incidents.
- Maintains all records and reports of accidents/incidents that have taken place during division business operations.
- Ensures that each employee's report of occupational injury or illness report is filed with the Workers' Compensation office within ten days of employee's notification of an occupational injury or illness.
- Processes all paperwork associated with accidents, on-site inspections, and in-house audits. Maintains permanent record for division and/or personnel files.
- Maintains all medical records, evaluations, and exposure monitoring records for the duration of employment and at least one year after.

Managers/Supervisors

- Be familiar with high risk positions and appropriate procedures related to their area of responsibility.
- Directs, implements, and coordinates program procedures and activities within area of responsibility.
- Requires all employees supervised to use appropriate procedures for meeting the public.
- Ensures that engineering controls are available, maintained, and used correctly.
- Ensures that all employees within area of responsibility receive workplace violence prevention training as required.
- Ensures that employees are aware of and comply with requirements for workplace violence prevention practices.
- Investigates all incidents within area of responsibility. Reviews all accidents/incidents with workers involved. Insures that corrective action is taken immediately to eliminate the cause of the accident/incident.
- Ensures accident reports and Workers' Compensation forms are completed and submitted as appropriate.
- Conducts frequent and regular safety and health inspections of his/her work areas and ensures that no unsafe conditions exist in area of responsibility.
- Ensures that injuries are treated promptly and reported properly.
- Acts on reports of hazards or hazardous conditions reported to them by employees.

Employees

- Be familiar with and comply with all proper workplace violence prevention procedures.
- Notify supervisor immediately of unsafe conditions, aggressive behavior, or incidents.
- Identify and assist or report "strangers" in your work area.
- Treat all "customers" with respect and be polite.

In consideration of the size of a company, these responsibilities may be shared further or consolidated. The main goal of our program is to ensure that the policies, procedures and training are followed for the safety and security of our company, its employees and the public.

Risk Assessment/Inspections

This company has implemented procedures for conducting a risk assessment and inspection of the workplace and jobsites for compliance with this program. The purpose of the inspection is to identify hazards and unsafe practices before they cause an accident or incident.

The program is based on the results of the risk assessment and inspections and includes the following procedures:

- Examining past incidents.
- Reviewing our OSHA 300 log.
- Surveying our safety-and-health committee and workers at all levels regarding violent incidents, reported or not.

- Discussing findings with pertinent employees. Inviting their comments, suggestions, and particular needs.
- Ensuring recommended corrections/changes are communicated and discussed.
- Following up on changes, corrections, and other actions necessary.

New Hire & Termination Procedures

Our company has in place new employee hiring procedures which will lower the risk of potential violence or harassment in the workplace.

Examples of procedures which can be further implemented include, yet are not limited to:

- Limiting access by former employees to the workplace.
- Requiring visitors to sign in and out at reception, wear identification badges, or be escorted.
- Increasing parking lot illumination or providing escorts and/or guards.
- Locking doors that lead from reception areas to work areas.
- Adding surveillance cameras, panic buttons, or metal detectors.

As part of our risk assessment procedures our company has put in place a screening procedure for the hiring of new employees. Hiring the right person, no matter the position, is an important step in preventing workplaces violence.

The following steps are considered during the hiring process, yet are not limited to these:

- Checking all work history statements made on job applications. This may be done internally or by an outside service.
- Developing open-ended job interview questions that help your interviewer make the most thorough assessments of candidates possible.
- Having an experienced interviewer or team conduct two interviews of every applicant, including those for entry-level jobs.
- Developing a screening system that is equitable, that allows our company to weigh potential liability.
- Using drug screening when it's felt necessary or required.
- Screening contract personnel assigned to work at our facility.
- Conversely, if our company assigns workers to other organizations, we consider their safety and security requirements.

Not all individuals distraught about job termination or layoff become violent; however, firings the cause of most of the violence that occurs in the workplace.

Management and supervisors will be trained to identify potential problems among workers, administer discipline as necessary, and terminate employees without causing the terminated employee to feel that the loss of this job is the "end of the line." Open communication from management can help employees facing termination for whatever reason.

Conducting exit interviews when employees retire, quit, or are transferred or terminated are also used to help identify potential violence-related problems.

All Ohio Sealants Inc. understands that violence may best be prevented by appropriate workplace security measures and caring for the people who work for our company through communication, adequate training, and a system for reporting and following up on incidents.

Training

Training and education cannot be over-emphasized as a means of learning workplace violence prevention procedures. Knowledge of the appropriate procedures and rules, and how and when to function under these procedures, is essential to personal safety.

Our Company has implemented these training procedures for its management and employees.

Managers and Supervisors will be trained in:

- The Company's Workplace Violence Prevention Program.
- Communication skills.
- Recognition of aggressive behavior.
- Dealing with employee layoffs, job terminations, and discipline; how to assess the violence potential of individuals; and how to take appropriate measures, such as arranging security.
- Violence prevention, our company's security procedures, and response procedures.
- Addressing problems and conflict promptly.

Employee Training Procedures:

- All new employees will read and understand our policies and procedures, and will review them regularly.
- New employees will be provided orientation training and will be furnished information and literature covering the company's Workplace Violence Prevention Program and Code of Safe Practices.
- This orientation training will be provided prior to the employee's exposure to a hostile work environment.
- Appropriate individual job/task training will be provided.

Emergency Communication Plan

All Ohio Sealants Inc. has adopted the following elements as our Internal Emergency Communication Plan:

- Employees have a means of alerting other workers of a dangerous situation and be able to provide information requested by emergency responders.
- A list of contacts, evacuation plans, and building plans where they're available to emergency responders (Company Emergency Action Plan).
- Keeping important phone numbers in several places (including off-site locations), available to all appropriate managers and employees.
- Encouraging victims of threats and violence outside the workplace to notify their supervisor about such incidents. Management will provide information (and a description or picture of the alleged threatener) to receptionists and other necessary personnel on a need-to-know basis and tell them what actions they should take if that individual seeks entry to the workplace or seeks contact with the employee involved.
- For environments with greater security risks, further measures may be added on a case by case basis.

Incident Reporting

All Ohio Sealants Inc. trains its management and employees in knowing how and where to report violent acts or threats of violence. Our policy requires employees to report all threats or incidents of violence.

The following guidelines are used in a threat-incident report, which management will use to assess the safety of the workplace and to decide on a plan of action:

- Name of the person who made the threat and that person's relationship to the company and to the threatened party.
- Names of victims or potential victims.
- When and where the incident occurred and how it ended.
- What happened immediately prior to the incident and what may have contributed to the incident.
- The specific language of the threat.
- Behavior that indicates an intention to carry out the threat.
- A description of the threat-maker and his or her emotional state.
- Names of others directly involved and actions they took.
- Names of witnesses.
- What happened to involved parties after the incident.
- Names of supervisory staff involved and their response.
- Steps that have been taken to prevent the threat from being carried out.
- Suggestions for preventing such incidents.

Incident Response

All Ohio Sealants Inc. has adopted the following procedures for incident response. These procedures are subject to evaluation and change to ensure the safety and security of our employees.

- When an incident occurs, necessary resources are brought together, which may include help from outside the company.
- When a threat is made, available sources are consulted to help evaluate the level of risk posed by the threat-maker.
- When appropriate, fitness-for-duty evaluations are obtained for employees exhibiting seriously dysfunctional behaviors at the workplace.
- When a threat has been made or an incident has occurred, the situation is evaluated and, if warranted, potential victims and/or the police will be notified.
- All Ohio Sealants Inc. respects the privacy and confidentiality rights of employees during investigations.
- Workplace risks are reviewed to determine whether additional security measures should be taken after a threat or violent incident.
- Increased worksite protection will be provided when threats of violence have been made, such as additional police or security patrols.
- Those who might be affected if the threat-maker carries out his or her threat are promptly notified.
- Increased protection to threatened employees is considered, such as new phone numbers, relocation, loan of a cellular phone, or a quick-response distress button.
- Potential victims are counseled on options available to them, such as obtaining a restraining order.

General Communication / Workplace Procedures

These guidelines will be used to assist in training management and employees in the implementation of our program:

- BE POLITE.
- Do not get excited.
- Do not argue.
- Request a supervisor when feeling stressed or pressured.
- Utilize all training procedures.
- Report all incidents to the appropriate supervisor.
- Be observant of "strangers" in work areas.
- Be observant of persons with packages and other abnormalities.
- Escort the clients to their destination.
- Identify and communicate previous aggressive behavior or threats.
- Program emergency phone numbers into the telephone.
- Maintain a log of incidents with all relevant information.
- Utilize the "buddy system" when confronted with aggressive behavior.
- Interact in open and public areas with potentially violent persons.
- Request counseling after a stressful incident.
- Inform co-workers/supervisor of activity itinerary.
- Provide escorts for potential victims outside of the controlled work area.

Warning signs of potentially violent individuals:

- Written, oral, or implied threats or intimidation.
- Fascination with weaponry or acts of violence.
- Theft or sabotage of projects or equipment.
- Alcohol or drug abuse in the workplace.
- Expressions of hopelessness or heightened anxiety.
- Intention to hurt self or others.
- Lack of concern for the safety of others.
- Externalization of blame.
- Irrational beliefs and ideas.
- Romantic obsession.
- Displays of excessive or unwarranted anger.
- Feelings of victimization.
- Inability to take criticism.
- New or increased sources of stress at home or work.
- Productivity and/or attendance problems.

What to do

- Project calmness. Move and speak slowly, quietly, and confidently.
- Listen attentively and encourage the person to talk.
- Let the speaker know that you are interested in what he or she is saying.
- Maintain a relaxed yet attentive posture.
- Acknowledge the person's feelings and indicate that you can see he is upset.
- Ask for small, specific favors such as asking the person to move to a quieter area.
- Establish ground rules. State the consequences of violent or threatening behavior.
- Employ delaying tactics that give the person time to calm down. For example, offer a glass of water.
- Be reassuring and point out choices.
- Help the person break down big problems into smaller, more manageable problems.
- Accept criticism. When a complaint might be true, use statements such as; "You're probably right" or "It was my fault."
- If the criticism seems unwarranted, ask clarifying questions.
- Arrange yourself so that your exit is not blocked.
- Make sure there are three to six feet between you and the other person.

What not to do

- Do not make sudden movements that may seem threatening.
- Do not speak rapidly, raise your volume, or use an accusatory tone.
- Do not reject all demands.
- Do not make physical contact, jab your finger at the other person, or use long periods of eye contact.
- Do not pose in challenging stances: directly opposite someone, hands on hips, or with arms crossed.
- Do not challenge, threaten, or dare the individual. Never belittle the other person.
- Do not criticize or act impatient.
- Do not attempt to bargain with a threatening individual.
- Do not try to make the situation seem less serious than it is.
- Do not make false statements or promises you cannot keep.
- Do not try to impart a lot of technical or complicated information when emotions are high.
- Do not take sides or agree with distortions.
- Do not invade the individual's personal space.

NOTE: In the "Attachments" Chapter of this Injury & Illness Prevention Program you will find a master copy of the following form for Company use:

- Violent Incident Report Form
- Suspect & Vehicle Identification Sheet
- Employee Incident Report
- Record of Employee Training

Sexual Harassment Company Policy

It is this Company's Policy that illegal sexual discrimination, unwelcome sexual advances, requests for sexual favors, and any other verbal, visual, or physical conduct of a sexual nature is strictly prohibited.

Requiring coworkers, subordinate employees, or prospective employees to submit to conduct of this nature, explicitly or implicitly, as a term or condition of employment, or used as a basis for any employment decisions is forbidden.

Any and all behavior that has the purpose or effect of unreasonably interfering with an individual's work performance, or creating an intimidating, hostile, or offensive work environment is hereby banned.

Sexual harassment can occur in a variety of circumstances, including but not limited to:

- The victim as well as the harasser may be a woman or a man. The victim does not have to be of the opposite sex.
- The harasser can be the victim's supervisor, an agent of the employer, a supervisor in another area, a co-worker, or a non-employee.
- The victim does not have to be the person harassed but could be anyone affected by the offensive conduct.
- Unlawful sexual harassment may occur without economic injury to or discharge of the victim.
- The harasser's conduct must be unwelcome.

Prevention is the best tool to eliminate sexual harassment in the workplace. Appropriate managers have been designated, rather than a direct supervisor, and other alternative routes provided to receive the filing of formal complaints of sexual harassment. If possible, it is requested that any victimized employee attempt to informally resolve a sexual harassment issue by directly informing the harasser that the conduct is unwelcome and must stop. If informal resolution is unsuccessful, the victim should use the formal complaint form and submit it to the designated manager of their choice. This Company will take immediate and appropriate action when any employee files a formal complaint.

This Company recognizes that the question of whether a particular course of conduct constitutes sexual harassment requires a factual determination. The Company also recognizes that false accusations of sexual harassment can have serious effects on innocent persons. If an investigation results in a finding that a person who has accused another of sexual harassment has maliciously or recklessly made false accusations, the accuser will be subject to appropriate sanctions, including discharge.

When investigating allegations of sexual harassment, this Company will look at the whole record: the circumstances, such as the nature of the sexual advances, and the context in which the alleged incidents occurred. A determination on the allegations is made from the facts on a case-by-case basis. **It is this Company's Policy that sexual harassment will not be tolerated.**

NOTE: In the “Attachments” Chapter of this Injury & Illness Prevention Program you will find a master copy of the following form for Company use:

- Sexual Harassment Complaint Form

Notes:

Chapter 10

Hazard Communication Program

§1926.59 – Hazard Communication

Policy Statement

All Ohio Sealants Inc. is committed to the safety and health of its employees. To identify and control hazards presented by chemicals in the workplace, All Ohio Sealants Inc. will have in place a hazard communication program (HCP) to provide information to employees about any hazardous materials they are exposed to.

If All Ohio Sealants Inc. employees are exposed to any hazardous chemical, All Ohio Sealants Inc. designates Keith Maxey to ensure a written HCP is created, communicated to all employees, and maintained according to all applicable regulations, standards and industry best practices.

Employer Responsibilities

It is the responsibility of All Ohio Sealants Inc. (through Keith Maxey) to:

- Establish a hazard communication program if employees work with or around any hazardous or toxic substances;
- Ensure that proper safeguards are in place to ensure the safety of personnel working with or around hazardous chemicals;
- Ensure all hazardous chemicals in the workplace are labeled and have a complete safety data sheet on file and available employees;
- Ensure every employee is provided training covering the hazard communication program;
- Provide support for the implementation of HCP; and
- Review the HCP at least annually to evaluate the effectiveness of the program.

Safety Committee Responsibilities

It is the responsibility of the All Ohio Sealants Inc. safety committee to:

- Assist in the creation and implementation of the All Ohio Sealants Inc. hazard communication program;
- Assist in the development and delivery of HCP training; and
- Identify issues of non-compliance and hazards related to the use of hazardous chemicals.
- Recommend steps to promote safety compliance and adherence to all safety and health policy; and
- Provide an avenue for employees to share concerns and recommend changes regarding chemicals in the workplace to help ensure a safer work environment.

Employee Responsibilities

Every All Ohio Sealants Inc. employee is expected to:

- Follow safety policy and adhere to all precautions and safety requirements when working with or around hazardous chemicals;
- Understand the hazards of the chemicals in the workplace, reviewing Safety Data Sheets before using any hazardous chemical;

- Understand how to lessen or prevent exposure to hazardous chemicals through safe work practices and use of personal protective equipment;
- Understand emergency procedures to follow in the event of exposure to these chemicals;
- Verify the proper labeling of chemicals at the worksite, and the presence of SDSs for each;
- Report any deficiencies in hazard communication as soon as safely possible to his or her supervisor; and
- Attend and participate actively in safety trainings.

Training

All Ohio Sealants Inc. will ensure every employee is provided training covering the hazard communication program. This training will be provided at no cost to the employee during working hours.

All Ohio Sealants Inc. will use only training material that is appropriate in content and vocabulary to educational level, literacy, and language of employees.

All Ohio Sealants Inc. will provide training on hazardous chemicals in their work area at the time of assignment and whenever a new hazard is introduced to the work area.

Keith Maxey will ensure that all employees at All Ohio Sealants Inc. are informed and trained in the following minimum elements for hazard communication:

- The requirements of regulatory bodies, industry standards and best safety practices regarding hazardous chemicals;
- Operations in the employee's work area that involve hazardous chemicals;
- The availability and location of the written HCP, list of hazardous chemicals, and safety data sheets (SDSs);
- How to detect the presence or release of a hazardous chemical in the work area;
- The classified and unclassified hazards of chemicals in the work area;
- Measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented for employee protection; and
- The details of the HCP including an explanation of all labels and SDSs, and how employees can obtain and use the appropriate hazard information. Training must include the order of the information on the SDS and how to obtain and use the hazard information.

Training records will include the following information:

- The dates of the training sessions.
- The contents or a summary of the training sessions.
- The names and qualifications of persons conducting the training.
- The names and job titles of all persons attending the training sessions.

Employee training records will be maintained for 3 years from the date on which the training occurred.

Hazard Communication Program

The hazard communication program (HCP) describes how All Ohio Sealants Inc. will meet all applicable requirements regarding hazardous chemical labeling, material safety data sheets and employee information and training.

The HCP also will include the following:

- A list of all chemicals known to present a hazard to All Ohio Sealants Inc. employees; and
- Methods All Ohio Sealants Inc. will use to inform employees of hazards presented by non-routine tasks; and
- Methods All Ohio Sealants Inc. will use to inform employees of hazards associated with chemicals contained in unlabeled pipes in their work areas.

All Ohio Sealants Inc. will rely on the evaluation of the chemical manufacturer or importer of any hazardous chemicals at the worksite to provide the identifying and safety information required for the HCP.

Labels

All hazardous material containers at All Ohio Sealants Inc. will be labeled, tagged or marked with the following:

- The product signifier;
- Signal word;
- Hazard statement(s);
- Pictogram(s);
- Precautionary statement(s); and
- Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party.

For unclassified hazards, the label requires supplementary information, a description of the unclassified hazards and appropriate precautionary measures to ensure safe handling and use.

Alternatively, hazardous material containers at All Ohio Sealants Inc. can be labeled, tagged or marked with the product identifier and words, pictures, symbols, or combination thereof, to provide at least general information regarding the hazards of the chemicals, and which, in conjunction with other information immediately available to employees under the HCP, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

In lieu of affixing labels to individual containers, the All Ohio Sealants Inc. HCP may rely on signs, placards, process sheets, batch tickets, operating procedures or similar written materials, as long as the alternative method provides workers with the same information.

A container for a hazardous substance into which the substance has been transferred for immediate use does not have to be labeled.

Labels and other forms of warnings will not be removed or defaced. All Ohio Sealants Inc. will ensure every label is legible in English, but may present the chemical's hazard information in another language, as long as it is also present in English.

Safety Data Sheets

All Ohio Sealants Inc. will maintain at least English-language copies of SDSs for each hazardous chemical it uses, which will include the following section numbers and headings, and the information about the chemical associated with each:

- Section 1, Identification;
- Section 2, Hazard(s) identification;
- Section 3, Composition/information on ingredients;
- Section 4, First-aid measures;
- Section 5, Fire-fighting measures;
- Section 6, Accidental release measures;
- Section 7, Handling and storage;
- Section 8, Exposure controls/personal protection;
- Section 9, Physical and chemical properties;
- Section 10, Stability and reactivity;
- Section 11, Toxicological information.
- Section 12, Ecological information;
- Section 13, Disposal considerations;
- Section 14, Transport information;
- Section 15, Regulatory information
- Section 16, Other information, including date of preparation or last revision.

Keith Maxey will maintain copies of safety data sheets for each hazardous chemical in the workplace and shall ensure they are readily accessible during each work shift to employees when they are in their work area(s).

Where employees must travel between workplaces during a workshift, SDSs may be kept at the primary workplace facility.

Keith Maxey will make SDSs readily available, upon request, to any employee (or their designated representatives) and any regulatory official with the authority to demand them.

Employee Information and Training

The HCP will be made available upon request to any employee (or their designated representatives) and any regulatory official with the authority to demand it.

All Ohio Sealants Inc. will provide every employee with effective information and training on hazardous chemicals in their work area at the time of initial assignment and whenever a new chemical hazard the employees have not previously been trained about is introduced into their work area. Information and training may be designed to cover categories of hazards or specific chemicals.

Special Considerations

Multi-Employer Workplaces

If employees of another employer may be exposed to hazardous chemicals, All Ohio Sealants Inc. will ensure the HCP includes the methods to do the following for the other employers on the site:

- Provide onsite access to SDSs for each hazardous chemical to which their employees may be exposed;
- Inform their employees of any precautionary measures that need to be taken for worker protection during normal operating conditions and foreseeable emergencies; and
- Inform their employees of the labeling system used in the workplace.

Multiple Workplaces

If employees must travel between workplaces during a shift, the HCP may be kept at only the primary workplace facility.

Non-routine Tasks

Before employees begin work on hazardous non-routine tasks, the appropriate supervisor will give affected employees information about hazardous chemicals to which the employee may be exposed during such activity. This information will include the following:

- Specific chemical hazards;
- Protective/safety measures employees can take; and
- Measures All Ohio Sealants Inc. has taken to reduce the hazards.

Hazardous Chemicals in Unlabeled Pipes

Though regulations do not require pipes for hazardous chemicals to be labeled, if there are hazards associated with chemicals in pipes in the work area, the affected employees' supervisor will provide information about that chemical and its hazards as though the chemical was being used in that area.

Policy Review

All aspects of this policy and the All Ohio Sealants Inc. hazard communication program are subject to annual review by Keith Maxey and the safety committee to ensure the effectiveness of the policy, to guarantee a safe working environment for All Ohio Sealants Inc. employees, and to reflect any regulatory changes to which the policy must respond.

On the following pages, please find the following documents:

- Hazardous Chemical Labels
- Chemicals Known to Present a Hazard
- Hazard Communication Training Acknowledgement
- Hazard Communication Training Documentation

These forms may be reproduced freely by All Ohio Sealants Inc. for the purposes of implementing and maintaining a safety and health program.

HAZARDOUS CHEMICAL

NAME OF CHEMICAL:

____

Physical Hazards:

____

____

Health Hazards, Target Organs, or Systems:

____

____

Optional Information, such as Personal Protective Equipment or Safe Handling:

____

____

HAZARDOUS CHEMICAL

NAME OF CHEMICAL:

____

Physical Hazards:

____

____

Health Hazards, Target Organs, or Systems:

____

____

Optional Information, such as Personal Protective Equipment or Safe Handling:

____

____

HAZARDOUS CHEMICAL

NAME OF CHEMICAL:

____

Physical Hazards:

____

____

Health Hazards, Target Organs, or Systems:

____

____

Optional Information, such as Personal Protective Equipment or Safe Handling:

____

____

HAZARDOUS CHEMICAL

NAME OF CHEMICAL:

____

Physical Hazards:

____

____

Health Hazards, Target Organs, or Systems:

____

____

Optional Information, such as Personal Protective Equipment or Safe Handling:

____

____

Chemicals Known to Present a Hazard

Chemical name	SDS on File?		Labeled?		Training Program?	
	Yes	No	Yes	No	Yes	No

HAZARD COMMUNICATION TRAINING ACKNOWLEDGEMENT

This is to certify that I have been trained and informed about the hazards and precautions associated with the use of hazardous chemicals in my work as required in the All Ohio Sealants Inc. written hazard communication program.

To confirm my understanding of such training and instructions, the Safety Coordinator has reviewed them with me and he/she indicated his/her satisfaction by checking the box before each of the topics listed below:

- ☐ Overview of the requirements contained in the OSHA Hazardous Chemical Communication Rule
- ☐ Chemicals present in my workplace operations.
- ☐ Locations and availability of our written hazard communication program and the SDS for the hazardous chemicals.
- ☐ Physical and health effects of these hazardous chemicals.
- ☐ Methods used to determine the presence or release of hazardous chemicals.
- ☐ How to lessen or prevent exposure to these hazardous chemicals through safe work practices and use of personal protective equipment.
- ☐ Steps All Ohio Sealants Inc. has taken to lessen or prevent exposure to these chemicals.
- ☐ Safety emergency procedures to follow in the event of exposure to these chemicals.
- ☐ How to read container labels and interpret SDS to obtain appropriate hazard information.

Employee's Name Signature Date

Trainer's Name Signature Date

Note to employee: This form will be made a part of your personnel file. Please read and understand its contents before signing.

Trainer (*include qualifications)*:
Date:
Content of Training:

Attendees	
Print Name	**Signature**

(Retain at least 3 years)

Notes:

Chapter 11

Personal Protective Equipment

29 CFR-1910.132 - Personal Protective Equipment

The following list of personal protective equipment (PPE) is available to all employees and will be used as required by Federal, State, or Local regulations:

Hard hats, safety glasses, gloves, harnesses, lanyards, and ear protection.

Employees can request PPE equipment from Keith Maxey.

Policy Statement

All Ohio Sealants Inc. has implemented this safety program to ensure the protection of personnel from hazards on the job that may be safeguarded against by the proper use of Personal Protective Equipment. Keith Maxey is the supervisor responsible for ensuring the following work practices are enforced.

Keith Maxey will ensure that all employees are properly trained in the recognition and assessment of hazards and hazardous situations, the proper selection and use of personal protective equipment required for the hazard and to avoid, prevent, or abate such hazards.

Employees will be trained on initial hiring to use, maintain, clean and disinfect, store, and service PPE properly. Employees will receive refresher training on PPE at least annually, or as work requirements, changing job assignments, changing equipment, or environment warrants it. Any employee who demonstrates a lack of knowledge or understanding of any aspect of PPE use or maintenance will be re-trained. An employee must verify his/her understanding of training content as a condition of employment.

Keith Maxey will do a hazard assessment of each jobsite prior to commencement of work to ascertain if hazards are present or likely to be encountered, what engineering controls may be implemented to minimize hazards, and what PPE is necessary for the performance of the job. Affected employees will be notified of hazards, engineering controls needed, and PPE required.

PPE will be provided for all work required by All Ohio Sealants Inc. and employees are required by Company Policy to use only proper company PPE at all times when required on the job or on company property. Failure to use PPE will result in disciplinary action against the violating employee.

PPE will be issued and fitted to each affected employee individually. Employees must demonstrate proficiency in donning and doffing equipment, and proper techniques of cleaning and maintaining their respective equipment.

PPE must be used, stored, and maintained in a sanitary condition. All PPE must be cleaned, disinfected, and stored according to manufacturer's recommendations.

Defective or damaged PPE will be immediately tagged "OUT OF SERVICE", removed from service, and replaced with serviceable equipment. PPE will be inspected by the individual employee at the beginning of each work shift.

OSHA Personal Protective Equipment Standards

Introduction

The Occupational Safety and Health Administration (OSHA) require that employers protect their employees from workplace hazards that can cause injury. Controlling a hazard at its source is the best way to protect employees. Depending on the hazard or workplace conditions, OSHA recommends the use of engineering or work practice controls to manage or eliminate hazards to the greatest extent possible. For example, building a barrier between the hazard and the employees is an engineering control; changing the way in which employees perform their work is a work practice control. When engineering, work practice and administrative controls are not feasible or do not provide sufficient protection, employers must provide "Personal Protective Equipment" (PPE) to their employees and ensure its use. Personal protective equipment, commonly referred to as "PPE", is equipment worn to minimize exposure to a variety of hazards. Examples of PPE include such items as gloves, foot and eye protection, protective hearing devices (earplugs, muffs) hard hats, respirators and full body suits.

This information will help both employers and employees do the following:

- Understand the types of PPE.
- Know the basics of conducting a "Hazard Assessment" of the workplace.
- Select appropriate PPE for a variety of circumstances.
- Understand what kind of training is needed in the proper use and care of PPE.

The following information is general in nature and does not address all workplace hazards or PPE requirements. The information, methods and procedures in this guide are based on the OSHA requirements for PPE.

Important Note: This guide does not address PPE requirements related to respiratory protection as this information is extensive and is covered in detail in the "Respiratory Protection" Chapter.

Requirement for PPE

To ensure the greatest possible protection for employees in the workplace, the cooperative efforts of both employers and employees will help in establishing and maintaining a safe and healthful work environment.

In general, employers are responsible for:

- Performing a "hazard assessment" of the workplace to identify and control physical and health hazards.
- Identifying and providing appropriate PPE for employees.
- Training employees in the use and care of the PPE.
- Maintaining PPE, including replacing worn or damaged PPE.
- Periodically reviewing and evaluating the effectiveness of the PPE program.

In general, employees should:

- Properly wear PPE.
- Attend training sessions on PPE.
- Care for, clean, and maintain PPE.
- Inform a supervisor of the need to repair or replace PPE.

Specific requirements for PPE are presented in many different OSHA standards, published in 29 CFR. Some standards require that employers provide PPE at no cost to the employee while others simply state that the employer must provide PPE.

The Hazard Assessment

A first critical step in developing a comprehensive safety and health program is to identify physical and health hazards in the workplace. This process is known as a "Hazard Assessment." Potential hazards may be physical or health-related and a comprehensive hazard assessment should identify hazards in both categories. Examples of physical hazards include moving objects, fluctuating temperatures, high intensity lighting, rolling or pinching objects, electrical connections, and sharp edges. Examples of health hazards include overexposure to harmful dusts, chemicals, or radiation.

The hazard assessment should begin with a walk-through survey of the facility to develop a list of potential hazards in the following basic hazard categories:

- Impact
- Penetration
- Compression (roll-over)
- Chemical
- Heat/Cold
- Harmful Dust
- Light (optical) Radiation
- Biological

In addition to noting the basic layout of the workplace and reviewing any history of occupational illnesses or injuries, things to look for during the walk-through survey include:

- Sources of electricity.
- Sources of motion such as machines or processes where movement may exist that could result in an impact between personnel and equipment.
- Sources of high temperatures that could result in burns, eye injuries or fire.
- Types of chemicals used in the workplace.
- Sources of harmful dusts.
- Sources of light radiation, such as welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.
- The potential for falling or dropping objects.
- Sharp objects that could poke, cut, stab or puncture.
- Biologic hazards such as blood or other potentially infected material.

When the walk-through is complete, supervisors should organize and analyze the data so that it may be efficiently used in determining the proper types of PPE required in the workplace. The employer should become aware of the different types of PPE available and the levels of protection offered. It is definitely a good idea to select PPE that will provide a level of protection greater than the minimum required to protect employees from hazards. The workplace should be periodically reassessed for any changes in conditions, equipment, or operating procedures that could affect occupational hazards. This periodic reassessment should also include a review of injury and illness records to spot any trends or areas of concern and taking appropriate corrective action. The suitability of existing PPE, including an evaluation of its condition and age, should be included in the reassessment.

Documentation of the hazard assessment is required through a written certification that includes the following information:

- Identification of the workplace evaluated.
- Name of the person conducting the assessment.
- Date of the assessment.
- Identification of the document certifying completion of the hazard assessment.

Selecting PPE

All PPE clothing and equipment should be of safe design and construction, and should be maintained in a clean and reliable fashion. Employers should take the fit and comfort of PPE into consideration when selecting appropriate items for their workplace. PPE that fits well and is comfortable to wear will encourage employee use of PPE.

Most protective devices are available in multiple sizes and care should be taken to select the proper size for each employee. If several different types of PPE are worn together, make sure they are compatible. If PPE does not fit properly, it can make the difference between being safely covered or dangerously exposed. It may not provide the level of protection desired and may discourage employee use.

OSHA requires that many categories of PPE meet or be equivalent to standards developed by the American National Standards Institute (ANSI). ANSI has been preparing safety standards since the 1920s, when the first safety standard was approved to protect the heads and eyes of industrial workers. Employers who need to provide PPE in the categories listed below must make certain that any new equipment procured meets the cited ANSI standard. Existing PPE stocks must meet the ANSI standard in effect at the time of its manufacture or provide protection equivalent to PPE manufactured to the ANSI criteria. Employers should inform employees who provide their own PPE of the employer's selection decisions and ensure that any employee-owned PPE used in the workplace conforms to the employer's criteria, based on the hazard assessment, OSHA requirements, and ANSI standards.

OSHA requires PPE to meet the following ANSI standards:

- Eye and Face Protection: ANSI Z87.1-1989
- Head Protection: ANSI Z89.1-1986.
- Foot Protection: ANSI Z41.1-1991.

For hand protection, there is no ANSI standard for gloves but OSHA recommends that selection be based upon the tasks to be performed and the performance and construction characteristics of the glove material. For protection against chemicals, glove selection must be based on the chemicals encountered, the chemical resistance, and the physical properties of the glove material.

Training Employees in the Proper Use of PPE

Employers are required to train each employee who must use PPE. Employees must be trained to know at least the following:

- When PPE is necessary.
- What PPE is necessary.
- How to properly put on, take off, adjust and wear the PPE.
- The limitations of the PPE.
- Proper care, maintenance, useful life and disposal of PPE.

Employers should make sure that each employee demonstrates an understanding of the PPE training as well as the ability to properly wear and use PPE before they are allowed to perform work requiring the use of the PPE. If an employer believes that a previously trained employee is not demonstrating the proper understanding and skill level in the use of PPE, that employee should receive retraining.

Other situations that require additional or retraining of employees include the following circumstances: changes in the workplace or in the type of required PPE that make prior training obsolete.

Eye and Face Protection

OSHA requires employers to ensure that employees have appropriate eye or face protection if they are exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, potentially infected material, or potentially harmful light radiation.

Employers must be sure that their employees wear appropriate eye and face protection and that the selected form of protection is appropriate to the work being performed and properly fits each worker exposed to the hazard.

Prescription Lenses

Employers must make sure that employees with corrective lenses either wear eye protection that incorporates the prescription into the design or wear additional eye protection over their prescription lenses. It is important to ensure that the protective eyewear does not disturb the proper positioning of the prescription lenses so that the employee's vision will not be inhibited or limited. Also, employees who wear contact lenses must wear eye or face PPE when working in hazardous conditions.

Eye Protection for Exposed Workers

OSHA suggests that eye protection be routinely considered for use by carpenters, electricians, machinists, mechanics, millwrights, plumbers and pipefitters, sheet metal workers and tinsmiths, assemblers, sanders, grinding machine operators, sawyers, welders, laborers, chemical process operators and handlers, and timber cutting and logging workers. Employers of workers in other job categories should decide whether there is a need for eye and face PPE through a hazard assessment.

Examples of potential eye or face injuries include:

- Dust, dirt, metal or wood chips entering the eye from activities such as chipping, grinding, sawing, hammering, the use of power tools or even strong wind forces.
- Chemical splashes from corrosive substances, hot liquids, solvents or other hazardous solutions.
- Objects swinging into the eye or face, such as tree limbs, chains, tools, or ropes.
- Radiant energy from welding, harmful rays from the use of lasers or other radiant light (as well as heat, glare, sparks, splash and flying particles).

Types of Eye Protection

Selecting the most suitable eye and face protection for employees should take into consideration the following elements:

- Ability to protect against specific workplace hazards.
- Should fit properly and be reasonably comfortable to wear.
- Should provide unrestricted vision and movement.
- Should be durable and cleanable.
- Should allow unrestricted functioning of any other required PPE.

The eye and face protection selected for employee use must clearly identify the manufacturer. Any new eye and face protective devices must comply with ANSI Z87.1-1989 or be at least as effective as this standard requires.

An employer may choose to provide one pair of protective eyewear for each position rather than individual eyewear for each employee. If this is done, the employer must make sure that employees disinfect shared protective eyewear after each use. Protective eyewear with corrective lenses may only be used by the employee for whom the corrective prescription was issued and may not be shared among employees.

Some of the most common types of eye and face protection include:

Safety Spectacles — These protective eyeglasses have safety frames constructed of metal or plastic and impact-resistant lenses. Side shields are available on some models.

Goggles — These are tight-fitting eye protection that completely cover the eyes, eye sockets and the facial area immediately surrounding the eyes and provide protection from impact, dust and splashes. Some goggles will fit over corrective lenses.

Welding shields — Constructed of vulcanized fiber or fiberglass and fitted with a filtered lens, welding shields protect eyes from burns caused by infrared or intense radiant light; they also protect both the eyes and face from flying sparks, metal spatter and slag chips produced during welding, brazing, soldering and cutting operations.

OSHA requires filter lenses to have a shade number appropriate to protect against the specific hazards of the work being performed in order to protect against harmful light radiation.

Laser safety goggles — These specialty goggles protect against intense concentrations of light produced by lasers. The type of laser safety goggles an employer chooses will depend upon the equipment and operating conditions in the workplace.

Face shields — These transparent sheets of plastic extend from the eyebrows to below the chin and across the entire width of the employee's head. Some are polarized for glare protection. Face shields protect against nuisance dusts and potential splashes or sprays of hazardous liquids but will not provide adequate protection against impact hazards. Face shields used in combination with goggles or safety spectacles will provide additional protection against impact hazards.

Each type of protective eyewear is designed to protect against specific hazards. Employers can identify the specific workplace hazards that threaten employees' eyes and faces by completing a hazard assessment as outlined in the earlier section.

Welding Operations

The intense light associated with welding operations can cause serious and sometimes permanent eye damage if operators do not wear proper eye protection. The intensity of light or radiant energy produced by welding, cutting or brazing operations varies according to a number of factors including the task producing the light, the electrode size and the arc current.

Head Protection

Employers must ensure that their employees wear head protection if any of the following apply:

- Objects might fall from above and strike them on the head.
- They might bump their heads against fixed objects, such as pipes or beams.
- There is a possibility of accidental head contact with electrical hazards.

Whenever there is a danger of objects falling from above, such as working below others who are using tools or working under a conveyor belt, head protection must be worn. Hard hats must be worn with the bill forward to protect employees properly.

In general, protective helmets or hard hats should do the following:

- Resist penetration by objects.
- Absorb the shock of a blow.
- Be water-resistant and slow burning.
- Have clear instructions explaining proper adjustment and replacement of the suspension and headband. Hard hats must have a hard outer shell and a shock-absorbing lining that incorporates a headband and straps that suspend the shell from 1 to 1 1/4 inches away from the head. This type of design provides shock absorption during an impact and ventilation during normal wear.

Protective headgear must meet ANSI Standard Z89.1-1986 (Protective Headgear for Industrial Workers) or provide an equivalent level of protection.

Types of Hard Hats

In addition to selecting protective headgear that meets ANSI standard requirements, employers should ensure that employees wear hard hats that provide appropriate protection against potential workplace hazards. It is important for employers to understand all potential hazards when making this selection, including electrical hazards. This can be done through a comprehensive hazard assessment and an awareness of the different types of protective headgear available.

Hard hats are divided into three industrial classes:

Class G (Old Class A) hard hats provide impact and penetration resistance along with limited voltage protection (up to 2,200 volts).

Class E (Old Class B) hard hats provide the highest level of protection against electrical hazards, with high-voltage shock and burn protection (up to 20,000 volts). They also provide protection from impact and penetration by flying/falling objects.

Class C hard hats provide lightweight comfort and impact protection but offer no protection from electrical hazards.

Another class of protective headgear on the market is called a "bump hat," designed for use in areas with low head clearance. They are recommended for areas where protection is needed from head bumps and lacerations. These are not designed to protect against falling or flying objects and are not ANSI approved. It is essential to check the type of hard hat employees are using to ensure that the equipment provides appropriate protection. Each hat should bear a label inside the shell that lists the manufacturer, the ANSI designation and the class of the hat.

Size and Care Considerations

Head protection that is either too large or too small is inappropriate for use, even if it meets all other requirements. Protective headgear must fit appropriately on the body and for the head size of each individual. Most protective headgear comes in a variety of sizes with adjustable headbands to ensure a proper fit (many adjust in 1/8-inch increments). A proper fit should allow sufficient clearance between the shell and the suspension system for ventilation and distribution of an impact. The hat should not bind, slip, fall off or irritate the skin.

Some protective headgear allows for the use of various accessories to help employees deal with changing environmental conditions, such as slots for earmuffs, safety glasses, face shields, and mounted lights. Optional brims may provide additional protection from the sun and some hats have channels that guide rainwater away from the face. Protective headgear accessories must not compromise the safety elements of the equipment.

Periodic cleaning and inspection will extend the useful life of protective headgear. A daily inspection of the hard hat shell, suspension system and other accessories for holes, cracks, tears, or other damage that might compromise the protective value of the hat is essential. Paints, paint thinners and some cleaning agents can weaken the shells of hard hats and may eliminate electrical resistance. Consult the helmet manufacturer for information on the effects of paint and cleaning materials on their hard hats. Never drill holes, paint, or apply labels to protective headgear as this may reduce the integrity of the protection. Do not store protective headgear in direct sunlight, such as on the rear window shelf of a car, since sunlight and extreme heat can damage them.

Helmets with any of the following defects should be immediately replaced:

- Perforation, cracking, or deformity of the brim or shell;

- Indication of exposure of the brim or shell to heat, chemicals, or ultraviolet light and other radiation (in addition to a loss of surface gloss, such signs include chalking or flaking). It is a good idea to always replace a hard hat if it sustains an impact, even if damage is not noticeable. Suspension systems are offered as replacement parts and should be replaced when damaged or when excessive wear is noticed. It is not necessary to replace the entire hard hat when deterioration or tears of the suspension systems are noticed.

Foot and Leg Protection

Situations where an employee should wear foot and/or leg protection include:

- When heavy objects or tools might roll onto or fall on the employee's feet.
- Working with sharp objects such as nails or spikes that could pierce the soles or uppers of ordinary shoes.
- Exposure to molten metal that might splash on feet or legs.
- Working on or around hot, wet, or slippery surfaces.
- Working when electrical hazards are present.

Safety footwear must meet ANSI minimum compression and impact performance standards in ANSI Z41-1991. All ANSI approved footwear has a protective toe and offers impact and compression protection, but the type and amount of protection is not always the same. Different footwear protects in different ways. Check the product's labeling or consult the manufacturer to make sure the footwear will protect the user from the hazards they face.

Foot and leg protection choices include the following:

Leggings protect the lower legs and feet from heat hazards such as molten metal or welding sparks. Safety snaps allow leggings to be removed quickly.

Metatarsal guards protect the instep area from impact and compression. Made of aluminum, steel, fiber or plastic, these guards may be strapped to the shoes.

Toe guards fit over the toes of regular shoes to protect the toes from impact and compression hazards. They may be made of steel, aluminum or plastic. Combination foot and shin guards protect the lower legs and feet, and may be used in combination with toe guards when greater protection is needed.

Safety shoes have impact-resistant toes and heat-resistant soles that protect the feet against hot work surfaces common in foundry and other hot metal industries. The metal insoles of some safety shoes protect against puncture wounds. Safety shoes may also be designed to be electrically conductive to prevent the buildup of static electricity in areas with the potential for explosive atmospheres or nonconductive to protect workers from workplace electrical hazards.

Special Purpose Shoes

Electrically conductive shoes provide protection against the buildup of static electricity. Employees working in explosive and hazardous locations such as explosives manufacturing facilities or grain elevators must wear conductive shoes to reduce the risk of static electricity buildup on the body that could produce a spark and cause an explosion or fire. Foot powder should not be used in conjunction with protective conductive footwear because it reduces the conductive ability of the shoes. Silk, wool, and nylon socks can produce static electricity and should not be worn with conductive footwear. Conductive shoes must be removed when the task requiring their use is completed.

Note: Employees exposed to electrical hazards must never wear conductive shoes. Electrical hazard, safety-toe shoes are nonconductive and will prevent the wearer's feet from completing an electrical circuit to the ground. These shoes can protect against open circuits of up to 600 volts in dry conditions and should be used in conjunction with other insulating equipment and additional precautions to reduce the risk of a worker becoming a path for hazardous electrical energy.

The insulating protection of electrical hazard, safety-toe shoes may be compromised if the shoes become wet, the soles are worn through, metal particles become embedded in the sole or heel, or workers touch conductive, grounded items.

Note: Nonconductive footwear must not be used in explosive or hazardous locations.

Foundry Shoes

In addition to insulating the feet from the extreme heat of molten metal, foundry shoes keep hot metal from lodging in shoe eyelets, tongues or other shoe parts. These snug-fitting leather or leather-substitute shoes have leather or rubber soles and rubber heels. All foundry shoes must have built-in safety toes.

Care of Protective Footwear

As with all protective equipment, safety footwear should be inspected prior to each use. Shoes and leggings should be checked for wear and tear at reasonable intervals. This includes looking for cracks or holes, separation of materials, broken buckles or laces. The soles of shoes should be checked for pieces of metal or other embedded items that could present electrical or tripping hazards. Employees should follow the manufacturers' recommendations for cleaning and maintenance of protective footwear.

Hand and Arm Protection

If a workplace hazard assessment reveals that employees face potential injury to hands and arms that cannot be eliminated through engineering and work practice controls, employers must ensure that employees wear appropriate protection. Potential hazards include skin absorption of harmful substances, chemical or thermal burns, electrical dangers, bruises, abrasions, cuts, punctures, fractures and amputations. Protective equipment includes gloves, finger guards and arm coverings, or elbow-length gloves.

Employers should explore all possible engineering and work practice controls to eliminate hazards and use PPE to provide additional protection against hazards that cannot be completely eliminated through other means.

Types of Protective Gloves

It is essential that employees use gloves specifically designed for the hazards and tasks found in their workplace because gloves designed for one function may not protect against a different function even though they may appear to be an appropriate protective device.

Factors that may influence the selection of protective gloves for a workplace:

- Type of chemicals handled.
- Nature of contact (total immersion, splash, etc.).
- Duration of contact.
- Thermal protection.
- Area requiring protection (hand only, forearm, or entire arm).
- Grip requirements (dry, wet, oily).
- Size and comfort.
- Abrasion/resistance requirements.

Gloves made from a wide variety of materials are designed for many types of workplace hazards.

In general, gloves fall into four groups:

- Gloves made of leather, canvas or metal mesh.
- Fabric and coated fabric gloves.
- Chemical- and liquid-resistant gloves.
- Insulating rubber gloves.

Leather, Canvas, or Metal-Mesh Gloves

Sturdy gloves made from metal mesh, leather, or canvas provide protection against cuts and burns. Leather or canvas gloves also protect against sustained heat. Leather gloves protect against sparks, moderate heat, blows, chips, and rough objects.

Aluminized gloves provide reflective and insulating protection against heat and require an insert made of synthetic materials to protect against heat and cold.

Aramid fiber gloves protect against heat and cold, are cut- and abrasive-resistant, and wear well.

Synthetic gloves of various materials offer protection against heat and cold are cut- and abrasive-resistant and may withstand some diluted acids. These materials do not stand up against alkalis and solvents.

Fabric and Coated Fabric Gloves

Fabric and coated fabric gloves are made of cotton or other fabric to provide varying degrees of protection.

Fabric gloves protect against dirt, slivers, chafing, and abrasions. They do not provide sufficient protection for use with rough, sharp or heavy materials. Adding a plastic coating will strengthen some fabric gloves.

Coated fabric gloves are normally made from cotton flannel with napping on one side. By coating the un-napped side with plastic, fabric gloves are transformed into general-purpose hand protection, offering slip-resistant qualities.

These gloves are used for tasks ranging from handling bricks and wire to chemical laboratory containers. When selecting gloves to protect against chemical exposure hazards, always check with the manufacturer or review the product literature to determine the glove's effectiveness against specific workplace chemicals and conditions.

Chemical- and Liquid-Resistant Gloves

Chemical-resistant gloves are made with different kinds of rubber: natural, butyl, neoprene, nitrile and fluorocarbon (viton); or various kinds of plastic: polyvinyl chloride (PVC), polyvinyl alcohol, and polyethylene. These materials can be blended or laminated for better performance. As a general rule, the thicker the glove material, the greater the chemical resistance; however, thick gloves may impair grip and dexterity, having a negative impact on safety.

Some examples of chemical-resistant gloves include:

Butyl gloves are made of a synthetic rubber and protect against a wide variety of chemicals, such as peroxide, rocket fuels, highly corrosive acids (nitric acid, sulfuric acid, hydrofluoric acid, and red-fuming nitric acid), strong bases, alcohols, aldehydes, ketones, esters, and nitro compounds. Butyl gloves also resist oxidation, ozone corrosion and abrasion, and remain flexible at low temperatures. Butyl rubber does not perform well with aliphatic and aromatic hydrocarbons and halogenated solvents.

Natural (latex) rubber gloves are comfortable to wear, which makes them a popular, general-purpose glove. They feature outstanding tensile strength, elasticity, and temperature resistance. In addition to resisting abrasions caused by grinding and polishing, these gloves protect workers' hands from most water solutions of acids, alkalis, salts, and ketones. Latex gloves have caused allergic reactions in some individuals and may not be appropriate for all employees. Hypoallergenic gloves, glove liners, and powderless gloves are possible alternatives for workers who are allergic to latex gloves.

Neoprene gloves are made of synthetic rubber and offer good pliability, finger dexterity, high density and tear resistance. They protect against hydraulic fluids, gasoline, alcohols, organic acids, and alkalis. They generally have chemical & wear resistance properties superior to those made of natural rubber.

Nitrile gloves are made of a copolymer and provide protection from chlorinated solvents such as trichloroethylene and perchloroethylene. Although intended for jobs requiring dexterity and sensitivity, nitrile gloves stand up to heavy use even after prolonged exposure to substances that cause other gloves to deteriorate. They offer protection when working with oils, greases, acids, caustics, and alcohols but are generally not recommended for use with strong oxidizing agents, aromatic solvents, ketones, and acetates.

Care of Protective Gloves

Protective gloves should be inspected before each use to ensure that they are not torn, punctured or made ineffective in any way. A visual inspection will help detect cuts or tears but a more thorough inspection by filling the gloves with water and tightly rolling the cuff towards the fingers will help reveal any pinhole leaks. Gloves that are discolored or stiff may also indicate deficiencies caused by excessive use or degradation from chemical exposure. Any gloves with impaired protective ability should be discarded and replaced. Reuse of chemical-resistant gloves should be evaluated carefully, taking into consideration the absorptive qualities of the gloves. A decision to reuse chemically-exposed gloves should take into consideration the toxicity of the chemicals involved and factors such as duration of exposure, storage, and temperature.

Body Protection

Employees who face possible bodily injury of any kind that cannot be eliminated through engineering, work practice, or administrative controls must wear appropriate body protection while performing their jobs. In addition to cuts and radiation, the following are examples of workplace hazards that could cause bodily injury:

- Temperature extremes.
- Hot splashes from molten metals and other hot liquids.
- Potential impacts from tools, machinery and materials.
- Hazardous chemicals.

Employers are required to ensure that their employees wear personal protective equipment only for the parts of the body exposed to possible injury. Examples of body protection include laboratory coats, coveralls, vests, jackets, aprons, surgical gowns, and full body suits.

If a hazard assessment indicates a need for full body protection against toxic substances or harmful physical agents, the clothing should be carefully inspected before each use, it must fit each worker properly, and it must function properly and for the purpose for which it is intended.

Protective clothing comes in a variety of materials, each effective against particular hazards, such as:

Paper-like fiber used for disposable suits protects against dust and splashes.

Treated wool and cotton adapts well to changing temperatures, is comfortable, fire-resistant, and protects against dust, abrasions, and irritating surfaces.

Duck is a closely woven cotton fabric that protects against cuts and bruises when handling heavy, sharp, or rough materials.

Leather is often used to protect against dry heat and flames.

Rubber, rubberized fabrics, neoprene, and plastics protect against certain chemicals and physical hazards. When chemical or physical hazards are present, check with the clothing manufacturer to ensure that the material selected will provide protection against the specific hazard.

Hearing Protection

Employee exposure to excessive noise depends upon a number of factors, including:

- The loudness of the noise as measured in decibels (dB).
- The duration of each employee's exposure to the noise.
- Whether employees move between work areas with different noise levels.
- Whether noise is generated from one or multiple sources.

Generally, the louder the noise, the shorter the exposure time before hearing protection is required. For instance, employees may be exposed to a noise level of 90 dB for 8 hours per day (unless they experience a Standard Threshold Shift) before hearing protection is required. On the other hand, if the noise level reaches 115 dB hearing protection is required if the anticipated exposure exceeds 15 minutes.

Noises are considered continuous if the interval between occurrences of the maximum noise level is one second or less. Noises not meeting this definition are considered impact or impulse noises (loud momentary explosions of sound) and exposures to this type of noise must not exceed 140 dB.

Examples of situations or tools that may result in impact or impulse noises are powder-actuated nail guns, a punch press, or drop hammers.

If engineering and work practice controls do not lower employee exposure to workplace noise to acceptable levels, employees must wear appropriate hearing protection. It is important to understand that hearing protectors reduce only the amount of noise that gets through to the ears. The amount of this reduction is referred to as attenuation, which differs according to the type of hearing protection used and how well it fits. Hearing protectors worn by employees must reduce an employee's noise exposure to within the acceptable limits.

Manufacturers of hearing protection devices must display the device's NRR on the product packaging. If employees are exposed to occupational noise at or above 85 dB averaged over an eight hour period, the employer is required to institute a hearing conservation program.

Some types of hearing protection include:

Single-use earplugs are made of waxed cotton, foam, silicone rubber, or fiberglass wool. They are self-forming and, when properly inserted, they work as well as most molded earplugs.

Pre-formed or molded earplugs must be individually fitted by a professional and can be disposable or reusable. Reusable plugs should be cleaned after each use.

Earmuffs require a perfect seal around the ear. Glasses, facial hair, long hair or facial movements such as chewing may reduce the protective value of earmuffs.

