



GROVE ROOFING

SINCE 1870



SAFETY MANUAL

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TABLE OF CONTENTS

TITLE	PAGE
Forward	6
Employee Participation	7
Safety Communication	8
Employee Right to Stop Work	8
OSHA Recordkeeping and Reporting	8
Risk Assessment & Hazard Reporting	10
Job Safety Analysis (JSA)	11
Safety Education & Training	12
Site Safety Inspections	13
Accident, Incident, & Near Miss Reporting	14
Definitions & Responsibilities	18
Pre-Planning – Making it Safe	20
Housekeeping	23
Personal Protective Equipment	24
Respiratory Protection	27
Hearing Conservation	33
Weather Hazards	35
Heat Stress	37
Fall Protection	39
General Requirements	40
Fall Protection Systems & Requirements	43
Fall Arrest Rescue Plan	56
Personal Fall Restraint Systems	57
Catch Platforms	57
Safety Net Systems	57
Crane Suspended Platforms	58
Walking Working Services	59
Scaffolding	65
Ladders	71
Portable	71
Fixed	73
Chicken Ladders	74
Stairways	75
Aerial Lifts	77
Hazard Communication	78
Industrial Hygiene Program	86
Fire Prevention & Protection	88
Electrical Safety	92
Lockout / Tagout	95
RF Radiation	98
Portable Power and Hand Tools	99

TITLE	PAGE
Cranes & Rigging	104
General	104
Definitions	105
Site Conditions & Coordination	105
Power Line Safety	107
Crane Inspections	107
Crane Operation	115
Signal Requirements	118
Swing Radius	121
Critical Lifts	124
Qualified Rigger	124
Rigging	125
Conveyors	127
Hoists	127
Mobile Equipment	128
Forklifts & Lulls	131
Sheet Metal Operations	136
Hot Asphalt Safety	138
Hot Work	142
Back Injury Prevention	147
Emergency Action Plan	149
Fatigue Management	152
Bloodborne Pathogens	155
Process Safety Management Contractor Responsibilities	158
Trenching & Excavation	161
Motor Vehicle Safety	167

Forms

Hazard Report Form
Job Safety Analysis Form
GRS Employee Injury/Near Miss Form
GRS Witness Statement Form
GRS Supervisors Accident/Incident Investigation Report
Emergency Numbers and Hospital Info (Sample Project Form)
Respiratory Protection - Voluntary Use Form
Controlling Contractor Crane Checklist
Excavation Checklist
Lockout Tagout: Equipment Energy Identification Form
Lockout Tagout: Machine Specific Procedure Periodic Inspection Certification
PPE Hazard Assessment Form

TITLE **PAGE**

Appendices

Asbestos Program
Lead Program
Written Silica Exposure Control Plan
Training Matrix
Waste Management Program
Confined Space Assessment & Inventory
Emergency Action Plan
Equipment Lockout Procedures
NRCA Fall Protection Compliance Program Student Handout
Ladder & PFA Equipment Orientation
Hazard Communication 2012 Globally Harmonized System (GHS)
Gove Roofing COVID-19 Corporate Safety Plan
Airborne Infectious Disease Exposure Prevention Plan (HERO Act)

Reference

Grove Roofing DOT/FMCSA Drug and Alcohol Testing Package
[\\GFS\Internal\Driver Program \(CDL & non-CDL\)\2_CD_L \(& HazMat\) drivers\Grove CDL Driver Drug Policy \(DOT-FMCSA\)](#)
Grove Roofing Drug-Free Workplace Policy Summary (Non-regulated)
[\\GFS\Internal\Employee Manual & Drug Policy\Drug-Free Workplace Policy \(non-CDL\)\Grove Employee Drug Policy \(Drug Free Workplace Policy DFWP - Non-Regulated\)](#)
Grove Roofing Comprehensive Driver Program & Fleet Management Manual
[\\GFS\Internal\Driver Program \(CDL & non-CDL\)\Grove Certified Driver Program](#)
Grove Roofing Fire Prevention Policy, Program & Procedure
[\\GFS\Safety\GRS Fire Prevention Policy, Program & Procedure](#)
Grove Roofing Employee Manual
[\\GFS\Internal\Employee Manual & Drug Policy](#)

FORWARD

This safety manual has been developed by the senior management of Grove Roofing Services to help create for you, the safest work environment possible. It will outline the techniques and procedures, which are essential for the protection of our company’s greatest asset...its people.

The goals of our safety program are:

**NO INJURIES
NO ACCIDENTS
NO FINES**

You will often hear these goals repeated at company safety meetings. **“No injuries”** means that you complete your work each day in a safe manner that enables you, and your fellow workers, to leave the workplace without injury and go on with the rest of your life.

“No accidents” means that there are no occurrences where workers are exposed to injury and potential property damage. It is possible to have an accident and there is no bodily injury or property damage. The occurrence however, increases the potential for these things to happen. Keep the law of averages on your side and make the proper decisions and use the proper behavior to minimize and eliminate the likelihood of an accident.

“No fines” means that we take the proper steps to abide by the requirements of the law and not expose ourselves to a fine resulting from a job site inspection.

This manual has been developed following the industries best practices and closely follows the National Roofing Contractor’s safety recommendations. The manual is yours to keep and refer to from time to time. You may be asked to bring it to work with you for a safety discussion. Updates and changes will be made to the manual from time to time. Put the updates in the manual when you receive them.

Your commitment to work safely is essential to your continued employment with Grove Roofing Services. Do your best to minimize the likelihood of an accident and stay safe.

Please contact our Safety Director, **Steve Kopp** with any questions.

EMPLOYEE PARTICIPATION

Grove Roofing Services understands the importance of employee participation in our safety and health process. Participation in our process is encouraged throughout the organization. It is our intent to create a culture in which employees will participate in safety and health activities while maintaining an open “safety dialog” with management. There are several ways employees can participate in our safety process. They include but are not limited to:

- Participating on safety teams.
- Analyzing routine hazards in each step of a job or process, and preparing safe work practices or controls to eliminate or reduce exposure as part of our Job Safety Analysis (JSA) program. Participating in safety and health training.
- Participating in accident/incident investigations.
- Participating in project site safety inspections.
- Participate in safety consultant and insurance audits.
- Participating in industrial hygiene sampling activities.
- Reporting hazards.
- Correcting hazards within your control.
- Supporting your fellow workers by providing feedback on risks and assisting them in eliminating hazards.
- Participating in a pre-use or change analysis for new equipment or processes in order to identify hazards up front before use.

SAFETY COMMUNICATION

Grove Roofing Services understands the importance of communicating safety and health information to its employees. There are several means and methods used to communicate safety information at our construction project locations. They include but are not limited to:

- The reporting and follow up of hazards.
- Job Safety Analysis (JSA) reviews.
- Tool Box Talks and other training programs.
- General employee meetings.
- Postings and bulletins.

EMPLOYEES RIGHT TO STOP WORK

Every Grove Roofing employee has the right and authority and responsibility to stop work for conditions that threaten imminent danger to themselves or others. This right comes without fear of reprisal and harassment.

OSHA defines *imminent danger* as a condition or practice which exists that could reasonably be expected to cause death or serious physical harm.

OSHA RECORDKEEPING

Grove Roofing's competent person for OSHA recordkeeping is **Janice Vertlieb**.

Per OSHA 1904.35 – Grove Roofing will provide limited access to injury and illness records to employees, former employees, their personal representatives, and their authorized employee representatives. Specific information as to requirements can be found below. Definitions of employee(s), personal representative, and authorized representative can be found within OSHA 1904.35(b)(2).

As required Grove Roofing provides the following access to OSHA recordkeeping records:

- Provide a copy of the OSHA Form 300 by end of next business day
- Do not remove names from the OSHA Form 300 (Unless designated as a Privacy Case when recorded)
- Provide a copy of the OSHA Form 301 (or equivalent) to injured / ill employee, former employee or personal representative by end of next business day
- Provide copies of the OSHA 301 Form (or equivalent) to authorized representatives within 7 calendar days. Only information from the OSHA 301 Form section titled "Tell us about the case" will be provided. All other information from the copy of the OSHA 301 Form or the equivalent substitute form that Grove Roofing gives to the authorized employee representative will be removed.

- Initial copies are to be provided at no cost. Subsequent copies can be assessed a reasonable fee.

Requests for these records should be made through **Janice Vertlieb**.

RECORD STORAGE

- All employee medical records shall be retained and maintained for 30 years plus the duration of employment.
- All employee exposure records shall be maintained for 30 years.
- OSHA 300 and 301 (or equivalent) forms shall be retained for current year plus 5 years previous.

POSTING

- OSHA 300A forms will be at a minimum posted from February 1, to April 30th, per the requirements of 1904.32.

ELECTRONIC SUBMISSION OF RECORDS

OSHA 300A information will be electronically reported using the Injury Tracking Application by July 1 of the current year for the previous year. i.e. Information for 2017 will be submitted prior to July 1, 2018.

SEVERE INJURY REPORTING

Worker fatality will be reported to OSHA within eight (8) hours.

Any amputation, loss of an eye, or hospitalization of a worker will be reported to OSHA within 24 hours.

Reporting Options:

- Call the Buffalo New York Area office at (716) 551-3053.
- Call the OSHA 24 – hour hotline at 1-800-321-6742.
- Report online at: <https://www.osha.gov/pls/ser/serform.html>

RISK ASSESSMENT & HAZARD REPORTING

General

Employees play a key role in discovering and controlling hazards that may develop – or that already exist – in the workplace. Understanding this key employee role, Grove Roofing Services wants to provide a reliable system for employees, without fear of reprisal and/or harassment, to notify management personnel about conditions that appear hazardous, to receive timely and appropriate responses, and to encourage employees to use the system.

Grove Roofing Services believes that it is important to establish multiple ways to report hazards so that, depending on comfort level and the nature of the issue, there are several avenues to get concerns addressed. The following procedures can be followed to report hazards.

Verbal Reporting

You can:

- Report the hazard to your supervisor or manager.
- Report the hazard to our safety director.
- Report the hazard to the office.

When a safety or health hazard is reported, a supervisor/manager and/or our safety director will evaluate the hazard and implement corrective actions.

1. For hazards that can be corrected immediately, the supervisor and/or manager will record the hazard and the abatement in their daily log.
2. For hazards that cannot be corrected immediately, the supervisor and/or manager will complete a written “Safety Hazard Report Form”. Hazard abatement is scheduled and monitored.

Written Reporting

1. Any employee can complete the “Safety Hazard Report Form.” Please fill out the form completely so there will be no delay in determining where or what the problem is and the severity. You need not sign the form if you wish to remain anonymous.
2. Completed forms should be turned in to your supervisor. If the hazard creates an imminent danger, it is strongly recommended that employee also verbally notify your supervisor immediately so immediate corrective action can be taken.
3. Priority problems will be resolved immediately. Other problems may be scheduled for solution as time and availability of personnel or equipment permit.

JOB SAFETY ANALYSIS (JSA)

Job Safety Analysis (JSA) is the process of reviewing each step of a process or operation to identify potential hazards and implement controls for the hazards to prevent incidents and accidents.

Benefits of a Job Safety Analysis (JSA)

The benefits of a JSA are many:

- Many accident-causing hazards are eliminated.
- It allows for safety refresher instructions on infrequent/periodic jobs.
- The employee is kept closely involved in safety.

Performing a JSA

Four basic stages in conducting a JSA are:

- selecting the job to be analyzed
- breaking the job down into a sequence of steps
- identifying potential hazards
- determining preventive measures to overcome these hazards

STEP ONE: Select the jobs. Don't make it too broad (e.g., make a desk) nor too narrow (e.g., pushing a button). Most jobs are not composed of a single step. Rather, they are made up of definite steps leading to completion of the job.

STEP TWO: Break the job into successive steps. Describe concisely what is being done. Pick an employee who is experienced. The objective is to study the job and tasks associated, not the individual employee. Record observations on the JSA form using action words (lift, pull, close) and tell what object is receiving the action (lever, cover, arm). Finally, check with employees to be sure that the steps are correct and in the right order.

STEP THREE: Identify the hazards in each step of the process. Can anyone be caught in, on, or by the objects? Can they slip or trip? Is straining possible? Are there environmental hazards? Is layout or placement a problem? Are tools and equipment adequate and in good repair? Will a change in one step create a hazard in another? Once the hazards are identified, check again with employees familiar with the job.

STEP FOUR: Eliminate the hazards. Find effective ways to eliminate the hazards and prevent the potential accidents.

Review and Updates

JSAs will be reviewed whenever a high potential incident or serious loss occurs, and whenever significant changes to materials, process, equipment or personnel occur.

SAFETY EDUCATION & TRAINING

Training Areas

Each new employee will be trained in the following areas:

1. Hazards associated with roofing work in general, including falls, burns, and back injury.
2. Safety practices to be followed on the job, including the use of fall protection and personal protective equipment (PPE).
3. Information relating to the hazard communication standard, including the safe use of chemicals.
4. RF Radiation safety and health concerns as well as job-site hazard analysis and controls.
5. The nature of fatigue, its warning sides, possible effects & control measures.

Each new employee will be given the opportunity to ask questions about and processes he or she does not understand or any other safety concerns.

All Employees

Each employee will receive training when:

1. Weekly tool box meetings are held
2. There is a process change or an unusual hazard exists
3. Hazardous chemicals are present on the project.

Training Methods

Our training goal is to ensure that employees understand the safety hazards and their prevention methods. This will be accomplished through one or more of the following:

1. Training materials, such as tool box talks, pocket guides, and NRCA produced video tapes or other audiovisual materials.
2. Training sessions provided by the Safety Director or Safety Consultant
3. Demonstrations given by product suppliers on the proper use of equipment.
4. Training sessions conducted by companies that provide specialty training
5. Supplementary methods such as alerts, memos, posters, and check stuffers.

SITE SAFETY INSPECTIONS

General

Our safety inspection program objectives are to:

- To locate unsafe conditions and equipment
- To focus on unsafe work practices or behavior trends
- To reveal the need for new safeguards
- To involve more employees in the safety program

Job Site Inspections

Frequent and regular inspections of the project and individual work areas are an important tool in identifying and eliminating /controlling potential hazards. The following inspection requirements shall be implemented on projects:

1. Grove Roofing Services shall perform frequent and regular inspections of the project site to assess compliance with all site-specific environmental, health and safety requirements. Any hazards identified shall be immediately corrected by Grove Roofing Services and/or the applicable contractor(s).
2. Grove Roofing Services foreman shall conduct daily tours of their work area(s) to assess compliance with all site-specific environmental, health and safety requirements and with OSHA standards. Any hazards identified shall be immediately corrected. No outstanding non-compliance issues shall be allowed to carry over into the subsequent inspections and shall be corrected as soon as feasible.

Accident, Incident, and Near Miss Reporting

Policy

Grove Roofing Services requires all employees to immediately report to their supervisor all injury, property damage, fire, and environmental incidents. Grove Roofing Services requires employees to report all near misses with the potential for serious injury or property damage. Supervisors will report the accident/incident promptly to management and the project CM/GC where required. Each incident will be analyzed to determine causes and the analysis will be used to reduce or eliminate the risk of further incident.

Definitions

An **Accident** is defined as an unplanned event that causes harm to people or damage to property. Accidents are categorized as one of the following:

- An **Incident** is defined as property/fire damage or environmental damage but with no injury to workers.
- A **Near Miss** is a situation in which no injury or damage occurred but might have if conditions had been slightly different.
- **First Aid** refers only to injuries that can be treated on the job, the injury produces no restrictions, job transfer, and produces no days away from work.
- **Medical Treatment** (for the purpose of this policy) refers to any injury/illness where medical treatment by a doctor or licensed health care provider is given.
- **Restricted Duty Injury** (for the purpose of this policy) refers to any injury/illness which requires the injured employee to have job restriction or job transfer.
- **Lost Time Injury** refers to any injury that prevents a worker from coming to work on the day following the day of the injury.
- **Critical Injury** is defined as an injury of a serious nature that:
 - a) Places life in jeopardy;
 - b) Produces unconsciousness;
 - c) Results in substantial loss of blood;
 - d) Involves the fracture of a leg or arm but not a finger or toe;
 - e) Involves the amputation of a leg, arm, hand or foot but not a finger or toe;
 - f) Consists of burns to a major portion of the body; or
 - g) Causes the loss of sight to an eye.
- **Occupational Illness** is defined as a condition resulting from a worker's exposure to chemical, biological or physical agents in the workplace to the extent that the health of the worker is impaired.

General Requirements

- All accidents and incidents must be reported. For vehicle accidents please refer to the Grove Roofing Services Motor Vehicle Safety Program as separate procedures and forms apply.
- Notify Grove Roofing Services management immediately if the accident/incident results in regulatory activity.

- Do not speak to media under any circumstance. Refer media inquiries to the Grove Roofing Services President. Refer to the Grove Roofing Services Crisis Management Plan.
- Hospitalization for treatment of 1 or more employees requires contacting OSHA. OSHA must be notified within eight (8) hours of occurrence.
- Any work related employee fatality must be immediately reported to management. OSHA must be notified within eight (8) hours of occurrence.

Responsibilities

Employee

1. Employees are required to report all accidents/incidents to their supervisor immediately.
2. Employees are required to participate in accident/incident investigations. This includes filling out required forms and statements.

Supervisor / Foreman

1. The Supervisor/Foreman must call MedCor at 800-775-5866 for all reported employee injuries. If the injury is severe, call 911 first and then call MedCor once emergency aid has been provided.
2. The Supervisor/Foreman must investigate all accidents and incidents that involve workers. This includes completing the Accident Investigation Report, taking statements from witnesses and collecting any other pertinent information and ensuring the injured worker has received the necessary medical assistance.
3. If a worker sustaining a First Aid injury later seeks medical aid, the worker or supervisor must notify management at the immediately.
4. The supervisor is responsible for ensuring that all accident reports are transmitted to the Grove Roofing Services Office, to the attention of the Controller.
5. The Project Manager or Superintendent is responsible to report the accident to the project construction manager, general contractor, owner and/or prime contractor. This notification should be made as soon as possible. If specific site reporting procedures apply, those procedures should be implemented.

Controller/ Management

1. The Controller will complete required NYS C-2 and other applicable worker compensation forms.
2. The Controller will make notifications to the TPA/insurance carrier.
3. The Controller, along with management, will review submitted accident/incident reports.

Accident/Incident Investigation Procedure

1. The employee reports a work related accident/incident. All accidents/incidents, regardless of severity, must be reported immediately to the supervisor.
2. If employee injury accident/incident, administer medical attention as required:
 - a. If injury is first aid in nature, provide first aid services
 - b. If injury is beyond first aid, but is not severe and nature, call MedCor at 800-775-5866.**

- c. If injury requires emergency treatment, - Call emergency services @ 911 or site specific number, then call MedCor at 800-775-5866.**
3. If property/fire damage incident complete the Supervisors Accident/Incident Investigation Report sections applicable to the incident.
4. If environmental incident complete the sections Supervisors Accident/Incident Investigation Report applicable to the incident.
5. Near misses are reported on the Employee's Report of Injury/Near Miss Form. This is the only form required to be completed for Near Misses reported.
6. If employee injury incident that requires a doctor visit, ensure the employee understands they should obtain a doctors slip with detailed information. If restrictions/limitations are assigned they should be written as detailed as possible.
7. Secure the accident scene.
8. Notify Grove Roofing Services management immediately. If injury is severe implement the Grove Roofing Services Crisis Management Plan or additional technical assistance is needed, notify our safety consultant immediately.
9. The Project Manager or Superintendent will report the accident to the project construction manager, general contractor, owner and/or prime contractor. (as applicable)
10. Begin the accident investigation.
 - a. Identify and isolate witnesses
 - i. Prevent the witnesses from "sharing" their version of events with each other until after all statements have been taken.
 - b. Take photographs
 - i. For digital cameras, ensure the date stamp feature is enabled on the camera.
 - ii. Use coins, measuring tape, etc. to show scale where appropriate
 - c. Write a description of the accident scene
 - i. Note items such as date, time, weather, environmental conditions, and general/specific location.
 - d. Collect facts determining the who, what, where, when and how
 - i. Take and record measurements, record data such as equipment model numbers, serial numbers, etc.
 - ii. Photograph these items when possible
 - e. Secure and protect any involved equipment such ladders, fall protection, PPE, MSDS, etc.
 - i. Review the clues and collect further facts on condition, defects, involvement in the accident.
 - ii. Photograph clues.
 - f. Obtain witness statements

- i. Have the witnesses, in writing; describe events in their own words on the Grove Roofing Services Witness Statement form. The witness should focus on facts and only what they witnessed. Have the witness sign and date the form.
 - ii. If writing the statement for the witness, review the statement word by word. Any changes should be initialed by the witness. Have the witness sign and date the form. If the witness refuses to sign, the interviewer should print the statement “Witness refused to sign” on the witness signature line.
11. The Supervisor/Foreman has the injured employee complete the Grove Roofing Services Employee’s Report of Injury/Near Miss form.
12. The Supervisor/Foreman begins completion of the Grove Roofing Services Supervisor’s Accident/Incident Investigation Report. Determine the cause of the accident. Ensure all applicable areas of the form are completed. Complete any additional forms required by the Construction Manager, General Contractor, Owner, and or Prime Contractor (as applicable)
13. Submit copies of all forms to Grove Roofing Services Controller no later than 24 hours after the accident occurred. Near miss forms must also be submitted. Note any recommendations or corrective actions on the near miss form.
14. The Project Manager or Superintendent will submit required forms to the Construction Manager, General Contractor, Owner, and or Prime Contractor (as applicable) per their requirements. This is typically within 24 hours.
15. Implement any corrective actions and or follow up items. Note: this step may supersede previous steps.

DEFINITIONS & RESPONSIBILITIES

Authorized/Designated Person

An authorized person as defined by OSHA “means a person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the jobsite.”

Competent Person

A competent person as defined by OSHA “means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.”

Qualified Person

A qualified person as defined by OSHA “means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.”

Managers, Superintendents, Foreman

1. Manage, implement, and improve the safety program.
2. Review and address job specifications and contractual requirements as they apply to safety.
3. Work to pre-plan job operations and activities to ensure working in safe areas. This may include performing/reviewing job safety analysis for critical work activities before those activities begin.
4. Work with our safety consultant to identify and correct known or potential hazards.
5. Discuss safety at regular job meetings with subcontractors, general contractors, construction managers, and employees.
6. Enforce Grove Roofing Services safety policies, OSHA requirements, and project site safety rules/requirements.
7. Immediately report and investigate accidents, incidents, and near misses. Support and assist in the implementation of corrective actions. Monitor corrective actions for completion.
8. Participate in safety inspections and audits. Support and assist in the implementation of inspection/audit corrective actions. Monitor corrective actions for completion.
9. Ensure site employees carry out their safety responsibilities on a daily basis.
10. Motivate employees to continuously improve safety.

Employees

1. Regularly participate in company safety meetings.
2. Follow rules and regulations pertaining to safety.

3. Attend required safety training.
4. Be proactive by correcting known and/or potential safety hazards.
5. Wear the proper clothing and personal protective equipment (PPE) for the task at hand. Inspect tools and equipment before use. Do not use damaged or unsafe tools/equipment.
6. Do not place yourself or a fellow employee in an unsafe condition.
7. Report injuries, illness, unsafe acts, near misses, and conditions immediately to your supervisor/foreman, no matter how minor they may seem.

Safety Director

1. Manage, implement, and improve the safety program.
2. Motivate employees to improve safety on their jobsite.
3. Perform safety meetings and training as required.
4. Participate on safety teams and safety committee.
5. Conduct jobsite inspections on a regular basis.
6. Report on and assist in correcting unsafe conditions and unsafe acts.
7. Serve as a safety resource.
8. Support the managers and employees in safety-related matters or concerns.
9. Assist pre-construction in review for safety items.
10. Assist managers and/or perform accident investigations, incident investigations, and near miss investigations.

PRE-PLANNING – MAKING IT SAFE

General

Safety should always be on your mind! Many hazardous conditions can be eliminated when we set up safely and if you **think** safety.

Each employee should participate in safety pre-planning in the performance of their job including when necessary; the use of job safety analysis (JSA), pre task planning, fall protection plans, hot work permits, lock out tag out coordination, chemical inventory forms, vehicle & equipment inspections, etc. This planning should include protection of other contractors and the public.

Check the Deck

It is important that you inspect the roof deck(s) and other surfaces you will be working on/from. Be sure that a new desk is properly secured.

1. Before beginning tear off operations, check the underside of the deck for dangerous areas.
2. Check the underside of the deck for electrical wires, equipment, and asbestos.
3. Frost, snow, and rain can make a deck very slippery. Implement controls and **proceed with caution!**
4. Holes (anything larger than a 2X2-inch gap) must be covered and marked, guardrails must be erected around it, or workers must wear personal fall arrest equipment.
5. A cover must be secured and able to withstand twice the intended load of workers and equipment.
6. Do not remove a cover without the okay of your foreman. Immediately re-cover the hole when the roofing or flashing work is complete.
7. Avoid point loading of roof decks.
8. Always properly secure any loads stored on the roof deck.

Public Protection

1. Locate equipment where fumes and dust will not be drawn into fresh air intakes and windows of nearby buildings.
2. Implement controls as needed to protect and maintain public use of sidewalks, entrances to buildings, lobbies, corridors, aisles, doors, exits and vehicular roadways.
3. Appropriate sidewalk sheds/canopies, catch platforms, fences, guardrails, barricades, shields and adequate visibility as required by laws and regulations of governing authorities.
4. Warnings, signs and instructional safety signs shall be conspicuously posted where necessary.
5. Signalperson may be required to control the moving of motorized equipment in areas where the public might be endangered.
6. Operations performed on public roads, will follow applicable MUTCD (Manual on Uniform Traffic Control Devices) and/or specific municipal/owner regulations.

Authorized/Designated Person

An authorized person as defined by OSHA “means a person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the jobsite.”

Competent Person

A competent person as defined by OSHA “means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.”

Qualified Person

A qualified person as defined by OSHA “means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.”

Managers, Superintendents, Foreman

1. Manage, implement, and improve the safety program.
2. Review and address job specifications and contractual requirements as they apply to safety.
3. Work to pre-plan job operations and activities to ensure working in safe areas. This may include performing/reviewing job safety analysis for critical work activities before those activities begin.
4. Work with our safety consultant to identify and correct known or potential hazards.
5. Discuss safety at regular job meetings with subcontractors, general contractors, construction managers, and employees.
6. Enforce Grove Roofing Services safety policies, OSHA requirements, and project site safety rules/requirements.
7. Immediately report and investigate accidents, incidents, and near misses. Support and assist in the implementation of corrective actions. Monitor corrective actions for completion.
8. Participate in safety inspections and audits. Support and assist in the implementation of inspection/audit corrective actions. Monitor corrective actions for completion.
9. Ensure site employees carry out their safety responsibilities on a daily basis.
10. Motivate employees to continuously improve safety.

Employees

1. Regularly participate in company safety meetings.
2. Follow rules and regulations pertaining to safety.
3. Attend required safety training.

4. Be proactive by correcting known and/or potential safety hazards.
5. Wear the proper clothing and personal protective equipment (PPE) for the task at hand. Inspect tools and equipment before use. Do not use damaged or unsafe tools/equipment.
6. Do not place yourself or a fellow employee in an unsafe condition.
7. Report injuries, illness, unsafe acts, near misses, and conditions immediately to your supervisor/foreman, no matter how minor they may seem.

Safety Director

1. Manage, implement, and improve the safety program.
 2. Motivate employees to improve safety on their jobsite.
 3. Perform safety meetings and training as required.
 4. Participate on safety teams and safety committee.
 5. Conduct jobsite inspections on a regular basis.
 6. Report on and assist in correcting unsafe conditions and unsafe acts.
 7. Serve as a safety resource.
 8. Support the managers and employees in safety-related matters or concerns.
 9. Assist pre-construction in review for safety items.
 10. Assist managers and/or perform accident investigations, incident investigations, and near miss investigations.
-
1. Work performed at hospitals/healthcare facilities (both interior and exterior) may be required to follow Interim Life Safety Plan (ISLM) and Infection Control Risk Assessment (ICRA) requirements.
 2. Work should not be performed until these requirements are reviewed, confirmed, and when required implemented.

HOUSEKEEPING

One of the easiest ways to prevent accidents is to maintain a neat and orderly job site. Professional roofing crews take pride in maintaining a clean work site.

1. Good housekeeping prevents accidents and increases productivity.
2. Materials must be neatly stacked and placed away from foot traffic.
3. Combustible scrap and debris should be removed at regular intervals during the course of construction.
4. Tools and extension cords should not be a trip hazard.
5. The top and bottom of ladders and stairs should be kept free of debris and stored materials.
6. Materials and equipment should not be stored within 6 feet from the edge of the roof.
7. Where necessary, wheels on rolling equipment should be blocked.
8. All flammable liquids must be stored in an approved safety can.

The kettlemen must give particular attention to the orderliness of the kettle area.

1. Place a large sheet of plywood or cardboard under the kettle.
2. Dispose of wrappers and tins promptly.
3. Keep the materials stacked and organized.
4. Make sure the propane cylinders are tied or chained upright at least 10 feet from the kettle.
5. Clean up any spilled fuel or flammable liquids.
6. Kettle lids should open away from buildings to help keep fumes away from the buildings.

Personal Protective Equipment (PPE)

General Requirements

All Grove employees shall be instructed in the proper use of PPE. Retraining will be conducted when the workplace changes making the earlier training obsolete, the type of PPE changes or when the employee demonstrates lack of use, improper use, or insufficient skill or understanding. PPE training is to be documented and become a certified record of training. Training records shall be maintained in the Grove Roofing office safety files.

Grove will provide its employees with PPE specifically fitted for their use. All PPE must be used and maintained in a sanitary and reliable condition. Defective and damaged equipment shall not be used. Grove does not permit employee-owned PPE to be used on company projects.

Selection of the appropriate PPE is determined via a written hazard assessment which must be signed by a competent company representative.

Eye Protection – Safety Glasses and Goggles

1. Each affected employee shall use appropriate (ANSI Z87.1) eye or face protection when exposed to eye or face hazards from flying particles, molten liquids such as roofing tar, liquid chemicals, acid or caustic liquids, chemical gases or vapors or potentially injurious light radiation. (Consult MSDS for chemical eye protection requirements).
2. Eye and face protectors are designed for particular hazards so be sure to select the type to match the hazard.
3. Replace poorly fitting or damaged safety glasses.
4. Eye protection that provides side protection shall be used at all times. Tinted lenses should not be worn indoors or inside plant areas.
5. Each affected employee who wears prescription lenses shall wear eye protection that incorporates prescription in its design, or shall wear eye protection that can be worn over the prescription lenses without disturbing the proper position of prescription lenses or the protective lenses.
6. Each affected employee shall use filter lenses that have a shade number appropriate for protection from injurious light.
7. Goggles must be worn during roof cutting, spudding, tear off, and roof vacuuming operations.
8. Safety goggles or safety glasses must always be worn when a face-shield is worn.

Head Protection – Hard Hats

1. Employees must wear hard hats when overhead, falling, or flying hazards exist or when danger of electrical shock is present.
2. Inspect hard hats routinely for dents, cracks, or deterioration.
3. If a hard hat has taken a heavy blow or electrical shock, you must replace it even when you detect no visible damage.
4. Maintain hard hats in good condition; do not drill; clean with strong detergents or solvents; paint; or store them in extreme temperatures.

Foot Protection – Work Boots

1. Each affected employee shall wear protective footwear when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where employee's feet are exposed to electrical hazards.
2. No open toe shoes, sandals, and/or sneakers are allowed. A sturdy work boot is required to be worn.

Hand Protection - Gloves

1. Grove Roofing Services selects and requires employees to use appropriate hand protection when employees' hands are exposed to hazards such as those from skin absorption of harmful substances (consult MSDS), severe cuts and lacerations, abrasions, punctures, chemical or thermal burns and harmful temperature extremes.

Hearing Protection – Ear Plugs/Muffs

As part of the hearing conservation program, Grove Roofing Service selects and requires employees to use appropriate hearing protection devices when employees' are exposed to noise hazards at 85dB or higher.

Respiratory Protection – Respirators/Dust Masks

At times an employee may be required to wear a respirator or choose to wear one voluntarily. See the respiratory protection section of this program.

Other Protection

A certain job task may require the use of additional PPE. This PPE may be a requirement of the Job Safety Analysis or other review process. Employees will be instructed on this PPE before use.

Task Specific Protection

Built Up Roofing:

- Long pants with no cuffs that cover the top of the boot.
- A long-sleeved shirt, buttoned at the cuff and within one button of the collar.
- Boots with thick rubber or composite soles.
- Gloves with a snug-fitting cuff.
- Goggles or safety glasses.
- Full face shield when using a kettle or when handling a hot lugger.

Single-Ply Roofing:

- Long pants with no cuffs that cover the top of the boot.
- A long-sleeved shirt, buttoned at the cuff and within one button of the collar.

- Boots with thick rubber or composite soles.
- Gloves with a snug-fitting cuff.
- Goggles or safety glasses.

Shingles

- Long pants with no cuffs that cover the top of the boot.
- Boots with thick rubber or composite soles.
- Gloves with a snug-fitting cuff.
- Goggles or safety glasses.

Spray-Applied Foam:

- Long pants with no cuffs that cover the top of the boot.
- A long-sleeved shirt, buttoned at the cuff and within one button of the collar.
- Boots with thick rubber or composite soles.
- Goggles or safety glasses.
- Gloves with a snug-fitting cuff.

Sheet Metal:

- Long pants with no cuffs that cover the top of the boot.
- Boots with thick rubber or composite soles.
- Gloves with a snug-fitting cuff.
- Goggles or safety glasses.
- A full face shield and filtering lenses for welding.

Modified Bitumen:

- Long pants with no cuffs that cover the top of the boot.
- A long-sleeved shirt, buttoned at the cuff and within one button of the collar.
- Boots with thick rubber or composite soles.
- Cotton or leather gloves with a snug-fitting cuff.
- Goggles or safety glasses.
- A full face shield for kettle use or when handling a hot lugger.

In addition, remember the following:

- Do not wear rings on fingers or any other type of jewelry.
- Do not wear earphones because you will not be alert to verbal warnings or request for help from other workers

RESPIRATORY PROTECTION

On occasion, employees may be exposed to airborne contaminants. The practices and procedures described here constitute the program under which respiratory protection equipment will be used. Appropriate personal respiratory protection equipment will be utilized where effective engineering controls (i.e., ventilation) of respiratory hazards and/or administrative controls are not feasible to prevent exposure to contaminants or while controls are being instituted or during emergencies. Respiratory equipment is provided to all affected employees at no cost.

Any employee who requests to use a respirator when such use is not required may be supplied with a respirator by Grove Roofing or may be permitted to use his or her own if the company determines such respirator use will not create a hazard. Employees using respirators under this paragraph will be provided information in 29 CFR §1910.134, Appendix D, “Information for Employees Using Respirators When Not Required Under the Standard” (found at the end of this program). Prior to such voluntary use, the company will nonetheless implement the medical evaluation provisions under this program for such voluntary use and ensure the employee cleans, maintains and stores the respirator so it does not present a health hazard to the employee. Exception to these requirements for voluntary dust mask use: When an employee wears a dust mask, or filtering face piece, when not required, such use is not subject to the medical evaluation, cleaning, maintenance and storage requirements of this program.

Respirator Selection - General

Respirators shall be selected on a basis of the hazards to which the employee is exposed.

- Employee exposure conditions will be determined by appropriate work area surveillance techniques.
- The respirators selected must provide adequate protection against the particular hazard and must provide a specified protection factor.
- Only NIOSH-approved respirators will be selected and allowed for use.

Several factors can influence respirator selection. These include worker comfort, physical and contaminate conditions at the work site, limitations of different respirators, assigned protection factors, and a workers medical condition.

Respirator Selection - Assigned Protection Factors

The assigned protection factor (APF) of a respirator reflects the level of protection that a properly functioning respirator would be expected to provide to a population of properly fitted and trained users. For example, an APF of 10 for a respirator means that a user could expect to inhale no more than one tenth of the airborne contaminant present.

Respirator Selection - Respirator Types

There are two basic types of respirators, air purifying and air supplying.

Air purifying respirators have filters, cartridges, or canisters that remove contaminants from the air by passing the ambient air through the air-purifying element before it reaches the user. Air

purifying respirators can remove particles, gases and vapors. The contaminate removed depends on the type of respirator and canister / cartridge / filter selected. Air-purifying respirators have limitations the user must be aware of when selecting them. Some air purifying respirators can be powered and are referred to as Powered Air Purifying Respirators or PAPR. These respirators employ a belt mounted pack unit that forces air through the cartridges or canisters through a hose to a face piece or hoods. Powered Air Purifying Respirators have many of the same limitations as non-powered air purifying respirators.