OSHA requires that employers protect their employees from workplace hazards that can cause injury. Controlling a hazard at its source is the best way to protect employees. Depending on the hazard or workplace conditions, OSHA recommends the use of engineering or work practice controls to manage or eliminate hazards to the greatest extent possible. For example, building a barrier between the hazard and the employees is an engineering control; changing the way in which employees perform their work is a work practice control. When engineering, work practice and administrative controls are not feasible or do not provide sufficient protection, employers must provide PPE to their employees and ensure its use.

Chapter 12

Hearing Conservation

29 CFR-§1910.95 – Occupational Noise Exposure

Policy Statement for Occupational Noise Exposure

All Ohio Sealants Inc. has implemented this policy to ensure that no employee is exposed to noise levels in excess of the action levels as listed in the following regulations. The following engineering controls and work practices will be enforced.

Upon initial hiring, employees will be trained in the hazards presented by excessive noise levels in the workplace, and the use and care of hearing protection devices. Training will be repeated annually and updated to reflect changes in personal protective equipment (PPE) and work requirements.

Employees will be required to wear hearing protection in work areas whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level (TWA) of 85 decibels measured on the A scale (slow response) or, equivalently, a dose of fifty percent.

Audio monitoring will be implemented if it is believed noise levels in work areas are approaching or exceed action level limits. If monitoring results indicate exposures equaling or exceeding safe limits, an employee will be included in a hearing conservation program. A baseline audiogram will be done within 6 months of exposure with the employee required to cease work and avoid high noise levels for at least 14 hours prior to the test. An audiogram will be performed at least annually on employees in the hearing conservation program, and if comparison indicates a standard threshold shift, the employee will be notified of this fact, in writing, within 21 days of the finding.

If a standard threshold shift occurs, the following procedures will be implemented:

- Employees not using hearing protectors will be fitted with hearing protectors, trained in their use and care, and required to use them.
- Employees already using hearing protectors will be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.
- The employee will be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if it is suspected that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.
- The employee will be informed of the need for an otological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected.

Audiometric evaluation and testing conducted by a licensed physician using the guidelines contained in OSHA 1910.95 (g), is available to all employees whose work requirements equals or exceeds an 8 hr. time-weighted average 85 decibels on a regular basis at no cost to the employee.

Hearing protection is available at no cost to all employees upon request from the job-site foreman or Company office.

A record of all audio testing and monitoring will be kept at the Company office and maintained as required. Evaluations will be done for suitable hearing protection from the noise levels encountered in the workplace. These records, as well as information on these OSHA regulations and appendices will be available to employees upon request.

Introduction

This chapter describes what you can do at your workplace to control noise that can damage your coworkers' or employees' hearing. It is about developing ***strategies*** to prevent or control workplace noise and is organized in four sections.

- ***Sound and Noise*** — gives you basic information about sound and noise.
- ***Controlling Workplace Noise*** — describes noise-control tools and suggests how to use them to develop a noise-control strategy for your workplace.
- ***Your Program for Success*** — shows you how to fit a noise-control strategy into a successful workplace safety-and-health program.
- ***Rules to Work by*** — gives you an overview of OSHA's hearing conservation requirements.

Sound and Noise: Overview

Sound

Sound is what you hear. Of course, a dog can hear sounds that you cannot and you can feel the sound of a jet as it prepares to take off. However, most of us, in our everyday lives, relate sound with what we hear.

Noise

Noise is sound that you do not want to hear. One person's noise may be another person's music, but there is a point at which noise becomes a problem for all of us: when it is so loud that it destroys our ability to hear sounds that we want to hear.

About this Section: This section tells you about the following topics:

- How is sound measured?
- How does hearing work?
- How loud is too loud?
- What happens when noise is too loud?
- How can I tell if my hearing is damaged?
- How can I tell when workplace noise is dangerous?

How is sound measured?

Sound is measured in two ways: ***decibels*** and ***frequency.***

Decibels

Decibels indicate the pressure of sound. Sound waves transfer that pressure from place to place and are measured in units on a *logarithmic* scale, shown below.

Decibels	***Increase in Sound Intensity***
100	10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 = 10,000,000,000
90	10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 = 1,000,000,000
80	10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 = 100,000,000
70	10 x 10 x 10 x 10 x 10 x 10 x 10 = 10,000,000
60	10 x 10 x 10 x 10 x 10 x 10 = 1,000,000
50	10 x 10 x 10 x 10 x 10 = 100,000
40	10 x 10 x 10 x 10 = 10,000
30	10 x 10 x 10 = 1,000
20	10 x 10 = 100
10	10 x 1 = 10
1	1

For each 10 decibel increase in sound level, you increase sound intensity by a factor of 10.

Frequency

Frequency is related to a sound's ***pitch*** and is measured in units called ***hertz (Hz),*** or cycles per second. The pitch of a sound — how high or low it seems — is how you perceive its frequency.

The higher a sound's pitch, the higher its frequency. Children usually have the best hearing and can often distinguish frequencies ranging from the lowest note on a pipe organ (about 20 Hz), to the trill of a dog whistle (20,000 Hz).

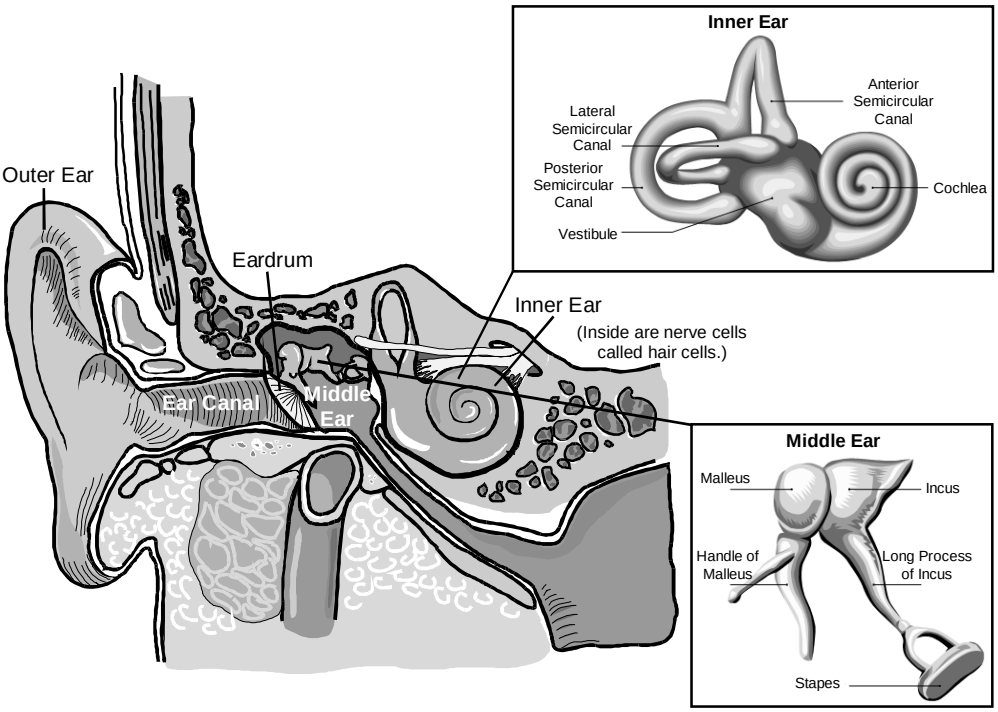
Human hearing is most sensitive to frequencies between 3,000 to 4,000 Hz. That is why those with damaged hearing have difficulty understanding higher-pitched voices and other sounds in the 3,000- to 4,000-Hz range.

How does hearing work?

The ear has three main parts: ***the outer ear***, ***middle ear***, and ***inner ear.*** The outer ear opens to the ear canal. The ***eardrum*** separates the ear canal from the middle ear. Small bones in the middle ear transfer sound to the inner ear. The inner ear contains the nerve endings that lead to the brain.

Waves and Vibrations

All sounds produce waves. Sound waves, which funnel through the opening in your outer ear, travel down the ear canal, and strike your eardrum, causing it to vibrate. The vibrations pass the small bones of the middle ear, which transmit them to sensory cells — called ***hair cells*** — in the inner ear. The vibrations become nerve impulses and go directly to the brain, which interprets the impulses as sound.



How loud is too loud?

Guidelines

People differ in their sensitivity to noise and there is no way to determine who is at risk for hearing damage. Factors such as sound pressure, frequency, and exposure time all play a role in determining whether noise is harmful or just annoying.

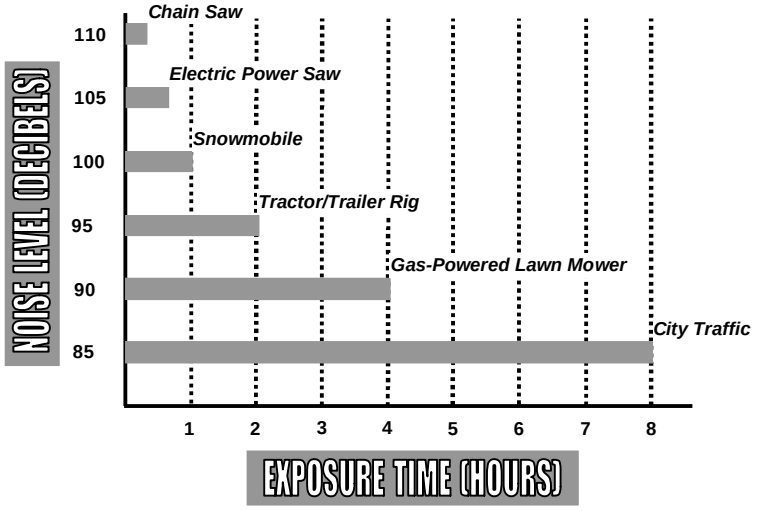
You should consider your hearing at risk if noise affects you in one of the following ways:

- You have to shout above noise to make yourself heard
- You have ringing in your ears for several hours after exposure to noise
- You have difficulty hearing normal sounds for several hours after exposure to noise

Exposure Times and Noise Levels

Most hearing specialists agree: You can damage your hearing if you are continually exposed to noise levels greater than 85 decibels over an eight-hour period. As noise levels rise above 85 decibels, the safe exposure time falls dramatically, as shown below.

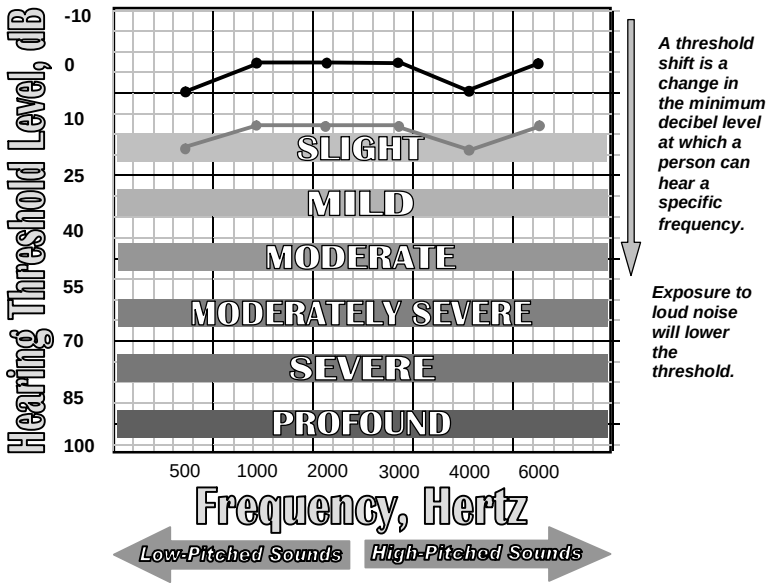
Maximum Exposure Times, Without Hearing Protection for Common Noise Sources



What happens when noise is too loud?

Shifting Thresholds

When noise is too loud, it can damage the sensitive hair cells in your inner ear. Those hair cells are the foot soldiers for your hearing. As the number of damaged hair cells increases, your brain receives fewer impulses to interpret as sound. When you damage hair cells, you damage hearing.



While a single exposure to loud noise — such as a shotgun blast — can damage your hair cells, it probably will not destroy them. You may experience ringing in your ears and some sounds may be muffled, but your hair cells will recover and so will your hearing. This is called a temporary threshold shift.

On the other hand, repeated exposures to loud noise — hundreds of shotgun blasts — will damage hair cells to the point that they cannot recover. Because the damage is permanent, the result is called a permanent threshold shift. There is no treatment — no medicine, no surgery, not even a hearing aid — that will restore it. When you destroy hair cells, you destroy hearing.

How can I tell if my hearing is damaged?

Signs and Symptoms

Hearing loss is painless and gradual. It usually develops over several years — you might not even notice the loss during those years. Sometimes overexposure to loud noise can trigger ringing or other sounds in your ears, called tinnitus. While tinnitus may be a symptom of damaged hearing, it can also be caused by infections, medications, and impacted ear wax. The only way to know for sure if noise has damaged your hearing is to have a hearing examination by a certified audiometric technician, audiologist, otolaryngologist, or physician.

If you can answer “yes” to any of the following questions, your hearing may be at risk.

- At your workplace, are you exposed to loud noise without hearing protection?
- Do you shout to a coworker at arm's length because of the noise around you?
- Off the job, are you exposed to noise from firearms, motorcycles, snowmobiles, power tools, or loud music without hearing protection?
- Do you need to turn up the television or radio volume to hear it?
- Do you ask people to repeat sentences?
- Do you feel your hearing is not as good as it was 10 years ago?
- Have family members noticed a problem with your hearing?

How can I tell when workplace noise is dangerous?

Signs and Symptoms

If you are not sure whether the noise in your workplace is dangerously loud, ask yourself: "Is normal conversation difficult because of the noise?" "Have coworkers also complained about the noise?" These are symptoms of a noise problem.

Sound Surveys

There is really only one way to tell when workplace noise is dangerous. Have the noise evaluated by someone trained to do a sound survey. (Anyone trained to use a sound-level meter and a dosimeter should be able to conduct a survey.)

There are three types of sound surveys:

- ***Basic Survey*** — The surveyor uses a sound-level meter to identify areas in the workplace that may put workers' hearing at risk.
- ***Detailed Survey*** — The surveyor uses a sound-level meter and a dosimeter to monitor and estimate an individual worker's daily exposure to noise.
- ***Engineering Survey*** — The surveyor measures noise levels produced by machinery in different operating modes to find ways to eliminate or control excessive noise.

Survey Objectives

An effective noise survey should give you enough information to understand a noise problem — to identify it and to determine how to control it. It is important to narrow the survey's focus so that you are not overwhelmed with more information than you need to make a good decision.

Controlling Workplace Noise

Overview

Though some people may tell you otherwise, there is more to noise control than buying products off the shelf at your local safety-supply store. Do you really need to spend money on noise-control products? This section describes what to consider before you decide.

Where to Control Noise

If you have a workplace noise problem, there are three points at which you can bring it under control:

- At the source. What is causing the noise?
- Along the sound path. How does sound move from the source to the listener?
- At the listener. Who is affected by the noise?

How to Control Noise

There are seven tools you can use to accomplish the task:

- Exposure Monitoring
- Audiometric Testing
- Education and Training
- Engineering Controls
- Administrative Controls
- Hearing Protectors
- Record Keeping
- Developing a Strategy

This section describes each of the noise-control tools and suggests how you can use them to develop a noise-control strategy.

- What You Should Know About Exposure Monitoring
- What You Should Know About Audiometric Testing
- What You Should Know About Education and Training
- Using Engineering Controls
- Using Administrative Controls
- Using Hearing Protectors
- What You Should Know About Recordkeeping

What You Should Know About Exposure Monitoring

Exposure Monitoring as a Noise-Control Tool

If employees are exposed to noise levels that exceed 85 decibels averaged over an eight-hour period, then you must reduce their exposure. How do you know if the noise levels exceed 85 decibels? Exposure monitoring can help you answer the question; it can help you determine if noise in your workplace is too loud, where it is too loud, when it is too loud, and whose hearing may be at risk.

Anyone trained to use a dosimeter can monitor noise exposure levels for individual employees over a specific time period, such as an eight-hour day. This person can also use a sound-level meter to survey noise levels of work tasks and machines at specific times during the workday.

Strategy Overview

Exposure monitoring gives you the information to determine if individual employees are exposed to noise that exceeds 85 decibels averaged over an eight-hour period. It can help you identify the following:

- The location of the noise.
- The cause of the noise.
- The employee or employees affected by the noise.

What You Should Know About Audiometric Testing

Audiometric Testing as a Noise-Control Tool

Audiometric testing determines whether an employee's hearing is stable or getting worse over time. The testing instrument is called an audiometer and the result of the test — the ***audiogram*** — is a graph showing an employee's hearing ability at different sound-frequency levels. An employee's baseline audiogram establishes a baseline or reference for comparing to the employee's future audiograms.

- Employees who are exposed to noise that exceed 85 decibels averaged over an eight-hour day must have baseline audiometric tests.
- At least annually, after the baseline test, employees must be re-tested if they are exposed above the 85-decibel limit.
- The results of each employee's annual audiogram must be compared to the baseline audiogram to determine if the employee's hearing has changed.
- If the comparison indicates a change in the employee's hearing, the employee must be notified within 21 days of the finding.
- Only a certified audiometric technician, audiologist, otolaryngologist, or physician can perform an audiometric test.

Strategy Overview

Audiometric testing can tell you how effectively you are controlling workplace noise. If employees are overexposed, you will see the results as ***threshold shifts*** when you compare their baseline audiograms to their annual audiograms.

If employees are overexposed, you will need to determine how and why the overexposure is occurring.

What You Should Know About Education and Training

Education and Training as a Noise-Control Tool

Informed employees know about workplace hazards, how to recognize the hazards, and how to control their exposure. The best way to inform them — and to keep them informed — is through education and training.

Employees who are exposed to noise levels that exceed 85 decibels averaged over an eight-hour period must understand the following concepts:

- Why 85-decibel-level noise can damage their hearing.
- The purpose of audiometric testing.
- The purpose of hearing protectors and how to use them properly.

Strategy Overview

If your workplace has noise levels that exceed 85 decibels, education and training, exposure monitoring, and audiometric testing are probably the most important tools of your noise-control strategy.

Education and training inform employees about noise hazards, while exposure monitoring and audiometric testing identify the hazards. Together, these tools help you eliminate noise hazards or keep them under control.

Using Engineering Controls

Advantages & Disadvantages

When you replace a noisy machine with a quiet one, modify it to make it quieter, or change the sound path so that dangerous noise never reaches the listener, you are using an engineering control.

Workplace safety-and-health specialists will tell you that engineering controls are the best way to control noise. That is true if the engineering control is effective, practical, and affordable for your workplace.

For example, if you have an old, noisy, electric hand drill, you can replace it with a newer, quieter one — a practical, affordable engineering control. If you have a large, noisy chipper/shredder, however, replacing it may not be practical. Instead, you might isolate the noise by enclosing the shredder or block the noise by constructing a barrier between the shredder and the listener.

- When you double the distance between the listener and the sound source, you decrease the sound pressure level by six decibels. For example, a hazardous 96-decibel noise source at five feet is a safe 84 decibels at 20 feet.
- When you reduce the dropping height of materials collected in bins and boxes, you can quiet noisy material conveying systems. Also, consider the following low-cost controls:
- Match the conveyer speed to the flow of materials to keep the material from vibrating.
- Use rigid containers or line them with damping materials such as plastic or rubber.
- Plates dropping off a roller belt onto a stacking platform can be noisy. Reduce the drop height and you will decrease the noise.

Strategy Overview

Applying effective, practical, affordable engineering controls to a noise problem is challenging because there are no ready-to-order solutions — you have to tailor them to your workplace. You are more likely to find an engineering-control solution when you have accomplished the following:

- Understand what is causing the noise.
- Determine how the noise is reaching the listener.
- Identify the most appropriate point, or points, at which to control the noise: at the source, along the sound path, or at the listener.

Using Administrative Controls

Advantages & Disadvantages

To administer an activity means to manage it. Unlike engineering controls — which prevent hazardous noise from reaching a worker — administrative controls manage workers' activities to reduce exposure. Closely related to administrative controls are work-practice controls, which emphasize safe work practices and procedures.

Administrative and work-practice controls are usually less expensive to carry out than engineering controls; that is because there are no significant capital costs involved in changing or modifying equipment. In some cases, administrative controls have reduced employee exposure to noise and increased productivity by rotating employees through a demanding, noisy task. Work-practice controls also improve employee performance by emphasizing safe work practices.

On the other hand, administrative controls and work-practice controls usually are not as effective as engineering controls because they do not control the noise source. Noisy machines are still noisy and the exposure hazard is still present.

Applying Administrative Controls: Examples

Examples of administrative and work-practice controls include the following:

- Reducing the time employees spend working in noisy areas — for example, rotating two or more employees so that each is exposed to noise levels less than 85 decibels, averaged over an eight-hour day.
- Shutting down noisy equipment when it is not needed for production.
- Ensuring that employees maintain their equipment to keep it running smoothly and quietly.
- Ensuring that employees know how to perform tasks and operate equipment at safe noise levels.
- Using warning signs to identify work areas where noise exceeds safe levels.
- Teaching employees appropriate methods for eliminating or controlling noise.
- Encouraging employees to report noise hazards to supervisors.

Strategy Overview

If you cannot eliminate or control dangerous noise at the source or along the sound path with an engineering control, you may be able to reduce it at the listener with an administrative control. However, if an administrative control will not reduce employee exposures to safe levels, you will need to consider another noise-control tool: hearing protectors.

Using Hearing Protectors

There are two types of hearing protectors: ear plugs and earmuffs. Both types decrease the pressure of sound that reaches the eardrum and are the next line of defense against noise when you cannot reduce exposures to safe levels with engineering or administrative controls.

Ear plugs fit in the outer ear canal. To be effective, they must totally block the ear canal with an airtight seal. They are available in different shapes and sizes and can be custom made. An earplug must be snugly fitted so that it seals the entire circumference of the ear canal. An improperly fitted, dirty, or worn-out plug will not seal and can irritate the ear canal.

Earmuffs fit over the entire outer ear to form an air seal — they will not seal around eyeglasses or long hair — and are held in place by an adjustable headband. The headband must hold earmuffs firmly around the ear.

How Effective are Hearing Protectors?

Properly fitted earplugs and muffs reduce noise levels 15 to 26 decibels. Better earplugs and muffs are approximately equal in sound reduction, though earplugs are more effective for reducing low-frequency noise and earmuffs for reducing high-frequency noise. Using earplugs and muffs together adds more protection against higher noise levels (above 105 decibels) than either used alone.

Hearing protectors are effective only when employers and employees understand how to select, wear, and care for them.

- Ensure that employees are properly fitted with appropriate hearing protectors.
- Have an adequate supply of hearing protectors available.
- Educate employees how to wear and care for hearing protectors.
- Respond promptly to employees' questions about hearing protectors.
- Replace protectors when they are damaged, dirty, or worn out.

Remember that hearing protectors control noise, they do not eliminate it — they are effective only if you wear them for the entire time that you are exposed to hazardous noise.

How do I select hearing protectors?

Focus on the three C's: ***comfort***, ***convenience***, and ***compatibility***. Do not expect employees to wear hearing protectors that are uncomfortable, difficult to use, or that interfere with their work. Employees should decide, with the help of a person trained in fitting hearing protectors, which types and sizes are appropriate.

Most hearing protectors are labeled with a noise reduction rating (NRR) indicating a protection level in decibels. However, these ratings are not reliable outside of a laboratory — which is where they received the rating — so you should not use them solely in making a selection decision. More important are factors that favor comfort, convenience, and compatibility:

- Easy to place and remove
- Simple to care for
- Constructed with non-allergenic material
- Will not interfere with eyeglasses or hard hats

Do I have to provide hearing protectors to my employees?

If you are an employer, you must provide hearing protectors, at no cost, to employees exposed to workplace noise that exceeds 85 decibels, averaged over an eight-hour period. In addition, those who receive hearing protectors must have the opportunity to do the following:

- Select appropriate hearing protectors from a variety of types that are compatible with their work tasks.
- Be properly fitted with the hearing protectors they select.
- Be trained in the use and care of their hearing protectors.

Before you invest in hearing protectors, determine whether you can use engineering controls or administrative controls to lower noise levels below the 85-decibel limit.

What You Should Know About Recordkeeping

Recordkeeping as a Noise-Control Tool

You cannot control workplace noise without reliable information. Accurate records document what you have done to control noise and inform you when you may need to change your strategy to keep noise under control.

Strategy Overview

You might think of record keeping as a separate activity, but it ties together critical information about all the other tools you use to eliminate or control workplace noise.

The table below summarizes the critical record-keeping information for each noise-control tool.

Noise-Control Tool	What it Covers	Critical Recordkeeping Information	Retention Period
Exposure Monitoring	Sound survey	The date of survey, instruments used, areas surveyed, noise hazards identified, employees affected, employees with exposure levels exceeding 85 decibels over an eight-hour period.	2 years
Audiometric Testing	Baseline and annual audiograms	Name and job classification of each affected employee, employee test results, tester's name, test date, audiometer calibration date, test room background sound pressure level.	Until the employee's termination date
Education and Training	Hearing conservation concepts	Names of employees who received training, training dates, who presented the training.	No minimum period
Engineering Controls	Feasibility survey	Results of feasibility surveys, controls used, start date, noise reduction achieved.	No minimum period
Administrative Controls	Feasibility survey	Results of feasibility surveys, controls used, start date, noise reduction achieved, employees affected.	No minimum period
Hearing Protectors	Selection and fitting	Date of initial hearing protector fitting for each employee, size and brand of hearing protector selected, name of person who assisted with fitting.	No minimum period

Your Program for Success

Workplace Safety-and-Health Program

A program is simply a means for achieving a goal. Your workplace program is what you and your employees do to achieve and maintain a safe, healthful workplace. A workplace program is just a concept, but it is an important one. Think for a moment about how you control injuries and illnesses at your workplace. Your workplace program reflects how you manage the safety and health of your employees.

Elements of a Successful Program

Look at any business that has a safe, healthful workplace and you will find the following elements:

- Managers are committed to making the program work.
- Employees are held accountable for following safe work practices.
- Employees are involved in the program.
- Employees know how to identify and control hazards.
- Employees know how to investigate near-miss incidents and accidents.
- Employees and managers are educated and trained in safe work practices.
- Managers review the program regularly to ensure that it stays effective.

Noise Control and Your Workplace Program

An effective workplace program covers all the bases: when you identify workplace hazards, control them effectively, investigate accidents and avoid repeating them, and train employees how to do their jobs safely, you are already complying with most workplace requirements. The following table shows how a noise-control strategy fits into a successful workplace safety program.

PROGAM for SUCCESS	
Safety Program Element	**Noise-Control Strategy**
Management Commitment	Be committed to achieving and maintaining a low-noise workplace — where noise exposure levels do not exceed 85 decibels averaged over a typical eight-hour work period.
Hazard Identification	Identify noise hazards by conducting sound surveys to monitor actual noise levels in the workplace and to determine the location of noise hazards, the cause of the hazards, and the employees affected.
Hazard Control	When noise levels exceed 85 decibels averaged over an 8-hour period, determine what method or methods — engineering controls, administrative controls, or hearing protectors — will reduce the noise to safe levels.
Accountability	Determine who should be responsible for identifying noise hazards, applying appropriate control methods, conducting monitoring and audiometric testing, and keeping accurate records of monitoring and testing results.
Accident Investigation	Keep accurate records of all employee exposures and audiometric tests. Review the records to determine if you are controlling noise hazards or if you need to strengthen the controls.
Education and Training	Educate employees about the purpose of audiometric testing, monitoring, and hearing protectors; train employees how to use and care for hearing protectors.
Employee Involvement	• Require all employees exposed to noise levels exceeding 85 decibels, averaged over an eight-hour day to participate in training. • Inform employees about their monitoring and audiometric test results. • Encourage employees to report noise hazards and to offer solutions for controlling them.
Program Review	Evaluate each of the above elements periodically to ensure that you're achieving and maintaining a low-noise workplace.

Rules to Work By

Overview: OSHA's Hearing Conservation Rules

If employees at your workplace are exposed to noise levels above an 8-hour time-weighted average of 85 decibels you must have a hearing conservation program.

The program must include monitoring, audiometric testing, and training, and must accomplish the following:

- Allow employees to observe the monitoring process.
- Inform affected employees about their monitoring results.
- Provide appropriate hearing protectors to affected employees.
- Maintain accurate monitoring, audiometric testing, and training records.
- Allow employees to review monitoring, audiometric testing, and training records.

The Rules by Topic and Number

OSHA's hearing conservations rules apply to general industry and construction employers. The table below identifies the rules by topic and number.

1910 Subpart G-Occupational Noise Exposure	
Topic	**Rule Number**
Monitoring	1910.95(d)
Employee Notification	1910.95(e)
Observation of Monitoring	1910.95(f)
Audiometric Testing	1910.95(g)-(h)
Hearing Protectors	1910.95(i)
Hearing Protector Attenuation	1910.95(j)
Training	1910.95(k)
Access to Information and Training	1910.95(l)
Record Keeping	1910.95(m)

Key Words Defined

Administrative Control	A method of controlling workplace hazards by managing workers' activities to reduce exposure.
Audiogram	A graph showing individual hearing ability as a function of frequency.
Decibel	A unit of sound-pressure level, abbreviated dB.
Dosimeter	A device worn by a worker for determining the worker's accumulated noise exposure based on sound level and time and calculated by a pre-determined integration formula.
Earmuff	Personal protective equipment that fits over both ears and forms an air seal.
Earplug	Personal protective equipment that fits in the outer ear canal; to be effective they must totally block the ear canal with an air-tight seal.
Eardrum	A membrane in the ear canal between the external ear and the middle ear.
Engineering Control	A method of controlling a workplace hazard by modifying or eliminating the source of exposure so that it is no longer hazardous.
Frequency	The number of times per second that the sine wave of sound repeats itself, or that the sine wave of a vibrating object repeats itself. Now expressed in hertz (Hz), formerly in cycles per second (cps).
Hair cell	Sensory cells in the inner ear that transforms the mechanical energy of sound into nerve impulses.
Hearing	The subjective human response to sound.
Hearing Protectors	Personal protective equipment that decreases the pressure of sound that reaches the eardrum; includes earplugs and earmuffs.
Hertz	Unit of measurement of frequency, numerically equal to cycles per second, abbreviated Hz.
Inner Ear	The inner portion of the ear involved in hearing and balance.
Logarithm	The exponent that indicates the power to which a number must be raised to produce a given number. For example, for the base 10 logarithm, used in acoustics, 2 is the logarithm of 100.

Middle Ear	The middle portion of the ear consisting of the eardrum and an air-filled chamber lined with mucus membrane.
Noise	1. Sound that is noticeably unpleasant. 2. Sound that is undesired or that interferes with one's hearing.
Noise-Induced Hearing Loss	Sounds of sufficient intensity and duration that damage one's hearing ability.
Outer Ear	The external portion of the ear including the canal leading to the eardrum.
Permanent Threshold Shift	A permanent decrease in hearing ability a specified frequency as compared to a previously established reference level.
Pitch	The property of a sound that is determined by the frequency of the waves producing it; the highness or lowness of sound.
Sound	1. The sensation perceived by the sense of hearing. 2. Mechanical radiant energy transmitted by waves in a material medium such as air, and the objective cause of hearing.
Sound-Level Meter	An instrument that uses a microphone, amplifier, and output meter to measure sound levels.
Sound Survey	Describes a variety of methods of measuring sound levels; including basic survey, detailed survey, and engineering survey; includes monitoring exposure levels at the listener over extended time periods, such as an eight-hour work day.
Temporary Threshold Shift	A temporary impairment of hearing ability.
Tinnitus	Ringing in the ear or noise sensed in the head. Onset may be due to an acoustic trauma and persist in the absence of acoustical stimulation (in which case it may indicate a lesion of the auditory system).
Work-Practice Control	A type of administrative control; emphasizes safe work practices and procedures.

Chapter 13

Hand & Power Tool Safety

OSHA 29 CFR-§1926.300 - Tools, Hand & Power
OSHA 29 CFR-§1926.301 - Hand Tools
OSHA 29 CFR-§1926.302 - Power Operated Hand Tools

ELECTRIC TOOLS

Regulation Rules To be Followed:

- Electric power operated tools will either be of the approved double-insulated type or grounded in accordance with OSHA CFR Regulations.
- The use of electric cords for hoisting or lowering tools will not be permitted.

Safety Basics

- Read and understand the manufacturer's instructions before operating any new or unfamiliar electric tool.
- Make sure that all electric tools are properly grounded or double-insulated.
- Ground fault circuit interrupters (GFCIs) must be used with any portable electric tool operated outdoors or in wet locations.
- Always disconnect the tool from the power source before making adjustments or changing attachments,
- Never remove or tamper with guards or other safety devices.
- Always wear eye protection when operating electric tools.
- Wear hearing protection when operating tools in confined spaces or for prolonged periods.
- Hold the tool firmly and secure the material properly before turning on the tool.

DRILLS

Types

Trim carpenters will generally select a ¼ or ⅜ inch trigger-controlled variable speed drill. Simply by increasing pressure on the trigger, you can change drill speed from 0 to 2,000 rpm.

Carpenters working in heavy structural construction such as bridges, trusses, and waterfront piers will usually select the slower but more powerful one- or two-speed reversible ½ or ¼ inch drill.

Size of the drill is determined by the maximum opening of the chuck. For instance, a ⅜ inch drill will take only bits or attachments with a shank up to ⅜ inch wide.

For drywall screws, a drywall screw gun should be used. The driving bit should be replaced when worn.

Attachments

Attachments such as speed-reducing screwdrivers, disk sanders, and buffers can help prevent fatigue and undue muscle strain. A right-angle drive attachment is very useful in tight corners and other hard-to-reach places.

Cutting and drilling attachments must be kept sharp to avoid overloading the motor.

Never crowd or push the tool beyond capacity. Such handling can burn out the motor, ruin the material, and injure the operator in the event of a kickback.

Some attachments, such as holesaws, spade bits, and screwdrivers, require considerable control by the operator. If you do not feed the attachment slowly and carefully into the

material, the drill can suddenly stop and severely twist or break your arm. Stock should be clamped or otherwise secured to prevent it from moving. This will also enable you to control the tool with both hands and absorb sudden twists or stops caused by obstructions such as knots or hidden nails.

You must restrain the drill just before the bit or cutting attachment emerges through the material, especially when oversized spade bits are used. Sides of the bit often become hooked on the ragged edge of the nearly completed hole and make the drill come to a sudden stop that can wrench your arm.

At the first sign of the bit breaking through the material, you should withdraw the drill and complete the work from the other side. This will produce a cleaner job and prevent the material from cracking or splintering. The same result can be obtained by clamping a back-up piece to the material and drilling into that.

Select the bit or attachment suitable to the size of the drill and the work to be done. To operate safely and efficiently, the shanks of bits and attachments must turn true. Make sure that the bit or attachment is properly seated and tightened in the chuck.

Some operations require the use of an impact or hammer drill. For instance, drilling large holes in concrete or rock with a carboloy bit should be done with an impact drill

Follow manufacturer's instructions when selecting and using a bit or attachment, especially with drills or work you are not unfamiliar with.

Working with Small Pieces

- Drilling into small pieces of material may look harmless, but if the pieces are not clamped down and supported, they can spin with the bit before the hole is completed.
- If a small piece starts to twist or spin with the drill, you can be injured. Small work pieces should be properly secured and supported. Never try to drill with one hand and hold a small piece of material with the other.

Drilling from Ladders

- Standing on a ladder to drill holes in walls and ceilings can be hazardous. The top and bottom of the ladder must be secured to prevent the ladder from slipping or sliding when the operator puts pressure on the drill.
- When drilling from a ladder, never reach out to either side. Overreaching can cause the ladder to slide or tip.
- Never stand on the top step or paint shelf of a stepladder. Stand at least two steps down from the top. When working from an extension ladder, stand no higher than the fourth rung from the top.
- Never support yourself by holding onto a pipe or any other grounded object. Electric current can travel from the hand holding the drill through your heart to the hand holding the pipe. A minor shock can make you lose your balance. A major shock can badly burn or even kill you.

Operation

- Always plug in the drill with the switch OFF.
- Before starting to drill, turn on the tool for a moment to make sure that the shank of the bit or attachment is centered and running true.
- Punch a layout hole or drill a pilot hole in the material so that the bit won't slip or slide when your start drilling. A pilot hole is particularly important for drilling into hard material such as concrete or metal.
- With the drill OFF, put the point of the bit in the pilot hole or punched layout hole.
- Hold the drill firmly in one hand or, if necessary, in both hands at the correct drilling angle.
- Turn on the switch and feed the drill into the material with the pressure and control required by the size of the drill and the type of material.

- Don't try to enlarge a hole by reaming it out with the sides of the bit. Switch to a larger bit.
- While drilling deep holes, especially with a twist bit, withdraw the drill several times with the motor running to clear the cuttings.
- Never support material on your knee while drilling. Material should be firmly supported on a bench or other work surface for drilling.
- Unplug the drill and remove the bit as soon as the work is finished.
- When drilling into floors, ceilings, and walls, beware of wiring and plumbing.
- Rotary and hammer drills generate extreme torque and must be handled with caution. Take occasional breaks to relax your arms and shoulders.

Drilling Timbers

- When drilling timbers with a self-feeding auger bit, do not underestimate the physical pressure required to maintain control of the tool. Such work calls for a heavy-duty, low-rpm drill, ½ or ¼ inch in size.
- Never attempt to drill heavy timbers by yourself, especially when working on a scaffold or other work platform. If the self-feeding auger bit digs into a hidden knot or other obstruction, the sudden torque can twist or wrench your arm and throw you off balance.

Other Materials

- The main hazard in drilling materials other than wood is leaning too heavily on the tool. This can not only overload and burn out the motor but also cause injury if you are thrown off balance by the drill suddenly twisting or stopping.
- Always use a drill powerful enough for the job and a bit or attachment suited to the size of the drill and the nature of the work. As at other times, punching a layout hole or drilling a pilot hole can make the job safer and more efficient.
- A drill press stand is ideal for drilling holes in metal accurately and safely. Small pieces can be clamped in a vise and bolted to the table. This prevents the work piece from spinning when the drill penetrates the metal.
- A drill press can also be used for cutting large holes in wood with a hole saw or speed bit. The stability of the press and the operator's control over cutting speed eliminate sudden torque.

PLANES

Electric planes are available in various types and sizes, and are operated in similar ways. Depending on specific features adjustments between models may differ.

Planes may be equipped with:

- Outfeed tables (back shoes) that are either fixed or movable
- Infeed tables (front shoes) that move straight up and down or move up and down on an angle to keep the gap between cutter head and table as small as possible
- Cutter heads with two or more straight blades (also called knives or cutter blades) or cutter heads with two curved blades.

Never operate an electric plane while wearing a scarf, open jacket, or other loose clothing. Keep long hair tied up. Always wear eye protection and practice good housekeeping.

Standard Plane

- Hold with both hands to avoid contact with cutter blades.
- Always keep both hands on the plane until motor stops.
- Use the edge guide to direct the plane along the desired cut. Never try to guide the plane with your fingers. If the plane runs into an obstruction or starts to vibrate, your fingers can slide into the unprotected cutter head.

Block Plane (Electric)

Designed for use on small surfaces, the block plane is operated with only one hand. It is more dangerous than the larger, standard plane.

You may tend to support the work with one hand while operating the block plane with the other. Any unexpected twist or movement can force the plane or the material to kick back and injure you. Keep your free hand well out of the way, in case the plane slips accidentally.

Maintaining Blades

- To avoid striking staples, nails, sand, or other foreign objects, make sure the work is free of obstructions.
- Keep blades in good condition and sharp. A sharp blade is safer to use than a dull blade that requires more pressure. A dull blade will float over the work and can bounce off, causing injury.
- Use a fine-grit oilstone when sharpening blades. Blades can be re-sharpened several times if they are not nicked or cracked.

Changing Blades

Time and patience is required when raising or replacing cutter blades. Blades must be the same weight and seated at the same height to prevent the cutter head from vibrating. Any deviation can cause the head to run off balance. Blades can fly out, injure you or fellow workers.

Replacing cutter blades involves two steps: Removing and Installing

Removing Blades

- Disconnect the plane from the power source.
- Turn the plane upside down and secure it in a fixed position.
- Hold the cylinder head stationary by tapping a softwood wedge between the cutterhead and the bearing (some tools are equipped with a locking device).
- Loosen all the screws and lift out one blade and throat piece.
- Turn the cutter head and repeat this procedure with other blades.
- If necessary, clean parts thoroughly with recommended solvent

Installing Blades

- Replace one throat piece and blade.
- Tighten the two end screws lightly.
- Take a hardwood straight edge and use the outfeed table (back shoe) as a gauge. Raise or lower the blade until both ends are level with the outfeed table at the blade's highest point of revolution.
- Tighten up the remaining screws.
- Set the rest of the blades in the same way.
- Turn the cylinder head and make sure that all blades are the same height.
- Tighten up all the screws.
- Double-check the height of all blades. Tightening can sometimes shift the set.
- Double-check all the screws.
- Turn the tool right side up and plug it in.
- Hold the tool in both hands with the cutter blades facing away from you and switch it on.

Operation

- Always disconnect the plane from the power source before adjusting or changing blades or the cutter head.
- For safe operation make sure that blades (at their highest point of revolution) are exactly flush with the outfeed table.
- Make sure to support work securely for safety and accuracy.

- Use a jack (e.g. when planing doors and large pieces of plywood) to secure material and keep edges clear of dirt and grit.
- When using an electric block plane, clamp or fasten the workpiece whenever possible. Keep your free hand well away from plane and material.
- When using the standard power plane, adjust the edge guide to provide desired guidance.
- Adjust depth of cut to suit the type and width of wood to be planed.
- To start a cut, rest the infeed table (front shoe) firmly on the material with cutter head slightly behind the edge of the material. After finishing a cut, hold both hands on the plane until motor stops.

ROUTERS

With special guides and bits, the portable electric router can be used to cut dadoes, grooves, mortises, dovetail joints, moldings, and internal or external curves. Routers are especially useful for mortising stair stringers and recessing hinges and lockplates on doors. The router motor operates at very high speed (up to 25,000 rpm) and turns clockwise.

- When starting a router with a trigger switch in the handle, keep both hands on the tool to absorb the starting torque.
- When starting a router with a toggle switch on top of the motor, hold the router firmly with one hand and switch on power with the other, then put both hands on the tool for control and accuracy.
- Always wear eye protection. Hearing protection may also be required. Remember, the speed and power of a router requires that it be operated with both hands.

Operation

- Always support and secure the work in a fixed position by mechanical means such as a vise or clamps. Never try to hold the work down with your hand or knee. Never rely on a second person to hold the material. Human grip is no match for the torque and kickback that a router can generate.
- Make sure that the bit is securely mounted in the chuck and the base is tight.
- Set the base on the work, template, or guide and make sure that the bit can rotate freely before switching on the motor.
- For work along edges such as bevels and moldings, make sure that the cutting edge of the router bit contacts the material to the left of the cutting direction.
- Otherwise the router will kick back or fly away from you.
- When routing outside edges, guide the router around the work counter-clockwise. Splinters left at corners by routing across the grain will be removed by the next pass with the grain.
- Feed the router bit into the material at a firm but controllable speed. There is no rule on how fast to cut. When working with softwood, the router can sometimes be moved as fast as it can go. Cutting may be very slow, however, with hardwood, knotty or twisted wood, and larger bits.
- Listen to the motor. When the router is fed into the material too slowly, the motor makes a high-pitched whine. Push too hard and the motor makes a low growling noise. Forcing the tool can cause burnout or kickback. Cutting through knots may cause slowdown or kickback.
- When the type of wood or size of bit requires going slow, make two or more passes to prevent the router from burning out or kicking back.
- If you are not sure about depth of cut or how many passes to make, test the router on a piece of scrap similar to the work.
- When the cut is complete, switch off power and keep both hands on the router until the motor stops. In lifting the tool from the work, avoid contact with the bit.

SAW SAFETY

- Wear protective clothing and equipment. Eye protection is essential.
- Where saws are used in confined spaces or for prolonged periods, wear hearing protection.
- Where ventilation is inadequate, wear a dust mask for protection against dust. Over time, exposure to dust from particle board and other materials may cause respiratory problems.

Note: With electric saws operated outdoors or in wet locations, you must use a ground fault circuit interrupter (GFCI).

- Never wear loose clothing, neck chains, scarves, or anything else that can get caught in the saw.
- Leave safety devices in place and intact on the saw. Never remove, modify, or defeat guards. Keep your free hand away from blade.
- Always change and adjust blades with the power OFF. Disconnect electric saws from the power source before making changes or adjustments.

CIRCULAR SAWS

Circular saws are either worm-drive or direct-drive. The worm-drive saw has gears arranged so that the blade runs parallel to the motor shaft. The direct-drive saw has the blade at a right angle to the motor shaft.

The worm-drive saw periodically requires special gear oil to keep the inner gears lubricated. This requirement is usually eliminated in the direct-drive saw, which has sealed bearings and gears.

Both saws must be inspected regularly for defects, and operated and maintained in accordance with manufacturers' recommendations.

Check for:

- damaged cord – loose blade
- faulty guards – defective trigger
- chipped or missing
- cracked or damaged teeth casing

Safety Features

Sawdust Ejection Chute

This feature prevents sawdust from collecting in front of the saw and obscuring the cutting line. The operator can continue cutting without having to stop the saw and clear away sawdust.

Clutch

Some worm-drive saws are equipped with a clutch to prevent kickback. Kickback occurs when a saw meets resistance and violently backs out of the work. The clutch action allows the blade shaft to continue turning when the blade meets resistance. The blade stud and friction washer can be adjusted to provide kickback protection for cutting different materials. Check friction washers for wear.

Brake

An electric brake on some circular saws stops the blade from coasting once the switch is released. This greatly reduces the danger of accidental contact.

Trigger Safety

On some light-duty saws a latch prevents the operator from accidentally starting the motor. The trigger on the inside of the handle cannot be pressed without first pressing a latch on the outside of the handle. On heavy-duty saws a bar under the trigger switch helps to prevent accidental starting.

Blades

Blades should be sharpened or changed frequently to prolong saw life, increase production, and reduce operator fatigue. The teeth on a dull or abused blade will turn blue from overheating. Cutting will create a burning smell. Such blades should be discarded or reconditioned.

- Before changing or adjusting blades, disconnect the saw from the power source.
- Take care to choose the right blade for the job. Blades are available in a variety of styles and tooth sizes.
- Combination blades (rip and crosscut) are the most widely used.
- Ensure that arbor diameter and blade diameter are right for the saw.
- Because all lumber is not new, make sure it is clean and free of nails, concrete, and other foreign objects. This precaution not only prolongs blade life but may also prevent serious injury.
- Take special care to ensure that blades are installed in the proper rotational direction. Remember that electrical circular handsaws cut with an upward motion. The teeth visible between the upper and lower guard should be pointing toward the front of the saw. Most models have a directional arrow on both blade and guard to serve as a guide.

Blade Guards

Never operate an electric saw with the lower guard tied or wedged open. The saw may kick back and cut you, or another worker who uses the saw.

An exposed blade, still in motion, will force the saw to move, cutting anything in its path. Make sure that the lower guard returns to its proper position after a cut. Never operate a saw with a defective guard-retracting lever.

On most saws the lower guard is spring-loaded and correct tension in the spring will automatically close the guard. However, a spring weakened by use and wear can allow the guard to remain open after cutting. Maintain complete control of the saw until the blade stops turning.

Note: The guard may also be slow to return after 45° cuts.

Choosing the Proper Blade

For safety, understand the different designs and uses of blades. Blades unsuited for the job can be as hazardous as dull blades. For instance, a saw fitted with the wrong blade for the job can run hot so quickly that blade tension changes and creates a wobbly motion. The saw may kick back dangerously before the operator can switch it off.

Re-sharpened blades can be substantially reduced in diameter. Make sure that the blade diameter and arbor diameter are right for the saw.

Carbide-Tipped Blades – Take special care not to strike metal when using a carbide-tipped blade. The carbide tips can come loose and fly off, ruining the blade and injuring the operator. Inspect the blade regularly for cracked or missing tips.

Changing, Adjusting, and Setting Blades

When changing blades, take the following precautions:

- Disconnect the saw from the power source.
- Place the saw blade on a piece of scrap lumber and press down until the teeth dig into the wood. This prevents the blade from turning when the locking nut is loosened or tightened. Some machines are provided with a mechanical locking device.
- Make sure that keys and adjusting wrenches are removed before operating the saw.

Proper adjustment of cutting depth keeps blade friction to a minimum, removes sawdust from the cut, and results in cool cutting.

The blade should project the depth of one full tooth below the material to be cut.

Carbide-tipped blades or miter blades should project only half a tooth below the material. If the blade is to run freely in the kerf (saw cut), teeth must be set properly, that is, bent alternate.

The setting of teeth differs from one type of blade to another. Finer toothed blades require less set than rougher-toothed blades. Generally, teeth should be alternately bent ½ times the thickness of the blade.

Sharp blades with properly set teeth will reduce the chance of wood binding. They will also prevent the saw from overheating and kicking back.

Cutting

Place the material to be cut on a rigid support such as a bench or two or more sawhorses. Make sure that the blade will clear the supporting surface and the power cord. The wide part of the saw shoe should rest on the supported side of the cut if possible.

- Plywood is one of the most difficult materials to cut with any type of saw. The overall size of the sheet and the internal stresses released by cutting are the main causes of difficulty. Large sheets should be supported in at least three places, with one support next to the cut.
- Short pieces of material should not be held by hand. Use some form of clamping to hold the material down when cutting it.
- NEVER use your foot or leg to support the material being cut. You can be seriously injured by this careless act.
- The material to be cut should be placed with its good side down, if possible. Because the blade cuts upward into the material, any splintering will be on the side which is uppermost.
- Use just enough force to let the blade cut without laboring. Hardness and toughness can vary in the same piece of material, and a knotty or wet section can put a heavier load on the saw. When this happens, reduce pressure to keep the speed of the blade constant. Forcing the saw beyond its capacity will result in rough and inaccurate cuts. It will also overheat the motor and the saw blade.
- Take the saw to the material. Never place the saw in a fixed, upside-down position and feed material into it. Use a table saw instead.
- If the cut gets off line, don't force the saw back onto line. Withdraw the blade and either start over on the same line or begin on a new line.
- If cutting right-handed, keep the cord on that side of your body. Stand to one side of the cutting line. Never reach under the material being cut.
- Always keep your free hand on the long side of the lumber and clear of the saw. Maintain a firm, well-balanced stance, particularly when working on uneven footing.

- Plywood, wet lumber, and lumber with a twisted grain tend to tighten around a blade and may cause kickback. Kickback occurs when an electric saw stalls suddenly and jerks back toward the operator. The momentarily exposed blade may cause severe injury.

Pocket Cutting

- Tilt saw forward.
- Rest front of shoe on wood.
- Retract lower guard.
- Lower saw until front teeth almost touch wood.
- Release guard to rest on wood.
- Switch on the saw.
- Keep the saw tilted forward and push it down and forward with even pressure gradually lowering it until shoe rests flat on wood.
- Follow these steps with extreme care.

SABER SAWS

The saber saw, or portable jigsaw is designed for cutting external or internal contours. The saw should not be used for continuous or heavy cutting that can be done more safely and efficiently with a circular saw.

The stroke of the saber saw is about ½ inch for the light duty model and about ¼ inch for the heavy duty model.

The one-speed saw operates at approximately 2,500 strokes per minute. The variable-speed saw can operate from one to 2,500 strokes per minute.

The reciprocating saw is a heavier type of saber saw with a larger and more rugged blade. The tool is often used by drywall and acoustical workers to cut holes in ceilings and walls. Equipped with a small swivel base, the saw can be used in corners or free-hand in hard-to-reach places. The reciprocating saw must be held with both hands to absorb vibration and to avoid accidental contact.

Eye protection is a must. You may also need respiratory protection.

Choosing the Proper Blade

Various blades, ranging from 7 to 32 teeth per inch, are available for cutting different materials. For the rough cutting of stock such as softwood and composition board, a blade with 7 teeth per inch will cut the fastest. For all-round work with most types of wood, a blade with 10 teeth per inch is satisfactory.

Cutting

The saber saw cuts on the upstroke. Splintering will therefore occur on the top side of the material being cut. Consequently, the good side should be facing down. The degree of splintering depends on the type of blade, the vibration of the material, and the feed of the saw.

To avoid vibration, the material should be clamped or otherwise secured and supported as close to the cutting line as possible. If the material vibrates excessively or shifts during cutting, the saw can run out of control, damaging the blade and injuring the operator.

- Before starting a cut make sure that the saw will not contact clamps, the vise, workbench, or other support.
- Never reach under the material being cut.
- Never lay down the saw until the motor has stopped.
- Do not try to cut curves so tight that the blade will twist and break.
- Always hold the base or shoe of the saw in firm contact with the material being cut.

Note: When sawing into floors, ceilings, or walls, always check for plumbing and wiring.

External Cut

To start an external cut (from the outside in), place the front of the shoe on the material. Make sure that the blade is not in contact with the material or the saw will stall when the motor starts.

Hold the saw firmly and switch it on. Feed the blade slowly into the material and maintain an even pressure. When the cut is complete, do not lay down the saw until the motor has stopped.

Inside Cuts

To start an inside cut (pocket cut), first drill a lead hole slightly larger than the saw blade. With the saw switched off, insert the blade into the hole until the shoe rests firmly on the material. Do not let the blade touch the material until the saw has been switched on.

It is possible to start an inside cut without drilling a lead hole first — but only when it's absolutely necessary. To do this, rest the front edge of the shoe on the material with the saw tipped backward. Keep the blade out of contact with the material.

Switch on the saw and slowly feed the blade into the material while lowering the back edge of the shoe. When the shoe rests flat on the material and the blade is completely through, proceed with the cut. Any deviation from this procedure can cause the blade to break and injure the operator or workers nearby.

Never try to insert a blade into, or withdraw a blade from, a cut or a lead hole while the motor is running. Never reach under the material being cut.

CHAINSAWS

Each year in The United States, construction workers are injured while using chainsaws. Generally the injuries result from two types of accidents:

1. The operator makes accidental contact with the revolving chain
2. The operator is struck by the object being cut, usually a tree or heavy limb.

Many of these injuries are serious. While the chainsaw is relatively easy to operate, it can be lethal. As with all high-speed cutting tools, it demands the full attention of even the trained and experienced operator.

Requirements

Chainsaws can be powered by electric motors or gasoline engines. Both saws are designed to provide fast cutting action with a minimum of binding in the cut, even though wood may be sap-filled or wet. Both afford about the same performance in terms of horsepower and they are equipped with similar controls and safety devices.

Regulations require that chainsaws used in construction must be equipped with a chain brake. Make sure that the saw is equipped with a chain brake mechanism, and not simply a hand guard, which is similar in appearance.

Regulations also require that chainsaws used in construction must be equipped with “anti-kickback” chains. These chains incorporate design features intended to minimize kickback while maintaining cutting performance

Protective Clothing and Equipment

- Eye protection in the form of plastic goggles is recommended. A faceshield attached to the hard hat will not provide the total eye protection of close-fitting goggles.
- Leather gloves offer a good grip on the saw, protect the hands, and absorb some vibration. Gloves with ballistic nylon reinforcement on the back of the hand are recommended.
- Since most chainsaws develop a high decibel rating (between 95 and 115 dBA depending on age and condition), adequate hearing protection must be worn, especially during prolonged exposure.
- Trousers or chaps with sewn-in ballistic nylon pads provide excellent protection, particularly for the worker who regularly uses a chainsaw.

Kickback

Kickback describes the violent motion of the saw that can result when a rotating chain is unexpectedly interrupted.

The cutting chain's forward movement is halted and energy is transferred to the saw, throwing it back from the cut toward the operator.

The most common and probably most violent kickback occurs when contact is made in the "kickback zone".

Contact in this zone makes the chain bunch up and try to climb out of the track. This most often happens when the saw tip makes contact with something beyond the cutting area such as a tree branch, log, or the ground.

To minimize the risk of kickback:

- use a low-profile safety chain
- run the saw at high rpm when cutting
- sharpen the chain to correct specifications
- set depth gauges to manufacturers' settings
- maintain correct chain tension
- hold the saw securely with both hands
- don't operate the saw when you are tired
- know where the bar tip is at all times
- don't allow the cut to close on the saw
- make sure the chain brake is functioning.

Starting

When starting, hold the saw firmly on the ground or other level support with the chain pointing away from your body and nearby obstructions. Use a quick, sharp motion on the starter pull. Never "drop start" the saw.

This leaves only one hand to control a running saw and has resulted in leg cuts. Use the proper grip.

Site Hazards

- Take extra care when making pocket cuts. Start the cut with the underside of the chain tip, then work the saw down and back to avoid contact with the kickback zone. Consider an alternative such as a saber saw.
- Be particularly careful to avoid contact with nails, piping, and other metallic objects. This is especially important when making a pocket cut through framing lumber such as a subfloor or when cutting used lumber such as trench shoring, lagging, or blocking timbers.
- Use chainsaws to cut wood only. They are not designed to cut other materials.

When using a chainsaw to trim rafter ends, take the following steps to avoid injury:

- Cut down from the top of the rafter. Don't cut from underneath.
- Use a harness, lanyard, and lifeline to prevent falls or work from a secure scaffold at eaves level.
- The extension cord on an electric chainsaw should be secured on the roof above the operator with enough working slack. This will prevent the weight of a long cord from pulling the operator off balance.
- Keep both hands firmly on the saw.

Maintenance

Well-maintained cutting components are essential for safe operation. A dull or improperly filed chain will increase the risk of kickback.

- Inspect and maintain your saw according to the manufacturer's recommendations regarding chain tension, wear, replacement, etc. Check for excessive chain wear and replace chain when required. Worn chains may break!
- Select the proper size files for sharpening the chain.

Two files are necessary:

1. Flat: for adjusting depth gauge
2. Round: for sharpening cutters and maintaining drive links.

- You must choose the correct round file for your chain to avoid damaging the cutters. Consult the owner's manual or the supplier to be sure of file size.
- A round file used in combination with a file holder or a precision filing guide will give the best results.

Adjusting Chain Tension

- Follow the manufacturer's instructions on chain tension. In general, the chain should move easily around the bar by hand without showing noticeable sag at the bottom.
- Be generous with chain lubricating oil. It is almost impossible to use too much. Most late model saws have automatic oilers. But operators must still remember to fill the chain-oil reservoir.

CHOP SAWS

Increasingly, carpenters and other trades are using chop saws to cut various materials. These portable saws offer quick, efficient, and economical cutting.

Unfortunately, like all power equipment, chop saws pose serious hazards for the unwary or untrained operator. Follow Basic Saw Safety and Safety Basics as for other power saws.

- Select the proper abrasive cutting wheel for the material being cut. For metals, use aluminum oxide. For masonry, stone, and concrete, use silica carborundum.
- Do not exceed the recommended rpm printed on the blade label.
- The center hole on the blade must fit the mandril and be snugly fastened in place with the proper washer and lock nut.

Warning: A loose or off-center blade can shatter in use.

- Position material to be cut at 90º degrees to the blade. Support the other end to prevent the blade from binding.
- Do not rush cutting. Let the wheel cut without burning or jamming.
- When cutting is complete, let the blade stop before moving material.
- Maintain the saw in good repair with the blade guard in place and working smoothly. Tighten any loose parts and replace any broken or damaged ones.
- Don't try to adjust for length on downward cutting motion. Your hand could slide into the blade while it is spinning.

- With some large chop saws, additional precautions are required because of the tremendous torque the saws can develop.
- Beware of sparks landing on combustible material.

QUICK-CUT SAWS

Hand-held portable circular cut-off saws are commonly known as “quick-cut saws” in construction. They are widely used for cutting concrete, masonry products, sheet metal products (both steel and aluminum), and light steel sections such as angles and channels.

Hazards

Quick-cut saws are high-powered compared to similar tools. Hazards include high-speed blade rotation, blade exposure during operation, and exhaust from the internal combustion engine (the usual power source).

The saws also create clouds of dust when dry-cutting masonry and showers of hot sparks when cutting metal products, especially steel.

These hazards can result in cuts, kickbacks, exposure to carbon monoxide fumes, exposure to dusts (silica from concrete and masonry products in particular), burns, flying particles hitting the eye, and other injuries from flying material when work is not secured for cutting or when blades fly apart.

These hazards can be controlled by:

- Using quick-cut saws properly and wearing the right protective equipment such as eye, hearing, and respiratory protection as well as face shields and gloves
- Keeping saws in good working condition, equipped with proper blades or disks, and used with all guards in place
- Securing work to keep it from shifting during cutting
- Being cautious around sharp edges left by cuts

Training

Instruct workers in the care, maintenance, and operation of quick-cut saws. Read and understand the operating manual, review the major points.

The operating manual should be available on the job, not only for instruction but for ready reference if something goes wrong with the saw or it must be used for work outside the operator's experience.

Time spent on instruction will reduce accidents and injuries as well as prolong the service life of the saw.

As a minimum you should know:

- care of the saw
- installing disks and blades
- mixing fuel and fueling the saw
- starting the saw
- supporting and securing work to be cut
- proper cutting stance and grip
- proper cutting techniques for different material
- respiratory protection against dusts
- how to inspect and store abrasive disks.

Care

Quick-cut saws must be serviced and maintained in accordance with the manufacturers' instructions.

Replacement parts should be those recommended by the manufacturer.

Cracked, broken, or worn parts should be replaced before the saw is used again. Guards and air-intakes should be cleaned regularly and often. Abrasive disks should be checked before installation and frequently during use. Correct any excessive blade vibration before trying to make a cut.

In confined areas, make sure that ventilation is adequate. Gasoline-driven saws release carbon monoxide gas — odorless, colorless, and highly toxic.

Starting

Most of the following procedures are for gasoline-powered quick-cut saws:

- Use caution when preparing the oil/gasoline mixture and when fuelling the saw. No smoking or ignition sources should be allowed in the area where fuel is mixed or tanks are filled.
- Fill the tank outdoors in a well-ventilated space at least 10 feet from the area where the saw will be used. Spilled fuel should be wiped off the saw.
- Avoid fuelling the saw on or near formwork. Gasoline spills are a fire hazard. Use a funnel to avoid spills.
- Do not overfill the saw or run it without securing the fuel tank cap. Gasoline seeping from the tank can saturate your clothing and be ignited by sparks thrown off from metal cutting. The only cap to use is one supplied by the manufacturer.
- Check the saw for leaks. Sometimes vibration makes gas lines leak.
- Start the saw in an area clear of people and obstacles. Under no circumstances should anyone be standing in front of the saw as it starts or while it's running.
- Put the saw on a smooth hard surface for starting.
- The guard should be properly set for the type of cut beforehand.
- Assume a solid well-balanced stance. Do not wrap the starter cord around your hand — this can cause injury.
- Set one foot on the rear handle, put one hand on the top handle to lift the blade off the surface, and use the other hand to pull the starter cord. **Warning:** Always shut off saw before fuelling. Keep fuel container well clear of work area. Once the saw is running, release the throttle and make sure the engine drops to idle without the disk or blade moving.
- Run the engine at full throttle and let the disk or blade run freely to make sure it turns on the arbor without wobbling or vibrating.

Support

One of the major hazards with quick-cut saws is failure to support and secure the work to be cut.

The saw is powerful enough to throw material around unless it is securely held and supported. Standing on material to hold it down is not recommended.

For repeated cuts of masonry or metal pieces, a jig is ideal for efficiency and safety. The jig should be designed and built to hold material in place after measurement without further manual contact.

Stance and Grip

The quick-cut saw is a heavy, powerful tool that must be held by hand.

Operators need a secure stance with legs apart for balance and support. The saw should be held at a comfortable, balanced location in front of you.

Grip the saw firmly with one hand on each handle. Hold your forward arm straight to keep the saw from kicking back or climbing out of the cut.

Cutting

Although skill in handling the quick-cut saw can only be learned through practice, some safety considerations and operating techniques must always be kept in mind, even by the most experienced operators.

Work should be supported so that the disk or blade will not bind in the cut. Support heavy materials on both sides of the cut so the cut piece will not drop or roll onto the operator's foot. Light materials can generally be allowed to fall. In all cases the cut should be as close as possible to the supporting surface.

Kickback and Pull-In

Kickback can happen extremely fast and with tremendous power. If a segment of the disk or blade contacts the work, the disk or blade starts to climb out of the cut and can throw the saw up and back toward you with great force.

- For cutting, keep the throttle wide open. Ease the blade down onto the cut line. Don't drop or jam the blade down hard. Move the saw slowly back and forth in the cut.
- Hold the saw so that disk or blade is at right angles to the work and use only the cutting edge of the disk or blade. Never use the side of a disk for cutting. A worn disk will almost certainly shatter and may cause severe injury.
- Beware of blade run-on. The blade may continue to rotate after the cut and run away with a saw set down too soon.
- Don't force the saw to one side of the cut. This will bend the disk or blade and cause it to bind, possibly to break.
- Water cooling is recommended for cutting masonry materials. It prolongs disk life and reduces dust exposure.
- Keep pressure on the saw reasonably light. Although more pressure may be necessary for hard materials, it can cause an abrasive disk to chip or go “out of round.”
- This in turn will make the saw vibrate. If lowering the feed pressure does not stop vibration, replace the disk.
- Don't carry the saw any distance with the engine running. Stop the engine and carry the saw with the muffler away from you.

To avoid kickback, take the following steps:

- Secure and support the material at a comfortable position for cutting. Make sure that material will not move, shift, or pinch the blade or disk during cutting.
- Keep steady balance and solid footing when making a cut.
- Do not support the work on or against your foot or leg.
- Use both hands to control the saw. Maintain a firm grip with thumb and fingers encircling the handles.
- Never let the upper quarter segment of blade or disk contact the material.
- Run the saw at full throttle.
- Do not cut above chest height.
- When re-entering a cut, do so without causing blade or disk to pinch. Pull-in occurs when the lower part of the disk or blade is stopped suddenly – for instance, by a cut closing up and binding. The saw pitches forward and can pull you off balance.

Protective Equipment

In addition to the standard equipment mandatory on construction sites, operators of quick-cut saws should wear snug-fitting clothing, hearing protection, eye and face protection, and heavy-duty leather gloves.

The dry cutting of masonry or concrete products calls for respiratory protection as well. See the chapter on Personal Protective Equipment.

For general dust hazards, a half-mask cartridge respirator with NIOSH-approval for dust, mist, and fumes should provide adequate protection when properly fitted and worn by a clean-shaven person.

Disks and Blades - Disks and blades are available in three basic types:

- abrasive disks
- diamond-tipped blades
- carbide-tipped blades

Use only the disks and blades compatible with the saw and rated for its maximum rpm. Blades or disks may fly apart if their rpm is not matched to saw rpm. If you have any doubts, consult the operating manual or a reputable supplier.

Abrasive Disks —Types and Uses

Type	Uses	Materials
Concrete	All-around use, most economical for cutting concrete and masonry. Water-cooling recommended to increase disk life and to reduce dust.	Concrete, stone, masonry products, cast iron, aluminum, copper, brass, cables, hard rubber, plastics
Metal	Primarily for steel, not suited for masonry products. Water-cooling is not recommended with metal abrasive disks	Steel, steel alloys, other hard metals such as cast iron

Diamond Disks and Blades

Diamond disks are normally used with water cooling. They are now available for dry cutting, which may be necessary to avoid staining some masonry products.

When dry-cutting with a diamond blade, let the blade cool for 10-15 seconds every 40-60 seconds. This can be done simply by pulling the saw out of the cut.

Types and Uses

Type	Uses	Materials
Diamond Abrasive Disk	Cuts faster than other abrasive disks and creates less dust. Water-cooling is absolutely necessary to prevent heat build-up that can make disk disintegrate.	Stone, all masonry and concrete products. Not recommended for metal
Dry-Cut Diamond Blade	Fast cuts, lots of dust, very expensive. Let blade cool for 10-15 seconds every 40-60 seconds. Continuous cutting will damage the blade.	Stone, all masonry and concrete products. Not recommended for metal.

Carbide-Tipped Blades

These blades must be used with care. If a carbide-tipped blade encounters material harder than what it is designed to cut, the tips may fly off.

A carbide-tipped blade used with a quick-cut saw must be designed for that purpose. It must also be used only to cut the materials specified by the manufacturer.

Inspection / Installation

- Inspect disks and blades before installing them.
- Make sure that contact surfaces are flat, run true on the arbor, and are free of foreign material.
- Check that flanges are the correct size and not warped or sprung. Check the label to make sure that the disk or blade is approved for use on high-speed quick-cut saws and has a rated rpm suitable to the saw being used. A periodic service check may be necessary to ensure that the rpm still meets the manufacturer's requirement.
- Inspect the disk or blade for damage. Abrasive disks tapped lightly with a piece of wood should ring true. If the sound is dull or flat, the disk is damaged and should be discarded.
- Make sure that diamond or carbide tips are all in place. Do not use diamond or carbide-tipped blades or disks if any tips are missing.

- Do not drop abrasive disks. Discard any disk that has been dropped.
- Use the proper bushing on the arbor so that the disk runs true on the shaft without wobbling or vibrating.
- Discard badly worn disks that are uneven or “out of round.”

TABLE SAWS

Types

The table saw most often used in construction is the 10-inch belt-driven tilting arbor saw. The dimension refers to the diameter of the saw blade recommended by the manufacturer.

Although some saws are direct-drive, with the blade mounted right on the motor arbor, most are belt-driven.

Both types are equipped with a fixed table top and an arbor that can be raised, lowered, or tilted to one side for cutting at different depths and angles.

Basket Guards

Basket guards may be fastened to the splitter or hinged to either side of the saw on an L-shaped or S-shaped arm.

Basket guards can protect the operator from sawdust, splinters, and accidental contact with the blade. Keep the basket guard in place for normal operations such as straight and bevel ripping and miter cutting. When the guard is removed to permit cutting of tenons, finger joints, rabbets, and similar work, use accessories such as feather boards, holding jigs, push sticks, and saw covers.

Some split basket guards have a see-through cover. One side can be moved sideways for a blade tilted to 45 degrees.

One side can be lifted up while the other remains as a protective cover.

Sheet metal baskets fastened to the splitter are less effective because you cannot see the saw blade.

Kickback

Kickback occurs when stock binds against the saw blade.

The blade can fire the wood back at you with tremendous force, causing major injuries to abdomen, legs, and hands.

- Never stand directly behind the blade when cutting. Stand to one side. See that other workers stand clear as well.
- Make sure the rip fence is aligned for slightly more clearance behind the blade than in front. This will help prevent binding.
- Use a sharp blade with teeth properly set for the wood being cut. A dull or badly gummed blade will cause friction, overheating, and binding.
- Install a splitter to keep the kerf (cut) open behind the blade. Also effective are anti-kickback fingers attached to the splitter.

Splitters

Splitters prevent the kerf from closing directly behind the blade. Ideally, they should be slightly thinner than the saw blade and manufactured from high tensile steel. Splitters are not always needed with carbide-tipped saw blades, whose relatively wide kerf may provide the desirable clearance. A wide kerf alone, however, is often not enough to keep some boards from closing behind the cut and binding against the blade.

In general, it is impossible to predict how a board will behave during ripping. It may remain straight, presenting no problems. On the other hand, the release of internal stresses may make the two ripped portions behind the blade either close up or spread apart.

Disappearing splitters with anti-kickback fingers can be pushed down when in the way of a workpiece and pulled up if necessary after the machine has been shut off.

Roller Stand

You risk injury when you try to maintain control over long pieces of stock singlehandedly, especially if the stock begins to bind on the blade and kick back.

A roller stand provides the needed support. Adjust it to a height slightly lower than the saw table to allow for sagging of the material. Be sure to set up the stand so the roller axis is at 90 degrees to the blade. Otherwise, the roller could pull the stock off to one side and cause binding.

Whatever the design, a support stand should be standard equipment in every carpentry and millwork shop. It can be used as an extension to a workbench, jointer, or bandsaw and is especially important with the table saw.

Extensions

Made of wood or metal, table top extensions installed behind and to both sides of the machine can make the cutting of large sheets of plywood and long stock safer and more efficient.

In most cases a space must be provided between extension and saw top for adjusting the basket guard and allowing scrap to fall clear.

Blades

Table saw blades are basically similar to those for circular saws. The teeth on carbide-tipped, hollow-ground, and taper blades do not need setting.

Blade Adjustment

Proper adjustment of cutting depth holds blade friction to a minimum, removes sawdust from the cut, and results in cool cutting.

Sharp blades with properly set teeth will keep the work from binding and the blade from overheating and kicking back.

The blade should project the depth of one full tooth above the material to be cut. When using carbide-tipped blades or miter blades only half a tooth should project above the material.

Blade Speed

The right cutting speed is important. The blade should turn at the correct rpm to yield the recommended cutting speed.

When not in motion, saw blades, especially large blades, are usually not perfectly flat because of internal tensions. At the right operating speeds, however, the blades straighten out as a result of centrifugal force and cut smoothly at full capacity.

Blades running too fast or too slow tend to start wobbling either before or during a cut. If cutting continues, the blade will overheat and may cause kickback, damage the equipment, and injure the operator.

Rip Fence

The rip fence is used mainly to guide the stock and maintain correct width of cut. The fence on small saws is usually clamped down at both the front and back of the table by pushing down a lever or turning a knob. Adjust the fence slightly wider at the back to let the wood spread out behind the cut and reduce the risk of kickback.

You can add a piece of hardwood to the rip fence in order to rip thin pieces of wood and make dadoes and rabbets. The auxiliary fence can be set close to the cutters without the risk of contact between the blade and the steel fence.

Pushsticks and Feather Boards

Narrow pieces can be cut safely and efficiently with the help of pushsticks, which should be painted or otherwise marked to prevent loss.

To rip narrow, short pieces, a push block is the right choice. The shoe holds the material down on the table while the heel moves the stock forward and keeps it from kicking back.

Different designs of pushsticks are required for cutting different kinds of stock.

The heel of the pushstick should be deep enough to prevent it from slipping and strong enough to feed the stock through the saw.

You can also use one or two feather boards to rip narrow stock safely. A feather board clamped immediately in front of the saw blade will provide side pressure to the stock without causing binding and kickback. Use a push block to feed stock all the way through.

Operation

- Follow Basic Saw Safety.
- Keep the floor around the saw clear of scrap and sawdust to prevent slipping and tripping.
- Always stop the machine before making adjustments. Before making major adjustments, always disconnect the main power supply.
- Select a sharp blade suitable for the job.
- Use the safety devices such as pushsticks and feather boards recommended in this chapter.
- Make sure nobody stands in line with a revolving blade.
- Don't let anyone or anything distract you when you are operating the saw.
- Whenever possible, keep your fingers folded in a fist rather than extended as you feed work into the saw.
- Never reach around, over, or behind a running blade to control the stock.
- Follow the manufacturer's recommendations in matching the motor size to the saw. Underpowered saws can be unsafe.
- Table saws should be properly grounded. Check the power supply for ground and always use a ground fault circuit interrupter. This is mandatory for saws used outdoors or in wet locations.
- Table saws should be equipped with an on-off switch so power can be shut off quickly in an emergency.
- A magnetic starter switch is preferable to a mechanical toggle because it prevents the saw from starting up again unexpectedly after an interruption in power.
- When purchasing a new table saw, try to get one equipped with an electric brake. The brake stops blade rotation within seconds of the operator turning off the saw. The reduced risk of injury is worth the extra cost.
- Extension cords should be of sufficient wire gauge for the voltage and amperage required by the saw and for the length of the run.

RADIAL ARM SAWS

The motor and blade of the radial arm saw are suspended above the table. Because the motor and blade assembly can be locked in different positions and can travel during the cut, you must pay special attention to keeping fingers and hands clear.

Injuries involving radial arm saws tend to be serious. By using appropriate guards and procedures, however, you can safely use the saw for crosscuts, miter cuts, ripping, and dadoes.

Set-Up - The saw must be adequately powered for the work.

- The saw should be installed in a well-lit area out of the way of traffic, with enough space to store and handle long lengths of wood. Locating the machine with its back to a wall or partition can help to keep flying pieces from hitting anyone.
- Where possible, mark the floor with yellow warning lines to keep other personnel back from the saw.
- Make sure all safety guards and devices are in place.
- Choose the right blade for the job. A sharp tungsten carbide combination blade is good for both crosscutting and ripping without frequent re-sharpening.

General Procedures

- Follow Basic Saw Safety.
- If you don't have someone to help with long stock, use a roller stand or extension table to support the work.
- Always return the motor head to the column stop.
- When crosscutting or mitering, keep hands at least six inches away from the blade. Do not adjust length of cut until the motor is back at column.
- Slope the table top back slightly to keep the blade at the column, thereby preventing contact with stock being placed in position.
- Do not allow the blade to cut too quickly when crosscutting or mitering.
- Avoid drawing the blade completely out of the cut. The cut piece, whether large or small, often moves. When the saw is rolled back towards the column, the teeth can grab the piece and shoot it in any direction.
- Do not cut by pushing the saw away from you into the stock. The material can lift up and fly over the fence.

Ripping and Crosscutting

- For regular ripping, turn the motor away from the column to the in-rip position. Feed stock into the saw from the right side.
- To cut wide stock, change the saw to the out-rip position. Feed stock into the saw from the left side. Remember – the blade must turn up and toward you when feeding the stock.
- Do not force the cut. Allow the blade through the wood at its own pace.

To avoid kickback, take the following precautions:

- Maintain proper alignment of blade with fence.
- Adjust anti-kickback device to ⅛ inch below the surface of stock being fed.
- Use a sharp blade, free of gum deposits and with teeth properly set.
- When binding occurs, stop saw and open kerf with a wedge.
- After completing cut, remove stock from rotating blade to prevent overheating and possible kickback.
- Always push stock all the way through past the blade.
- Do not leave machine with motor running.
- Use a push stick when ripping narrow pieces. Have suitably sized and shaped pushsticks for other jobs as well. See information on pushsticks and feather boards under Table Saws, earlier in this chapter.

Jigs

The control provided by a well-made jig is essential for making irregular cuts safely and accurately.

Keep commonly used jigs on hand. Jigs such as those for making stair and doorframe wedges and tapers are designed to carry stock past the blade with the saw locked in the rip position.

When you are drawing the saw into the stock, clamp or nail jigs to the table to prevent slipping.

Re-Sawing with Blade Horizontal

The rip fence on the radial arm saw is too low for supporting material to be re-sawn on edge. Therefore the material must be laid flat on the table and the motor must be turned so the blade is parallel to the table. The closeness of the arbor requires an auxiliary table top and fence to re-saw thin stock.

Because the kickback fence can't be used and controlling stock is sometimes difficult, re-sawing on the radial arm saw can be hazardous.

If no other equipment is available, rip the stock halfway through, then turn it around and complete the cut.

On the second cut, be sure to push the two halves well past the blade once they have been cut apart. Pushsticks and featherboards clamped to the table can reduce hazards.

Dadoes

A dado head is an essential tool for cutting grooves, rabbets, and dadoes. A groove is cut with the grain; a dado is cut across the grain; and a rabbet is a shoulder cut along the edge of a board.

The most common dado head consists of two outside cutters and several inside chippers between the outside cutters.

Another type is sometimes called a quick-set dado, consisting of four tapered washers and a blade. By rotating the locking washers, the blade will oscillate and cut a groove to the desired width.

Because of their small size, dado heads do not run at the peripheral feed speed on a big radial arm saw. As a result, the blade feeds itself too fast, either stopping the motor or lifting the work and throwing it back. To prevent this, make several light passes, lowering the dado head ⅛ to ¼ inch each time.

Dado heads require guards for safety. Always make sure guards are in place before starting work.

Proper rotation of the teeth is up and toward you.

Other Accessories

Rotary accessories of various types are advertized as turning the radial arm saw into a multifunction machine.

Remember that the saw has its limitations.

Possible problems include the following:

Shaper heads run too slowly for safe and smooth work.

Grinding stones may run too fast or slow and are not recommended.

Sanding drums tend to run too fast and may burn the wood.

PNEUMATIC POWER TOOLS

Regulation Rules to be Followed:

- Pneumatic power tools will be secured to the hose or whip by some positive means to prevent the tool from becoming accidentally disconnected.
- Safety clips or retainers will be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.
- All pneumatically driven nailers, staplers, and other similar equipment provided with automatic fastener feed, which operate at more than 100 p.s.i. pressure at the tool will have a safety device on the muzzle to prevent the tool from ejecting fasteners, unless the muzzle is in contact with the work surface.
- Compressed air will not be used for cleaning purposes except where reduced to less than 30 p.s.i. and then only with effective chip guarding and personal protective equipment which meets the requirements of Subpart E of this part. The 30 p.s.i. requirement does not apply for concrete form, mill scale and similar cleaning purposes.
- The manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings will not be exceeded,
- The use of hoses for hoisting or lowering tools will not be permitted.
- All hoses exceeding 1/2-inch inside diameter will have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.
- Airless spray guns of the type which atomize paints and fluids at high pressures (1,000 pounds or more per square inch) will be equipped with automatic or visible manual safety devices which will prevent pulling of the trigger to prevent release of the paint or fluid until the safety device is manually released.
- In lieu of the above, a diffuser nut which will prevent high pressure, high velocity release, while the nozzle tip is removed, plus a nozzle tip guard which will prevent the tip from coming into contact with the operator, or other equivalent protection, will be provided.
- Abrasive blast cleaning nozzles. The blast cleaning nozzles will be equipped with an operating valve which must be held open manually. A support will be provided on which the nozzle may be mounted when it is not in use.

Air-powered tools include:

- jack hammers
- chipping hammers
- drills
- grinders
- sanders
- staplers
- framing nailers
- wrenches
- brad nailers
- winches
- air nozzles
- saws
- buffers
- impact tools
- sprayers

  - Run combustion engines outside or in a well ventilated area to prevent the build-up of carbon monoxide gas. Always keep a fire extinguisher near flammable liquids.
  - When moving compressors to another location, ask for help or use mechanical devices to prevent back injuries.
  - Eye injuries can occur when compressed air is used to blow out formwork. Wear safety goggles and respiratory protection.
  - Always secure hose connections with wire or safety clips to prevent the hose from whipping except when automatic cut-off couplers are used.
  - Make sure hoses are clear of traffic and pose no tripping hazards.
  - Replace worn-out absorption pads and springs. Too much vibration of the tool can damage nerves in fingers, hands, and other body parts. This is called “white finger disease” or Raynaud's Syndrome.

- Some tools have a high decibel rating – for instance, jack hammers and impact drills. To prevent hearing loss, always wear hearing protection.
- Never tamper with safety devices.
- Keep hands away from discharge area – on nailers in particular.
- Match the speed rating of saw blades, grinding wheels, cut-off wheels, etc. to tool speed. Too fast or too slow a rotation can damage the wheels, release fragments, and injure workers.
- Never use air to blow dust or dirt out of work clothes. Compressed air can enter the skin and bloodstream with deadly results.
- Turn off the pressure to hoses when the system is not in use.
- Turn off the air pressure when changing pneumatic tools or attachments.
- Never "kink" a hose to stop air flow.

Most air-powered tools need very little maintenance. At the end of the shift, put a teaspoon of oil in the air inlet and run the tool for a second or two to protect against rust.

Dust, moist air, and corrosive fumes can damage the equipment. An inline regulator filter and lubricator will extend tool life.

Before start-up, check the couplings and fittings, blow out the hose to remove moisture and dirt, and clean the nipple before connecting the tool. Set the air pressure according to the manufacturer's specifications and open gradually.

Compressed air can be dangerous.

Hazards include:

Air embolism-This is the most serious hazard, since it can lead to death. If compressed air from a hose or nozzle enters even a tiny cut on the skin, it can form a bubble in the bloodstream – with possibly fatal results.

Physical damage-Compressed air directed at the body can easily cause injuries – including damage to eyes and ear drums.

Flying particles-Compressed air at only 40 pounds per square inch can accelerate debris to well over 70 miles per hour when it is used to blow off dust, metal shavings, or wood chips. These particles then carry enough force to penetrate the skin.

WARNING: Make sure that air pressure is set at a suitable level for the tool or equipment being used. Before changing or adjusting pneumatic tools, turn off air pressure.

POWDER/EXPLOSIVE ACTUATED TOOLS

Regulation Rules to be Followed:

- Only employees who have been trained in the operation of the particular tool in use will be allowed to operate a powder-actuated tool.
- The tool will be tested each day before loading to see that safety devices are in proper working condition. The method of testing will be in accordance with the manufacturer's recommended procedure.
- Any tool found not in proper working order, or that develops a defect during use, will be immediately removed from service and not used until properly repaired.
- Personal protective equipment will be in accordance with Subpart E of this part.
- Tools will not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any employees. Hands will be kept clear of the open barrel end.
- Loaded tools will not be left unattended.
- Fasteners will not be driven into very hard or brittle materials including, but not limited to, cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick, or hollow tile.

- Driving into materials easily penetrated will be avoided unless such materials are backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the other side.
- No fastener will be driven into a spalled area caused by an unsatisfactory fastening.
- Tools will not be used in an explosive or flammable atmosphere.
- All tools will be used with the correct shield, guard, or attachment recommended by the manufacturer.
- Powder-actuated tools used by employees will meet all other applicable requirements of American National Standards Institute, A10.3-1970, Safety Requirements for Explosive-Actuated Fastening Tools.

Hazards

Flying Particles – This is the major hazard. On impact, materials may break up, blow apart, or spall off. This often happens when fasteners are fired too close to a corner of masonry or concrete or when they strike materials such as glazed tile, hollow tile, or thin marble tile.

Ricochets – These usually result when the tool is not held at right angles to the base material, or the fastener hits a particularly hard material such as stone or hardened steel. Always check the base material to ensure that it can safely accept the fastening device.

Noise – Powder-actuated tools create an extreme pulse of sound when fired. Operators and others in the area should wear hearing protection – especially when the tool is operated in a confined space.

Sprains and Strains – These injuries usually result from using the tool repeatedly in awkward, cramped, or unbalanced positions. You should try to work from a balanced position on a solid surface.

Explosions – There is always the risk of explosion or fire when the tools are used in atmospheres contaminated by flammable vapor, mist, or dust. The work area must be ventilated – mechanically if necessary.

Blow-Through –When the base material does not offer enough resistance, the fastener may pass completely through and fly out the other side. This is particularly dangerous when fasteners penetrate walls, floors, or ceilings where others may be working. If necessary, areas behind, around, and under material should be kept clear of people.

Protective Equipment

In addition to the standard personal protective equipment required on construction projects, you should wear hearing protection, eye protection, and a face shield. Heavy shirts and pants provide some protection against ricochets and flying fragments of material and fasteners.

Tool Types

High-Velocity — High-velocity powder-actuated tools use the expanding gases from the exploding cartridge to propel the fastener. The gases push directly against the fastener. These tools are rarely used in construction, except in special cases to penetrate thick steel or very hard material — they are usually used in military, salvage, or underwater applications. No one should operate high velocity tools without special training.

Low-Velocity — Most powder-actuated tools used in construction are low-velocity. The expanding gases from the exploding cartridge push against a piston which in turn drives the fastener into the base material.

Many different low-velocity tools are available, from single-shot models to semi-automatic models using multiple cartridges in strip or disk holders. Some tools are specific to one size of fastener or type of cartridge. Most can be fitted with various pistons, base plates, spall stops, and protective shields for different jobs.

Pistons

Specialized pistons are available for different fasteners. Such pistons are designed for the fastener and should not be used with other types. Misusing a tool with a specialized piston can result in under- or over-driven fasteners or fasteners leaving the barrel misaligned, leading to ricochets. Some general-purpose tools can take various types of pistons.

Fasteners

Fasteners used with powder-actuated tools are made of special steel to penetrate materials without breaking or bending. Never use any kind of substitute for a properly manufactured fastener.

Generally pins and studs should not be used on hard, brittle, or glazed materials such as cast iron, marble, tiles, and most stone. The fastener will either fail to penetrate and ricochet or the base material will shatter.

Materials whose hardness or ductility is unknown should be tested first. Try to drive a pin into the material with a normal hammer. If the pin point is blunted or fails to penetrate at least 1/16", a powder-actuated tool should not be used.

Fasteners are invariably fitted with a plastic guide device. Its purpose is twofold. When the fastener is inserted into the barrel the guide keeps the fastener from dropping out. It also aligns the fastener inside the barrel so it will penetrate the base material at right angles.

There are two basic types of fasteners – pins and studs.

Pins are fasteners designed to attach one material to another, such as wood to concrete. They resemble nails, but there the similarity stops. Ordinary nails cannot be used as fasteners in powder-actuated tools.

Head diameters for pins are available between ¼" and ⅜". Lengths vary from ½" to 3".Washers of various types and diameters are available for different applications.

Pins should be selected for appropriate length, head size, and application. As a general rule, pins need not be driven into concrete more than 1". Using a longer pin is generally unnecessary and also requires a stronger cartridge.

Follow the manufacturer's directions on length, penetration, and appropriate material. For example, one cut-nail fastener is available for fastening drywall to relatively soft base materials, but is recommended for virtually no other application. Testing may be necessary on some masonry materials that vary widely in hardness and durability.

Studs are fasteners consisting of a shank which is driven into the base material and an exposed portion to which a fitting or other object can be attached. The exposed portion may be threaded for attachments made with a nut.

Studs are also available in an eye-pin configuration for running wire through the eye.

Clip Assemblies - Fastening to the base material is done by a pin, but the pin is attached to a clip assembly configured to secure a uniquely shaped item. Clip assemblies are available, for instance, to hold conduit. One ceiling configuration comes with pre-tied 12 gauge wire.

Cartridges

Manufacturers recommend certain cartridges for certain applications. Because recommendations cannot cover every possibility, testing may be required with unfamiliar base materials.

Cartridges come in .22, .25, and .27 caliber sizes. Larger calibers hold more powder which drives the fastener further – or into harder base materials. In addition, all three calibers are available with different levels of powder charge. For some tools there may be as many as six different powder charges available. Some manufacturers produce tools that use a long-case version of the .22- caliber cartridge. It is critical that you understand cartridge selection and cartridge identification systems.

COLOR	NUMBER	CARTRIDGE POWER
Grey	1	Lowest
Brown	2	
Green	3	
Yellow	4	
Red	5	
Purple	6	Highest

Shots may be packaged/loaded as single cartridges, strips of ten in a plastic holder, or a round disk holding ten cartridges. The tool model will determine the caliber and how the tool is to be loaded.

Number identifications are printed on the outside of cartridge packages. Cartridge tips are color-dipped for identification. Some strip cartridges are held in a plastic strip the same color as the cartridge tips.

The general rule is to start with the weakest cartridge and increase one cartridge color/load number at a time to reach the penetration required. Too strong a charge may cause shattering, ricochets, or blow-through. Too weak a cartridge will keep the fastener from seating itself properly.

Tool Power Controls

Many tools feature a “power control” device. This allows an operator to make a tool adjustment so that either all or only part of the available cartridge power is used. Power controls may ultimately let manufacturers market only one cartridge in each caliber.

The goal would be to handle every application which the caliber is capable of performing with one cartridge, power-controlled to the appropriate driving force needed.

Fastening Steel

Low-velocity powder-actuated tools should not be used on hardened steels, tool steels, or spring steels. Where the grade of steel is unknown, test by trying to hammer the fastener in. If the pin is blunted, bent, or fails to enter at least 1/16", do not use a low-velocity powder actuated tool – it's not up to the job.

Don't try to fire a fastener any closer than ½" to the free edge of steel. Keep in mind that this applies only to steel. When fastening steel to concrete, you must consider the allowable margin for concrete as well: 2½".

When fastening two pieces of thin sheet steel to a base material, hold the sheets together. Gaps caused by bending may lead to ricochets.

Special spall stops or protective shields are required for applications such as fastening sheet metal to masonry or sheet metal to structural steel. Consult the operating manual or the manufacturer to ensure that the right components are being used for the job.

Fastening Concrete and Masonry

Concrete and masonry materials are not always uniform in consistency or hardness. As a result, they may spall, chip, or cause a ricochet when the fastener strikes a spot or layer harder than the rest. Use the spall guard recommended by the manufacturer.

Once material is spalled or left with a ricochet hole, do not fire a second pin any closer than 2" to the damaged area. The area may be weakened and spall further or cause a ricochet off its sloped edge.

Pins tend to cause breaks near the edges of concrete and masonry. Don't drive pins closer than 2½" to a free edge.

Misfires

With misfired cartridges, follow the procedures stated in the operating manual for the tool you are using. Because of the wide variety of tools available, procedures for misfires may differ.

When such information is not available, take the following steps:

- Continue to hold the tool against the base material for at least 30 seconds. This protects against a delayed discharge of the cartridge.
- Remove the cartridge from the tool. During removal keep the tool pointed safely toward soft material such as wood. Never use any kind of prying device to extract the cartridge from the chamber. If the cartridge is wedged or stuck, tag the tool “DEFECTIVE and LOADED” and lock it in its storage container. Never try to dismantle a tool with a cartridge stuck or wedged in it. Again, tag it “DEFECTIVE and LOADED,” lock it away, and call the manufacturer's representative for help.
- Place misfired cartridges in a container of water.
- Keep the misfired cartridge separate from unused cartridges and return it to the manufacturer for disposal. Never throw misfired cartridges in the garbage.
- Be cautious. The problem may be a misfired cartridge, but the tool may also be defective. Check the tool for obvious damage, perform function tests, and use the tool only if it operates properly.

General Safeguards

- Make sure that the tool is not loaded. This action must become instinctive and be carried out before anything else is done with the tool. Even after watching someone else handle the tool before passing it on, make sure that it's not loaded.
- Powder-actuated tools should be used, handled, and stored properly.
- Never put your hand or fingers over the end of the muzzle for any reason, even when the tools are not loaded with fasteners.
- Tools must be inspected and function-tested before work starts. Proper training and the operator's manual will describe how to carry out both of these requirements.
- Know the powder-actuated tools you are using and wear all the required personal protective equipment.

Fasteners should not be fired through pre-drilled holes for two reasons:

1. Unless the fastener hits the hole accurately, it will probably shatter the edge.
2. The fastener derives its holding power from compressing the material around it. A pre-drilled hole reduces this pressure and therefore the fastener's holding power. (This is why studs and pins driven into steel should penetrate completely through the metal. Otherwise the compressed steel trying to regain its original position can loosen the fastener by pushing against the point. With the tip completely through the metal the same pressure only works to squeeze the pin tighter.)

- Firing explosive-actuated tools from ladders is not recommended. From a ladder it can be difficult to press the tool muzzle against the base material with enough pressure to fire. For tasks overhead or at heights, work from a scaffold or another approved work platform to ensure solid, balanced footing. As an alternative use a manufacturer's pole accessory if the reach is normal ceiling height (8-10 feet). The pole secures the tool and permits firing by the operator standing below.
- Do not leave the tool unattended unless it's locked in a box.
- Load the tool immediately before firing. Don't walk around with the tool loaded.
- Do not use powder-actuated tools in areas where there may be exposure to explosive vapors or gases.

Maintenance

- Tools in regular use should be cleaned daily. Tools used intermittently should be cleaned after firing.
- All parts of the tool exposed to detonation gases from the cartridge should be cleaned and lightly oiled according to the manufacturer’s instructions. The cartridge magazine port, cartridge chamber, and piston sleeve should be wiped clean but never be oiled.
- The tool brush supplied is adequate for most fouling.
- Stubborn carbon should be loosened with a manufacturer's spray detergent oil. Tools being checked for immediate use should be wiped dry of oil.
- Failure to clean the tool as recommended can lead to corrosion, pitting, fouling, and failure to work properly. Ideally, the tool should be cleaned before being returned to storage.
- Tools with a power control adjustment will accumulate additional powder residue from firing–especially when the control is set to restrict the amount of cartridge strength being used. Semi-automatic tools may also accumulate powder residue. These tools need to be cleaned more often.
- Sluggish performance may indicate that a tool needs cleaning. Tool action will slow to the point where a competent operator can detect the difference. Most manufacturers recommend major maintenance, inspection, and cleaning every six months. This involves stripping, inspecting, and cleaning parts not covered in daily maintenance.

Storage

Regulations require that both the tool and the cartridges be stored in a locked container with explosive loads of different strengths in separate containers. Cartridges should only be removed from the locked container when they are going to be used immediately.

The tool must require two separate actions before it will fire:

1. pressure against the surface of the material
2. action of the trigger.

- Explosive-actuated tools must be stored in a locked container when not in use or when left unattended.
- The tool must not be loaded until ready for immediate use.
- Whether loaded or unloaded, the tool must never be pointed at anyone.
- Cartridges must be marked or labeled for easy identification. Cartridges of different strengths must be stored in separate containers.
- Misfired cartridges must be placed in a container of water and be removed from the project.

FUEL OPERATED TOOLS

Regulation Rules to be Followed:

- All fuel powered tools will be stopped while being refueled, serviced, or maintained, and fuel will be transported, handled, and stored in accordance OSHA CFR Regulations.
- When fuel powered tools are used in enclosed spaces, the applicable requirements for concentrations of toxic gases and use of personal protective equipment will be followed

HYDRAULIC POWER TOOLS

Regulation Rules to be Followed:

- The fluid used in hydraulic powered tools will be fire-resistant fluids approved under Schedule 30 of the U.S. Bureau of Mines, Department of the Interior, and will retain its operating characteristics at the most extreme temperatures to which it will be exposed.
- The manufacturer's safe operating pressures for hoses, valves, pipes, filters, and other fittings will not be exceeded.

HAND TOOLS

Regulation Rules to be Followed:

- Employers will not issue or permit the use of unsafe hand tools.
- Wrenches, including adjustable, pipe, end, and socket wrenches will not be used when jaws are sprung to the point that slippage occurs.
- Impact tools, such as drift pins, wedges, and chisels, will be kept free of mushroomed heads.
- The wooden handles of tools will be kept free of splinters or cracks and will be kept tight in the tool.

Hand Saws

Select the right saw for the job. A 9 point is not meant for crosscutting hardwood. It can jump up and severely cut the worker's hand or thumb.

For this kind of work the right choice is an 11 point (+).When starting a cut, keep your thumb up high to guide the saw and avoid injury.

For cutting softwood, select a 9 point (-). The teeth will remove sawdust easily and keep the saw from binding and bucking.

Ripping requires a ripsaw.

Wood Chisels

Most injuries with this tool can be prevented by keeping the hand that holds the work behind, not in front of, the chisel.

- A dull or incorrectly sharpened chisel is difficult to control and tedious to work with.
- Chisels not in use or stored in a toolbox should have protective caps.
- Wood chisels are tempered to be very hard. The metal is brittle and will shatter easily against hard surfaces.
- Never use a chisel for prying.
- Repeatedly striking the chisel with the palm of your hand may lead to repetitive strain injury.
- With chisels and other struck tools, always wear eye protection. Gloves are recommended to help prevent cuts and bruises.

Cold Chisels

Cold chisels are used to cut or shape soft metals as well as concrete and brick.

In time the struck end will mushroom. This should be ground off. Don't use chisels with mushroomed heads. Fragments can fly off and cause injury.

Axes and Hatchets

In construction, axes are mainly used for making stakes or wedges and splitting or shaping rough timbers.

- Unless it has a striking face, don't use the hatchet as a hammer. The head or the wooden handle can crack and break.
- Hatchets with striking faces are meant only for driving common nails, not for striking chisels, punches, drills, or other hardened metal tools.
- Never use an axe or hatchet as a wedge or chisel and strike it with a hammer.
- Most carpenters prefer a hatchet with a solid or tubular steel handle and a hammer head with a slot for pulling nails.

Sledgehammers

Sledgehammers are useful for drifting heavy timbers and installing and dismantling formwork. They can knock heavy panels into place and drive stakes in the ground for bracing.

- Sledgehammers can also be used to drive thick tongue-and-groove planking tightly together. Use a block of scrap wood to prevent damage to the planks.
- The main hazard is the weight of the head. Once the hammer is in motion it's almost impossible to stop the swing. Serious bruises and broken bones have been caused by sledgehammers off-target and out of control.
- Missing the target with the head and hitting the handle instead can weaken the stem. Another swing can send the head flying.
- Always check handle and head. Make sure head is secure and tight. Replace damaged handles.
- As with any striking or struck tool, always wear eye protection.
- Swinging a sledgehammer is hard work. Avoid working to the point of fatigue. Make sure you have the strength to maintain aim and control.

Claw Hammers

These are available in many shapes, weights, and sizes for various purposes. Handles can be wood or steel (solid or tubular). Metal handles are usually covered with shock-absorbing material.

- Start with a good quality hammer of medium weight (16 ounces) with a grip suited to the size of your hand.
- Rest your arm occasionally to avoid tendinitis. Avoid overexertion in pulling out nails. Use a crow bar or nail puller when necessary.
- When nailing, start with one “soft” hit, that is, with fingers holding the nail. Then let go and drive the nail in the rest of the way.
- Strike with the hammer face at right angles to the nailhead. Glancing blows can lead to flying nails. Clean the face on sandpaper to remove glue and gum. Don't use nail hammers on concrete, steel chisels, hardened steel-cut nails, or masonry nails.
- Discard any hammer with a dented, chipped, or mushroomed striking face or with claws broken, deformed, or nicked inside the nail slot.

Utility Knives

Utility knives cause more cuts than any other sharp-edged cutting tool in construction.

- Use knives with retractable blades only.
- Always cut away from your body, especially away from your free hand. When you're done with the knife, retract the blade at once. A blade left exposed is dangerous, particularly in a toolbox.

Screwdrivers

Screwdrivers are not intended for prying, scraping, chiseling, scoring, or punching holes.

The most common abuse of the screwdriver is using one that doesn't fit or match the fastener. The results are cuts and punctures from slipping screwdrivers, eye injuries from flying fragments of pried or struck screwdrivers, and damaged work.

Always make a pilot hole before driving a screw. Start with one or two “soft” turns, that is, with the fingers of your free hand on the screw. Engage one or two threads, make sure the screw is going in straight, then take your fingers away.

You can put your fingers on the shank to help guide and hold the screwdriver. But the main action is on the handle, which should be large enough to allow enough grip and torque to drive the screw. Power drivers present obvious advantages when screws must be frequently or repeatedly driven.

Note: All cross-point screws are not designed to be driven by a Phillips screwdriver.

Phillips screws and drivers are only one type among several cross point systems. They are not interchangeable.

Hand Planes

Hazards include the risk of crush and scrape injuries when the hand holding the plane strikes the work or objects nearby. Cuts and sliver injuries are also common.

The hand plane requires some strength and elbow grease to use properly. The hazards of overexertion and tendinitis can be aggravated by using a dull iron or too short a plane.

- Only use a plane suited to the job and keep the iron sharp.
- For long surfaces like door edges, use a fore plane 18" long and 2 ⅜" wide or a jointer plane 24" long and 2 ⅝" wide.
- For shorter surfaces, use a jack plane 15" long and 2 ⅜" wide or a smoothing plane 10" long and 2 ⅜" wide.
- Remember that sharp tools require less effort and reduce the risk of fatigue, overexertion, and back strain.
- Work can also be easier with a door jack and supports on your work bench.

Plumb Bobs

The weight of a mercury-filled plumb bob will surprise you. Designed for use in windy conditions, the bob has considerable weight in proportion to its surface area.

The weight and point of the bob can make it dangerous. Ensure that all is clear below when you lower the bob.

Don't let it fall out of your pocket, apron, or tool bag. The same goes for the standard solid bob.

Crow Bars

Any steel bar 10-60 inches long and sharpened at one end is often called a crow bar.

The tools include pry bars, pinch bars, and wrecking bars. Shorter ones usually have a curved claw for pulling nails and a sharp, angled end for prying.

Nail Pulling

Pulling out nails can be easier with a crow bar than a claw hammer.

In some cases, a nail-puller does the job best. The hand holding the claw must be kept well away from the striking handle.

Lifting - Loads levered, lifted, or shifted by bars can land on fingers and toes.

- Make sure to clear the area and maintain control of the load.
- Have enough rollers and blocking ready.
- Never put fingers or toes under the load.

General

- Try to avoid prying, pulling, wedging, or lifting at sharp angles or overhead.
- Wherever possible, keep the bar at right angles to the work.
- Wear eye protection and, where necessary, face protection.

Chapter 14

Lockout/Tagout-Controlling Hazardous Energy

29 CFR-§1910.147 – The Control of Hazardous Energy

Company Policy for the Control of Hazardous Energy

All Ohio Sealants Inc. has adopted this program for Lockout/Tagout procedures for the control of hazardous energy threats.

All Ohio Sealants Inc. will enforce the following engineering controls and work practices in order to eliminate or minimize the hazards of an unexpected release of hazardous energy:

All Ohio Sealants Inc. will provide training to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees.

Training will include the following:

Each authorized employee will receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy possible in the workplace, and the methods and means necessary for energy isolation and control.

Each employee will be instructed in the purpose and use of the energy control procedure.

All other employees whose work operations are, or may be, in an area where energy control procedures are utilized, will be instructed in the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.

Retraining will be provided for all employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures. Additional retraining will also be conducted whenever a periodic inspection reveals, or when the employer has reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures. The retraining will reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

The employer will certify that employee training has been accomplished and is being kept up-to-date. The certification will contain each employee's name and dates of training.

The Lockout /Tagout procedures for All Ohio Sealants Inc. are administered by Keith Maxey and will be those described in the procedures defined in this chapter.

Each employee is responsible for ensuring that proper procedure is used on his/her specific job, the program is under the direct supervision of the job foreman at each work location.

In situations in which lockout or tagout devices must be temporarily removed from the energy isolating device and the machine or equipment energized to test or position the machine, equipment or components, the following sequence of actions will be followed:

- Clear the machine or equipment of tools and materials.
- Remove employees from the machine or equipment area.
- Remove the lockout or tagout devices.
- Energize and proceed with testing or positioning.
- De-energize all systems and reapply lockout according to proper procedure to continue the servicing and/or maintenance.

When service or maintenance is performed by a crew or other group, they will use the job foreman's lock for lockout procedure to ensure a level of protection equivalent to that provided by the implementation of a personal lockout or tagout device. Each member of the crew will attach his/her personal lock to the foreman's lock at the beginning of the procedure required, and remove their personal lock as their part in the procedure is complete. In the event a shift change is required during a lockout procedure, the affected employee will secure his/her lock on the control before removal of the previously used lock.