- Air purifying particulate removing respirators – capture particles in the air, such as dusts, mists and fumes. They are negative pressure respirators and cannot be used in oxygen deficient atmospheres or in Immediately Dangerous to Life and Health (IDLH) environments. Filters are replaced when the user finds it difficult to breathe through them or when a change out schedule mandates. The filters must be labeled with a letter N, R, or P and a number representing the efficiency, 95, 99, or 100. For example, in cases that a High Efficiency Particulate Air filter is required only a filter with the efficiency of 100 can be used.
- Air-purifying gas and vapor removing respirators – are normally used when there are only hazardous gases and vapors in the air. They are negative pressure respirators and cannot be used in oxygen deficient atmospheres or in Immediately Dangerous to Life and Health (IDLH) environments. These respirators use chemical filters (called cartridges or canisters) to remove dangerous gases or vapors. These respirators do not protect against airborne particles unless designated as a combination cartridge / canister. (See next) The canisters or cartridges are used to protect against specific gases or vapors. They cannot be used to protect against all contaminants unless specifically designated to do so. The canisters / cartridges only provide protection as long as the filters absorbing capacity is not deleted. The filter is replaced when its end of service life indicator indicates such, breathing becomes labored or “hot”, or as change out schedules dictate.
- Air-purifying combination removing respirators – are normally used in atmospheres that contain hazards of both particulates and gases. They are negative pressure respirators and cannot be used in oxygen deficient atmospheres or in Immediately Dangerous to Life and Health (IDLH) environments. These respirators use both particulate filters and gas / vapor filters. They cannot be used to protect against all contaminants unless specifically designated to do so. The canisters / cartridges only provide protection as long as the filters absorbing capacity is not deleted. The filter is replaced when its end of service life indicator indicates such, breathing becomes labored or “hot”, or as change out schedules dictate.

Air supplied respirators supply clean air directly to the user from a source other than the air surrounding the user. As all respirators air supplying respirators have limitations the user must be aware of when selecting them.

- Air supplied respirators (airline respirator) – makes use of a hose to deliver clean, safe air from a stationary source of compressed air. This type of respirator provides clean air for long periods of time and is lightweight for the user. The hose assembly does limit the mobility and range of the user. These are normally used when there are extended work periods required in atmospheres that are not Immediately Dangerous to Life and Health (IDLH). If used in areas where the potential exists for an IDLH atmosphere an escape bottle must be part of the respirator system.

- Self Contained Breathing Apparatus (SCBA) – consists of wearable clean air supply pack. They do not restrict movement but can be heavy and awkward. There are several types. These respirators are usually used for short duration job tasks or for emergencies in Immediately Dangerous to Life and Health (IDLH) environments. To ensure the quality of the air used to refill the SCBAs meets NFPA Standards, we will require a certificate of quality from the outside vendor responsible for refilling annually.

Respirator Selection - Purchase of Respirators

The safety director shall approve all respirator selections. This includes the respirator and any cartridges, canisters and/or supply air that may apply. Selection will be made according to the guidance of American National Standard Practices for Respiratory Protection and OSHA 29 CFR 1910.134.

Medical Surveillance

Employees will not be assigned to a task requiring the mandatory use of a respirator unless found physically able to do the work while wearing a respirator. This requires clearance by a Grove Roofing Services designated licensed health care professional using the mandatory OSHA medical questioner and evaluation. Medical evaluation prior to fit-testing will be confidential, during normal working hours, convenient, understandable, and the employee given a chance to discuss the results with the physician or other licensed health care professional (PLHCP)

Formal Fit Testing

1. A quantitative or qualitative fit test shall be conducted for each employee who is required to wear a respirator as part of their job. Respirators will not be worn unless a proper fit test has been conducted.
2. The employee shall be fit tested for each type, make, and model of respirator used.
3. This fit testing shall be conducted by a qualified designated individual before the employee's initial assignment to a task that requires the use of a respirator using OSHA approved methods.
4. The fit testing will be repeated annually following the OSHA Mandatory fit test protocol. Fit test(s) must be documented per OSHA requirements.

Note: Fit testing is not required for employees who voluntarily choose to wear a dust mask type (filtering face piece) disposable respirator for non-mandatory use.

Manufacturer's Recommended User Seal Check Procedures

The respirator manufacturer's recommended procedures for performing a user seal check must be performed each time a respirator is donned.

Factors that Effect Proper Respirator Fit

1. A proper seal is important to provide the proper protection. Respirators shall not be worn when conditions prevent a proper seal. Such conditions include facial hair, eyeglasses, and special facial features
2. Facial hair that lies along the sealing area of the respirator, such as beards, sideburns, mustaches, and/or 24 hours of growth are not permitted on employees who are required to wear respirators that rely on a proper face piece-to-face seal. Eyeglasses with temple bars or straps that pass beneath the sealing surface will prevent a good seal and should not be used. Special corrective lens holders are available that can be mounted inside a full-face piece respirator.
3. Special facial features such as scars, deep skin creases, prominent cheekbones, severe acne and lack of teeth or missing dentures can prevent a respirator from sealing properly.
4. Respirator fit testing, when required, will not be conducted if these conditions are present.

Change Out Schedules & End of Service Life Indicators

Change out schedules can depend on many variables. To ensure a safety protection factor for employees an aggressive change out schedule must be followed. Cartridges and canisters that contain an end of service life indicators (ESL) must be changed out when the indicator indicates the canister or cartridge is spent. The following change out schedules are required:

- Disposable Respirator – Filtering Face-piece Type (Dust Mask) – (No ESL) Dispose of at end of shift or when respirator becomes dirty or breathing becomes difficult.
- N95 – Cartridges – (No ESL) When N series cartridges are used in a dirty environment, they must be changed out after one work shift of use or when they become dirty, damaged, or breathing becomes difficult.
- R95 – Cartridges – (No ESL) When R series cartridges are used in an environment in which oil is present, they must be changed after one work shift of use or when they become dirty, damaged, or breathing becomes difficult.
- P100 – Cartridges – (No ESL) When P series cartridges are used in a dirty environment or in high concentrations of a particulate the filter should be changed when breathing becomes difficult due to plugging of the cartridges by retained particulates or after one work week whichever is first. Organic Vapor / P100 – Combination Cartridges – (No ESL) When combination cartridges are used cartridges should be changed when breathing becomes difficult due to plugging of the cartridges by retained particulates or as soon as the wearer can smell or taste the vapor or gas penetrating the cartridge or after one work week whichever is first.

In special circumstances for non-routine tasks the Safety Department may institute specialized change out schedules. Stores stock items shall be changed out as canisters meet shelf life expectancy.

Inspection, Cleaning, Storage, & Maintenance

Inspection of Negative Pressure Respirators - All respirators must be inspected before each use. Respirators that are issued to employees should be inspected monthly. Personal respirators can also be brought to the safety director for inspection if needed. Do not use a respirator that does

not pass pre use inspection. Immediately remove it from service and contact your supervisor. Specific field inspection procedures are as follows:

1. Inspect cartridges and canisters for end of service life or change out.
2. Inspect respirator for cracks.
3. Inspect respirator for tears, pits, decomposition, stiffening, swelling, and distortion of rubber
4. Inspect respirator for distorted or worn adaptors
5. Inspect respirator inhalation valve for stiffening, cracks, corrosion, and cuts
6. Inspect respirator headband for permanent stretching, stiffening, decomposition, frayed materials or cuts
7. Inspect respirator plastic filter / regulator to ensure clips are not damaged and gaskets in place
8. Inspect respirator exhalation cover for damage or distortion

Cleaning & Storage - Individually assigned respirators shall be cleaned after each days use. Those used by more than one employee must be cleaned and sanitized after each use. Manufacturer's instructions for cleaning and storage should be followed to insure that the respirator continues to function properly. Respirators should be stored in a closed, plastic bag in a clean, dry, cool place away from sunlight or damaging chemicals. Storage of the respirator should be in a manner that does not deform the face piece.

Maintenance & Repair - Only original manufacturers' parts will be used for repairs to respirators. An inventory of equipment is always on hand, maintained, and documented to meet the needs/demands of the employees and company. All respirators that need repaired must be immediately tagged out of service and replaced.

Voluntary Use of Disposable Filtering Face-piece Respirators (Dust Masks)

As a convenience to our employees, we supply our projects with NIOSH approved disposable respirators for nuisance dusts/mist/fumes. Employees must use the disposable respirators supplied by the Grove Roofing Services. Employees may elect to voluntarily wear disposable respirators as a matter of comfort.

Each employee that elects to wear this type of respirator will be initially trained in the proper methods of wearing, fitting and maintaining / disposal of the respirators. The employees will also be informed as to the limitations of this type of respirator and any issues that may affect the fit of the respirator, such as facial hair and glasses. Each employee will verify that they have no physical limitations that would prevent them from wearing a disposable mask. Each employee must review and sign the Grove Roofing Services Respirator Voluntary Use Form. Signing of this form will indicate training completion.

Training

1. No employee shall be assigned to a task requiring the use of a respirator unless the employee has received proper training.

2. The training is to be repeated annually (refresher) through classroom and hands on competency for all employees who wear a respirator, and shall include:
 - a. The nature of the respiratory hazards and the effects of improper use of respirators
 - b. The intended use, capabilities, and limitations of different types of respirators
 - c. The proper methods of donning, wearing, and doffing the respirator. This will include instruction to check for proper fit in the field.
 - d. A review of the current regulatory requirements and company policy.
 - e. Proper cleaning, inspection, maintenance, and storage procedures.
 - f. Recognition and handling of emergencies.

Responsibilities

Program Manager (Safety Director)

1. The administration, preparation and maintenance of this program. Review and revise the program every 12 months. All aspects of the program shall be reviewed.
1. Ensure surveillance of work area conditions is scheduled as required and documented.
2. Selection of respirators.
3. Coordinate and maintain relationship with licensed health care provider.
4. Coordinate initial fit test for employees on first assignment to a task that requires a respirator.
5. Coordinate annual fit testing.
6. Develop recordkeeping system for medical surveillance, training and fit testing, exposure monitoring, and other necessary information.
7. Coordinate required authorized user training.

Supervision

1. Be knowledgeable of the respiratory hazards that exist in their areas of responsibility and the types of respirators that have been selected for use by employees exposed to the hazards.
2. Arrange for employees to obtain medical clearance and fit testing as needed.
3. Ensure that employees are properly using the selected respirators when exposed to the hazard.
4. Overseeing the cleaning, inspection, and storage of respirators.

Employees

1. Use selected respirators in accordance with instructions and training.
2. Clean, disinfect, inspect and properly store assigned respirators.
3. Report problems of respirator malfunction to supervision and safety director.
4. Have an awareness of the respiratory protection requirements for their work areas.
5. Leave the work area to wash, change cartridges, or if they detect break-through or resistance

HEARING CONSERVATION

Noise Exposure Monitoring

In order to ensure that noise levels are 85 dBA or less, a noise survey will be performed. This survey will be performed by an outside agency using a sound level meter or a combination of noise logging dosimeter / sound level meter. Personal dosimetry may also be done if levels warrant.

After each survey is completed, an analysis of the levels, area, and PPE will be done to ensure that hearing protection devices have a high enough NRR to bring employee exposure levels to or below 85 dBA. Signs shall be posted where noise levels exceed 85 dBA. Hearing protectors are available to all Grove Roofing Services employees exposed to an 8-hr. time-weighted average of 85 decibels at no cost to the employee

Training

Employees will be provided with training on an annual basis, and shall be updated to be consistent with changes in the PPE and work processes.

Engineering Controls

Engineering controls whenever possible will be considered to reduce noise exposures. Engineering controls can come in many forms including noise reflecting, noise absorbing, and noise reducing devices and controls. Proper maintenance and balancing of equipment and machine also reduce noise levels.

PPE / Hearing Protection Devices

Hearing protection is available before entering hearing required areas. Hearing protection is selected on its noise reduction rating (NRR). All employees shall ensure that hearing protectors are worn properly. Note: Ear Muffs can be worn in combination with foam plugs to increase the NRR.

Audiometric Testing / Evaluation

Audiometric testing will be performed for regular facility employees that work in areas that have noise levels above 85 dBA. Test shall be performed as follows:

1. New employees - Baseline within 6 months of hire
2. Employees exposed to noise levels above 85 dBA – Re-Test annually
3. Employees demonstrating a threshold shift – Within 30 days of original test
4. Prior to an audiogram at least 14 hours without exposure to workplace noise must be observed.

The site uses an outside medical service to conduct audiometric tests. Certification of calibration for vendor services is maintained in the safety files.

Any employee that sustains a threshold shift as defined by OSHA will be notified in writing of the shift within 21 days. When a standard threshold shift occurs hearing protection shall be re-evaluated and/or refitted and if necessary a medical evaluation may be required. All appropriate confirmed shifts will be recorded on the OSHA 300 log.

Recordkeeping

All records regarding an employee's audiometric tests will be retained for the duration of a person's employment, plus 30 years.

WEATHER HAZARDS

During outdoor work, such as roofing, weather is always a concern. If severe weather strikes, know what to do to protect yourself, your coworkers, equipment, and materials. Watch for changing weather. If possible, listen to weather forecasts on the radio; this can provide you with advance warning of severe wind or rain. Most importantly, listen to your supervisor. If he or she tells you to come off the roof, don't wait; make your way to shelter immediately.

Your first responsibility is to ensure the safety of yourself and your fellow employees. However, if possible, try to prevent property damage to equipment, materials, and the building itself. This may require placing a tarp over equipment or exposed areas of the roof before the storm hits. Taking the time to prevent water or wind damage can save thousands of dollars in property losses.

Rain

1. Wear shoes that won't slip in wet weather.
2. Wear appropriate rain gear that will keep you dry.
3. Seek shelter immediately if you encounter lightening, high winds, hail, or heavy rain.
4. If possible, cover any materials, tools or equipment with plastic sheeting, tarps or other waterproof material to prevent water damage. Have enough to cover any exposed areas of the roof to prevent water damage to the roof or the interior of the building.
5. Make sure any roof drains are clear of debris and unplugged. Good housekeeping will help roof drains remain clear of debris.

Wind

Wind can be the most dangerous element you will face in roofing. It is important that you understand the hazards and know how to avoid injury.

- If possible, secure any materials on the ground and those that could be blown off the roof.
- If your supervisor warns you to leave the roof, do so immediately; don't wait to finish another duty.
- Watch for severe weather approaching.
- Leave the roof if excessive winds pick up. Seek shelter immediately.
- Remember, the most important wind damage issues are:
 - Lightweight insulation storage
 - Partially completed shingle piles that may or may not be completely fastened

Snow & Ice

- Inspect the roof for snow and ice conditions before work begins.
- Accumulation of snow, wet snow, and ice on a roof can affect the roofs structural capacity. Large amounts of snow, wet snow, ice, or large snow imbalances (drifting) on the roof should be reported to your supervisor. Please pay attention to the warning signs of roof distress:

- Sagging roof members including steel bar joists, metal decking, wood rafters, wood trusses and plywood sheathing.
- Popping, cracking and creaking sounds.
- Sagging ceiling tiles and/or sagging sprinkler lines and sprinkler heads.
- Doors and/or windows that can no longer be opened or closed.
- If you notice one or more of the warning signs listed above, you need to evacuate the building immediately.
- When shoveling or removing snow from a roof, take care not to create an overloading condition. If the snow can be immediately removed from the roof, a determination of how much snow can be “piled” into one location should be made and communicated.
- When removing snow and ice from a roof, the ground level area(s) along the exterior edge of the roof must be barricaded.
- A cubic foot of ice weighs approximately 57 pounds. Special care and planning should be considered when removing large ice cycles and ice accumulations.
- After a fresh snow, white and flat roofs that lack parapets can become “endless” when surrounded by unplowed parking lots or flat landscapes. Sun glare can add to this issue. When applicable the roof edge should be marked.
- Wear slip resistant boots that won’t slip in wet or snowy weather.
- Wear appropriate snow gear that will keep you dry and warm.

HEAT STRESS

When the human body is unable to maintain a normal temperature, heat illnesses can occur and may result in death.

Heat Stroke

Heat stroke occurs when the body's temperature regulating system fails and body temperature rises to critical levels (greater than 104°F). This is a medical emergency that may result in death. The signs of heat stroke are confusion, loss of consciousness, and seizures. Workers experiencing heat stroke have a very high body temperature and may stop sweating. If a worker shows signs of possible heat stroke, get medical help immediately, and call 911. Until medical help arrives, move the worker to a shady, cool area and remove as much clothing as possible. Wet the worker with cool water and circulate the air to speed cooling. Place cold wet cloths, wet towels or ice all over the body or soak the worker's clothing with cold water.

Heat Exhaustion

The signs and symptoms of heat exhaustion are headache, nausea, dizziness, weakness, irritability, confusion, thirst, heavy sweating and a body temperature greater than 100.4°F. Workers with heat exhaustion should be removed from the hot area and given liquids to drink.

Cool the worker with cold compresses to the head, neck, and face or have the worker wash his or her head, face and neck with cold water. Encourage frequent sips of cool water. Workers with signs or symptoms of heat exhaustion should be taken to a clinic or emergency room for medical evaluation and treatment. Make sure that someone stays with the worker until help arrives. If symptoms worsen, call 911 and get help immediately.

Heat Cramps

Heat Cramps are muscle pains usually caused by the loss of body salts and fluid during sweating. Workers with heat cramps should replace fluid loss by drinking water and/or carbohydrate-electrolyte replacement liquids (e.g., sports drinks) every 15 to 20 minutes.

Worker Guidance

Awareness of heat illness symptoms can save your like or the life of a co-worker. The following provides valuable information concerning heat-related illnesses and preventative measures.

- If you are coming back to work from an illness or an extended break or you are just starting a job working in the heat, it is important to be aware that you are more vulnerable to heat stress until your body has time to adjust. Let your employer know you are not used to the heat. It takes about 5-7 days for your body to adjust.
- Drinking plenty of water frequently is vital for workers exposed to the heat. An individual may produce as much as 2 to 3 gallons of sweat per day. In order to replenish that fluid, you should drink 3 to 4 cups of water every hour starting at the beginning of your shift.

- Taking your breaks in a cool shaded area and allowing time for recovery from the heat during the day are effective ways to avoid a heat-related illness.
- Avoid or limit the use of alcohol and caffeine during periods of extreme heat. Both dehydrate the body.
- If you or a co-worker start to feel symptoms such as nausea, dizziness, weakness or unusual fatigue, let your supervisor know and rest in a cool shaded area. If symptoms persist or worsen seek immediate medical attention.
- Whenever possible, wear clothing that provides protection from the sun but allows airflow to the body. Protect your head and shade your eyes if working outdoors.
- When working in the heat pay extra attention to your co-workers and be sure you know how to call for medical attention.

FALL PROTECTION

General

Fall hazards are a major concern in our industry. Falls occur in two different categories. Falls from the same level and falls from a height. Both can cause severe injury and even death. All employees are required to use the proper fall protection equipment where OSHA safety standards mandate, where conventional methods of fall protection are inadequate/not in place, or where it is deemed necessary,

Responsibilities

The **Competent Person** will ensure that all equipment meets required specifications for the intended application. The competent person will inspect equipment before installation and/or use. The Competent Person will supervise the use, installation, and dismantling of fall protection equipment and systems. This includes equipment already “in place” and provide for use by an owner. The Competent Person will ensure that all personnel required to use fall protection equipment have been trained in the proper use of the equipment.

The Qualified Person will supervise design, installation, and use of horizontal lifeline systems to ensure that they can maintain a safety factor of at least two — twice the impact of a worker free-falling six feet, supervises design, installation, and use of personal fall-restraint anchorages, and supervise design, installation, and use of personal fall-arrest anchorages.

The **Grove Roofing Services Safety Consultant** will perform routine inspections of project sites to monitor fall protection compliance. The Grove Roofing Safety Consultant will work in conjunction with the competent person and where required a qualified person to ensure fall protection is designed and used properly.

Supervisors and foreman will ensure that fall protection systems are used where required. The supervisor and/or foreman will inspect fall protection equipment on a weekly basis as part of their weekly safety inspection.

Employees will use fall protection equipment as instructed. Employees will inspect personal fall arrest equipment each day before use. Employees will not use and immediately take out of service fall protection equipment that does not “pass” inspection. Employees will stop work and report any recognized fall hazards immediately.

Training

Employees will receive new hire and annual training on the recognition and elimination of fall hazards. Employees will also be trained on the use of fall protection. Training will include information on the use of fall protection equipment, inspection, installation, and maintenance, warning line systems, monitoring systems, mechanical equipment use on low sloped roofs, OSHA standards, and company procedures. Training will consist of lecture and hands-on use/demonstrations. Employee retraining will be provided when Grove Roofing has reason to

believe that any affected employee who has already been trained does not have the understanding and skill required to include but not limited to, situations where:

- Changes in the workplace render previous training obsolete; or
- Changes in the types of fall protection systems or equipment to be used render previous training obsolete; or
- Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.

Training Records

- All fall protection training is to be documented and become a certified record of training. Training records shall be maintained in the Grove Roofing office safety files.
- The training record (certification) shall contain the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training.
- When Grove roofing relies on training conducted by another employer, union hall, or completed prior to the effective date of this section, a certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.

Installation & Use of Equipment

Equipment will be installed and used in accordance with OSHA standards and the manufacturer's instructions. The installation and use of equipment will be inspected and approved by a competent person and/or qualified person where applicable. All equipment will be used only for the application for which it was designed.

General Requirements

Per OSHA 29 CFR 1926 Construction Standards:

1. Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.
2. Each employee who is constructing a leading edge 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems. Exception: When the employer can demonstrate that it is infeasible or creates a greater hazard to use these systems, the employer shall develop and implement a fall protection plan which meets the requirements of paragraph (k) of 1926.502.
3. Each employee on a walking/working surface 6 feet or more above a lower level where leading edges are under construction, but who is not engaged in the leading edge work, shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system. If a guardrail system is chosen to provide the fall protection, and a controlled access zone has already been established for leading edge

- work, the control line may be used in lieu of a guardrail along the edge that parallels the leading edge.
4. Each employee in a hoist area shall be protected from falling 6 feet or more to lower levels by guardrail systems or personal fall arrest systems. If guardrail systems, [or chain, gate, or guardrail] or portions thereof, are removed to facilitate the hoisting operation (e.g., during landing of materials), and an employee must lean through the access opening or out over the edge of the access opening (to receive or guide equipment and materials, for example), that employee shall be protected from fall hazards by a personal fall arrest system.
 5. Each employee on walking/working surfaces shall be protected from falling through holes (including skylights) more than 6 feet above lower levels, by personal fall arrest systems, covers, or guardrail systems erected around such holes.
 6. Each employee on a walking/working surface shall be protected from objects falling through holes (including skylights) by covers.
 7. Each employee on ramps, runways, and other walkways shall be protected from falling 6 feet or more to lower levels by guardrail systems.
 8. Each employee at the edge of an excavation 6 feet or more in depth shall be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barrier
 9. Each employee at the edge of a well, pit, shaft, and similar excavation 6 feet or more in depth shall be protected from falling by guardrail systems, fences, barricades, or covers.
 10. Each employee less than 6 feet above dangerous equipment shall be protected from falling into or onto the dangerous equipment by guardrail systems or by equipment guards.
 11. Each employee 6 feet or more above dangerous equipment shall be protected from fall hazards by guardrail systems, personal fall arrest systems, or safety net systems.
 12. Each employee working on, at, above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 6 feet or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches above the walking/working surface, shall be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system.

Floor and Wall Opening Guarding Requirements

1. Every open sided floor, balcony, mezzanine, platform or work surface 6 feet or more above adjacent floor or ground level shall be guarded by a standard guardrail.
2. Every skylight shall be treated as floor hole/opening unless the skylight is unable to sustain the weight of a 200-pound person with a safety factor of four.
3. Every floor hole/opening measuring more than 2 inches in its least dimension in any floor, roof or platform shall be guarded by a cover or a standard guardrail.
4. Every stairway opening, ladder way opening or ladder way platform shall be guarded on all exposed sides by a standard guardrail.
5. Every opening for manholes, pits, hatches, trapdoors, and cutes shall be guarded by a cover or standard guardrail.

6. Every wall opening from which there is a drop of more than 6 feet, and the bottom of the opening is less than 39 inches above the floor shall be guarded by a standard guard rail. Where the bottom of the opening is less than 4 inches above the floor, a toe board is required.
7. Every extension platform outside an open floor or wall opening shall be guarded on all open sides by a standard guardrail.
8. Every ramp or runway 6 feet or more above the floor or ground level shall be guarded on all open sides by a standard guardrail.

Flat & Low Slope Roof Perimeter Requirements

1. Each employee engaged in roofing activities on low-slope roofs (4 in 12 or less slope), with unprotected sides and edges 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or a combination of warning line system and guardrail system, warning line system and safety net system, or warning line system and personal fall arrest system, or warning line system and safety monitoring system. Or, on roofs 50-feet or less in width, the use of a safety monitoring system alone (i.e. without the warning line system) is permitted. This includes commercial and residential roofs.

Steep Roof Perimeter Requirements

1. Guardrail systems with toe boards, safety net systems, or personal fall arrest systems will be provided to employees working on a steep roof (slope greater than 4 in 12) with unprotected sides and edges six (6) feet or more above lower levels. This includes commercial and residential roofs.

Residential Type Roof Requirements

Residential construction is defined by OSHA as construction work that satisfies both of the following elements: the end-use of the structure being built must be as a home, i.e., a dwelling. Two (2) units or less and the structure being built must be constructed using traditional wood frame construction materials and methods. The limited use of structural steel in a predominantly wood-framed home, such as a steel I-beam to help support wood framing, does not disqualify a structure from being considered residential construction.

1. Residential construction OSHA rules generally require that employees working six feet or more above lower levels use guardrails, safety nets, or personal fall arrest systems.
2. Other fall protection measures may be used to the extent allowed under other OSHA provisions of 29 CFR 1926.501(b) addressing specific types of work. For example, 1926.501(b)(10) permits the use of warning lines and safety monitoring systems during the performance of roofing work on low-sloped roofs.
3. OSHA allows the use of an effective fall restraint system in lieu of a personal fall arrest system. To be effective, a fall restraint system must be rigged to prevent a worker from reaching a fall hazard and falling over the edge. A fall restraint system may consist of a full body harness or body belt that is connected to an anchor point at the center of a roof

by a lanyard of a length that will not allow a worker to physically reach the edge of the roof.

4. If the employer can demonstrate that use of conventional fall protection methods is infeasible or creates a greater hazard, it must ensure that a qualified person: Creates a written, site-specific fall protection plan in compliance with 29 CFR 1926.502(k); and documents, in that plan, the reasons why conventional fall protection systems are infeasible or why their use would create a greater hazard. **It almost all cases this exception will not apply to our operations. Only the general superintendent or above can approve the use of a fall plan.**

Hoistway Requirements

1. Guardrail systems or personal fall arrest systems will be used in hoist areas when an employee may fall six (6) feet or more.
2. If guardrail systems must be removed for hoisting, employees are required to use personal fall arrest systems.

Scaffolding Requirements

Fall protection is required to be implemented on scaffold systems at a height of ten (10) feet or more.

Aerial Lift Requirements

Fall protection in the form of a personal fall arrest system (PFAS) is required to be used 100% of the time the basket is occupied at all heights. For specific information refer to the Aerial Lift Safety section of this manual.

Scissor Lift Requirements

Fall protection in the form of a standard railing is required at all times. Gates and mid chains at access points must be secure. A personal fall arrest system (PFAS) is required to be used if employees who “leave” the floor of the scissor lift. Some project locations may specify the use of PFAS in addition to the railing system. In these instances a PFAS system will be used. A scissor lift with integrated anchor points should be used when PFAS use is expected/required.

Fall Protection Systems & Requirements

Falling Object Protection

When employees or subcontractors are exposed to falling objects:

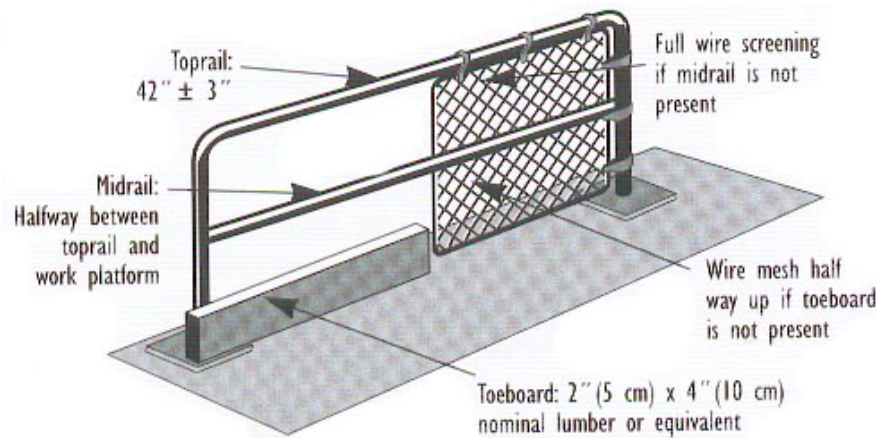
1. Require the use of hard hat protection in the work area and
2. Erect toe-boards, screens, or debris netting systems to prevent objects from falling from higher levels and/or
3. Erect a canopy structure to protect workers / public below and/or
4. Barricade the area to which objects could fall, prohibit employees and public from entering the barricaded area, and

5. Store objects no more than 4 feet from a roof or other edge so that those objects would not go over the edge if they were accidentally displaced.

Guardrail Systems

A standard guardrail shall consist of a top rail approximately 42 inches high, intermediate rail halfway between the floor and top rail, toe board, and posts.

1. Parapets must be at least 39 inches high before guardrails are not required. A 21-inch parapet can substitute as a mid-rail and a 4-inch parapet can substitute as a toe-board.
2. For wood railings, the posts shall be of at least 2 inch by 4-inch stock spaced not to exceed 8 feet; the top rail shall be of at least 2 inch by 4-inch stock; the intermediate rail shall be of at least 1-inch stock.
3. A standard toe board shall be 4 inches minimum height, and shall be securely fastened in place with not more than 1/4-inch clearance above floor level. It may be of any substantial material, either solid or with openings not more than over 1 inch in greatest dimension.
4. For pipe railings, posts, top and intermediate railings shall be at least 1 1/4 inches in diameter with posts spaced not more than 8 feet on center.
5. For structural steel railings, posts, top and intermediate railings shall be of 2 inch by 2 inch by 3/8 inch angles or other metal shapes of equivalent bending strength, with posts spaced not more than 8 feet on center.
6. For wire rope cable railing, top and intermediate railings shall be of 1/2-inch cable or equivalent. Posts are not required providing that both rails do not sag more than 3 inches between attachment points and are capable of withstanding a load of 200 pounds applied in any direction at any point on the rails, with a minimum of deflection.
7. If wire rope is used, it must be flagged every 6 feet.
8. A stair railing and handrail shall be constructed similar to a guardrail but the vertical height shall be not more than 34 inches or less than 30 inches from the top of the riser.
9. The anchoring of posts, framing, and attachments for members of railings of all types shall be of such construction that the completed structures shall be capable of withstanding a load of 200 pounds applied in any direction at any point on the top rail, with a minimum of deflection.
10. The use of fiber or synthetic rope for guardrails is prohibited.
11. Steel or plastic banding cannot be used for top rails or midrails



Hole Cover Specifications

Hole covers prevent workers from falling through skylights or temporary openings and holes in roofs and other walking/working surfaces. Skylights are not considered covers unless they meet this strength requirement.

Hole Covers must:

1. Support at least twice the maximum expected weight of workers, equipment, and materials. Be secured so they won't be displaced accidentally
2. Have full-edge bearing on all four sides
3. Be painted with a distinctive color or marked with the word HOLE or COVER



Warning Line Systems

A warning-line system for roofing work consists of ropes, wires, or chains, and supporting stanchions that mark off the area where roofing work can be done without guardrails, personal fall-arrest systems, restraint systems, or safety nets. Warning-line systems can only be used for roofing work on roofs that have slopes of 4 in 12 or less (low slope roof). The purpose of the line is to warn roofers that they are near an unprotected edge.

The warning line must be at least six feet from an unprotected edge and meet the following criteria:

1. The warning line system must be erected on all open sides of the work area.
2. Employees are not allowed to enter the area between the warning line and the roof edge unless performing work in that area.
3. Access areas that are not in use should be blocked off with a rope, chain, wire, or other barricade.
4. Employees working outside of the warning line must be protected with a fall arrest system or a safety monitoring system.
5. Do not store material or use mechanical equipment outside the warning line.
6. The warning line must be flagged at least every six feet with high-visibility material.
7. The warning line must be rigged so that the line is 34 to 39 inches from the walking/working surface.
8. The warning line must have a minimum tensile strength of 500 pounds. Don't use plastic caution tape for a warning line.
9. The warning line must be attached to each stanchion so that tension on one section of the line will not cause an adjacent stanchion to tip over. Stanchions must be able to support a force of at least 16 pounds applied horizontally in the direction of the roof edge without tipping over.
10. When mechanical equipment is not being used, the warning line must be erected at least 6 feet from the roof edge. (Fig. 1 below)

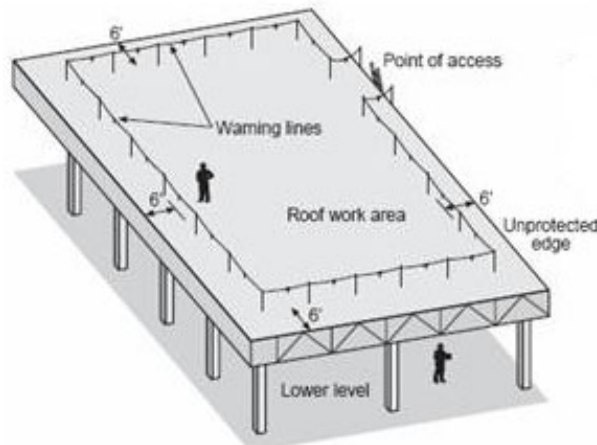


Fig.1

11. If mechanical equipment is being used, the warning line must be erected at least 6 feet from the roof edge parallel to the direction of travel and at least 10 feet from the roof edge perpendicular to the direction of travel. (Fig. 2 below)

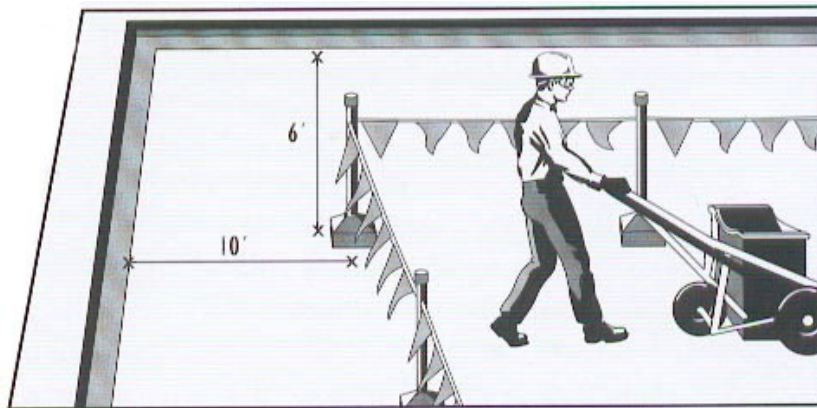


Fig. 2

Safety Monitoring System

The safety monitoring system (SMS) is a fall protection system where a competent person monitors workers and warns them when they are working in an unsafe manner or when they appear to be unaware of fall hazards. Safety monitoring can be used only to protect those who do roofing work on roofs that have slopes no greater than 4 to 12 (low slope roofs).

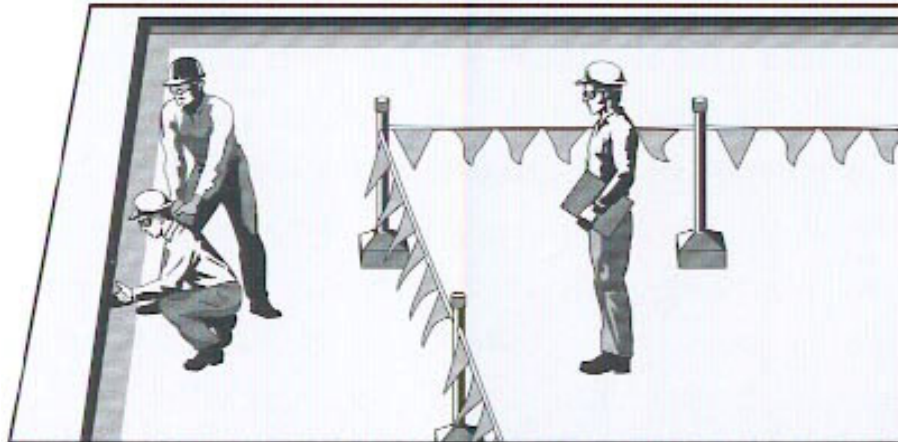
Only those who are doing roofing work are permitted in the area controlled by the safety monitor.

This system can be used as an exclusive fall protection system on low slope roofs 50 feet or less in width. It can also be used in conjunction with a warning line system when crew members are working outside the warning line. Mechanical equipment cannot be used or stored outside the warning line when using the SMS.

The safety monitor must:

1. Be a competent person able to recognize potential fall hazards.
2. Warn employees of fall hazards or unsafe work practices.
3. Be close enough to orally communicate with employees.
4. Be on the same work surface and within sight of the employees.
5. Not have other duties that distract him or her from properly monitoring the employees.

(Please note that certain states, such as California and Washington, specifically prohibit any other duties for the safety monitor.)



Slide Guards Systems

A slide-guard system prevents workers from sliding down a sloped roof.

Slide guards **CANNOT** be used as a primary and only means of fall protection unless specified in a written fall protection plan compliant with 29 CFR 1926.502(k).

Slide guards can be used for fall protection in addition to guardrails, safety nets, warning lines, and personal fall arrest protection.

Requirements when using slide guards in addition to other required fall protection.