Failure to comply with proper Lockout/Tagout procedures is grounds for disciplinary action. It will be grounds for immediate termination of employment with All Ohio Sealants Inc. for any unauthorized removal of warning tags or lockout devices. The performance of Lockout/Tagout procedures will be inspected/evaluated at least annually by Keith Maxey for compliance with company policy. Inspections will be documented and date, equipment, and employee(s) reviewed will be recorded.

Lockout procedures are to be utilized over tagout procedures, where possible.

Locks used for (LOTO) will be clearly marked with identification of the employee applying the device.

Purpose

This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It will be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

Compliance with this Program

All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance will not attempt to start, energize, or use that machine or equipment.

Company Lockout/Tagout Policy

Purpose

All Ohio Sealants Inc. has established this "Lockout/Tagout Policy and Procedure" to provide maximum safety protection to our employees whenever they must service or perform maintenance on machinery and equipment.

Scope

These procedures must be used by all employees authorized to service or maintain our equipment to ensure that machines or equipment is completely isolated from all potentially hazardous energy sources. All employees affected in any way by servicing and maintenance activities must also be knowledgeable of lockout/tagout procedures.

Application

These procedures must be followed whenever unexpected energizing, star-up or release of stored energy could cause injury. These procedures do not apply when servicing or maintenance of equipment during normal production operations unless:

- Guards, or other safety devices, must be removed or bypassed.
- An employee places him/herself in an area where work on materials, etc., is actually being performed.
- An employee places him/herself in any area considered dangerous during the normal operating cycle.

Compliance

All supervisors are responsible and accountable for the use of safe lockout/tagout procedures by all employees under their supervision. Compliance with lockout/tagout procedures is mandatory. Non-compliance with these procedures is considered a violation of an employee's condition of employment.

Authorization

Employees who are properly trained and certified on equipment maintenance and lockout/tagout procedures, and approved by the facility manager, are authorized to implement lockout/tagout procedures as appropriate.

Lockout/Tagout Procedures

Preparation for Lockout

Review

Prior to lockout, the authorized employee(s) will review the lockout/tagout procedures for each machine/piece of equipment. As a minimum the following information will be reviewed:

- Types and magnitudes of energy.
- Hazards posed by that energy.
- Methods to effectively control the energy.

Particularly close attention must be given to energies (such as gravity, electrical, high pressure) that can be stored or re-accumulated after shut-down.

Notification

Prior to shutdown all affected employees will be notified to clear their work area and/or any other area that might be hazardous.

Lockout/Tagout

Shutdown

Machinery and equipment will be shut down in an orderly manner using the shutdown checklist procedures on the associated lockout;/tagout procedures for each machine/piece of equipment. If more than one authorized employee is involved in shutdown, the maintenance team leader will make sure all assistants have accomplished their tasks and are aware that shutdown will occur.

Isolation

All energy isolation devices will be located and operated to completely de-energize and isolate the equipment. The authorized employee, or team leader will verify operation of each energy isolation device.

Applying Lockout/Tagout Devices

Lockout devices — will be used to secure energy isolating devices unless the machinery or equipment is not capable of being locked out. Only authorized employees will affix lockout/tagout devices. Lockout devices must be able to hold energy isolation devices in a “safe” or “off” position.

Tagout devices — will be used only if machinery or equipment is not capable of being locked out. Tags will clearly state that moving energy isolating devices from the “safe” or “off” position is strictly prohibited. If a tag cannot be affixed to the energy isolating device, it will be located as close as safely possible to the device so that the tag is obvious to anyone attempting to operate the device.

Lockout/Tagout materials and hardware — will be provided by the employer. Each lockout/tagout device will be used only for lockout/tagout.

Lockout devices will have the following characteristics:

- Capable of withstanding harsh environments
- Standardized within the Company. Same color, shape, size, etc.
- Prevent removal without excessive force
- Singularly identify the user
- Uniquely keyed

In addition, tagout devices will also have the following characteristics:

- Non-reusable
- Attachable by hand
- Self-locking
- Non-releasable with not less than 50 LB locking strength
- Design/characteristics at least equivalent to a one-piece, all environment-tolerant nylon cable tie.

Stored Energy — Immediately after applying lockout or tagout devices, the authorized employee will ensure all potentially hazardous stored or residual energy is relieved, disconnected, restrained, and otherwise rendered safe.

If stored energy can be re-accumulated, the authorized employee will verify that the energy is isolated until maintenance is complete or the energy no longer exists.

Verification of Isolation — Before starting work on a machine or equipment that is locked or tagged out, the authorized employee will verify that the machinery or equipment is actually isolated and de-energized.

Release from Lockout or Tagout

The authorized employee will follow the procedures below prior to removing lockout or tagout devices and restoring energy:

- **Equipment** — Make sure machinery or equipment is properly re-assembled. Inspect machinery or equipment to make sure nonessential items have been removed.
- **Employees** — Make sure all employees are safely positioned outside danger zones. Notify affected employees that lockout/tagout devices have been removed and that energy is going to be re-applied.
- **Removing lockout/tagout devices** — Only the authorized employee who applied the lockout/tagout device may remove that device. Exception: When the authorized employee is not at the facility and all reasonable efforts have been made to inform the employee that their lockout/tagout device has been removed:
  - The owner is authorized and will remove the device following procedures in this section.
  - Each owner will be trained in proper lockout/tagout procedures.
  - The owner will ensure the authorized employee has this knowledge before he/she resumes work.

Testing/Positioning Machines or Equipment

Whenever lockout/tagout devices are removed to test or position machines and equipment, or their components, the authorized employee will complete the following procedures in the sequence presented:

- Clear the machine or equipment of tools and materials.
- Remove employees from danger zones.
- Remove lockout/tagout devices.
- Energize and proceed with testing or positioning.
- De-energize all systems and re-apply lockout/tagout devices.

Outside Personnel (Contractors, etc.)

- Outside servicing personnel contracted to perform maintenance or other services covered by these lockout/tagout procedures will not begin work until the owner is satisfied that their lockout/tagout procedures are at least equivalent to Company procedures.
- The owner will also ensure Company employees understand and comply with contracted personnel lockout/tagout procedures.

Shift/Personnel Changes

When a shift change occurs during a lockout/tagout procedure, the following procedures will be followed:

- The on-coming authorized employee(s) will attach lockout/tagout devices and verify complete isolation.
- The on-coming authorized employee(s) will receive a comprehensive briefing on the maintenance being performed from the off-going authorized employee(s).
- The off-going authorized employee(s) will remove their lockout/tagout devices.

Special Procedure: In the event that communication between off-going and on-coming authorized employee(s) is impossible and work is to be done on the equipment/machinery by the on-coming authorized employee(s), then the following procedures must be followed:

- The off-going authorized employee(s) will each check out a "department" lock from the maintenance department and record in the checkout log the status and condition of the equipment in question.
- The off-going authorized employee(s) will attach the "department" lock to the equipment/machinery and remove their personal lock.
- The on-coming authorized employee(s), upon realization the there is a "department" lock in place on the equipment/machinery to be worked on, will go to the maintenance department and read the checkout log, and sign for the appropriate key.
- The on-coming authorized employee(s) will attach their personal lock to the equipment/machinery and remove the "department" lock.
- The on-coming authorized employee(s) will immediately return the "department" lock and key to the maintenance department and sign in the key and lock.

Training

Training in Lockout/Tagout — will be provided to all employees who may be in an area where energy control procedures are used. This training will make sure that the purpose and function of the energy control program are understood and that employees gain the needed knowledge and skills to safely apply, use, and remove energy controls. As a minimum, training will include:

- Authorized employees must be able to recognize: hazardous energy sources, type and magnitude of energy in the workplace, and methods and means necessary to isolate and control the energy.
- Affected employees must be able to recognize: purpose and use of the energy control procedures.
- Other employees must be able to recognize: procedures and prohibitions of the energy control program.

Training for Tagout Devices — Further training on tagout systems need to emphasize that:

- Tags are warning devices only and do not provide a physical restraint that lockout devices provide.

- Tags must not be removed without the authorized employee's approval, and should never be bypassed, ignored, or otherwise defeated.
- Tags must be legible, and understandable by all employees.
- Tags must be able to withstand environmental conditions in the workplace.
- Tags may give employees a false sense of security.
- Tags must be securely attached to prevent being accidentally detached during use.

Retraining — Employees will be retrained at the following times:

  - Initial assignment.
  - Change in job assignment.
  - Change in machinery or equipment.
  - Change in operating procedures.

Inspections

Annual inspection on lockout/tagout procedures will be conducted by an authorized employee other than the one(s) using the control procedure being inspected.

- The purpose of the inspection is to correct any deviations or inadequacies in the procedures.
- The inspector and authorized employee must review responsibilities under the energy control procedure.
- The owner will certify that the inspection was conducted. Elements of the certification include:
  - Identification of equipment or machinery.
  - Date of inspection.
  - Employees included in the inspection.
  - Person performing inspection.

Purpose

This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It will be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

Compliance with this Program

All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance will not attempt to start, energize, or use that machine or equipment.

_____ _____

CEO/Owner Signature Date

What is "Lockout/Tagout"?

"Lockout/Tagout" refers to specific practices and procedures to safeguard employees from the unexpected energization or startup of machinery and equipment, or the release of hazardous energy during service or maintenance activities. This requires, in part, that a designated individual turns off and disconnects the machinery or equipment from its energy source(s) before performing service or maintenance and that the authorized employee(s) either lock or tag the energy-isolating device(s) to prevent the release of hazardous energy and take steps to verify that the energy has been isolated effectively. If the potential exists for the release of hazardous stored energy or for the reaccumulation of stored energy to a hazardous level, the employer must ensure that the employee(s) take steps to prevent injury that may result from the release of the stored energy.

Lockout devices hold energy-isolation devices in a safe or "off" position. They provide protection by preventing machines or equipment from becoming energized because they are positive restraints that no one can remove without a key or other unlocking mechanism, or through extraordinary means, such as bolt cutters. Tagout devices, by contrast, are prominent warning devices that an authorized employee fastens to energy-isolating devices to warn employees not to reenergize the machine while he or she services or maintains it. Tagout devices are easier to remove and, by themselves, provide employees with less protection than do lockout devices.

FORMS OF HAZARDOUS ENERGY	
Energy Form	***Description***
Potential	Stored energy that can be drawn upon to do work. Suspended loads, compressed springs, and pressurized hydraulic systems are examples. Potential energy can be converted to kinetic energy and many of the other energy forms below.
Kinetic	Energy resulting from moving objects such as released loads and uncoiling springs. When these objects are released, their potential energy is converted to kinetic energy.
Flammable	Energy converted from the combustion of gasses, liquids, solid chemicals, and vapors.
Chemical	The capacity of a substance to do work or produce heat through a change in its composition. Chemical energy can be converted from gasses, liquids, solid chemicals, and vapors.
Electrical	Energy generated through the conversion of other forms such as mechanical, thermal, or chemical energy. Energy stored between plates of a charged capacitor is an example of potential electrical energy. Typical electrical energy sources include open buss bars, motors, and generators.
Thermal	Energy transferred from one body to another as the result of a difference in temperature. Heat flows from the hotter to the cooler body. Sources include mechanical work, radiation, chemical reactions, and electrical resistance.

Lockout/Tagout Concerns

Employees can be seriously or fatally injured if machinery they service or maintain unexpectedly energizes, starts up, or releases stored energy. OSHA's standard on the Control of Hazardous Energy (Lockout/Tagout) spells out the steps employers must take to prevent accidents associated with hazardous energy. The standard addresses practices and procedures necessary to disable machinery and prevent the release of potentially hazardous energy while maintenance or servicing activities are performed.

Two other OSHA standards also contain energy control provisions. In addition, some standards relating to specific types of machinery contain de-energization requirements (requiring the switches to be "open and locked in the open position" before performing preventive maintenance on overhead and gantry cranes). These provisions apply in conjunction with the other machine-specific standards to assure that employees will be adequately protected against hazardous energy.

When OSHA Standards Apply

If your employees service or maintain machines where the unexpected startup, energization, or the release of stored energy could cause injury, the standards likely apply to you. The standards apply to all sources of energy, including, but not limited to: mechanical, electrical, hydraulic, pneumatic, chemical, and thermal energy.

Controlling hazardous energy in installations for the exclusive purpose of power generation, transmission, and distribution, including related equipment for communication or metering, is covered by 29 CFR 1910.269.

When OSHA Standards do not Apply

The standard does not apply to general industry service and maintenance activities in the following situations, when:

- Exposure to hazardous energy is controlled completely by unplugging the equipment from an electric outlet and where the employee doing the service or maintenance has exclusive control of the plug. This applies only if electricity is the only form of hazardous energy to which employees may be exposed. This exception encompasses many portable hand tools and some cord and plug connected machinery and equipment.

An employee performs hot-tap operations on pressurized pipelines that distribute gas, steam, water, or petroleum products, for which the employer shows the following:

- Continuity of service is essential.
- Shutdown of the system is impractical.
- The employee follows documented procedures and uses special equipment that provides proven, effective employee protection.
- The employee is performing minor tool changes or other minor servicing activities that are routine, repetitive, and integral to production, and that occur during normal production operations. In these cases, employees must have effective, alternative protection.

CRITERIA FOR LOCKOUT & TAGOUT DEVICES	
Criterion	***Description***
Singularly Identified	This means that any employee who sees a lockout or tagout device recognizes it and does not mistake its purpose. Each lock or tag must identify the employee who attached it and can only be used on an energy-isolating device. Each lock must have a unique key or combination; this means that only the employee who uses the lock must have the key or the combination to that lock.
Durable	Lockout devices must work under the environmental conditions in which they are used. Tagout device warnings must remain legible even when they are used in wet, damp, or corrosive conditions.
Standardized	Lockout and tagout devices must be designated by color, shape, or size. Tagout devices must have a standardized print and warning format.
Substantial	Lockout devices and tagout devices must be strong enough that they cannot be removed inadvertently. Tagout devices must be attached with a single-use, self-locking material such as a nylon cable tie.

Lockout/Tagout Requirements that Apply to Service & Maintenance Operations

The standard applies to the control of hazardous energy when employees are involved in service or maintenance activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining or servicing machines or equipment. These activities include lubricating, cleaning or unjamming machines, and making adjustments or tool changes, where the employees may be exposed to hazardous energy.

If a service or maintenance activity is part of the normal production operation, the employee performing the servicing may be subjected to hazards not normally associated with the production operation itself. Although machine guarding provisions cover most normal production operations, workers doing service or maintenance activities during normal production operations must follow lockout/tagout procedures if they:

- Remove or bypass machine guards or other safety devices
- Place any part of their bodies in or near a machine's point of operation
- Place any part of their bodies in a danger zone associated with machine operations

Work involving minor tool changes and adjustments or other servicing activities that are routine, repetitive, and integral to the use of the production equipment and that occur during normal production operations are not covered by the lockout/tagout standard. This exception is limited, however, and applies only when economic considerations prevent the use of prescribed energy-isolation measures and when the employer provides and requires alternative measures to ensure effective, alternative protection.

Whenever the standard is applicable, the machinery must be shut off and isolated from its energy sources, and lockout or tagout devices must be applied to the energy-isolation devices. In addition, the authorized employee(s) must take steps to verify that he or she has effectively isolated the energy. When there is stored or residual energy, the authorized employee(s) must take steps to render that energy safe. If the possibility exists for reaccumulation of stored energy to hazardous levels, the employer must ensure that the worker(s) perform verification steps regularly to detect such reaccumulation before it has the potential to cause injury.

OSHA's Requirements

OSHA's standard establishes minimum performance requirements for controlling hazardous energy. The standard specifies that employers must establish an energy-control program to ensure that employees isolate machines from their energy sources and render them inoperative before any employee services or maintains them.

As part of an energy-control program, employers must:

- Establish energy-control procedures for removing the energy supply from machines and for putting appropriate lockout or tagout devices on the energy-isolating devices to prevent unexpected re-energization. When appropriate, the procedure also must address stored or potentially re-accumulated energy.
- Train employees on the energy-control program, including the safe application, use, and removal of energy controls.
- Inspect these procedures periodically (at least annually) to ensure that they are being followed and that they remain effective in preventing employee exposure to hazardous

If employers use tagout devices on machinery that can be locked out, they must adopt additional measures to provide the same level of employee protection that lockout devices would provide. Within the broad boundaries of the standard, employers have the flexibility to develop programs and procedures that meet the needs of their individual workplaces and the particular types of machines being maintained or serviced.

PROCEDURE FOR SHUTTING DOWN EQUIPMENT AND CONTROLLING HAZARDOUS ENERGY	
Critical Step	***Action***
1	Prepare to shut down the equipment — Each authorized employee who shuts down equipment must know the type and magnitude of the energy, its hazards, and how to control the energy. All affected employees must know that the equipment is being serviced and that it will be shut down and locked out for the duration of the service work. (An authorized employee is one who locks out or tags out the energy-isolating device and services the equipment. An affected employee may use the equipment or work in the area where the equipment is being serviced under a lockout or tagout procedure.
2	Shut down the equipment — If the equipment is operating, shut it down as you normally would.
3	• De-energize the equipment: isolate or block the hazardous energy — The method(s) you use depends on the form of energy and the means available to control it. • To isolate the energy • Disconnect motors that power the equipment. • De-energize electrical circuits by disconnecting the power source from the circuit. • To block the energy • Block fluid flow in hydraulic, pneumatic, or steam systems with control valves or by capping or blanking the lines. • Block equipment parts that could be moved by gravity.

4	Dissipate any potential (stored) energy — Some forms of energy must also be dissipated after equipment has been de-energized. Capacitors; coiled springs; elevated machine members; rotating flywheels; and air, gas, steam, chemical, and water systems are sources of hazardous stored energy. If the energy could return to a hazardous level, you must make sure that it remains isolated from the equipment until all service work is finished. • Vent pressurized fluids until internal pressure levels reach atmospheric levels. • Discharge capacitors by grounding them. • Release or block tensioned springs. • Ensure that all moving parts have stopped completely.
5	• Lock out or tag out the energy-isolating device — If you can lock out the energy-isolating device, then you must lock it out. If you tag out the device, you must ensure that your tag will be as effective as a lock. • To lock out the device — Attach your lock and a personal identification tag to the device. • The lock must hold the energy-isolating device in a “safe” or “off ” position. • To tag out the device — Attach the tag to the device or as close to it as possible. The tag must clearly state that changing the energy-isolating device from the “safe” or “off ” position is prohibited.
6	• Verify that the equipment is isolated from the hazardous energy — Before servicing locked-out or tagged-out equipment, verify that the equipment is, in fact, de-energized and isolated from all energy sources. • Verify that the equipment is isolated or disconnected from all energy sources. • Verify that no one is near the equipment. • Push the start button or engage the normal operating control(s) to make certain the equipment will not operate. • Return operating control(s) to neutral or “off ” position after verifying that the equipment does not start.

What Energy-Control Procedures Must Include

Employers must develop, document, and use procedures to control potentially hazardous energy. The procedures explain what employees must know and do to control hazardous energy effectively when they service or maintain machinery. If this information is the same for the various machines used at a workplace, then a single energy-control procedure may suffice. For example, similar machines (those using the same type and magnitude of energy) that have the same or similar types of control measures can be covered by a single procedure. Employers must develop separate energy-control procedures if their workplaces have more variable conditions such as multiple energy sources, different power connections, or different control sequences that workers must follow to shut down various pieces of machinery.

The energy-control procedures must outline the scope, purpose, authorization, rules, and techniques that employees will use to control hazardous energy sources, as well as the means that will be used to enforce compliance. These procedures must provide employees at least the following information:

- A statement on how to use the procedures.
- Specific procedural steps to shut down, isolate, block, and secure machines.
- Specific steps designating the safe placement, removal, and transfer of lockout/tagout devices and identifying who has responsibility for the lockout/tagout devices.
- Specific requirements for testing machines to determine and verify the effectiveness of lockout devices, tagout devices, and other energy-control measures.

What Workers Must Do Before Beginning Service or Maintenance Activities

Before beginning service or maintenance, the following steps must be accomplished in sequence and according to the specific provisions of the employer's energy-control procedure:

- Prepare for shutdown.
- Shut down the machine.
- Disconnect or isolate the machine from the energy source(s).
- Apply the lockout or tagout device(s) to the energy-isolating device(s).
- Release, restrain, or otherwise render safe all potential hazardous stored or residual energy. If a possibility exists for re-accumulation of hazardous energy, regularly verify during the service and maintenance that such energy has not re-accumulated to hazardous levels.
- Verify the isolation and de-energization of the machine.

What Workers Must Do Before Removing Lockout/Tagout Device(s) and Re-energizing Machinery or Equipment

Employees who work on de-energized machinery may be seriously injured or killed if someone removes lockout/tagout devices and reenergizes machinery without their knowledge. Thus, it is extremely important that all employees respect lockout and tagout devices and that only the person(s) who applied these devices remove them.

Before removing lockout or tagout devices, the employees must take the following steps in accordance with the specific provisions of the employer's energy-control procedure:

- Inspect machines or their components to assure that they are operationally intact and that nonessential items are removed from the area.
- Check to assure that everyone is positioned safely and away from machines.

After removing the lockout or tagout devices but before reenergizing the machine, the employer must assure that all employees who operate or work with the machine, as well as those in the area where service or maintenance is performed, know that the devices have been removed and that the machine is capable of being reenergized. In the rare situation in which the employee who placed the lockout/tagout device is unable to remove that device, another person may remove it under the direction of the employer, provided that the employer strictly adheres to the specific procedures outlined in the standard.

PROCEDURE FOR REMOVING LOCKOUT OR TAGOUT DEVICES AND RE-ENERGIZING EQUIPMENT	
Critical Step	***Action***
1	Inspect the repair or maintenance work — Make sure you have all your work tools and that you have replaced all equipment components.
2	Tell coworkers that you are removing the lockout or tagout device — Check the work area to ensure that all workers are clear of the area.
3	Check the equipment power controls — Verify that the equipment power controls are in a neutral or off position.
4	Remove the lockout or tagout device — The person who attached the device must also remove it.
5	Re-energize the equipment.

How and When to Use Lockout

You must use a lockout program (or tagout program that provides a level of protection equal to that achieved through lockout) whenever your employees engage in service or maintenance operations on machines that are capable of being locked out and that expose them to hazardous energy from unexpected energization, startup, or release of stored energy. The primary way to prevent the release of hazardous energy during service and maintenance activities is by using energy-isolating devices such as manually operated circuit breakers, disconnect switches, and line valves and safety blocks. Lockout requires use of a lock or other lockout device to hold the energy-isolating device in a safe position to prevent machinery from becoming reenergized. Lockout also requires employees to follow an established procedure to ensure that machinery will not be reenergized until the same employee who placed the lockout device on the energy-isolating device removes it.

Determine if the Energy-Isolating Device Can Be Locked Out

- An energy-isolating device is considered “capable of being locked out” if it meets one of the following requirements:
- Is designed with a hasp or other part to which you can attach a lock such as a lockable electric disconnect switch.
- Has a locking mechanism built into it.
- Can be locked without dismantling, rebuilding, or replacing the energy-isolating device or permanently altering its energy-control capability, such as a lockable valve cover or circuit breaker blockout.

If Equipment Can Not Be Locked Out

Sometimes it is not possible to lock out the energy-isolating device associated with the machinery. In that case, you must securely fasten a tagout device as close as safely possible to the energy-isolating device in a position where it will be immediately obvious to anyone attempting to operate the device. You also must meet all of the tagout provisions of the standard. The tag alerts employees to the hazard of re-energization and states that employees may not operate the machinery to which it is attached until the tag is removed in accordance with an established procedure.

Other Options

If it is possible to lock out an energy-isolating device, employers must use lockout devices unless they develop, document, and use a tagout procedure that provides employees with a level of protection equal to that provided by a lockout device. In a tagout program, an employer can attain an equal level of protection by complying with all tagout-related provisions of the standard and using at least one added safety measure that prevents unexpected reenergization. Such measures might include

removing an isolating circuit element, blocking a controlling switch, opening an extra disconnecting device, or removing a valve handle to minimize the possibility that machines might inadvertently be reenergized while employees perform service and maintenance activities.

When Tagout Devices Can Be Used Instead of Lockout Devices

When an energy-isolating device cannot be locked out, the employer must modify or replace the energy-isolating device to make it capable of being locked out or use a tagout system. Whenever employers significantly repair, renovate, or modify machinery or install new or replacement machinery, however, they must ensure that the energy-isolating devices for the machinery are capable of being locked out.

Tagout devices may be used on energy-isolating devices that are capable of being locked out if the employer develops and implements the tagout in a way that provides employees with a level of protection equal to that achieved through a lockout system.

When using a tagout system, the employer must comply with all tagout-related provisions of the standard and train employees in the limitations of tags, in addition to providing normal hazardous energy control training for all employees.

Limitations of Tagout Devices

A tagout device is a prominent warning that clearly states that the machinery being controlled must not be operated until the tag is removed in accordance with an established procedure.

Tags are essentially warning devices and do not provide the physical restraint of a lock. Tags may evoke a false sense of security. For these reasons, OSHA considers lockout devices to be more secure and more effective than tagout devices in protecting employees from hazardous energy.

Requirements for Lockout/Tagout Devices

Whether lockout or tagout devices are used, they must be the only devices the employer uses in conjunction with energy-isolating devices to control hazardous energy. The employer must provide these devices and they must be singularly identified and not used for other purposes. In addition, they must have the following characteristics:

☐ **Durable enough to withstand workplace conditions.** Tagout devices must not deteriorate or become illegible even when used with corrosive components such as acid or alkali chemicals or in wet environments.

☐ **Standardized according to color, shape, or size.** Tagout devices also must be standardized according to print and format. Tags must be legible and understandable by all employees. They must warn employees about the hazards if the machine is energized, and offer employees clear instruction such as:

- "Do Not Start"
- "Do Not Open"
- "Do Not Close"
- "Do Not Energize"
- "Do Not Operate"

☐ **Substantial enough to minimize the likelihood of premature or accidental removal.** Employees should be able to remove locks only by using excessive force with special tools such as bolt cutters or other metal-cutting tools. Tag attachments must be non-reusable, self-locking, and non-releasable, with a minimum unlocking strength of 50 pounds. Tags must be attachable by hand, and the device for attaching the tag should be a one-piece nylon cable tie or its equivalent so it can withstand all environments and conditions.

☐ **Labeled** to identify the specific employees authorized to apply and remove them.

What Employees Need to Know About Lockout/Tagout Programs

Training must ensure that employees understand the purpose, function, and restrictions of the energy-control program. Employers must provide training specific to the needs of "authorized," "affected," and "other" employees.

"Authorized" employees are those responsible for implementing the energy-control procedures or performing the service or maintenance activities. They need the knowledge and skills necessary for the safe application, use, and removal of energy-isolating devices. They also need training in the following:

- Hazardous energy source recognition.
- The type and magnitude of the hazardous energy sources in the workplace.
- Energy-control procedures, including the methods and means to isolate and control those energy sources.

"Affected" employees (usually machine operators or users) are employees who operate the relevant machinery or whose jobs require them to be in the area where service or maintenance is performed. These employees do not service or maintain machinery or perform lockout/tagout activities.

- Affected employees must receive training in the purpose and use of energy-control procedures. They also need to be able to do the following:
- Recognize when the energy-control procedure is being used.
- Understand the purpose of the procedure.
- Understand the importance of not tampering with lockout or tagout devices and not starting or using equipment that has been locked or tagged out.

All other employees whose work operations are or may be in an area where energy-control procedures are used must receive instruction regarding the energy-control procedure and the prohibition against removing a lockout or tagout device and attempting to restart, reenergize, or operate the machinery.

In addition, if tagout devices are used, all employees must receive training regarding the limitations of tags.

TRAINING FOR AUTHORIZED & AFFECTED EMPLOYEES		
Employees	***The Nature of Their Work***	***What Their Training Must Include***
Authorized	Those who lock out or tag out the equipment and who do the maintenance work on the equipment.	• How to find and recognize hazardous energy sources. • The types and magnitudes of energy used in the workplace. • How to isolate energy sources.
Affected	Those who may use equipment serviced under lockout or tagout procedures and other employees who work in area affected by the procedures. (An affected employee becomes an authorized employee when that employee's duties includes service or maintenance work on equipment.)	• The purpose of energy-control procedures. • How energy-control procedures are applied. • How energy-control procedures will protect them.

When Training is Necessary

The employer must provide initial training before starting service and maintenance activities and must provide retraining as necessary. In addition, the employer must certify that the training has been given to all employees covered by the standard. The certification must contain each employee's name and dates of training.

Employers must provide retraining for all authorized and affected employees whenever there is a change in the following:

- Job assignments.
- Machinery or processes that present a new hazard.
- Energy-control procedures.

Retraining also is necessary whenever a periodic inspection reveals, or an employer has reason to believe, that shortcomings exist in an employee's knowledge or use of the energy-control procedure.

When Power is needed to Test or Position Equipment

OSHA allows the temporary removal of lockout or tagout devices and the re-energization of the machine only in limited situations for particular tasks that require energization– for example, when power is needed to test or position machines, equipment, or components. However, this temporary exception applies only for the limited time required to perform the particular task requiring energization. Employers must provide effective protection from hazardous energy when employees perform these operations.

The following steps must be performed in sequence before re-energization:

- Clear tools and materials from machines.
- Clear employees from the area around the machines.
- Remove the lockout or tagout devices as specified in the standard.
- Energize the machine and proceed with testing or positioning.
- Deenergize all systems, isolate the machine from the energy source, and reapply energy-control measures if additional service or maintenance is required.

The employer must develop, document, and use energy-control procedures that establish a sequence of actions to follow whenever re-energization is required as a part of a service or maintenance activity, since employees may be exposed to significant risks during these transition periods.

PROCEDURE FOR TEMPORARY REMOVAL OF LOCKOUT & TAGOUT DEVICES	
Critical Step	***Action***
1	Clear all tools or other materials near the equipment.
2	Make sure no workers are near the equipment.
3	Remove the lockout or tagout devices.
4	Energize the equipment.
5	Shut down the equipment.

Using Outside Contractors for Service or Maintenance Procedures

If an outside contractor services or maintains machinery, the onsite employer and the contractor must inform each other of their respective lockout or tagout procedures. The onsite employer also must ensure that employees understand and comply with all requirements of the contractor's energy-control program(s).

When a Group Performs Service or Maintenance Activities

When a crew, department, or other group performs service or maintenance, they must use a procedure that provides all employees a level of protection equal to that provided by a personal lockout or tagout device. Each employee in the group must have control over the sources of hazardous energy while he or she is involved in service and maintenance activities covered by the standard. Personal control is achieved when each authorized employee affixes a personal lockout/tagout device to a group lockout mechanism instead of relying on a supervisor or other person to provide protection against hazardous energy.

GROUP LOCKOUT-THE GROUP LOCKBOX VARIATION	
Step	***Activity***
1	An authorized employee secures each energy-isolating device with a personal lock.
2	The same authorized employee places the key that fits each lock in a group lock box with a multi-lock hasp.
3	The other authorized employees in the group secure the lockbox – they attach their personal locks to the box – before beginning their service work.
4	After each employee finishes service work on the equipment, that employee removes his personal lock from the lockbox.
5	After all the employees have finished their service work and removed their personal locks from the lockbox, the authorized employee who placed the key in the box removes it.
6	The authorized employee uses the key to remove the locks on the energy-isolating devices.

When a Shift Changes During Machine Service or Maintenance

Employers must make sure that there is a continuity of lockout or tagout protection. This includes the orderly transfer of lockout or tagout device protection between outgoing and incoming shifts to control hazardous energy. When lockout or tagout devices remain on energy-isolation devices from a previous shift, the incoming shift members must verify that the machinery is effectively isolated and deenergized.

Review of Lockout/Tagout Procedures

Employees are required to review their procedures at least once a year to ensure that they provide adequate worker protection. As part of the review, employers must correct any deviations and inadequacies identified in the energy-control procedure or its application.

What a Review Should Involve

The periodic inspection is intended to assure that employees are familiar with their responsibilities under the procedure and continue to implement energy-control procedures properly. The inspector, who must be authorized and not involved in the particular control procedure being inspected, must be able to determine the following:

- Employees are following steps in the energy-control procedure.
- Employees involved know their responsibilities under the procedure.
- The procedure is adequate to provide the necessary protection, and what changes, if any, are needed.

For a lockout procedure, the periodic inspection must include a review of each authorized employee's responsibilities under the energy-control procedure being inspected. Where tagout is used, the inspector's review also extends to affected employees because of the increased importance of their role in avoiding accidental or inadvertent activation of the machinery. In addition, the employer must certify that the designated inspectors perform periodic inspections. The certification must specify the following:

- Machine or equipment on which the energy-control procedure was used.
- Date of the inspection.
- Names of employees included in the inspection.
- Name of the person who performed the inspection.

Commonly Used Terms

Affected Employee — An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized Employee — A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under the standard.

Capable of Being Locked Out — An energy-isolating device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy-isolating devices are capable of being locked out, if lockout can be achieved, without the need to dismantle, rebuild, or replace the energy-isolating device or permanently alter its energy control capability.

Energized — Connected to an energy source or containing residual or stored energy.

Energy-Isolating Device — A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: a manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit-type devices are not energy-isolating devices.

Energy Source — Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Hot Tap — A procedure used in the repair, maintenance, and services activities, which involve welding on a piece of equipment (pipelines, vessels, or tanks) under pressure, in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

Lockout — The placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy-isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device — A device that uses a positive means such as a lock, either key or combination type, to hold an energy-isolating device in the safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

Normal Production Operations — The utilization of a machine or equipment to perform its intended production function.

Servicing and/or Maintenance — Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubricating, cleaning or unjamming machines or equipment and making adjustments or tool changes where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

Setting Up — Any work performed to prepare a machine or equipment to perform its normal production operation.

Tagout — The placement of a tagout device on an energy-isolating device, in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout Device — A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy-isolating device in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Company Lockout/Tagout Audit

This audit covers the servicing and maintenance of machines and equipment in which the unexpected start up of the machines or equipment, or release of stored energy could cause injury to employees. Mark your item choices in the boxes: Y=Yes, N=No.

Energy Control Program

Y/N

☐ ☐ Has the employer established an energy control program consisting of energy control procedures, employee training and periodic inspections?

☐ ☐ Is a responsible person appointed to monitor the effectiveness of the energy control program?

Lockout/Tagout

☐ ☐ Is a tagout system used only if an energy isolating device is not capable of being locked out?

☐ ☐ Can the employer prove that the utilization of a tagout system will provide full employee protection?

☐ ☐ Whenever replacement or major repair, renovation or modification of a machine or equipment is performed, and whenever new machines or equipment are installed, are energy isolating devices for such machine or equipment designed to accept a lockout device?

Energy Control Procedure

☐ ☐ Are written procedures in place, documented and used for the control of potentially hazardous energy?

Exception: The employer need not document the required procedure for a particular machine or equipment, when all of the following elements exist:

- The machine or equipment has no potential for stored or residual energy or re-accumulation of stored energy after shut down which could endanger employees.
- The machine or equipment has a single energy source which can be readily identified and isolated.
- The isolation and locking out of that energy source will completely de-energize and de-activate the machine or equipment.
- The machine or equipment is isolated from that energy source and locked out during servicing or maintenance.
- A single lockout device will achieve a locked-out condition.
- The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance.
- The servicing or maintenance does not create hazards for other employees.
- The employer, in utilizing this exception, has had no accidents involving the unexpected activation or re-energizing of the machine or equipment during servicing or maintenance.

☐ ☐ Do procedures clearly and specifically outline the scope, purpose, authorization, rules and techniques to be utilized for the control of hazardous energy, and the means to enforce compliance? Do procedures include:

  - A specific statement of the intended use of the procedure.
  - Specific procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy.
  - Specific procedural steps to place, remove, and transfer lockout devices/ tagout devices and the responsibility for them.

- Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tagout devices, and other energy control measures.

Protective Materials and Hardware

Y/N

- ☐ ☐ Are locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware provided by the employer for isolating, securing or blocking of machines or equipment from energy sources?
- ☐ ☐ Are lockout devices and tagout devices singularly identified; the only device(s) used for controlling energy, and not used for other purposes?
- ☐ ☐ Are lockout and tagout devices capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected?
- ☐ ☐ Are tagout devices constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible?
- ☐ ☐ Are tags made so that they will not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored?
- ☐ ☐ Are lockout and tagout devices standardized within the facility in at least one of the following criteria: color; shape; or size; and additionally, in the case of tagout devices, print and format
- ☐ ☐ Are lockout devices substantial enough to prevent removal without the use of excessive force or unusual techniques, such as the use of bolt cutters or other metal cutting tools?
- ☐ ☐ Are tagout devices, including their means of attachment, substantial enough to prevent inadvertent or accidental removal?
- ☐ ☐ Are the means of attaching tagout devices of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds?
- ☐ ☐ Is the general design and basic characteristics of the means of attachment at least equivalent to a one-piece, all environment-tolerant nylon cable tie?
- ☐ ☐ Do lockout devices and tagout devices indicate the identity of the employee applying the device(s)?
- ☐ ☐ Do tagout devices warn against hazardous conditions if the machine or equipment is energized and include a legend such as the following: Do Not Start. Do Not Open. Do Not Close. Dot Not Energize. Do Not Operate?
- ☐ ☐ Does each person's lock have either a key or combination which is unique to that device?

Periodic Inspection

- ☐ ☐ Does the employer conduct a periodic inspection of the energy control procedure at least annually?
- ☐ ☐ Is the periodic inspection performed by an authorized employee other than the one(s) utilizing the energy control procedure being inspected?
- ☐ ☐ Is the periodic inspection conducted to correct any deviations or inadequacies identified?

☐ ☐ Does the periodic inspection include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected?

☐ ☐ Does the employer certify in writing that the periodic inspections have been performed?

Note: The certification must identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

Training and Communication

Y/N

☐ ☐ Does the employer provide training to make sure that the purpose and function of the energy control program is understood by employees, and that the knowledge and skills required for the safe application, use, and removal of the energy controls are acquired by employees?

☐ ☐ Does the training include the following:

- Authorized employees. The recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.
- Affected employees. The purpose and use of the energy control procedure.
- All other employees. General lockout/tagout program and procedures, and the prohibition relating to attempts to restart or re-energize machines or equipment which are locked out or tagged out.

☐ ☐ When a tagout system is used, employees should be trained that:

- Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock.
- When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.
- Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective.
- Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.
- Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.
- Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

Employee Retraining

☐ ☐ Is retraining provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures?

☐ ☐ Is additional retraining conducted whenever a periodic inspection reveals, or whenever the employer has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures?

☐ ☐ Does retraining re-establish employee proficiency and introduce new or revised control methods and procedures, as necessary?

☐ ☐ Does the employer certify that employee training has been accomplished and is being kept up-to-date, and does the certification contain each employee's name and dates of training?

Energy Isolation

Y/N

☐ ☐ Is lockout or tagout performed only by the authorized employees who are performing the servicing or maintenance?

Notification of Employees

☐ ☐ Are affected employees notified by the employer or authorized employee of the application and removal of lockout or tagout devices?

☐ ☐ Is notification given before the controls are applied, and after they are removed from the machine or equipment?

Application of Controls

☐ ☐ Are established procedures for the application of energy control (the lockout or tagout procedures) being accomplished in proper sequence?

Step One: Preparation for shutdown

☐ ☐ Does the authorized employee have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy before turning off a machine or equipment?

Step Two: Machine or equipment shutdown

☐ ☐ Are machines or equipment turned off or shut down using orderly, established procedures?

Step Three: Machine or equipment isolation

☐ ☐ Are all energy isolating devices needed to control the energy to the machine or equipment physically located and operated in such a manner as to isolate the machine or equipment?

Step Four: Lockout or tagout device application

☐ ☐ Are lockout or tagout devices affixed to each energy isolating device by authorized employees?

☐ ☐ Are lockout devices affixed in a manner that will hold the energy isolating devices in a "safe" or "off" position?

☐ ☐ Are tagout devices, where used, affixed in such a manner as will clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited?

☐ ☐ Where tagout devices are used with energy isolating devices designed with the capability of being locked, is the tag fastened at the same point at which the lock would have been attached? (Remember using tags is not allowed unless full employee protection can be proved.)

☐ ☐ Where a tag cannot be affixed directly to the energy isolating device, is the tag located as close as safely possible to the device, and in a position that will be immediately obvious to anyone attempting to operate the device?

☐ ☐ Following the application of lockout or tagout devices to energy isolating devices, is all potentially hazardous stored or residual energy relieved, disconnected, restrained, and otherwise rendered safe?

☐ ☐ If there is a possibility of re-accumulation of stored energy to a hazardous level, is isolation verification continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists?

☐ ☐ Prior to starting work on machines or equipment that have been locked out or tagged out, does the authorized employee verify that isolation and de-energizing of the machine or equipment have been accomplished?

Release from Lockout or Tagout

Y/N

☐ ☐ Before lockout or tagout devices are removed and energy is restored to the machine or equipment, are the following actions taken?

- The work area is inspected to ensure that non-essential items have been removed and that machine or equipment components are operationally intact.
- The work area is checked to make sure all employees have been safely positioned or removed.
- Before lockout or tagout devices are removed and before machines or equipment are energized, affected employees are notified that the lockout devices have been removed.
- After lockout or tagout devices have been removed and before a machine or equipment is started, affected employees are notified that the lockout or tagout device(s) have been removed.

☐ ☐ Is each lockout or tagout device removed from each energy isolating device by the employee who applied the device?

☐ ☐ When the authorized employee who applied the lockout or tagout device is not available to remove it, is the device removed under the direction of the employer using specific procedures? Do those procedures include:

- Verification by the employer that the authorized employee who applied the device is not at the facility;
- Making all reasonable efforts to contact the authorized employee to inform them that their lockout or tagout device has been removed; and
- Ensuring that the authorized employee has this knowledge before he/she resumes work at that facility.

Testing or Positioning of Machines, Equipment or Components Thereof

☐ ☐ When lockout or tagout devices must be temporarily removed to test or position the machine, equipment or component, is the following sequence of actions followed:

- Clear the machine or equipment of tools and materials.
- Remove employees from the machine or equipment area.
- Remove the lockout or tagout devices.
- Energize and proceed with testing or positioning.
- De-energize all systems and reapply energy control measures to continue the servicing and/or maintenance.

Outside Personnel (contractors, etc.)

Y/N

- ☐ ☐ Whenever outside servicing personnel are to be engaged in activities, does the on-site employer and the outside employer inform each other of their respective lockout or tagout procedures?
- ☐ ☐ Does the on-site employer make sure that his/her employees understand and comply with the guidelines and restrictions of the outside employer's energy control program?

Shift or Personnel Changes

- ☐ ☐ Are specific procedures used during shift or personnel changes to ensure continuity of lockout or tagout protection?
- ☐ ☐ Do shift change procedures include the orderly transfer of lockout or tagout device protection between off-going and on-coming employees?

Inspector's Name

Date

Chapter 15

Ladder & Stairway Safety

§1926.1053 - Ladders

§1926.1060 - Training Requirements

Keith Maxey is responsible for the implementation and enforcement of the following safety rules as they apply to ladder & stairway safety.

All Ohio Sealants Inc. will ensure that each employee has been trained by a competent person in the following areas.

- The nature of all fall hazards in the work area.
- The maximum intended load-carrying capacities of ladders and the correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used.
- The proper construction, use, placement, and care in handling of all stairways and ladders.

Introduction

Most ladder falls involve portable ladders that move, tilt, or shift while a worker is climbing or descending. Unstable or slippery base surfaces are the primary reasons ladders fail.

Other reasons include a misstep or a slip of the foot, loss of balance, an overreach, and being struck by a vehicle or other object.

Workers can reduce ladder fall risks by doing the following:

- Frequently inspect & maintain ladders.
- Match tasks to appropriate ladders.
- Set up ladders correctly.
- Climb & descend ladders properly.

Employers, too, have a responsibility for training workers so they understand these safe work practices and can use them effectively. This chapter will help promote safe work practices for portable ladders, and we encourage you to use it as a basic reference.

Ladder Ratings

There are many types of portable ladders, but they all receive one of four ratings, based on their maximum working load (the maximum weight they can safely support). Before you use a ladder, check its rating and be sure not to subject it to a load greater than its rated capacity.

Rating	***Working Load***
Extra heavy duty (I-A)	300 pounds
Heavy duty (I)	250 pounds
Medium duty (II)	225 pounds
Light duty (III)	200 pounds

Types of Portable Ladders

Portable ladders are either non-self-supporting (such as the straight ladder) or self-supporting (such as the standard step ladder). Within one of these two categories, you are likely to find the right size, shape, and type of ladder to accomplish your task.

Non-Self-Supporting Ladders

Single Portable or Straight Ladder

The single portable or straight ladder is indispensable for general use. It is the most common type of portable ladder and has the widest range of applications. When used on slippery surfaces, this ladder must have slip-resistant feet or be secured to prevent it from sliding.

Rubber or neoprene ladder shoes are recommended for smooth, dry surfaces, and spikes are recommended for snow or ice. Single portable ladders must not be longer than 30 feet and are intended for use by only one worker at a time. Such ladders are available in wood, metal, and reinforced fiberglass.

Extension or Section Ladder

Extension ladders offer the greatest length in a general purpose ladder. The ladder consists of two or more sections that travel in guides or brackets, allowing adjustable lengths. The sections must be assembled so that the sliding upper section is on top of the lower section. Each section must overlap its adjacent section a minimum distance, based on the ladder's overall length.

The overall length is determined by the lengths of the individual sections, measured along the side rails. The table shows the minimum overlap for ladders up to 60 feet long.

Ladder Length	***Overlap***
Up to and including 36 feet	3 feet
Over 36 through 48 feet	4 feet
Over 48 through 60 feet	5 feet

Note: Install positive stops on individual ladder sections to ensure the required overlap.

Extension ladders are made of wood, metal, or reinforced fiberglass. Wood ladders cannot have more than two sections and must not exceed 60 feet. Metal and fiberglass ladders can have as many as three sections; however, the overall length must not exceed 72 feet. Individual sections of any extension ladder must not be longer than 30 feet. Extension ladders are for use by only one person at a time.

Make sure extension ladders have non-slip bases if there is a chance the ladder can slip. Cord-face ladder shoes are recommended for wet surfaces, rubber or neoprene ladder shoes for smooth dry floor surfaces, and steel spikes for ice or snow. Be careful if you use an extension ladder on oily, metal, or concrete surfaces. Place the ladder securely and tie it off to prevent it from slipping.

Self-Supporting Ladders

Standard Stepladder

The standard stepladder, a general purpose ladder, has flat steps and a hinged back. It is self-supporting and nonadjustable. An industrial model, designed for heavy service demands, has oversize back legs, heavy-duty flat steps, and knee braces that increase rigidity and durability.

Standard stepladders should be used only on surfaces that offer firm, level footing such as floors, platforms, and slabs. They are available in metal, wood, or reinforced fiberglass versions, and are intended to support only one worker at a time. Remember not to stand on, or work from, the top step. The ladders must have a metal spreader or locking arms. They cannot be longer than 20 feet, measured along the front edge of the side rails.

Two-Way Stepladder

The two-way stepladder is similar to the industrial standard stepladder; however, each side of this ladder has a set of steps. The extra set of steps offers convenience and versatility: One person can work from either side or two people can work from the ladder at the same time — one on each side.

Platform Ladder

The platform ladder is a special-purpose ladder that has a large stable platform from which you can work at the highest standing level. The ladder's length is determined by the length of the front edge of the side rail from the bottom of the ladder to the base of the platform. The length of a platform ladder cannot exceed 20 feet.

Trestle Ladder

A trestle ladder is a self-supporting portable ladder that has two sections hinged at the top, forming equal angles with the base. A variation of the trestle ladder, the extension trestle ladder, includes a vertically adjustable single ladder that can be locked in place. (The single extension section must lap at least three feet into the base section.) Trestle ladders are used in pairs to support planks or staging. The rungs are not intended to be used as steps.

The angle of spread between open front and back legs must be 5 ½ inches per foot of length. The length cannot be more than 20 feet, measured along the front edge of the side rails. Rails must be beveled at the top and have metal hinges to prevent spreading. Metal spreaders or locking devices are also required to keep the rails in place.

Selecting Ladders

Ladders come in different types because workers who use them have different needs. In the previous section, major types of portable ladders were identified and the tasks for which they are appropriate. However, many of the special-purpose ladders were omitted, which are usually variations of general purpose ladders, designed to meet a special need.

Examples include: platform, trolley, side-rolling, shaft, and manhole ladders. The important point: You are likely to save time and energy and reduce your risk of injury if you choose the right ladder for your task or job.

Using Ladders

Ladders are easier and safer to use when you match them with the appropriate task. Still, most portable-ladder accidents happen when workers do one or more of the following: fail to inspect ladders regularly, place ladders inappropriately, or ignore safe practices when climbing or descending. The guidelines below address each of these issues.

At the Beginning of Each Job

- Select the appropriate ladder for your task or job.
- Inspect the ladder before you use it. Make sure it is in sound condition — clean and undamaged.

Placing a Ladder

- Move the ladder near the work you are doing.
- Angle the ladder properly. The base should extend not less than one-fourth the ladder's length. The minimum slope should be 50 degrees.
- Place a solid rest for the rail tops across window openings.
- Protect the base of a tall, occupied ladder if it could be struck by vehicles or pedestrians.

Avoid

- Never place a ladder in front of an unlocked, unguarded door.
- Never place a ladder on boxes, tables, trucks, or other moveable objects.

Securing a Ladder

- Nail or lash a ladder in place if it will be used repeatedly in the same spot.
- Select a ladder that will extend at least 36 inches above the access area it is serving.

Avoid

- Working on ladders in exposed areas during a severe storm or strong wind.
- Working on ladders covered with ice or snow.
- Using a portable ladder if an approved stairway could be used instead.

Ascending and Descending

- Face the ladder at all times.
- Grasp the side rails with both hands; you have a better chance of avoiding a fall if a rung or step fails.
- Raise and lower heavy, awkward loads with a hand line or hoist.
- Attach light, compact tools or materials to the ladder or to yourself.

Avoid

- Sliding down the ladder.
- Climbing when your hands or shoes are slippery.
- Using your hands for carrying items.
- Carrying awkward loads when ascending or descending a ladder.
- Placing tools or materials on a ladder if they could fall off.

Metal Ladders

Make sure steps and rungs have a skid-resistant surface that minimizes the risk of slipping. ("Skid resistant" means corrugated, knurled, dimpled, or coated with skid-resistant material.)

Avoid

Using any ladder with conductive side rails near exposed, energized equipment. (Such ladders must be permanently, legibly marked with the words, **"WARNING — Do Not Use Around Energized Electrical Equipment."**

Precautions

- Place both feet firmly on the ladder rungs and steps.
- Make sure only one person stands on, or works from, a standard ladder. (Use a scaffold or a second ladder if two or more people are doing the same task.)
- Immediately inspect any ladder that has collapsed, tipped over, or been exposed to oil or grease. Clean and repair the ladder if necessary.
- Remove defective ladders from service. Tag or mark defective ladders with the words: "Dangerous, Do Not Use."
- Make sure an extension ladder extends at least 36 inches above an access landing.
- Keep the area around the top and bottom of a ladder free of debris.
- Keep the load on the ladder (including yourself) below its maximum load capacity.

Do Not

- Do not paint ladders. Paint conceals defects. Use transparent preservatives instead.
- Do not use ladders with broken, patched, oily, or cracked rails, rungs, or steps.
- Do not reach out over the side rails, lean, or turn excessively on a ladder.
- Do not use a ladder as guy, brace, or skid.
- Do not stand or sit on the top two steps of a stepladder.
- Do not use a self-supporting ladder without first opening it up and securing the metal spreader or locking device.
- Do not load a ladder beyond its maximum load capacity.

Transporting Ladders

Some ladders are easier to move than others. Here are a few guidelines to help you protect ladders and the people who use them.

When you hand-carry a ladder, keep the front end elevated, especially around blind corners, in aisles, and through doorways. You will reduce the chance of striking another person with the front of the ladder.

When you transport a ladder in a truck or trailer, place it parallel to the bed. Avoid tossing, throwing, or dropping it in the bed.

If you transport a long ladder on a short truck bed over long distances, support the ladder so it will not sag or bend.

Drive slowly over rough terrain. Tie the ladder securely to eliminate nicking, gouging, chafing, and road shock.

Storing Ladders

Another way to prolong a ladder's life is to store it properly. Here are some useful storage tips:

- The storage area should be well ventilated.
- Wood ladders should not be exposed to moisture or excessive heat. Avoid storing ladders near stoves, steam pipes, or radiators.
- Store straight or extension ladders in flat racks or on wall brackets. Make sure there are enough brackets to support the ladder so that it does not sag. If the ladder rails have a lateral curve, the wall brackets should match the curve.
- Store stepladders vertically, in a closed position, to reduce the risk of sagging or twisting. Secure stored ladders so that they will not tip over if they are struck.
- Store ladders, especially wood ladders, promptly after using them. Exposure to moisture and sun will shorten the life of a wood ladder.

Maintaining and Repairing Ladders

Neglected ladders quickly become unsafe ladders. Step bolts slacken, step sockets and other joints work loose, hole sizes increase — eventually the ladder becomes twisted and unstable.

Periodic maintenance extends a ladder's life and saves replacement costs. Maintenance includes regular inspection of the ladder, repairing damage and tightening step bolts and other fastenings.

Replace lower steps on wooden ladders when one-fourth of the step surface is worn away. Typically, the center of a step receives the most wear. (Mineral abrasive or other skid-resistant material reduces wear.)

- Do not use cleats to repair rung ladders.
- Do not paint a wood ladder — paint conceals defects.

Consider stocking repair parts if you use different types of ladders. Typical parts include ladder bolts, related hardware, and lower steps or rungs (which wear out faster than upper steps or rungs).

Improving Slip Resistance

Slip-resistant materials are often used on industrial ladder treads. Notable is the anti-slip treatment on metal platform ladders used in file and parts rooms, tool cribs, and frozen-food lockers. The obvious benefit of slip-resistant material is that it reduces fall risks when a worker is climbing or descending.

Ladder Hazards Checklist

Begin your work with a ladder that will not let you down. Use the checklist below to make sure the ladders you use are hazard free.

- ☐ Are ladders kept in good condition?
- ☐ Are the joints between steps and side rails tight, all hardware and fittings securely attached, and movable parts operating freely without binding or excessive play?
- ☐ Are non-slip safety feet on each single or multiple-section portable rung-type ladder?
- ☐ Are ladder rungs and steps kept free of grease and oil?
- ☐ Are workers instructed to face the ladder when ascending/descending it?
- ☐ Are workers prohibited from using ladders that have missing steps, rungs, cleats, broken side rails, or other faulty parts?
- ☐ Are workers instructed not to stand or step on the top step of any portable ladder?
- ☐ When portable ladders are used to reach elevated platforms and roofs, does the ladder extend at least 36 inches above the elevated surface?
- ☐ Are portable metal ladders legibly marked with signs reading “CAUTION — Do Not Use Around Electrical Equipment” or equivalent wording?
- ☐ Are steps, rungs, or cleats of ladders spaced no more than 12 inches apart?
- ☐ Are portable ladders secured or lashed to prevent displacement when they are used?
- ☐ Are wood cleats attached to the side rails of job-made ladders in one of the following ways:
  - By housing the cleats into the side rails by at least one-half inch.
  - By securing wood strips (same thickness as the cleats) to the side rails between each cleat.
  - By securing the cleats to the side rails with bolts.
- ☐ Is there at least seven inches of space behind the cleats to allow secure footing?

Ladder Training

Employers have a responsibility to ensure that their employees understand how to inspect and use ladders correctly. Use the following checklist to evaluate the training employees receive.

- ☐ Have you provided a training program for each employee who uses a ladder?
- ☐ Does the training enable each employee to recognize and minimize ladder hazards?
- ☐ Has each employee been trained by a competent person in the following areas, when applicable?
- ☐ The nature of fall hazards in the work area?
- ☐ How to correctly use, place, handle, and maintain ladders?
- ☐ The maximum load-carrying capacities of ladders used?
- ☐ OSHA requirements for the types of ladders that will be used?

Safety Requirements for Stairways

The rules covering stairways and their components generally depend on how and when stairs are used. Specifically, there are rules for stairs used during construction and stairs used temporarily during construction, as well as rules governing stair rails and handrails.

Stairways Used During Construction

The following requirements apply to all stairways used during construction:

- Stairways that will not be a permanent part of the building under construction must have landings at least 30 inches deep and 22 inches wide at every 12 feet or less of vertical rise.
- Stairways must be installed at least 30 degrees —and no more than 50 degrees— from the horizontal.
- Variations in riser height or stair tread depth must not exceed one-quarter inch in any stairway system, including any foundation structure used as one or more treads of the stairs.
- Doors and gates opening directly onto a stairway must have a platform that extends at least 20 inches beyond the swing of the door or gate.
- Metal pan landings and metal pan treads must be secured in place before filling.
- Stairway parts must be free of dangerous projections such as protruding nails.
- Slippery conditions on stairways must be corrected.
- Workers must not use spiral stairways that will not be a permanent part of the structure.

Temporary Stairs

The following requirements apply to stairways used temporarily during construction.

Except during construction of the stairway:

- Do not use stairways with metal pan landings and treads if the treads and/or landings have not been filled in with concrete or other materials unless the pans of the stairs and/or landings are temporarily filled in with wood or other materials. All treads and landings must be replaced when worn below the top edge of the pan.
- Do not use skeleton metal frame structures and steps (where treads and/or landings will be installed later) unless the stairs are fitted with secured temporary treads and landings.

Note: Temporary treads must be made of wood or other solid material and installed the full width and depth of the stair.

Stair Rails

The following general requirements apply to all stair rails:

- Stairways with four or more risers or rising more than 30 inches in height – whichever is less – must be installed along each unprotected side or edge. When the top edge of a stair rail system also serves as a handrail, the height of the top edge must be no more than 37 inches nor less than 36 inches from the upper surface of the stair rail to the surface of the tread.
- Top edges of stair rail systems used as handrails must not be more than 37 inches high nor less than 36 inches from the upper surface of the stair rail system to the surface of the tread. (If installed before March 15, 1991, not less than 30 inches).
- Stair rail systems and handrails must be surfaced to prevent injuries such as punctures or lacerations and to keep clothing from snagging.
- Ends of stair rail systems and handrails must be built to prevent dangerous projections, such as rails protruding beyond the end posts of the system.

In addition:

- Unprotected sides and edges of stairway landings must have standard 42-inch guardrail systems.
- Intermediate vertical members, such as balusters used as guardrails, must not be more than 19 inches apart.
- Other intermediate structural members, when used, must be installed so that no openings are more than 19 inches wide.
- Screens or mesh, when used, must extend from the top rail to the stairway step and along the opening between top rail supports.

Handrails

Requirements for handrails are as follows:

- Handrails and top rails of the stair rail systems must be able to withstand, without failure, at least 200 pounds of weight applied within 2 inches of the top edge in any downward or outward direction, at any point along the top edge.
- Handrails must not be more than 37 inches high nor less than 30 inches from the upper surface of the handrail to the surface of the tread.
- Handrails must provide an adequate handhold for employees to grasp to prevent falls.
- Temporary handrails must have a minimum clearance of 3 inches between the handrail and walls, stair rail systems and other objects.
- Stairways with four or more risers, or that rise more than 30 inches in height – whichever is less – must have at least one handrail.
- Winding or spiral stairways must have a handrail to prevent use of areas where the tread width is less than 6 inches.

Midrails

Midrails, screens, mesh, intermediate vertical members or equivalent intermediate structural members must be provided between the top rail and stairway steps to the stair rail system. When midrails are used, they must be located midway between the top of the stair rail system and the stairway steps.

Employers must train all employees to recognize hazards related to ladders and stairways, and instruct them to minimize these hazards. For example, employers must ensure that each employee is trained by a competent person in the following areas, as applicable:

- Nature of fall hazards in the work area;
- Correct procedures for erecting, maintaining and disassembling the fall protection systems to be used;
- Proper construction, use, placement and care in handling of all stairways and ladders; and
- Maximum intended load-carrying capacities of ladders used.

Note: Employers must retrain each employee as necessary to maintain their understanding and knowledge on the safe use and construction of ladders and stairs.

Ladder & Stairway Glossary

Check — A lengthwise separation of the wood that occurs across the rings of annual growth.

Cleat — A rectangular ladder crosspiece placed on edge, upon which a person may step while ascending or descending.

Competent person — A person who can identify existing and predictable hazards in the work environment and who has authorization to take prompt measures to eliminate the hazards.

Decay — Disintegration due to action of wood-destroying fungi. Also known as dote or rot.

Extension ladder — A non-self-supporting portable ladder that is adjustable in length. It consists of two or more sections in guides or brackets that permit length adjustment. Length is designated by the sum of the lengths of each section, measured along the side rails.

Extension trestle ladder — A self-supporting portable ladder that is adjustable in length, consisting of a trestle ladder base and a vertically adjustable single ladder with means for locking the ladders together. Length is designated by the length of the trestle ladder base.

Failure — Load refusal, breakage or separation of components.

Fastening — A device that attaches a ladder to a structure, building, or equipment.

Handrail — A rail used to provide employees with a handhold for support.

Job-made ladder — A ladder that is fabricated by employees, typically at the construction site; non-commercially manufactured.

Load refusal — The point where the structural members lose their ability to carry the load.

Ladder — An appliance usually consisting of two side rails joined at regular intervals by crosspieces called steps, rungs, or cleats on which a person steps when ascending or descending.

Platform ladder — A self-supporting ladder of fixed size with a platform at the working level.

Point of access — All areas used by employees for work-related passage from one area or level to another.

Riser height — The vertical distance from the top of a tread or platform/landing to the top of the next higher tread or platform/landing.

Rungs — Ladder crosspieces of circular or oval cross-section on which a person steps when ascending or descending.

Safety feet — means a safety device placed on the foot of the side rails to reduce the likelihood of the base slipping. Safety feet may be flat pads covered with a nonslip material, pointed metal projections, or spur wheels.

Sectional ladder — A non-self-supporting portable ladder, nonadjustable in length, consisting of two or more sections that function as a single ladder. Its length is designated by the overall length of the assembled sections.

Single (or straight) ladder — A single section non-self-supporting portable ladder, nonadjustable in length. Its length is measured along a side rail.

Special-purpose ladder — A general-purpose portable ladder with modified features for specific uses.

Step ladder — A self-supporting portable ladder, nonadjustable in length that has flat steps and a hinged back. Length is measured along the front edge of a side rail.

Steps — The flat crosspieces of a ladder on which a person steps when ascending or descending.

Temporary service stairway — A stairway where permanent treads and/or landings are to be filled in at a later date.

Tread — The horizontal member of a step.

Tread depth — The horizontal distance from front to back of a tread, excluding nosing, if any.

Tread width — The horizontal distance from front to back of the tread, including nosing.

Trestle ladder — A self-supporting portable ladder, nonadjustable in length, which consists of two sections hinged at the top to form equal angles with the base. Length is measured along the front edge of a side rail.

Chapter 16

Fall Protection Program

§1926.501 – Duty to have Fall Protection

§1926.502 – Fall Protection Systems – Criteria and Practices

§1926.503 – Training Requirements

Company Policy for Fall Protection

All Ohio Sealants Inc. has implemented this policy to ensure that proper safe work practices and procedures are followed to protect employees from the fall hazards. Keith Maxey is designated as the Program Administrator responsible for managing and supervising the Fall Protection Program. The following work practices, procedures, and engineering controls will be enforced as an integral part of our Company safety policy:

☐ Our Company will provide to our employees at no cost fall protection such as guardrails, safety nets, or personal fall arrest systems whenever our employees are exposed to potential falls to lower levels from heights of six feet or greater. This includes work near and around excavations.

☐ ***Exception:*** When the standard methods of protection are not feasible or a greater hazard would be created. Scaffolds, ladders, or vehicles will only be used when appropriate fall protection is in place.

☐ This Company provides a training program for each employee who might be exposed to fall hazards. Training will enable each employee to recognize the hazards of falling and will instruct each employee in the procedures to follow to minimize these hazards. Keith Maxey will maintain written certification records showing the following:

- Who was trained, the types of training, and dates of training.
- Signature of person providing training and the date it was determined training was deemed adequate.

☐ Keith Maxey will ensure that all employees who participate in work where fall hazards are present are trained in recognition of fall hazards, fall protection procedures, equipment, and work practices. Employees will be certified upon completion of training in the following areas:

- The nature of fall hazards in the work area.
- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
- The role of each employee in the safety monitoring system when this system is used.
- The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, personal fall restraint systems, slide guard systems, positioning devices, and other protection to be used.
- The limitations on the use of mechanical equipment during the performance of roofing work.
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.
- The role of employees in the fall protection work plan.

☐ Fall protection will be required at all times for employees working at heights of 6 feet or above. The fall protection system used will be appropriate for the specific work location or situation where it is required.

☐ Keith Maxey is designated the competent person in charge of the Company Fall Protection Program and will specify a fall protection system for each worksite. Keith Maxey will supervise implementation of the fall protection system and inspect the system prior to use.

☐ A "Safety Monitoring System" will be implemented where no alternative measure is feasible. In the event a conventional fall protection system is deemed inappropriate, Keith Maxey will designate the work area a controlled access zone, and will assign a competent person to monitor the safety of other employees and will ensure that the safety monitor complies with the following requirements. The assigned safety monitor will:

- Be competent to recognize fall hazards.
- Warn the monitored employees when it appears they are unaware of a fall hazard or is acting in an unsafe manner.
- The safety monitor will be on the same walking/working surface and within visual sighting distance of the employees being monitored.
- The safety monitor will be close enough to communicate orally with the employee being monitored.
- The safety monitor will have no other responsibilities that could take his/her attention from the monitoring function.

☐ Any accidents or incidents involving All Ohio Sealants Inc. employees will be reported immediately to the supervisor for the work location. All accidents/incidents will be investigated under the guidelines of the Company Accident Investigation Program and changes will be implemented to the Fall Protection Plan as necessary.

☐ All materials and equipment purchased and used for fall protection will comply with ANSI and ASTM standards required for that equipment.

What is Fall Protection?

You accomplish fall protection by doing the following:

- Make fall protection part of your workplace-safety-and-health program.
- Identify and evaluate fall hazards.
- Eliminate fall hazards, if possible.
- Train workers to recognize fall hazards.
- Use appropriate equipment to prevent falls and to protect workers if they do fall.
- Inspect and maintain fall protection equipment before and after using it.
- Become familiar with Subpart M fall protection rules.

Preventing and Controlling Falls

- What is a fall protection system?
- What to consider when selecting a fall protection system
- Personal fall-arrest systems
- Personal fall-restraint systems
- Positioning-device systems
- Guardrail systems
- Safety-net systems
- Warning-line systems for roofing work
- Safety monitoring for roofing work
- Catch platforms
- Covers for holes
- Fences and barricades
- Protecting workers from falling objects

What is a Fall Protection System?

If workers will be exposed to fall hazards that you cannot eliminate, you will need to prevent falls from occurring or ensure that if workers do fall, they are not injured. A fall protection system is designed to prevent or arrest falls. The table below shows the fall protection systems covered in §1926.500 – Subpart M.

FALL PROTECTION SYSTEMS

Type of fall protection system	What it does
Personal fall-arrest system	Arrests a fall
Personal fall-restraint system	Prevents a fall
Positioning-device system	Positions a worker and limits a fall to two feet
Guardrail system	Prevents a fall
Safety-net system	Arrests a fall
Warning-line system for roofing work	Warns a worker of a fall hazard
Slide-guard system for roofing work	Prevents workers from sliding down sloped roofs

Other Fall Protection Methods

The following methods may also be appropriate for preventing falls:

☐ ***Safety monitoring for roofing work –*** A method in which a person – rather than a mechanical system – warns roofers when they are in danger of falling. The monitor, who must be a competent person, is responsible for recognizing the hazards and warning workers about them.

☐ ***Catch platforms –*** Though not covered in Subpart M, catch platforms are an acceptable method of protecting workers from falls.

☐ ***Covers for holes –*** Simple and effective when they are properly installed, rigid covers prevent workers from falling through temporary holes, openings, and skylights in walking/working surfaces.

☐ ***Fences and barricades –*** Use a fence or similar barricade to keep people away from wells, pits, and shafts.

What to Consider When Selecting a Fall Protection System

Appropriate fall protection systems have the following characteristics:

- ☐ They are affordable.
- ☐ They offer the least interference with workers' tasks or activities.
- ☐ They prevent falls or protect workers who do fall.

Wherever possible, eliminate fall hazards. Identify hazards that you cannot eliminate and evaluate each one. The evaluation will help you determine appropriate fall protection systems for your work site. Consider the following:

- ☐ What is the fall distance from the walking/working surface to the next lower level?
- ☐ How will the workers move – horizontally, vertically, or in both directions – to do their tasks?
- ☐ How will workers be promptly rescued if they are suspended in a personal fall-arrest system?
- ☐ How many workers are exposed to the hazard?
- ☐ What tasks and work areas are associated with the hazard?
- ☐ Are secure anchorages available or can they be easily installed near the hazard?
- ☐ Are there other hazards near the work area, such as overhead power lines?

Personal Fall-Arrest Systems

A personal fall-arrest system consists of an anchorage, connectors, and a full-body harness that work together to stop a fall and to minimize the arrest force. Other parts of the system may include a lanyard, a deceleration device, and a lifeline. The personal fall-arrest system is effective only if you know how all of the components work together to stop a fall.

Before using a personal fall-arrest system, workers must be instructed in the following:

- ☐ How to select and install a secure anchorage.
- ☐ How to select and use connectors.
- ☐ How to put on and use a full-body harness.
- ☐ How to correctly attach and use a lanyard.
- ☐ When a deceleration device is necessary.
- ☐ How to erect and use a lifeline.
- ☐ The correct procedures for using retractable devices.
- ☐ How to estimate fall distances.
- ☐ How to avoid swing falls.
- ☐ How to inspect and maintain the system.
- ☐ How you will be promptly rescued if you fall.

The Anchorage

An anchorage is a secure point of attachment for lifelines, lanyards, or deceleration devices. How can you be sure that an anchorage is secure? An anchorage for a personal fall-arrest system must support at least 5,000 pounds. Anchorages that cannot support 5,000 pounds must be designed and installed under the supervision of a qualified person and must be able to maintain a safety factor of at least two – twice the impact force of a worker free-falling six feet. If you do not know how much weight an anchorage will support, have a qualified person check it before you trust your life to it. Anchorage strength is critical, but is not the only factor to consider. Also important:

Anchorage connector – Unless an existing anchorage has been designed to accept a lanyard or lifeline, you will need to attach an anchorage connector – a device that provides a secure attachment point. Examples include tie-off adapters, hook anchors, beam connectors, and beam trolleys. Be sure that the connector is compatible with the lanyard or lifeline and appropriate for the work task.

Attachment point – The anchorage can be used only as the attachment point for a personal fall-arrest system; it cannot be used to support or suspend platforms.

Location — The anchorage should be located directly above the worker, if possible, to reduce the chance of a swing fall.

Fall distance — Because a personal fall-arrest system does not prevent a fall, the anchorage must be high enough above a worker to ensure that the arrest system, and not the next lower level, stops the fall. Consider free-fall distance, lanyard length, shock-absorber elongation, and body-harness stretch in determining the height of an anchorage. Free-fall distance is the distance a worker falls before a personal fall-arrest system begins to stop the fall.

Connectors — An anchorage, a lanyard, and a body harness are not useful until they are linked together. Connectors do the linking; they make the anchorage, the lanyard, and the harness a complete system. Connectors include carabiners, snap hooks, and D-rings.

Carabiner — This high-tensile alloy steel connector has a locking gate and is used mostly in specialized work such as window cleaning and high-angle rescue. Carabiners must have a minimum tensile strength of 5,000 pounds.

Snap hook — A hook-shaped member with a keeper that opens to receive a connecting component and automatically closes when released. Snap hooks are typically spliced or sewn into lanyards and self-retracting lifelines. Snap hooks must be high-tensile alloy steel and have a minimum tensile strength of 5,000 pounds. Use only locking snap hooks with personal fall-arrest systems; locking hooks have self-locking keepers that will not open until unlocked.

D-ring — D-rings are the attachment points sewn into a full-body harness. D-rings must have a minimum tensile strength of 5,000 pounds.

The full-body harness — The full-body harness has straps that distribute the impact of a fall over the thighs, waist, chest, shoulders, and pelvis. Full-body harnesses come in different styles, many of which are light and comfortable. Before you purchase harnesses, make sure that they fit those who will use them, that they are comfortable, and that they are easy to adjust. A full-body harness should include a back D-ring for attaching lifelines or lanyards and a back pad for support. Never use a body belt as part of a personal fall-arrest system.

When purchasing a full-body harness for a personal fall-arrest system.

Keep the following in mind:

- ☐ The harness must be made from synthetic fibers.
- ☐ The harness must fit the user. It should be comfortable and easy to adjust.
- ☐ The harness must have an attachment point, usually a D-ring, in the center of the back at about shoulder level. The D-ring should be large enough to easily accept a lanyard snap hook.
- ☐ Chest straps should be easy to adjust and strong enough to withstand a fall without breaking.
- ☐ Use only industrial full-body harnesses (not recreational climbing harnesses).

☐ The harness must be safe, reliable, and it should meet ANSI standards for product design, development, and production.

Lanyards

A lanyard is a specially designed flexible line that has a snap hook at each end. One snap hook connects to the body harness and the other connects to an anchorage or a lifeline. Lanyards must have a minimum breaking strength of 5,000 pounds. They come in a variety of designs, including self-retracting types that make moving easier and shock absorbing types that reduce fall-arrest forces. Do not combine lanyards to increase length or knot them to make them shorter.

Deceleration Devices

Deceleration devices protect workers from the impact of a fall and include shock-absorbing lanyards, self-retracting lifelines or lanyards, and rope grabs.

Shock-absorbing lanyard – A shock absorber reduces the impact on a worker during fall arrest by extending up to 3.5 feet to absorb the arrest force. Subpart M rules limit the arrest force to 1,800 pounds but a shock-absorbing lanyard can reduce the force even more – to about 900 pounds. Because a shock-absorbing lanyard extends up to 3.5 feet, it is critical that the lanyard stops the worker before the next lower level. Allow about 20 vertical feet between the worker's anchorage point and the level below the working surface. Always estimate the total distance of a possible fall before using a shock-absorbing lanyard.

Example: Lanyard length (6 feet) + deceleration distance (3.5 feet) + worker's height (6 feet) + safety margin (3 feet) = 18.5 vertical feet from anchorage to lower level.

Never use a shock-absorbing lanyard if the shock absorber is even partially extended or if the lanyard has arrested a fall.

Self-retracting lanyard/lifeline – Self-retracting lanyards and lifelines offer more freedom to move than shock-absorbing lanyards. Each has a drum-wound line that unwinds and retracts as the worker moves. If the worker falls, the drum immediately locks, which reduces free-fall distance to about two feet – if the anchorage point is directly above the worker. Some self-retracting lanyards will reduce free-fall distance to less than one foot. Self-retracting lanyards are available in lengths up to 20 feet.

Self-retracting lifelines, which offer more freedom, are available in lengths up to 250 feet. Self-retracting lanyards and lifelines that limit free-fall distance to two feet or less must be able to hold at least 3,000 pounds with the lanyard (or lifeline) fully extended. Self-retracting lanyards that do not limit free-fall distance to two feet must be able to hold at least 5,000 pounds with the lanyard (or lifeline) fully extended. Beware of swing falls! If you use a self-retracting lanyard or lifeline, work below the anchorage to avoid a swing fall. The farther you move away from the anchorage, the farther you will fall and the greater your risk of swinging back into a hard object.

Swing falls are hazardous because you can hit an object or a lower level during the pendulum motion.

Rope grab — A rope grab allows a worker to move up a vertical lifeline but automatically engages and locks on the lifeline if the worker falls. When using a rope grab, keep the following in mind:

☐ The rope grab must be compatible with the lifeline.

☐ The rope grab must be correctly attached to the lifeline (not upside down).

☐ Keep the lanyard (between the rope grab & body harness) as short as possible.

☐ Keep the rope grab as high as possible on the lifeline.

Lifelines

A lifeline is a cable or rope that connects to a body harness, lanyard, or deceleration device, and at least one anchorage. There are two types of lifelines, vertical and horizontal.

Vertical lifeline – A vertical lifeline is attached to an overhead anchorage and must be connected directly to a worker's full-body harness, lanyard, retractable device, or rope grab; it must have a minimum breaking strength of 5,000 pounds.

When a worker needs to move horizontally, however, a vertical lifeline can be hazardous due to the potential for a swing fall – the pendulum motion that results when the worker swings back under the anchor point. A swing fall increases a worker's risk of striking an object or a lower level during the pendulum motion.

Horizontal lifeline – Unlike a vertical lifeline, the horizontal lifeline stretches between two anchorages. When you connect a lanyard or rope grab to the horizontal lifeline, you can move about freely, thus reducing the risk of a swing fall. However, horizontal lifelines are subject to much greater loads than vertical lifelines. If horizontal lifelines are not installed correctly, they can fail at the anchorage points. For this reason, horizontal lifelines must be designed, installed, and used under the supervision of a qualified person.

Horizontal lifelines and sag angles – Any load on a horizontal lifeline will cause it to deflect, or sag. The sag angle is a horizontal lifeline's angle of deflection when it is subjected to a load, such as a falling worker. Reducing the sag angle (making a horizontal lifeline too tight) actually increases the force on the line during a fall. As you tighten a horizontal lifeline, you increase the impact load dramatically!

Example: When the sag angle is 15 degrees, the force on the lifeline and anchorages subjected to a load is about 2:1. However, if you decrease the sag angle to five degrees, the force increases to about 6:1. To reduce loads on a horizontal lifeline, increase the sag angle or connect to the lifeline with a shock-absorbing lanyard.

Safe Practices for Personal Fall-Arrest Systems

- ☐ Do not tie knots in rope lanyards and lifelines; knots can reduce strength by 50 percent.
- ☐ Do not tie lifelines or lanyards directly to I-beams; the cutting action of beam edges can reduce the rope's strength by 70 percent.
- ☐ Know how the "sag angle" of a horizontal lifeline can affect arrest forces on the anchorages.
- ☐ Remember that horizontal lifelines must be designed, installed, and used under the supervision of a qualified person.
- ☐ Think about the potential for a swing fall whenever you connect a lifeline to a personal fall-arrest system.
- ☐ Remember that a shock-absorbing lanyard will elongate before arresting a fall. The fall distance includes lanyard length (before the shock absorber extends), deceleration distance (shock-absorber extension), worker height, and a safety margin (allow three feet).

Personal Fall-Restraint Systems

Unlike the personal fall-arrest system, which is designed to stop a fall, a personal fall-restraint system prevents a worker from reaching an unprotected edge and thus prevents a fall from occurring. The system consists of an anchorage, connectors, and a body harness or a body belt. The attachment point to the body belt or full body harness can be at the back, front, or side D-rings.

The anchorage for a fall-restraint system must support at least 3,000 pounds or be designed and installed with a safety factor of at least two. If you are not sure how much an anchorage will support, have a qualified person evaluate it.

Positioning-Device Systems

Positioning-device systems make it easier to work with both hands free on a vertical surface such as a wall or concrete form. Positioning-device systems are also called Class II work-positioning systems and work-positioning systems. The components of a positioning-device system – anchorage, connectors, and body support **–** are similar to those of a personal fall-arrest system. However, the systems serve different purposes.

A positioning-device system provides support and must stop a free fall within two feet; a personal fall-arrest system provides no support and must limit free-fall distance to six feet.

- ☐ **Anchorage –** Positioning-device systems must be secured to an anchorage that can support at least twice the potential impact of a worker's fall or 3,000 pounds, whichever is greater.
- ☐ **Connectors –** Connectors must have a minimum strength of 5,000 pounds. Snap hooks and D-rings must be proof-tested to a minimum load of 3,600 pounds without deforming or breaking.
- ☐ **Body support –** A body belt is acceptable as part of a positioning-device system. However, it must limit the arresting force on a worker to 900 pounds and it can only be used for body support. A full-body harness is also acceptable and must limit the arrest force to 1,800 pounds. Belts or harnesses must have side D-rings or a single front D-ring for positioning.

Guardrail Systems

A guardrail system consists of a top rail, mid-rail, and intermediate vertical member. Guardrail systems can also be combined with toe-boards that prevent materials from rolling off the walking/working surface.

Retrieval/Rescue of Suspended Workers

Responding to Falls – Prompt Rescue is Required

The best strategy for protecting workers from falls is to eliminate the hazards that cause them. When you cannot eliminate the hazards, you must protect workers with an appropriate fall protection system or method. If a worker is suspended in a personal fall-arrest system, you must provide for a prompt rescue.

"Prompt" means without delay. A worker suspended in a harness after a fall can lose consciousness if the harness puts too much pressure on arteries. A worker suspended in a body harness must be rescued in time to prevent serious injury. If a fall-related emergency could happen at your work site, you should have a plan for responding to it promptly. Workers who use personal fall-arrest systems must know how to rescue themselves immediately after a fall or they must be promptly rescued.

Emergency Response Plan

The following guidelines explain plans for responding promptly to falls and other emergencies.

Effective plans do not need to be elaborate. The plan must show that you have thought about how to eliminate and control hazards and that workers know how to respond promptly if something goes wrong.

Get others involved in planning. When other workers participate, they will contribute valuable information, take the plan seriously, and be more likely to respond effectively during an emergency. Key planning objectives:

☐ Identify the emergencies that could affect your site.

☐ Establish a chain of command.

☐ Establish procedures for responding to the emergencies.

☐ Identify critical resources and rescue equipment.

☐ Train on-site responders.

Identify emergencies that could affect your workplace. Identify any event that could threaten worker safety or health. Two examples:

☐ A worker suspended in a full-body harness after a fall.

☐ A worker on a scaffold who contacts an overhead power line.

Identify critical resources and rescue equipment. Prompt rescue will not happen without trained responders, appropriate medical supplies, and the right equipment for the emergency.

☐ ***First-aid supplies***. Every worksite needs medical supplies for common injuries. Does your site have a first aid kit for injuries that are likely to occur? Store the supplies in clearly marked, protective containers and make them available to all shifts.

☐ ***Rescue equipment.*** Identify on-site equipment that responders can use to rescue a suspended worker. Extension ladders and mobile lifts are useful and available at most sites. Determine where and how each type of equipment would be most effective during a rescue. Make sure the equipment will permit rescuers to reach a fall victim, that it is available when rescuers need it, and that rescuers know how to use it. Will your longest ladder reach a suspended worker? If not, what equipment will reach the worker? When equipment is needed for a rescue, will workers know where it is and how to use it? Think about seasonal and environmental conditions and how they may affect rescue equipment and those who use it. Equipment that works for summer rescues may not work for winter rescues.

Train on-site responders. An effective emergency-response plan ensures that on-site responders know emergency procedures, know how to use available rescue equipment, and – if necessary – know how to contact off-site responders. Workers who use personal fall-arrest systems and who work alone must know how to rescue themselves. Those who work at a remote site may need a higher level of emergency training than those who work near a trauma center or a fire department.

Establish a chain of command. All workers must know their roles and responsibilities during an emergency. A chain of command links one person with overall responsibility for managing an emergency to those responsible for carrying out specific emergency response tasks. Ensure that back-up personnel can take over when primary responders are not available.

Establish procedures for responding to emergencies. Procedures are instructions for accomplishing specific tasks. Emergency procedures are important because they tell workers exactly what to do to ensure their safety during an emergency. Your emergency response plan should include the following procedures – preferably in writing – that describe what people must know and do to ensure that a fallen worker receives prompt attention:

☐ How to report an emergency.

☐ How to rescue a suspended worker.

☐ How to provide first aid.

After an emergency, review the procedures; determine if they should be changed to prevent similar events and revise them accordingly.

Responding to Falls – Before On-Site Work Begins

- ☐ Identify emergencies that could affect your work site.
- ☐ Establish a chain of command.
- ☐ Document procedures for responding to emergencies and make sure they are available at the site.
- ☐ Post emergency-responder phone numbers and addresses at the work site.
- ☐ Identify critical resources and rescue equipment. Train on-site responders.
- ☐ Identify off-site responders and inform them about any conditions at the site that may hinder a rescue effort.
- ☐ Identify emergency entry and exit routes. Make sure responders have quick access to rescue and retrieval equipment, such as lifts and ladders.

During On-Site Work

- ☐ Identify on-site equipment that can be used for rescue and retrieval, such as extension ladders and mobile lifts.
- ☐ Maintain a current rescue-equipment inventory at the site. Equipment may change frequently as the job progresses.
- ☐ Re-evaluate and update the emergency-response plan when work tasks change.

When an Emergency Occurs

- ☐ First responders should clear a path to the victim. Others should direct emergency personnel to the scene. You can use 911 for ambulance service; however, most 911 responders are not trained to rescue a worker suspended in a personal fall-arrest system.
- ☐ Make sure only trained responders attempt a technical rescue.
- ☐ Prohibit all nonessential personnel from the rescue site.
- ☐ Talk to the victim; determine the victim's condition, if possible.
- ☐ If you can reach the victim, check for vital signs, administer CPR, attempt to stop bleeding, and make the victim comfortable.

After an Emergency

- ☐ Verbally by telephone or in person, report any work-related fatalities or the in-patient hospitalization of three or more employees as a result of a work-related incident to your Area Office of OSHA within eight hours.
- ☐ Identify equipment that may have contributed to the emergency and put it out of service.
- ☐ Have a competent person examine equipment. If equipment is damaged, repair or replace it. If the equipment caused the accident, determine how and why.
- ☐ Document in detail the cause of the emergency.
- ☐ Review emergency procedures. Determine how the procedures could be changed to prevent similar events; revise the procedures accordingly.

Training Workers about Fall Protection

Workers need to know about workplace hazards to which they may be exposed, how to recognize the hazards, and how to minimize their exposure. The best way for them to learn is through training. Training ensures that they know about the hazards and can demonstrate how to protect themselves from falling. Some employers assume that they can train their employees simply by showing them a fall protection training video or giving them a safe work practices guide, but that is not training.

Employers Responsibility

Employers are responsible for ensuring that employees can recognize fall hazards and that they know how to protect themselves before they are exposed to fall hazards. You cannot assume they know how to protect themselves from falls. If they are starting work on a new site, for example, they might not recognize fall hazards or know how to protect themselves unless they are properly trained.

Required Training for Employees Exposed to Fall Hazards

Workers who could be exposed to fall hazards must be trained to recognize the hazards and to know the procedures that minimize the hazards.

The training format – As an employer, you can determine the training format. What is important is that, through training, your employees can recognize fall hazards and know procedures to minimize the hazards.

Who can do the training – It is important that the trainer knows the hazards at the work site, knows how to eliminate or control the hazards, and knows how to teach workers to protect themselves. That is why the trainer must be a competent person. (Recall that a competent person is one who can identify work-site hazards and who has management authority to control them.) The trainer must know and be able to explain the following:

- ☐ The nature of fall hazards at the work site.
- ☐ Procedures for erecting, maintaining, and disassembling fall protection systems.
- ☐ How to use and operate fall protection systems.
- ☐ The role of each employee who may be affected by a safety-monitoring system.
- ☐ The restrictions that apply to mechanical equipment used during roofing work.
- ☐ The procedure for handling and storing materials and for erecting protection from falling objects.
- ☐ Rescue/retrieval procedures for fall suspended workers.
- ☐ The requirements of OSHA 1926.500 Subpart M.

When to train – Employees must be trained before they begin tasks that could expose them to fall hazards or before they use fall protection systems. They must be retrained when you have reason to believe they do not recognize fall hazards, when they do not follow safe practices for using fall protection systems, and when changes in the workplace or in the fall protection systems used make their previous training obsolete.

All Ohio Sealants Inc. has a written Company Safety and Health Program that details its responsibilities under OSHA's Fall Protection regulations, §1926.500 Subpart M. In accordance with §1926.503, all employees of All Ohio Sealants Inc. will be trained by a competent person prior to any job assignment where fall protection is required. The training will enable each employee to recognize fall hazards and to follow appropriate procedures that minimize the hazards.

This record certifies that the following employees have been trained to recognize fall hazards and to use appropriate fall protection systems and methods to minimize exposure to the hazards.

FALL PROTECTION TRAINING LOG

Employee Name	Training Date	Trainer's Signature	Type of Training

Inspecting and Maintaining Equipment

Caring for Equipment

When you use ladders, scaffolds, aerial lifts, and fall protection systems you expect to get your job done safely, but do you pay attention to the condition of the equipment. Inspect personal fall arrest equipment frequently, keep it clean, store it properly, and it will not let you down.

Inspecting fall-arrest, fall-restraint, and positioning-device systems — Each time you use a personal fall-arrest, restraint, or positioning-device system, inspect the components for damage or excessive wear. Replace any component that looks damaged. Do not use a personal fall-arrest system that has arrested a fall unless a competent person has determined that the system is safe to use.

Harness, lifeline, and anchorage — Inspect these components regularly. The table below highlights what to look for.

Inspecting Harness, Lifeline, and Anchorage	
Component	**What to look for**
Harness webbing	Frayed edges, broken fibers, pulled stitches, cuts, burns, and chemical damage
Harness D-rings	Cracks, breaks, and rough or sharp edges; the D-ring should pivot easily
Harness buckles	Excessive wear, frayed or cut fibers, broken stitching
Harness grommets	Loose, bent, or broken grommets, & punched holes not made by the manufacturer
Lifelines	Wear or deterioration
Anchorages and anchorage connectors	Look for abrasion and damaged threads or swages. Inspect stitching and loops on synthetic slings for cuts, cracks, or frayed and broken stitching. Look for excessive kinks or damaged steel fibers.

Snap hooks — Look for cracks, excessive wear, and corrosion. The snap-hooks should open easily and close firmly. Keeper locks must prevent it from opening when closed.

Lanyards — Inspect each time before use. The table below shows what to look for.

Inspecting Lanyards	
Type of lanyard	**What to look for**
Wire rope lanyard	Cuts, frayed strands, or excessive wear
Web lanyard	Cuts, discoloration, cracks, frayed or broken stitching
Rope lanyard	Frayed or cut fibers. The entire length of the rope should have the same diameter.
Shock-absorbing lanyard	Cuts, discoloration, cracks, frayed or broken stitching. Remove a lanyard from service if any part of the warning label is exposed.

Self-retracting lifelines — Look for cuts, frayed strands, or excessive wear in the line and damage to the housing. If the unit needs service, check the manufacturer's recommendations. Do not try to repair it yourself.

Guardrail systems — Frequently inspect manila, plastic, or synthetic rope used for top rails or mid-rails to ensure that the rope meets the minimum strength and rail height requirements of Subpart M. [See §1926.502(b)]

Summary: Inspecting, Cleaning, and Storing Equipment

- ☐ Always follow manufacturers' instructions and warnings.
- ☐ Always inspect equipment before using it. Look for damaged or missing parts. Labels, warnings, and other instructions should be readable.
- ☐ If equipment looks like it needs repair, remove it from service and have a competent person examine it.
- ☐ Have a competent person regularly inspect equipment.
- ☐ Mark equipment with a unique code or item number. I. D. numbers make it easier to keep track of the equipment and to document maintenance or repair.

Cleaning Equipment

- ☐ Wash synthetic rope and body harnesses in soapy water to remove dirt; rinse them with clean water. Air-dry at room temperature.
- ☐ Do not use cleaning solvents; solvents can damage synthetic material.
- ☐ Do not lubricate moving parts unless the manufacturer requires it; lubricants attract dirt.
- ☐ Do not remove information labels and warnings; make sure they are still legible after cleaning.

Storing Equipment

- ☐ Follow manufacturer's instruction for storing equipment. Store equipment in an area that is clean, dry, and moisture-free; avoid excessive heat, light, oil, and corrosive chemicals.

Using a Fall Protection Plan

A fall protection plan enables workers doing *leading-edge work, pre-cast concrete erection work, or residential-type construction work* to use alternative fall protection systems or methods when conventional systems are not feasible. Under these special circumstances, properly documented fall protection plans give employers the flexibility to use more appropriate methods of fall protection. However, employers must be able to show that conventional systems are not practical or that they pose a greater safety hazard to workers than other fall protection alternatives. In addition, the fall protection plan must meet the following requirements:

- ☐ A qualified person must prepare the plan specifically for the site where the work will be performed.
- ☐ The plan must document why conventional fall protection systems are not feasible and show how alternative methods will reduce or eliminate fall hazards.
- ☐ The plan must describe all measures that will be taken to minimize or eliminate fall hazards at the worksite.
- ☐ The employer must designate the work area as a controlled-access zone.
- ☐ Employers who do not use either alternative fall protection measures or conventional systems must use a safety-monitoring system to protect workers in the controlled-access zone.

OSHA's requirements for fall protection plans are covered in Subpart M.

An effective fall protection plan can protect workers from fall hazards and enhance the overall level of safety at a job site. If you are required to use a "Site Specific Fall Protection Work Plan", use the following guidelines and forms to keep your plan in line with OSHA's requirements.

Explain Why Conventional Systems Cannot Be Used

Before you can use a fall protection plan, you must explain why conventional protection methods – guardrails, safety nets, personal fall-arrest, or fall-restraint systems – are infeasible or would pose a greater safety hazard to workers than your proposed method. Consider using scaffolds, catch platforms, or aerial lifts. If you cannot eliminate the hazard, you must also explain why. Be specific!

The following three examples help illustrate the point.

If anchors capable of holding 5,000 pounds are not available you must also explain why personal fall-arrest systems with 2:1 safety factors or fall restraint systems will not protect workers.

If you believe that having workers erect guardrails creates a greater hazard than an alternative method, you must explain why. You must demonstrate why erecting and dismantling guardrail systems creates a greater hazard than your alternative method and why you cannot use personnel platforms, personal fall-arrest, or fall-restraint systems.

If you feel that guardrail systems are not feasible because you cannot anchor them in a finished surface, you must also consider free-standing guardrail systems that will not put holes in the finished surface. If you cannot use free-standing systems, you must explain why.

Describe How Your Alternative Method Will Protect Workers

Describe specifically how your alternative fall protection method will reduce or eliminate fall hazards. Include workers' tasks, the fall hazards they will encounter, the location of hazards, and how you intend to protect them from the hazards. You can list your responses in a table such as the one below.

ALTERNATIVE FALL PROTECTION METHODS			
The worker's task	**The type of fall hazard (such as a floor opening or unprotected edge)**	**The location of the fall hazard**	**Alternative protection (how it will reduce or eliminate the fall hazard)**

Appoint a Qualified Person to Prepare the Plan

A qualified person is one who has extensive knowledge, training, and experience with fall protection systems. A qualified person must know how to design, use, and install fall protection systems; the limitations of fall protection systems; and fall hazards associated with work tasks and processes. A qualified person must prepare a site-specific fall protection plan and approve any changes to the plan. Be sure that the plan identifies the following:

- **The construction** activity (leading-edge, residential, or pre-cast concrete)
- **The site** address where you will use the plan
- **The name** of the person who prepared the plan (must be a qualified person)
- **The date** the qualified person prepared the plan

Establish Controlled-Access Zones

Where Conventional Protection Cannot Be Used

Your fall protection plan must identify each area where you cannot use guardrails, safety nets, or personal fall-arrest systems, and you must designate those areas as controlled-access zones. In addition, you must do the following:

- ☐ Describe how you will limit access to controlled-access zones, including procedures that authorize workers to enter controlled-access zones.
- ☐ Describe how you will identify controlled-access zones and how you will separate them from other work areas.
- ☐ Identify all workers who will enter controlled-access zones.

Assign Supervisory Responsibility to a Competent Person

A competent person is someone who can identify hazardous conditions and appropriate applications for a fall protection system and who has authority to correct hazards. A competent person must know the site-specific fall protection plan, how to perform work tasks safely, and the hazards associated with those tasks. You must designate a competent person to implement the fall protection plan.

Document Accountability

Your fall protection plan must describe how workers and supervisors will comply with its requirements.

Establish a Training Program

Everyone covered by a fall protection plan must be trained by a competent person. Be sure to document the names of those who receive fall protection training and their training dates. The training program must cover the following:

- ☐ Fall hazards that workers will encounter.
- ☐ Types of systems that will protect workers from falls.
- ☐ Workers' responsibilities under the fall protection plan.
- ☐ Procedures for assembling, maintaining, and dissembling personal fall arrest systems.
- ☐ How workers should comply with the plan.
- ☐ Retraining procedures when the plan changes, tasks change, or when workers are not following the plan.

Update the Plan When Site Conditions Change

- ☐ When worksite conditions change and affect how workers are protected from falling, you must update your fall protection plan so that it addresses the changes. An on-site qualified person must approve the changed plan. The updated plan must:
- ☐ Describe the site-condition changes that required the update.
- ☐ Include the qualified person's reasons for the update.
- ☐ Include the date the qualified person approved the plan changes and the person's signature.

Investigate Accidents

If a worker covered by the fall protection plan fell or had a "near miss" incident, you must investigate the accident and, if necessary, change the plan so that similar events will not happen again. The plan must describe near misses or accidents and how to prevent future incidents.

Keep the Plan at the Job Site

A copy of the fall protection plan must be kept, with all approved changes, at the job site.

NOTE: A blank "Site Specific Fall Protection Work Plan" follows this section.

Fall Protection Systems, Criteria, and Practices — 1926.502

The requirements in 1926.502 cover installing, constructing, and using these fall protection systems and methods:

- ☐ Guardrail systems — 1926.502(b)
- ☐ Safety-net systems — 1926.502(c)
- ☐ Personal fall-arrest systems — 1926.502(d)
- ☐ Personal fall-restraint systems — 1926.760
- ☐ Positioning-device systems — 1926.502(e)
- ☐ Warning-line systems for roofing work — 1926.502(f)
- ☐ Covers for holes in walking/working surfaces — 1926.502(i)
- ☐ Protection from falling objects — 1926.502(j)

SITE-SPECIFIC FALL PROTECTION WORK PLAN

This Fall Protection Work Plan enables workers performing operations with fall hazards to use alternative fall protection systems or methods when conventional systems are not feasible. Under these special circumstances, properly documented fall protection plans give All Ohio Sealants Inc. the flexibility to use more appropriate methods of fall protection when conventional systems are not practical or that they pose a greater safety hazard to workers than other fall protection alternatives. This fall protection plan meets the following requirements:

☐ ***A qualified person*** prepared the plan specifically for the site where the work will be performed.

☐ ***The plan documents*** why conventional fall protection systems are not feasible and show how alternative methods will reduce or eliminate fall hazards.

☐ ***The plan describes*** all measures that will be taken to minimize or eliminate fall hazards at the worksite.

This Fall Protection Work Plan is specific for the following project:

Location of Job: _____

Date plan prepared or modified: _____

Plan prepared by: _____

Plan approved by: _____

Plan supervised by: _____

Statement of Company Policy: All Ohio Sealants Inc. is dedicated to protecting employees from workplace injuries and illnesses. Company management and supervisors are responsible for identifying and correcting hazards on the job. All employees are responsible for working safely. This plan supplements our existing "Safety and Health Program."

This Plan addresses the use of conventional fall protection at a number of areas on this project and identifies specific activities that require unconventional means of fall protection. These activities include:

☐ _____

☐ _____

☐ _____

☐ _____

Each employee will be trained in these procedures and will strictly adhere to them except when doing so would expose the employee to greater hazards. If, in the employee's opinion, this is the case, the employee is to notify the competent person of his or her concern and have the concern addressed before proceeding.

It is the responsibility of _____, Competent Person to implement this Fall Protection Work Plan. Work operations will be checked frequently and safety policy and procedures will be enforced.

The Crew Foreman, _____, is responsible for correcting unsafe practices or conditions immediately.

Designated "First Aid Trained" personnel on this site include: _____

_____.

In the event of serious injury, company personnel are directed to call 911 or local Emergency Medical Services at: _____.

It is the responsibility of Keith Maxey to ensure that all employees understand and adhere to the procedures of this plan and follow the instruction of the crew supervisor. It is the responsibility of the employee to alert management to unsafe or hazardous conditions or practices that may cause injury to employees.

Any changes to the Fall Protection Work Plan must be approved by the Qualified Person,

_____.

Appropriate fall protection systems will be used on this job when the risk of fall exists. These processes will be conducted by employees trained to do this type of work and trained to recognize the fall hazards. This plan details how fall-hazards will be minimized by All Ohio Sealants Inc.. Following are the specific requirements for fall protection on this project:

- ☐ This Fall Protection Plan must be kept at the jobsite at all times when operations are in progress.
- ☐ The implementation of the fall protection plan will be under the supervision of a competent person.
- ☐ The personal fall arrest system will include, but not limited to, an anchorage, connectors, and a body harness used to arrest an employee in a fall from the working level.
- ☐ A personal fall-restraint system will be used to prevent a worker from reaching an unprotected edge and thus prevent a fall from occurring. The system will consist of an anchorage, connectors, and a body harness or a body belt. The attachment point to the body belt or full body harness will be at the back, front, or side D-rings.
- ☐ An anchorage will be used to secure a point of attachment for lifelines, lanyards or deceleration devices. The anchorage will be located directly above the worker, if possible, to reduce the chance of a swing fall. The anchorage will be high enough above a worker to ensure that the arrest system, and not the next lower level, stops the fall. This will make the anchorage, the lanyard, and the harness a complete system. Connectors include carabiners, snap hooks, and D-rings.
- ☐ A body harness will be secured about the person in a manner that distributes the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders with a means for attaching the harness to other components of the fall arrest system.
- ☐ A connector will be used to couple (connect) parts of the personal fall arrest system or positioning device system together.
- ☐ A deceleration device such as a rope, grab, ripstitch lanyard, specially woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards will be used to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.
- ☐ A lanyard (flexible line of rope, wire, or strap that generally has a connector at each end) will be used for connecting the body harness to a deceleration device, lifeline, or anchorage.
- ☐ A lifeline (compact consisting of a flexible line for connection to an anchorage at one end to hang vertically, or for connection to anchorages at both ends to stretch horizontally), will be used as a means for connecting other components of a personal fall arrest system to the anchorage.
- ☐ A body belt, which will only be used as a positioning device, will be secured about the waist and attached to a lanyard, lifeline, or deceleration device.
- ☐ A positioning device system (body harness system) may be used to allow an employee to be supported on an elevated vertical surface and work with both hands free while leaning backwards.

☐ A rope grab (deceleration device that travels on a lifeline and automatically, by friction, engages the lifeline and locks) will be implemented to arrest a fall.

☐ A self-retracting lifeline/lanyard (deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under minimal tension during normal employee movement and which, after onset of a fall, automatically locks the drum) may be used to arrest the fall.

☐ In the event an employee falls, the employer will investigate the circumstances of the fall to determine if the fall protection plan needs to be changed (e.g. new practices, procedures, or training) and will implement those changes to prevent similar types of falls.

☐ Work on or from scaffolds will be prohibited during storms or high winds unless a qualified person has determined that it is safe for employees to be on the scaffold and those employees are protected by a personal fall arrest system.

☐ Appropriate Personal Protective Equipment, such as hard hats, will be worn at all times when falling objects hazards exist.

☐ _____
_____

☐ _____
_____

☐ _____
_____

Additional Information:

_____
_____
_____
_____

This Fall Protection Work Plan approved by:

Name: _____ Title: _____

(Please Print)

Signature: _____ Date: _____

Fall Protection Work Plan must be kept at the jobsite at all times when operations are in progress.

FALL HAZARD ASSESSMENT

Job Name:	Location:

Date Assessed:	Related Operating Procedures Reviewed: ☐ YES ☐ NO	Location Marked and Entry Controlled: ☐ YES ☐ NO

FALL HAZARD ASSESSMENT CHECKLIST

1. Can an employee enter the area without restriction and perform work?	☐ YES	☐ NO
2. Are fall prevention systems such as cages, guardrails, toeboards, and manlifts in place	☐ YES	☐ NO
3. Have slipping and tripping hazards been removed or controlled?	☐ YES	☐ NO
4. Have visual warnings of fall hazards been installed?	☐ YES	☐ NO
5. Can the distance a worker could fall be reduced by installing platforms, nets etc.?	☐ YES	☐ NO
6. Are any permanently installed floor coverings, gratings, hatches, or doors missing?	☐ YES	☐ NO
7. Does the location contain any other recognized safety and or health hazards?	☐ YES	☐ NO
8. Is the space designated as a Permit Required Confined Space?	☐ YES	☐ NO
9. Have anchor points been designated and load tested?	☐ YES	☐ NO

Assessment Information: (indicate specifics with initials)

Initials	Hazard	Remarks/Recommendations
	Total potential fall distance:	
	Number of workers involved:	
	Frequency of task:	
	Obtainable anchor point strength:	
	Required anchor point strength: (not less than 5000 lbs)	

Additional Requirements:

Potential environmental conditions that could impact safety:

Initials	Condition	Remarks/Recommendations

Possible required structural alterations:

Initials	Alteration	Remarks/Recommendations

Possible task modification that may be required:

Initials	Task	Remarks/Recommendations

Training requirements:

Initials	Requirement	Remarks/Recommendations

Personal protective equipment required:

Initials	Requirement	Remarks/Recommendations

Comments:

☐ ***Approved*** ***AUTHORIZATION***

I certify that I have conducted a Fall Hazard Assessment of the above designated location and have detailed the findings of the assessment on this form. * Further detailed on attachment: ☐ YES ☐ NO

Title:	Date:	Time:
Name:	Signature:	

FALL PROTECTION PROGRAM
EMPLOYEE ACKNOWLEDGEMENT

By my signature below, I acknowledge that I have received instruction and have read the All Ohio Sealants Inc. Fall Protection Program. I have been given the opportunity to ask questions and have received answers, instruction, and clarification to my questions. I understand the contents of and agree to follow All Ohio Sealants Inc. policy with regard to the Fall Protection Program.

Fall Protection Program received on _____ , 20 ___

Printed Name of Employee

_____ _____

Signature of Employee Date

_____

Social Security Number

_____

Printed Name of Trainer

_____ _____

Signature of Trainer Date

cc: Employee Personnel File

CERTIFICATION
Employee Training For Fall Protection

All Ohio Sealants Inc. certifies that the following employee has been trained in the understanding, knowledge, and skills necessary for the safe performance of duties assigned in areas of fall protection hazards.