1. Roofing slide guards must consist of 2-inch by 6-inch nominal planks or larger.
2. On residential type construction roofs with a slope of 6-in-12 (50%) or less, roofing eave slide guards should be installed after the first three courses of shingles are installed. Install the slide guards continuously along the eave at approximately a 90-degree angle to the roof.
3. On residential type construction roofs with slopes greater than 6-in-12 (50%) and up to and including 8-in-12 (67%), eave slide guards as mentioned above are required, and additional slide guards must be installed above the eave guards area at intervals of not more than 8 feet as you ascend the roof. These slide guards may be more level if desired.
4. Remember to inspect the roof surface for slipping hazards.
5. Once the roof is installed to the ridge, climb down to a lower plank and remove the slide guards at the higher level.

Personal Fall Arrest Systems

Any employee exposed to fall hazards of 6 feet or more who is not protected by a guardrail, warning line system, monitor, or other acceptable means, must use a personal fall arrest system, restraint or positioning system.

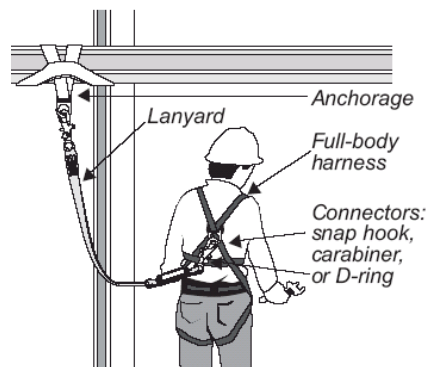
1. A personal fall-arrest system consists of an anchorage, connectors, and a full-body harness that work together to stop a fall and to minimize the arrest force. Other parts of the system may include a lanyard, a deceleration device, and a lifeline. The personal fall-

arrest system is effective only if you know how all of the components work together to stop a fall.

2. Fall protection equipment must be inspected each time and employee puts it on to ensure the equipment is not flawed, worn out, or in any other condition which could diminish equipment effectiveness -- if fall arrest equipment is damaged, it must be immediately removed from service.

Safe practices for personal fall-arrest systems

1. Inspect your fall arrest equipment before each use.
2. Never use fall arrest equipment after it has been subjected to a fall.
3. Don't tie knots in rope lanyards and lifelines; knots can reduce strength by 50 percent.
4. Don't tie lifelines or lanyards directly to I-beams; the cutting action of beam edges can reduce the rope's strength by 70 percent. (unless the lanyard is designed for this practice)
5. Remember, horizontal lifelines must be designed, installed, and used under the supervision of a qualified person.
6. Think about the potential for a swing fall whenever you connect a lifeline to a personal fall-arrest system.
7. Remember, a shock-absorbing lanyard will elongate before arresting a fall.
8. Remember to calculate your fall distance. 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).



Typical Personal Fall Arrest System

Anchorage

An anchorage is a secure point of attachment for lifelines, lanyards, or deceleration devices. An anchorage for a personal fall-arrest system must support at least 5,000 pounds. Anchorages that can't 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 don't 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'll 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 can't 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 doesn't prevent a fall, the anchorage must be high enough above a worker so that the arrest system, rather than a 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.

Connectors

An anchorage, a lanyard, and a body harness are not useful until they're linked together. Connectors do the linking; they make the anchorage, the lanyard, and the harness a complete system. Connectors include carabineers, snap hooks, and D-rings.

- Always inspect your connectors before use. Connectors must be immediately removed from service and replaced if found to have a defect.
- Employee must be trained by a competent person in the use of connectors.
- Connectors must be immediately removed from service and forwarded to your supervisor and/or our safety director if a fall occurs.

Carabineer - 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. Carabineers 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 snap hooks have self-locking keepers that won't open until they're 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.

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. **Never use a body belt as part of a personal fall-arrest system.**

- Always inspect your harness before use. It must be immediately removed from service and replaced if found to have a defect.

- The harness must be worn per the manufactures directions and specifications.
- Employee must be trained by a competent person in its use.
- The harness must be immediately removed from service and forwarded to your supervisor or our safety director if a fall occurs.
- 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 should meet ANSI standards and the manufacturer should provide use instructions.

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 styles, including self-retracting types that make moving easier and shock-absorbing types that reduce fall-arrest forces.

- Never combine lanyards to increase length or knot them to make them shorter. Never hook snap hooks end to end.
- Always inspect your lanyard before use. It must be immediately removed from service and replaced if found to have a defect.
- The lanyard must be worn and used per the manufactures directions and specifications.
- Employee must be trained by a competent person in its use.
- Lanyards must be immediately removed from service and forwarded to your supervisor or our safety director if a fall occurs.

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. Because a shock-absorbing lanyard extends up to 3.5 feet, it's critical that the lanyard stops the worker before the next lower level. It is critical that the fall distance calculation takes into account the added distance of the deceleration device.

Self-retracting lanyards or lifelines - 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 don't 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 and the body harness) as short as possible.
- Keep the rope grab as high as possible on the lifeline.

Lifeline

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.

- Never combine lifelines to increase length or knot them to make them shorter.
- Always inspect lifelines before use. Lifelines be immediately removed from service if found to have a defect.
- Employee must be trained by a competent person in lifeline use.
- Lifelines must be immediately removed from service if a fall occurs

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.

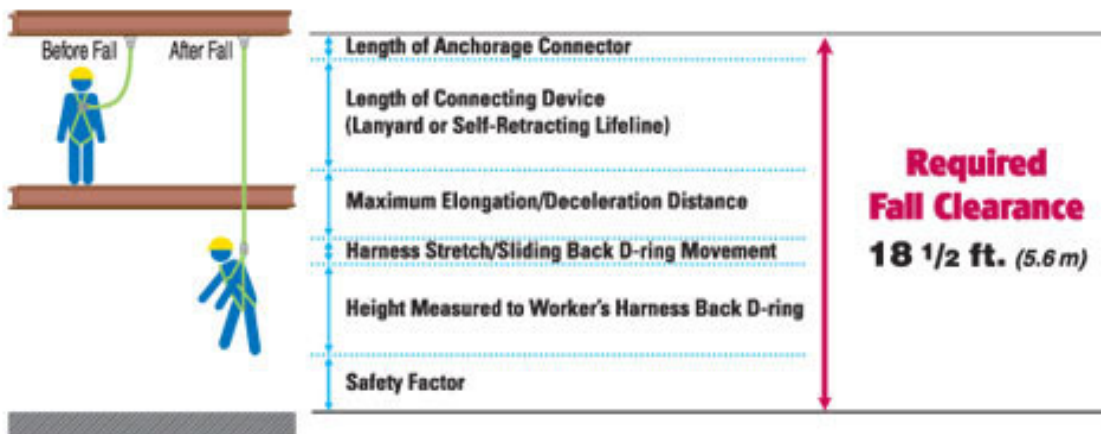
- Only one worker is allowed per vertical lifeline.

Horizontal lifeline - Unlike a vertical lifeline, the horizontal lifeline stretches between two anchorages. When you connect a lanyard or rope grab to a 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. Horizontal lifelines can fail at the anchorage points if they're not installed correctly. For this reason, horizontal lifelines must be designed, installed, and used under the supervision of a qualified person.

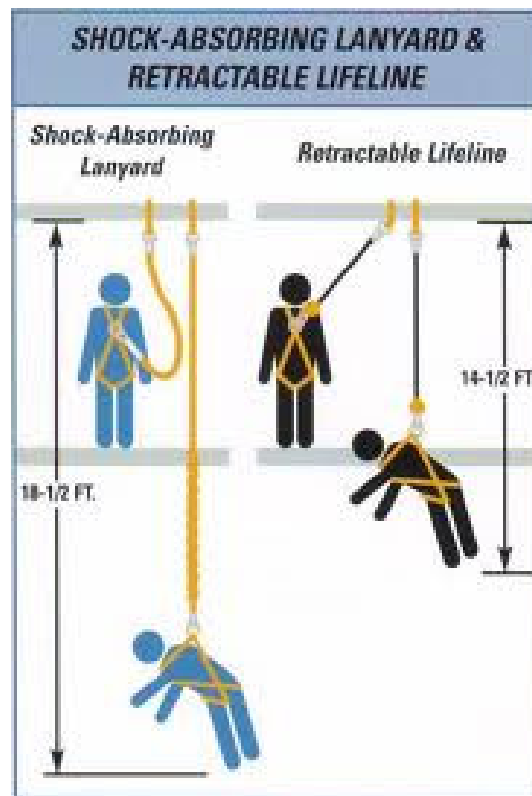
- Only the number of workers specified by the qualified person are allowed to use one horizontal lifeline.

Calculating Fall Clearance Distance

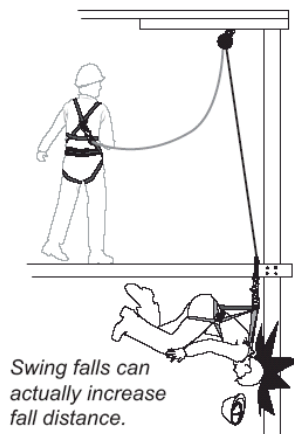
How to calculate total fall distance:



Example 1: Typical 6' Shock Absorbing Lanyard - 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.



Example 2: Shock Absorbing Lanyard versus Self Retracting Lifeline (SRL) fall distance minimum requirements.



Example 3 - Be Aware of other variables – Swing falls can increase fall distance.

General Inspection

1. Manufacture inspection and maintenance procedures should be followed for each specific type of equipment.
2. To maintain their service life and high performance, all harnesses should be inspected frequently. Visual inspection before each use should become routine, and also a routine inspection by a competent person. If any of the conditions listed below are found the equipment should be replaced before being used.

Harness Inspection

Webbing - Grasp the webbing with your hands and bend the webbing, checking both sides. This creates surface tension making damaged fibers or cuts easier to see. Webbing damage may not show up through a sight (visual) inspection only – manual (touch) the harness is equally important.

Webbing Visual and Touch Inspection Items

- Cuts, nicks or tears
- Broken fibers/cracks
- Overall deterioration
- Modifications by user
- Fraying/Abrasions
- Discoloration of material
- Hard or shiny spots Indicates heat damage
- Webbing thickness uneven Indicates possible fall
- Mildew
- Missing Straps
- Undue Stretching Indicates possible fall
- Burnt, charred or melted fibers Indicates heat damage
- Excessive hardness or brittleness Indicates heat or uv damage

Stitching Visual and Touch Inspection Items

- Pulled stitches
- Stitching that is missing
- Hard or shiny spots Indicates heat damage
- Cut stitches
- Discoloration of stitching

Hardware Visual and Touch Inspection Items

- Distortion (twists, bends)
- Rough or sharp edges
- Rust or corrosion
- Cracks or breaks
- Broken/distorted grommets
- Modification by users (i.e. additional holes)
- Tongue buckle should overlap the buckle frame and move freely back and forth in their socket
- Roller of tongue buckle should turn freely on frame
- Bars must be straight
- All springs must be in working condition

Lanyard Inspection

When inspecting lanyards, begin at one end and work to the opposite end. Slowly rotate the lanyard so that the entire circumference is checked. Spliced ends require particular attention. Hardware should be examined under procedures detailed below.

Hardware Visual and Touch Inspection Items

- Distortion (twists, bends)
- Rough or sharp edges
- Rust or corrosion
- Cracks or breaks
- Modification by users
- All springs must be in working condition
- Snap hooks must take dual action to open

Steel Lanyards: While rotating a steel lanyard, watch for cuts, frayed areas, or unusual wear patterns on the wire. The use of steel lanyards for fall protection without a shock-absorbing device is not recommended.

Web Lanyard: While bending webbing over a piece of pipe, observe each side of the webbed lanyard. This will reveal any cuts or breaks. Due to the limited elasticity of the web lanyard, fall protection without the use of a shock absorber is not recommended.

Rope Lanyard: Rotation of the rope lanyard while inspecting from end to end will bring to light any fuzzy, worn, broken or cut fibers. Weakened areas from extreme loads will appear as a noticeable change in original diameter. The rope diameter should be uniform throughout, following a short break-in period. When a rope lanyard is used for fall protection, a shock-

absorbing system should be included.

Shock-Absorbing Packs

The outer portion of the shock-absorbing pack should be examined for burn holes and tears. Stitching on areas where the pack is sewn to the D-ring, belt or lanyard should be examined for loose strands, rips and deterioration.

Cleaning & Storage

- Wipe off all surface dirt with a sponge dampened in plain water. Squeeze the sponge dry. Dip the sponge in a mild solution of water and mild detergent. Work up a thick lather, with a vigorous back and forth motion. Then wipe dry with a clean cloth.
- Hang freely to dry, but away from excessive heat, steam or long periods of sunlight.
- Storage areas should be clean, dry and free of exposure to fumes, heat, direct ultra violet light, sunlight and corrosive elements.
- Note: Do not store harnesses next to batteries, chemical attack can occur if battery leaks.

Fall Arrest Rescue Plan

The proper use of fall arrest protection can save a workers life. Part of the proper use of fall arrest protection and a total fall protection program is having a rescue plan. The rescue plan should be specific to the scope of work, available rescue options, and other mitigating factors. The goal of the rescue plan should be to enact the quick removal (within 15 minutes or less) and medical treatment of the worker involved in the fall. In the event a worker using fall arrest protection is involved in a fall:

1. Immediately stop work in the area.
2. Immediately try and contact the worker via voice to access the level of injury.
3. If worker is unconscious or not responding immediately summon emergency services.
4. Immediately notify your supervisor.
5. Enact the site specific fall rescue plan (if applicable) for the scope of work being performed. A fall arrest rescue plan may be developed as part of the JSA for a performed task (as applicable). Additionally these general procedures can be enacted:
 - a. Self Rescue - If the worker is able and is within 2 to 3 feet of a floor/platform, /etc., instruct the worker to climb to this location and await assistance. If this cannot be done safely do not perform.
 - b. Equipment Aided - Ladder Rescue – Erect and secure a ladder near the worker and instruct the worker to mount the ladder. Workers **SHOULD NOT** try and manually transfer an unconscious worker to the ladder. This should be performed by trained rescue personnel only.
 - c. Mechanical Aided – Aerial Lift –
 - d. A worker will get into an aerial lift basket (engage their fall protection) and make sure there is a second adjustable lanyard in the basket with them.
 - e. Position the aerial lift basket under the worker.
 - f. Attach the second lanyard to the worker being rescued. Confirm the other end is attached to the aerial lift.

- g. Disconnect the worker from the impacted fall arrest lanyard / equipment. Note: do not remove fall harness from fallen worker at this time.
- h. Once the worker is secure in the aerial lift basket, lower the worker to the ground inside the basket.
6. If the fall rescue plan is not performing as planned, immediately summon emergency rescue services.
7. Medically evaluate the worker.
8. Remove all involved fall protection equipment from service and Tag Do Not Use.

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.

1. The attachment point to the body belt or full-body harness can be at the back, front, or side D-rings.
2. The anchorage for a fall-restraint system must support at least 3,000 pounds or be designed and installed by a qualified person and have a safety factor of at least two.



A typical restraint system

Catch Platforms

1. The platform should be constructed to easily support an employee in case of a fall.
2. The platform must be built no more than 10 feet below the working space.
3. The width of the platform must be the same distance of the fall, but even in the potential fall hazard is only 36 inches the platform must be at least 45 inches wide.
4. The platform must have standard guardrails on all open sides (see guardrail construction).

Safety Net System

Use of a safety net system is another fall protection option allowed by OSHA.

1. The safety net should be installed as close to the working surface as possible, but not more than 30 feet below it.

2. Safety nets must not have any openings greater than 36 square inches or longer than 6 inches on any side.
3. After installation, relocation, repairs, or at least every six months if not moved, the safety net must be drop tested. The drop test should consist of a 400 pound sandbag dropped from the working surface.
4. Safety nets should be installed with enough ground clearance so that a person falling into the net will not touch the ground.
5. Defective nets may not be used. Nets must be checked for defects weekly and after any occurrence.
6. Objects that fall into the net must be removed immediately.

Crane & Derrick Suspended Platforms

Sometimes, workers may not be able to reach the work area with stairways, ladders, scaffolds, or aerial lifts. When there is no other safe way to reach the area, you can use a crane or a derrick and a personnel platform to lift workers to the area. Employee safety must be the basis for your decision to use this method. When using this method, OSHA 1926 Subpart CC requirements must be followed.

Fall Related Accident, Incident & Near Miss Investigation

Accidents, incidents, and near misses involving a fall a high potential for a fall, whether rescue was required for not, shall be investigated for root cause. From the investigation:

- Personal Fall Arrest equipment shall be immediately taken out of service
- Action items shall be implemented
- Results of the investigation communicated to employees

WALKING WORKING SURFACES

Construction (Jobsite and Projects) Walking Working Surfaces - General Requirements

1. Every floor, work area, and passageway shall be kept free from protruding nails, splinters, holes, or loose boards.
2. All extension cords, cables, and hoses shall be maintained to provide a safe walking/working surface.
3. Roof loads shall not be exceeded.

Shop / Office / Warehouse Walking Working Surfaces

General Requirements

1. All places of employment, passageways, storerooms, service rooms and walking-working surfaces are kept in a clean, orderly, and sanitary condition.
2. Each floor are maintained in a clean and dry condition. When wet processes are used, drainage must be maintained and dry standing places provided.
3. Each surfaces is maintained free of hazards such as sharp / protruding objects, loose boards, corrosion, leaks, spills, snow and ice.
4. Each surface is required to support the maximum intended load for that surface.
5. A safe means of access and egress is required to and from each walking-working surface.
6. Walking-working surfaces are inspected regularly and hazardous conditions are corrected or repaired prior to an employee using the surface again or the hazard is guarded to prevent employees from using until corrected. If the correction or repair involves the structural integrity of the surface, a qualified person is required to perform or supervise the correction or repair.

Ladders

1. Rungs, steps, and cleats are parallel, level, and uniformly spaced when the ladder is in position for use; spaced at least 10 inches and no more than 14 inches apart (as measured between centerlines of the rungs, steps and cleats)
2. Steps on stepstools are spaced at least 8 inches apart and no more than 12 inches apart as measured between the centerlines of the rungs or steps and a minimum clear width of 10.5 inches.
3. Portable ladders are required to have a minimum width of 11.5 inches. Fixed ladder rungs, steps and cleats must have a minimum width of 16 inches, this does not apply to ladders with narrow rungs that are not designed to be stepped on (rungs located at the tapered end of an orchard ladder or similar ladder); rungs and steps of manhole entry ladders that are supported by the manhole opening must have a minimum clear width of 9 inches.
4. Wooden ladders cannot be coated with any material that would obscure structural defects.
5. Metal ladders are made with corrosion-resistant material or protected against corrosion.
6. Ladder surfaces are free of puncture and laceration hazards;
7. Ladders are only used for the purpose they are designed;

8. Inspection each ladder prior to use and throughout use for visible defects that could cause injury; if a ladder with structural or other defects is immediately tagged “Dangerous: Do Not Use” or with similar language and remove from service until repaired or replaced.
9. Each employee is required to face the ladder when climbing up or down it; uses at least one hand to grasp the ladder and no employee carries any object or load that could cause the employee to lose balance and fall while climbing.

Portable Ladders

1. Rungs and steps are corrugated, knurled, dimpled, coated with skid-resistant material, or otherwise treated to minimize the possibility of slipping;
2. Step ladders or combination ladders used in step ladder mode is equipped with a metal spreader or locking device that securely holds the front and back sections in an open position while in use.
3. Do no load beyond the maximum intended load; this includes the weight and force of the employee and all tools, equipment and materials being carried.
4. Use only on stable and level surfaces, unless ladder is secured or stabilized to prevent displacement. Ladders used on slippery surfaces must be secured and stabilized.
5. Portable single rail ladders are not allowed.
6. Ladders cannot be moved, shifted or extended while an employee is on it;
7. If a ladder is placed in a passageway, doorway or driveway where they could be displaced by activities or traffic the ladder must be secured or guarded by a temporary barricade (such as a row of traffic cones or caution tape) to keep the activities or traffic away from the ladder.
8. Cap (if equipped) and top step of stepladder cannot be used.
9. The top of a non-self-supporting (straight or extension ladder) ladder is placed so that both side rails are supported, unless the ladder is equipped with a single support attachment.
10. Portable ladder used to gain access to an upper landing surface is required to have side rails that extend at least 3 feet above the upper landing surface.
11. Ladders and ladder sections cannot be tied or fastened together to provide added length unless they are specifically designed for such use.
12. Ladders cannot be placed on boxes, barrels, or other unstable bases to obtain additional height.

Fixed Ladders

1. Each ladder must be capable of supporting their maximum intended load.
2. The minimum perpendicular distance from the centerline of the steps or rungs or grab bars, or both, to the nearest permanent object is back of the ladder is 7 inches.
3. Grab bars cannot protrude on the climbing side beyond the rungs of the ladder.
4. Side rails of through or side-step ladders must extend 42 inches above the top of the access level or landing platform.
5. For parapet ladders, the access level is the roof, if the parapet is cut to permit passage through the parapet, or the top of the parapet if the parapet is continuous.

6. For through ladders, the steps or rungs are omitted from the extensions and the side rails are flared to provide at least 24 inches and not more than 30 inches of clearance. When a ladder safety system is provided, the maximum clearance between side rails of the extension must not exceed 36 inches.
7. For side step ladders, the side rails, rungs and steps must be continuous in the extension.
8. Grab bars must extend at least 42 inches above the access level or landing platforms.
9. The minimum size of grab bars is the same size as the rungs.
10. When a fixed ladder terminates at a hatch the hatch must open with sufficient clearance to provide easy access to or from the ladders and open at least 70 degrees from the horizontal if the hatch is counterbalanced.
11. Individual-rung ladders are constructed to prevent the employee's feet from sliding off the end rungs.
12. Fixed ladders having a pitch of greater than 90 degrees from the horizontal are not allowed.
13. The step-across distance from the centerline of the rungs or steps is at least 7 inches and not more than 12 inches for through ladders to the nearest edge of the structure, building or equipment and at least 15 inches and not more than 20 inches for side step ladders to the access point of the platform edge.
14. Fixed ladders that do not have cages or wells must have a clear width of at least 15 inches on each side of the ladder centerline to the nearest permanent object, a minimum perpendicular distance of 30 inches from the centerline of the steps or rungs to the nearest object on the climbing side and when unavoidable obstructions are encountered, the minimum clearance at the obstruction may be reduced to 24 inches provided that deflector plates are installed.

Mobile ladder stands and mobile ladder platforms.

1. Mobile ladder stands and platforms have a step width of at least 16 inches.
2. Steps and platforms must be slip resistant; the slip resistant surface must be an integral part of the design and construction of the stand and platform or provided as a secondary process or operation, such as dimpling, knurling, shotblasting, coating, spraying, or applying durable slip-resistant tapes.
3. Must be capable of supporting at least four times their maximum intended load.
4. Wheels or casters under load are capable of supporting their proportional share of four times the maximum intended load, plus their proportional share of the unit's weight.
5. All stands and platforms with a top step height of 4 feet or greater must have handrails with a vertical height of 29.5 inches to 37 inches, measured from the front edge of a step. Removable gates or non-rigid members, such as chains, may be used instead of handrails in special use applications.
6. The maximum work-surface height of a mobile ladder stand and platform cannot exceed four times the shortest base dimension, unless additional support is used (outriggers, counterweights or comparable means).

7. Stands and platforms with wheels or casters must be equipped with a system to prevent horizontal movement when an employee is on the stand or platform; cannot be moved with an employee on it.

Mobile ladder stands and platforms must have steps that are uniformly spaced and arranged, with a rise of no more than 10 inches and a depth of at least 7 inches. The slope of the step stringer to which the steps are attached cannot be more than 60 degrees measured from the horizontal. If Grove can demonstrate that these requirements are not feasible for a mobile ladder platform, steeper slopes or vertical rung ladders may be used, provided that the unit is stabilized to prevent overturning.

Stands with a top step height above 10 feet have to have the top step protected on three sides by a handrail with a vertical height of at least 36 inches; and top steps that are 20 inches or more, front to back, have a midrail and toeboard. Removable gates or non-rigid members, such as chains, may be used instead of handrails in special use applications. The standing area of a mobile ladder stand must be within the base frame.

Mobile ladder platforms with a platform height of 4 to 10 feet must have handrails with a vertical height of at least 36 inches and midrails in the platform area. All ladder platforms with heights above 10 feet must have guardrails and toeboards on the exposed sides and ends of the platform. Removable gates or non-rigid members, such as chains, may be used instead of handrails in special use applications.

Stairways

A stairway landing of 4 feet or more above a lower level is required to be protected by a guardrail or stair rail system.

Each flight of stairs having at least 3 treads and at least 4 risers is required to be equipped with a stair rail system and handrails as follows:

Table D-2 -- Stairway Handrail Requirements

Stair width	Enclosed	One open side	Two open sides	With earth built up on both sides
Less than 44 inches (1.1 m).	At least one handrail	One stair rail system with handrail on open side.	One stair rail system with handrail on each open side.	
44 inches (1.1 m) to 88 inches (2.2 m).	One handrail on each enclosed side	One stair rail system with handrail on open side and one handrail on enclosed side.	One stair rail system with handrail on each open side.	
Greater than 88 inches (2.2 m).	One handrail on each enclosed side and one intermediate handrail located in the middle of the stair	One stair rail system with handrail on open side, one handrail on enclosed side, and one intermediate handrail located in the middle of the stair.	One stair rail system with handrail on each open side and one intermediate handrail located in the middle of the stair.	
Exterior stairs less than 44 inches (1.1 m).				One handrail on at least one side.

Note to table: The width of the stair must be clear of all obstructions except handrails.

Vertical clearance above any stair tread to any overhead obstruction must be at least 6 feet, 8 inches as measured from the leading edge of the tread.

Stairs must have uniform riser heights and tread depths between landings.

Stairway landings and platforms must be at least the width of the stair and at least 30 inches in depth, as measured in the direction of travel.

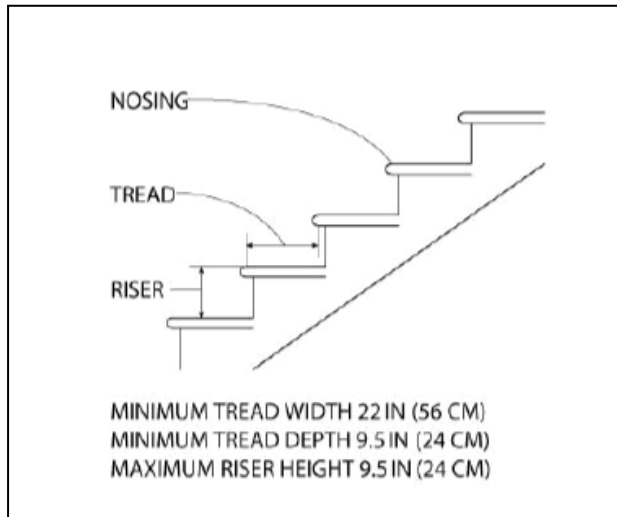
When a door or gate opens directly on a stairway, a platform must be provided and the swing of the door or gate cannot reduce the platform's effective usable depth to:

- Less than 20 inches for platforms installed prior to January 17, 2017; and
- Less than 22 inches for platforms installed on or after January 17, 2017.

Each stair must support at least five times the normal anticipated live load, but never less than a concentrated load of 1,000 pounds applied at any point.

Standard stairs must be used to provide access from one walking – working surface to another when operations necessitate regular and routine travel between levels, including access to operating platforms for equipment.

Standard stairs must be installed at angles between 30 and 50 degrees from the horizontal; have a maximum riser height of 9.5 inches; have a minimum tread depth of 9.5 inches and have a minimum width of 22 inches between vertical barriers.



Each employee on a walking-working surface in our office, shop or warehouse with an unprotected side or edge that is 4 feet or more above a lower level will be protected from falling by either one or more of the following: guardrail system, safety net system, hole cover or a personal fall arrest system. This includes falling through holes and floor openings greater than 4 feet or more above a lower level.

Work on Low Slope Roofs

Work performed 6 feet or close to the roof edge, the employer must ensure each employee is protected from falling by a guardrail system, safety net system, travel restraint system, or a PFAS.

Work performed at least 6 feet but less than 15 feet from the roof edge, the employee must be protected from falling by a guardrail system, safety net system, travel restraint system, or a PFAS. A designated area when performing work that is both infrequent and temporary.

Work performed 15 feet or more from the roof edge, the employee must be protected from falling by a guardrail system, safety net system, travel restraint system, or personal fall arrest system or designated area. Fall protection is not required if the work is infrequent and temporary. Employees are prohibited from going within 15 feet of the roof edge without using fall protection.

SCAFFOLDING

General

Before any employee begins work on a project that requires the use of scaffolding or in our shop or warehouse -- a temporary elevated platform and supporting structure designed to support workers and their materials -- he/she should be thoroughly familiar with the various types of scaffolding and work rules.

Responsibilities

Competent Person - The competent person will oversee the scaffold selection, erection, use, movement, alteration, dismantling, maintenance, and inspection. The competent person will be knowledgeable about proper selection, care, and use of the fall protection equipment. Additionally, the competent person shall assess hazards and perform pre-use daily inspections.

Supervisor/Foreman – Supervisors/foreman will not allow any employee who has not received the required training to perform any of the tasks or activities related to scaffold erection and/or dismantling. Supervisor/foreman will ensure that employees are provided with PPE as necessary for their job. Supervisors will ensure that a competent person is in charge of scaffold erection according to the manufacturer's specifications.

Safety Director – Our safety director will provide prompt assistance to supervisors, or others as necessary on any matter concerning this scaffolding.

Employees - Employees shall comply with all applicable safety rules and guidelines. Employees will report damaged scaffolds, accessories, and missing or lost components. Employees will assist with inspections as requested.

Installation and Use of Equipment

Equipment will be installed and used in accordance with OSHA standards and the manufacturer's instructions. The erection, dismantling, inspection, and use of scaffolding will be supervised and/or performed by the competent person and/or qualified person where applicable. All scaffold equipment will be used only for the application for which it was designed.

Common Scaffolding Types Used

Mobile scaffold: A portable rolling scaffold supported by casters.

Tube and coupler scaffold: A scaffold made from lengths of metal tubing, with a base to support the posts, and special devices called “couplers” which lock the tubular components together.

Tubular welded frame scaffold: Similar to the tube and coupler scaffold, made from pre-fabricated welded posts and horizontal bearers with intermediate members.

Safe Scaffold Erection and Use

Safe scaffold erection and use is important in minimizing and controlling the hazards associated with their use. Scaffold work practices and rules should be based on:

- Sound design
- Selecting the right scaffold for the job
- Assigning personnel
- Fall protection
- Guidelines for proper erection
- Guidelines for use
- Guidelines for alteration and dismantling
- Inspections
- Maintenance and storage

Scaffold Inspections

Scaffolds and scaffold components shall be inspected by a competent person before each shift, periodically throughout the shift, and after each occurrence that could affect a scaffold's integrity (such as being struck by a crane).

Any part of a scaffold that has been damaged or weakened so that it no longer meets OSHA strength requirements must be repaired, replaced, braced, or removed from service.

General Work Rules for all Scaffold Types

The following are general scaffolding work rules to be followed:

1. Both the competent person and employees must always inspect all scaffold components each day before they begin work. Immediately report hazardous conditions.
2. Fall protection is required during scaffold use at ten (10) feet or more above the next lower level.
3. To get the scaffold, use the designated safe access.
4. Do not climb to the platform on scaffold bracing or frames not designed for climbing.
5. When using ladders or stairs, use both hands and face the rungs going up or down.
6. Do not carry any materials when climbing.
7. Do not work on slippery platform.
8. Do not overload work platforms with materials.
9. Makeshift devices, such as boxes and barrels, may not be used on top of scaffold platforms to increase the height of the working level.
10. Never remove any component of a completed scaffold, except when directed by a competent person.
11. If there are overhead hazards, provide overhead protection.
12. If items can fall to the level below provide falling object protection.
13. Barricade areas under the scaffold to prevent worker, public and/or other entry.
14. Maintain a minimum of 10 feet from overhead power lines.
15. Never move a scaffold while occupied.
16. Never use shore or lean-to-scaffolds.

Work Rules for Mobile Scaffold

The general scaffold work rules above also apply to rolling scaffolds. In addition, the following rules must be carefully observed:

1. Mobile scaffolds must be erected per manufactures instructions and under the supervision of the competent person.
2. Employees must never ride a manually propelled rolling scaffold while it is being moved.
3. Do not construct a bridge between rolling scaffold towers with planks or stages.
4. While working, do not lean over scaffold guardrails to extend your working area.
5. Secure all materials on scaffold before moving it.
6. Before an employee moves a scaffold, he/she must make sure the floor surface is clear of all obstacles, obstructions and holes. Move all electrical cords. Employees should also keep their eyes open for potential overhead obstacles.
7. Never move rolling scaffolds by pulling the top section. Always move by pushing the scaffold base.
8. Use rolling scaffolds only on a level base.
9. Before using mobile scaffold lock all four (4) wheels to prevent movement.

Erecting & Dismantling of Scaffold

Evaluate All Jobsite Conditions

1. Inspect ground conditions for the strength of the supporting structure. Frame spacing and mudsill size can be assessed only after the total weight the scaffold will hold and the strength of the supporting soil or structure is determined by a supervisor or qualified person.
2. The scaffold's footings or anchorage should be sound and rigid, capable of carrying four (4) times the maximum intended load without settling or displacement.
3. Look at the overhead obstructions, such as electric power lines or other obstacles. A minimum of ten (10) feet must be maintained from any energized power line. Do not erect any scaffold without first determining if the working conditions require overhead protection. If required, install or put it in place before erecting the scaffold.
4. Consider on-site weather conditions, such as wind, rain, or snow. Provide weather protection where weather will influence the safety of employees working on the scaffold.

Consider the Scaffold Height

1. A stationary or fixed scaffold should be no more than 125 feet in height. If the stationary scaffold needs to be higher, a professional engineer must design it.
2. A portable or rolling scaffold should be no more than 60 feet in height. If the portable scaffold needs to be higher, a professional engineer must design it.

Inspect All Scaffold Equipment for Damage and Wear

1. Inspect wood planks to ensure it has been graded for scaffold use. Not all types and grades of lumber can be used for scaffolding. Wood should be sound, straight grained, with no splits, holes or saw cuts.

2. If any scaffold or its components such as braces, brackets, trusses, screw legs, couplers, ladders, etc. is damaged or weakened in any way, it must be repaired or replaced immediately.

All Scaffold Assembly Must Comply with Local, State and Federal Safety Requirements

1. The scaffold must be assembled under the supervision of a competent person.
2. The appropriate safety gear, including hardhat, must be worn at all times while erecting, moving, dismantling or using scaffolding.
3. Fall protection will be used during the erection a dismantling of scaffold whenever feasible. The competent person will determine fall protection use feasibility.

Supported Scaffolding

General Guidelines

1. The scaffold and its components must be able to easily support, without fail, four times the maximum intended load.
2. Make sure that mudsills are a suitable size to support and maintain the intended weight load for the scaffold. If employees are not sure whether the mudsills are sufficient, they must check with the competent person.
3. Mudsills should be level, and in complete contact with the supporting foundation.
4. If scaffolding is erected on soft ground or fill, the surface must be stabilized. Employees should verify stabilizing methods with the competent person.
5. Base plates or screw jacks with base plates must rest securely on both the sills and legs of the scaffolding.
6. If the foundation is uneven, correct the situation by using screw jacks with base plates. Do not use unstable objects such as loose bricks, pieces of scrap lumber, barrels, blocks, etc.
7. Never force scaffolding members to fit. If connections cannot be easily made, plumb and level scaffold.
8. Keep scaffold plumb and level during erection.
9. When the scaffold height exceeds four times the minimum base width, the scaffold must be secured with stability bracing.
10. Place ties as near as possible to horizontal members.
11. Place the bottom tie no more than four times the minimum base width. After this, ties must be placed at a minimum every 26 vertical feet.
12. Place vertical ties at the ends of scaffold runs. The intervals between the vertical ties should not exceed 30 feet.
13. Place the uppermost tie as close to the top of the scaffold as possible, but no higher than four times the minimum base width of the scaffold from the top.
14. Install ties as erection progresses. Do not take ties down until the scaffold is dismantled to their height.
15. Restrain circular scaffolds built around or within a structure from tipping by using “standoff” bracing segments.
16. On a freestanding tower, guy the legs at the standard intervals to prevent tipping or overturning.

17. Work platforms must be completely planked from upright to upright with scaffold-grade plank.
18. The planks must be in good condition.
19. The work platform must be at least 18 inches wide, unless exempted.
20. Every plank must overlap the support by a minimum of 12 inches or the planks must be cleated to prevent movement.
21. No gaps more than 1 inch should be present.
22. The face of the work platform should be no more than 14 inches from the surface being worked on.
23. The planks should not protrude beyond the support by more than 18 inches.
24. Overhangs should be separated from the main work platform by guardrails so that employees do not walk over them.
25. Scaffold plank spans of a full thickness, 2 inches by 10 inches, should never exceed 10 feet.
26. Firmly secure planks and platforms in case of windy weather or other hazardous conditions.
27. Evenly distribute materials and employees on planks or the platform.
28. At each open side and end of the scaffold there must be a standard guardrail. The top rail cannot be higher than 42 inches or less than 39 inches above the work platform.
29. Install mid-rails halfway between the platform and the top rail on all guardrails.
30. Toe-boards must be at least 3.5 inches in height on all working platforms.
31. If personnel work, pass under, or move around the scaffold, the scaffold must have a screen between the toe board and the guardrail that extends along the entire opening.
32. This screen will prevent materials from falling off the platform and accidentally hitting persons.
33. The screen must be No. 18 gauge U.S. Standard wire 1/2 inch mesh, or the equivalent.
34. If employees use access ladders, they must extend at least 3 feet above the work platform.
35. Do not place materials on side and end brackets. Brackets are meant to support people only.