_____ has demonstrated proficiency in the following areas of fall protection:

☐ The nature of fall hazards in the work area.

☐ The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.

☐ The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, personal fall restraint systems, slide guard systems, positioning devices, and other protection to be used.

☐ The role of each employee in the safety monitoring system when this system is used.

☐ The limitations on the use of mechanical equipment during the performance of roofing work.

☐ The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.

☐ The role of employees in the fall protection work plan.

_____ _____

Employee Trained By ***Date of Training***

_____ _____

Signature of Trainer ***Date***

_____ _____

Employee Signature ***Date***

cc: Employee Personnel File

Notes:

Chapter 17

Scaffolds & Work Platforms

§1926.450 – Subpart L – Scaffolds
§1926.451 – General Requirements
§1926.454 – Training Requirements

Policy Statement

All Ohio Sealants Inc. has implemented this policy to ensure that no employee is exposed to hazards while doing work requiring the use of scaffold. Keith Maxey is the supervisor responsible for ensuring the following engineering controls, training requirements, and safe work practices are enforced to protect our employees from hazards associated with the erecting and use of scaffolds:

Keith Maxey will ensure that each employee who performs work on a scaffold is trained by a person qualified in scaffold safety. The training will enable employees to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize the hazards. Training includes the following applicable areas:

- The nature of any electrical hazards, fall hazards, and falling object hazards in the work area.
- The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection systems and falling object protection systems being used.
- The proper use of the scaffold and the proper handling of materials on the scaffold.
- The maximum intended load and the load-carrying capacities of the scaffolds used.
- Any other safety topics deemed pertinent to the particular work-site, scaffold system, or fall protection systems being used.

Keith Maxey will ensure that each employee involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold is trained by a competent person to recognize any hazards associated with the work in question. Training includes the following applicable topics:

- The nature of scaffold hazards.
- The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold being used.
- The design criteria, maximum intended load-carrying capacity, and intended use of the scaffold.
- Any other safety topics deemed pertinent to the particular work-site, scaffold system, or fall protection systems being used.

Retraining is required when Keith Maxey has reason to believe that an employee lacks the skill or understanding needed to safely perform work that involves the erection, use, or dismantling of scaffolds. The employee will be retrained so that the required proficiency is regained. Retraining is required in all of the following situations:

- Where changes at the worksite present a hazard about which an employee has not been previously trained.

- Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained.
- Where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retained the required skill, knowledge, and proficiency for the work involved.

A scaffold will be designed, constructed, erected, and used in accordance with OSHA requirements. All scaffold used at All Ohio Sealants Inc. will be designed by a qualified person.

Scaffold will not be erected, moved, dismantled, or altered, except under the supervision of a competent person.

A scaffold and its components will be capable of supporting, without failure, not less than 4 times the maximum intended load.

A scaffold will not be loaded to more than the designed working load.

Keith Maxey will ensure that all scaffolding systems, components, and fall protection systems used will be inspected for visible defects by a competent person prior to use, before each work shift begins, after erecting or moving, periodically throughout the work day, and after any occurrence that could affect a scaffold's structural integrity. Any scaffold, including accessories such as braces, brackets, trusses, screw legs, ladders, or platforms, that is damaged or weakened from any cause will be immediately repaired or replaced. Any scaffold or accessories that are repaired will have at least the original designed strength of the scaffold or accessory.

Any system or component of a system which is found to have a defect in manufacturing or design, damage, excessive wear, weathering, or corrosion will be immediately removed from service and tagged to indicate that it is not to be used with a prominent tag which states:

- An employee on a scaffold who is exposed to an overhead hazard of falling material will be protected with overhead protection sufficient to prevent injury.

- All load-carrying wood members of scaffold framing will be a minimum of 1,500 psi fiber stress value.
- The poles, legs, or uprights of scaffolds will be plumb and will be securely and rigidly braced to prevent swaying and displacement.
- The support for a scaffold will be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Leveling jack adjusting screws, when used, will not extend more than 18 inches below the base of the scaffold.
- Scaffold poles, legs, posts, frames, and uprights will bear on base plates and mud sills or other adequate firm foundation.
- Scaffold components that are not compatible will not be intermixed.
- Unstable objects, such as barrels, boxes, pallets, brick, or concrete blocks, will not be used to support a scaffold or work platform.
- Makeshift devices such as boxes and barrels will not be used on top of scaffold platforms to increase the working level height of employees.

Ladders will not be used on a scaffold to increase the working level height of employees, except on a large area scaffold where Keith Maxey has required the following procedures and conditions are satisfied:

- When the ladder is placed against a structure that is not a part of the scaffold, the scaffold will be secured against the sideways thrust exerted by the ladder.
- The platform units will be secured to the scaffold to prevent the units from moving.

- Either the ladder legs will be on the same platform or another means will be provided to stabilize the ladder against unequal platform deflection.
- The ladder legs will be secured to prevent them from slipping or being pushed off the platform.

Hazards created on a scaffold from the accumulation of excess tools, materials, and debris will not be permitted.

Work on or from scaffolds is prohibited during storms or high winds unless a competent person has determined that it is safe for employees to be on a scaffold and that the employees are protected by a personal fall arrest system. Wind screens will not be used unless the scaffold is secured against the anticipated wind forces imposed.

Scaffold will be kept free of slippery conditions such as those caused by ice, snow, oil, grease, or other slippery compounds.

Employees are not permitted within 10 feet of energized electrical lines.

Keith Maxey will ensure that before a scaffold is erected within 10 feet of an electrical line, the utility or property owner will be consulted. An electrical line or electrical apparatus will be considered energized unless the property owner or utility indicates it is de-energized and the line or apparatus is visibly grounded. If de-energizing is impractical and the equipment is exposed to contact by an employee, the minimum clearances shown in Table 1 below will be maintained between the scaffold, employee, or material, whichever is closer.

Table 1:

Insulated Lines		
Voltage	***Minimum Distance***	***Alternatives***
Less than 300 volts	3 feet	2 times the length of the line insulator, but not less than 10 feet.
300 volts to 50 kilovolts	10 feet	
More than 50 kilovolts	10 feet plus 0.4 inches for each kilovolt over 50 kilovolts	

Appropriate guardrail systems will be installed on any open side or end of a scaffold work platform that is 10 or more feet above the floor or ground.

Keith Maxey will ensure that a competent person determines the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. All Ohio Sealants Inc. will provide fall protection for employees erecting or dismantling supported scaffolds where the installation and use of the protection is feasible and does not create a greater hazard.

If vertical lifelines are used, they will be fastened to fixed, safe points of anchorage and will be protected from sharp edges and abrasion. Safe points of anchorage include structural members of buildings, but not any of the following:

- Standpipes
- Vents
- Other piping systems
- Electrical conduit
- Outrigger beams

If horizontal lifelines are used, they will be secured to 2 or more structural members of the scaffold.

If wood planks are used for a work platform, then the planks will be scaffold-grade lumber that has a minimum of 1,500 pounds psi fiber stress value. The planks will be not less than 2 inches by 10 inches.

The platform will consist of a minimum of 2 planks laid side by side. Each platform on all working levels of scaffolds will be fully planked or decked between uprights where practicable. Spaces between the platform and the uprights will not be more than 9 ½ inches.

Platform planks will be laid with their edges together so the platform is tight and does not have spaces through which tools or fragments of materials can fall.

Planking will extend over the end bearer not less than 6 inches, but not more than 12 inches and will be cleated or otherwise fastened to prevent shifting and will be uniform in thickness. Where planks are lapped, each plank will lap its bearer not less than 6 inches to provide a minimum overlap of 12 inches. Hook-on type manufactured platforms may be used if secured to the bearer.

Where a scaffold turns a corner, the planks will be laid to prevent tipping. The planks that meet the corner bearer at an angle will be laid first and will extend over the diagonally placed bearer far enough to have a good bearing, but not far enough to tip. The planks that run in the different direction will be laid so as to extend over the rest on the first layer of planks.

When moving a platform to the next level, employees will leave the old platform undisturbed until the new platform supports have been set in place and are ready to receive the platform planks.

Wood platform components will not be covered with opaque finishes. Platform edges may be covered or marked for identification. A platform may be coated periodically with wood preservatives, fire-retardant finishes, and slip-resistant finishes. Such coating may not obscure the top or bottom wood surfaces.

The front of a platform will not be more than 14 inches from the face of the work unless a guardrail system is erected along the front edge, or unless a personal fall arrest system is used. ***Exception:*** The maximum distance from the face of the work for plastering and lathing will not be more than 18 inches.

When scaffold is occupied by employees, slippery conditions that occur on the platform will be eliminated as soon as possible after the condition occurs.

Keith Maxey will ensure that in addition to wearing a hard hat, employees on a scaffold will be provided additional protection from falling hand tools, debris, and other small objects through the installation of toeboards, screens, or guardrail systems or the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects.

If there is a danger of tools, materials, or equipment falling from a scaffold and striking employees below, then one of the following provisions will apply:

- The area below the scaffold to which objects can fall will be barricaded and employees will not be permitted to enter the hazard area.
- Toeboards will be erected along the edge of a platform that is more than 10 feet above lower levels. The toeboards will span a distance sufficient to protect employees below. If toeboards are used, they will satisfy the following requirements:
  - Be capable of withstanding, without failure, not less than 50 pounds of force applied in any downward or horizontal direction at any point along the toeboard.
  - Be not less than 3 ½ inches high from the top edge of the toeboard to the level of the walking/working surface.
  - Toeboards will be securely fastened in place at the outermost edge of the platform and have not more than ¼ inch of clearance above the walking/working surface.

- Toeboards will be solid or have openings of not more than 1 inch in the greatest dimension.

- If tools, materials, or equipment are piled to a height higher than the top edge of the toeboard, then paneling or screening extending from the toeboard or platform to the top of the guardrail will be erected for a distance sufficient to protect employees below.
- A guardrail system will be installed with openings small enough to prevent the passage of potential falling objects.
- A canopy structure, debris net, or catch platform that is strong enough to withstand the impact forces of potential falling objects will be erected between the falling object hazard and employees.

Only qualified and competent personnel are permitted to make repairs or modifications to a scaffold system or its components. Non-qualified personnel may create more hazards. Disciplinary action for non-qualified repair or modification will be enforced.

Any violation of the above policy, misuse of scaffolds, or misconduct while working on scaffolds will be subject to disciplinary action within the scope of company policy, up to and including termination of employment.

General Scaffold Safety Policy

It will be the responsibility of all users to read and comply with the following common sense guidelines which are designed to promote safety in the erecting, dismantling and use of Scaffolds. These guidelines do not purport to be all-inclusive nor to supplant or replace other additional safety and precautionary measures to cover usual or unusual conditions. If these guidelines in any way conflict with any state, local, federal or other government statute or regulation, said statute or regulations will supersede these guidelines and it will be the responsibility of each user to comply therewith.

A Quick Tour of §1926.450 – Subpart L

§1926.450 – Subpart L requirements identify what workers and employers need to know to use all types of scaffolds safely. Specifically, the requirements:

- Regulate the design, construction, and use of scaffolds.
- Update previous scaffolding standards.
- Set performance-oriented criteria to protect workers from injury.
- Cover specific types of scaffolds.
- Allow employers flexibility in using fall protection systems.
- Extend fall protection to erectors and dismantlers.
- Strengthen training for workers.
- Identify conditions under which workers must be retrained.

Subpart L covers all scaffolds used in construction, alteration, repair, and demolition work, but does not apply to crane- or derrick-suspended personnel platforms covered in Subpart N. The table on the next page shows how Subpart L is organized and what requirements are covered under each of its major parts.

Sub Paragraph	Requirements Covered	
1926.450	**Scope & Application — Definitions**	
1926.451	**General Requirements**	
	• Capacity • Scaffold platform construction • Supported scaffolds • Suspension scaffolds	• Access • Use • Fall protection • Falling object protection
1926.452	**Additional Requirements for Specific Scaffold Types**	
	• Pole • Tube and coupler • Fabricated frame • Large area • Bricklayers' square • Horse • Form & carpenters' bracket • Roof bracket • Pump jack • Ladder jack • Window jack • Crawling boards	• Trestle ladder • Single-point adjustable • Two-point adjustable • Multi-point adjustable • Catenary • Float • Interior hung • Needle beam • Multi-level suspended • Mobile • Repair bracket • Stilts
1926.453	**Aerial Lifts**	
	• General requirements • Specific requirements • Manually propelled elevating aerial platforms • Boom supported elevating work platforms • Self-propelled elevating work platforms	
1926.454	**Training Requirements**	
	• All workers • Erectors & dismantlers • Retraining	• Qualified person • Competent person
Non-Mandatory Appendices	**A** -Guidelines and tables **B** -Guidelines for erectors and dismantlers **C** -National consensus standards **D** -Training topics, erectors and dismantlers **E** -Drawings and illustrations	

Subpart L frequently refers to ***Competent Persons*** and ***Qualified Persons***. The terms apply to persons who have special skills and are given specific responsibilities.

Competent Person

A competent person *can identify hazardous working conditions and has authorization to take prompt corrective measures to eliminate them.* The competent person, who has primary responsibility for supervising and directing all scaffolding erection, dismantling, and altering work, must:

- Know Subpart L requirements applicable to the types of scaffolds used.
- Be able to identify and correct hazards encountered in scaffold work.
- Be trained in the structural integrity of the types of scaffolds used.
- Have authority to promptly abate hazardous worksite conditions.

A competent person's duties can be shared as long as each person is qualified to perform the duty and has authority to promptly abate hazards. Only Competent Persons will:

- Determine feasible safe access for persons erecting and dismantling scaffolds.
- Inspect scaffolds and components for hazards before each work shift and after any event that could affect the scaffolds' structural integrity.
- Supervise and direct all scaffold erection, dismantling, and altering work.
- Determine the feasibility of providing fall protection for each scaffold erection and dismantling operation.
- Determine whether it is safe to work on scaffolds during storms or high winds.
- Determine whether scaffold components made from different metals can be used together.
- Determine whether scaffold components made by different manufacturers can be used together.
- Identify the cause and significance of a deteriorated scaffold component and correct the hazard.
- Inspect ropes used in suspension scaffolds and identify defects.
- Inspect manila or synthetic rope used for toprails or midrails to make sure it meets the 200-pound capacity requirements.

NOTE: Many organizations offer training programs on Subpart L scaffolding requirements. However, attending one of these programs does not necessarily make one competent (or a competent person). Competency *must* be demonstrated; it is usually the result of many hours of in-class training and on-the-job experience.

Qualified Person

A qualified person has a recognized degree, certificate, or professional standing - or by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve problems related to the subject, the work, or the project.

Scaffolds must be designed by a qualified person but not necessarily by an engineer. Exceptions: connections for mason's adjustable multi-point suspension scaffolds, pole scaffolds more than 60 feet high, coupler and fabricated-frame scaffolds more than 125 feet high, and outrigger scaffolds must be designed by a registered engineer.

Scaffold Capacities

Scaffolds must be able to support their own weight and at least four times the maximum intended load applied to them. Unless otherwise noted in Subpart L, scaffold components have to meet the 4-to-1 safety factor too, but only for that portion of the maximum intended load applied to them. The maximum intended load for a component depends on the scaffold type and its configuration. Note that scaffolds and components must be able to support four times the maximum intended load – not the rated load. The intended load includes workers, equipment, and supply loads. The intended load should never exceed the rated load unless the design is approved by an engineer and the manufacturer.

Direct Connections

Direct connections and counterweights used to balance adjustable suspension scaffolds must resist at least four times the tipping force of the scaffold. A competent person who directs the rigging of the scaffold must calculate the potential loads. Safety factors for the counterweights, riggings, direct connections to roofs, floors, and suspension ropes of adjustable suspension scaffolds should be based on the rated load and the stall load of the hoist, not the maximum intended load.

Suspension Ropes, Hardware, and the Maximum Intended Load

Suspension ropes and connecting hardware on non-adjustable suspension scaffolds must be able to support, without failure, at least six times the maximum intended load applied to them.

Stall Loads

The stall load of any scaffold hoist cannot exceed three times its rated load. This safety factor ensures that suspension scaffold support systems are not overloaded.

Design by a Qualified Person

Scaffolds must be designed by a qualified person and must be constructed and loaded in accordance with that design.

Working Safely on Scaffolds

Platform Construction

All scaffold platforms, except walkways and platforms used by erectors and dismantlers, must be fully decked or planked between the front uprights and the guardrail supports. The opening between the uprights and the planking cannot exceed one inch unless the employer demonstrates that a wider opening is necessary. (The maximum opening cannot exceed 9½ inches.)

Platform Gaps

Platform units must be placed so that the spaces between the units do not exceed one inch — unless more space is necessary; for example, fitting around uprights with side brackets to extend platform width. The maximum opening cannot exceed 9½ inches.

Platform and Walkway Widths

Platforms and walkways must be at least 18 inches wide. If work areas are too narrow for 18-inch platforms or walkways, workers can use narrower platforms but they must be protected from fall hazards by guardrails and/or personal fall arrest systems. OSHA allows 12-inch widths for ladder jack, top-plate bracket, roof bracket, and pump-jack scaffolds.

Front Edge of Platforms

The front edge of a scaffold platform cannot be more than 14 inches from the face of a structure unless guardrails or personal fall arrest systems are used to protect workers from falling between the structure and the platform. There are two exceptions:

1. The front edge distance for outrigger scaffolds must be no more than 3 inches.
2. Scaffolds used for plastering and lathing work can be no more than 18 inches from the face of a structure.

Platform Lengths

A platform 10 feet or less in length must extend at least 6 inches, but no more than 12 inches, beyond its support unless the excess length is guarded or can support workers and material without tipping. A platform longer than 10 feet can extend no more than 18 inches beyond a support unless the excess length is guarded or can support workers and material without tipping.

Abutted Planks

When platform planks are abutted to create a long platform, each abutted end must rest on a separate support. Abutted planks touch end to end on separate support surfaces; they do not rest on one another.

Overlapped Planks

Platform planks overlapped to create a long platform must overlap at least 12 inches over supports unless the planks are nailed together or otherwise restrained so they do not move.

Direction Changes

Any platform that rests on a bearer at an angle other than a right angle must be laid first. Platforms that rest at right angles over the same bearer must rest on top of the first platform. Ensure platform planks are fully bearing to eliminate potential instability.

Paint (opaque) Finishes

Wood platforms cannot be covered with opaque finishes, because opaque finishes cover defects in wood. Wood platform edges, however, may be marked for identification. Preservatives or slip-resistant and fire-retardant finishes are acceptable as long as the finish does not cover structural defects or make them hard to spot.

Mixed or Modified Components

Scaffold components made by different manufacturers cannot be mixed unless they fit together easily and do not change the scaffold's integrity. Components made by different manufacturers cannot be modified to intermix unless a competent person approves.

Components Made From Different Metals

Scaffold components made from different metals cannot be used together unless a competent person approves. If a competent person determines that mixing components made from different metals could reduce their strength, the employer must take corrective action. If a competent person cannot make the determination, then different metals must not be used.

Access to Scaffolds

Employers must provide all workers with safe access to scaffolds and scaffold platforms. Workers must use ladders or stairways to reach platforms that are more than 2 feet above or below the access point. Do not use cross braces as a means of access. Note that permanent stairways or portable ladders must meet the requirements of Subpart X (Stairways and Ladders) of the construction safety and health code.

Bottom Rung or Step

The bottom step or rung of hook-on ladders, attachable ladders, and stairway-type ladders must be no more than 24 inches above or below the scaffold supporting level.

Rest Platforms

Hook-on and attachable ladders on supported scaffolds more than 35 feet high must have rest platforms at 35-foot intervals; stairway-type ladders must have rest platforms every 12 feet. Integral prefabricated scaffold-access frames must have rest platforms every 35 feet.

Erecting and Dismantling

Erectors and dismantlers must comply with the requirements summarized below:

- Means of access must be determined by a competent person. The competent person, designated by the employer, must determine if safe access is feasible at each stage of the erecting and dismantling process.
- Hook-on or attachable ladders must be installed as soon as possible after scaffold erection begins.
- End frames of tubular welded frame scaffolds that have parallel, level horizontal members may be used for access.
- Cross bracing is not an acceptable means of access.

Protecting Workers from Falling Objects

Workers on scaffolds must wear hardhats and be protected by toeboards, screens, guardrail systems, debris nets, catch platforms, or canopies when falling objects are a potential hazard.

Hardhats cannot be the only means of protecting workers from falling objects. Be sure to secure all large objects that could fall onto a scaffold. Note that workers must wear hardhats only if falling objects are a potential hazard. If there is no hazard from falling objects, then hardhats are not required.

Persons Working Below

If tools, materials, or equipment could fall from a scaffold and strike persons below, the area below the scaffold must be barricaded or a toeboard must be placed along the edge of the scaffold platform.

When tools, materials, or equipment are piled higher than the top edge of the toeboard, paneling or screening must protect persons below. Alternatively, guardrail systems, canopies, or catch platforms may be installed to retain materials.

Protecting Workers from Falling

Workers on scaffolds more than 10 feet above a lower level must use fall protection. The employer has the option, in many cases, of protecting workers with guardrails or personal fall arrest systems.

On single-point or two-point adjustable suspension scaffolds, however, guardrails and personal fall arrest systems are required. On other types of scaffolds only personal fall arrest systems are allowed. Fall protection requirements for those who install suspension scaffold support systems on floors, roofs, and other elevated surfaces are included in 1926, Subpart M.

Remember, when you work from a scaffold more than 10 feet above a lower level, you must be protected from falling. The following table shows fall protection required by Subpart L for various types of scaffolds.

FALL PROTECTION REQUIRED	TYPE OF SCAFFOLD
Personal Fall-Arrest System	• Boatswain's Chair • Catenary Scaffold • Float Scaffold • Needle Beam Scaffold • Ladder Jack Scaffold
Guardrails	• Self-contained adjustable scaffold when platform is supported by the frame structure • Walkways located within a scaffold
Personal Fall-Arrest System and Guardrails	• Single-point adjustable suspension scaffold • Two-point adjustable scaffold • Self-contained adjustable scaffold when platform is supported by ropes
Personal Fall-Arrest System, Guardrails, or Grab-line	• Crawling Board (chicken ladder)
Personal Fall-Arrest System or Guardrails	• Overhand bricklaying on a supported scaffold • All other types of types of scaffolds not identified in this table

Personal Fall-Arrest Systems

A personal fall arrest system consists of an anchorage, connectors, and a body harness. It may also include a lanyard, deceleration device, or lifeline. Persons who work from a boatswain's chair, catenary scaffold, float scaffold, needle beam scaffold, or ladder jack scaffold must be protected by a personal fall arrest system.

Personal Fall-Arrest Systems and Guardrails

Workers on single-point or two-point adjustable suspension scaffolds must be protected by personal fall arrest systems and guardrail systems. Workers must also use personal fall arrest systems and guardrails on self-contained adjustable scaffolds that are supported only by ropes (with no safety catch to support the platform if the rope fails). The top edge of top rails on supported scaffolds and on all suspended scaffolds where both a guardrail and a personal fall arrest system are required must be between 38 inches and 45 inches above the platform surface.

Cross Bracing

Cross bracing is acceptable in place of a midrail when the crossing point of two braces is between 20 inches and 30 inches above the work platform. Cross bracing can be used as a toprail when the crossing point is between 38 inches and 48 inches above the work platform. The end points at each upright must be no more than 48 inches apart. Cross bracing can be substituted for either the toprail or the midrail on a scaffold system – but not both. The crossing point must be at the appropriate toprail or midrail height.

Personal Fall-Arrest Systems for Erectors and Dismantlers

Workers who erect or dismantle supported scaffolds must, if feasible, use fall protection. A competent person, designated by the employer, must make the feasibility determination at each stage of the erecting and dismantling process.

Lanyards and Personal Fall-Arrest Systems

Personal fall arrest systems used on scaffolds must be attached by a lanyard to a vertical lifeline, horizontal lifeline, or structural member that will hold at least 5,000 pounds. A competent person should decide the most appropriate connection. All personal fall arrest systems must meet the requirements specified in Subpart L. When a lanyard is connected to a horizontal lifeline on a single-point or two-point adjustable suspension scaffold, the scaffold must have independent support lines and automatic locking devices that can stop the scaffold if the suspension ropes fail.

Aerial Lifts - Fall Protection	
Type Of Lift	**Fall-Protection Required**
Vehicle-mounted elevating and rotating work platforms (ANSI A92.2 devices)	Platforms other than buckets or baskets must include guardrail systems – guardrails, a midrail, and toeboards. Each person who works on a boom-supported platform must wear a body harness/belt and lanyard attached to the boom or basket. (Body belts may be used only for fall restraint.)
Manually propelled elevating aerial platforms (ANSI A92.3 devices)	The platform must have a guardrail at least 42 inches ±3 inches above the floor, a midrail, and toeboards at least 4 inches high.
Boom-supported elevating work platforms (ANSI A92.5 devices)	The platform must have a guardrail at least 42 inches ±3 inches above the floor, a midrail, and toeboards at least 4 inches high. Each worker on the platform must wear a body harness/belt and lanyard attached to the boom or platform.
Self-propelled elevating work platforms (ANSI A92.6 devices)	The platform must have a guardrail 42 inches ±3 inches above the floor, a midrail, and toeboards at least 4 inches high.

Safe Work Practices

Damaged Scaffolds and Components

Any part of a damaged scaffold or component must be removed from service until it is repaired or replaced.

Erecting, Moving, Dismantling

Scaffolds must be erected, moved, dismantled, or altered only under the supervision of a competent person. The competent person must be on the worksite to direct and supervise all scaffold erecting, dismantling, altering, and moving operations. Work must be performed only by trained, experienced persons selected by the competent person.

Horizontal Movement

A scaffold cannot be moved horizontally when a worker is on it unless it has been designed by a registered professional engineer specifically for horizontal movement.

Load Capacities

Scaffolds and scaffold components must not be loaded over their maximum intended loads or rated capacities. Remember that the maximum intended load for a component depends on the scaffold type and configuration. Scaffolds and components must be able to support four times their maximum intended load — not the rated load. The intended load includes workers, equipment, and supply loads. The intended load should never exceed the rated load unless the design is approved by an engineer and the manufacturer.

Ladders and Large Area Scaffolds

Ladders can be used only on large area scaffolds; they cannot be used on other types of platforms to increase the working height. Large area scaffolds include pole scaffolds, tube and coupler scaffolds, systems scaffolds, or fabricated frame scaffolds erected over an entire work area.

Power Lines

Workers must stay clear of power lines and any conductive material on the scaffold. The minimum clearance is 10 feet for all uninsulated lines and insulated lines more than 300 volts. The minimum clearance for insulated lines less than 300 volts is three feet.

Scaffold Inspection

Scaffolds and components must be inspected by a competent person before each work day and after any incident that could weaken them.

Shore or Lean-To Scaffolds

Shore or lean-to scaffolds are prohibited. They are not properly designed and are a potential safety hazard for anyone who works on them.

Slippery Scaffolds

Working on a scaffold coated with snow, ice, or other slippery material is prohibited unless it is necessary to remove the slippery material.

Storms and High Winds

Working on a scaffold is prohibited during storms or high winds unless a competent person has determined that it is safe to be on the scaffold and workers are protected by personal fall arrest systems or wind screens.

Suspension Ropes

Suspension ropes must be protected from heat and acids or other corrosive substances or be made from material that will not be damaged by corrosive substances.

Tag Lines

When a scaffold might be struck by a swinging load, tag lines or equivalent means must be used to control the load.

Supported Scaffolds

OSHA defines a supported scaffold as one or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support.

Height to Smallest Base Dimension

Supported scaffolds with a height-to-smallest base-width ratio of more than 4-to-1 (including outrigger supports) must be restrained from tipping by ties, guys, braces, or equivalent means. "Equivalent means" refers to other designs, materials, or methods that provide an equal or greater degree of safety for workers.

Guys, Ties, and Braces

Guys, ties, and braces must be installed where horizontal members support both inner and outer legs. They must be installed according to the manufacturer's recommendations or at the closest horizontal member to the 4-to-1 height and repeated vertically at least every 20 feet if the scaffold is up to 3 feet wide; every 26 feet if the scaffold is greater than 3 feet wide.

Be sure to use vertical and horizontal tie-ins to keep the scaffold from falling into or away from a structure. A qualified person must design the tie-ins.

Support Surface

Poles, legs, posts, frames, and uprights must bear on base plates and mud sills or a firm foundation. The scaffold structure must be plumb and braced so that it does not sway. Footings must offer full support without settling. Base plates are always required on supported scaffolds; however, a concrete slab is considered a firm foundation and can be substituted for mudsills.

SAFE PRACTICE CHECKLIST	
Access	• Maintain a safe access to scaffolds and scaffold platforms. • Do not climb cross braces to reach a scaffold platform. • Use ladders or stairways to reach platforms that are more than 2 feet above or below the access point.
Components and Connections	• Never use damaged scaffold components. Repair or replace them immediately. Make sure a competent person inspects the components before each work shift. • Do not modify components. • Do not mix components made by different manufacturers. • Never use damaged wire rope.
Environment	• Watch for electrical hazards, slippery platforms, and strong winds.
Erecting, Dismantling, and Moving	• Have only trained and experienced workers erect suspension scaffolds. • Never roll a scaffold by yourself while you are on it. • Never use wood outrigger systems.
Fall-Protection and Falling Objects	• Match fall protection systems with the appropriate type of scaffold. • Make sure platforms are guarded to keep workers and equipment from falling. • Do not drop anything from a scaffold.
Inspection	• Inspect components, connections, planks, and structures regularly for hazards.
Ladders	• Do not use ladders for any reason on a standard scaffold platform.
Leveling	• Keep the scaffold level, plumb, and square. • Do not use bricks, blocks, barrels or other unstable objects to level a scaffold.
Platforms	• Do not work on slippery platforms. • Never use a stage that is too long or too short for the job. • Planking must be sound and meet OSHA requirements. • Do not use makeshift methods to increase the working height of a scaffold platform.

Rough-terrain Forklift Scaffolds

You can use a forklift to support a platform only if the entire platform is attached to the forks and the vehicle is not moved when someone is on the platform. *Attached* means the platform is fastened to the forks with bolts or by an equally safe method. All scaffold capacity, construction, access, use, and fall protection requirements apply.

Follow these requirements for safe personnel lifting operations:

Before an employee is elevated on a rough terrain forklift scaffold, a pre-lift meeting will be held to review the appropriate requirements and procedures to be followed. The pre-lift meeting will be attended by all of the following personnel:

- The person(s) responsible for the task to be performed.
- The signalperson.
- The lift operator.
- The personnel to be lifted.

- The scaffold platform will be attached to the forks by enclosed sleeves and will be secured against the back of the forks with a mechanical device so that the platform cannot tip or slip.
- The lifting carriage & forks will be secured to prevent them from tipping upward.
- Protection will be provided for personnel on the platform from moving parts and on lift trucks equipped with a lifting mast. The side of the platform adjacent to the mast

will be protected by a solid or mesh guard that is sufficient in height and width to prevent contact with moving parts of the mast. On trucks equipped with rotators, the rotation will be deactivated.

A work platform will be in compliance with all of the following requirements:

- Be of welded mild steel construction that has a minimum safety factor of 4 times the maximum intended load.
- Have a continuous guardrail system constructed as follows:
  - Have a top rail which is located not less than 36 inches, nor more than 42 inches, above the platform floor and which is constructed to withstand a minimum of 200 pounds of force in any direction.
  - Have a midrail which is installed at mid-height between the top rail and platform floor and which is constructed to withstand a 200-pound side thrust.
  - Have a toeboard which is not less than 4 inches in nominal height and which is installed not more than ¼ of an inch above the floor around the periphery of the work platform. If the platform has a gate, then toeboard will also be installed on the gate.
  - Have a wood planking, steel plate, or a steel grating bolted or welded to the bottom of the platform and be maintained free of slip or trip hazards.
  - Have a permanently affixed sign on the platform that specifies the maximum number of passengers allowed, the work platform identification number, and the maximum rated load.
  - Be easily identifiable by high-visibility color or marking.
- An employee on a scaffold who is exposed to an overhead hazard of falling material or overhead projections will be protected with overhead protection that is sufficient to prevent injury.
- The lifting mechanism will operate smoothly through its entire lift range, both empty and loaded and all lift-limiting devices and latches will be functional.
- The work platform will be level when in use.
- If an employee is elevated in a platform on a variable reach lift truck, a personal fall arrest system, including the required anchorage is required and will be worn when an employee is elevated.
- The rough terrain fork truck or the lift truck will rest on firm footing. Leveling devices and outriggers will be used where provided on equipment.
- A trained operator will remain at the operator station of a lift truck to control the lift truck while an employee is elevated. The lift truck control or controls will be in neutral and the parking brake set. The operator of the lift truck scaffold platform will be able to see the elevated platform at all times.
- A lift truck platform will be returned to the ground before a lift truck is repositioned. The forklift will be moved as close to the work area as possible for final positioning. An employee will exit the landed platform and reboard the platform only after the lift truck repositioning is completed.
- A lift truck operator will keep his or her hands and feet clear of the controls that are not in use.
- The path that a lift truck platform travels will be clear of hazards, such as storage racks, scaffolds, overhead obstructions, and electrical lines. Distances will be maintained from electrical lines as required.
- A lift truck operator will lift and lower an employee smoothly, with caution, and either at the employee's request or after alerting the elevated employee of intended movement. An operator of a lift truck that has a telescopic boom will extend or retract the boom only at idle or near idle speed.
- The combined mass weight of the platform, load, and the employee will not be more than $^{1}/_{3}$ of the rated capacity of the rough terrain forklift truck on which the platform is used.

- An employee will maintain firm footing on the platform floor. Railings, planks, ladders, or other materials will not be used on the platform to achieve reach or height.
- The guardrail system of the platform will not be used to support any of the following:
  - Materials
  - Other work platforms
  - Employees
- The platform will be lowered to ground level for an employee to enter or exit, except where elevated work areas are inaccessible or hazardous to reach. An employee may exit the platform with the knowledge and consent of the employer. When exiting to unguarded work areas, fall protection will be provided and used as required. An employee will not climb on any part of a lift truck when attempting to enter or exit the platform.
- A platform will not be modified if the modification is detrimental to its safe use.
- Floor dimensions parallel to the truck longitudinal centerline will not be more than 2 times the load center distance listed on the rough terrain forklift truck nameplate. The floor dimension width will not be more than the overall width of the truck measured across the load-bearing tires plus 10 inches on either side. The minimum space for each employee on the platform will be not less than 18 inches in either direction.
- A wood pallet will not be used as a platform for lift truck scaffolds.
- If arc welding is performed by an employee on the platform, then the electrode holders will be protected from contact with the metal components of the work platform.
- The only tools that are permitted on the work platform are hand tools and portable powered tools. Materials and tools will be secured to prevent displacement. The total weight of compressed gas cylinders will not be more than 20 pounds.
- A work platform will not be used during high winds, electrical storms, snow, ice, sleet, or other adverse weather conditions that could affect the safety of the employees on the work platform or the operator of the truck.
- An employee will keep all parts of his or her body inside the platform during raising, lowering, or repositioning of the platform.
- There will be a communication system between an employee on the work platform and the operator of the rough terrain forklift truck or a fork lift truck.

Inspection and Maintenance of Rough Terrain Forklift Trucks

Before an employee is elevated on a rough terrain forklift truck platform, a trained operator or other qualified person will inspect all of the following items:

- Tire condition & inflation pressure.
- Steering mechanism.
- Warning devices.
- Lights.
- Brakes.
- Lift and tilt mechanisms, load engaging means, chains, cables, and limit switches.
- Fuel systems.
- Other work platforms.
  - A forklift truck will not be operated if an unsafe condition is found before or during use until the truck has been restored to a safe operating condition.
  - A rough terrain forklift truck and forklift trucks will be maintained according to the manufacturer's recommendations.

Operator Training

Employers must ensure that an employee has been trained before being assigned as an operator of a rough terrain forklift truck that is used to elevate personnel. An employee will be trained in all of the following areas:

- The capabilities of the equipment and its attachments.
- The purpose, use, and limitations of the controls.
- How to make daily checks.

An employee will practice operating an assigned vehicle and perform the functions necessary for a particular job until proficiency is achieved.

Operator Permits

Some jurisdictions require that permits be issued by the company to the operator of a rough terrain forklift performing personnel lifting operations. Follow these procedures:

- Employers must ensure that an operator has a valid permit to operate a rough terrain forklift or a forklift truck for elevating an employee. The operator will carry the permit or will have the permit available if it is requested by any regulating department representative, during working hours.
- A permit to operate a rough terrain forklift truck or a forklift truck is valid only for work performed for the employer who issued the permit. A permit may be issued for a period of not more than 3 years. A permit will contain:

- Firm name.
- Operator's name.
- Date issued.
- Date expiring
- Operator restrictions, if any.
- If a restricted permit to operate is issued, then the permit will state the nature of the restriction.
- The truck type an operator is trained on and qualified to operate.

Types of Supported Scaffolds

Bricklayer's Square Scaffolds

- Wood bricklayer's scaffolds must be reinforced with gussets on both sides of each corner.
- Install diagonal braces on all sides of each square.
- Install diagonal braces between squares on the rear and front sides of the scaffold.
- Do not exceed three tiers in height. One square must rest directly above the other.

Crawling Boards (chicken ladders)

- Crawling boards must extend from the roof peak to the eaves when used for roof construction, repair, or maintenance.
- Crawling boards must be secured to the roof by ridge hooks or other means that meet equivalent strength and durability criteria.

Fabricated Frame Scaffolds

- When you move platforms to the next level, leave the existing platform undisturbed until the new end frames have been set in place and braced.
- Frames and panels must be braced by cross, horizontal, or diagonal braces that secure vertical members together laterally.
- Join frames and panels together vertically by coupling or stacking pins.
- If uplift could displace scaffold end frames or panels, the frames or panels must be locked together vertically.
- Scaffolds more than 125 feet above their base plates must be designed by a registered professional engineer.

Form Scaffolds and Carpenter's Bracket Scaffolds

- Brackets, except those for wooden bracket-form scaffolds, must be attached to the supporting formwork or structure by: nails; a metal stud attachment device; welding; hooking over a secured structural supporting member; or, for carpenter's bracket scaffolds, by a bolt extending through to the opposite side of the structure's wall.
- Wooden bracket-form scaffolds must be an integral part of the form panel.
- Folding type metal brackets, when extended, must be either bolted or secured with a locking-type pin.

Horse Scaffolds

- Scaffolds must not be constructed more than two tiers or 10 feet high, whichever is less.
- When you arrange horses in tiers, place each horse directly over the horse in the tier below. The legs of each horse must be nailed down or otherwise secured to prevent displacement. Each tier must be cross braced.

Ladder Jack Scaffolds

- Platforms must not exceed 20 feet in height.
- All ladders used to support ladder jack scaffolds must meet the requirements of Subpart X, Stairways and Ladders.
- Job-made ladders cannot be used to support ladder jack scaffolds.
- The ladder jack must be designed and constructed to bear on the side rails and ladder rungs or on the ladder rungs alone.
- Ladders that support ladder jacks must be placed, fastened, or equipped with devices to prevent slipping.
- Scaffold platforms must not be bridged one to another.

Mobile Scaffolds

- When a freestanding mobile scaffold is used, the height will not be more than 4 times the minimum base dimension.
- Outriggers, when used, may be considered as part of the base dimension. The outriggers will be installed on both sides of the scaffold at each frame line.
- Locking devices will be used to secure the casters to the frame or adjusting screw. The adjusting screw will not extend more than 12 inches. The casters will be provided with a positive locking device to prevent movement of the scaffold. The device will be used when the scaffold is in use, except where the work platform is 4 feet or less from the floor.
- Vertical members of the scaffold will be braced by cross bracing and diagonal bracing. Not less than 2 horizontal diagonal braces will be installed, 1 as close to the casters as possible, at intervals of not more than 4 times the least-based dimension. The horizontal diagonal brace may be omitted on a scaffold that is specifically designed to absorb racking.
- A scaffold platform will cover the full width of the scaffold, except for a necessary entrance opening. A platform will be secured in place. A platform will not extend outward beyond the base supports of the scaffold unless outrigger frames or equivalent devices are used to ensure stability.
- A ladder or stairway that is provided on a manually propelled mobile scaffold will be affixed or built into the scaffold and will be so located that, when in use, the ladder or stairway does not have a tendency to tip the scaffold. A landing platform will be provided at intervals of not more than 30 feet.
- Only manual force will be used to move a scaffold. The force will be applied near or as close to the base as practical, except for a scaffold with a work platform that is 4 feet or less from the floor.

- When being used, a mobile scaffold will rest upon a suitable footing and will stand plumb. Where leveling of the scaffold is necessary, screw jacks or an equivalent means will be used.
- An employer will not allow an employee to ride on a mobile scaffold, unless all of the following conditions exist:
  - The floor or surface is within 3 degrees of level and is free from pits, holes, or obstructions.
  - The minimum base dimension of the scaffold when ready for rolling is not less than ½ of the height.
  - The casters are equipped with rubber or similar resilient tires.
  - All tools and materials are secured or removed from the platform before the mobile scaffold is moved.
  - The scaffold is equipped with guardrails on all sides.
  - Before a scaffold is moved, each employee on the scaffold will be made aware of the move.
- A mobile scaffold will be in compliance with the applicable provisions regarding scaffold platforms and frame members.
- A power system used to propel a mobile scaffold will be designed for such applications. A forklift, truck, similar motor vehicle, or add-on motor will not be used to propel a scaffold unless the scaffold is designed to be propelled by these types of applications.
- If a power system is used to propel a scaffold, then the propelling force will be applied directly to the wheel and will not produce a speed of more than 1 foot per second.
- Personnel will not be on any part of a powered mobile scaffold that extends outward beyond the wheels, casters, or other supports.
- A powered mobile scaffold will be stabilized to prevent tipping during movement.

Outrigger Scaffolds

- The inboard end of outrigger beams, measured from the fulcrum point to the extreme point of anchorage, must be not less than 1.5 times the outboard end in length.
- Outrigger beams fabricated in the shape of an I-beam or channel must be placed so that the web section is vertical.
- The fulcrum point of outrigger beams must rest on secure bearings at least 6 inches in each horizontal dimension.
- Outrigger beams must be secured in place and braced at the fulcrum point against tipping.
- Securely anchor the inboard ends of outrigger beams. Use braced struts bearing against sills that contact the overhead beams or ceiling, or use tension members secured to the floor joists underfoot.
- The entire supporting structure must be securely braced to prevent horizontal movement.
- Platform units must be secured to outriggers.
- Scaffolds and scaffold components must be designed by a registered professional engineer.

Plasterer's, Decorator's, and Large Area Scaffolds

These scaffolds must be constructed in accordance with the requirements for pole scaffolds, tube-and-coupler scaffolds, or fabricated frame scaffolds.

Pole Scaffolds

- Pole scaffolds more than 60 feet in height must be designed by a registered professional engineer.
- When you move platforms to the next level, leave the existing platform undisturbed until new bearers are set and braced.

- Install cross bracing between the inner and outer sets of poles on double pole scaffolds.
- Install runners and bearers on edge.
- Install diagonal bracing in both directions across the entire inside face of double-pole scaffolds that support loads of 50 pounds or more per square foot.
- Extend runners over a minimum of two poles. Support by bearing blocks securely attached to the poles.
- Install diagonal bracing in both directions across the entire outside face of double- and single-pole scaffolds.
- Extend bearers a minimum of 3 inches beyond the outside edges of runners.
- Do not splice braces, bearers, and runners between poles.
- Where you splice wooden poles, square the ends. Make sure that wood splice plates are on at least two adjacent sides and that they extend at least 2 feet on either side of the splice.

Pump Jack Scaffolds

- Pump jack brackets, braces, and accessories must be fabricated from metal plates and angles. Each pump jack bracket must have two positive gripping mechanisms.
- Secure poles to the structure with rigid triangular bracing.
- Workbenches must not be used as scaffold platforms.
- Wood poles must be straight-grained and free of shakes, large loose (or dead) knots, and other defects.
- Wood poles constructed in two continuous lengths must be joined together with the seam parallel to the bracket.
- If two-by-fours are spliced to make a pole, mending plates must be installed at all splices to maintain the full strength of the member.

Roof Bracket Scaffolds

- Scaffold brackets must fit the pitch of the roof and provide a level support for the platform.
- Anchor brackets with nails or secure with first-grade manila rope at least ¾ inch diameter.

Step, Platform, and Trestle Ladder Scaffolds

- Scaffold platforms must not be any higher than the second-highest rung or step of the ladder supporting the platform.
- All ladders used in conjunction with step, platform, and trestle ladder scaffolds must meet the pertinent requirements of Subpart X, Stairways and Ladders. Do not use job-made ladders.
- Ladders that support step, platform, and trestle ladder scaffolds must be placed, fastened, or equipped with devices to prevent slipping.
- Scaffolds must not be bridged one to another.

Stilts

- A worker may wear stilts only on a large-area scaffold.
- When workers use stilts on a large-area scaffold protected by guardrails, the guardrail height must be increased an amount equal to the height of the stilts.
- Stilts can be used only on surfaces that are flat and free of pits, holes, and other obstructions.
- Keep stilts properly maintained. Any alteration of the original equipment must be approved by the manufacturer.

Tube and Coupler Scaffolds

- When you move platforms to the next level, leave the existing platform undisturbed until new bearers are set and braced.
- Install transverse bracing forming an “X” across the width of the scaffold, at every third set of posts horizontally, and every fourth runner vertically.

- On straight-run scaffolds, make sure longitudinal bracing across the inner and outer rows of posts is installed diagonally in both directions. The bracing must extend from the base of the end posts upward to the top of the scaffold at approximately a 45-degree angle.
- When you cannot attach bracing to posts, attach it the runners as close to the post as possible.
- Install bearers transversely between posts.
- Extend bearers beyond the posts and runners. They must have full contact with the coupler.
- Install runners along the length of the scaffold on both the inside and outside posts at level heights.
- Interlock runners on straight runs in continuous lengths and couple them to each post. The bottom runners and bearers must be located as close to the base as possible.
- Couplers must be made from a structural metal such as drop-forged steel, malleable iron, or structural-grade aluminum.
- Tube and coupler scaffolds more than 125 feet in height must be designed by a registered professional engineer.

Window Jack Scaffolds

- Scaffolds must be securely attached to the window opening.
- Use the scaffold to work only at the window opening through which the jack is placed.
- Do not use window jacks to support planks placed between one window jack and another.

Suspension Scaffolds

OSHA defines a suspension scaffold as one or more platforms suspended by ropes or other non-rigid means from an overhead structure.

Support Device Load Requirements

Support devices such as outrigger beams, cornice hooks, and parapet clamps must rest on surfaces that can support at least four times the scaffold's load when the scaffold operates at the rated load of the hoist (or at least 1.5 times the scaffold load at the stall capacity of the hoist, whichever is greater).

Outrigger Beams

Outrigger beams must be made of structural metal or material of equivalent strength and must be restrained. The outrigger beams must be secured directly to the supporting surface or stabilized by counterweights. Because masons' multi-point adjustable suspension scaffolds bear heavy loads, their supporting outrigger beams cannot be stabilized by counterweights; the supporting surface could become dangerously overloaded.

Outrigger beams must have stop bolts or shackles at both ends and be securely fastened with the flanges turned out when channel iron beams are used in place of I-beams. Bearing supports must be perpendicular to the beam center line. Outrigger beams must be set and maintained with the web vertically. The shackle that attaches the rope to the outrigger beam must be placed directly over the center line of the stirrup.

Direct Connections

A competent person must evaluate all direct connections and confirm that scaffold-supporting surfaces can support the imposed loads. An engineer must design masons' multi-point adjustable suspension scaffold connections.

Counterweights

Counterweights must be used only for their intended purpose and must not be changed or moved until the scaffold is dismantled. Sand and other flowable material cannot be used as a counterweight. Solid materials such as large concrete or lead blocks designed to be used as counterweight are acceptable, however.

Hoists and Related Equipment

Winding drum hoists must have at least four wraps of the suspension rope at the lowest point of scaffold travel. When other types of hoists are used, the suspension ropes must be long enough so the scaffold can be lowered without the rope end passing through the hoist.

Gasoline-powered equipment and hoists cannot be used on suspension scaffolds.

Suspension scaffold hoists must have an operating brake and an automatic braking device or locking pawl that engages when a hoist makes a sudden change in momentum or an accelerated over-speed.

Manually operated hoists must descend with a positive crank force.

Suspension Wire Rope

Repaired wire rope cannot be used for suspension rope. The load end of wire suspension ropes must be fitted with properly sized thimbles and secured by eye splicing or equivalent means. A competent person must check wire ropes for defects before each work-shift. Damaged rope must be replaced. Swaged attachments or spliced eyes on wire suspension ropes cannot be used unless they are made by a rope manufacturer or a qualified person.

Securing Scaffolds

Two-point and multi-point suspension scaffolds must be secured if they could sway; a competent person must make the determination. Window cleaners' anchors cannot be used to secure suspension scaffolds.

Safety Devices

Emergency escape and rescue devices cannot be used as working platforms. This requirement does not apply to systems that function as suspension scaffolds and as emergency/rescue devices.

Tiebacks

Tiebacks must be at least as strong as suspension ropes and must be secured to a structurally sound anchorage on the building or structure. Do not use standpipes, vents, other piping systems, or electrical conduit for anchorages. Be sure to install tiebacks perpendicular to the face of the building or structure or use opposing angle tiebacks. Do not install single tiebacks at an angle to the face of a building or structure. Support devices such as cornice hooks, roof hooks, or parapet clamps must also be secured by properly installed tiebacks.

Types of Suspension Scaffolds

Catenary Scaffolds

- No more than one platform can be placed between consecutive vertical pickups and no more than two platforms must be used on a catenary scaffold.
- Platforms supported by wire ropes must have hook-shaped stops on each end to prevent them from slipping off the wire ropes. These hooks must be placed so that they will prevent the platform from falling if one of the horizontal wire ropes breaks.
- Wire ropes must not be tightened so much that a scaffold load will overstress them.
- Wire ropes must be continuous, without splices between anchors.

Float Scaffolds

- The platform must be supported by at least two bearers, each of which must project 6 or more inches beyond the platform on both sides. Each bearer must be securely fastened to the platform.
- Rope connections must keep the platform from shifting or slipping.

Interior Hung Scaffolds

- Scaffolds must be suspended only from a roof or other structural members such as ceiling beams.
- Inspect overhead supporting members such as roofs or ceiling beams before erecting the scaffold.
- Connect suspension ropes and cables to overhead supporting members by shackles, clips, or thimbles.

Multi-Level Suspended Scaffolds

- Scaffolds must be equipped with additional independent support lines equal to the number of supported points, as strong as the suspension ropes, and rigged to support the scaffold if the suspension rope(s) fail.
- Independent support lines and suspension ropes must not be attached to the same anchorage points.
- Supports for platforms must be attached directly to the support stirrup and not to any other platform.

Multi-Point Adjustable Suspension Scaffolds

- When you use two or more scaffolds, they must not be bridged to one another unless they are designed to be bridged, the bridge connections are articulated, and the hoists are properly sized.
- If bridges are not used, you can go from one platform to another only when the platforms are the same height and are abutting.
- Scaffolds must be suspended from metal outriggers, brackets, wire rope slings, or hooks.

Needle Beam Scaffolds

- Scaffold support beams must be installed on edge.
- Use ropes or hangers for supports. One end of a needle beam scaffold, however, may be supported by a permanent structural member.
- Ropes must be securely attached to the needle beams.
- The support connection must prevent the needle beam from rolling or becoming displaced.
- Platform units must be securely attached to the needle beams. Cleats and overhang are not acceptable.

Repair Bracket Scaffolds

- Brackets must be secured by one or more wire ropes at least ½-inch in diameter.
- Attach each bracket to the securing wire rope (or ropes) by a locking device that will keep the bracket and the rope from separating.
- Each bracket, at the contact point between the supporting structure and the bottom of the bracket, must have a shoe (heel block or foot) that will prevent the bracket from moving laterally.
- Platforms must be secured to the brackets so they do not move or separate from the brackets.
- If you place a wire rope around a structure to anchor a personal fall arrest system for workers erecting or dismantling a scaffold, the wire rope must meet Subpart M and must be of at least 5/16-inch diameter.
- Each wire rope used to secure brackets in place or as a personal fall arrest system anchorage must be protected from damage.

- Use a turnbuckle at least 1 inch in diameter to tension wire ropes that secure brackets in place or that anchor personal fall arrest systems.
- Each turnbuckle must be connected to the other end of its rope by an appropriately sized eye-splice thimble.
- Do not use U-bolt wire rope clips on any wire rope to secure brackets or to anchor personal fall arrest systems.
- Do not drop materials over the outside of the supporting structure.
- Erect scaffolds only one direction around a structure.

Single-Point Adjustable Suspension Scaffolds

- If two single-point adjustable suspension scaffolds are combined to form a two-point adjustable suspension scaffold, the scaffold must comply with the requirements for two-point adjustable suspension scaffolds.
- Under most circumstances, the supporting rope between the scaffold and the suspension device must be kept vertical.
- Boatswain's chair tackle must consist of correctly sized ball bearings or bushed blocks containing safety hooks and properly "eye-spliced" minimum ⅝-inch diameter first-grade manila rope.
- Boatswain's chair seat slings must be reeved through four corner holes in the seat, must cross each other on the underside of the seat, and must be rigged to prevent slippage which could cause an out-of-level condition.
- Boatswain's chair seat slings must be a minimum of ⅝-inch diameter rope that will satisfy the strength, slip resistance, and durability of first-grade manila rope.
- When workers use a heat-producing process such as gas or arc welding, boatswain's chair seat slings must be a minimum of ⅜-inch wire rope.
- Non-cross-laminated wood boatswain's chairs must be reinforced on their undersides by cleats securely fastened to prevent the boards from splitting.

Two-Point Adjustable Suspension Scaffolds

- Platforms must not be more than 36 inches wide unless they are designed by a qualified person.
- Platforms must be securely fastened to hangers.
- The blocks for fiber or synthetic ropes must consist of at least one double and one single block. The sheaves of all blocks must fit the size of the rope used.
- Platforms must be ladder-type, plank-type, beam-type, or light-metal-type.
- Do not bridge or connect two-point scaffolds to one another when raising or lowering them unless the bridge connections are attached and the hoists are properly sized.
- You can go from one platform to another only when the plat-forms are at the same height, are abutting, and you use walk-through stirrups specifically designed for this purpose.

Vehicle Mounted Elevating & Rotating

Work Platforms (Aerial Lifts)

This type of equipment falls in the Scaffold category. An aerial lift is an extensible or articulating device designed to position workers and handle materials. Aerial lifts can be powered or manually operated and do not necessarily rotate about a vertical axis.

Keith Maxey is designated by All Ohio Sealants Inc. as the competent person in authority over all aerial device work procedures. Keith Maxey will ensure that all safety measures and systems are in place and correctly installed; all safety procedures are adhered to, and ensure regular inspections of the operational site and aerial equipment are made. All Ohio Sealants Inc. has implemented and will enforce the following work practices and procedures to assure that no employee will be exposed to hazards during aerial lift work operations:

- Keith Maxey will confirm and verify that all employees are trained in and familiar with required work practices and procedures in the use of any equipment required, proper PPE, and safety procedures which must be followed to safeguard personnel involved in aerial lifting operations or who work in the vicinity of aerial lifting operations.
- Only trained and authorized personnel will be permitted to operate equipment.
- Each work platform will be inspected, maintained, repaired, and kept in proper working order according to the manufacturer's maintenance and repair manuals.
- Any work platform not in safe operating condition must be removed from service until repaired. All repairs will be made by qualified service persons conforming to the manufacturer's operating, maintenance, and repair manuals.
- Modifications or alterations of work platforms will be made only with written permission of the manufacturer or any other equivalent entity.
- Each work platform will be equipped with a mechanical parking brake, which will hold the unit on any slope it is capable of climbing. When possible, wheel chocks will be installed before using an aerial lift on an incline.

The following information will be displayed on all work platforms in a clearly visible, accessible area and in as permanent a manner as possible:

  - Warnings, cautions, or restrictions for safe operation in accordance with ANSI requirements.
  - The rated work load will be clearly displayed at each entrance to the platform.

Before using the work platform, the operator must:

- Read and understand the manufacturer's operating instructions and safety rules, and be trained by a qualified person on the contents of the manufacturer's instructions and safety rules.
- Read and understand all decals, warnings, and instructions on the work platform.
- On a daily basis, before the work platform is used, it must be given a thorough inspection, which must include:
  - Inspection for defects such as cracked welds, hydraulic leaks, damaged control cable, loose wire connections, and tire damage.
  - Inspection of functional controls for proper operation.

Any suspect items discovered through inspection must be carefully examined and a determination made by a qualified service person as to whether they constitute a safety hazard. All unsafe items must be corrected before further use of the work platform.

Before the work platform is used, the operator must survey the immediate work area for hazards such as:

- Untamped earth fills
- Ditches.
- Dropoffs or holes
- Debris.
- Bumps & floor obstructions.
- Overhead obstructions and high-voltage conductors
- Other possible hazardous conditions

Before each elevation of the work platform, the operator must:

- Check for overhead obstructions and high-voltage conductors. A minimum distance of ten feet from energized high-voltage conductors must be maintained at all times between the conductors and the operator and platform equipment.
- Ensure that the load and its distribution on the platform are in accordance with the manufacturer's rated capacity. The manufacturer's recommended load limits must never be exceeded.
- Ensure that outriggers and stabilizers are used if the manufacturer's instructions require their use.
- Ensure that guardrails are properly installed and gates are closed.

Before and during driving while the platform is elevated, the operator will:

- Be required to look in the direction of, and keep a clear view of, the path of travel and assure that the path of travel is firm and level.
- Maintain a safe distance from obstacles, debris, drop-offs, holes, depressions, ramps, overhead obstacles, or other hazards to safe elevated travel.

- The operator must limit travel speed according to conditions. Conditions to be observed are: Ground surface, congestion, slope, location of personnel, and other factors that may create a hazard of collision or injury to personnel.
- Stunt driving and horseplay is prohibited.
- Personnel must maintain a firm footing on the platform while working thereon unless they are secured by safety harness and lanyard devices fixed to manufacturer-approved anchor points. Use of railings or planks, ladders or any other device on the work platform for achieving additional height is prohibited.
- The operator will immediately report defects or malfunctions which become evident during operation and must stop use of the work platform until correction has been made.
- Altering/disabling safety devices or interlocks is prohibited.

Subpart L covers only vehicle-mounted elevation and rotating aerial lifts (ANSI A92.2 device). However, ANSI has additional rules covering three other types of aerial lifts:

Manually propelled elevating aerial platforms (ANSI A92.3 device)

Boom-supported elevating work platforms (ANSI A92.5 device)

Self-propelled elevating work platforms and scissor lifts (ANSI A92.6 device)

These additional rules require workers to have the manufacturer's operation manual with the lifts when they use them and to follow all operating and maintenance instructions.

Field Modifications

Aerial lifts may be "field modified" provided the manufacturer certifies in writing that modifications conform to all applicable provisions of ANSI A92.2 and OSHA requirements.

Ladder and Tower Trucks

Aerial ladders must be secured in the lower traveling position before they can be transported on highways.

Extensible and Articulating Boom Platforms

Lift controls must be tested before platforms are used. Workers must stand firmly on the floor of the basket & wear a body belt and a lanyard attached to the boom or basket.

Body belts are acceptable in this case, as part of a tether system. However, body belts are not acceptable as part of a personal fall arrest system.

Electrical Tests

All electrical tests must conform to ANSI A92.2-1969 section 5.

Bursting Safety Factor

ANSI A92.2-1969, section 4.9, applies to all critical hydraulic and pneumatic components. Critical components are those in which a failure would result in a free fall or free rotation of the boom.

Welding Standards

Welding work must conform to the following standards:

Standard Qualification Procedure, AWS B3.0-41

Recommended Practices for Automotive Welding Design, AWS D8.4-61

Standard Qualification of Welding Procedures and Welders for Piping and Tubing, AWS D10.9-69

Specifications for Welding Highway and Railway Bridges, AWS D2.0-69

Training Requirements

Each person who works from a scaffold must be trained to recognize hazards associated with that scaffold and to control or minimize the hazards. Training must cover:

- Electrical hazards, such as overhead power transmission lines.
- Fall hazards and methods to control the hazards.
- Falling object hazards and methods to protect persons from falling objects.
- How to use the scaffold's walkways, platform components, and access areas.
- The scaffold’s load capacity and the types of loads appropriate for the scaffold.
- The requirements of Subpart L that apply to the Scaffold.

Workers Who Erect or Dismantle Scaffolds

Workers who erect, disassemble, move, or maintain a scaffold must be trained by a competent person. Training must cover:

- Scaffold hazards.
- Erecting, disassembling, moving, and maintenance procedures.
- Design criteria, maximum intended load-carrying capacity, and use.

Retraining

When an employer has reason to believe a worker lacks the skill or knowledge to safely use, erect, or dismantle a scaffold, the employer must retrain the worker. Other reasons for retraining include worksite changes that create new hazards and changes in the types of scaffolds, fall protection, or falling object protection used.

The following table summarizes the training requirements for persons who work from scaffolds and persons who erect or dismantle scaffolds.

Summary of Training Requirements for Scaffold Users

	Those Who Work from Scaffolds	Those Who Erect and Dismantle Scaffolds
Critical Scaffold Issues	• Falling objects • Fall protection • Material handling on scaffolds • Scaffold load capacities	• Scaffold design criteria • Scaffold erecting, disassembling, moving, and maintenance procedures • Scaffold erecting, disassembling and, moving hazards • Scaffold load capacities
What They Need to Know	• How to use appropriate fall protection systems • How to control scaffold hazards • How to use scaffold walkways, platform components, and access areas • Maximum-intended and load-carrying capacities of scaffolds • Subpart L requirements	• Hazards involved in erecting/dismantling • Erection/dismantling planning procedures • How to deal with electrical hazards • How to inspect components • Appropriate design criteria • Maximum-intended and load-carrying capacities of scaffolds • Subpart L requirements
Who Can Train Them	• Any person who has training and experience in the above critical scaffold issues and who can teach the issues to scaffold users. • Subpart L refers to a person with these skills as a qualified person.	• Any person who has training and experience in the above critical scaffold issues who can teach the issues to erectors/dismantlers, and who has authority to control scaffold hazards. • Subpart L refers to a person with these skills as a competent person.
How Often to Train Them	• Before beginning a new job • Whenever changes at the worksite present new hazards • Whenever they fail to demonstrate skills related to any of the critical scaffold issues	• Before they begin a new job • Whenever changes at the worksite present new hazards • Whenever they fail to demonstrate skills related to any of the critical scaffold issues

Effective training programs do not just happen. They require careful planning, explicit goals and objectives, dedicated instructors, and motivated students. It does not matter whether the activity is athletics, academics, or occupational safety and health.

The underlying training concepts are similar:

- Design a training program
- Conduct training,
- Evaluate training effectiveness
- Improve training through feedback

1. Design a Training Program

Determine whether a worksite problem can be solved by training.

Will training solve the problem or are hazards or engineering problems causing injuries? Training is most effective when it focuses on what workers need to know to do their jobs safely. Training is especially helpful for inexperienced workers, new workers, and workers unfamiliar with special processes and equipment.

Identify training needs

Establish what the worker is expected to do and identify hazardous tasks. Analyze each task to determine what the worker must learn to do a job safely.

Design learning activities

Learning activities enable workers to demonstrate that they have acquired desired skills and knowledge. The activities should simulate actual job tasks as closely as possible. Learning activities can be group-oriented, with lectures, role playing, and demonstrations. Or they can be designed as self-paced activities for individual workers. Ultimately, the design depends on the employer's creativity and training resources.

2. Conduct the Training

Plan the training structure and format. Consider the number, frequency, and length of sessions. Determine instructional techniques and who will do the training. Make sure the training is well-organized and has clearly defined objectives. Give workers an overview of what they will learn. Relate training materials to tasks and jobs. Include hands-on experience and role-playing activities, if possible. Reinforce learning by summarizing objectives and key concepts. Be sure to let workers participate in discussions and ask questions.

3. Evaluate Training Effectiveness

How do you know training is accomplishing your objectives? Develop a plan to objectively evaluate training effectiveness. Ask workers what they've learned through training. Ask supervisors if workers are accomplishing training goals. Examine trends in your injury or illness statistics for changes that training may have influenced.

4. Improve Training through Feedback

Collect and evaluate feedback from workers, supervisors, and others affected by the training. When you are sifting through what people had to say about the training, consider these questions:

- Did the training focus on critical elements of the job?
- Were major gaps in workers' knowledge or skills covered?
- Were the training objectives presented clearly?
- Did the objectives state the performance levels expected of workers?
- Did learning activities simulate actual work tasks?
- Were learning activities appropriate for the knowledge and skills the jobs required?
- Were training materials organized and presented clearly?
- Were workers motivated to learn?
- Were workers encouraged to participate and to ask questions?

Adjust the training program if the feedback warrants a change.

Handling Emergencies

Employers must establish procedures to ensure that a worker who falls from a scaffold receives immediate attention. Emergency procedures should be fully documented before workers begin work or use fall arrest or restraint systems. Emergency procedures should identify key rescue and medical personnel, equipment available for rescue, communications procedures, retrieval methods, and first-aid requirements.

The following lists identify safe practice guidelines for developing emergency response planning procedures, responding to emergencies, and investigating accidents.

Planning Guidelines – Before On-Site Work Begins

- Make the fire department or emergency responders aware of the job specifications at the site and any factors that may slow response time.
- Create one or more joint training sessions between key onsite personnel and emergency responders.
- Document the rescue plan and make sure it is posted at the worksite.
- Mark the job site with signs and note the easiest access routes on & off the site.

As On-Site Work Progresses

- Identify on-site equipment that can be used for rescue and retrieval. Examples: boom-lifts, ladders, and forklifts.
- Maintain a current equipment inventory at the site. Equipment may change frequently as the job progresses.
- Evaluate and update the emergency response plan if onsite work tasks change.

Emergency Response Actions

- Call 9-1-1 or other emergency numbers indicated on the emergency response plan. Use 9-1-1 for ambulance service but remember that most 9-1-1 responders are not trained to rescue an injured worker suspended in a personal fall-arrest system. Rescue procedures must ensure prompt response to a suspended worker. The 9-1-1 number does not ensure prompt response. First responders should clear a path to the victim. Others should be sent to direct emergency personnel to the scene.
- Make sure only qualified personnel attempt a technical rescue.
- Prohibit all non-essential personnel from the rescue area.
- Talk to the victim; if possible, determine the victim's condition.
- If the victim is accessible: Comfort and check vital signs. If necessary: Administer CPR, attempt to stop bleeding.
- Do not attempt a solo rescue if the victim is suspended. Wait for trained emergency responders.

Accident Investigation Guidelines

- Report fatalities and catastrophes to OSHA within eight hours.
- Report injuries requiring overnight hospitalization to OSHA within 24 hours.
- Identify all equipment associated with the accident and put it out of service until the accident investigation is complete.
- Document what went wrong, step by step.
- Review the fall protection plan; determine how the plan could be changed to prevent similar accidents; revise the plan accordingly.
- Have a qualified person examine equipment associated with the accident; if damaged, repair or replace it. If it contributed to the accident, determine how and why, and then replace it.
- Do not disturb the scene of a fatality or catastrophe.

SCAFFOLD SAFETY RULES

The following are common sense rules designed to promote safety when using scaffolding. These rules are based on OSHA Standards and are intended to deal with some of the many practices and conditions encountered in the use of scaffolding. The rules do not purport to be all-inclusive or to supplant or replace other additional safety and precautionary measures to cover usual or unusual conditions. They are not intended to conflict with, or supersede, any statute or regulation; reference to specific provisions should be made by the user.

1. Post these scaffolding safety rules in a conspicuous place and be sure that all persons who erect, dismantle, or use scaffolding are aware of them.
2. Follow all state, local, and federal codes, ordinances, and regulations pertaining to scaffolding.
3. Inspect all equipment before using – Never use any equipment that is damaged or deteriorated in any way.
4. Keep all equipment in good repair. Avoid using rusted equipment – the strength of rusted equipment is not known.
5. Inspect erected scaffolds regularly to be sure that they are maintained in safe condition.
6. Consult your scaffolding supplier when in doubt – scaffolding is his business, **Never Take Chances.**

A. Provide adequate sills for scaffold posts and use base plates.

B. Use adjusting screws instead of blocking to adjust to uneven grade conditions.

C. Plumb and level all scaffolds as the erection proceeds. Do not force braces to fit – level the scaffold until proper fit can be made easily.

D. Fasten all braces securely.

E. **DO NOT** climb cross braces. An access (climbing) ladder, access steps, frame designed to be climbed or equivalent safe access to the scaffold will be used.

F. On wall scaffolds, place and maintain anchors securely between structure and scaffold at least every 30' of length and 25' of height.

G. When scaffolds are to be partially or fully enclosed, specific precautions must be taken to assure frequency and adequacy of ties attaching the scaffolding to the building due to increased load conditions resulting from effects of wind and weather. The scaffolding components to which the ties are attached must also be checked for additional loads.

H. Free standing scaffold towers must be restrained from tipping by guying or other means.

I. Equip all planked or staged areas with proper guardrails, midrail, and toeboards along all open side and ends of scaffold platforms.

J. Power lines near scaffolds are dangerous – use caution and consult the power service company for advice.

K. **DO NOT** use ladders or makeshift devices on top of scaffolds to increase the height.

L. **DO NOT** overload scaffolds.

M. Planking:
1. Use only lumber that is properly inspected and graded as scaffold plank.
2. Planking will have at least 12" of overlap and extend 6" beyond center of support, or be cleated at both ends to prevent sliding off supports.
3. Fabricated scaffold planks and platforms unless cleated or restrained by hooks will extend over their end supports not less than 6" not more than 12".
4. Secure plank to scaffold when necessary.

N. For rolling scaffold, the following additional rules apply:
1. DO NOT ride rolling scaffolds.
2. Secure or remove all material and equipment from platform before moving scaffold.
3. Caster brakes must be applied at all times when scaffolds are not being moved.
4. Casters with plain stems will be attached to the panel or adjustment screw by pins or other suitable means.
5. DO NOT attempt to move a rolling scaffold without sufficient help – watch out for holes in floor and overhead obstructions.
6. DO NOT extend adjusting screws on rolling scaffolds more than 12".
7. Use Horizontal diagonal bracing near the bottom and at 20' intervals measured from the rolling surface.
8. DO NOT use brackets on rolling scaffolds without consideration of overturning effect.
9. The working platform height of a rolling scaffold must not exceed four times the smallest base dimension unless guyed or otherwise stabilized.

O. Additional rules for "Putlogs" and "Trusses":
1. DO NOT cantilever or extend putlogs/trusses as side brackets without thorough consideration for loads to be applied.
2. Putlogs/trusses should extend at least 6" beyond point of support.
3. Place proper bracing between putlogs/trusses when the span of putlog/truss is more than 12".

P. All brackets will be seated correctly with side brackets parallel to the frames and end brackets at 90 degrees to the frames. Brackets will not be bent or twisted from normal position. Brackets (except mobile brackets designed to carry materials) are to be used as work platforms only and will not be used for storage of material or equipment.

Q. All scaffolding accessories will be used and installed in accordance with the manufacturers recommended procedure. Accessories will not be altered in the field. Scaffolds, frames, and their components, manufactured by different companies will not be intermixed.

Notes:

Chapter 18

Driver Safety Policy

Policy Statement

At All Ohio Sealants Inc., the safety of our employees is of utmost importance. The selection of employees who will be required to drive full or part-time will be done with care. Drivers of company vehicles can be considered qualified when they meet the following criteria:

- Possess a valid state driver's license of the proper class.
- A review of MVD record shows that they do not pose an unreasonable risk.

Driver Training

All employees driving Company owned vehicles for All Ohio Sealants Inc. will be trained in safe operation of assigned vehicle.

- Defensive driving
- Split-second decision making
- Backing-up rules
- Safe distances
- Intersection driving
- Poor condition driving in dust storms, rain, etc.

Preventive Maintenance

Establishment of a preventive maintenance program for all COMPANY vehicles is essential. Record jackets will be maintained on all vehicles so that a log can be maintained on all planned maintenance, as well as repairs made from noted defects.

Vehicle Inspection

Each vehicle or piece of equipment will be inspected on a daily basis by the operator before and after operation. Each operator is responsible for the safe condition of the equipment. Any vehicle having steering, brake, or other safety problems is not to be operated until repairs have been made by a mechanic. Any other unsafe conditions are to be reported to the operator's supervisor as soon as possible.

Vehicle Operation

All COMPANY vehicles and equipment are to be operated in a safe manner and operators will adhere to all applicable laws. The operator is fully and totally responsible for the safe operation of the equipment. The operator will report any accidents, or damage, to the Vehicle Operations Supervisor.

Procedure

The procedures set forth in the Driver Safety Program will be the guidelines for management adherence to this policy.

Responsibility

The supervisors at All Ohio Sealants Inc. have the primary responsibility for management of the Driver Safety Program.

Keith Maxey will appoint a responsible representative to report all driver information requested by our insurance broker.

Monitoring

Keith Maxey is also responsible for the records of the Driver Safety Program. Duties will include, but are not limited to:

- Be responsible for monitoring the driving record of those persons who operate the Company vehicles or their own "personal" vehicle while on Company business.
- Monitor the Driver's Safety Program and report to management any suggestions for improvement or needed changes.
- Monitor the maintenance policy of fleet vehicles so that they are kept in safe condition
- Review each vehicle accident report or infraction with management.
- Monitor renewals of insurance records.

Drivers

Drivers of vehicles that are owned, rented or leased by The Company will be required to follow defensive driving techniques and practices. The basic defensive driving practice is to plan ahead and do everything that one can reasonably do to prevent an accident. This is to include the use of seat belts.

The following guidelines will be followed:

Drivers for our Company must possess a valid driver's license in order to operate any Company vehicle or their own personal vehicle on Company business. The duties of drivers will be reviewed. The requirement will be noted by the employee's supervisor or personnel staff at the time of hire.

The driver should be physically and mentally capable of driving the vehicle he/she is assigned to drive, whether the vehicle is a car, van, or truck.

Pre-operation of Vehicles

Prior to the assignment of any vehicle to any employee or prior to allowing an employee to drive "Their Own Personal Vehicle" on Company business, the following minimum standards will be implemented and records maintained to ensure that the driver is qualified to drive the vehicle and minimize the risk of liability to our Company.

Driver Safety Program

Introduction

The operation of vehicles is indispensable in conducting Company business. The way in which each vehicle is handled will directly affect the loss picture of the entire Company. Fleet losses are potentially one of the most costly losses that an operation can incur.

The types of exposure that involve the fleet program include: property damage, bodily injury, fatalities, liability suits and Workers' Compensation claims.

The insurance and other claims costs that result from vehicle accidents can be substantial and would adversely affect successful accomplishment of COMPANY objectives. To help prevent vehicle accidents and the type of loss exposures associated with them, the following guidelines have been established:

Initial Assignment

Verification and recording of date any type of driver's license held and renewal date noted. A review of the driver's state Motor Vehicle Record for the most recent three-year period to include the following:

- Review of the accident report history showing the dates and types of accident regardless who was at fault.
- Review of the traffic violations for the last three years, with evaluation of acceptable driving records according to Company guidelines.
- Confirmation of personal insurance for those driving their personal vehicle while on Company business.
- Physical examinations when required by the state for the driving of specified vehicles or by funding and licensing contract.
- The driver with a major conviction will be immediately suspended from driving any Company vehicle or their personal vehicle on Company business.
- Driving a Company vehicle while under the influence of drugs or alcohol will subject the employee to disciplinary action up to and including dismissal.

Annual Review

Once each year, a request for current license information will be sent to each Company employee. Employees who drive a Company vehicle, or if they request mileage reimbursement for driving their personal vehicle on Company business, will have their personal driving record reviewed. It will be the responsibility of the employee to respond in a timely manner. Failure to respond to the request for information by personal vehicle drivers may result in the delay of mileage reimbursements.

A review of each driver's file and record will be made annually and will include all of the criteria above as appropriate for each employee. This will not preclude request of driver's records for review by Keith Maxey as deemed necessary.

Definitions

Major Convictions — Major convictions include, but are not limited to:

- Driving while intoxicated or under the influence of alcohol or drugs; failure to stop and report an accident.
- Homicide, manslaughter or assault arising out of the operation of a vehicle.
- Driving during a period when license is suspended or revoked; reckless driving.
- Possession of an open container of alcoholic beverage; drag or highway racing.
- Attempting to elude a Peace Officer.

Minor Convictions — Any moving traffic violation other than a major conviction except the following:

- Motor vehicle equipment, load or size requirements.
- Improper display or failure to display license plates provided such plates exist.
- Failure to have a valid driver's license in possession.

Preventable Accident — A preventable accident is defined by the National Safety Council as "Any vehicle accident involving a vehicle which results in property damage and/or personal injury regardless of who was injured, what property was damaged, to what extent or where it occurred in which the driver in question failed to exercise reasonable precaution to prevent the accident."

Vehicular Accident — Any accident occurring between a Company vehicle (or private car when employee is on official Company business and has been formerly authorized mileage) and another vehicle, pedestrian, animal or fixed object.

SPECIAL NOTE: All Ohio Sealants Inc. will call police to investigate all company vehicle accidents. It is vehicle operator's immediate supervisor's responsibility to ensure that all facts are obtained with respect to the driver. Under no circumstances should any employee make any statement relative to liability or draw any conclusions as to the facts asserted at the scene. The occurrence of a vehicle accident may or may not be the fault of the employee. It is important to investigate and determine the cause of the accident and any necessary corrective action that may taken by the employee's immediate supervisor.

Questions to Help Determine if a Vehicle Accident was Preventable

One basic question in determining preventability is: "Did our employee take every reasonable precaution to avoid the auto accident?" If "No," our driver was not driving defensively therefore, the accident should be judged "preventable." Please note that legal liability or any citations should never influence the decision of determining preventability of an accident.

Answer the following questions which adhere to the given situation(s):

Intersection Accidents

YES/NO

- ☐ ☐ Did our employee approach the intersection at a controlled speed that was reasonable for conditions?
- ☐ ☐ Was our driver prepared to stop before entering the intersection regardless of right of way?
- ☐ ☐ Did our driver avoid entering an intersection on the amber signal?
- ☐ ☐ Did our driver avoid overtaking or passing at the intersection?
- ☐ ☐ At a blind corner, did our driver approach slowly, with a foot on the brake pedal?
- ☐ ☐ Did our driver make certain all other drivers were stopping for a traffic light or stop sign?
- ☐ ☐ Was our driver alert for the turns of other vehicles?
- ☐ ☐ Did our driver signal his/her change in direction well in advance?
- ☐ ☐ Did our driver allow oncoming traffic to clear before making a left turn?
- ☐ ☐ Did our driver turn from the proper lane?

We Were Hit by another Vehicle While Stopped or Parked

- ☐ ☐ Did our driver properly signal his/her intention to stop?
- ☐ ☐ Did our driver avoid coming to a sudden stop?
- ☐ ☐ Was our driver parked on the proper side of the road?

We Pulled from Parked Position

- ☐ ☐ Did our driver look to the front and rear for approaching traffic immediately before pulling out?
- ☐ ☐ Did our driver look back, rather than depending upon the rear vision mirrors?
- ☐ ☐ Did our driver signal before pulling away from the curb?
- ☐ ☐ Did our driver start out only when an action would not require traffic to change its speed or direction in order to avoid our vehicle?
- ☐ ☐ Did our driver continue to glance back while pulling out?

We Hit the Other Vehicle in Rear

YES/NO

- ☐ ☐ Did our driver adjust speed to the conditions of the road, visibility and traffic?
- ☐ ☐ Was our driver maintaining a safe following distance for conditions?
- ☐ ☐ If a vehicle pulled in front of our vehicle, did our driver drop back and reestablish the proper following distance?
- ☐ ☐ Did our driver approach the green traffic light cautiously, expecting the driver ahead to stop suddenly on a signal change?
- ☐ ☐ Did our driver look ahead of the vehicle in front for possible emergencies?

We Were Backing

- ☐ ☐ Was it necessary to back?
- ☐ ☐ Did our driver have to park so close to the vehicle or obstacle ahead that backing was necessary when leaving the parking space?
- ☐ ☐ If our driver could not see where to back:
- ☐ ☐ Did the driver try to get someone as a guide?
- ☐ ☐ Did the driver walk around the vehicle before getting in?
- ☐ ☐ Did the driver back immediately after walking around?
- ☐ ☐ If applicable, did the driver use the cone policy correctly?
- ☐ ☐ Did the driver use the horn while backing?
- ☐ ☐ Did the driver look to the rear without depending on the rear vision mirrors?
- ☐ ☐ Did the driver back slowly?

We Skidded

- ☐ ☐ Did our driver travel at a speed safe for the conditions of weather and road?
- ☐ ☐ Was our driver keeping a safe following distance?
- ☐ ☐ Was our driver alert for loose gravel, sand, ruts, etc.?

Pedestrians

- ☐ ☐ Did our driver tap the horn to alert pedestrians of our vehicle approach?
- ☐ ☐ Did our driver pass through congested section anticipating that pedestrians might step in front of the car?
- ☐ ☐ Did our driver keep as much clearance between our vehicle and parked cars as conditions permitted?
- ☐ ☐ Did our driver interpret the pedestrian's next action or intention?
- ☐ ☐ Did our driver check the location of pedestrians before staring at a green signal?
- ☐ ☐ Did our driver give all pedestrians right of way?
- ☐ ☐ Did our driver refrain from passing a stopped school bus?
- ☐ ☐ Was our driver alert for signs of children who might run into the path (balls rolling into street, etc.)?

Safe Operating Guide for Company Vehicles

Preventing Collision with a Vehicle Ahead

An extremely frequent and costly accident is the collision with the vehicle ahead. There are five steps that can be taken that will help you avoid being involved in a collision with the vehicle ahead:

Be Alert — Watch for signs from the driver or drivers ahead as to what they intend to do. Are their turn signals on? Are their brake lights lit?

Drive Ahead of the Situation — Look beyond the vehicle ahead to see situations that may force him to act quickly and thereby become a threat to you.

Stay Back — Allow plenty of following distance. Allow one car length (using your own vehicle as a measure) for every 10 miles of speed and allow even more distance in adverse weather or road conditions.

Stopping Ability — This is the distance necessary to bring your vehicle to a stop that depends on a number of factors. The first is "driver reaction time". This is the time it takes for the driver to see the need to stop, take his foot from the accelerator to the brake pedal and begin to apply the brake. "Driver reaction distance" is based on an average driver reaction time of ¾ of a second for a typical driver under normal driving conditions. The distance traveled during the reaction time of ¾ of a second will depend upon the speed of the vehicle.

The second ingredient involves "braking distance". This is the distance traveled from the time the brake is applied until the vehicle is brought to a stop. This distance will also vary based on the speed of the vehicle. The type and condition of the pavement surface will also affect the braking distance, the type and condition of tires, and the condition of the brakes.

Begin to Stop Sooner — Slow down and touch your brakes the instant you see a hazard developing. The situation may require you to stop. Failure to do this is known as "delayed braking" – a serious flaw in good defensive driving techniques. A defensive driver should not have to make a true "panic" stop more than once a year. Stopping ability can be expressed as a formula:

Remember, moving at 55 mph produces a travel distance of 81 feet for each second of delay.

How to Avoid Backing Accidents

Backing can be a "dangerous maneuver". Because of the hazards of backing, the defensive driver avoids backing whenever possible by planning an alternative maneuver or choosing another route.

The defensive driver does not back out of parking lots, driveways, or alleys when he can avoid it. Instead, he drives in and turns around so he comes out front first. When this is not possible, he backs in so that he can drive forwards to come out. He knows it is safer to back out of traffic into a quiet area than to back into a heavy traffic stream.

When backing is unavoidable, follow these rules:

- ☐ ***"Size up the situation"*** thoroughly and completely, even if you have to get out of your vehicle to do so. Then start backing promptly before the backing situation changes.
- ☐ ***Back slowly.***
- ☐ ***Check both sides as you back***. Check your mirrors often during the backing movement.
- ☐ ***Do not depend entirely*** on your mirrors to judge distance to the rear. Mirrors help you to spot pedestrians who may unexpectedly move into the path of your backing vehicle, but mirrors can be deceiving in estimating or measuring distances and clearances.

Avoid a Collision with a Following Vehicle

There are measures you can take to avoid being hit from behind:

- ☐ ***Signal Your Intentions —*** Use your directional signals and your brake lights.
- ☐ ***Stop smoothly —*** if you follow the rule for avoiding a collision with a vehicle ahead, you will also reduce the chances for a collision of the vehicle following.
- ☐ ***Keep Clear of Tailgaters —*** Do not let a tailgater rile you. Just slow down. Increase the following distance between your vehicle and the vehicle ahead, so you do not have to brake suddenly if a tailgater hits you.

Avoid a Rear-End Collision When Stopped

- ☐ ***Keep a foot*** on the brake pedal to activate lights.
- ☐ ***Stay at least*** 6 feet away from any stopped car ahead to avoid the "domino", multi-collision chain reaction effect.
- ☐ ***Keep your lights*** on at dusk or in the rain or other poor visibility conditions.

The Technique of Passing

Any passing maneuver often entails risk. The following twelve points will help to reduce that risk:

1. Decide if the Pass maneuver is necessary.
2. Make certain there is a safe following distance between you and the vehicle ahead.
3. Check the traffic ahead if you are moving in the oncoming traffic lane. If your vehicle and the oncoming vehicle are both traveling at 55 miles per hour, you are closing the gap between you at the rate of 161 feet per second. Since it takes 10 seconds to complete the task, the oncoming car should be at least 1/3 mile away.
4. Check the traffic behind you before changing lanes. First check your mirrors and then your blind spot.
5. Signal with your left turn signal before you change lanes.
6. Move into the left lane.
7. Accelerate as you move alongside the vehicle you are passing.
8. Signal the vehicle you are passing by tapping your horn or flashing your lights if you deem this necessary – especially at night.
9. Signal your intention to return to the right lane by the use of directional signal.
10. Return to the right lane when you can see all of the passed vehicle(s) in the right rear-view mirror.
11. Do not forget to cancel your directional signal.
12. Resume your proper cruising speed as soon as you have completed your passing maneuver.

Driving Emergencies

Your Brakes Fail — If there is any resistance, pump the pedal. You may be able to work up enough pressure to help somewhat.

Most vehicles are equipped with a dual brake system. If one system fails, the back-up system should work. If pumping the brake pedal does not help, coast in "drive" gear and use the parking or hand brake.

If you want to slow faster, shift to lower gears which will permit engine compression to help you slow your vehicle. Use your horn or lights to warn other drivers and pedestrians that you are in trouble and out of control.

You Go Into a Skid — If the rear of the vehicle starts to slide, take your foot off the gas at once. Your first instinct may be to turn hard away from the direction of skid. Do not! That will really spin you.

Turn your wheels in the same direction of the skid – but be careful, do not over-steer. You will be able to feel when the vehicle regains rolling action, and then straighten the wheel.

"Never hit the brakes as a side skid correction". For fast stopping with the least chance of causing a side skid, pump your brakes hard with a rapid jabbing and releasing pressure on the brake pedal. Disc brakes require slower pumping.

You Have a Blow-Out — Keep a firm and steady grip on the steering wheel and do not over-steer to correct swerve or pull.

If a front tire fails, there will be a strong pull to the side of the blow-out. A rear blow-out tends to cause weaving of the rear end. Do not slam on the brakes. Brake smoothly - but easily.

Day or night, set out flares or other warning devices such as reflectors and turn on your light flashers.

You Must Stop on the Freeway — On a freeway with paved shoulders, signal and pull off the road at near traffic speed, then slow down. Do not obscure your taillights by standing or working behind your vehicle. Day or night, place a flare or reflector warning device about 15 feet behind the vehicle and another at about 300 feet further back.

Seat Belts

Seat belts have been provided for your safety. They should be worn and properly adjusted at all times when your vehicle is in motion.

Accident Reporting

When reporting a vehicle accident involving other vehicles and persons, be certain that you have all pertinent information regarding other vehicles or equipment, any persons involved, and specific circumstances of the mishap.

Become familiar with the COMPANY reporting form and procedures. Know where to obtain copies of the form and keep them in your assigned vehicle at all times.

Accident Scene:

☐ Secure the scene to prevent other accidents from occurring.

☐ Place warning cones, flashers, reflectors or flares to protect the scene.

☐ Report injuries to emergency response services.

Accident Data:

- ☐ Date, time and location of the accident – list streets and known landmarks.
- ☐ Describe in detail what & how it happened - use a diagram to illustrate the scene.
- ☐ Road surface, weather and light conditions.
- ☐ Names, addresses and telephone numbers of parties involved.
- ☐ Determine who was injured, extent of injury and report their role in the accident.
- ☐ If injured persons on scene, where were they taken and by what means of transportation (drove self, by friend, by ambulance).
- ☐ Names, addresses and telephone numbers of witnesses and their statements.
- ☐ License numbers of vehicles and description of the damage.
- ☐ Name and badge number of responding police officer, if available.
- ☐ Take pictures of the accident scene, paying attention to injured persons and property damage. Take picture close up as well as far away that indicate cross streets, background landmarks that can document the accident location.
- ☐ In accidents not involving other vehicles or people, record the information outlined in your accident report kit and submit it to your fleet supervisor.

Accident Review

Determining Preventability

When a driver reports an accident, a COMPANY accident review committee must determine whether the accident was preventable by the driver involved. The board should consist of the vice president of operations, the fleet supervisor, the Company safety director and any other person deemed necessary. Once preventability is determined, the committee should decide the disciplinary actions to be assigned to the driver involved.

Preventable Accidents

A preventable accident is any occurrence involving an owned or operated vehicle that results in property damage and/or personal injury. This applies regardless of who was injured, what property was damaged, to what extent or where it occurred, and whether or not the driver in question failed to do everything possible to prevent it. The following paragraphs are offered as a guide in determining the preventability of these accidents.

Guidelines to Determining the Preventability of Accidents

Accidents involve so many different factors that it is impossible to set hard and fast rules to classify them as preventable or non-preventable. The accident review board will make this determination. In making these decisions, the board will answer the question "What standard of safe driving performance do we expect from our drivers in this Company?" Drivers respect a strict interpretation of the rules so long as the Company takes the time and effort to ensure that these interpretations are made consistently and fairly.

Intersections

It is the responsibility of all drivers to approach, enter, and cross intersections prepared to avoid accidents that might occur through the action of other drivers. Complex traffic movement, blind intersections, or failure of the other driver to conform to law or traffic control devices will not automatically discharge an accident as "non-preventable".

Intersection accidents are preventable even though the driver has not violated traffic regulations. The vehicle operator's failure to take precautionary measures prior to entering intersections is a factor to be studied in making a decision. When a driver crosses an intersection and the obvious actions of the other driver indicate possible involvement, either by reason of excess speed, crossing a lane in turning, or coming from behind a blind spot, the decision should still be a preventable accident.

Practically any backing accident is preventable. A driver is not relieved of the responsibility to back safely, even when a spotter is involved in the maneuver. The spotter cannot control the movement of the vehicle; therefore, a driver must make sure all backing zones are clear.

Front-End Collisions

Regardless of the abrupt or unexpected stop of the vehicle ahead, your driver can prevent accidents of this nature by maintaining a safe following distance, knowing the conditions of the road and the load. This includes being prepared for possible obstructions on the roadway, either in plain or hidden view. Overdriving headlights at night is a common cause of front-end collisions. Night speed should not be greater than that which will permit the vehicle to come to a stop within the distance illuminated by the vehicle's headlights.

Rear-End Collisions

Investigation will often disclose that a driver risked being struck from behind by failing to maintain a margin of safety in his/her own following distances or making abrupt lane changes. Rear-end collisions preceded by a rollback, an abrupt stop at an intersection, when a traffic signal changes, or when your driver fails to signal a turn or slow down gradually should be charged as preventable.

Passing

Failure to pass another vehicle safely indicates faulty judgment and possibly failure to follow the important factors a driver must implement before attempting to pass. Unusual actions of the driver being passed or of oncoming traffic might appear to exonerate a driver involved in a passing accident; however, the entire passing maneuver is voluntary and your driver is responsible for a safe pass.

Being Passed

Sideswipes and cutoffs involving a driver while being passed are preventable when the driver fails to yield to the passing vehicle by slowing down or moving to the right where possible.

Lane Encroachment

A safe driver is rarely a victim of entrapment by another driver when changing lanes. Similarly, entrapment in merging traffic is an indication of unwillingness to yield to other vehicles or to wait for a break in traffic. Blind spots are not valid excuses for lane encroachment accidents.

Drivers must make extra allowances to protect themselves in areas of limited sight distances. Squeeze plays causing involvement with parked cars, pillars, and other road structures can be prevented by dropping back when it is apparent that the other driver is forcing the issue or contesting space on the road.

Grade Crossings

Preventing collisions with rail track vehicles, such as trains, occurring at grade crossings, in traffic, or on private property is the responsibility of the driver. When a vehicle is parked across a rail siding, the driver must first determine if it is safe and permissible. He/she must stand by in case conditions change by the movement of railcars. Common grade crossing accidents occur on county/country roads that lack crossing indicators, barriers and flashing lights. At these crossings, it is important for the driver to have clear sight, up and down the tracks in both directions, prior to crossing.

Oncoming Vehicles

It is important to check the action of the driver when involved in a head-on or sideswipe accident with a vehicle approaching from the opposite directions. Exact location of the vehicles, prior to and at the point of impact, must be fully clarified during the accident review process. Even though an opposing vehicle enters a driver's traffic lane, it may be possible for your driver to avoid the collision. Your driver can take actions to make their presence known such as flashing lights or sounding the horn.

Turning

Turning movements require the most exacting care by a professional driver. Squeeze plays on left or right turns involving other vehicles or pedestrians are the responsibility of the driver making the turn. Failure to signal, to properly position the vehicle for the turn, to check the rear-view mirrors, to check pedestrian lanes or to take other defensive actions should be considered during the accident review.

You may find that your driver failed to take precautionary actions from indicators given by the other driver immediately preceding the incident. U-turns by your driver that result in a collision are considered preventable accidents.

Passenger Accidents

Passenger accidents in any type of vehicle are preventable when they are caused by the faulty operation of the vehicle. Even though the incident did not involve a collision, it must be considered preventable when your driver stops, turns, or accelerates abruptly, resulting in an injury to a passenger. Emergency actions taken by your driver to avoid a collision should be reviewed to determine that the action would/did eliminate a vehicle collision. In such cases, injury to the passenger would be considered non-preventable.

Pedestrians

Traffic regulations and court decisions generally favor the pedestrian hit by a vehicle. Unusual route of a pedestrian at mid-block or from between parked vehicles does not necessarily relieve the driver from accident preventability. Whether speed limits are posted or the area is placarded with warning signs, speed too fast for conditions may be involved as contributing factors.

Weather

Adverse weather conditions are not a valid excuse for being involved in an accident. Rain, snow, fog, or icy pavements have never caused an accident. These conditions increase the hazards but do not cause accidents. Failure to adjust driving habits to prevailing weather conditions or to "call it a day" when necessary, should be cause for deciding such accidents are preventable. Failure to use safety devices, such as snow chains when required, contributes to accident preventability.

Alleys, Driveways, and Entrances

Accidents involving traffic originating from alleys, driveways, entrances, and other special intersecting roadways should be carefully analyzed to determine what the driver might have done to avoid the accident. Failure to slow down, sound the horn, look for hazards, or yield to others can be considered reasons to call an accident preventable.

Fixed Objects

Collisions with fixed objects are preventable. They usually involve failure to check clearances to the side and overhead. The driver is responsible to be on the lookout for such obstacles, to proceed slowly in unfamiliar locations, and use ground-guides if necessary.

Parking

Unconventional parking locations, including double parking, failure to put out warning devices, etc. generally constitute evidence for judging an accident preventable.

Rollaway accidents from parked positions normally are considered preventable. This includes unauthorized entry into an unlocked and unattended vehicle, failure to properly block wheels, turn them to the curb, or otherwise secure the vehicle from movement.

Mechanical Failure

Any accident caused by mechanical failure that reasonably could have been detected by the driver, should be considered preventable. It is the driver's responsibility to report unsafe vehicle conditions for repairs and make sure the vehicle is in safe operating condition at all times. When mechanical difficulties occur unexpectedly during a trip, the driver is responsible to report this condition to the Company, seeking advice for emergency service. Failure to take precautionary action that results in an accident should be considered a preventable accident. An accident caused by mechanical failure that results from abusive driving should be considered preventable.

Pulling Away from Curbs/Parking

Particular attention should be paid to driver's actions when leaving a parking space or position. Many drivers do not take sufficient time to check for clearances in all directions. This type of accident is considered preventable.

Why a Company Should Do Fleet Safety

Moral Aspect

- Employee Image
- Public Image

Financial Aspect

- Direct Costs (worker's comp premiums, medical expenses)
- Indirect Costs (lost time, productive down time, property damage)
- Higher Workers' Compensation premiums
- Litigation?
- Customer relationships and loss of sales

Legal Aspect

- Compliance with OSHA, DOT, Police, etc.
- Litigation

The total cost of a vehicle accident usually exceeds the amount recovered from the insurance Company. Accident control in a large motor vehicle fleet is critical because increased insurance premiums (among other factors) reduce profits. This impact can be as devastating, if not more, to smaller fleets! Safe vehicle operation is the result of training, skill, planning, and action, not chance. Unfortunately, many companies fail to pay enough attention to the safe operation of motor vehicles. The reason for this lapse may be the difficulties of organizing an adequate safety program and providing good driver and fleet supervision.

The majority of all motor vehicle accidents are caused by driver error or poor operating practices including fatigue, inadequate training/retention, and alcohol/drugs use. Only a small percentage of accidents are due to mechanical failure of vehicles or to improper maintenance or equipment. As a result, an organization's vehicle accident prevention efforts should focus on both these principal accident factors - driver error and vehicle failure - because both can be controlled.

Companies can control driver error by implementing a program of driver selection, appropriate scheduling, effective practical training and evaluation, adequate supervision, and alcohol/drug screening; while vehicle failure can be reduced by a systematic preventive maintenance program. As experience has shown, the unsupervised fleet usually has higher accident costs than the supervised one.

Look at past incidences and/or other similar companies for a predictor of future problems!

What Is A Vehicle Safety Program?

A genuine Fleet Safety Program requires a written safety policy, developed, supported, and enforced by management, including a person designated as the Vehicle Operations Manager to implement and administer the program and to advise management. This person must be responsible for advising management on accident prevention and safety matters, developing and promoting safety activities and work-injury prevention measures throughout the fleet. The Vehicle Operations Manager is responsible for:

- Studying and recommending fleet safety programs regarding equipment and facilities, personnel selection and training, and other phases of fleet operations.
- Evaluating driver performance and skill requirements, conducting or arranging for effective safety training, and prepare and disseminate safety educational material.
- Reviewing incidences/accidents to determine their causes and recommending corrective actions to management, and compiling and distributing statistics on accident-cause analyses and experience.
- Identifying problem persons, operations, locations, maintaining individual driver-safety records, and administering the safe-driver award incentive program.
- **A driver safety program including:**
  - Driver selection procedures
  - Driver training
  - Records of driver safety performances
  - Safety-motivational activities
  - Proper supervision and implementation
  - Accountability
  - Recognizing safe driving
- **An efficient system for accident investigation including:**
  - Fact-Finding Mission
  - Effective interviewing
  - Detailed reporting and assessment
  - Determination and application of appropriate corrective actions
  - Follow-up procedures to help prevent future accidents
- **A vehicle preventative maintenance program**

Driver Safety Program

☐ Initiate a driver training program

☐ Proper and effective supervision

☐ Establish performance goals to management

☐ Establish competency and skills levels by setting objectives

☐ Periodic evaluations/reviews of performance

☐ Establish and communicate appropriate consequences

☐ Develop standards to determine ways accidents can be prevented

☐ Require immediate reporting of every accident

☐ Compute and publish the fleet accident record

☐ Maintain a performance record for each driver

☐ Safety motivational activities/incentives

☐ Initiate defensive driving training

Selecting Drivers

- Interview
- Experience
- References
- MVR

Personal Traits

- Dependability
- Good judgment
- Courtesy
- Pleasant personality
- Ability to get along with others

HAZMAT transporters must abide by other regulations including OSHA, DOT, RCRA, etc. Training is much more involved.

What Else Can Be Done?

- Continually communicate with the drivers.
- Involve the safety committee to establish and monitor the communication channel!
- Establish incentive activities/programs.
- Ensure drivers are immediately reporting problems/concerns. Delayed or unreported maintenance issues eventually cause more expense and can increase the possibility of accident or injury to the driver.
- Include accident packs in fleet vehicles (insurance proof, camera, forms, etc.)
- Maintain and carry fire extinguishers and first aid kits.
- Ensure vehicle safety devices are provided and maintained (i.e. signals, wipers, markings, placards, flares, blankets, radios, phones, etc.)
- Continually monitor and evaluate the preventative maintenance program. Don't forget maintenance shop safety! Service and maintain equipment, jacks, chemicals (HAZCOM), PPE, tire/rim servicing, fire protection, lubrication and washing operations, battery charging, flammables, traffic control in the area, etc.
- Injuries also occur during loading, unloading, and handling materials. Consider stability and weight capacities; shifting loads; fall protection; setting brakes and chocking wheels; avoiding exposure from falling loads; prohibiting unapproved riders; avoiding pinch points, crush areas, etc. Provide effective training in the safe work practices when utilizing material handling equipment such as slings, forklifts, tiebacks, etc.

Company Driver Qualifications

Establishing effective and realistic driver qualification standards is vitally important to the successful operation of any fleet, whether it is a coast to coast interstate operation or a small incidental fleet. Driver qualifications should exist for both the professional and incidental driver. Incidental drivers are those who do not drive as a primary job function, but do, however, use a vehicle to perform that job. Examples of incidental drivers are delivery persons, public utility drivers, salespeople, and field service personnel.

By placing sufficient emphasis on selecting the best available driver, a Company helps to avoid future financial losses resulting from accidents and abuse of the equipment.

Selecting the right driver for the position will depend on how well the selection measures match the skills necessary for satisfactory job performance.

Depending on the type of commerce and size of the vehicles used, there are effectively three levels of driver qualification regulations to be considered:

1. State mandated driver qualifications
2. Drivers of vehicles with a gross vehicle weight rating (GVWR) of 26,001 pounds or more; designed to transport 16 or more passengers, including the driver; or used in the transportation of hazardous materials in a quantity requiring placarding under the Department of Transportation's (DOT) Hazardous Materials Regulations (HMR), must

have a single, state issued Commercial Driver's License meeting minimum Federal requirements.

3. Drivers involved in interstate or foreign commerce in vehicles with a GVWR of 10,001 pounds or more; designed to transport 16 or more passengers, including a driver, or used in the transportation of hazardous materials in a quantity requiring placarding under the DOT HMR, are subject to the requirements of the DOT Federal Highway Administration's Federal Motor Carrier Safety Regulations (FMCSR).

A "driver qualification file" should be maintained, for persons hired, to permit review of the driver's record and provide future reference to the driver's qualifications. This file should contain all the documents completed during the hiring process and annual updates as required. Motor carriers subject to the FMCSR must have certificates indicating successful completion of the physical examination and road test. A written exam and certificate are no longer required to be administered and placed in the DQ file. The sections pertaining to the written exam (Sec.391.35 and 391.37) have since been removed from the regulations. You may wish to keep a separate confidential file containing drug test results and related information unless the regulations stipulate differently.

The driver selection process includes several steps including:

1. Application Form
2. Interview
3. Driver's License Verification
4. Reference Check
5. Motor Vehicle Driving Record
6. Physical Examination
7. Road Test
8. Written Test (Optional)
9. Substance Abuse and Drug Testing

If these steps are consistently followed, you should know which applicant is the most qualified to fill the position. Applicants who have shown consistently poor results in the selection process are more likely to be problems later. The following suggestions should help you select a driver who will be a valuable asset to your business.

1. Application Form

The application form should provide information on the applicant's driver's license(s), driving experience, accident record, and traffic violation convictions and forfeitures for the past 3 years, past employment (previous 3 years; 10 years for drivers required to have a Commercial Drivers License), education, and physical history. Motor carriers subject to the **Federal Motor Carrier Safety Regulations** (FMCSR) are required to obtain specific information on the application form.

For incidental fleets, you may want to suggest to the human resources department that applications for incidental drivers include the following:

- ***Driving Experience —*** Applicant's past driving experience and the type of driving license held and in which state.
- ***Familiarity with specific equipment —*** The type of equipment the applicant has driven.
- ***Past driving record —*** Past driving record, including convictions.

2. Interview

Personally interview the applicant to review job requirements and qualifications in detail. The interview should be used to resolve any questions regarding the information obtained or omitted on the application form.

3. Driver's License Verification

Personally check and review the applicant's driver's license to determine if he/she is qualified and licensed to operate the type of vehicles you have.

4. Reference Check

A check should be made with previous employers to develop information about the driver's general character and professional ability. Factors such as length of employment; job performed including operation of vehicles; accident record; ability to get along with others; and whether the previous employer would re-hire the individual should be included.

This check can be accomplished by a telephone interview, a letter, or a personal visit. The driver's file should verify that these checks were made with record of the responses received. Motor carriers subject to the FMCSR are required to investigate the driver's employment record for the preceding 3 years.

5. Motor Vehicle Record

A copy of the Motor Vehicle Record (MVR) should be obtained from each state where a driver holds a license, to ascertain that the applicant has a valid license and to review the driver's past record. A driver required to have a CDL can only be licensed in one state. A history of accidents and/or moving traffic violations could indicate a major problem with the applicant.

A MVR should also be obtained annually for each driver and reviewed to determine whether remedial training is necessary. The review is conducted with the driver and becomes part of his/her file. If you operate under the FMCSR, an annual review must be completed in accordance with Section 391.25 of the regulations.