Before using the scaffold, the competent person must thoroughly inspect the complete structure to determine whether it complies with all safety codes. This includes but is not limited to:

1. All nuts and bolts should be tightened.
2. The scaffold should be level and plumb.
3. Platforms must be fully planked.
4. Guardrails, and if necessary toe-boards, should be in place and securely fastened.
5. Safe access must be provided.
6. Scaffold is barricaded.

Rolling (Mobile) Scaffolds

1. The scaffold height must not exceed four times the minimum base dimension. Employees should use outrigger frames or outrigger units to increase the base width dimension when necessary.
2. Casters must be secured to frame legs or screw jacks with a nut and bolt or similar fasteners. The weight of the tower cannot exceed the weight capacity of the casters.
3. Screw jacks must not extend more than 12 inches above the caster base.

4. The scaffold must be kept level and plumb at all times.
5. Use horizontal/diagonal bracing on a rolling scaffold at the bottom and the top of the tower, and every 20 feet interval in between.
6. Fabricated planks with hooks can replace the top diagonal brace. Cross-brace all rolling scaffold frames.
7. On the platform, employees must use only prefabricated plank or cleated plank.
8. Firmly lock all 4 casters when the scaffold is not being moved.

Training

Affected employees will receive instruction on the particular types of scaffolds which they are to use. Training will focus on proper erection, handling, use, inspection, and care of the scaffolds. Training must also include the installation of fall protection, guardrails, and the proper use and care of fall arrest equipment. This training will be done upon initial job assignment. Retraining shall be done when job conditions change. Periodic refresher training shall be done at the discretion of the supervisor.

Company designated “competent person(s)” will receive additional training regarding the selection of scaffolds, recognition of site conditions, recognition of scaffold hazards, protection of exposed personnel and public, repair and replacement options, and requirements of the OSHA standards.

LADDERS

Portable Ladders

Ladder Selection

Ladder selection includes type of ladder (step ladder, straight ladder, extension ladder, other), the material the ladder is constructed from (typically, fiberglass, aluminum or wood), the useable height of the ladder. Other factors may need to be considered for specialty ladders, such as rolling warehouse ladders, arborist ladders, etc.

Criteria to be considered and used in selecting a portable ladder for a given job include:

1. Working environment
2. Amount of weight to be supported by the ladder
3. Specific tasks to be done
4. Can fall arrest protection and or positioning be integrated while using a ladder
5. How will the work be performed
6. The ladder rating. Ladders are classified by the amount of weight that can be accommodated (load). When determining the load capability required, the weight of the person using the ladder plus all equipment and supplies carried on the ladder must be considered.
7. Load classifications are:
 - a. Type I-AA: Heavy Duty, up to 350 pounds
 - b. Type I-A: Heavy Duty, up to 300 pounds
 - c. Type I: Heavy Duty, up to 250 pounds
 - d. Type II: Medium Duty, up to 225 pounds Type III: Light Duty, up to 200 pounds
8. The task or job to be done affects ladder choice also.

Ladder Inspection

Prior to each use, all ladders must be inspected.

1. For wood ladders, all parts must be free of splinters and sharp edges, free from shake, wane, compression failure, decay or other irregularities.
2. For metal ladders, the ladder must be free of structural defects, sharp edges, burrs, and not corroded.
3. All ladders must have all rungs or steps in place and secure.
4. There shall be no evidence of cracking, splitting or warping.
5. Ladders which have been painted or covered with an opaque coating material cannot be used, as the covering can camouflage structural faults in the ladder.
6. For extension ladders, hooks and locks must be in good working condition. Ropes, if used, must also be in good working condition.
7. Any ladder found not be in good working condition shall immediately be removed from service until replaced.

Ladder Use

1. Solid footing, solid surface support, and a solid resting place are required for all ladders.
2. Ladders shall not be placed on boxes, barrels, or other unstable surfaces.
3. The area around the ladder must be kept clear: in case of a fall, this prevents additional injuries.
4. Whenever possible, the ladder should be secured to a solid support to prevent movement.
5. Extension ladders should be extended only per manufacturer’s directions, and securely locked.
6. Step ladders shall be fully opened with the spreader bars locked.
7. Employees shall not use the bracing on the back of the stepladder’s legs to climb.
8. No one is allowed above the “limit step”, typically the third step or rung from the top.
9. Ladders are designed for use by only a single person; no more than one person should ever be on the same ladder.
10. Rungs and steps should not be used as shelves for equipment or supplies. If the ladder is equipped with a supply shelf, that may be used.
11. Slip-resistant shoes are strongly recommended.
12. Work with both feet on the same rung. Do not lean sideways. Always hold onto the ladder with one hand. Use three points of contact.
13. When straight ladders or extension ladders are placed against a vertical surface, the angle shall be a ratio of one foot horizontal for every four foot vertical. (1:4) –See Fig. 1 Below.
14. When straight ladders or extension ladders are used to access roofs or landings, the ladder must extend at least three feet (36 inches) above the roof/landing surface.
15. Ladders shall not be used for other than their intended use.
16. If a ladder is used in a location where it could be struck by workers or equipment, station a watcher at the bottom of the ladder. Do not leave a ladder unattended in this kind of location if it is not being used.
17. Lock, block, or guard all doorways while ladders are used in front of them.
18. Barricade all ladders used in corridors, stairwells, or aisles
19. Never place a ladder against a windowpane. Instead, attach a board across the back of the ladder that extends across the window and provides firm support against the building walls or window frames.
20. Ladders must be nonconductive and positioned a minimum of 10 feet from overhead power lines.

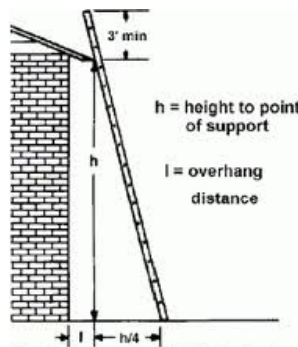


Fig. 1 –Ladder placement

Ladder Maintenance & Storage

1. Maintenance should be done per the manufacturer's instructions.
2. Ladders should not be painted or coated with an opaque coating that can hide structural defects.
3. Ladders should be stored in a dry, well-ventilated area. Ladders should never be stored out-of-doors.
4. Ladders must be stored in a position and location that does not cause warping.
5. Ladders should be secured when stored upright to prevent falling.
6. Ladders must NOT be used as shelves to store other objects.

Fixed Ladders (Facility Ladders)

Fixed ladders that extend 24 feet or more above a lower level require:

1. Each fixed ladder installed before November 19, 2018 must be equipped with a personal fall arrest system, ladder safety system, cage or well;
2. Each ladder installed on and after November 19, 2018 must be equipped with a personal fall arrest system or a ladder safety system.
3. When a fixed ladder, cage or well or any portion of a section thereof, is replaced, a personal fall arrest system or ladder safety system is installed in at least that section of the fixed ladder, cage or well with the replacement is located.
4. On and after November 18, 2036, all fixed ladders must be equipped with a personal fall arrest system or a ladder safety system.
5. When a one-section fixed ladder or a fixed ladder is equipped with a personal fall protection or ladder safety system:
 - a. The PFAS or ladder safety system must provide protection throughout the entire vertical distance of the ladder, including all ladder sections; and
 - b. The ladder must have rest platforms provided at maximum intervals of 150 feet.
6. Ladder sections having a cage or well:
 - a. Must be offset from adjacent sections; and
 - b. Have landing platforms provided at maximum intervals of 50 feet.
7. A cage or well in combination with a personal fall arrest system or ladder safety system provided the cage or well does not interfere with the operation of the system.
 1. The distance between rungs, cleats, and steps shall not exceed 12 inches and shall be uniform throughout the length of the ladder.
 2. The minimum clear length of rungs or cleats shall be 16 inches.
 3. All rungs shall have a minimum diameter of three-fourths inch for metal ladders, and a minimum diameter of 1 1/8 inches for wood ladders.
 4. Rungs, cleats, and steps shall be free of splinters, sharp edges, burrs, or projections which may be a hazard.
 5. When ladders are used to ascend to heights exceeding 20 feet (except on chimneys), landing platforms shall be provided for each 30 feet of height or fraction thereof, except that, where no cage, well, or ladder safety device is provided, landing platforms shall be provided for each 20 feet of height or fraction thereof. Each ladder section shall be offset from adjacent sections. Where installation conditions (even for a short, unbroken length) require that adjacent sections be offset, landing platforms shall be provided at each offset.

Chicken Ladders (Crawling Boards)

Chicken ladders or crawling boards are sometimes used in steep roofing operations and must be at least 10 inches wide and 1 inch thick, with 1 inch by 1 ½ inch cleats. The cleats must be equal in length to the width of the board.

1. Cleats should be spaced at intervals not to exceed 24 inches.
2. The chicken ladder must be secured to the roof with ridge hooks or other means.
3. The chicken ladder should extend from the roof peak to the eave.

STAIRWAYS

Stairways can pose a hazard to employees. Grove Roofing Services requires all personnel to exercise caution while using stairways.

General Requirements

1. Employees should always use extra caution while climbing or descending stairways.
2. Employees should watch where they place their feet while using stairs.
3. Transport heavy or bulky loads away from stairways, or by means other than carrying them up or down a stairway.
4. Report a loose or missing handrail or tread to a supervisor immediately. If it is possible to temporarily connect the handrail, correct the hazard prior to reporting it.
5. Pick up all debris lying on a stairwell -- even if it is not your mess.
6. If materials pose a trip hazard while employees are walking in stairways, the stairways should be closed.

Stairways Used During Construction

The following requirements apply to all stairways used during construction:

1. 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.
2. Stairway parts must be free of dangerous projections such as protruding nails.
3. Slippery conditions on stairways must be corrected.
4. Workers must not use spiral stairways that will not be a permanent part of the structure.
5. 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.
6. 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:

1. 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.
2. 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).
3. Stair rail systems and handrails must be surfaced to prevent injuries such as punctures or lacerations and to keep clothing from snagging.

4. 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.
5. Unprotected sides and edges of stairway landings must have standard 42-inch guardrail systems.
6. Intermediate vertical members, such as balusters used as guardrails, must not be more than 19 inches apart.
7. Other intermediate structural members, when used, must be installed so that no openings are more than 19 inches wide.
8. Screens or mesh, when used, must extend from the top rail to the stairway step and along the opening between top rail supports.

Hand Rails

Requirements for handrails are as follows:

1. 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.
2. 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.
3. Handrails must provide an adequate handhold for employees to grasp to prevent falls.
4. Temporary handrails must have a minimum clearance of 3 inches between the handrail and walls, stair rail systems and other objects.
5. Stairways with four or more risers, or that rise more than 30 inches in height whichever is less, must have at least one handrail.
6. Winding or spiral stairways must have a handrail to prevent use of areas where the tread width is less than 6 inches.

Mid Rails

Mid-rails, 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.

1. When mid-rails are used, they must be located midway between the top of the stair rail system and the stairway steps.

AERIAL LIFTS

General

Aerial lifts include the following vehicle mounted aerial devices used to elevate employees to work above ground; extensible boom platforms, aerial ladders, articulating boom platforms, vertical towers, and any combination of this equipment. The following basic requirements apply to these lifts:

1. Lifts must be inspected before use.
2. The work area and ground conditions must be inspected before use.
3. Lift controls must be tested each day prior to use to determine that the controls are in a safe working condition.
4. Only trained and authorized Grove Roofing Service employees shall operate aerial lifts.
5. Employee shall stand firmly in the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other height increasing devices.
6. Use warning signs or barricades to keep others out of the work area. A working back up alarm or spotter shall be used when the aerial lift is backing.
7. A personal fall arrest system including a harness must be worn and used immediately upon entering the basket. This is required at all heights.
8. Never tie off to other equipment or to a structure next to the platform.
9. Be sure to close the access gate while you're working from the platform.
10. Know the lift's rated load capacity and don't exceed it.
11. Stay at least 10 feet away from electrical power lines.
12. Never use the lift during severe weather.
13. The brakes shall be set when the outriggers are used.
14. Manufacture instructions for the safe operation of the lift shall be readable and available. Employees must consult with and follow all manufacture operating and safety instructions. Modifications to aerial lift equipment shall not be made without written permission from the manufacture.

HAZARD COMMUNICATION

Purpose

This program has been prepared to comply with the requirements of OSHA 1910.1200 (HCS 2012) and to ensure that information necessary for the safe use, handling, and storage of hazardous chemicals is provided to and made available to employees.

Responsibilities

The following responsibilities are not all-inclusive but are designed to give guidance and initial program development. Since every project location is different, these responsibilities may vary, as particular circumstances require.

This procedure is intended to cover those employees who are directly involved with handling of hazardous materials or supervision of those activities.

Safety Director

1. Ensure all management personnel are aware of the Hazard Communication Program.
2. Annually audit the Hazard Communication Program, Chemical Inventory List & Safety Data Sheets (SDS)
3. Coordinate employee training.

Supervisor/ Foreman

1. Maintain a file of Safety Data Sheets at the shop and project(s) for hazardous chemicals that are used. Ensure they are available for review by employees using these materials.
2. Ensure required labeling practices are being followed. All hazardous chemical ingredients must be identified.
3. Enforce applicable safety and health rules and the Hazard Communication Program.

Employees

1. Do not remove chemical hazard labels on containers.
2. Do not use un-approved containers for hazardous materials.
3. Consult chemical labels and Safety Data Sheets (SDS) when using hazardous chemicals.
4. Participate in training.

Chemical Inventory

1. An inventory list of all known hazardous chemicals is maintained for each project. The inventory list shall be maintained at the project.
2. A Safety Data Sheet (SDS) should accompany any new chemical brought to the worksite, and be included on the inventory list.

Container Labeling

General

Labels, as defined in the 2012 revised Hazard Communication Standard (HCS 2012), are an appropriate group of written, printed or graphic informational elements concerning a hazardous chemical that are affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging.

To develop labels under HCS 2012, manufacturers, importers and distributors must first identify and classify the chemical hazard(s).

HCS 2012 GHS Label Element Information

1. HCS 2012 requires specific information be provided on labels of hazardous chemicals by manufactures, importers, and/or distributors. See Figure 1 below. Information includes:

Product Identifier (1) is how the hazardous chemical is identified. This can be (but is not limited to) the chemical name, code number or batch number.

Signal Words (2) are used to indicate the relative level of severity of the hazard and alert the reader to a potential hazard on the label. There are only two words used as signal words, “Danger” and “Warning.” Within a specific hazard class, “Danger” is used for the more severe hazards and “Warning” is used for the less severe hazards.

Hazard Statements (3) describe the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard. For example: “Causes damage to kidneys through prolonged or repeated exposure when absorbed through the skin.” All of the applicable hazard statements must appear on the label.

Precautionary Statements (4) describe recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to the hazardous chemical or improper storage or handling.

Supplier Identification (5) lists the name, address and telephone number of the chemical manufacturer, importer or other responsible party.

Pictograms (6) are graphic symbols used to communicate specific information about the hazards of a chemical. The pictograms OSHA has adopted improve worker safety and health, conform to the GHS, and are used worldwide. Pictograms on labels will have a red border. The use of black and white borders is allowable on Safety Data Sheets and secondary labels.

While the GHS uses a total of nine pictograms, OSHA will only enforce the use of eight. The environmental pictogram is not mandatory but may be used to provide additional information.

The Basic Parts of A GHS-Compliant Label

1 → **n-Propyl Alcohol**
 UN No. 1274
 CAS No. 71-23-8

2 → **DANGER**

3 → Highly flammable liquid and vapor. Causes serious eye damage. May cause drowsiness and dizziness.

4 → Keep away from heat/sparks/open flames/hot surfaces. No smoking. Avoid breathing fumes/mist/vapours/spray. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present. Continue rinsing.

Fill Weight: 18.65 lbs. Lot Number: B56754434
 Gross Weight: 20 lbs. Fill Date: 6/21/2013
 Expiration Date: 6/21/2020 See SDS for further information.

5 → Acme Chemical Company • 711 Roadrunner St. • Chicago, IL 60601 USA • www.acmechem.com • 123-444-5567












1. **Product Identifier** - Should match the product identifier on the Safety Data Sheet.
2. **Signal Word** - Either use "Danger" (severe) or "Warning" (less severe)
3. **Hazard Statements** - A phrase assigned to a hazard class that describes the nature of the product's hazards
4. **Precautionary Statements** - Describes recommended measures to minimize or prevent adverse effects resulting from exposure.
5. **Supplier Identification** - The name, address and telephone number of the manufacturer or supplier.
6. **Pictograms** - Graphical symbols intended to convey specific hazard information visually.

Sample label courtesy of Weber Packaging Solutions • www.weberpackaging.com

GHS Label Sample
Figure 1

2. Figure 2 below shows the symbol for each pictogram, the written name for each pictogram, and the hazards associated with each of the pictograms. Some of the symbols are already used for transportation and many chemical users may be familiar with them.

<p>Health Hazard</p>  <ul style="list-style-type: none"> • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity 	<p>Flame</p>  <ul style="list-style-type: none"> • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides 	<p>Exclamation Mark</p>  <ul style="list-style-type: none"> • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
<p>Gas Cylinder</p>  <ul style="list-style-type: none"> • Gases Under Pressure 	<p>Corrosion</p>  <ul style="list-style-type: none"> • Skin Corrosion/ Burns • Eye Damage • Corrosive to Metals 	<p>Exploding Bomb</p>  <ul style="list-style-type: none"> • Explosives • Self-Reactives • Organic Peroxides
<p>Flame Over Circle</p>  <ul style="list-style-type: none"> • Oxidizers 	<p>Environment (Non-Mandatory)</p>  <ul style="list-style-type: none"> • Aquatic Toxicity 	<p>Skull and Crossbones</p>  <ul style="list-style-type: none"> • Acute Toxicity (fatal or toxic)

*Pictograms and Hazards
Figure 2*

Secondary Container Labeling Requirements

1. Coffee cups, soda bottles, and other food containers cannot be used as secondary chemical containers. Their use is prohibited for this purpose.
2. Any time contents must be transferred from one container to another (i.e., secondary container) the secondary container must be labeled to indicate the contents and hazards as indicated on the original container. Secondary containers may be labeled with either an extra copy of the original manufacturer's label or with generic labels, which have the identity and hazard warnings from the original container or SDS.
3. At Grove Roofing an acceptable secondary container label includes the HMIS Label (Fig. 3 below), NFPA 704 Diamond Label (Fig. 4 below) or a GHS label identical to the manufacturer's label.
4. The only exception to labeling secondary containers is if an employee places a chemical into a secondary container which that employee will keep in their possession at all times and which will be only sufficient quantity to use in a single application.



HMIS Label
Figure 3



NFPA 704 Diamond Label
Figure 4

Safety Data Sheets (SDS)

Grove Roofing Specific Safety Data Sheet (SDS) Requirements

1. Grove Roofing will maintain a SDS for each hazardous chemical. The most recent version of SDS shall be maintained. Grove Roofing may maintain an accessible electronic copy or paper hard copy as applicable to a specific project need.
2. When working at a project site, the project manager, supervisor, and/or designee must assemble SDS's or any chemical that will or may be used at the project site. The SDSs or access to the SDS (electronic) must be kept at the project site at all times and employees informed on the location of the SDS.
3. Safety Data Sheets shall be readily accessible to employees. To be readily accessible paper copies of a SDS may be necessary.

Safety Data Sheet (SDS) HCS 2012 Information

HCS 2012 requires that the chemical manufacturer, distributor, or importer provide Safety Data Sheets (SDSs) (formerly MSDSs or Material Safety Data Sheets) for each hazardous chemical to downstream users to communicate information on these hazards.

MSDS/SDS Differences

The information contained in the SDS is largely the same as the MSDS, except now the SDSs are required to be presented in a consistent user-friendly, 16-section format.

Safety Data Sheet Contents

The SDS includes information such as the properties of each chemical; the physical, health, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical. OSHA requires that SDS preparers provide specific minimum information as detailed in the new standard.

Safety Data Sheet 16 Section Format

Sections 1 through 8 contain general information about the chemical, identification, hazards, composition, safe handling practices, and emergency control measures (e.g., firefighting). This information should be helpful to those that need to get the information quickly.

Sections 9 through 11 and 16 contain other technical and scientific information, such as physical and chemical properties, stability and reactivity information, toxicological information, exposure control information, and other information including the date of preparation or last revision.

The SDS must also contain **Sections 12 through 15**, to be consistent with the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS), but OSHA will not enforce the content of these sections because they concern matters handled by other agencies.

The SDS must also state that no applicable information was found when the preparer does not find relevant information for any required element.

Employee Training

Employees are to be trained in the Grove Roofing Hazard Communication Program before being assigned a task or location where they may be exposed to a hazardous chemical. Training is to include proper handling/storage of chemicals employees may be exposed to, labeling information and requirements, how to understand SDSs, and must be repeated anytime a new chemical is introduced to which they may be exposed. Employees will be trained to work safely with hazardous materials. Employee training will include:

- Information on the Hazard Communication standard including an explanation of chemical labeling including GHS labels, and Grove Roofing procedures.

- The location of chemicals to which employees may be exposed.
- The properties of hazardous materials to which employees may be exposed, including any material's physical state, color, odor, etc.
- The name or names of the substance, including the generic name, chemical name, and/or trade name.
- The level at which exposure to the substance is hazardous.
- The symptoms of overexposure to a hazardous material and appropriate medical emergency treatment.
- The potential for flammability, explosion, and reactivity of the substance.
- Methods that may be used to detect the release of a hazardous material in the workplace.
- The physical and health hazards associated with hazardous material.
- The proper procedure for handling hazardous materials, including information/instruction regarding the wearing of the appropriate personal protective equipment.
- The proper emergency response actions to be taken in the event of a leak/spill situation.

Emergency Response

Report any incident of over-exposure or spill of a chemical to your supervisor and office at once. Your supervisor will be responsible for ensuring proper emergency response actions are taken in leak/spill situations.

Personal Protective Equipment

Review label or SDS for required personal protective equipment (PPE). Required PPE is available from your supervisor and/or the office. Any employee found in violation of PPE requirements may be subject to disciplinary actions up to including discharge.

Hazards of Non-Routine Tasks

1. Supervisors will inform employees of any special tasks that may arise which could involve possible exposure to hazardous materials.
2. Review safe work procedures and use of required PPE shall be conducted prior to the start of such tasks. Where necessary, areas will be posted to indicate the nature of the hazard involved.

Contractor Coordination & Multi Employer Worksites

1. Other project site employees are required to adhere to the provision of the Hazard Communication Standard.
2. Information on hazardous materials known to be present will be exchanged with other employers and contractors. Grove Roofing employees shall be informed of other contractor hazards through training and information bulletins.
3. All project employees will have access to our Hazard Communication Program, container labels and SDSs upon request.

Unlabeled Pipes

1. Owners, construction managers, and/or general contractors should provide Grove Roofing with information regarding hazards associated with materials contained in unlabeled pipes.
2. Under no circumstance should a pipe or valve be opened, altered, or removed until its contents are determined and proper safety precautions put in place.

INDUSTRIAL HYGIENE PROGRAM

Goal

To identify, assess and control potential workplace exposures affecting company employees.

Approach

Grove Roofing Services will conduct initial monitoring/sampling of employees expected to have the highest exposures as representative of overall employee exposure. Results of the initial testing will be used as a basis to determine, as appropriate, safe work practices, need for additional testing, engineering controls, personal protective equipment, and regulatory compliance.

Identification of Health-based Concerns

Exposures that must be evaluated will be determined from the MSDSs for chemicals being used at the company. The MSDS will be the basis for determining the specific chemicals that must be evaluated task-by-task. Laboratory reports will be kept on file after employees have been made aware of the results.

The following table lists hazardous substances employees may be exposed to by task, applicable OSHA PELs, and highest measured employee exposures. Grove Roofing Services Management will conduct an annual review to identify new IH issues applicable to its employees and the need for sampling.

Hazardous Substances Exposures

Task/Area	Substance	PEL	Measured Exposure
Roofing tasks	Asbestos*	0.1 fb/cc	NA
Grinding	Silica	<.53 mg/m ³	0.31
Soldering	Lead**	50 ug/ m ³	3.9 ug/ m ³
General	Noise	90 dba	TBD
Asphalt tasks	Asphalt fumes	various	TBD
Shop			
Stainless steel Hot work	Hexavalent Chromium	2.5 ug/m ³ AL	TBD
Soldering	Lead**	50 ug/ m ³	3.6 ug/ m ³
Stainless steel Grinding			
General	Noise	90 dba	TBD

* Grove employees are not to handle, disturb, or work around asbestos containing materials unless specifically trained and certified to do so

** Lead exposure monitoring must be conducted for each different task and significantly unique circumstance on an annual basis

Gases, Vapors, Fumes, Dusts, and Mists - General

1. Ensure work areas are properly ventilated, including inside occupied buildings. M
Welding/cutting on a tank or in an enclosure that contained gasoline or other flammable gas or liquid should not be allowed unless it has been purged and tested. If a tank is encountered, stop work and immediately contact your supervisor and/or the Grove Roofing Services safety director.
2. Avoid exposure to; inhalation, ingestion, absorption of, or contact with any hazardous material or substance.

FIRE PREVENTION AND PROTECTION

General

Fire prevention is one of the most important concerns when working within an existing job site. Therefore significant code requirements and operating procedures have been established to prevent and control the spread of fires.

Open Yard Material Storage

1. Combustible materials shall be piled with due regard to the stability of piles and in no case higher than 20 feet.
2. Driveways between and around combustible storage piles shall be at least 15 feet wide and maintained free from accumulation of rubbish, equipment, or other articles or materials. Driveways shall be so spaced that a maximum grid system unit of 50 feet by 150 feet is produced.
3. The entire storage site shall be kept free from accumulation of unnecessary combustible materials. Weeds and grass shall be kept down and a regular procedure provided for the periodic cleanup of the entire area.
4. Method of piling shall be solid wherever possible and in orderly and regular piles. No combustible material shall be stored outdoors within 10 feet of a building or structure.
5. Portable fire extinguishing equipment, suitable for the fire hazard involved, shall be provided at convenient, conspicuously accessible locations in the yard area. Portable fire extinguishers, rated not less than 2A, shall be placed so that maximum travel distance to the nearest unit shall not exceed 100 feet.

Roof Material Storage

1. Storage shall not obstruct, or adversely affect, means of exit.
2. All materials shall be stored, handled, and piled with due regard to their fire characteristics.
3. Non compatible materials, which may create a fire hazard, shall be segregated.
4. Material shall be piled to minimize the spread of fire and to permit convenient access for firefighting. Stable piling shall be maintained at all times.

Liquefied Petroleum Gas

1. Welding is prohibited on containers.
2. LP-Gas consuming appliances shall be approved types.
3. Containers shall be upright upon firm foundations or otherwise firmly secured. The possible effect on the outlet piping of settling shall be guarded against by a flexible connection or special fitting.
4. Portable heaters, including salamanders, shall be equipped with an approved automatic device to shut off the flow of gas to the main burner, and pilot if used, in the event of flame failure. Such heaters, having inputs above 50,000 B.t.u. per hour, shall be equipped with either a pilot, which must be lighted and proved before the main burner can be turned on, or an electrical ignition system. Container valves, connectors, regulators, manifolds, piping, and tubing shall not be used as structural supports for heaters. Containers, regulating

equipment, manifolds, pipe, tubing, and hose shall be located to minimize exposure to high temperatures or physical damage.

5. For temporary heating, heaters (other than integral heater-container units) shall be located at least 6 feet from any LP-Gas container. This shall not prohibit the use of heaters specifically designed for attachment to the container or to a supporting standard, provided they are designed and installed so as to prevent direct or radiant heat application from the heater onto the containers. Blower and radiant type heaters shall not be directed toward any LP-Gas container within 20 feet.
6. If two or more heater-container units, of either the integral or nonintegral type, are located in an unpartitioned area on the same floor, the container or containers of each unit shall be separated from the container or containers of any other unit by at least 20 feet.
7. Storage of LPG within buildings is prohibited.
8. Storage outside of buildings, for containers awaiting use, shall be located from the nearest building or group of buildings, in accordance with the following: 500 lb. or less 0 feet from the building, 501 to 6,000 lbs. a minimum of 10 feet from the building, 6001 to 10,000 lbs. a minimum of 20 feet from the building, and over 10,000 lbs. a minimum of 25 feet from the building.
9. Storage locations shall be provided with at least one approved portable fire extinguisher having a rating of not less than 20-B:C.
10. When damage to LP-Gas systems from vehicular traffic is a possibility, precautions against such damage shall be taken.

Flammable and Combustible Liquids

1. Flammable liquids shall be kept in closed containers when not actually in use.
2. Leakage or spillage of flammable or combustible liquids shall be disposed of promptly and safely.
3. Flammable liquids may be used only where there are no open flames or other sources of ignition within 50 feet of the operation, unless conditions warrant greater clearance.
4. No more than 25 gallons of flammable or combustible liquids shall be stored in a room outside of an approved storage cabinet.
5. Cabinets shall be labeled in conspicuous lettering, "Flammable-Keep Fire Away."
6. Storage areas shall be kept free of weeds, debris, and other combustible material not necessary to the storage.
7. At least one portable fire extinguisher, having a rating of not less than 20-B units, shall be located outside of, but not more than 10 feet from, the door opening into any room used for storage of more than 60 gallons of flammable or combustible liquids.
8. Transfer of flammable liquids from one container to another shall be done only when containers are electrically interconnected (bonded).
9. The dispensing units shall be protected against collision damage.

Fire Extinguishers – General

Several methods for fire protection and control exist and are allowable by OSHA. The majority of fire protection devices found on our work sites will be in the form of fire extinguishers. The following are some of the general requirements:

1. A fire extinguisher, rated not less than 2A, shall be provided for each 3,000 square feet of the protected building area, or major fraction thereof. Travel distance from any point of the protected area to the nearest fire extinguisher shall not exceed 100 feet.
2. One or more fire extinguishers, rated not less than 2A, shall be provided on each floor. In multistory buildings, at least one fire extinguisher shall be located adjacent to stairway.
3. A fire extinguisher, rated not less than 10B, shall be provided within 50 feet of wherever more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used on the jobsite. This requirement does not apply to the integral fuel tanks of motor vehicles.
4. Extinguishers and water drums, subject to freezing, shall be protected from freezing.
5. Portable fire extinguishers shall be visually inspected monthly by a designated Grove Roofing competent person. The inspector shall place their initials on the fire extinguisher tag in the applicable month box. These initials shall serve as proof of inspection.
6. Portable fire extinguishers shall be inspected annually by an authorized vendor. The inspection tag and seal must appear on the fire extinguisher as proof of annual inspection.

Fire Extinguisher Classification

The rating of a fire extinguisher consists of two parts, a letter and a number. The number, located just before the fire classification letter, is a guide to the units extinguishing potential. For example, an extinguisher rated 4A is capable of putting out twice as much burning material as one rated 2A. This number, when used with class B extinguishers also shows the square foot area of a class B fire that can be put out with that extinguisher. The second part is a letter that indicates the “class” of extinguisher required. Here are the classifications:

Class A Extinguishers will put out fires in ordinary combustibles, such as wood and paper. The numerical rating for this class of fire extinguisher refers to the amount of water the fire extinguisher holds and the amount of fire it will extinguish.

Class B Extinguishers should be used on fires involving flammable liquids, such as grease, gasoline, oil, etc. The numerical rating for this class of fire extinguisher states the approximate number of square feet of a flammable liquid fire that a non-expert person can expect to extinguish.

Class C Extinguishers are suitable for use on electrically energized fires. This class of fire extinguishers does not have a numerical rating. The presence of the letter “C” indicates that the extinguishing agent is non-conductive.

Class D Extinguishers are designed for use on flammable metals and are often specific for the type of metal in question. There is no picture designator for Class D extinguishers. These extinguishers generally have no rating nor are they given a multi-purpose rating for use on other types of fires.

Fire Extinguisher Training

Employees who use fire extinguishers as part of an emergency action plan, hot work, kettle operation, or other required task shall be initially and annually trained in fire extinguishers and their use.

The training at minimum shall include hands on demonstration and use.
Training records shall be maintained in the Grove Roofing Office safety files.

ELECTRICAL SAFETY

Definitions

Qualified Persons are those who have received specific training and have demonstrated the skills necessary to work safely on or near exposed energized parts. A person may be qualified to work, for example, on circuits up to 600 volts, but may be unqualified to work on higher voltages. Only qualified persons may place or remove locks and tags on energized electrical systems.

Unqualified Persons are those with little or no such training. An employee undergoing on-the-job training who has demonstrated the ability to perform duties safely at his or her level of training, and who is under the direct supervision of a qualified person, is considered to be a qualified person for the purpose of those duties.

General

1. Only electrical circuits and outlets designated by the owner, construction manager, and/or general contractor may be utilized.
2. The responsibility for the installation, maintenance and testing of all electrical system components supplying power for a project will be in the scope duties of the qualified electrical contractor. This scope includes all inspection of temporary systems. All electrical work, installation and wire capacities shall be in accordance with the pertinent provisions of the National Electrical Code, unless otherwise provided by applicable regulations, whichever is more stringent.
3. Only trained, qualified electricians are authorized to work on the electrical equipment. Qualified employees must adhere to the approach distances in Table S5 at the end of this section. Employees should report electrical malfunctions and deficiencies to their foreman immediately.
4. When working on or near exposed deenergized parts they are treated as live.
5. Cord-and-plug equipment must have a ground prong unless double insulated.
6. Employees may not enter spaces containing exposed energized parts unless illumination is provided that enables the employees to work safely.
7. Protective shields, protective barriers or insulating materials as necessary shall be used when working in confined or enclosed work spaces where electrical hazards may exist. Note: Grove Roofing employees are not permitted to enter confined spaces and/or permit required confined spaces as defined by OSHA. 1910.146
8. Conductive apparel shall not be worn unless the items are rendered non-conductive by covering, wrapping or other insulating means.

Working on Electrical Systems

1. Only qualified employees are allowed to work on electric parts, wiring, equipment, and/or electrical systems.

Guarding of Live Parts

1. Live parts of electric equipment operating at 50 volts or more must be guarded against accidental contact.

Overhead Power Lines

1. When work is to be performed within 10 feet of overhead power lines, the lines must be de-energized and grounded. Arrangements must be made with the organization that operates or controls the electric circuits when lines are to be de-energized and grounded.
2. If this is not possible to de-energize and ground overhead lines, then other protective measures, such as guarding, isolating or insulating, must be taken before the work is started. These protective measures must prevent direct contact by the qualified person or indirect contact through conductive materials, tools, or equipment. Only qualified persons from the power distribution company are allowed to install insulating devices on overhead power transmission and distribution lines.
3. All tools, equipment such as aerial lifts, unqualified employees, scaffolding, tools, etc. must maintain a minimum distance of 10 feet or more from any overhead power line. This applies to overhead lines 50kV or less. For overhead lines greater than 50kV a distance of 10 feet plus four (4) inches for every additional kV must be maintained.
4. Cranes and rigging must maintain a default distance of 20 feet until the conditions of 1926 Subpart CC are met.

Conductive Materials and Equipment

1. Conductive materials and equipment that are in contact with any part of an employee's body must be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts.
2. If an employee must handle long conductive objects, such as metal tools, pipes, or rods, in areas with exposed live parts, then insulation, guarding and/or approved materials handling techniques must be used which will minimize the hazard.
3. Any portable ladder used where there is potential for contact with exposed energized parts must be nonconductive.

Portable Electrical Equipment and Extension Cords

The following requirements apply to the use of cord-and-plug-connected equipment and flexible cord sets (extension cords):

1. Portable cord and plug connected equipment and extension cords must be visually inspected before use on any shift for external defects such as loose parts, deformed and missing pins, or damage to outer jacket or insulation, and for possible internal damage such as pinched or crushed outer jacket. Any defective cord or cord-and-plug-connected equipment must be removed from service and no person may use it until it is repaired and tested to ensure it is safe for use.
2. Extension cords must be of the three-wire type. Extension cords and flexible cords must be designed for hard or extra hard usage (for example, types S, ST, and SO). The rating or approval must be visible.

3. Portable equipment must be handled in a manner that will not cause damage. Flexible electric cords connected to equipment may not be used for raising or lowering the equipment.
4. Extension cords must be protected from damage. Sharp corners and projects must be avoided. Flexible cords may not be run through windows or doors unless protected from damage, and then only on a temporary basis.
5. Attachment plugs and receptacles may not be connected or altered in any way that would interrupt the continuity of the equipment grounding conductor.
6. Employee's hands must not be wet when plugging and unplugging flexible cords and cord and plug connected equipment if energized equipment is involved.

Ground Fault Circuit Interrupter (GFCI)

1. Electrical power used during construction operations, including portable generators, shall have functioning ground fault circuit interrupter protection.
2. The GFCI should be placed at the source of power (outlet) whenever possible.
3. GFCI devices must be tested before each shift to ensure proper operation. Follow manufactures instructions for testing.

OSHA Approach Distances, TABLE S5

Voltage range (phase to phase) | Minimum approach distance

300V and less	 Avoid Contact
Over 300V, not over 750V	 1 ft. 0 in. (30.5 cm).
Over 750V, not over 2kV	 1 ft. 6 in. (46 cm).
Over 2kV, not over 15kV	 2 ft. 0 in. (61 cm).
Over 15kV, not over 37kV	 3 ft. 0 in. (91 cm).
Over 37kV, not over 87.5kV	 3 ft. 6 in. (107 cm).
Over 87.5kV, not over 121kV	 4 ft. 0 in. (122 cm).
Over 121kV, not over 140kV	 4 ft. 6 in. (137 cm).

LOCKOUT/TAGOUT

General

Lockout / Tagout (LOTO) is used to prevent the unexpected energization, startup or release of stored energy while performing maintenance and servicing of machines. Lockout/tagout also applies to electrical circuit work.

- Most Grove Roofing Services employees are affected employees.
- Only authorized and trained employees are allowed to perform lockout tagout.
- Under no circumstance can an employee remove another employees/contractors lock, lockout device, and/or tag.
- Under no circumstance can an employee tamper with or alter another employees/contractors lock, lockout device, and/or tag.
- Many manufacturing or industrial plants have their own specific written lockout/tagout procedures which must be followed.

Definitions

Affected Employee: An employee whose job requires him/her to operate or use electrical circuits/devices, tools, machinery, and/or equipment on which servicing or maintenance is performed under lockout/tagout, or employees who work in areas where servicing or maintenance are performed.

Authorized Employee: An employee who locks out or tags electrical circuits/devices, machines, tools, and/or equipment in order to perform their work.

Energy Source: Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy.

Equipment Specific Procedures: Procedures which identify a piece of equipment, energy sources associated with it, the location of the isolation devices and procedural steps to assure that all energy sources have been brought to a zero energy state. This is normally associated with manufacturing operations, non construction operations, and non- cord and plug tools.

Lockout: Placement of a lockout device on an energy-isolating device in accordance with the written procedures which ensures that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device: A device using a positive means, such as a lock, to hold an energy isolating device in a safe position and prevent energizing of machinery or equipment.

Servicing and/or Maintenance: Workplace activity such as constructing, installing, setting up, adjusting, inspecting, modifying and maintaining and/or servicing machines or equipment. This also includes lubrication, cleaning or unjamming and making adjustments or tool changes outside of the time frame of routine and normal production operations.

Sequence of Lockout/tagout - General

1. **NOTIFY** - Notify all affected employees that lockout/tagout is going to be implemented and the reasons for the lockout of the equipment.
2. **SHUT DOWN** - If the machine is operating, shut it down by the normal stopping procedure, (i.e., depress a stop button, open a toggle switch, etc.).
3. **IDENTIFY** - Identify energy sources for the equipment being worked on. Shut off or close the switch, valve, or other energy isolating device(s) so that the equipment is isolated from its energy source(s). In some cases blocking and blanking of fluid lines may be required.
4. **APPLY** - Apply lockout devices and tags to the energy source control points. Control points would include disconnect boxes on motor control centers, local disconnect boxes located at or near the equipment, plugs on electric cords, hand valves for steam or water, ball valves for air, etc. Assure that the tag is filled out with the employees name and the date.
5. **DISSIPATE** - Dissipate any stored residual energy. Stored residual energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure in lines) must be dissipated or restrained by repositioning, blocking, bleeding down, etc.
6. **VERIFY** - After assuring that no personnel are exposed, and as a check on having controlled and dissipated all energy sources, operate the starting device for the equipment to make certain the equipment will not operate.

Procedures for Restoring Energy

1. Before the lockout/tagout devices are removed and energy is restored the authorized employee shall inspect the work area to assure that the equipment is operationally intact. This would include the replacement of guards and removal of tools.
2. The authorized employee shall also assure that all affected employees are notified that power is being restored and that all employees are safely away from the equipment.

Procedures for More than One Employee

1. When lockout/tagout is required and more than one employee is involved in the work, each employee shall place his/her own lock and tag on the lockout device at the energy source.
2. As each person completes his/her portion of the work they will remove their lock and tag from the lockout device.
3. The last employee to complete the work is responsible for restoring the energy source(s) to the ready position and returning the equipment to stand-by.

Exceptions from Using Lockout / Tagout

Cord and Plug-Connected Electrical Equipment and Quick Disconnect Air Hoses

1. Work on cord or plug-connected electrical equipment when it is unplugged, the employee working on the equipment must have complete control over the plug.
2. With quick disconnect air hoses. The employee must have complete control over the hose so that it cannot be reconnected without their knowledge.

Equipment Specific Procedure Periodic Inspection

Each equipment specific lockout procedure will be inspected annually by an authorized employee acting as the inspector and another authorized employee actually carrying out the procedure.

This inspection must be documented and include:

- The Date of the Inspection
- Name of the Inspector
- Name of employee performing procedure
- The Identification of the piece of equipment
- Verification that the procedure is appropriate to isolate all energy sources
- When there have been changes to specific procedures, the results of the reviews must be presented to and discusses with all employees authorized to use LO/TO devices.

If changes were made and the procedure needs to be updated, a copy of the changes must be sent to the Grove Roofing safety director after updates and communication is complete.

Training & Communication

1. Employees shall receive at a minimum affected level training.
2. Authorized level training shall be completed for those jobs that require the employee to perform lockout/tagout
3. Retraining shall be 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.
4. Annual affected level refresher and annual authorized level re-fresher training will be provided to applicable employees.
5. Grove Roofing shall document, sign, and certify that employee training/retraining has been accomplished and is being kept up to date. The certification shall contain each employee's name, the instructors name/signature, and dates of training. The certification (training record) shall be kept in the Grove Roofing office safety files.

RF RADIATION

RF is the abbreviation for “radiofrequency” and consists of waves of electric and magnetic energy moving together through space at the speed of light. Many types of wireless services make use of RF radiation to transmit from wireless antennas to wireless devices. Cellular phones, two-way radio services (police, fire, EMS), pagers, television, radio and satellite communications systems all operate using RF radiation. At low levels it is not considered a hazard, but at the levels produced by this type of equipment RF radiation can pose a considerable health risk for workers.

In most instances, you may not be aware of or have any physical sensation of being over-exposed to RF radiation. RF radiation cannot be detected by the senses, you cannot taste, smell or see it. A person can suffer an RF radiation over-exposure injury without even knowing it at the time of being over-exposed.

RF Safety and Health Concerns

- Shock or burns from physical contact
- Thermal effects (eye damage, cognitive issues)
- Non-thermal effects (reproductive harm, behavioral changes, possible link to cancer)

Job-Site Hazard Analysis and Controls

- Employees with implanted medical devices, such as pacemakers, should consult with their medical doctor and identify themselves to their Supervisor prior to working near or around RF emitting equipment
- All antennae are to be considered active unless proven otherwise
- Inspect the job site and adjacent areas for RF equipment, warning signs or restricted access areas
- Keep your distance -- stay at least 6 feet away from a single antenna or 10 feet away from a group of antennas
- If you must work closer, ask the building contact or have Management alert the Owner if a transmitter must be removed and reinstalled by the licensee during roof system repairs or installation
- Ask the building contact or have Management contact the Owner to see whether the equipment may be shut down or shielded during roofing work
- Proper Lockout/ Tagout procedures should be followed and written verification including dates and times the transmitter is shut down or shielded must be provided
- Stay away from transmitters until transmitters are shut down or shielded
- If the RF equipment cannot be shutdown, RF dosimetry/ personal protective monitors shall be provided
- If workers are required to wear RF PPE, training on the selection, use, maintenance and limitations of such shall be conducted

PORTABLE POWER & HAND TOOLS

General

There are several types of power tools commonly used in roofing. Power tools are those powered pneumatically or by electricity, gasoline, hydraulics, or gun powder.

The following general precautions shall be observed by power tool users:

1. Inspect tools before use.
2. Never carry a tool by the cord or hose
3. Never remove prongs from any cords
4. Never stand in or near water when using tools
5. Never “yank” the cord or the hose to disconnect it from the receptacle
6. Keep cords and hoses away from heat, oil and sharp edges
7. Replace all frayed and/or damaged extension cords. Do not try to tape cords
8. Disconnect tools when not in use, before servicing and when changing accessories such as blades, bits and cutters
9. All observers shall be kept at a safe distance away from the work area
10. Secure work with clamps or a vise, freeing both hands to operate the tool
11. Avoid accidental starting. The worker shall not hold a finger on the switch button while carrying a plugged-in tool
12. Tools shall be maintained with care. They shall be kept clean for the best performance. Follow instructions in the user’s manual for maintenance, lubricating and changing accessories
13. Maintain good footing and balance
14. Avoid loose fitting clothes, ties or jewelry such as bracelets, watches or rings, which can become caught in moving parts
15. Use double insulated tools
16. Keep work area well lighted when operating electric tools
17. All portable electric tools that are damaged shall be removed from use and tagged “Do Not Use”. This shall be done by supervisors and/or employees.

Guards

Hazardous moving parts of a power tool need to be safeguarded. For example, belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or moving parts of equipment shall be guarded if such parts are exposed to contact by employees.

Guards, as necessary, shall be provided to protect the operator and others from the following:

- Point of operation
- Nip points
- Rotating parts
- Flying chips
- Sparks

Safety guards shall never be removed when a tool is being used. For example, portable circular saws shall be equipped with guards. An upper guard shall cover the entire blade of the saw. A

retractable lower guard shall cover the teeth of the saw, except when it makes contact with the work material. The lower guard shall automatically return to the covering position when the tool is withdrawn from the work.

Safety Switches

The following hand-held power tools shall be equipped with a momentary contact “on-off” control switch:

1. drills
2. tappers
3. fastener drivers
4. horizontal, vertical and angle grinders with wheels larger than two inches in diameter
5. disc and belt sanders
6. reciprocating saws
7. saber saws
8. other similar tools

These tools also may be equipped with a lock-on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

The following hand-held powered tools may be equipped with only a positive “on-off” control switch:

1. platen sander
2. disc sanders with discs two inches or less in diameter
3. grinders with wheels two inches or less in diameter
4. routers
5. planers
6. laminate trimmers
7. nibblers
8. shears
9. scroll saws
10. jigsaws with blade shanks quarter inch wide or less

Other hand-held powered tools such as circular saws having a blade diameter greater than two inches, chain saws and percussion tools without positive accessory holding means shall be equipped with a constant pressure switch that will shut off the power when the pressure is released.

Electric Tools

Employees using electric tools shall be aware of several potential hazards with the most serious being the possibility of electrocution.

To protect the user from shock, tools shall either have a three-wire cord with ground and be grounded, be double insulated or be powered by a low-voltage isolation transformer. The third prong shall never be removed from the plug.

Tools shall be shut down before cleaning, repairing or oiling. Disconnect and/or use Lockout/Tagout. Refer to Lockout/Tagout Program.

These general practices shall be followed when using electric tools:

1. Electrical tools shall be inspected before use and annually. Confirm annual inspection is performed before using the tool See table below.
2. Electric tools shall be operated within their design limitations
3. Gloves, eye protection, and safety footwear are recommended during use of electric tools
4. When not in use, tools shall be stored in a dry place
5. Electric tools shall not be used in damp or wet locations
6. Work areas shall be well lit, even if this means the operators has to augment the work surface illumination by other appropriate means

Electrical Power Tool Inspection

Electrical power tools must be inspected to prevent the potential for injury. Employees are required to inspect electrical hand tools before each use.

Gas Tools

1. Operate gasoline tools only in a well-ventilated area or outdoors.
2. Always use safety cans for flammable and combustible liquids.
3. Turn off gasoline-powered equipment before refueling.

Pneumatic Tools

Pneumatic tools are powered by compressed air and include chippers, drills, hammers, and sanders. There are several potential hazards encountered in the use of pneumatic tools. The main hazard is the danger of getting hit by one of the tool's attachments or by some kind of fastener the worker is using with the tool.

1. Inspect tools before use. Immediately remove defective tools.
2. Eye protection is required and face protection is recommended for employees working with pneumatic tools. Noise is another potential hazard. Working with noisy tools (e.g. jackhammers) requires proper, effective use of hearing protection.
3. When using pneumatic tools, employees shall ensure they are fastened securely to the hose to prevent them from becoming disconnected. A short wire or positive locking device attaching the air hose to the tool will serve as an added safeguard.
4. A safety clip or retainer shall be installed to prevent attachments, such as chisels on a chipping hammer, from being unintentionally shot from the barrel.
5. Screens shall be set up to protect nearby workers from being struck by flying fragments around chippers, riveting guns, staplers or air drills.
6. Compressed air guns shall never be pointed toward anyone. Users shall never "dead-end" it against themselves or anyone else.

Powder Actuated Tools

Powder-actuated tools operate like a loaded gun and shall be treated with the same respect and precautions. Employees must be trained in the use of powder actuated tools. Safety precautions to remember include the following:

1. Inspect tools before use per manufactures instructions.
2. These tools shall not be used in an explosive or flammable atmosphere
3. Before using the tool, the worker shall inspect it to determine that it is clean, all moving parts operate freely, and the barrel is free from obstructions
4. Employees shall not modify tool
5. The tool shall never be pointed at anybody
6. The tool shall not be loaded unless it is to be used immediately. A loaded tool shall not be left unattended, especially where it could be available to unauthorized persons
7. Hands shall be kept clear of the barrel end
8. To prevent the tool from firing accidentally, two separate motions are required for firing: one to bring the tool into position and another to pull the trigger
9. The tools shall not be able to operate until they are pressed against the work surface with a force of at least five pounds greater than the total weight of the tool
10. Misfires must be handled per manufacture instructions.
11. Suitable eye, face, and hearing protection are essential when using a powder-actuated tool
12. The muzzle end of the tool shall have a protective shield or guard centered perpendicularly on the barrel to confine any flying fragments or particles that might otherwise create a hazard when the tool is fired. The tool shall be designed so that it will not fire unless it has this kind of safety device
13. All powder-actuated tools shall be designed for varying powder charges so that the user can select a powder level necessary to do the work without excessive force
14. If the tool develops a defect during use, it shall be tagged and taken out of service immediately until it is properly repaired

Hands Tools

1. Hand tools are those that are manually powered, including everything from screwdrivers to handsaws.
2. Do not use any tool if its handle is cracked, loose, or splintered.
3. Wear appropriate personal protective equipment, such as safety glasses and gloves.
4. Never use a tool as a pry bar.
5. Maintain tools in good condition, i.e., properly sharpened, cleaned, and lubricated.
6. Be aware that sparks caused by metal hand tools can be an ignition source for nearby flammables.
7. Do not use chisels with mushroomed heads.

Tool Maintenance

It is important to follow all proper maintenance procedures for tools and equipment. When maintenance procedures are not followed, the equipment wears out quickly and can become hazardous.

1. Don't allow saws, blades, and cutting tools to become dull. Sharpen them periodically, especially after heavy use.

2. Check electrical equipment cords prior to each use for cut or frayed wires or loose or missing ground plugs.
3. Consult and follow the equipment's owner's manual for instructions on proper maintenance.
4. Make sure all moving parts are properly oiled and greased.
5. Any broken or defective equipment should be immediately tagged and taken out of service until it is properly repaired.
6. Gasoline engines should have their oil changed at frequent intervals.
7. Air-cooled engines must have their cooling fans kept free of asphalt and other debris. Make sure they are cleaned regularly.

CRANES & RIGGING

General

This program applies to Grove Roofing Services power-operated owned, leased, or rented equipment, when used in construction that can hoist, lower and horizontally move a suspended load. This includes but is not limited to:

- articulating cranes (such as knuckle-boom cranes)
- crawler cranes
- mobile cranes (such as wheel-mounted, rough-terrain, all-terrain, commercial truck-mounted, and boom truck cranes)
- multi-purpose machines when configured to hoist and lower (by means of a winch or hook) and horizontally move a suspended load
- a crane on a monorail
- tower cranes
- overhead and gantry cranes
- variations of such equipment.

Excluded from the scope of the OSHA 1926 Subpart CC standard and this program include but may not be limited to:

- power industrial trucks (forklifts), except when configured to hoist and lower (by means of a winch or hook) and horizontally move a suspended load.
- articulating/knuckle-boom truck cranes that deliver material to a construction site when used to transfer materials from the truck crane to the ground, without arranging the materials in a particular sequence for hoisting.
- Articulating/knuckle-boom truck cranes that deliver material to a construction site when the crane is used to transfer building supply sheet goods or building supply packaged materials from the truck crane onto a structure, using a fork/cradle at the end of the boom, but only when the truck crane is equipped with a properly functioning automatic overload prevention device. Such sheet goods or packaged materials include, but are not limited to: Sheets of sheet rock, sheets of plywood, bags of cement, sheets or packages of roofing shingles, and rolls of roofing felt.

This exclusion does not apply when:

- The articulating/knuckle-boom crane is used to hold, support or stabilize the material to facilitate a construction activity, such as holding material in place while it is attached to the structure;
- The material being handled by the articulating/knuckle-boom crane is a prefabricated component. Such prefabricated components include, but are not limited to: Precast concrete members or panels, roof trusses (wooden, cold-formed metal, steel, or other material), prefabricated building sections such as, but not limited to: Floor panels, wall panels, roof panels, roof structures, or similar items;
- The material being handled by the crane is a structural steel member (for example, steel joists, beams, columns, steel decking (bundled or unbundled) or a component of a systems-engineered metal building (as defined in 29 CFR 1926 subpart R).

Definitions

A/D director (Assembly/Disassembly director) means an individual who meets this subpart's requirements for an A/D director, irrespective of the person's formal job title or whether the person is non-management or management personnel.

Assembly/Disassembly means the assembly and/or disassembly of equipment covered under this standard. With regard to tower cranes, "erecting and climbing" replaces the term "assembly," and "dismantling" replaces the term "disassembly." Regardless of whether the crane is initially erected to its full height or is climbed in stages, the process of increasing the height of the crane is an erection process.

Competent person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Dedicated spotter (power lines): To be considered a dedicated spotter, the requirements of 1926.1428 (Signal person qualifications) must be met and his/her sole responsibility is to watch the separation between the power line and the equipment, load line and load (including rigging and lifting accessories), and ensure through communication with the operator that the applicable minimum approach distance is not breached.

Qualified person means a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, successfully demonstrated the ability to solve/resolve problems relating to the subject matter, the work, or the project.

Qualified rigger is a rigger who meets the criteria for a qualified person.

Signal person means a person who is trained, evaluated, and authorized to give signals. Grove Roofing Services uses the term Qualified Signal Person.

Site Conditions & Coordination

Due to the many safety requirements of using a crane on a project site, a Grove Roofing Services Operator or other authorized Grove Roofing representative must complete the Grove Roofing Services Controlling Contractor Checklist form any time a crane is to be rented, leased, and/or used at a project site. The form must be completed before use and in conjunction with applicable parties such as the controlling contractor/owner, other involved contractors, and Grove Roofing Services safety director.

Grove Roofing Services cranes must not be assembled or used unless ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer's specifications for adequate support and

degree of level of the equipment are met. The requirement for the ground to be drained does not apply to marshes/wetlands.

If the A/D director or the Operator determines that ground conditions do not meet these requirements, a Grove Roofing Services representative must have a discussion with the controlling entity regarding the ground preparations that are needed so that, with the use of suitable supporting materials/devices (if necessary), the requirements in the OSHA Subpart CC standard can be met.

Assembly/Disassembly

General

1. When assembling or disassembling a crane (or attachments), Grove Roofing Services must comply with all applicable manufacturer prohibitions and must comply with either:
 - a. Manufacturer procedures applicable to assembly and disassembly, or
 - b. Grove Roofing Services procedures for assembly and disassembly. Grove Roofing Services procedures may be used only where it can be demonstrated that the procedures used meet the requirements in OSHA 1926.1406. Note: Grove Roofing Services must follow manufacturer procedures when an employer uses synthetic slings during assembly or disassembly rigging.
2. Assembly/disassembly must be directed by a person who meets the criteria for both a competent person and a qualified person, or by a competent person who is assisted by one or more qualified persons ("A/D director").
3. Where the assembly/disassembly is being performed by only one person, that person must meet the criteria for both a competent person and a qualified person. For purposes of this standard, that person is considered the A/D director.
4. The A/D director must understand the applicable assembly/disassembly procedures. Modifications or additions that may affect the capacity or safe operation of the equipment must not be made without written approval from the manufacturer or approval from a registered professional engineer.
5. The A/D director must review the applicable assembly/disassembly procedures immediately prior to the commencement of assembly/disassembly unless the A/D director understands the procedures and has applied them to the same type and configuration of equipment (including accessories, if any).
6. The A/D director must review the applicable Subpart CC 1926.1404 requirements.
7. Before assembling or disassembling equipment, the A/D director must determine if any part of the equipment, load line, or load (including rigging and lifting accessories) could get, in the direction or area of assembly/disassembly, closer than 20 feet to a power line during the assembly/disassembly process. If so, the employer must meet the requirements in Option (1), Option (2), or Option (3) of Subpart CC 1926.1407.

Assembly/Disassembly Crew Instructions

Before commencing assembly/disassembly operations, the A/D director must ensure that the crew members understand all of the following:

1. Their tasks.

2. The hazards associated with their tasks.
3. Protecting assembly/disassembly crew members out of operator view.

Assembly/Disassembly Protecting Crew Members Out of view

1. Before a crew member goes to a location that is out of view of the operator and is either in, on, or under the equipment, or near the equipment (or load) where the crew member could be injured by movement of the equipment (or load), the crew member must inform the operator that he/she is going to that location.
2. Where the operator knows that a crew member went to a location covered by paragraph (e)(1) of this section, the operator must not move any part of the equipment (or load) until the operator is informed in accordance with a pre-arranged system of communication that the crew member is in a safe position.

Power Line Safety

1. A minimum default distance of 20 feet must be maintained from any overhead power line. This includes parts of the crane, rigging, tag lines, and load.
2. Cranes and/or their equipment that must operate within 20 feet of overhead power lines must follow the safety requirements outlined in 1926.1408 for 350kv or less and 1926.1409 for over 350kv.

Crane Inspections

Any part of a manufacturer's procedures regarding inspections that relate to safe operation (such as to a safety device or operational aid, critical part of a control system, power plant, braking system, load-sustaining structural components, load hook, or in-use operating mechanism) that is more comprehensive or has a more frequent schedule of inspection than the requirements of this section must be followed.

All documents produced under this section must be available, during the applicable document retention period, to all persons who conduct inspections under this section.

Modified equipment

Equipment that has had modifications or additions which affect the safe operation of the equipment (such as modifications or additions involving a safety device or operational aid, critical part of a control system, power plant, braking system, load-sustaining structural components, load hook, or in-use operating mechanism) or capacity must be inspected by a qualified person after such modifications/additions have been completed, prior to initial use. The inspection must meet all of the following requirements:

The inspection must assure that the modifications or additions have been done in accordance with the approval obtained pursuant to Subpart CC 1926.1434 (Equipment modifications).

The inspection must include functional testing of the equipment. Equipment must not be used until it can be demonstrated these requirements have been met.

Repaired/adjusted equipment

Equipment that has had a repair or adjustment that relates to safe operation (such as: A repair or adjustment to a safety device or operator aid, or to a critical part of a control system, power plant, braking system, load-sustaining structural components, load hook, or in-use operating mechanism), must be inspected by a qualified person after such a repair or adjustment has been completed, prior to initial use. The inspection must meet all of the following requirements:

1. The qualified person must determine if the repair/adjustment meets manufacturer equipment criteria (where applicable and available).
2. Where manufacturer equipment criteria are unavailable or inapplicable, the qualified person must; determine if a registered professional engineer (RPE) is needed to develop criteria for the repair/adjustment. If an RPE is not needed, the employer must ensure that the criteria are developed by the qualified person. If an RPE is needed, the employer must ensure that they are developed by an RPE.
3. Determine if the repair/adjustment meets the criteria developed in accordance with paragraph Subpart CC 1926.1412(b)(1)(ii)(A).
4. The inspection must include functional testing of the repaired/adjusted parts and other components that may be affected by the repair/adjustment.
5. Equipment must not be used until an inspection under this paragraph demonstrates that the repair/adjustment meets the requirements of Subpart CC 1926.1412.

Post Assembly

1. Upon completion of assembly, the equipment must be inspected by a qualified person to assure that it is configured in accordance with manufacturer equipment criteria.
2. If manufacturer criteria is not available, a qualified person, meet the requirements under Subpart CC 1926.1412(c)(2).

Each Shift

A competent person must begin a visual inspection prior to each shift the equipment will be used, which must be completed before or during that shift. The inspection must consist of observation for apparent deficiencies. Taking apart equipment components and booming down is not required as part of this inspection unless the results of the visual inspection or trial operation indicate that further investigation necessitating taking apart equipment components or booming down is needed. Determinations made in conducting the inspection must be reassessed in light of observations made during operation.

At a minimum the inspection must include all of the following:

1. Control mechanisms for maladjustments interfering with proper operation.
2. Control and drive mechanisms for apparent excessive wear of components and contamination by lubricants, water or other foreign matter.
3. Air, hydraulic, and other pressurized lines for deterioration or leakage, particularly those which flex in normal operation.
4. Hydraulic system for proper fluid level.
5. Hooks and latches for deformation, cracks, excessive wear, or damage such as from chemicals or heat.
6. Wire rope reeving for compliance with the manufacturer's specifications.

7. Wire rope, in accordance with § 1926.1413(a).
8. Electrical apparatus for malfunctioning, signs of apparent excessive deterioration, dirt or moisture accumulation.
9. Tires (when in use) for proper inflation and condition.
10. Ground conditions around the equipment for proper support, including ground settling under and around outriggers/stabilizers and supporting foundations, ground water accumulation, or similar conditions.
11. The equipment for level position within the tolerances specified by the equipment manufacturer's recommendations, both before each shift and after each move and setup.
12. Operator cab windows for significant cracks, breaks, or other deficiencies that would hamper the operator's view.
13. Rails, rail stops, rail clamps and supporting surfaces when the equipment has rail traveling. Safety devices and operational aids for proper operation.

If any deficiency is identified, an immediate determination must be made by the competent person as to whether the deficiency constitutes a safety hazard. If the deficiency is determined to constitute a safety hazard, the equipment must be taken out of service until it has been corrected. If any deficiency in safety devices/operational aids is identified, the action specified in Subpart CC 1926.1415 and 1926.1416 must be taken prior to using the equipment.

Monthly

1. Each month the equipment is in service it must be inspected in accordance with the Each Shift inspection criteria.
2. Equipment must not be used until the inspection demonstrates that no corrective actions are required.
3. The inspection must be documented and maintained. The documentation must include:
 - a. The items checked and the results of the inspection.
 - b. The name and signature of the person who conducted the inspection and the date.
 - c. This document must be retained for a minimum of three months.

Annual/comprehensive

1. At least every 12 months the equipment must be inspected by a qualified person in accordance with Each Shift inspection criteria.
2. In addition, at least every 12 months, the equipment must be inspected by a qualified person. The crane must be inspected to meet the requirements of Subpart CC 1926.1412(f)(2).
3. The inspection must include functional testing to determine that the equipment as configured in the inspection is functioning properly.
4. If any deficiency is identified, an immediate determination must be made by the qualified person as to whether the deficiency constitutes a safety hazard or, though not yet a safety hazard, needs to be monitored in the monthly inspections.
5. If the qualified person determines that a deficiency is a safety hazard, the equipment must be taken out of service until it has been corrected, except when temporary alternative measures are implemented as specified in Subpart CC 1926.1416(d) or 1926.1435(e).

6. If the qualified person determines that, though not presently a safety hazard, the deficiency needs to be monitored, the employer must ensure that the deficiency is checked in the monthly inspections.
7. The following information must be documented, maintained, and retained for a minimum of 12 months, by the employer that conducts the inspection:
 - a. The items checked and the results of the inspection.
 - b. The name and signature of the person who conducted the inspection and the date.

Severe Service

Where the severity of use/conditions is such that there is a reasonable probability of damage or excessive wear (such as loading that may have exceeded rated capacity, shock loading that may have exceeded rated capacity, prolonged exposure to a corrosive atmosphere), the employer must stop using the equipment and a qualified person must inspect the crane per Subpart CC 1926.1412(g).

Equipment Not in Regular Use

Equipment that has been idle for 3 months or more must be inspected by a qualified person in accordance with the requirements of paragraph (e) (Monthly) of this section before initial use.

Crane Wire Rope Inspections

General

1. Rope lubricants that are of the type that hinder inspection must not be used.
2. All documents produced under this section must be available, during the applicable document retention period, to all persons who conduct inspections under this section.

Shift Inspection

A competent person must begin a visual inspection prior to each shift the equipment is used, which must be completed before or during that shift. The inspection must consist of observation of wire ropes (running and standing) that are likely to be in use during the shift for apparent deficiencies listed under Subpart CC 1926.1413(a)(2). Untwisting (opening) of wire rope or booming down is not required as part of this inspection.

Monthly Inspection

1. Each month an inspection must be conducted in accordance with the inspection requirements listed under Subpart CC 1926.1413(a)(2).
2. The inspection must include any deficiencies that the qualified person who conducts the annual inspection must be monitored.
3. Wire ropes on equipment must not be used until an inspection demonstrates that no corrective action is required.
4. The inspection must be documented and maintained. The documentation must include:
 - a. The items checked and the results of the inspection.

- b. The name and signature of the person who conducted the inspection and the date.
- c. This document must be retained for a minimum of three months.

Annual/ Comprehensive

1. At least every 12 months, wire ropes in use on equipment must be inspected by a qualified person in accordance with Subpart CC 1926.1413(a)(2).
2. The inspection must include those sections that are normally hidden during shift and monthly inspections.
3. If a deficiency is identified, an immediate determination must be made by the qualified person as to whether the deficiency constitutes a safety hazard.
4. If the deficiency is determined to constitute a safety hazard, operations involving use of the wire rope in question must be prohibited until:
 - a. The wire rope is replaced, or
 - b. If the deficiency is localized, the problem is corrected by severing the wire rope in two; the undamaged portion may continue to be used. Joining lengths of wire rope by splicing is prohibited. If a rope is shortened under this paragraph, the employer must ensure that the drum will still have two wraps of wire when the load and/or boom is in its lowest position.
5. If the qualified person determines that, though not presently a safety hazard, the deficiency needs to be monitored, the employer must ensure that the deficiency is checked in the monthly inspections.
6. The following information must be documented, maintained, and retained for a minimum of 12 months, by the employer that conducts the inspection:
 - a. The items checked and the results of the inspection.
 - b. The name and signature of the person who conducted the inspection and the date.

SAFETY DEVICES

Proper operation required. Operations must not begin unless all of the devices listed in this section are in proper working order. If a device stops working properly during operations, the operator must safely stop operations. If any of the devices listed in this section are not in proper working order, the equipment must be taken out of service and operations must not resume until the device is again working properly. See § 1926.1417 (Operation). Alternative measures are not permitted to be used.

The following safety devices are required on all equipment covered by this program, unless otherwise specified:

Crane Level indicator

1. The equipment must have a crane level indicator that is either built into the equipment or is available on the equipment.
2. If a built-in crane level indicator is not working properly, it must be tagged-out or removed. If a removable crane level indicator is not working properly, it must be removed.

Boom Stops

1. Boom stops, except for derricks and hydraulic booms.

Jib Stops

1. Jib stops (if a jib is attached), except for derricks.

Foot Pedal Brakes

1. Equipment with foot pedal brakes must have locks.

Outrigger Jacks

1. Hydraulic outrigger jacks and hydraulic stabilizer jacks must have an integral holding device/check valve.

Rail Clamps

1. Equipment on rails must have rail clamps and rail stops, except for portal cranes.

Horn

1. The equipment must have a horn that is either built into the equipment or is on the equipment and immediately available to the operator.
2. If a built-in horn is not working properly, it must be tagged-out or removed. If a removable horn is not working properly, it must be removed.

Operational Aids

General

1. The devices listed in this section are required on all equipment covered by program, unless otherwise specified. The requirements contained below for boob angle indicator, jib angle indicator, and boom length indicator do not apply to articulating cranes.
2. Operations must not begin unless the listed operational aids are in proper working order, except where an operational aid is being repaired the employer uses the specified temporary alternative measures. The time periods permitted for repairing defective operational aids are specified below. More protective alternative measures specified by the crane/derrick manufacturer, if any, must be followed.
3. If a listed operational aid stops working properly during operations, the operator must safely stop operations until the temporary alternative measures are implemented or the device is again working properly. If a replacement part is no longer available, the use of a substitute device that performs the same type of function is permitted and is not considered a modification.

Category I Operational Aids and Alternative Measures

Operational aids listed in this paragraph that are not working properly must be repaired no later than 7 calendar days after the deficiency occurs. Exception: If the employer documents that it has ordered the necessary parts within 7 calendar days of the occurrence of the deficiency, the repair must be completed within 7 calendar days of receipt of the parts. See Subpart CC 1926.1417(j) for additional requirements.

Boom Hoist Limiting Device

For equipment manufactured after December 16, 1969, a boom hoist limiting device is required. Temporary alternative measures (use at least one). One or more of the following methods must be used:

1. Use a boom angle indicator.
2. Clearly mark the boom hoist cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to keep the boom within the minimum allowable radius. In addition, install mirrors or remote video cameras and displays if necessary for the operator to see the mark.
3. Clearly mark the boom hoist cable (so that it can easily be seen by a spotter) at a point that will give the spotter sufficient time to signal the operator and have the operator stop the hoist to keep the boom within the minimum allowable radius.

If the equipment was manufactured on or before December 16, 1969, and is not equipped with a boom hoist limiting device, at least one of the measures listed in this section must be used.

Luffing Jib Limiting Device

Equipment with a luffing jib must have a luffing jib limiting device. Temporary alternative measures are the same as listed under Boom Hoist Limiting Device, except to limit the movement of the luffing jib rather than the boom hoist.

Anti Two-blocking Device

Telescopic boom cranes manufactured after February 28, 1992, must be equipped with a device which automatically prevents damage from contact between the load block, overhaul ball, or similar component, and the boom tip (or fixed upper block or similar component). The device(s) must prevent such damage at all points where two-blocking could occur. Temporary alternative measures:

1. Clearly mark the cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to prevent two-blocking, and use a spotter when extending the boom.

Lattice boom cranes manufactured after Feb 28, 1992, must be equipped with a device that either automatically prevents damage and load failure from contact between the load block, overhaul ball, or similar component, and the boom tip (or fixed upper block or similar component), or warns the operator in time for the operator to prevent two-blocking. The device must prevent such damage/failure or provide adequate warning for all points where two-blocking could occur.

Lattice boom cranes and derricks manufactured after November 8, 2011 must be equipped with a device which automatically prevents damage and load failure from contact between the load block, overhaul ball, or similar component, and the boom tip (or fixed upper block or similar component). The device(s) must prevent such damage/failure at all points where two-blocking could occur.

Lattice boom crane temporary alternative measures.

1. Clearly mark the cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to prevent two-blocking, or use a spotter.

Articulating cranes manufactured after December 31, 1999, that are equipped with a load hoist must be equipped with a device that automatically prevents damage from contact between the load block, overhaul ball, or similar component, and the boom tip (or fixed upper block or similar component). The device must prevent such damage at all points where two-blocking could occur. Temporary alternative measures:

1. When two-blocking could only occur with movement of the load hoist, clearly mark the cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to prevent two-blocking, or use a spotter.
2. When two-blocking could occur without movement of the load hoist, clearly mark the cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to prevent two-blocking, and use a spotter when extending the boom.

Category II Operational Aids and Alternative Measures.

Operational aids listed in this paragraph that are not working properly must be repaired no later than 30 calendar days after the deficiency occurs. Exception: If the employer documents that it has ordered the necessary parts within 7 calendar days of the occurrence of the deficiency, and the part is not received in time to complete the repair in 30 calendar days, the repair must be completed within 7 calendar days of receipt of the parts. See Subpart CC 1926.1417(j) for additional requirements.

Boom Angle or Radius Indicator

The equipment must have a boom angle or radius indicator readable from the operator's station. Temporary alternative measures:

1. Radii or boom angle must be determined by measuring the radii or boom angle with a measuring device.

Jib angle indicator if the equipment has a luffing jib. Temporary alternative measures:

1. Radii or jib angle must be determined by ascertaining the main boom angle and then measuring the radii or jib angle with a measuring device.

Boom length indicator if the equipment has a telescopic boom, except where the rated capacity is independent of the boom length. Temporary alternative measures. One or more of the following methods must be used:

1. Mark the boom with measured marks to calculate boom length,
2. Calculate boom length from boom angle and radius measurements,

3. Measure the boom with a measuring device.

Load Weighing and Similar Devices

Equipment (other than derricks and articulating cranes) manufactured after March 29, 2003 with a rated capacity over 6,000 pounds must have at least one of the following:

1. load weighing device
2. load moment (or rated capacity) indicator or
3. Load moment (or rated capacity) limiter.

Temporary alternative measures:

1. The weight of the load must be determined from a source recognized by the industry (such as the load's manufacturer) or by a calculation method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per foot weight). This information must be provided to the operator prior to the lift.

Articulating cranes manufactured after November 8, 2011 must have at least one of the following:

1. automatic overload prevention device
2. load weighing device
3. load moment (or rated capacity) indicator, or
4. load moment (rated capacity) limiter.

Temporary alternative measures:

1. The weight of the load must be determined from a source recognized by the industry (such as the load's manufacturer) or by a calculation method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per foot weight). This information must be provided to the operator prior to the lift.

The following devices are required on equipment manufactured after November 8, 2011:

1. Outrigger/stabilizer position (horizontal beam extension) sensor/monitor if the equipment has outriggers or stabilizers. Temporary alternative measures:
 - a. The operator must verify that the position of the outriggers or stabilizers is correct (in accordance with manufacturer procedures) before beginning operations requiring outrigger or stabilizer deployment.
2. Hoist drum rotation indicator if the equipment has a hoist drum not visible from the operator's station. Temporary alternative measures:
 - a. Mark the drum to indicate the rotation of the drum. In addition, install mirrors or remote video cameras and displays if necessary for the operator to see the mark.

Crane Operation

General

1. The employer must comply with all manufacturer procedures applicable to the operational functions of equipment, including its use with attachments.

2. Whenever there is a concern as to safety, the operator must have the authority to stop and refuse to handle loads until a qualified person has determined that safety has been assured.
3. Where the manufacturer procedures are unavailable, the employer must develop and ensure compliance with all procedures necessary for the safe operation of the equipment and attachments. Procedures for the operational controls must be developed by a qualified person. Procedures related to the capacity of the equipment must be developed and signed by a registered professional engineer familiar with the equipment.
4. The procedures applicable to the operation of the equipment, including rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions, and operator's manual, must be readily available in the cab at all times for use by the operator.
5. Where rated capacities are available in the cab only in electronic form: In the event of a failure which makes the rated capacities inaccessible, the operator must immediately cease operations or follow safe shut-down procedures until the rated capacities in electronic or other form are available.
6. The operator must not engage in any practice or activity that diverts his/her attention while actually engaged in operating the equipment, such as the use of cellular phones (other than when used for signal communications).
7. Where the crane has been taken out of service, a tag must be placed in the cab stating that the equipment is out of service and is not to be used. Where the employer has taken a function(s) out of service, a tag must be placed in a conspicuous position stating that the function is out of service and is not to be used.
8. Before starting the engine, the operator must verify that all controls are in the proper starting position and that all personnel are in the clear.
9. The boom or other parts of the equipment must not contact any obstruction.
10. The equipment must not be used to drag or pull loads sideways.
11. On wheel-mounted equipment, no loads must be lifted over the front area, except as permitted by the manufacturer.
12. The operator must test the brakes each time a load that is 90% or more of the maximum line pull is handled by lifting the load a few inches and applying the brakes. In duty cycle and repetitive lifts where each lift is 90% or more of the maximum line pull, this requirement applies to the first lift but not to successive lifts.
13. Neither the load nor the boom must be lowered below the point where less than two full wraps of rope remain on their respective drums.
14. Rotational speed of the equipment must be such that the load does not swing out beyond the radius at which it can be controlled.
15. A tag or restraint line must be used if necessary to prevent rotation of the load that would be hazardous.
16. The brakes must be adjusted in accordance with manufacturer procedures to prevent unintended movement.
17. The operator must obey a stop (or emergency stop) signal, irrespective of who gives it.

Leaving the Crane Unattended

The operator must not leave the controls while the load is suspended, except where all of the following are met:

1. The operator remains adjacent to the equipment and is not engaged in any other duties.

2. The load is to be held suspended for a period of time exceeding normal lifting operations.
3. The competent person determines that it is safe to do so and implements measures necessary to restrain the boom hoist and telescoping, load, swing, and outrigger or stabilizer functions.
4. Barricades or caution lines, and notices, are erected to prevent all employees from entering the fall zone. No employees are permitted in the fall zone.
5. These requirements do not apply to working gear (such as slings, spreader bars, ladders, and welding machines) where the weight of the working gear is negligible relative to the lifting capacity of the equipment as positioned, and the working gear is suspended over an area other than an entrance or exit.

Traveling with a Load

Traveling with a load is prohibited if the practice is prohibited by the manufacturer.

Where traveling with a load, the employer must ensure that:

1. A competent person supervises the operation, determines if it is necessary to reduce rated capacity, and makes determinations regarding load position, boom location, ground support, travel route, overhead obstructions, and speed of movement necessary to ensure safety.
2. The determinations of the competent person are implemented.
3. For equipment with tires, tire pressure specified by the manufacturer is maintained.

Storm Warning

1. When a local storm warning has been issued, the competent person must determine whether it is necessary to implement manufacturer recommendations for securing the equipment.

Compliance with Rate Capacity

1. The equipment must not be operated in excess of its rated capacity.
2. The operator must not be required to operate the equipment in a manner that would violate capacity requirements.
3. The operator must verify that the load is within the rated capacity of the equipment by at least one of the following methods:
 - a. The weight of the load must be determined from a source recognized by the industry (such as the load's manufacturer), or by a calculation method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per foot weight), or by other equally reliable means. In addition, when requested by the operator, this information must be provided to the operator prior to the lift; or
 - b. The operator must begin hoisting the load to determine, using a load weighing device, load moment indicator, rated capacity indicator, or rated capacity limiter, if it exceeds 75 percent of the maximum rated capacity at the longest radius that will be used during the lift operation. If it does, the operator must not proceed with the lift until he/she verifies the weight of the load.

Counterweight/Ballast

The following applies to equipment other than tower cranes:

1. Equipment must not be operated without the counterweight or ballast in place as specified by the manufacturer.
2. The maximum counterweight or ballast specified by the manufacturer for the equipment must not be exceeded.

Signal Requirements

General

Signals to operators must be by hand, voice, audible, or new signals.

Hand Signals

1. When using hand signals, the Standard Method referenced in Subpart CC Appendix A must be used (See Fig.1 below).
2. Non-standard hand signals. When using non-standard hand signals, the signal person, operator, and lift director (where there is one) must contact each other prior to the operation and agree on the non-standard hand signals that will be used.
3. Hand signal charts must be either posted on the equipment or conspicuously posted in the vicinity of the hoisting operations.

Voice Signals

1. Prior to beginning operations, the operator, signal person and lift director (if there is one), must contact each other and agree on the voice signals that will be used.
2. Once the voice signals are agreed upon, these workers need not meet again to discuss voice signals unless another worker is added or substituted, there is confusion about the voice signals, or a voice signal is to be changed.
3. The operator, signal person and lift director (if there is one), must be able to effectively communicate in the language used.
4. Each voice signal must contain the following three elements, given in the following order:
 - a. function (such as hoist, boom, etc.), direction;
 - b. distance and/or speed;
 - c. function, stop command.

New Signals

Signals other than hand, voice, or audible signals may be used where the employer demonstrates that:

1. The new signals provide at least equally effective communication as voice, audible, or Standard Method hand signals, or
2. The new signals comply with a national consensus standard that provides at least equally effective communication as voice, audible, or Standard Method hand signals.








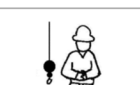

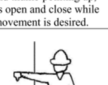
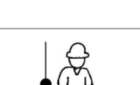

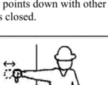
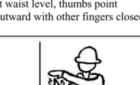
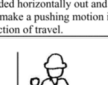
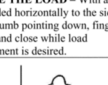
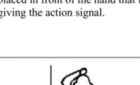
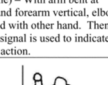
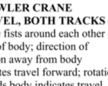
 <p>STOP – With arm extended horizontally to the side, palm down, arm is swung back and forth.</p>	 <p>EMERGENCY STOP – With both arms extended horizontally to the side, palms down, arms are swung back and forth.</p>	 <p>HOIST – With upper arm extended to the side, forearm and index finger pointing straight up, hand and finger make small circles.</p>
 <p>RAISE BOOM – With arm extended horizontally to the side, thumb points up with other fingers closed.</p>	 <p>SWING – With arm extended horizontally, index finger points in direction that boom is to swing.</p>	 <p>RETRACT TELESCOPING BOOM – With hands to the front at waist level, thumbs point at each other with other fingers closed.</p>
 <p>RAISE THE BOOM AND LOWER THE LOAD – With arm extended horizontally to the side and thumb pointing up, fingers open and close while load movement is desired.</p>	 <p>DOG EVERYTHING – Hands held together at waist level.</p>	 <p>LOWER – With arm and index finger pointing down, hand and finger make small circles.</p>
 <p>LOWER BOOM – With arm extended horizontally to the side, thumb points down with other fingers closed.</p>	 <p>EXTEND TELESCOPING BOOM – With hands to the front at waist level, thumbs point outward with other fingers closed.</p>	 <p>TRAVEL/TOWER TRAVEL – With all fingers pointing up, arm is extended horizontally out and back to make a pushing motion in the direction of travel.</p>
 <p>LOWER THE BOOM AND RAISE THE LOAD – With arm extended horizontally to the side and thumb pointing down, fingers open and close while load movement is desired.</p>	 <p>MOVE SLOWLY – A hand is placed in front of the hand that is giving the action signal.</p>	 <p>USE AUXILIARY HOIST (whipline) – With arm bent at elbow and forearm vertical, elbow is tapped with other hand. Then regular signal is used to indicate desired action.</p>
 <p>CRAWLER CRANE TRAVEL, BOTH TRACKS – Rotate fists around each other in front of body; direction of rotation away from body indicates travel forward; rotation towards body indicates travel backward.</p>	 <p>USE MAIN HOIST – A hand taps on top of the head. Then regular signal is given to indicate desired action.</p>	 <p>CRAWLER CRANE TRAVEL, ONE TRACK – Indicate track to be locked by raising fist on that side. Rotate other fist in front of body in direction that other track is to travel.</p>
 <p>TROLLEY TRAVEL – With palm up, fingers closed and thumb pointing in direction of motion, hand is jerked horizontally in direction trolley is to travel.</p>		

Fig 1. – Standard Method Hand Signals

Qualified Signal Person Requirements

The project foreman is responsible to ensure qualified signal persons are used during all hoisting and crane operations that require such.

- A qualified signal person is required when:
- The point of operation is not in full view of the operator and/ or
- The operator's view is obstructed in the direction the equipment is traveling and/or
- Either the operator or the person handling the load determines that a signal person is needed because of site-specific safety concerns.

A signal person is considered qualified if he or she:

1. Knows and understands the type of signals used at the worksite.
2. Is competent in using the type of signals being used.
3. Understands the operations and limitations of the equipment, including the crane dynamics involved in swinging, raising, lowering and stopping loads and in boom deflection from hoisting loads.
4. Knows and understands the relevant signal person qualification requirements specified in OSHA 29 CFR 1926 Subpart CC.
5. Passes an oral or written test and a practical test.

Grove Roofing Services shall use one of the following options to ensure that a signal person is qualified.

1. Third party qualified evaluator. - The signal person has documentation from a third party qualified evaluator (union hall or other) showing that he or she meets the qualification requirements (portable)
2. Employer's qualified evaluator (not a third party) - The employer's qualified evaluator assesses the individual, determines the individual meets the qualification requirements, and provides documentation of that determination. This assessment may not be relied on by other employers (non-portable).

Grove Roofing Services must make the documentation of the signal person's qualifications available at the project site, either in paper form or electronically. The documentation must specify each type of signaling (e.g., hand signals, radio signals, etc.) for which the signal person is qualified under the requirements of the standard.

Fall Protection

1. For non-assembly/disassembly work, the employer must provide and ensure the use of fall protection equipment for employees who are on a walking/working surface with an unprotected side or edge more than 6 feet above a lower level as follows:
 2. When moving point-to-point:
 3. On non-lattice booms (whether horizontal or not horizontal).
 4. On lattice booms that are not horizontal.
 5. On horizontal lattice booms where the fall distance is 15 feet or more.
 6. While at a work station on any part of the equipment (including the boom, of any type), except when the employee is at or near draw-works (when the equipment is running), in the cab, or on the deck.
7. For assembly/disassembly work, the employer must provide and ensure the use of fall protection equipment for employees who are on a walking/working surface with an unprotected side or edge more than 15 feet above a lower level, except when the employee is at or near draw-works (when the equipment is running), in the cab, or on the deck.
8. Personal fall arrest systems must be anchored to any apparently substantial part of the equipment unless a competent person, from a visual inspection, without an engineering analysis, would conclude that part could not support a 5,000 pound arresting force. Positioning device systems must be anchored to any apparently substantial part of the

equipment unless a competent person, from a visual inspection, without an engineering analysis, would conclude that the part could not support a 3,800 pound force.

9. Attachable anchor devices (portable anchor devices that are attached to the equipment) must meet the anchorage required for personal fall arrest systems.

Swing Radius Requirements

General

The requirements of this section apply where there are accessible areas in which the equipment's rotating superstructure (whether permanently or temporarily mounted) poses a reasonably foreseeable risk of:

1. Striking and injuring an employee; or
2. Pinching/crushing an employee against another part of the equipment or another object.

Preventing Entry

To prevent employees from entering these hazard areas, the employer must:

1. Train each employee assigned to work on or near the equipment ("authorized personnel") in how to recognize struck-by and pinch/crush hazard areas posed by the rotating superstructure.
2. Erect and maintain control lines, warning lines, railings or similar barriers to mark the boundaries of the hazard areas. Exception: When the employer can demonstrate that it is neither feasible to erect such barriers on the ground nor on the equipment, the hazard areas must be clearly marked by a combination of warning signs (such as "Danger-- Swing/Crush Zone") and high visibility markings on the equipment that identify the hazard areas. In addition, the employer must train each employee to understand what these markings signify.

Protecting Employees in the Hazard Area

1. Before an employee goes to a location in the hazard area that is out of view of the operator, the employee (or someone instructed by the employee) must ensure that the operator is informed that he/she is going to that location.
2. Where the operator knows that an employee went to a location within the swing radius, the operator must not rotate the superstructure until the operator is informed in accordance with a pre-arranged system of communication that the employee is in a safe position.
3. Where any part of a crane/derrick is within the working radius of another crane/derrick, the controlling entity must institute a system to coordinate operations. If there is no controlling entity, the employer (if there is only one employer operating the multiple pieces of equipment), or employers, must institute such a system

Keeping Clear Of the Load

1. Where available, hoisting routes that minimize the exposure of employees to hoisted loads must be used, to the extent consistent with public safety.

2. While the operator is not moving a suspended load, no employee must be within the fall zone, except for employees:
 - a. Engaged in hooking, unhooking or guiding a load;
 - b. Engaged in the initial attachment of the load to a component or structure; or
 - c. Operating a concrete hopper or concrete bucket.
3. When employees are engaged in hooking, unhooking, or guiding the load, or in the initial connection of a load to a component or structure and are within the fall zone, all of the following criteria must be met:
 - a. The materials being hoisted must be rigged to prevent unintentional displacement.
 - b. Hooks with self-closing latches or their equivalent must be used. Exception: "J" hooks are permitted to be used for setting wooden trusses.
 - c. The materials must be rigged by a qualified rigger.
4. Only employees needed to receive a load are permitted to be within the fall zone when a load is being landed.
5. During a tilt-up or tilt-down operation:
 - a. Only employees essential to the operation are permitted in the fall zone (but not directly under the load). An employee is essential to the operation if the employee is conducting one of the following operations and the employer can demonstrate it is infeasible for the employee to perform that operation from outside the fall zone: (1) Physically guide the load; (2) closely monitor and give instructions regarding the load's movement; or (3) either detach it from or initially attach it to another component or structure (such as, but not limited to, making an initial connection or installing bracing).
6. Boom free fall is prohibited when an employee is in the fall zone of the boom or load, and load line free fall is prohibited when an employee is directly under the load.

Boom Free Fall

The use of equipment in which the boom is designed to free fall (live boom) is prohibited in each of the following circumstances:

1. An employee is in the fall zone of the boom or load.
2. An employee is being hoisted.
3. The load or boom is directly over a power line, or over any part of the area extending the Table A of Subpart CC 1926.1408 clearance distance to each side of the power line; or any part of the area extending the Table A clearance distance to each side of the power line is within the radius of vertical travel of the boom or the load.
4. The load is over a shaft, except where there are no employees in the shaft.
5. The load is over a cofferdam, except where there are no employees in the fall zone of the boom or the load.
6. Lifting operations are taking place in a refinery or tank farm.

The use of equipment in which the boom is designed to free fall (live boom) is permitted only where none of the circumstances listed above are present and:

1. The equipment was manufactured prior to October 31, 1984; or

2. The equipment is a floating crane/derrick or a land crane/derrick on a vessel/flotation device.

Preventing Boom Free Fall

Where the use of equipment with a boom that is designed to free fall (live boom) is prohibited, the boom hoist must have a secondary mechanism or device designed to prevent the boom from falling in the event the primary system used to hold or regulate the boom hoist fails, as follows:

1. Friction drums must have:
 - a. A friction clutch and, in addition, a braking device, to allow for controlled boom lowering.
 - b. A secondary braking or locking device, which is manually or automatically engaged, to back-up the primary brake while the boom is held (such as a secondary friction brake or a ratchet and pawl device).
2. Hydraulic drums must have an integrally mounted holding device or internal static brake to prevent boom hoist movement in the event of hydraulic failure.
3. Neither clutches nor hydraulic motors must be considered brake or locking devices this purpose.
4. Hydraulic boom cylinders must have an integrally mounted holding device.

Preventing Uncontrolled Retraction

1. Hydraulic telescoping booms must have an integrally mounted holding device to prevent the boom from retracting in the event of hydraulic failure.

Load Line Free Fall

In each of the following circumstances, controlled load lowering is required and free fall of the load line hoist is prohibited:

1. An employee is directly under the load.
2. An employee is being hoisted.
3. The load is directly over a power line, or over any part of the area extending the Table A of § Subpart CC 1926.1408 clearance distance to each side of the power line; or any part of the area extending the Table A of 1926.1408 clearance distance to each side of the power line is within the radius of vertical travel of the load.
4. The load is over a shaft.
5. The load is over a cofferdam, except where there are no employees in the fall zone of the load.

Crane Operator

1. Crane operators are required to be trained and certified per the Subpart CC 1926.1427 requirements. The training and certification must be administered and comply with one of the four (4) options listed in the standard. Employers have until November 10, 2018 to provide this training and certification for its employees that operate covered cranes.

2. Crane operators must hold a NYS or other operating state crane license as required by that state.

Maintenance & Repair Employees

Maintenance and repair employees must meet the qualifications required under Subpart CC 1926.1429.

Critical Lifts

A critical lift is a non-routine crane lift that requires detailed planning and additional procedures and precautions. Critical lifts include:

1. Lifts made when the load weight is 75% or more of the rated capacity of the crane.
2. Loads that require the load to be lifted, swung, or placed out of the operator's view.
3. Lifts involving non-routine or technically difficult rigging arrangements.
4. Lifts that require the use of more than one crane.
5. Hoisting personnel with the crane.
6. The load is unique and, if damaged, would be irreplaceable or not easily repaired and is vital to the operation of the system.
7. The cost to replace or repair the load or the delay in operations would have a negative impact on the operation of the system.

After a critical lift has been determined by the project manager/Forman, they will ensure that the Grove Roofing Services Critical Lift Checklist is completed and a plan is developed which contains the following:

1. Identification of the items to be lifted, the weight, dimensions, and center of gravity of the load, and any hazardous or toxic materials which may be present.
2. Identification of the crane and its rated capacity.
3. Rigging sketches which may include:
4. Identification and rated capacity of slings, lifting bars, rigging, accessories, and below the hook lifting devices.
5. Load-indicating devices. - Load vectors.
6. Lifting points.
7. Sling angles.
8. Boom and swing angles. - Methods of attachment. - Crane orientation.
9. Other factors affecting equipment capacity.

The procedure and rigging sketches will be reviewed by the Grove Roofing Services competent person.

A pre-lift meeting will be held with the affected personnel, and the plan and procedures will be reviewed. Any questions will also be resolved at this time.

Qualified Rigger Requirements

The project foreman is responsible to ensure qualified rigging persons are used during all hoisting and crane operations that require such.

1. Qualified riggers must be used during hoisting activities for assembly and disassembly work. Additionally, qualified riggers are required whenever workers are within the fall zone and hooking, unhooking, or guiding a load, or doing the initial connection of a load to a component or structure.
2. A qualified rigger is a rigger who meets the criteria for a qualified person. Each qualified rigger may have different credentials or experience. A qualified rigger is a person that:
 - a. Possesses a recognized degree, certificate, or professional standing, or has extensive knowledge, training, and experience, and can successfully demonstrate the ability to solve problems related to rigging loads.
3. The person designated as the qualified rigger must have the ability to properly rig the load for a particular job. It does not mean that a rigger must be qualified to do every type of rigging job. Each load that requires rigging has unique properties that can range from the simple to the complex. For example, a rigger may have extensive experience in rigging structural components and other equipment to support specific construction activities. Such experience may have been gained over many years. However, this experience does not automatically qualify the rigger to rig unstable, unusually heavy, or eccentric loads that may require a tandem lift, multiple-lifts, or use of custom rigging equipment.
4. Riggers do not have to be certified by an accredited organization or assessed by a third party.
5. A certified and/or licensed crane operator does not necessarily meet the requirements of a qualified rigger. Determining whether a person is a qualified rigger is based on the nature of the load, lift, and equipment used to hoist that load plus that person's knowledge and experience. A certified/qualified crane operator may meet the requirements of a qualified rigger, depending on the operator's knowledge and experience with rigging.

Rigging

General

During all rigging operations, these general rules must be followed:

1. All rigging equipment must be inspected prior to each shift and defective equipment removed from service.
2. Equipment must not be loaded in excess of its recommended safe working load. There are tables available that list all of the types of lifting material and their rated safe loads.
3. Rigging equipment, when not in use, must be removed from the immediate work area so as not to present a hazard.
4. Specially designed rigging equipment must be marked to indicate their safe working loads and proof tested prior to use to 125% of their rated load.

There are three (3) basic types of rigging slings used in our work - alloy steel chains, wire rope, and synthetic web slings.

Alloy Steel Chains

1. Check to see if the size, grade, rated capacity, and manufacturer are permanently affixed to it.
2. Perform a pre-use inspection.
3. Hooks, rings, and other mechanical coupling links must have a rated capacity equal to that of the chain.
4. At least annually a written inspection of the chain must be made.

Wire Rope Slings

1. Check to see if the rated capacity is permanently affixed to it.
2. Perform a pre-use inspection.
3. Follow capacity for type of hitch being used.
4. Slings with rope clips may not be used as lift rigging.
5. At least annually a written inspection of wire rope sling must be made.

Synthetic Web Slings

1. Check to see if the sling is marked with its name, rated capacity, and type of material.
2. Perform a pre-use inspection.
3. Follow capacity for type of hitch to be used.
4. Protect synthetic web slings from becoming wet and freezing. The ice crystals that form from during freezing may reduce the lifting strength.
5. At least annually a written inspection of wire rope slings must be made.

Hoisting Personnel

1. Hoisting personnel shall be conducted under the requirements of OSHA 1926.1431.

Training

Grove Roofing Services will train affected employees in the following to meet the requirements of Subpart CC:

- Operator
- Overhead power line safety
- Signaling
- Competent persons and qualified person duties.
- Crush/pinch points related to the work.
- Tag-out

CONVEYORS

1. All conveyors must have an emergency shutoff, such as a pull cord. Before operating the conveyor, make a mental note of where the emergency shutoff is located in case of an emergency.
2. Do not wear loose clothing, jewelry, or other items that can become caught in conveyors.
3. Never ride or climb a conveyor.
4. Do not operate a conveyor unless you have been trained in its operation.
5. Never load a conveyor beyond its capacity.

HOISTS

Inspect the hoist daily. Look for frayed cables, broken welds, bent struts, or faulty mechanical parts. Make sure guards are intact and in place.

1. If possible, set materials on a pallet to make handling them easier.
2. Never leave a suspended load unattended.
3. Slings, hooks, and rigging should be inspected prior to each use.
4. Check to make sure the hoisting area is free of debris.
5. Use barricades to limit pedestrian travel near the hoisting area.
6. Do not exceed the rated capacity of the hoist.
7. Do not assume that your equipment is in the same condition as when you last left the job.
8. Rig loads with properly rated slings and safety hooks. Safety hooks must be equipped with a spring-loaded latch. Lift the load momentarily to check the security of the load and its balance.
9. Always use enough counterweight. As a rule of thumb, use 2 pounds (0.90 kg) of counterweight for every 1 pound of load. Do not use construction materials as counterweight, nor materials that flow, such as water or sand. Always follow the manufacturer's specifications.
10. All ground personnel must wear hard hats. Stay out from under suspended loads.

MOBILE EQUIPMENT

General

Workers who work in or around mobile equipment are at risk of serious injury or death.

This policy applies to all free moving mobile equipment that may be propelled by gasoline, propane, diesel or electricity. This policy establishes requirements to work in or around all types of mobile equipment.

Controls

Equipment Design

Equipment should be evaluated carefully to ensure the equipment is the right design for the activity. Design considerations are the operating terrain, load capacities, size and dimensions, and maneuverability.

Operator Training and Qualification

Only trained and authorized personnel may operate and access mobile equipment. Training should include general safety information, equipment specific information (refer to the owner's manual), site specific training, and a skills evaluation to determine competencies.

Where no specific requirements for operator training can be found, an employer should ensure the following items are covered in operator training:

- Capabilities and limitations of the specific piece of mobile equipment
- Basic maintenance requirements
- Pre-trip inspection requirements
- Operating requirements of mobile equipment including safe loading and unloading
- Use of required personal protective equipment

Mobile Equipment Maintenance and Inspections

Mobile equipment should be inspected and maintained in accordance with applicable standards and manufacturer's specifications. Operators should complete a documented pre-shift inspection prior to operating any piece of equipment. In addition, qualified personnel should carry out documented maintenance procedures in accordance with the manufacturer's specifications. A well-defined process and procedure should be established to identify how to remove and tag defective equipment from service.

Pedestrian Visibility, Routes, and Right of Ways

Clearly marked pedestrian routes should be established to keep workers out of the path of machinery. Right of ways should be clearly established and communicated to both the equipment operator and all workers and visitors. Workers should maintain a high level of visibility if their activities require them to be in the area of equipment - fluorescent reflective safety vests are recommended. Keep eye contact with the operator - you must see and be seen.

Equipment Operation

Operators should follow these basic guidelines:

General Operating Requirements

- The location shall determine the vehicle speed limit and post the information.
- All incidents involving mobile equipment shall be formally investigated following the Grove Roofing Safety Manual Accident, Incident, & Near Miss Reporting process
- Equipment operators are responsible for keeping the equipment under control at all times
- All equipment operators must obey traffic signs and signals, and audible or visual warning devices
- Alteration or modification of equipment is not permitted without prior written consent of the manufacturer and management
- When parking equipment, the operator must not block access to ladders or stairs, fire equipment, or other emergency response areas or equipment
- Stunt driving and horseplay are strictly forbidden
- All equipment rated capacities shall not be exceeded
- The right of way must be yielded to emergency vehicles
- Riders are not permitted except for the operator unless approved by location management
- Operators must keep both hands free such as not using a mobile device while operating
- More specific procedures and rules in the Grove Roofing Safety Manual must be followed

Free Moving Equipment or Vehicles

- If governors are in use and are set to a specific speed, they must not be removed or altered in any way
- Equipment operators must maintain a safe following distance from other equipment or vehicles (three truck lengths or three seconds)
- For intersections with obstructed views, the equipment operator is responsible to slow down, sound any onboard warning device, and check for cross-traffic
- Equipment operators must stay within marked pathways
- Seatbelts (when installed on the equipment) must be worn at all times
- Load backrest extension will not increase the maximum weight, which can be handled and provides overhead protection for operators and helps prevent parts of the load from falling on employees
- Excess counter-weighting is forbidden
- Unstable or unsafely arranged loads shall not be picked up and restacked, banded, taped, or shrink-wrapped
- Transfer loads from broken pallets or containers to sound ones before picking them up and promptly remove these same pallets or containers to void their future use
- The proper attachments must be used for the respective equipment
- Be aware of bystanders and pedestrians that may be in the target zone of an unstable load
- Traveling surfaces must be able to support the weight of the equipment and the load
- Railroad tracks and similar edges shall be crossed at a 45-degree angle, where possible

- There must be adequate overhead clearance maintained such as from lights, sprinklers and pipes
- Equipment operators must maintain a safe distance from roof edges or other edges such as elevated ramps, platforms and docks
- Equipment operators shall not pass other vehicles moving in the same direction at intersections, blind spots or other dangerous locations
- Reduce backing whenever possible - it is the most dangerous movement. Equipment operators need to look back over both shoulders before changing direction or moving in reverse. Do not rely on mirrors alone.
- Equipment operators must follow rules for refueling
- Equipment operators must avoid running over loose materials, uneven or soft surfaces and slippery areas including oils slicks The equipment operator must report and help correct these situations
- Equipment operators shall slow down for the conditions including wet or slippery surfaces and weather factors
- Equipment operators shall avoid running on ice and snow, where possible
- All free moving mobile equipment shall have back-up alarms
- Back-up alarms and lighting must be inspected during the pre-shift inspections and any deficiencies corrected

FORKLIFTS & LULLS ***(POWERED INDUSTRIAL TRUCKS)***

General

The use of powered industrial trucks (forklifts/lulls) is essential in our daily operations. Safe operation of this equipment is also essential. The following rules apply to the use of powered industrial trucks:

Inspections

1. Powered industrial trucks must be inspected by an authorized operator at the start of each shift.
2. If the inspection reveals any condition affecting the safe operation of the vehicle it shall be taken out of service immediately. Report this to the supervisor immediately.
3. If at any time during the operators shift a powered industrial truck is found to be in unsafe, the operator will immediately notify his/her supervisor and remove the truck from service until it has been restored to safe operating condition.

General Operating Procedures

The general operating procedures outlined below are all safety related, affecting the Powered Industrial Truck (PIT) operator, the pedestrian or the load being transported. While many of these procedures may appear to be common sense, they should all be followed to enhance overall safety.

1. All powered industrial truck injury, property damage, and near miss incidents must be reported to your supervisor immediately. All accidents/incidents will be investigated to determine root cause and corrective actions.
2. If at any time a forklift is found to be in need of repair, defective or in any way unsafe, the forklift must be taken out of service until it has been restored to a safe operating condition.
3. All repairs must be made by authorized personnel.
4. Manufacturer's operating instructions must be understood by the operator.
5. Load capacity information must be present. A forklift must never be used to lift a load beyond its capability.
6. Seat belts are required to be worn while operating the forklift.
7. The operator must always drive slowly enough to make a turn without tipping the forklift and to stop safely for pedestrians.
8. Wet or slippery driving surfaces require slower than ordinary speeds.
9. A forklift must be kept behind any other moving vehicle by at least three times the length of the forklift.
10. The operator must not pass another vehicle at intersections, blind spots or other dangerous locations.
11. The operator must slow down and sound the horn at cross aisles and other locations where vision is obstructed.
12. The operator must watch for pedestrians, especially at intersections, passageways and doors leading from toilets, lunchrooms and offices.

13. The operator must never drive directly toward anyone.
14. Stunt driving and horseplay are not permitted.
15. A forklift may be used to elevate workers only if it meets OSHA requirements and is approved by the Grove Roofing Services safety director.
16. No one can be allowed to stand or pass under the lift portion of any forklift, whether loaded or empty, because injury may result from mechanical failure or falling objects.
17. Before moving or stacking materials, the operator must survey the path of travel to avoid machinery, overhead obstructions, sprinkler systems, manufactured goods and other obstructions.
18. Carry the load low enough to avoid striking overhead obstructions, such as doorways, electrical conduits and sprinklers.
19. Carry the load only high enough to avoid raised or uneven surfaces.
20. Do not raise or lower a load while the forklift is moving.
21. Drive the forklift in reverse if front view is obstructed by the load.
22. Exercise caution on inclines. Always drive with the load pointed uphill (whether ascending or descending).
23. Be especially careful going downhill, so that the forklift can be brought to an emergency stop.
24. Never load or park the forklift so as to block or obstruct fire aisles, fire equipment, or means of egress.
25. Keep forklifts well back from the edge of loading docks and other open-sided floors.
26. When the operator must leave the forklift unattended, load engaging means (mast and forks) must be fully lowered, controls must be neutralized, the power must be shut off, and the parking brake must be set. An additional safety precaution is to remove the keys.
27. When an operator is dismounted and is within 25 feet of the vehicle and is in view of the vehicle, the engine may be left running. The load engaging mechanism must be fully lowered, controls must be neutralized (transmission in neutral position), and the brakes must be set.
28. Wheels must be chocked if the forklift is parked on an incline.

Re-Fueling

Diesel Powered Trucks

1. Refuel only at designated safe locations. A designated safe location outdoors is preferable to a refueling area indoors. Do not refuel trucks around heat sources.
2. Stop the engine during refueling.
3. Do not smoke while refueling.
4. Do not allow the powered industrial truck to become low on fuel or run out of fuel. Sediment or other impurities in the tank could be drawn into the fuel system causing difficulties in starting and actual damage to the internal components.
5. Do not fill the tank to the top; it may overflow because fuel expands as it is heated.
6. Follow correct refueling procedures:
 - a. Park the forklift in the designated refueling area.
 - b. Place the transmission in Neutral.
 - c. Lower the forks to the ground.
 - d. Engage the parking brake.

- e. Shut off the engine.
- f. Open the filler cap.
- g. Fill the tank slowly (if spillage occurs, wipe off fuel and wash down the area with water).
- h. Close the filler cap.

Propane Powered Trucks

1. Do not refuel LPG-powered trucks in areas where LPG vapors could collect if a leak occurs.
2. Do not refuel LPG-powered trucks near heat sources, stairways, exits, or other egress areas.
3. Position the tank so the liquid propane does not come into contact with the relief valve.
4. Make sure the locking pin engages into the cylinder.
5. Make sure the valve is closed tightly.
6. Store the propane outside, in the designated storage cage.
7. Always protect the valve from any damage.
8. Avoid contact with liquid propane, as it can cause frostbite.
9. Close the valve before breaking connections.
10. Wear eye protection and protective gloves.
11. Close the valve on the cylinder.
12. Run the engine until it stops. This ensures that the connection hose is empty.
13. Shut off the engine. Engage the parking brake.
14. Open the connecting nut. DO NOT use metal tools.
15. Disconnect the hose.
16. Disconnect the holding straps.
17. Remove the empty cylinder.
18. Replace with a full cylinder in the proper position.
19. Connect the holding straps.
20. Tighten the connecting nut (wiggle hose).
21. Open the valve on the cylinder slowly and check for leaks. Use solution of soap and water. Smell – listen – look.
22. Slowly open the valve to its fully open position.
23. Secure the hose in an inward and downward direction.
24. Secure the cylinder. Ensure holding straps are engaged.
25. Start the engine and resume operation.

Maintenance

1. Powered industrial truck maintenance and repair shall be performed by authorized mechanics/service techs.
2. Modifications to powered industrial trucks can only be made with the manufactures approval
3. Manufactures maintenance and service inspection requirements shall be followed.

Training

No one shall operate a powered industrial truck without proper instructions and training. Only Grove Roofing Services authorized operators are permitted to operate powered industrial trucks.

Training shall consist of a combination of formal instruction, practical training, and evaluation of the operator's performance in the workplace. Powered industrial truck operators shall receive initial training and evaluation in the following topics, as required by OSHA:

1. Operating instructions, warnings, and precautions for the types of truck the operator will be
2. authorized to operate;
3. Differences between the truck and the automobile;
4. Truck controls and instrumentation: where they are located, what they do, and how they work;
5. Engine or motor operation;
6. Steering and maneuvering;
7. Visibility (including restrictions due to loading);
8. Fork and attachment adaptation, operation, and use limitations;
9. Vehicle capacity;
10. Vehicle stability;
11. Any vehicle inspection and maintenance that the operator will be required to perform;
12. Refueling and/or charging and recharging of batteries if applicable;
13. Operating limitations;
14. Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate.

Workplace Related Topics

1. Surface conditions where the vehicle will be operated;
2. Composition of loads to be carried and load stability;
3. Load manipulation, stacking, and unstacking;
4. Pedestrian traffic in areas where the vehicle will be operated;
5. Narrow aisles and other restricted places where the vehicle will be operated;
6. Hazardous (classified) locations where the vehicle will be operated (if applicable);
7. Ramps and other sloped surfaces that could affect the vehicle's stability;
8. Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust (if applicable);
9. Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation.

Re-Training

Refresher training, including an evaluation of the effectiveness of that training, shall be conducted every 3 years to ensure that the operator has the knowledge and skills needed to operate the powered industrial truck safely.

Refresher training in relevant topics shall be provided to the operator when:

1. The operator has been observed to operate the vehicle in an unsafe manner;
2. The operator has been involved in an accident or near-miss incident;

3. The operator has received an evaluation that reveals that the operator is not operating the truck safely; The operator is assigned to drive a different type of truck; or
4. A condition in the workplace changes in a manner that could affect safe operation of the truck.

SHEET METAL OPERATIONS

General

1. Sheet metal should be stacked neatly to prevent sliding or falling.
2. Bundles of sheet metal should be handled with mechanical equipment, such as hoists, conveyors, and cranes.
3. When loading and unloading sheet metal, be aware of electrical lines and maintaining proper clearance.
4. Properly secure stored sheet metal, especially copper or aluminum as they are theft risks.
5. Keep the area clear of any accumulation of scrap metal or debris.
6. All personnel who operate mechanical equipment must be trained. Mechanical presses must be properly guarded.

Sheet Metal Personal Protective Equipment

1. Always wear gloves when handling sheet metal. Gauntlet-type gloves with wristlets can provide added protection to wrists and forearms. Sheet metal has very sharp edges – be careful when handling! Power shears must be properly guarded to keep your fingers and hands away from the blade.
2. Wear boots with thick rubber or composite soles.
3. If there is a potential for chemical splashes or if there is a danger of flying objects, safety glasses or goggles should be worn.
4. When welding, always wear leather gloves, a welding face shield with properly tinted lenses, and an apron.
5. If there is a potential for falling or flying objects, hard hats should be worn.
6. Use earplugs or other hearing protection if there are excessive noise levels.
7. When handling lead, follow the company lead program (when applicable) for the task(s) you are performing.

Welding and Torch Cutting

1. Employees must be CERTA trained and have a current authorized CERTA applicator card before operating any torch equipment.
2. Employees must be trained before operating any welding equipment.
3. When torch cutting, wear proper personal protective equipment, such as leather gloves, a leather apron, and a face shield with properly tinted lenses.
4. Inspect all equipment prior to use, including any compressed gas cylinders, hoses, regulators, and torches. Any defective parts should immediately be taken out of service.
5. Check the valves for dirt or debris.
6. An ABC-rated fire extinguisher (see section 12C for an explanation of fire extinguisher ratings) must be located within easy access during any welding or cutting operations.
7. Make sure there are no flammable materials or oily rags located near the welding or cutting operation. Remember to check for and be aware of flammable vapors that may be present.
8. When you have completed your welding job, always turn off the acetylene and oxygen at the tanks.

9. Conduct welding and soldering operations in well-ventilated areas. Respiratory protection may be required. Check with your supervisor.
10. Never cut or weld on a tank, drum, or other container, unless it has been thoroughly cleaned and inspected by a supervisor.
11. Arc welding requires the use of appropriately tinted eye protection to protect against the bright light generated.

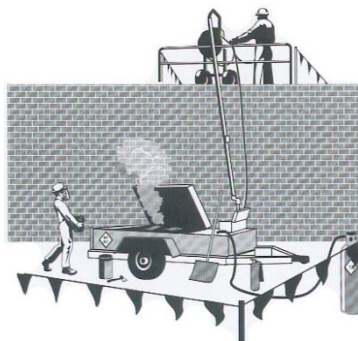
HOT ASPHALT SAFETY

General

The dangers associated with kettles and tankers are very real. These vessels contain materials, such as hot asphalt or coal tar, that need to be handled with extreme care. It is important to always follow safety requirements. Always wear the proper personal protective equipment.

Kettle Safety

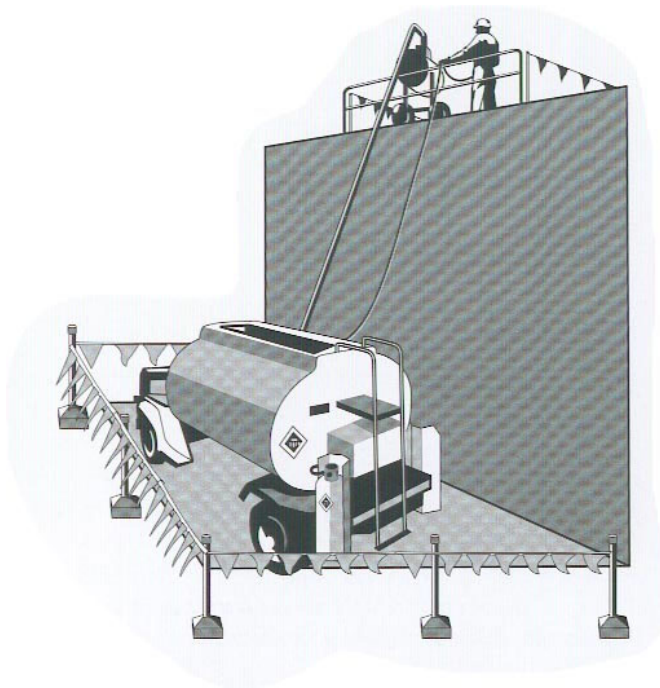
1. The propane tanks should be secured in an upright position at least 10 feet from the kettle.
2. The kettle should be on level ground with the tongue leveled and the wheels blocked.
3. Make sure the kettle lid opens away from the building. Also, check to see that the lid fits tightly.
4. A warning line should be set up around the kettle area to keep people away.
5. Make sure the kettle is ice and water free. Water inside the kettle can pop or flash once the asphalt is heated.
6. Before firing up the kettle, make sure all the vents are open. Check all hoses, gauges, burners, and other equipment for defects.
7. Cut the bitumen into hand-sized pieces and place them carefully into the kettle. Always wear the appropriate PPE when loading the kettle.
8. Never light a torch with a disposable lighter or matches. Use a spark lighter.
9. Increase kettle temperatures and add bitumen slowly. Never allow kettle tubes to be exposed. This can result in a fire or an explosion.
10. Keep any debris, discarded packaging, or any combustibles neatly away from the kettle area.
11. If there is a fire inside the kettle, close the lid and turn off the burners immediately.
12. Open spigots and valves slowly. Be careful on windy days because hot bitumen can easily be blown around, causing burns.
13. When carrying buckets of hot asphalt or bitumen on sloped surfaces, do so with the bucket on the downhill side.
14. To avoid splashes, never fill the bucket more than three quarters full.
15. Have a 20 pound (9.07 kg) ABC-rated dry chemical fire extinguisher on the roof and two 10 pound (4.54 kg) ABC-rated dry chemical fire extinguishers on the ground within 30 feet (9.144 m).



Tanker Safety

Tanker safety precautions important to remember:

1. Always make sure the tanker is water free.
2. The tanker should be set on level ground. Setting the tanker on the incline could cause the tubes to become exposed; this may result in a fire or explosion.
3. When filling the tanker, allow enough room inside for the expansion of the bitumen during heating.
4. Never fire the burners while the tanker is being filled.
5. Stand clear of the manhole when filling.
6. After filling, make sure the manhole cover is securely closed before moving the tanker.
7. When firing up the tanker, there should be at least 6 inches of bitumen covering the tubes.
8. Manually, with a hand-held thermometer, verify the accuracy of the automatic thermostat.
9. Heat the tanker slowly, especially if there is cold bitumen inside.
10. Never allow the vent pipe to become plugged. A buildup of vapors could cause an explosion.
11. When transporting a tanker that has recently been emptied, allow enough time for the tubes to cool.
12. Have two 20 pound (9.07 kg) ABC-rated fire extinguishers on hand.

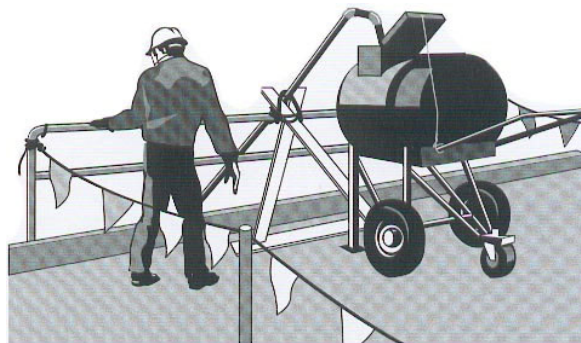


Hot Pipes

1. Hot pipes should be set up as vertically as possible to avoid bowing.
2. Make sure the pipes are clean and dry and all joints and unions are in good condition and secure.
3. Insulating the pipes, especially during cold weather or where the pipe is extended a substantial distance, helps to maintain proper bitumen temperature and control excess fumes.
4. The end of the pipe should be connected to a 120-degree elbow pipe and a flexible discharge hose.
5. Never clean a pipe by heating it with a propane torch. The pipe can explode.
6. Hot pipes that must be extended a substantial distance should be supported.
7. Tie off the pipe to a guardrail or other support immediately after placing it on the roof.
8. Guardrails should be erected at least 4 feet (1.219 m) on either side of the pipeline.
9. If possible, it is a good idea to place a tarp on the side of the building next to the pipe to prevent leakage from hitting the building.

Luggers

1. Always make sure there is no water or moisture in the lugger. Keep the filler neck covered when it is not in use.
2. Never fill a lugger or mop bucket more than three-quarters full. Anything over this limit is easy to splash or spill.
3. Always chock the wheels or set the brakes while filling the lugger.
4. Always check the path of travel and make sure it is level and clear of debris before moving the lugger.
5. Be sure the lugger's wheels are free of debris and can turn easily to minimize the possibility of it overturning.
6. Operators must wear appropriate PPE.



Asphalt Fumes

Asphalt fumes can be an irritant of the eyes, nose, throat, and lungs. However, by using good work practices, exposure to asphalt fumes by roofing employees and the public can be minimized.

1. If possible, the kettle should be placed downwind of roofing employees and any occupied buildings.
2. Keep the kettle and tanker openings closed as much as possible. This will heat the asphalt quicker and keep fumes to a minimum.
3. Use insulated hot pipes and luggers.
4. Never overheat asphalt. Maintaining the kettle at the proper temperature (between 425°F [218°C] and 550°F [288°C]) prevents the emission of excessive amounts of fumes. Verify proper equiviscous temperature (EVT) ranges for the type of bitumen used.
5. As a rule of thumb, check the asphalt packaging or manifest from the supplier if you are using a tanker, for the EVT and flash point. You may heat the asphalt 50 degrees higher than the EVT, if necessary, as long as you stay 25 degrees below the flash point.
6. It is important for the rooftop workers to periodically check the temperature of the asphalt to ensure the proper EVT. Depending upon the outcome, the rooftop worker must inform the kettlemen to raise or lower the temperature accordingly.
7. Remember, the lower the temperature, the less fume is produced.
8. If possible, air intakes and windows of buildings downwind of the kettle should be closed.
9. Work upwind of the asphalt operation whenever possible.

HOT WORK

Purpose

Grove Roofing Services (Grove Roofing) is committed to providing a safe and healthy work environment and to protecting our employees from injury or death caused by uncontrolled hazards in the workplace. Grove Roofing recognizes the potential for fire from roofing hot work operations. This Hot Work Program has been established to help protect the safety of Grove Roofing employees and client property by establishing appropriate hot work procedures and designated areas for hot work operations.

Scope

This program applies to all Grove Roofing employees and/or subcontractors who complete hot work or work in areas where hot work is taking place. Employees and subcontractors are required to follow the procedures outlined in this program.

Program Roles

Supervisors

Supervisors are responsible for:

- Ensuring that only authorized employees perform hot work activities.
- Ensuring employees comply with all procedures described in this program
- Ensuring all hot work activities are approved prior to being performed in both designated and non-designated areas
- If all combustible materials cannot be removed, ensuring that guards are in place to confine the heat, sparks and slag.
- Inspecting hot work areas and reviewing planned safety precautions before hot work operations begin.
- Completing hot work permit requests, inform employees, and post permit.
- Identifying dangerous situations, not suitable for hot work.
- Designating a fire watch employee for all hot work performed in a non-designated area during and for no less than 30 minutes after work is completed.
- Conducting final inspections after a fire watch period has concluded.

Authorized Personnel

Authorized personnel includes employees or subcontractors who are trained to perform hot work activities including soldering, heat-treating, grinding, torch-applied roofing and any other application involving heat, sparks or flames. Duties of authorized personnel include:

- Completing all required hot work training.
- Seeking approval and/or a permit to perform hot work prior to beginning operations.
- Performing hot work activities and procedures in accordance with this program.
- Inspecting designated hot work areas for combustibles and other hazards prior to beginning hot work. Combustibles within 35 feet of hot work must be removed whenever possible.

- Inspecting hot work equipment to ensure it is in safe operating condition before beginning work.
- Retaining control of the equipment while hot work is in progress.

Fire Watch Personnel

A fire watch is a designated employee who monitors the hot work area for fires while work is being performed and for 30 minutes after its completion. Duties of the fire watch personnel include:

- Maintaining continuous watch over hot work activity during and for 30 minutes after work has been completed.
- Monitoring adjacent areas for fires.
- Extinguishing small, controllable fires with extinguishing equipment available in hot work area.
- Activating fire alarm if an uncontrollable fire occurs.
- Signing the hot work permit 30 minutes after the work is complete and re-posting signed permit in hot work area.
- Ensuring that the supervisor has conducted a final inspection after the fire watch period has concluded and signs off on the permit.
- Having a supervisor find another trained person to relieve him/her if the designated individual must leave for any reason.

Other Personnel

This includes employees or subcontractors who are neither authorized personnel nor fire watch personnel but are still exposed to areas where hot work is performed. Other personnel should not perform any hot work activities. Duties include wearing proper personal protective equipment when in a 35 foot radius of hot work.

Hot Work Designated Areas (Shop)

The following areas have been designated as approved hot work areas in our shop. Hot work may be performed in these areas without the issuance of a hot work permit. Even though a permit is not required in these areas, authorized personnel must inspect the area for combustibles and other hazards before beginning hot work operations.

- Sheet metal shop
- Shop welding/soldering booths

Authorized personnel must be certain that a functioning fire extinguisher appropriate for the type of potential fire is present at all times while hot work is being performed in designated areas.

HOT WORK NON DESIGNATED AREAS (PROJECT LOCATIONS)

Basic Precautions

At a minimum all of the following precautions must be met to perform hot work in a non-designated area (project locations).

- Building fire sprinkler system is operational at the hot work location. (if applicable)
- All combustible materials within 35 feet of the hot work shall be moved to a safe distance or other location.
- If combustible materials cannot be moved, they are protected by fire retardant covers or they are shielded with fire retardant or metal guards.
- Appropriate PPE is provided to employees or subcontractors performing hot work based upon a hazard assessment.
- A fire watch is initiated during and for 30 minutes after all hot work has stopped.
- The Grove Roofing supervisor has inspected the hot work area prior to beginning work.
- The Grove Roofing supervisor has issued and posted a hot work permit

Special Precautions

Where any of the following conditions exist additional precautions shall also be taken above the basic precautions. The final protection measures will be determined by the Grove Roofing supervisor prior to beginning work.

Roof Openings/Coverings

Roof openings including but not limited to vents, expansion joints, drain holes, etc. must be protected to prevent slag, sparks, tar, and other materials from falling to the level below.

Protections may include:

- Fire-resistant shields or material
- Wetting down areas below (as applicable)
- Additional protections deemed necessary by your supervisor.
-

Potentially Explosive Atmospheres

If there is a potential for mixtures of flammable gases, vapors, liquids or dust in the air, **no hot work will be conducted** until the Grove Roofing supervisor has completed a review and air monitoring has confirmed that there is no danger of an explosion.

Containers

No hot work will be performed on used drums, barrels, tanks or other container until they have been cleaned thoroughly. The Grove Roofing supervisor must determine that no flammable materials and no substance such as greases, tars, acids or other material which might produce flammable or toxic vapors if exposed to heat are present.

Hot Work Permits

General Procedure

In cases where a hot work permit is required by the client.

1. The Grove Roofing supervisor will obtain, complete, and submit a hot work permit provided by the client.
2. The Grove Roofing supervisor will review planned safety precautions and inspect the hot work area using the hot work permit.
3. The Grove Roofing supervisor will assign the fire watch.
4. The Grove Roofing supervisor will communicate to other employees/contractors any additional special precautions that need to be taken prior to beginning operations.
5. If all necessary precautions have been taken and work can proceed, the Grove Roofing supervisor will complete the hot work permit and post the permit in a highly visible area.
6. Upon completion of the hot work operations and the 30 minute fire watch, the Grove Roofing supervisor will inspect the completed job and ensure the area is clear and ready to return to normal operations.
7. The Grove Roofing supervisor will inform the employees in the immediate area that work is completed to return to normal operations.

Voiding Permits

Hot work permits will be void and all hot work must not begin or must be immediately stopped if any of the following occur:

- Fire alarm sounds
- Work has not begun within 60 minutes of approved time
- Work has been suspended for more than 60 minutes
- A work shift ends or there is a change in authorized or approval personnel
- At any time the authorized employee and/or supervisor detects a danger or uncontrolled hazard

Whenever a hot work permit is voided, a new permit must be issued to begin or continue hot work operations.

Training

Authorized Personnel / Supervisors

Before any employees designated as authorized personnel or supervisors are allowed to perform any hot work operations, they must first receive training. Periodic retraining will occur if an employee has a lack of knowledge, uses equipment improperly or if work tasks change. At a minimum, the training will include the following subjects:

- Fire prevention and protection
 - Basic precautions
 - Special precautions
- Employee classifications and responsibilities
 - Hot work approver
 - Authorized personnel
 - Supervisors
 - Fire watch personnel
- Designated hot work areas

- Non-designated hot work procedures
- Protection of personnel
- Hot work permit system
- Handling and storage of hot work materials
- PPE selection and use

BACK INJURY PREVENTION

General

Back injuries are the most common and one of the most debilitating afflictions that roofers experience. Many back injuries are not caused by a single incident but by the cumulative stress of using poor lifting techniques, as well as other factors, such as fatigue and poor physical conditions. Eventually, these bad habits catch up with a worker, and back pain develops. However, by learning proper lift techniques and following commonsense guidelines, most back injuries are preventable. The purpose of this section is to help you keep your back healthy.

Proper Lifting Techniques

The best method of preventing back injury is to learn to lift properly and to get help with heavy loads. A few commonsense tips can help you avoid back strain.

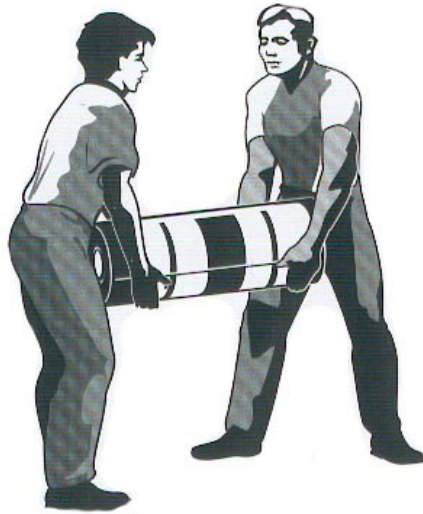
1. If possible, use equipment, such as hoists, dollies, handcarts, and forklifts, to help your lifting.
2. Frequently stretch to loosen up and prepare your muscles for work.
3. Before you move an object, check the intended path of travel and ensure that it is obstruction-free.
4. Before you lift something, check the weight of the object.
5. If the object is too heavy or bulky, get help. Don't try to be a hero (see section 9B).
6. Place one foot beside the load and one foot behind it. Make sure your feet are securely placed on the roof or ground to avoid slipping.
7. Firmly grasp the object you are lifting. Tuck your arms and elbows in.
8. Holding your head up when you lift helps to keep your spine in its natural curved position.
9. Lift with your legs to support the weight. Lift the object straight up and don't twist or lean forward.
10. Always keep the object you are lifting close to your body. Holding the load away from your body puts more strain on your back muscles.



Team Work

It is very important to realize that you don't have to do all of the heavy lifting yourself. Too often, employees think by asking others to help them, they are not doing their job or are just lazy. In reality, getting assistance from other employees will help you do your job more efficiently and prevent injuries.

1. Always check the load to find out how heavy it is. Don't try to pick it up, but lift a corner to get a sense of its weight. If it is too heavy, find a coworker to assist you.
2. Try to rotate jobs with other employees. Switching jobs avoids repetition and saves on long-term aches, pains, and injuries.
3. Communicate with the person assisting you so you lift and set the load down at the same time.
4. If possible, both persons should try to carry the load while facing each other.
5. If the load is very heavy, take rest breaks.



EMERGENCY ACTION PLAN

General

Emergency actions plans for our project locations are specific to each location. Depending on the size of the project and work performed the complexity of the plan will vary. Often, Grove Roofing Services is required to adopt owners, construction manager, or general contractor's emergency action plan. At projects requiring a site specific safety plan, the plan will address emergency action and response procedures related to that project.

General Emergency Preparedness Requirements for Project Sites

1. A list of emergency telephone numbers shall be located on site and posted at the Grove Roofing Services work area, field office, and/or job box.
2. Directions to the nearest hospital shall be located on site and posted at the Grove Roofing Services field office and/or job box.
3. Employees will be informed of site specific evacuation procedures including means of notification (alarms), evacuation routes, rally points, and accountability procedures.
4. Maintain and post a list of employees trained in CPR/First Aid. A valid certificate in first aid training must be obtained from the U.S. Bureau of Mines, the American Red Cross, or equivalent training that can be verified by documentary evidence.
5. Maintain and inspect monthly a stocked first aid kit. First aid supplies and equipment shall be easily accessible whenever required. First aid kits shall consist of appropriate items determined to be adequate for the project conditions in which they will be used.
6. Maintain a bloodborne pathogen spill clean-up kit.
7. Maintain and inspect monthly eyewash bottle and/or eye wash station. (may be provided by facility)
8. Maintain fire extinguisher(s) at field trailer, storage areas, re-fueling areas, and areas hot work is performed.

First Aid / Emergency Treatment

General

Grove Roofing Services does not maintain a medical emergency response team, but does maintain a list of First Aid/CPR trained employees who can respond to basic first aid needs.

For any injury beyond basic first aid, treatment shall be performed by the local emergency services organization or urgent care clinic. With the exception of CPR, under no circumstances shall an employee provide advanced medical care and treatment unless trained to do so. These situations shall be left to emergency services professionals, who have the necessary training, equipment, and experience. Untrained individuals may endanger themselves and/or those they are trying to assist.

Minor Injury

1. First Aid/CPR trained employees may perform basic first aid on injuries that are non-serious at their discretion. If a minor injury requires preventive first aid until emergency personnel arrive, it must be done by a first aid trained employee. For any injury that requires treatment beyond first aid, immediately contact your supervisor and if needed 911.

Severe Injury

1. Under no circumstances shall an employee provide advanced medical care and treatment. These situations shall be left to emergency services professionals, who have the necessary training, equipment, and experience. Untrained individuals may endanger themselves and/or those they are trying to assist. When a severe injury occurs:
2. Evaluate the scene, if the scene is safe evaluate the victim and their severity of injury / medical needs. If the scene is not safe do not get near the victim.
3. Immediately call 911 and give information requested. Do not hang up until told to do so. and an emergency response team will be onsite
4. Have a co-worker immediately contact the supervisor to respond to the area.
5. If CPR is required, notify employees trained in CPR.
6. Assist emergency personnel by providing them immediate and direct access to the employee.

Treatment for Asphalt and Modified Bitumen Burns

1. Call immediately for emergency services.
2. Make sure that you have an adequate supply of water on the job. Cool the burned area with water.
3. Cooling should be carried out only until the bitumen has hardened.
4. DO NOT remove bitumen or clothing from the burned area.

Heat Exhaustion

Symptoms of Heat Exhaustion:

- The skin is cool, pale, and moist
- Heavy perspiration
- Extreme weakness or fatigue
- Nausea, vomiting, or headache
- Slightly elevated body temperature
- Dizziness or disorientation

Treatment of Heat Exhaustion:

- Allow the victim to rest in a cool place
- Provide the victim with plenty of fluids
- Apply cool, wet cloth towels
- Get medical attention

Heat Stroke

Symptoms of Heat Stroke:

- Extremely high body temperature
- The victim's skin is red, spotted, and dry
- Convulsions
- The victim is confused or delirious or has lost consciousness

Treatment of Heat Stroke:

- Get medical attention immediately
- Move the victim to a cool place
- Thoroughly soak the victim's clothing with cool water
- Fan the victim

Frostbite

Roofing in cold weather can be uncomfortable and potentially dangerous if you are not dressed properly. Frostbitten skin looks white or gray with a hard surface but softness underneath. To treat frostbite, immerse the frozen part in warm (not hot) water and immediately seek medical attention.

To avoid frostbite, use these commonsense precautions:

- Dress in layers of clothing.
- Keep dry. Wear waterproof clothing in damp or snowy weather. Water chills the body very quickly.
- Always wear a hat and gloves.

FATIGUE MANAGEMENT

General

Fatigue can significantly affect the ability to communicate clearly, work safely and productively, and react optimally in an emergency situation. Fatigue and related consequences such as unintentionally falling asleep can be significant factors in incidents and accidents.

This Procedure aims to eliminate or otherwise minimize risks associated with fatigue, and will be communicated annually.

Fatigue Signs & Symptoms

Common Physical Signs:

- Tired, sore eyes and/or heavy eyelids; blurred vision; drooping of eyelids
- Yawning; Speech difficulties (it may be slurred, slowed or garbled)
- Head nodding; micro-sleeps
- Poor hand-eye coordination; slower reflexes and reactions; increased frequency of dropping objects like tools or parts
- Fidgeting
- Lack of energy, feeling lethargic

Common Mental/Behavioral Signs:

- Irritability, impatience, mood changes
- More withdrawn than usual, emotional
- Lacking motivation or energy
- Slowed response time
- Poor memory (e.g., forget instruction and events)
- Difficulty concentrating and limited attention span
- Increased risk taking
- Impaired judgment and problem solving ability; difficulty making decisions, and communicating
- Lapses in attention or ‘zoning out’ (e.g. not remembering last few miles when driving)

Fatigue Assessment & Management

Identification of persons who may be affected by fatigue can occur as a result of:

Self-Assessment

Individuals are encouraged to self-assess where they believe they may be impaired due to the effects of fatigue. If they suspect they may be suffering any sign of fatigue they should immediately notify their supervisor.

Reasonable Suspicion – Supervisor

If a Supervisor has a reasonable suspicion that a person at work is impaired by fatigue, the supervisor must, as soon as possible, direct the person to stop performing any duties that, if the

person is fatigued, may present a risk of injury or other undesirable outcome and initiate an assessment.

Reasonable Suspicion – Non-Supervisor

If other individuals (e.g. employees, subcontractors or visitors) suspect a person at work is affected by fatigue, they should advise a Supervisor.

Work Practice Controls

These work practice controls will be used by all employees to eliminate or minimize fatigue:

Repetitive or Monotonous Work/ High Physical Demands/ High Mental Demands

1. Redesign jobs to eliminate boring, repetitive tasks
2. Introduce challenging, meaningful tasks
3. Use plant, machinery and equipment to eliminate or reduce excessive physical demands;
4. Anti-fatigue mats and other ergonomic equipment shall be provided for employees who are working at a static location during their shift.
5. Introduce job rotation to limit a build-up of mental and physical fatigue
6. Ensure adequate breaks during the shift to allow recovery
7. Ensure there are adequate employees and resources to avoid placing excessive demands on staff

Hours of Work

1. Reduce working hours
2. Control the length of shifts
3. Ensure that any overtime does not result in excessive total work hours
4. Limit the use of call backs or overtime (particularly unscheduled overtime)
5. Monitor actual hours of work
6. Provide alternative transport at end of overtime/long shift
7. Ensure that responding to emergencies does not result in excessive hours
8. Reduce irregular and unpredictable work schedules

Breaks

1. Ensure a minimum of 10 hours break between shifts
2. Defer non-urgent work to allow appropriate rest and recovery
3. Use strategic breaks

Night Shifts

1. Schedule physically or mentally demanding tasks to be undertaken during the day, where possible
2. Limit the need for safety-sensitive and/or quality-critical tasks to be undertaken during night shift
3. Introduce challenging, meaningful tasks

4. Introduce job rotation to limit a build-up of mental and physical fatigue
5. Ensure adequate breaks during the shift to allow recovery
6. Ensure there are adequate employees and resources to avoid placing excessive demands on staff
7. Ensure the workplace and surroundings are well lit, safe and secure

Adverse Working Conditions

1. Avoid working during periods of extreme temperature
2. Use heating and cooling to control ambient temperature
3. Use plant, machinery and equipment to eliminate or reduce excessive physical demands;
4. Anti-fatigue mats and other ergonomic equipment shall be provided for employees who are working at a static location during their shift.
5. Provide adequate facilities for rest, meal breaks, and other essential requirements such as bathroom facilities

Stimulants & Medication

The use of over the counter drugs, prescription medication, and or other stimulants used to stay awake during a work shift may alter the employee's physical or mental ability to perform his/her safety-sensitive functions. Use of any substance must comply with the Grove Roofing Services Drug-Free Workplace Policy appropriate for the employee classification (i.e. Non-Regulated or DOT-FMCSA for CDL drivers)

BLOODBORNE PATHOGENS

General

The purpose of a Bloodborne Pathogens Exposure Control Plan is to protect the health and safety of all employees who can be reasonably expected, as the result of performing their job duties, to be exposed to blood or potentially infectious materials.

This plan will be reviewed at a minimum annually. Grove Roofing employees will have access to a copy of this plan by referencing it in the employee manual and or requesting the plan from their supervisor.

Definitions

Blood means human blood, human blood components, and products made from human blood.

Bloodborne Pathogens means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Other Potentially Infectious Materials for the purposes of the Grove Roofing Services policy means any body fluid that is visibly contaminated with blood and all body fluids in situations where it is difficult or impossible to differentiate between the type of body fluids.

Exposure Incident means a specific eye, mouth, other mucous membrane, or non-intact skin contact with blood or other potentially infectious materials that result from the performance of an employee's duties.

Universal Precautions is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Exposure Determination

Grove Roofing Services has performed an exposure determination for all common job classifications that may be expected to incur occupational exposures to blood or other potentially infectious materials. This exposure determination is made without regard to use of PPE. The following job classifications may be expected to incur occupational exposures to blood or other potentially infectious materials:

Job Classification	Tasks
CPR / First Aid Trained Employee	Rendering of CPR and/or First Aid (Voluntary)

Universal Precautions

Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials. No exceptions.

Work Practice Controls

These work practice controls will be used by all employees to eliminate or minimize occupational exposures:

1. Flush eyes and mucous membranes immediately after any exposure.
2. Wash hands with soap and water after an exposure. Hand washing stations will be made readily available at all work locations or antiseptic solutions/ towelettes will be available for use where the location of the work precludes a hand washing station.
3. Eating, drinking, and smoking is not allowed in areas where an exposure may occur.
4. Personal protective equipment worn to prevent exposure(PPE)
5. Use of bloodborne pathogen spill kits for blood and OPIM clean up.
6. The cleaning and disinfecting of equipment and surfaces after contact with blood or other infectious material.
7. Use of barrier devices during the administration of CPR and First Aid (voluntary)
8. Proper disposal of contaminated PPE, clean up equipment, etc.

PPE Requirements

The following PPE must be used during blood and/or OPIM clean-up operations. These items are included as part of stocked bloodborne pathogen clean up kits. PPE will be provided at no cost to employees:

1. Disposable aprons/gowns
2. Eye Shields
3. Face Masks
4. Shoe Covers
5. Nitrile Gloves (exam type)
6. Red bio hazard bags (red bags)
7. Other PPE that may be necessary

Regulated Waste

All red Bio Hazard bags must be disposed of per applicable federal and state laws. All disposal of Bio Hazard Waste will be coordinated through the Grove Roofing Services safety director. Grove Roofing Services will dispose of the waste through an authorized service vendor.

Hepatitis B Vaccination

1. Grove Roofing Services will offer the hepatitis B vaccine and vaccination series at no cost to designated employees within 10 working days of initial assignment. The company will offer post-exposure follow-up at no cost to employees.
2. Grove Roofing Services will assure that eligible employees who decline to accept the hepatitis B vaccine will sign the declination statement established under the OSHA standard.

3. If an employee initially declines the hepatitis B vaccination series, but at a later date while still covered under the standard decides to accept the vaccination, Grove Roofing Services will make available the hepatitis B vaccine at that time.
4. Records regarding HBV vaccinations or declinations will be maintained.

Post-Exposure Evaluation and Follow-up

An exposure incident is defined as contact with blood or OPIM on an employee's non-intact skin, eye, mouth, other mucous membrane or by piercing the skin or mucous membrane through such events as needle sticks.

1. Following a report of an exposure incident, Grove Roofing Services will make immediately available to the exposed employee a confidential medical examination and follow-up.
2. Related medical evaluations and procedures, including prophylaxis, are made available at no cost and at a reasonable time and place to the employee. All medical evaluations and procedures will be conducted by or under the supervision of a licensed physician and laboratory tests will be conducted in accredited laboratories.
3. All medical exams and follow up information will be provided as required under the OSHA standard 1910.1030(f)(3).
4. Grove Roofing Services will obtain and provide the employee with a copy of the evaluating health care professional's written opinion within 15 days of the completion of the evaluation.
5. The healthcare professional's written opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.
6. The healthcare professional's written opinion for post-exposure evaluation and follow-up shall be limited to the following information:
7. That the employee has been informed of the results of the evaluation; and
8. That the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.
9. All other findings or diagnoses shall remain confidential and shall not be included in the written report.

Medical Recordkeeping

Grove Roofing Services will establish and maintain an accurate record for each employee with occupational exposure, in accordance with 29 CFR 1910.1020.

Training

Training to meet the intent of the OSHA 1910.1030 standard will be conducted upon hire and annually thereafter. Awareness and Authorized level training will be performed. Training records shall be kept for a minimum of 3 years plus current year.

PROCESS SAFETY MANAGEMENT CONTRACTOR RESPONSIBILITIES

Purpose

The purpose of Process Safety Management (PSM) is to prevent or minimize consequences of catastrophic releases of toxic, reactive, flammable or explosive chemical in various industries. The requirements of PSM are outlined in 29 CFR 1910.119. Grove Roofing and its employees may perform work at facilities covered by this standard. Therefore the purpose of this written program is to ensure our employees are trained in the practices necessary to conduct their work at PSM covered work sites and to ensure they abide by the safe work practices of the company that hires Grove Roofing to perform the work.

Application

This program applies to Grove Roofing and its employees performing maintenance or repair, turnaround, major renovation, or specialty work on or adjacent to a covered PSM process.

Definitions

Process means any activity involving a highly hazardous chemical including any use, storage, manufacturing, handling, or the on-site movement of such chemicals, or combination of these activities.

Highly hazardous chemical means a substance possessing toxic, reactive, flammable, or explosive properties and specified by paragraph 1910.119(a)(1) of the OSHA General Industry Regulations.

General

As contractors covered under the PSM Program, Grove Roofing must be provided necessary information by the client company concerning the hazardous process, equipment, and procedures of the particular job site our employees are working at.

Specific Requirements

Pre-Work Review

Prior to allowing Grove Roofing employees to commence work in a process covered under PSM, the following requirements must be completed by the company we will be doing work for:

- Obtain and evaluate information regarding Grove Roofing's safety performance and programs (written documentation required).
- Inform Grove Roofing's site foremen or other designated Grove Roofing employee of the known potential fire, explosion, or toxic release hazards related to the work area and processes of the company.

- Explain the applicable provisions of the emergency action plan to Grove Roofing employees.
- Provide the site foremen with any developed and implemented safe work practices to provide for the control of hazards during operations such as lockout/tagout; confined space entry; opening process equipment or piping; and control over entrance into a facility by maintenance, contractor, laboratory, or other support personnel.
- Review with Grove Roofing the means and methods used to conduct the required contractor periodic performance evaluation.
- Review with Grove Roofing the means and methods used to maintain the required contract employee injury and illness log related to contractor work in process areas.

Grove Roofing shall advise and provide information to the client company relating to any unique hazards presented by our work or any hazards found by Grove Roofing employees related to the client company's work.

The results of this review will be documented and maintained in the Grove Roofing project file.

Safe Work Practices

Grove Roofing employees shall abide by the client companies (PSM employer's) safe work practices/rules during operations such as lockout/tagout, confined space entry, opening process equipment or piping, and controls over entrance to the facility. Safe work practices will be covered during site-specific training courses. Training will be documented.

Training

Prior to the start of any work at a facility covered under the PSM standard, Grove Roofing has the responsibility and will assure that each employee is trained in the work practices necessary to safely perform his or her job. Grove Roofing will provide the following documentation to each PSM covered facility that we will be performing work at:

- Our safety program information and other documentation required by the company.
- Training documentation that we have instructed our employees in the hazards related to their job and of potential fire, explosion, or toxic release hazards that exist or may exist. Material Safety Data Sheets may be used to discuss process safety information for the particular site we will be working at.
- Training documentation that we have explained the company's Emergency Action Plan to our employees.
- Training documentation concerning training provided to our employees to ensure they understand the safe work practices necessary to safely perform tasks.
- Training documentation that we have explained the Hot Works Permit Program of the company we are working for and other permits the company uses that will be needed during their time on company property.

Grove Roofing will assure that our employees have been instructed in known potential fire, explosion, or toxic release hazards related to his/her job. The site foreman will be responsible for

ensuring that each employee has received and understood the required training. Training shall be documented and will consist of the employee's name, the date of training, and the means used to verify that the employee understood the training.

Hot Work

Before hot work is permitted at/in a work area, the area must be inspected by the individual responsible for authorizing hot work operations at the company Grove Roofing is performing work for. Grove Roofing employees will not be allowed to perform hot work until a hot work permit is obtained from and authorized by the client company's designated representative. The hot work permit must be authorized before hot work can begin. The hot work permit must be posted in/at the work area.

Incident Investigations

Employees shall immediately report all accidents, injuries and near misses to their site foreman, who will then immediately notify the client company's designated representative. Grove Roofing and its employees are required to participate in all incident investigations. Incident investigations relating to PSM shall be initiated as promptly as possible, but not later than 48 hours following the incident.

Trade Secrets

Grove Roofing employees must respect the confidentiality of trade secret information when any Process Safety Information is released to them. Grove Roofing employees must not copy, scan, photograph, release or otherwise jeopardize this confidentiality without documented permission from the client company's designated representative.

TRENCHING & EXCAVATION

Purpose

This program outlines procedures and guidelines for the protection of Grove Roofing Services employees working in and around excavations and trenches. This program requires compliance with OSHA Standards described in Subpart P (CFR 1926.650) for the construction industry.

Scope

This program pertains to all Grove Roofing Services projects that require excavations or trenches.

References

29 CFR 1926.650 Subpart P – Excavations

Hazards

One of the reasons Grove Roofing Services requires a competent person on-site during excavation and trenching are the numerous potential hazardous that may be encountered or created. Hazards include:

- Electrocution
- Gas Explosion
- Entrapment
- Struck by equipment
- Suffocation
- Hazard Controls

Before any work is performed and before any employees enter the excavation, a number of items must be checked and insured:

1. Before any excavation, underground installations must be determined. This can be accomplished by either contacting the local utility companies or the local "one-call" center for the area. All underground utility locations must be documented on the proper forms. All overhead hazards (surface encumbrances) that create a hazard to employees must be removed or supported to eliminate the hazard.
2. If the excavation is to be over 20 feet deep, it must be designed by a registered professional engineer who is registered in the state where work will be performed.
3. Adequate protective systems will be utilized to protect employees. This can be accomplished through sloping, shoring, or shielding.
4. The worksite must be analyzed in order to design adequate protection systems and prevent cave-ins. There must also be an excavation safety plan developed to protect employees.

5. Workers must be supplied with and wear any personal protective equipment deemed necessary to assure their protection.
6. All spoil piles will be stored a minimum of four (4) feet from the sides of the excavation. The spoil pile must not block the safe means of egress.
7. If a trench or excavation is 4 feet or deeper, stairways, ramps, or ladders will be used as a safe means of access and egress. For trenches, the employee must not have to travel any more than 25 feet of lateral travel to reach the stairway, ramp, or ladder.
8. No employee will work in an excavation where water is accumulating unless adequate measures are used to protect the employees.
9. A competent person will inspect all excavations and trenches daily, prior to employee exposure or entry, and after any rainfall, soil change, or any other time needed during the shift. The competent person must take prompt measures to eliminate any and all hazards.
10. Excavations and trenches 4 feet or deeper that have the potential for toxic substances or hazardous atmospheres will be tested at least daily. If the atmosphere is inadequate, protective systems will be utilized.
11. If work is in or around traffic, employees must be supplied with and wear orange reflective vests. Signs and barricades must be utilized to ensure the safety of employees, vehicular traffic, and pedestrians.

Competent Person Responsibilities

The OSHA Standards require that the competent person must be capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and have authorization to take prompt corrective measures to eliminate them and, if necessary, to stop the work.

A competent person is required to:

- Have a complete understanding of the applicable safety standards and any other data provided.
- Assure the proper locations of underground installations or utilities, and that the proper utility companies have been contacted.
- Conduct soil classification tests and reclassify soil after any condition changes.
- Determine adequate protective systems (sloping, shoring, or shielding systems) for employee protection.
- Conduct all air monitoring for potential hazardous atmospheres.
- Conduct daily and periodic inspections of excavations and trenches.
- Approve design of structural ramps, if used.

Excavation Safety Plan

When a site specific excavation safety plan is required, the written plan is to be developed to the level necessary to insure complete compliance with the OSHA Excavation Safety Standard and state and local safety standards. The plan will be reviewed with employees before excavation operations begin,

Excavation Safety Plan Factors

- Utilization of the local one-call system
- Determination of locations of all underground utilities
- Consideration of confined space atmosphere potential
- Proper soil protection systems and personal protective equipment and clothing
- Determination of soil composition and classification
- Determination of surface and subsurface water
- Depth of excavation and length of time it will remain open
- Proper adherence to all OSHA Standards, this excavation and trenching safety program, and any other coinciding safety programs.

Soil Test & Identification

The competent person will classify the soil type in accordance with the definitions in Appendix A on the basis of at least one visual and one manual analysis. These tests should be run on freshly excavated samples from the excavation and are designed to determine stability based on a number of criteria: the cohesiveness, the presence of fissures, the presence and amount of water, the unconfined compressive strength, duration of exposure, undermining, and the presence of layering, prior excavation and vibration.

The cohesion tests are based on methods to determine the presence of clay. Clay, silt, and sand are size classifications, with clay being the smallest sized particles, silt intermediate and sand the largest. Clay minerals exhibit good cohesion and plasticity (can be molded). Sand exhibits no elasticity and virtually no cohesion unless surface wetting is present. The degree of cohesiveness and plasticity depend on the amounts of all three types and water.

When examining the soil, three questions must be asked: Is the sample granular or cohesive? Fissured or non-fissured? What is the unconfined compressive strength measured in TSF?

Methods of Testing Soils

Thumb penetration test: The competent person attempts to penetrate a fresh sample with thumb pressure. If the sample can be dented, but penetrated only with great effort, it is Type A. If it can be penetrated several inches and molded by light pressure, it is Type C. Type B can be penetrated with effort and molded. The competent person will perform several tests of the excavation to obtain consistent, supporting data along its depth and length. The soil is subject to change several times within the scope of an excavation and the moisture content will vary with weather and job conditions. The competent person must also determine the level of protection based on what conditions exist at the time of the test, and allow for changing conditions.

Excavation Protection Systems

- The three basic protective systems for excavations and trenches are sloping and benching systems, shoring, and shields.
- The protective systems shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied to or transmitted to the system.

Every employee in an excavation shall be protected from cave-ins by an adequate protective system.

- Exceptions to using protective system:
- Excavations are made entirely in stable rock
- Excavations are less than 5 feet deep and declared safe by a competent person

Sloping and Benching Systems

- Slope to the angle required by the Standard for Type C, which is the most unstable soil type.
- The table provided in Appendix B of the Standard may be used to determine the maximum allowable angle (after determining the soil type).
- Tabulated data prepared by a registered professional engineer can be utilized.
- A registered professional engineer can design a sloping plan for a specific job.
- Sloping and benching systems for excavations five (5) to twenty (20) feet in depth must be constructed under the instruction of a designated competent person.
- Sloping and benching systems for excavations greater than twenty (20) feet must be designed and stamped by a registered professional engineer.
- Sloping and benching specifications can be found in Appendix B of the OSHA Standard (Subpart P).

Shield Systems (Trench Boxes)

- Shielding is the third method of providing a safe workplace.
- Unlike sloping and shoring, shielding does not prevent a cave-in.
- Shields are designed to withstand the soil forces caused by a cave-in and protect the employees inside the structure.
- Most shields consist of two flat, parallel metal walls that are held apart by metal cross braces.
- Shielding design and construction is not covered in the OSHA Standards.
- Shields must be certified in design by a registered professional engineer and must have either a registration plate on the shield or registration papers from the manufacturer on file at the jobsite office.
- Repairs & modifications must be approved by manufacturer.

Safety Precautions For Shield Systems

- Shields must not have any lateral movement when installed.
- Employees will be protected from cave-ins when entering and exiting the shield (examples - ladder within the shield or a properly sloped ramp at the end).
- Employees are not allowed in the shield during installation, removal, or during any vertical movement.
- Shields can be 2 ft. above the bottom of an excavation if they are designed to resist loads at the full depth and if there are no indications of caving under or behind the shield.
- The shield must extend at least 18 inches above the point where proper sloping begins (the height of the shield must be greater than the depth of the excavation).

- The open end of the shield must be protected from the exposed excavation wall. The wall must be sloped, shored, or shielded. Engineer designed end plates can be mounted on the ends of the shield to prevent cave-ins.

Inspections

- Daily inspection of excavations, the adjacent areas and protective systems shall be made by the competent person for evidence of a situation that could result in a cave-in, indications of failure of protective systems, hazardous atmospheres or other hazardous conditions.
- All inspections shall be conducted by the competent person prior to the start of work and as needed throughout the shift.
- Inspections will be made after every rainstorm or any other increasing hazard.
- All documented inspections will be kept on file in the jobsite safety files and forwarded to the Safety Director weekly.
- A copy of the Daily Excavation Inspection form can be used for this purpose.

Personal Protective Equipment

It is company policy to wear a hard hat, safety glasses, and work boots on the jobsite. Because of the hazards involved with excavations, other personal protective equipment may be necessary, depending on the potential hazards present (examples -goggles, gloves, and respiratory equipment).

Training

The competent person(s) must be trained in accordance with the OSHA Excavation Standard, and all other programs that may apply (examples Hazard Communication, Confined Space, and Respiratory Protection), and must demonstrate a thorough understanding and knowledge of the programs and the hazards associated.

All other employees working in and around the excavation must be trained in the recognition of hazards associated with trenching and excavating.

Important Phone Numbers

DIG SAFELY NEW YORK	1-800-962-7962
NYSEG	
NATURAL GAS EMERGENCY	1-800-572-1121 – 24 HRS
ELECTRIC EMERGENCY	1-800-572-1131 – 24 HRS/7 DAYS
NATIONAL FUEL	

GAS EMERGENCY

1-800-444-3130 – 24 HRS/7 DAYS

NIAGARA MOHAWK

1-800-642-4272 – 24 HRS/7 DAYS

VERIZON

1-716-890-7711 – 24 HRS/7 DAYS

TIME WARNER

1-585-756-5000

MOTOR VEHICLE SAFETY

See the separate Grove Roofing “Comprehensive Driver Program & Fleet Management Manual”

HAZARD REPORT FORM

Hazard Description:

Location of the Hazard:

Project:	
Location:	
Area:	
Date Submitted:	

Hazard Priority Ranking: (check only one ranking)

<input type="checkbox"/>	Priority 1	Imminent Danger - A condition or practice likely to cause permanent disability, loss of life, amputation, and/or extensive loss of structure, or equipment, or material. (i.e. fall form height, struck by, caught in-between) Must be verbally reported to supervisor and corrected immediately.
<input type="checkbox"/>	Priority 2	A condition or practice likely to cause serious injury or illness resulting in temporary disability, lost time, restricted duty, and/or property damage that is disruptive, but less severe than "Priority 1"
<input type="checkbox"/>	Priority 3	A condition or practice likely to cause minor (first aid) injury or illness or non-disruptive property damage.

Note 1: All Priority 1 items must be immediately reviewed and corrected as applicable.

Corrective Action Plan:

Action Item	Assigned To	Completion Date

Employee Name

Supervisor Signature

Note 2: Action will be taken whether the employee name is listed or not.

Please turn this completed form into your supervisor. Completed forms should be forwarded to the Safety Coordinator within 24 hours.

Job Safety Analysis (JSA)

Project:	Date:	Superintendent:
Description of Work:		
JSA Title:		Revision Number: 0

Safety and Health Considerations – Check Yes or No								
HAZARD	YES	NO	HAZARD	YES	NO	HAZARD	YES	NO
Falls, Slips, Trips			Excavation/Trenching			Line Breaking		
Falling Objects			Confined Space(s)			Lockout/Tagout		
Struck By			Cranes/Rigging			Asbestos, Lead, Silica		
Caught Between			Scaffolding			Material Handling		
Electrical Shock / Arc			Scissor/Aerial Lift Use			Ergonomic / Lifting		
Chemical, Dust, Fume			Ladder Use			Public Exposure		
Fire / Hot Work / Burns			Working Over Water			Hazardous Materials/Waste		

Work Activity – Break the job down into steps	Hazards Associated with Each Step	Actions Required to Eliminate or Control the Hazard

Grove Roofing Services Employee's Report of Injury/Near Miss Form

Instructions: Employees shall use this form to report all work related injuries, illnesses, or “near miss” events (which could have caused an injury or illness) – *no matter how minor*. This helps us to identify and correct hazards before they cause serious injuries. This form shall be completed by employees as soon as possible and given to a supervisor for further action.

I am reporting a work related: <input type="checkbox"/> Injury/Illness <input type="checkbox"/> Near miss	
Your Name:	
Job title:	
Supervisor:	
Have you told your supervisor about this injury/near miss? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Date of injury/near miss:	Time of injury/near miss:
Names of witnesses (if any):	
Where, exactly, did it happen?	
What were you doing at the time?	
Describe step by step what led up to the injury/near miss. (continue on the back if necessary):	
What could have been done to prevent this injury/near miss?	
What parts of your body were injured? If a near miss, how could you have been hurt?	
Did you see a doctor about this injury/illness? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If yes, whom did you see?	Name of doctor, hospital, or clinic:
Date:	Time:
Has this part of your body been injured before? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If yes, when?	Supervisor Name:
Your signature:	Date:

Grove Roofing Services Witness Statement Form

Date of Incident: _____

Name of Witness: _____

Date of Statement: _____

Name of Interviewer: _____

Statement:

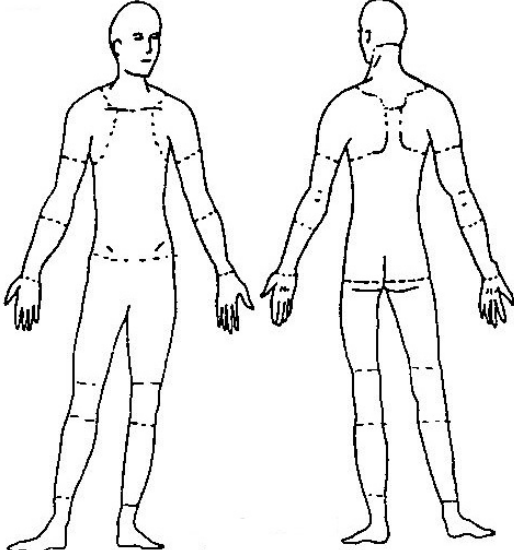
Signature & Date of Witness: _____

Signature & Date of Interviewer: _____

Grove Roofing Services Supervisor's Accident/Incident Investigation Report

Instructions: Complete this form as soon as possible after a reported accident/incident. This form does not have to be completed for Near Miss Incidents. Forward completed investigation forms to the Controller within 24 hours.

This is a report of a: <input type="checkbox"/> Injury/Illness Accident <input type="checkbox"/> Property/Fire Incident <input type="checkbox"/> Environmental Incident	
Date of Accident/Incident:	Project Location:
Date of this Report:	Report Completed by:

Section 1: Injured Employee Information (complete this part for each injured employee)		
Employee Name:	Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female	DOB:
Trade:	Employee Address:	
Employee Phone #:		
Did employee seek first aid/medical attention? <input type="checkbox"/> First Aid <input type="checkbox"/> Clinic <input type="checkbox"/> ER/Hospital <input type="checkbox"/> Other: _____		
Name of Hospital/Clinic: (if applicable)		Name of Doctor: (if applicable)
Was the employee assigned: <input type="checkbox"/> Restricted Duty <input type="checkbox"/> Job Transfer <input type="checkbox"/> Days Away from Work		
Part of body affected: (shade all that apply) 	Nature of injury: (most serious one) <input type="checkbox"/> Abrasion, scrapes <input type="checkbox"/> Amputation <input type="checkbox"/> Broken bone <input type="checkbox"/> Bruise <input type="checkbox"/> Burn (heat) <input type="checkbox"/> Burn (chemical) <input type="checkbox"/> Concussion (to the head) <input type="checkbox"/> Crushing Injury <input type="checkbox"/> Cut, laceration, puncture <input type="checkbox"/> Hernia <input type="checkbox"/> Illness <input type="checkbox"/> Sprain, strain <input type="checkbox"/> Damage to a body system: <input type="checkbox"/> Other _____	This employee works: <input type="checkbox"/> Regular full time <input type="checkbox"/> Regular part time <input type="checkbox"/> Other Hours worked before accident: Employment Date:

Section 2: Describe the Accident/Incident	
Exact Location of the Incident:	Exact Time:
Did Property Damage Occur? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Describe Property Damage:	Estimated Value:
Did an Environmental Incident Occur? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Describe Incident:	Describe Action Taken:

Names of Witnesses (if any): <i>Note: A witness statement form should be completed for each witness.</i>			
Number of attachments:	Written witness statements:	Photographs:	Maps / drawings:
What personal protective equipment was being used (if any)?			
Describe, step-by-step the events that led up to the incident. Include names of any machines, parts, objects, tools, materials and other important details.			
Description continued on attached sheets: <input type="checkbox"/>			

Section 3: Why Did the Incident Happen?	
Substandard Conditions: (Check all that apply) <input type="checkbox"/> Guarding , barrier issue or warning line issue <input type="checkbox"/> Safety device is defective <input type="checkbox"/> Defective tool or equipment <input type="checkbox"/> Congested or restricted area <input type="checkbox"/> Fire/Explosion hazards <input type="checkbox"/> Illumination / noise issue <input type="checkbox"/> Ventilation issue <input type="checkbox"/> Environmental issue <input type="checkbox"/> Lack of appropriate equipment / tools <input type="checkbox"/> PPE issue <input type="checkbox"/> Other: _____	Substandard Actions: (Check all that apply) <input type="checkbox"/> Operating without authority <input type="checkbox"/> Failure to warn/secure <input type="checkbox"/> Servicing equipment that has power to it <input type="checkbox"/> Making a safety device inoperative <input type="checkbox"/> Using defective equipment <input type="checkbox"/> Using equipment in an unapproved way <input type="checkbox"/> Unsafe lifting <input type="checkbox"/> Taking an unsafe position or posture <input type="checkbox"/> Distraction, teasing, horseplay <input type="checkbox"/> Failure to wear personal protective equipment <input type="checkbox"/> Failure to use the available equipment / tools <input type="checkbox"/> Other: _____
Why did the unsafe conditions exist?	
Why did the unsafe acts occur?	
Have there been similar incidents or near misses prior to this one? <input type="checkbox"/> Yes <input type="checkbox"/> No	

Section 4: Corrective Actions

What changes do you suggest to prevent this incident from happening again?

- Stop this activity Guard the hazard Train the employee(s) Train the supervisor(s)
- Redesign task steps Re-design JSA Write a new policy/rule Enforce existing policy
- Routinely inspect for the hazard Personal Protective Equipment Other: _____

What should be (or has been) done to carry out the suggestion(s) checked above?

Description continued on attached sheets:

Were corrective actions implemented? Yes No (please describe)

Section 5: Who completed and reviewed this form? (Please Print)

Written by:

Title:

Department:

Date:

Names of other investigation team members: (if applicable)

Reviewed by:

Title:

Date:

Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

EMPLOYEE ACKNOWLEDGEMENT:

I understand the information contained in this document and have been given the opportunity to ask questions.

Employee Name Print

Employee Signature

Date

EMERGENCY TELEPHONE NUMBERS

Police: 911

Fire Department: 911

Medical: 911

Poison Control (800)-222-1222

Project Address: Enter project address to be used for 911 call

Hospital and Health Clinic

Occupational Health Clinic – Enter Preferred Clinic Name XXX-XXX-XXXX

Emergency Room – Enter Closest Hospital Emergency Room XXX-XXX-XXXX

Utility

DIG Safe New York	811 or (800)-962-7962
NYSEG	(800) 572-1131
National Grid	(800) 867-5222
National Fuel	716– 686-6823

Project Contacts

Title	Name	Number
Safety Coordinator	Enter Name	XXX-XXX-XXXX
Project Manager	Enter Name	XXX-XXX-XXXX
Project Superintendent	Enter Name	XXX-XXX-XXXX
Project Foreman	Enter Name	XXX-XXX-XXXX
Main Office	Enter Name	XXX-XXX-XXXX
Construction Manager/Owner Rep.	Enter Name	XXX-XXX-XXXX
Construction Manager/Site Safety	Enter Name	XXX-XXX-XXXX

DIRECTIONS TO CLOSEST HOSPITAL

Directions to Buffalo Mercy Hospital 565 Abbott Road, Buffalo, NY 14220

Start out going southeast on South Park Ave,

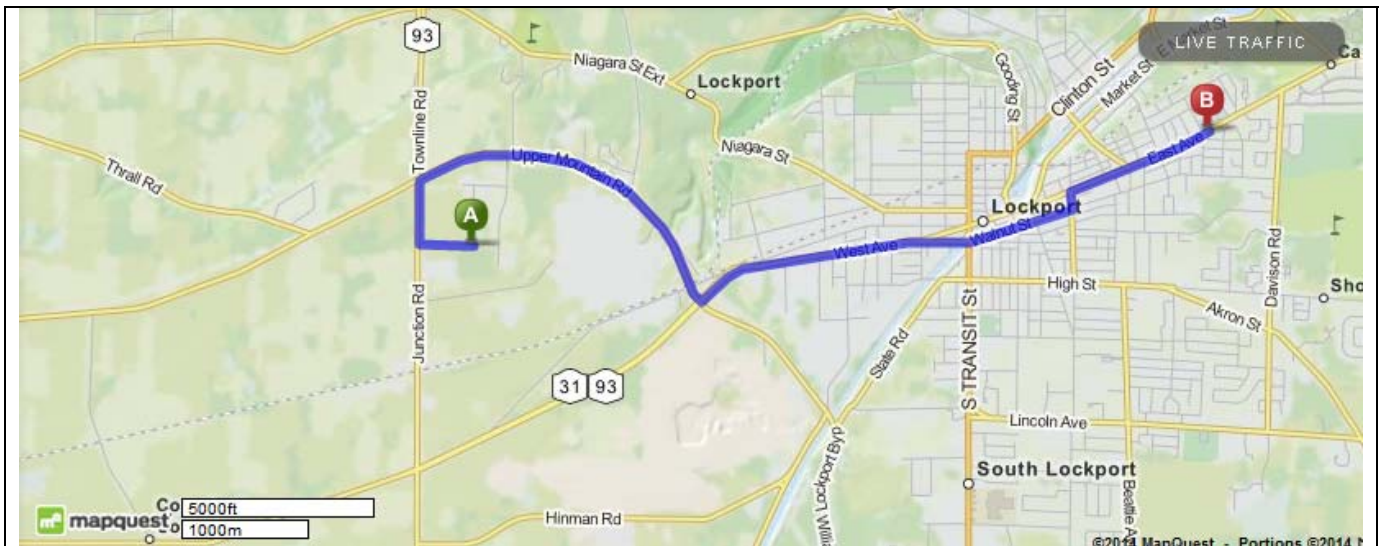
Continue straight onto Abbott Road,

In 1.1 Miles Buffalo Mercy Hospital will be on the Right.

Enter Emergency Room

End at **Buffalo Mercy Hospital**

565 Abbott Road
Buffalo, NY 14220



DIRECTIONS TO OCCUPATIONAL HEALTH CLINIC

Directions to Healthworks in West Seneca 1900 Ridge Rd, West Seneca, NY 14224

Start out going southeast on South Park Ave,

Continue straight onto Abbott Road for 1.2 miles,

Continue straight onto Potters Road for 1.4 miles,

Continue onto Orchard Park Road for .8 miles,

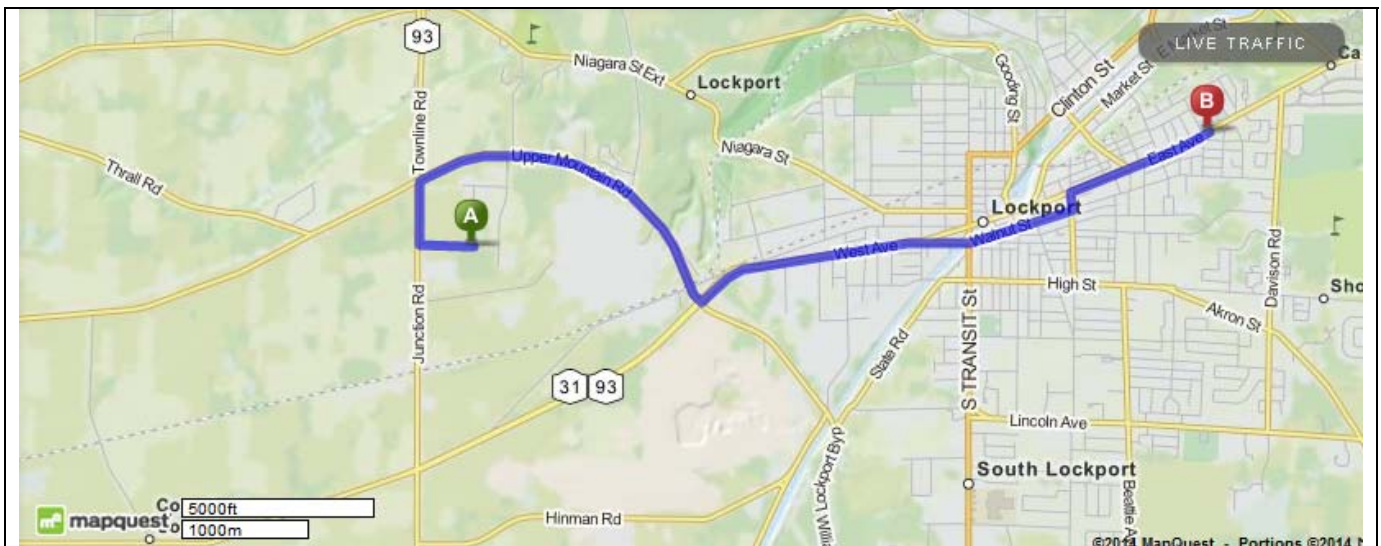
Turn Right onto Ridge Road

Destination will be in Plaza on right in .3 miles.

End at Health Works

1900 Ridge Road

West Seneca, NY 14224



**CONTRACTOR CHECKLIST FOR CRANES AND DERRICKS
(OSHA Subpart CC – 1926.1400)**

CONTRACTOR:	JOB NAME:
DATE COMPLETED:	COMPLETED BY:

Controlling Entity Requirements

- Ensure that ground preparations necessary to assemble or use the crane are performed so the ground can support the equipment.
- Inform the user of the equipment and the operator of the location of hazards beneath the equipment set-up area (such as voids, tanks utilities, etc) if those hazards identified in documents that are in the possession of the controlling entity or are otherwise known by the controlling entity.
- Institute a system to coordinate operations if a crane/derrick is within the working radius of another crane/derrick.

Assembly/Disassembly

<input type="checkbox"/> Identity of Competent Person
<input type="checkbox"/> Identity of Qualified person
<input type="checkbox"/> Identity of Assembly/Disassembly Director – A/D Director
<input type="checkbox"/> Identity of Qualified Rigger
Procedures to be followed to Assemble/Dismantle Crane or Derrick:
<input type="checkbox"/> Manufacturer Procedures Must follow if synthetic slings are used during Assemble/Dismantling Available to A/D Director on-site.
<input type="checkbox"/> Employer Procedures Employer Procedures must be developed by a qualified person and: <input type="checkbox"/> Must prevent unintended dangerous collapse of equipment <input type="checkbox"/> Provide adequate support and stability of equipment <input type="checkbox"/> Minimize employee exposure to unintended movement or collapse
<input type="checkbox"/> Could any part of the equipment get closer than 20 feet of a power line? If yes, which allowable option will be utilized to protect employees: <input type="checkbox"/> De-energize and ground <input type="checkbox"/> 20 Foot Clearance <input type="checkbox"/> Table A Clearance
<input type="checkbox"/> Contractors utilizing 20 foot or Table A clearance must implement measures identified in 1926.1407(b) preventing encroachment/electrocutions.
<input type="checkbox"/> Was the utility owner/operator notified to request voltage information if Table A clearance option is being utilized? <input type="checkbox"/> Date of notification: <input type="checkbox"/> Voltage:
<input type="checkbox"/> Posting of electrocution warning provide on equipment
<input type="checkbox"/> Training for Assembly/Dismantling <input type="checkbox"/> Provided to those involved in the Assembly/Dismantling Process <input type="checkbox"/> Documentation available identifying crew instructions were provided as required in 29 CFR 1926.1404

Checklist is designed to assist contractors with addressing the various issues covered Subpart CC – Cranes and Derricks in construction. 29 CFR Standard must be referred to for more details and supplemental information.

Power Line Safety

Did the contractor perform a hazard assessment and identify the work zone?

If yes, by what means?

Will any part of the equipment get closer than 20 feet taking into consideration its maximum working radius?

If yes, which allowable option will be utilized to protect employees:

- De-energize and ground
- 20 Foot Clearance
- Table A Clearance

Contractors utilizing 20 foot or Table A clearance must implement measures identified in 1926.1408(b) preventing encroachment/electrocutions

Was the utility owner/operator notified to request voltage information if Table A clearance option is being utilized?

- Date of notification:
- Voltage:

Equipment must not be operated below powerlines, if it does, it must comply with 1926.1408(d)

All power lines are assumed to be energized and unless owner/utility indicates otherwise. Maintain at least 20 foot clearance. Will work be performed near a transmitter/communication tower?

If yes, transmitter must be de-energized or

- Equipment provided with an electrical ground
- Tag lines used must be non-conductive

Will any part of the equipment get closer than the minimum approach distance under Table A?

- If yes:
- Employer must demonstrate it is infeasible to do the work without breaching the minimum distance
 - Utility owner/operator was contacted and it is infeasible to de-energize and ground the power line or relocate
 - Must meet all requirements outlined in 1926.1410

Will crane/derrick travel near/under a power line without a load?

- If yes:
- Clearance as per Table T must be maintained as well as requirements outline in 29 CFR 1926.1411

Training for Power Line Safety

- Provided to operator and crew members assigned to work with the equipment
- Documentation available identifying training was provided as required in 29 CFR 1926.1408(g)

Wire Rope Inspections

Wire rope inspections must be performed as follows:

- Shift Inspection
- Monthly Inspections
- Annual/Comprehensive

Documentation concerning inspection of wire rope is available on-site for review and being maintained?

Crane Inspections

Cranes must be inspected as follows:

- Modified Equipment
- Repaired adjusted equipment
- Post-Assembly
- Each Shift
- Monthly
- Annual
- Severe Service
- Equipment not in regular use Per Manufacturer

- Copy of license of Crane Operator on-file
- Daily Inspection to be performed by the operator and a copy provided to GC
- Copy of Monthly Inspection per NYS Code Rule 23 available on-site and signed.
- Copy of Annual Inspection available on-site and signed
- Identity of qualified rigger for material handling

Safety Devices and Operational Aids

Safety devices are operational on all equipment

- Crane level indicator
- Boom stops, except for derricks and hydraulic cranes
- Jib stops (if jib attached) except derricks
- Equipment with foot pedal brakes must have locks
- Hydraulic outrigger jacks and stabilizer jacks have integral holding device/check valve
- Equipment on rails, rail clamps and rail stops
- Horn

Operation of the equipment must not take place unless safety devices are in working order

Operational aids, if applicable, such as the following must be provided:

- Boom hoist limiting device
- Luffing jib limiting device,
- Anti two-block device,
- Boom angle or radius indicator
- Jib angle indicator
- Boom length indicator
- Load weighting and similar devices
- Outrigger/stabilizer position sensor/monitor
- Hoist drum rotation indicator

Equipment that lacks a required operational aid must be repaired in time frame allowable and alternative measures must be provided as outlined in 29 CFR 1926.1416.

If alternative measures are to be used, identify what measures are to be taken.

Fall Protection

Fall protection on walking working surfaces of cranes must be maintained as per 29 CFR 1926.1423.

Non-Assembly/Disassembly 6 Foot Trigger:

- When moving point to point
- While at a work station on any part of the equipment except,
 - Employee at or near draw-works
 - In the cab
 - On the deck

Assembly/Disassembly Work 15 Foot Trigger

Exception:

- Employee at or near draw-works
- In the cab
- On the deck

Signals

Signal person must be provided as follows:

- Point of operation is not in full view of the operator
- When equipment is traveling, the view in the direction of travel is obstructed
- Operator or the person handling the load determines it is necessary

Means of signaling to be used on the project

Identity of the signals person

Confirm hand signal chart is either posted on the equipment or in the vicinity of the hoisting operations

Training documentation for signal person must be provided as well for training regarding crush/pinch points.

Operation

Compliance with manufacturer procedures applicable to operational functions must be maintained and are readily available in the cab for use by the operator.

Confirm the following:

- Operator not to engage in activities that diverts their attention while operating the equipment
- Operator must not leave the equipment
- Tag-out equipment that is in need of service
- Verify controls in proper position prior to starting it
- Storm warnings and determination by competent person for securing equipment
- Wind speed limit for equipment on-site
- Notify operators and affected employees if adjustments or repairs are needed
- Compliance with rated capacity must be maintained
- Boom or other parts must not contact obstructions
- Do not drag or pull loads sideways
- Wheel mounted equipment, no loads over front are unless allowed by manufacturer
- Test brakes if load is 90% or more of the maximum line pull
- Maintain two full wraps of rope on drums (load or boom)
- Traveling with a load is prohibited unless allowable by manufacturer
- Rotational speed of the equipment must be controlled
- Utilize taglines if necessary to control loads
- Brakes must be adjusted in accordance with manufacturer specs
- Operator must obey a stop signal irrespective of who gives it
- Counterweight/ballast provided and used per manufacturer

Work Area Control

- Does controlling entity did to coordinate operations due to crane/derrick
 - Being within working radius of another crane/derrick?
 - Means to protect Swing Radius Hazards
- If Yes, plan is on-site and employees are trained in its components.
- Hoisting routes reviewed to minimize exposure of employees and public.

Training

Training for the following must be provided if applicable

- Overhead Powerlines
- Signal Persons
- Operators
- Competent person and Qualified person
- Crush/Pinch Points
- Tag-out
- Training Administration

- Confirm hand signal chart is either posted on the equipment or in the vicinity of the hoisting operations
- Training documentation for signal person must be provided as well for training regarding crush/pinch points.

Hoisting Personnel

Hoisting personnel is prohibited except where the employer demonstrates that the erection, use, and dismantling of conventional means of reaching the work area, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform, or scaffold would be more hazardous, or is not possible because of the project's structural design or worksite conditions.

- If these terms are met, all provisions outlined in 1926.1431 must be met.

EXCAVATION CHECKLIST

EXCAVATION LOCATION:		
DATE:		COMPETENT PERSON:
SOIL CLASSIFICATION:	EXCAVATION DEPTH:	EXCAVATION WIDTH:
TYPE OF PROTECTIVE SYSTEM USED:		

Indicate for each item: YES - NO - or N/A for not applicable

1. General Inspection of Jobsite:	
A. Competent person has the authority to remove employees from the excavation immediately.	
B. Surface encumbrances removed or supported.	
C. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	
D. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	
E. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	
F. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toeboards.	
G. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	
H. Employees prohibited from going under suspended loads.	
I. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	
2. Utilities:	
A. Utility companies contacted and/or utilities located via as-built drawings	
B. Exact location of utilities marked.	
C. Underground installations protected, supported, or removed when excavation is open.	
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge of the trench.	
C. Ladders inspected and in good condition / secured from movement.	
C. Structural ramps used by employees designed by a competent person.	
D. Structural ramps used for equipment designed by a registered professional engineer (RPE).	
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	
B. Water removal equipment monitored.	
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	

5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	
C. Emergency equipment, such as safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	
6. Protective Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, excavation / trench depth, and expected loads.	
B. Sloping and benching follows OSHA tables for type of soil classified. In cases where multiple types are present, protection follows the lowest class (i.e. "C").	
C. Excavation at 20 feet or more in depth have protective systems designed by a RPE.	
D. Materials and equipment used for protective systems inspected and in good condition.	
E. Materials and equipment not in good condition have been removed from service.	
F. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	
G. Members of support system securely fastened to prevent failure.	
H. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	
I. Excavations below the level of the base or footing supported, approved by an RPE.	
J. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	
K. Backfilling progresses with removal of support system.	
L. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	
M. Shield system placed to prevent lateral movement.	
N. Employees are prohibited from remaining in shield system during vertical movement.	

MAXIMUM ALLOWABLE SLOPES	
SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V)(1) FOR EXCAVATIONS LESS THAN 20 FEET DEEP(3)
STABLE ROCK	VERTICAL (90°)
TYPE A	3/4:1 (53°)
TYPE B	1:1 (45°)
TYPE C	1 1/2:1 (34°)

Lockout Tagout Equipment Energy Identification Form

Equipment Name: _____

Equipment ID: _____

Location: _____

Energy Sources Applicable to This Equipment:

- Electrical
- Thermal
- Hydraulic
- Pneumatic
- Mechanical
- Compressed Gas
- Elevated Machine Parts (Gravity)
- Other

Energy Control Devices Needed:

- Locks
- Tags
- Hasps
- Multiple Hasp
- Plug Cover
- Ball Valve Lockout Device (specify sizes)
- Gate Valve Lockout Device (specify sizes)
- Breaker Lockout Device (specify size and type of breaker)
- Wall Switch Cover Device
- Toggle Switch Cover Device
- Blocks
- Stands
- Pins (usually OEM equipment)
- Group Lockout Box

Machine Specific Procedure Periodic Inspection Certification

Location: _____

Inspection Date: _____

Equipment Inspected: _____

Procedure/Group Identifier: _____

Inspection Questions

YES NO

The procedure is adequate and identifies all energy sources, control methods, and verification of isolation (necessary protection in place)?

Are the steps in the energy control procedure followed?

Do Authorized employees know their responsibilities under the procedure?

Name of representative Authorized Employee(s) interviewed during inspection:

Inspection Results

The machine/equipment specific procedure was found **adequate** and was implemented correctly. (Questions 1-3 answered YES)




The machine/equipment specific procedure was found **inadequate** and/or was **not** implemented correctly during the inspection. (Any question answered NO)

List Procedure Changes Required:


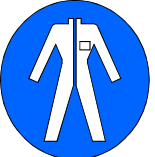



Authorized employee conducting LOTO Procedure: _____
Signature

Authorized employee conducting inspection: _____
Signature




PPE HAZARD ASSESSMENT FORM

I am reviewing (check the appropriate box):	A worksite	Specify location:	
	A single employee's job description	Name of employee:	
	A job description for a class of employees	Position Title:	
		Position Titles:	
		Location:	
Your Name:		Department/Division:	Date:
	EYE HAZARDS: Tasks that can cause eye injury include: working with chemicals or acids; UV lights; chipping, sanding, or grinding; welding; furnace operations; and metal and wood working.		
	<i>Check the appropriate box for each hazard:</i>	<i>Description of hazard(s):</i>	<i>Required PPE</i>
	Chemical Exposure		
	High Heat/Cold		
	Dust/Flying Debris		
	Impact		
	UV/IR Radiation		
Other:			
	HEAD/NECK/FACE HAZARDS: Tasks that can cause head/neck/face injury include: working below other workers who are using tools or materials that could fall, working on energized electrical equipment or utilities, and working in trenches or confined spaces.		
	<i>Check the appropriate box for each hazard:</i>	<i>Description of hazard(s):</i>	<i>Required PPE</i>
	Chemical Exposure		
	Dust/Flying Debris		
	Impact		
	UV/IR Radiation		
	Electrical Shock		
Other:			