6. Physical Examination

The physical fitness of the driver must be considered before hiring. Your Company should arrange for physical examinations. In addition to checking a driver's physical condition before hiring, periodic physical examinations should be required and arranged for by your Company. Re-examinations may indicate the onset of a problem and allow appropriate corrective measures to be taken.

Motor carriers subject to the FMCSR are required to have their drivers successfully complete a required medical examination initially and at least every 24 months thereafter, as well as submit to testing for the use of certain controlled substances.

7. Road Test

A road test is one of the ways to find out whether drivers can do the job expected of them. The same type of equipment to be assigned the driver should be used in the test and the test should be sufficiently long to cover a variety of situations. The test should not establish a passing or failing grade, but should indicate the driver's competent areas and weak points. This will allow you to provide needed training prior to dispatching the driver. Motor carriers subject to the FMCSR are required to verify that each driver has been given a road test.

8. Written Test (Optional)

Some companies make use of tests to evaluate a driver’s knowledge of driving rules and defensive driving practices. Extreme care must be taken to assure that the tests are non-discriminatory and clearly associated with the knowledge and skills necessary to successfully fill the position. Motor carriers subject to the FMCSR are no longer required to administer a written test to prospective drivers. Even though this is the case, companies still have the obligation to instruct drivers and employees about the FMCS Regulations. A written exam could be used as part of your training program. Under the Regulations, drivers must be familiar and up to date with the regulations and the employer must require driver compliance.

9. Substance Abuse Programs and Drug Testing

Fleets operating with drivers having Commercial Drivers Licenses (CDL) operating commercial motor vehicles meeting the following definition are subject to the Federal Highway Administration's regulations on alcohol misuse and drug use prevention and testing programs:

- Has a gross combination weight rating of 26,001 or more pounds inclusive of a towed unit with a gross vehicle weight rating of more than 10,000 pounds.
- Has a gross vehicle weight rating of 26,001 or more pounds.
- Is any size transporting hazardous materials requiring placards.

Drug testing should not be performed until a drug free workplace policy and supporting procedures are in place and communicated to all employees. The rule requires pre-employment, reasonable suspicion, random, post-accident, return-to-duty and follow-up testing. For details on the program, refer to the FMCSR, Title 49, Part 382.

Driver Training

Regular training must supplement the driver's selection program. The amount of training that is needed varies directly with the complexity of the job as well as with the knowledge and experience of the new employee. Proper training reduces operational disruptions and minimizes unnecessary costs due to accidents and equipment abuse.

Your Company's driver training program should be divided into several levels:

1. Initial Training — new employee indoctrination.

2. Refresher Training — updates on routes, cargo, equipment, and regulations.

3. Remedial Training — used when there is a problem of substandard performance.

Your Company's driver training program should include the following areas:

- Company rules and policies
- Equipment familiarization
- Routes and schedules
- Defensive driving techniques
- Government regulations
- Cargo handling
- Emergency procedures and warning devices
- Specific concerns or loss patterns

There are two approaches to training: classroom and in-vehicle. Classroom training can be accomplished using either a one-on-one or group approach. This method is useful for Company rules, government regulations, routes and schedules, accident and emergency procedures, basic cargo handling methods, and basic defensive driving techniques. In-vehicle training is most effective for equipment familiarization, vehicle inspections, cargo handling and defensive driving. In-vehicle training provides one of the best methods of giving practical instruction to a driver under closely controlled conditions.

Driver Selection:

☐ Does a definite program for driver selection exist?

☐ Is it as good as it should be and is it adhered to, or is it mostly on paper and frequently forgotten when busy or short of drivers?

Driver Training:

☐ Is there a definite training program or is it on a "hit or miss" basis?

☐ Is the driver's past record checked carefully to determine whether reported experience and knowledge are factual?

☐ Does the program provide for retraining as necessary when unsatisfactory performance or accidents are identified?

Driver Supervision:

☐ Are supervisory responsibilities adequately handled, or is there overlapping and occasional friction?

☐ Are there areas where no one is clearly responsible?

☐ Can relations with drivers be improved?

☐ Can routing and scheduling procedures be improved for greater efficiency of operation and greater safety?

COMPANY DRIVER SAFETY AUDIT

DRIVER QUALIFICATION Y N N/A	DRIVER TRAINING & MOTIVATION Y N N/A	DRIVER SUPERVISION Y N N/A
□□□ Job Assessment	□□□ Initial Training Program	□□□ Vehicle Location Check
□□□ Physical Qualifications	□□□ Company Rules and Policies	□□□ Trip Recorder Checks
□□□ Recruiting System	□□□ Equipment Familiarization	□□□ Road Observation System
□□□ Driver Qualification Files	□□□ Routes and Schedules	□□□ Logs Checked
□□□ Application Form	□□□ Emergency Procedures	
□□□ Interview	□□□ Accident Reporting	
□□□ Reference Check	□□□ Defensive Driving Techniques	
□□□ Road Test	□□□ Regulations	
□□□ Motor Vehicle Record	□□□ Cargo Handling/Securement	
□□□ Review	□□□ Ongoing Training Program	
	□□□ Incentive Program	

APPLICANT ROAD TEST

Driver's Name: _____ SSN: _____

Motor Vehicle Operator's License No. _____

Type of License: _____ Issuing State: _____

Type of Vehicle: _____

INSTRUCTIONS TO EXAMINER:

Place a check mark in the appropriate box:

PRE-TRIP INSPECTION

Y N N/A

☐☐☐ Checks general condition of vehicle

☐☐☐ Checks for proper operation of parking and service brake systems

☐☐☐ Checks steering mechanism

☐☐☐ Checks all lighting devices and reflectors

☐☐☐ Checks condition of tires

☐☐☐ Checks horn and windshield wipers

☐☐☐ Checks and adjusts rear view mirrors

☐☐☐ Checks emergency equipment

PLACING VEHICLE IN OPERATION

☐☐☐ Uses seat belt

☐☐☐ Starts vehicle properly

☐☐☐ Checks air pressure in brake system

☐☐☐ Shifts gears properly

☐☐☐ Checks traffic conditions

☐☐☐ Does not allow vehicle to roll while stopped

☐☐☐ Drives with both hands on wheel

☐☐☐ Steers smoothly

☐☐☐ Maintains proper speed for conditions, within speed limit

COUPLING AND UNCOUPLING COMBINATION UNIT

☐☐☐ Checks that fifth wheel jaws are open

☐☐☐ Lines up properly with the trailer

☐☐☐ Connects brake and electrical lines

☐☐☐ Charges trailer brakes

☐☐☐ Backs slowly

☐☐☐ Visually checks for proper coupling of fifth wheel

☐☐☐ Assures that fifth wheel handle is in locked position

☐☐☐ Raises landing gear and removes wheel chocks

☐☐☐ Applies trailer brakes and gently tries to pull away from trailer

BACKING AND PARKING

□□□ Stops in correct position
□□□ Avoids backing from blindside
□□□ Gets out of vehicle and checks entire area, including overhead, before backing
□□□ Uses mirrors properly

INTERSECTIONS

□□□ Prepares to stop vehicle if necessary, even if traffic signal is green
□□□ Checks in all directions for traffic conditions
□□□ Stops vehicle in proper location when required
□□□ Does not allow vehicle to roll when stopped

TURNING

□□□ Makes sure vehicle is in proper lane for turn
□□□ Signals intention to turn well in advance
□□□ Approaches at proper speed
□□□ Checks traffic conditions and turns only when intersection is clear
□□□ Keeps vehicle in proper lane during turn
□□□ Does not shift gears during turn

RAILROAD CROSSING

□□□ Checks in all directions when approaching crossing
□□□ Comes to complete stop when necessary or required by law
□□□ Stops at a safe distance when necessary
□□□ Does not shift gears when crossing tracks

PASSING

□□□ Only passes in safe location, where legally allowed
□□□ Checks ahead and behind to make sure passing room is adquate
□□□ Warns vehicle ahead of intention to pass
□□□ Uses directional signals properly
□□□ Leaves sufficient space before cutting back into lane
□□□ Does not exceed speed limit

REMARKS:

QUALIFIED: ☐ YES ☐ NO

_____

Examiner's Name (please print) **Title**

_____

Signature of Examiner **Date**

COMPANY VEHICLE ACCIDENT REPORT

Company:

AFTER AN ACCIDENT: 1 Stay Calm 2 If the vehicles are drivable and it is safe to do so, move them safely out of traffic 3 Apply first aid (if properly trained) 4 Call police, and if necessary, ambulance 5 Take brief notes

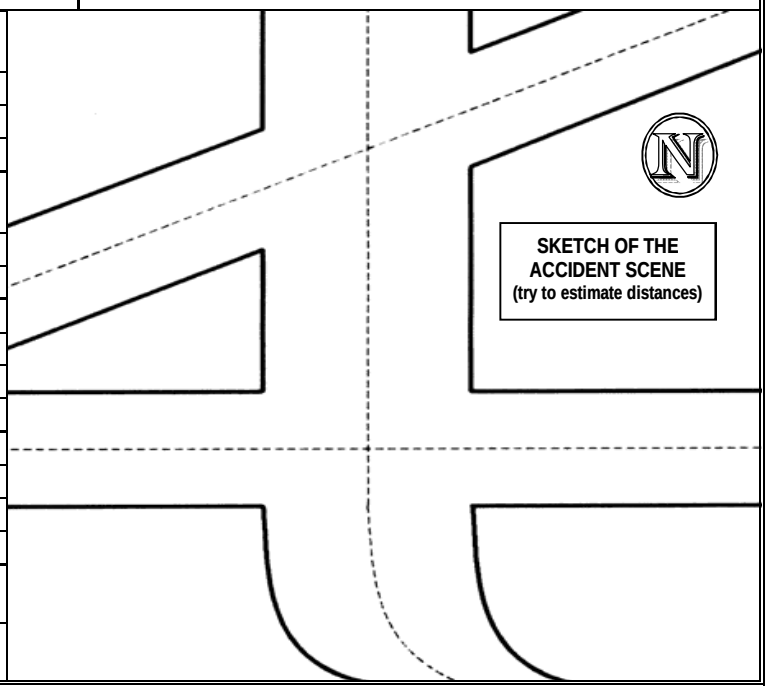
Vehicle Driver Name	**Other Vehicle Driver Name**
Address	**Address**
Phone **Driver License #**	**Phone** **Driver License #**
Vehicle Type	**Other Vehicle Type**
Vehicle license Plate #	**Vehicle license Plate #**
Owner's Name	**Owner's Name**
Address	**Address**
Vehicle Insurance Co. Name	**Other Vehicle Insurance Co. Name**
Name Policy is Under **Policy #**	**Name Policy is Under** **Policy #**

Passenger Info	**Passenger Info**	**Passenger Info**	**Passenger Info**

ACCIDENT DETAILS

Date of Accident	**Explain how the accident happened**
Time of Accident ☐ **am** ☐ **pm**	
Street	
City	
State	
Approx Speed: Your MPH: Other MPH:	**Describe your vehicle's damage**
Describe any Injuries	
	Describe other vehicle's damage

Investigating Officer Name
Phone **Badge No.**
Police Department
Investigating Officer Name
Phone **Badge No.**
Police Department
Witness Info
Witness Info
Report Completed By
Signature



Log 300 Recordkeeping

Following are the three forms needed for recordkeeping:

OSHA Form 300 — Log of Work-Related Injuries and Illnesses.

OSHA Form 301 — Injury and Illness Incident Report.

OSHA Form 300A — Summary of Work-Related Injuries and Illnesses.

These are official Federal OSHA forms with accompanying instructions and worksheets. Make copies of the blank forms for future use.

Posting Requirements (Federal)

Federal law requires that employers conspicuously display the following posters where they can be read by their employees:

Federal Minimum Wage — This posting explains the Federal Minimum Wage; Overtime Pay; Child Labor; and Enforcement.

Equal Employment Opportunity is the Law — Reasons for Taking Leave; Advance Notice & Medical Certification; Jobs Benefit & Protection.

Notice Employee Polygraph Protection Act — Prohibitions; Exemptions; Examinee Rights; Enforcement; Additional Information.

You Have A Right to a Safe & Healthful Workplace — "IT'S THE LAW"— Employers Holding Federal Contracts or Subcontracts; Private Employment State & Local Government Educational Institutions; Programs or Activities Receiving Federal Financial Assistance.

Your Rights Family & Medical Leave ACT — Reasons for Taking Leave; Advance Notice & Medical Leave; Jobs Benefit & Protection.

Your rights under USERRA — THE UNIFORMED SERVICES EMPLOYMENT AND REEMPLOYMENT RIGHTS ACT. USERRA protects the job rights of individuals who voluntarily or involuntarily leave employment positions to undertake military service. USERRA also prohibits employers from discriminating against past and present members of the uniformed services, and applicants to the uniformed services.

GINA – Genetic Information Non-Discrimination Act.

NOTE: Some states require the use of their own posters. Check with your State Labor Department for poster requirements.

All Ohio Sealants Inc. New Hire Orientation Checklist

☐ I have read or have had explained the Safety Policy & Program Summary. I have no further questions regarding:

- The Company's Safety Philosophy.
- My safety responsibilities as an employee.
- The disciplinary procedures.

_____**Initial**

☐ I have read or have had explained the Safety Committee portion of the Safety Program:

- I am aware of who is in charge of safety if I have questions.
- I am aware of my ability to report my safety concerns to the Safety Coordinator.
- I am aware that this Company is striving to provide a safe working environment and is committed to my safety and ability to inform the Company of unsafe working environments without fear of reprisal.

_____**Initial**

☐ I have read or have had explained the General Safety Rules as pertain to the Safety Program:

- I am aware of all safety rules and general codes of safe practice.

_____**Initial**

☐ I have read or have had explained the safety policy regarding Hand and Power Tools:

- I am aware that I am required to inspect all tools before I operate the equipment.
- I am aware that I can request training from my supervisor on any tool that I do not know how to operate safely.
- I am aware that if I am unsure of how to operate my tools safely I am to not operate them until I receive proper training and feel that I can operate it safely.
- I am aware that any tool in need of repair or out of compliance is to be reported to my supervisor.

_____**Initial**

☐ I have read or have had explained the process for Accident Reporting & Investigation:

- I understand that I am to immediately report an accident to my supervisor.
- I understand that I am to immediately stop working.
- I understand that if I need medical attention I am to see the clinic or hospital that is affiliated with this Company.
- I understand that if I go to a different doctor or medical facility the Company may have a right to deny or not pay my medical bill.
- I understand that I will be cooperative in any accident investigation.
- I understand that upon any accident I may be tested for drugs and alcohol.
- I understand that if I am present at my place of employment under the influence of drugs and or alcohol that I automatically self-terminate my employment with or without notice of termination by the Company.

_____**Initial**

☐ I have read or have had explained the Emergency Action Plan:

- I understand where my emergency evacuation routes are located.
- I understand that we are to gather at a specific determined place in order to conduct a head count.

_____Initial

☐ I have read and or have had explained the Fire Prevention Plan:

- I understand that I am to report any potential fire hazards.
- I am to keep all exits clear and free of obstacles.
- I know where the nearest fire extinguisher is to my workstation.

_____Initial

☐ I am aware of the CPR & First Aid portion of the Safety Program:

- I am aware of where the first aid kits are located.
- I am aware that I am to report to management if the first aid kit needs restocked.
- I am aware of who is trained in First Aid and CPR
- I am aware of where the nearest Eye Wash Station is located (if appropriate).
- I am aware that I am to report all injuries immediately to my supervisor.
- I am aware of where our clinic is located and will have someone drive me there in the event of an emergency (or by ambulance if appropriate).

_____Initial

☐ I have read or have had explained the Hazard Evaluation portion of the Safety Program:

- I understand that I am to be familiar with the hazards that surround my workstation.
- I understand that I am to report any hazard that may be present in my workstation.
- I understand that it is my responsibility to assist in providing a safe working environment for myself and my co-workers.

_____Initial

☐ I have read or have had explained the Bloodborne Pathogens portion of the Safety Program:

- I understand that I am to wear personal protective equipment when dealing with blood or body fluids.
- I understand that I am to properly dispose of any blood, body fluids, or material that has been touched by the blood or fluid.
- I understand that in the event of dealing with a Bloodborne Pathogen situation it is my responsibility to receive post exposure care by the Company's clinic.
- I am aware of where my hand-washing facilities and/or disinfectant are located.

_____Initial

☐ I have read or have had explained and understand the Workplace Violence & Harassment policy of the Safety Program:

- I understand The Company has ZERO TOLERANCE for workplace Violence & Harassment.
- Workplace Violence & Harassment includes but is not limited to: intimidation, threats, physical attack, property damage, and includes acts of violence committed by employees, customers, relatives, acquaintances, or strangers against Company employees in the workplace.
- Dangerous weapons are prohibited on Company property or in Company vehicles.

- All employees are encouraged to report to a supervisor any possibility of workplace Violence & Harassment. All reports will be confidential.

_____Initial

☐ I have read or have had explained the Electrical Safety portion and the Lockout/Tagout portion of the Company Safety Program:

- I understand that only authorized persons are allowed to deal with electrical repairs and or issues.
- I understand that I am to not touch or in any way use any equipment that is locked out or tagged out.
- I understand that it is my responsibility to report any electrical hazards to a supervisor immediately.

_____Initial

☐ I have read or have had explained the Hazard Communication & Material Safety Data Sheet (SDS) portion of the Safety Program:

- I understand what a Material Safety Data Sheet is.
- I have been given an orientation on how to read a SDS.
- I understand that I am to report any Chemical or Hazardous Substance that does not have a label.
- I understand that I can request further training on SDSs.

_____Initial

☐ I have read or have had explained the Personal Protective Equipment portion of the Safety Program:

- I understand that I am to wear my personal protective equipment as required by this Company.
- I am aware of what I am required to wear for personal protective equipment at this Company.

_____Initial

☐ I am aware of where my Company displays all of the required Employee Rights Postings.

_____Initial

☐ I am aware of where my Company "Designated Medical Provider" is located.

_____Initial

☐ I am aware that the Safety Program may contain additional written safety Programs in place which require additional training (i.e. Confined Spaces, Fall-Protection, Excavation, Ladders, Scaffolding, Lock-Out/Tag-Out, etc.):

- I understand that I may receive or request further training on any safety issues that may be appropriate for my particular job.
- If I have not received adequate training or feel that I cannot conduct my job safely it is my responsibility to notify my supervisor.

_____Initial

My signature certifies and verifies that I have received an orientation and have received or have read the material mentioned in the Company Safety Program. I understand completely the program and have no questions in regards to Company safety policy. I fully understand and am aware that if I have questions regarding the Company Safety Program or my personal safety, I may inquire of my supervisor for additional information and explanation.

New Hire Name	Signature	Date
Supervisor Name	Signature	Date

Orientación Y Lista De Verificación

☐ He leído o me han explicado la Póliza de Seguridad y el Resumen del Programa. No tengo más preguntas en cuanto a:

- La Filosofía de Seguridad de la compañía.
- Mis responsabilidades de seguridad como un empleado.
- El procedimiento de disciplina.

_____**Inicial**

☐ He leído o me han explicado la porción del Comité de Seguridad del Programa de Prevención de Lesiones y Enfermedad:

- Estoy consciente de quien está a cargo de seguridad si tengo preguntas.
- Estoy consciente de mi habilidad de reportar mis preocupaciones de seguridad al Comité de Seguridad.
- Estoy consciente que la compañía se esfuerza para proveer un ambiente seguro para el trabajo y esta cometido a mi seguridad y habilidad de informar a la compañía de ambientes inseguros para el trabajo sin temor de represalia.

_____**Inicial**

☐ He leído o me han explicado las Reglas Generales de Seguridad como pertenecen al Programa de Prevención de Lesiones y Enfermedad:

- Estoy consciente de todas las reglas de seguridad.

_____**Inicial**

☐ He leído o me han explicado los Códigos de Seguridad y Practica para las Herramientas Manuales y Eléctricas:

- Estoy consciente que debo inspeccionar toda la herramienta antes de utilizar el equipo.
- Estoy consciente que le puedo pedir entrenamiento a mi supervisor sobre cualquier herramienta que no sé operar de manera segura.
- Estoy consciente que si no estoy seguro como operar mi herramienta de manera segura, no la debo utilizar hasta recibir entrenamiento adecuado y sienta que la pueda utilizar de manera segura.
- Estoy consciente que cualquier herramienta que necesite reparación o no este en conformidad debe ser reportada a mi supervisor.

_____**Inicial**

☐ He leído o me han explicado el proceso de Reportar y Investigar Accidentes.

- Entiendo que debo reportar un accidente inmediatamente a mi supervisor.
- Entiendo que debo parar de trabajar inmediatamente.
- Entiendo que si necesito tensión medica debo ir a una clínica o hospital afiliado con esta compaña.
- Entiendo que si voy a un diferente doctor o clínica médica la compañía tiene el derecho de negar o no pagar mi cuenta medica.
- Entiendo que debo cooperar con cualquier investigación de accidente.
- Entiendo que me examinaran por drogas o alcohol por cualquier accidente.
- Entiendo que si estoy presente en mi lugar de empleo bajo la influencia de drogas o alcohol puedo ser despedido automáticamente con o sin aviso de terminación por la compañía.

_____**Inicial**

☐ He leído o me han explicado el Plan de Hacino de Emergencia.

- Entiendo donde las rutas de evaluación de emergencia están localizadas.
- Entiendo que debemos reunirnos en un determinado lugar especifico para poder conducir una cuenta de personas.

_____**Inicial**

☐ He leído o me han explicado el Plan de Prevención de Incendio.

- Entiendo que debo reportar cualquier peligro de incendio.
- Debo mantener todas las salidas libres de obstáculo.
- Yo sé donde el extinguidor de incendio más cercano está en mi área de trabajo.

_____**Inicial**

☐ Estoy consciente de la porción de Primeros Auxilios y Resucitación Cardiopulmonar CPR del Plan de Prevención de Lesiones y Enfermedad.

- Estoy consciente de donde los botiquines de primeros auxilios están localizados.
- Estoy consciente que debo reportar si el botiquín de primeros auxilios necesita materiales.
- Estoy consciente de quien está entrenado en Primeros Auxilios y Resucitación Cardiopulmonar CPR.
- Estoy consciente de donde la Estación para Lavar los Ojos está localizada (si es apropiado).
- Estoy consciente que debo reportar todas las heridas de inmediato a mi supervisor.
- Estoy consciente de donde nuestra clínica está localizada y TENDRÉ A ALGUIEN TRANSPORTARME ALLÍ EN EL EVENTO DE UNA EMERGENCIA (o en una ambulancia si es apropiado).

_____**Inicial**

☐ He leído o me han explicado la porcino de la Evacuación de Peligro en el Programa de Prevención de Lesiones y Enfermedad.

- Entiendo que me debo familiarizar con los peligros que esta alrededor de mi estaciona de trabajo.
- Entiendo que debo reportar cualquier peligro que puede estar presente en mi estación de trabajo.
- Entiendo que es mi responsabilidad para asistir en proveyendo un ambiente seguro de trabajo para yo mismo u otros.

_____**Inicial**

☐ He leído o me han explicado la porción del Patógenos Sanguíneos en el Programa de Prevención de Lesiones y Enfermedad.

- Entiendo que debo traer puesto equipo protector personal cuando se trata de sangre o fluidos del cuerpo.
- Entiendo que debo apropiadamente desechar de cualquier sangre, fluidos del cuerpo o materiales que han sido tocados por sangre o fluidos.
- Entiendo que en evento de tratar con una situación donde hay Patógenos Sanguíneos es mi responsabilidad de recibir cuidado de exposición posterior por la clónica de la componía.
- Estoy consciente de donde estar las facilidades para lavar las manos.

_____**Inicial**

☐ He leído o me han explicado y entiendo la porción de Seguridad en el Lugar de Empleo y la porción de la Póliza de Violencia en el Lugar de Empleo del Programa de Prevención de Lesiones y Enfermedad.

- Entiendo que esta compañía tiene CERO TOLERANCIA para la violencia en el lugar de empleo.
- Violencia en Lugar de Empleo incluye pero no se limita a: intimidación, amenazas, ataques físicos, violencia domestica, daño a propiedad e incluye actos de violencia cometidos por empleados, clientes, familiares, conocidos o extraños contra los empleados en lugar de empleo.
- Armas peligrosas están prohibidos en la propiedad de la compañía o en los vehículos de la compañía.
- Todos los empleados están animados en reportar a un supervisor o cualquier posibilidad de la violencia en el lugar de empleo. Todos los reportes se consideraran confidenciales.

_____**Inicial**

☐ He leído o me han explicado la porción de Seguridad Eléctrica y la porción de Lockout/Tagout en el Programa de Prevención de Lesiones y Enfermedad.

- Entiendo que solamente personas autorizadas están permitidos en tratar con las reparaciones eléctricas y/o problemas.
- Entiendo que no debo tocar o de ninguna manera usar cualquier equipo que esta restringido.
- Entiendo que es mi responsabilidad de reportar cualquier peligro eléctrico a un supervisor inmediatamente.

_____**Inicial**

☐ He leído o me han explicado las porciones de Comunicación de Peligro y la Hoja Informativa de Seguridad de Material del Programa de Prevención de Lesiones y Enfermedad.

- Entiendo lo que es una Hoja Informativa de Seguridad de Material.
- He recibido una orientación en como leer la hoja Informativa de seguridad de Material.
- Entiendo que debo reportar cualquier sustancia peligrosa o química que no tiene etiqueta. Entiendo que puedo recibir entrenamiento adicional en la Hoja Informativo de Seguridad de Material.

_____**Inicial**

☐ He leído o me han explicado la porción del Equipo Protector Personal del Programa de Prevención de Lesiones y Enfermedad.

- Entiendo que debo tener puesto mi Equipo Protector Personal como es requerido por esta compañía.
- Estoy consciente del Equipo Protector Personal (EPP) que esta requerido en este compañía.

_____**Inicial**

☐ Estoy consciente en donde mi compañía despliega todos los Letreros Requeridos de los Derechos de Empleados.

_____**Inicial**

☐ Estoy consciente de donde esta la clínica de mi compañía.

_____**Inicial**

☐ Estoy consciente que el Programa de Prevención de Lesiones y Enfermedades puede incluir programas adicionales por escrito que están puesto que requiere entrenamiento adicional (Respecto de: Espacios limitados, Protección de caídas, Excavación, Escaleras, Andamios, Lock-out/Tag-out, etc.).

- Entiendo que debo recibir o puedo pedir entrenamiento adicional en cualquier asunto de seguridad avanzado que pueda ser apropiado para mi trabajo en particular.
- Si no he recibido adecuado entrenamiento o siento que no puedo hacer mi trabajo en una manera seguro es mi responsabilidad notificar mi supervisor.

_____**Inicial**

Yo certifico que he recibido una orientación o he leído el material mencionado y el Programa de Prevención de Lesiones y Enfermedad. Entiendo completamente el programa y no tengo mas preguntas tocante a la seguridad. En caso de que tenga una pregunta acerca de nuestro programa de seguridad o de mi seguridad personal estoy consciente que puedo pedir a mi supervisor para explicación adicional.

Escriba Nombre	Firma	Fecha
Testigo de la Compañía	Titulo	Fecha

DISCLAIMER

OSHA's Safety and Health Regulations are continuously being reinterpreted. Therefore, Safety Services Company is unable to completely guarantee the exactness of the information conveyed in this publication. Safety Services Company assumes no responsibility and will be held harmless for any inaccuracies or omissions contained within this manual and will not be held liable to any extent or form for any injury or loss resulting from the manner in which this information is interpreted and / or applied. Careful effort has been dedicated in order to provide a simplified, understandable explanation of OSHA regulations based on currently available information. This "Safety and Health Manual is distributed with the agreement that Safety Services Company is not employed in providing legal or other specialized business services. Should expert assistance be required, retain the services of a competent professional.

SAFETY SERVICES COMPANY

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e-mail: ssc@safetysevicescompany.com

www.safetyservicescompany.com

Notes:

Chapter 21

Safety Meeting Minutes

Other Safety Training Documents for:

All Ohio Sealants Inc.

This section is designed to hold all Company Safety Training Documents. Any paperwork related to Company Safety Training should be 3-ring hole-punched and stored in this section.

Notes:

Chapter 22

Attachments

The following is a list of forms for Company use.

- ☐ Safety Committee By-Laws Form
- ☐ Safety Committee Checklist
- ☐ Safety Committee Meeting Agenda
- ☐ Safety Committee Meeting Minutes
- ☐ Disciplinary Safety Warning
- ☐ Code of Safe Practices Receipt
- ☐ Accident Incident Report
- ☐ Emergency Action Plan
- ☐ First Aid Response Plan
- ☐ Job Safety Analysis Form
- ☐ Violent Incident Report
- ☐ Suspect & Vehicle Identification Sheet
- ☐ Employee Incident Report
- ☐ Record of Employee Training
- ☐ Sexual Harassment Complaint Form
- ☐ Hazardous Chemical List
- ☐ Hazardous Communication Training Acknowledgement and Updated Training
- ☐ Example SDS Sheet

SAFETY COMMITTEE BYLAWS

Name

The name of the committee is the _____ Safety Committee.

Purpose

The purpose of the _____ Safety Committee is to bring all _____ employees together to achieve and maintain a safe, healthful workplace.

Goal

The goal of the _____ Safety Committee is to eliminate workplace injuries and illnesses by involving employees and managers in identifying hazards and suggesting how to prevent them.

Objectives

The Safety Committee has four objectives:

- Involve employees in achieving a safe, healthful workplace.
- Promptly review all safety-related incidents, injuries, accidents, illnesses, and deaths.
- Conduct quarterly workplace inspections, identify hazards, and recommend methods for eliminating or controlling the hazards.
- Annually evaluate the _____ workplace safety-and-health program and recommend to management how to improve the program.

Representatives

The _____ Safety Committee will have _____ voting representatives. _____ of the representatives will represent employees and _____ will represent management. Employee representatives can volunteer or their peers can elect them. Management representatives will be selected by management.

Each representative will serve a continuous term of at least one year. Terms will be staggered so that at least one experienced representative always serves on the committee.

Chair and Vice-chair

The _____ Safety Committee will have two officers: chair and vice-chair. One officer will represent labor and one officer will represent management.

Terms of Service

Chair and vice-chair will each serve a one-year term.

Duties of the Chair

The duties of the chair:

- Schedule regular committee meetings.
- Approve committee correspondence and reports.
- Develop written agenda for conducting meeting.
- Supervise the preparation of meeting minutes.
- Conduct the committee meeting.

Duties of the Vice-chair

The duties of the vice-chair:

- In the absence of the chair, assume the duties of the chair.
- Perform other duties as directed by the chair.

Election of Chair and Vice-chair

The election of a new chair or vice-chair will be held during the monthly committee meeting before the month in which the incumbent's term expires.

If the chair or vice-chair leaves office before the term expires, an election will be held during the next scheduled safety-committee meeting; the elected officer will serve for the remainder of the term.

Training

New representatives will receive training in safety-committee functions, hazard identification, and accident-investigation procedures.

Meetings

Monthly schedule — The _____ Safety Committee will meet the _____ of each month, except when the committee conducts quarterly workplace safety inspections.

Attendance and Alternates

Each representative will attend regularly scheduled safety committee meetings and participate in quarterly workplace inspections and other committee activities. Any representative unable to attend a meeting will appoint an alternate and inform the chair before the meeting. An alternate attending a meeting on behalf of a regular representative will be a voting representative for that meeting.

Agenda

The agenda will prescribe the order in which the _____ Safety Committee conducts its business. The agenda will also include the following when applicable:

- A review of new safety and health concerns
- A status report of employee safety and health concerns under review
- A review of all workplace near misses, accidents, illness, or deaths occurring since the last committee meeting.

Minutes

Minutes will be recorded at each committee meeting and posted & distributed to all employees.

The committee will submit a copy of the minutes to the _____ personnel office; the office will retain the copy for three years. All reports, evaluations, and recommendations of the committee will be included in the minutes. The minutes will also identify representatives who attended monthly meeting, and representatives who were absent.

Voting Quorum

_____ voting representatives constitute a quorum. A majority vote of attending representatives is required to approve all safety-committee decisions. Issues not resolved by majority vote will be forwarded to management for resolution.

Employee Involvement

The _____ Safety Committee will encourage employees to identify workplace-health-and-safety hazards. Concerns raised by employees will be presented to the committee in writing; the committee will review new concerns at the next regularly-scheduled monthly meeting.

Safety Log

The committee will maintain a log of all employee concerns, including the date received, recommendations to management, and the date the concern was resolved.

Response

The committee will respond to employee concerns in writing and work with management to resolve them. The committee will present written recommendations for resolving concerns to management. Within 60 days of receipt of the written recommendations, management will respond in writing to the committee indicating acceptance, rejection, or modification of the recommendations.

Incident and Accident Investigation

The _____ Safety Committee will review new safety- or health-related incidents at its next regularly-scheduled meeting. Safety-related incidents include work-related near misses, injuries, illnesses, and deaths. When necessary, the committee will provide written recommendations to management for eliminating or controlling hazards.

Workplace Inspections

The _____ Safety Committee will conduct quarterly workplace inspections of all Company facilities in March, June, September, and December.

Written Report

The committee will prepare a written report for management that documents the location of all health or safety hazards found during inspection. The report will recommend options for eliminating or controlling the hazards.

Within 60 days of receipt of the written report, management will respond in writing to the committee, indicating acceptance, rejection, or proposed modification of the recommendations.

Evaluation

The _____ Safety Committee will evaluate the Company's workplace-safety-and-health program annually and provide a written evaluation of the program to management. The committee will also evaluate its own activities each December and use the evaluation to develop an action plan for the next calendar year.

SAFETY COMMITTEE CHECKLIST

Done	To Do	
☐	☐	Our safety committee is composed of an equal number of employer and employee representatives.
☐	☐	Our safety committee is composed of an equal number of employer and employee representatives.
☐	☐	Employee representatives are volunteers or are elected by their peers.
☐	☐	There are at least four representatives on the committee if the workplace has more than 20 employees – at least two representatives if the workplace has 20 or fewer employees.
☐	☐	The representatives elect the committee chairperson.
☐	☐	Representatives are paid their regular wages during safety committee training and meetings.
☐	☐	Employee representatives serve on the committee for at least one year.
☐	☐	Representatives' terms of service are staggered so that at least one experienced representative is always on the committee.
☐	☐	Reasonable efforts are made to ensure that committee representatives represent the firm's major work activities.
☐	☐	The committee meets monthly except when representatives schedule quarterly workplace inspections.
☐	☐	Committee meetings follow a written agenda.
☐	☐	The minutes for each meeting are maintained for at least three years.
☐	☐	Minutes are available to all employees to read.
☐	☐	All reports, evaluations, and recommendations are included in the minutes.
☐	☐	Management has a reasonable time to respond, in writing, to the committee's recommendations.
☐	☐	The committee has a method for collecting and reviewing employees' safety-related suggestions and reports of hazards.
☐	☐	The committee assists management in evaluating and improving the workplace safety and health program.
☐	☐	The inspection team conducts workplace inspections at least quarterly.
☐	☐	The committee's quarterly inspection team follows a standard procedure for identifying safety-and-health hazards during its inspections.
☐	☐	The inspection team includes employer and employee representatives.
☐	☐	The inspection team documents, in writing, the location and identity of workplace hazards.
☐	☐	The inspection team – or other persons designated by the committee – does quarterly inspections of satellite locations.
☐	☐	The committee has a procedure for reviewing the team's quarterly inspection reports.
☐	☐	The committee recommends to management ways to control hazards and unsafe work practices.
☐	☐	The committee makes recommendations to ensure all employees are accountable for following safe work practices.
☐	☐	The committee has a procedure for investigating workplace accidents, illnesses, and deaths.
☐	☐	Representatives understand the purpose of their safety committee and know how it functions.
☐	☐	Representatives have access to applicable OSHA safety and health rules.
☐	☐	Representatives have received safety training for identifying workplace hazards and investigating accidents.

SAFETY COMMITTEE MEETING AGENDA

Date: _____

To: All committee members, alternates, bulletin board

Meeting Date and Time: _____

Place: _____

Agenda Items — Person Responsible

1. Old business
    a. Review last month's recommendations _____
    b. Follow-up on last quarterly inspection _____
2. New business
    a. Hazard reports — All
    b. Accident investigation reviews _____
    c. Recommendations review _____
    d. _____ _____
    e. _____ _____
    f. _____ _____
3. Safety Committee Members Training
    a. _____ _____
    b. _____ _____

Notes:

_____

_____

_____

_____

_____ _____

Chair Person's Signature — Date

SAFETY COMMITTEE MEETING MINUTES

Chairperson: _____ Date: _____

Department: _____ Time meeting started: _____

PRESENT	***ABSENT***
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Previous meeting minutes from _____ were read.

Date

Old Business

Review of last month's recommendations

Recommendation Number	Description	Completed	Not Completed	Date
R-_____	_____	☐	☐	_____
R-_____	_____	☐	☐	_____
R-_____	_____	☐	☐	_____
R-_____	_____	☐	☐	_____
R-_____	_____	☐	☐	_____
R-_____	_____	☐	☐	_____

Follow-up on last quarterly inspection: _____

_____

New Business

Hazard (inspection) reports reviewed: _____

Hazard Number	Description	Recommendation Number
H-_____	_____	**R-**_____
H-_____	_____	**R-**_____
H-_____	_____	**R-**_____
H-_____	_____	**R-**_____
H-_____	_____	**R-**_____
H-_____	_____	**R-**_____

SAFETY COMMITTEE MEETING MINUTES

Accident/incident investigation reviews:

Accident Number	Near Miss	Description	Recommendation Number
A-_____	☐	_____	***R***-_____
A-_____	☐	_____	***R-***_____
A-_____	☐	_____	***R-***_____
A-_____	☐	_____	***R-***_____
A-_____	☐	_____	***R-***_____
A-_____	☐	_____	***R-***_____
A-_____	☐	_____	***R-***_____

Safety Committee Members Training Report: _____

_____

_____

_____

Miscellaneous New Business: _____

_____

_____

_____

_____

Activity/Assignment Report:

Description	Person Assigned
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Committee Remarks: _____

_____

_____

_____

Meeting adjourned: _____ Next meeting: _____

Time/date Time/date

_____ _____

Chair Person Signature Secretary Signature

SAFETY WARNING

Employee's Name			Position
Date of Warning	Violation Time	☐ am ☐ pm	Violation Date
Supervisor Department			
Type of warning	☐ Verbal ☐ Written ☐ Serious ☐ Other:		
Type of Violation	☐ Unsafe Act ☐ Improper Safety Attire ☐ Unsafe condition ☐ Other		

Supervisor's Statement

Employee's Statement (Check Proper Box)

☐ I agree with the Supervisor's statement ☐ I disagree with the Supervisor's statement because:

List all previous warnings and retraining below

When warned and by whom	I have read and understand this warning decision
First Warning (Describe reason)	Employee's Signature Date
Date Date retrained	Supervisor's Signature Date
Second Warning (Describe reason)	Copy Distribution
Date Date retrained	☐ Employee
Third Warning (Describe reason)	☐ Employee's Supervisor
Date Date retrained	☐ Personnel Department ☐ Safety Committee

The Supervisor must complete this form immediately after the employee has been interviewed. A decision must be made on the following to ensure violators will not participate in the current safety incentive program.

☐ No further action ☐ Suspension ☐ Other:

☐ Suspension from current safety incentive program ☐ Dismissal

Submit this form for review at the next Safety Committee meeting

Safety Committee Notes

CODE OF SAFE PRACTICES RECEIPT

This is to certify that I have received a copy of The Company Code of Safe Practices.

☐ I have read these instructions, understand them, and will comply with them while working for the Company.

☐ I understand that failure to abide by these rules may result in disciplinary action and possible termination of my employment with this Company.

☐ I also understand that I am to report any injury to my foreman or superintendent immediately and report all safety hazards.

☐ I further understand that I have the following “Safety” rights:

☐ I am not required to work in any area I feel is not safe.

☐ I am entitled to information on any hazardous material or chemical I am exposed to while working.

☐ I am entitled to see a copy of The Company Safety and Health Manual.

☐ I will not be discriminated against for reporting safety concerns.

_____ _____

Employee Name Signature Date

_____ _____

Supervisor Name Signature Date

cc: Employee File

ACCIDENT/INCIDENT REPORT

Date of Accident	Time	Day of Week ☐ S ☐ M ☐ T ☐ W ☐ T ☐ F ☐ S	Shift ☐1 ☐2 ☐3	Department

INJURED PERSON

Name:		Address:
Age:	Phone:	
Job Title:		Supervisor Name:
Length of Employment at Company:		Length of Employment at Job:

Employee Classification: ☐ Full Time ☐ Part Time ☐ Contract ☐ Temporary

Nature of Injury	☐ Bruising	☐ Dislocation	☐ Other (specify)	Injured Body Part:
☐ Strain/Sprain	☐ Scratch/Abrasion	☐ Internal		
☐ Fracture	☐ Amputation	☐ Foreign Body	Remarks:	
☐ Laceration/Cut	☐ Burn/Scald	☐ Chemical Reaction		

Treatment	Name and Address of Treating Physician or Facility:
☐ First Aid	
☐ Emergency Room	
☐ Dr.'s Office	
☐ Hospitalization	

DAMAGED PROPERTY

Property, Equipment, or Material Damaged	Describe Damage
Object or Substance Inflicting Damage:	

INCIDENT DESCRIPTION

Describe what happened (attach photographs or diagrams if necessary)

ROOT CAUSE ANALYSIS (Check All that Apply)

Unsafe Acts	Unsafe Conditions	Management Deficiencies
☐ Improper work technique	☐ Poor workstation design/layout	☐ Lack of written policies &procedures
☐ Safety rule violation	☐ Congested work area	☐ Safety rules not enforced
☐ Improper PPE or PPE not used	☐ Hazardous substances	☐ Hazards not identified
☐ Operating without authority	☐ Fire or explosion hazard	☐ PPE unavailable

☐ Failure to warn or secure	☐ Inadequate ventilation	☐ Insufficient worker training
☐ Operating at improper speeds	☐ Improper material storage	☐ Insufficient supervisor training
☐ By-passing safety devices	☐ Improper tool or equipment	☐ Improper maintenance
☐ Guards not used	☐ Insufficient knowledge of job	☐ Inadequate supervision
☐ Improper loading or placement	☐ Slippery conditions	☐ Inadequate job planning
☐ Improper lifting	☐ Poor housekeeping	☐ Inadequate hiring practices
☐ Servicing machinery in motion	☐ Excessive noise	☐ Inadequate workplace inspection
☐ Horseplay	☐ Inadequate hazards guarding	☐ Inadequate equipment
☐ Drug or alcohol use	☐ Defective tools/equipment	☐ Unsafe design or construction
☐ Unnecessary haste	☐ Insufficient lighting	☐ Unrealistic scheduling
☐ Unsafe act of others	☐ Inadequate fall protection	☐ Poor process design
☐ Other:	☐ Other:	☐ Other:

ACCIDENT / INCIDENT REPORT-PAGE 2

ACCIDENT / INCIDENT ANALYSIS

Using the root cause analysis list on the previous page, explain the cause(s) of the incident in as much detail as possible.

Make sketches or illustrations to help describe incident:

How bad could the accident have been?	What is the chance of the accident happening again?
☐ Very Serious ☐ Serious ☐ Minor	☐ Frequent ☐ Occasional ☐ Rare

PREVENTIVE ACTIONS

Describe actions that will be taken to prevent recurrence:	Deadline	By Whom	Complete

INVESTIGATION TEAM

Name	Signature	Position

EMERGENCY ACTION PLAN

To be posted at all Company Facilities and workplaces

Company Name:	Job Location:
Street Address:	
City:	State: ZIP Code:
Prepared By: (Print Name of Preparer)	
Title:	Phone Number:
Signature:	Date:

PURPOSE

This plan is for the safety and well-being of the employees of: (Name of Company)

It identifies necessary management and employee actions during fires and other emergencies. Education and training are provided so that all employees know and understand the Emergency Action Plan.

LOCATON OF PLAN

The Emergency Action Plan can be found at the station or office of each: (Foreman, Supervisor, etc.)

A copy is also maintained in THE COMPANY general offices.

Upon request, an OSHA representative may obtain a copy of the plan from: (Name and Title)

EXIT ROUTES

Draw a diagram of jobsite or facility exit routes in space below:

Locate meeting place or “Roll-Call” area on above diagram:

ACCOUNTING FOR EMPLOYEES

After exiting jobsite or facility, all employees are to assemble for “Roll-Call” at this location:
Note location on above diagram

The following persons are responsible for ensuring that employees comply with this requirement:

Name and Title:

Name and Title:

CRITICAL OPERATIONS

To minimize damage from the emergency, the following personnel are responsible for shutting down the listed critical operations:

Personnel Names	Critical Operations

As soon as shutdowns are completed, the employees who performed critical operations must take the nearest exit route in accordance with general emergency procedures.

RESCUE AND MEDICAL DUTIES

The following personnel are certified and trained in both CPR and general first aid. These persons are to be contacted as specified in the "General Emergency Training":

Name and Title	Phone Number

REPORTING EMERGENCIES

The following personnel have the duty of contacting public responders to come to the emergency scene. The personnel are listed in descending order of availability:

Name and Title	Phone Number

ALARM SYSTEMS AND NOTIFICATION OF EMERGENCIES

In the event of a workplace or facility emergency, employees will be notified as follows:

Identify method(s) of notification:

TYPES OF EVACUATION

OSHA requires this Company to have an established system of types of evacuation to follow for different emergency circumstances. The following listing represents Company policy for various emergency situations:

PARTIAL EVACUATION: Code Yellow – 3 rings or horn blasts: RESPONDERS (trained extinguisher personnel and trained rescue and medical personnel)

FULL EVACUATION: Code Red – 4 rings or horn blasts: RESPONDERS (n/a)

NOTE: If there is more than one evacuation type, the alarm signal for each must be distinctive.

OTHER: (describe)

OTHER: (describe)

PUBLIC EMERGENCY RESPONSE INFORMATION
Ensure that 911 emergency services cover the area this Emergency Action Plan covers.
Local Police Department:
Local Fire Department:
Local Ambulance/EMS:
Local Hospital:
FURTHER INFORMATION
For further information or explanation about any duties under this Plan, contact:
Name and Title:
Name and Title:
This Emergency Action Plan is authorized and approved by: (Name and Title) Signature

FIRST AID RESPONSE PLAN

Company:	Date:
This plan was written for: (site or location this plan covers)	
The following person/position is responsible for managing our first aid response plan:	
The emergency medical service to be called:	
Summon the emergency medical service by doing the following: (In most cases it will be to call 911 or some other phone number, but a direct alarm or some other method may be the preferred way.)	
Emergency phone numbers are posted at the following location(s):	
Other means to summon aid are at the following location:	
When employees need first aid they must do the following:	
Employees on site who are first aid trained:	
First-aid kits (or a first aid station) are located at:	
The following person/position is responsible for inspecting the first aid kits:	
The Company's Designated Medical Provider is:	
Person Preparing Plan: Signature:	Date:
Supervisor's Name: Signature:	Date:

Job Safety Analysis			
Project **Contract:**			**Activity:**
Location:			
#	**Job Steps**	**Potential Hazards**	**Safe Procedures/Controls**
1			
2			
3			
4			
5			
6			
7			

Job Safety Analysis			
#	Job Steps	Potential Hazards	Safe Procedures / Controls
8			
9			
10			
11			
12			

Equipment to be used	Inspection Requirements	Training Requirements

VIOLENT INCIDENT REPORT FORM

1. Identifying information

Name	Job Title
Shift	Department or Section

Location of incident:

Type of Assault

☐ Verbal ☐ Threatened ☐ Struck ☐ Bitten ☐ Pushed ☐ Kicked

☐ Scratched ☐ Other (please specify)

Medical attention or First Aid obtained? ☐ Yes ☐ No	Advised of right to consult doctor? ☐ Yes ☐ No
Investigation conducted? ☐ Yes ☐ No	Insurance forms completed? ☐ Yes ☐ No
Reported to Supervisor? ☐ Yes ☐ No	Police called? ☐ Yes ☐ No

Action taken:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

2. Assailant

Description

Age	Complexion	Height	Weight

Name (if known)

3. Incident and Injury Information

Date of incident	Time
	a.m. / p.m.

4. Other Information

Was the assailant involved in any previous violent incidents with staff?

☐ Yes ☐ No

Are there any measures in place to prevent a similar incident?

☐ Yes ☐ No

Please provide any other information you think is significant.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Signature: _____

SUSPECT and VEHICLE IDENTIFICATION SHEET

General Appearance	
Sex Age Height Weight Race Hair Eyes Complexion Scars/Identifying Marks Tattoos **Clothing:** Jewelry Hat Coat Shirt/Blouse Pants/Skirt Shoes/Boots Tie	☐ Male ☐ Female 

Facial Appearance	Write below specific details that you definitely remember.	**Vehicle**
Skin or Hair color Hair texture Ear size and shape Cheeks (full or sunken) Shape of Nose Neck/Adam's apple Wrinkles Shape of brow Size and shape of eyes Mouth and Lips Moustache or Beard	What did the suspect say? Describe any weapon or tool seen.	  Color | Make | Model | Licence number Body Style | Damage or Rust Antenna | Bumper Sticker | Wheel Covers Direction of Travel

EMPLOYEE INCIDENT REPORT

Work site: _____

Manager/Supervisor: _____

Employee name_____ Date _____

Job title _____

Incident:

_____

_____

_____

_____

_____

Action taken:

_____

_____

_____

_____

CODE OF CONDUCT

- Proactive management includes Supervisory leadership and control to change unproductive activities. Conformance with safety policies, rules, and regulations is a necessary component of our Safety Program.
- Employee safety responsibilities are communicated during initial orientation. Safety rules and regulations are reviewed with employees by their supervisors and are part of the documented Employee Safety Training Process.
- Supervisors understand and enforce safety rules as a part of their job. This process may involve coaching, counseling, verbal, or written reprimands, and discipline in the form of suspension and/or termination**.** When appropriate, documented verbal warnings and reprimands are issued and carried out by supervisors.
- Failure to adhere to any of the Safety Rules and Safe Work Practices will result in disciplinary action. All discipline will be documented in the employee's folder. Discipline may be more severe depending on the offense.

Signature: _____ Date: _____

Employee

Signature: _____ Date: _____

Supervisor

RECORD of EMPLOYEE TRAINING

Employees have been made aware of the risks for violence identified at this site and have been trained in the appropriate actions as defined in the procedures of this program. Employees have been instructed on how to fill out the report form whenever a violent incident occurs. The following list is a list of employees who have received training on workplace violence prevention procedures.

Printed Name	Signature	Date

SEXUAL HARASSMENT COMPLAINT FORM

Please write legibly and fill out form completely. Submit completed form to appropriate management personnel.	
Complainant:	Alleged Harasser:
Department: Job Title:	Department: Job Title:
Mailing Address:	Other relevant information about Alleged Harasser:
Home Phone: Work Phone:	
Details of Incident	
What exactly occurred or was said?	
When did it occur and is it still ongoing?	
Where did it occur?	
How often did it occur?	
How did it affect you?	
What response did you make when the incident(s) occurred or afterwards and how did you react?	
Has your job been affected in any way?	
Was anyone present when the alleged harassment occurred? List any third party witnesses:	
Are there any persons who have relevant information?	
Did you tell anyone about it?	
Did anyone see you immediately after episodes of alleged harassment?	

Did the person who harassed you harass anyone else?
Do you know whether anyone complained about harassment by that person?
Are there any notes, physical evidence, or other documentation regarding the incident(s)?
Do you know of any other relevant information?
How would you like to see the situation resolved?
I am aware that false accusations of sexual harassment can have serious effects on innocent persons. I further understand that if it is determined, after investigation, that I have maliciously or recklessly made false accusations, I will be subject to appropriate sanctions, including discharge.
Complainant's Signature Date
Received by: Print Name Signature Date

LIST OF HAZARDOUS CHEMICALS

Product / Chemical Name	Manufacturer	Location Used

HAZARDOUS COMMUNICATION TRAINING ACKNOWLEDGEMENT

This is to certify that I have been trained and informed about the hazards and precautions associated with the use of hazardous chemicals in my work as required in the All Ohio Sealants Inc. written hazard communication program.

To confirm my understanding of such training and instructions, the Safety Coordinator has reviewed them with me and he/she indicated his/her satisfaction by checking the box before each of the topics listed below:

☐ Overview of the requirements contained in the OSHA Hazardous Chemical Communication Rule

☐ Chemicals present in my workplace operations.

☐ Locations and availability of our written hazard communication program and the SDS for the hazardous chemicals.

☐ Physical and health effects of these hazardous chemicals.

☐ Methods used to determine the presence or release of hazardous chemicals.

☐ How to lessen or prevent exposure to these hazardous chemicals through safe work practices and use of personal protective equipment.

☐ Steps All Ohio Sealants Inc. has taken to lessen or prevent exposure to these chemicals.

☐ Safety emergency procedures to follow in the event of exposure to these chemicals.

☐ How to read container labels and interpret SDS to obtain appropriate hazard information.

Employee's Name Signature Date

Trainer's Name Signature Date

Note to employee: This form will be made a part of your personnel file. Please read and understand its contents before signing.

GROUP TRAINING RECORD FOR UPDATES AND REFRESHER TRAINING

Trainer:	
Date:	
Content of Training:	
Attendees	
Print Name	**Signature**

Notes: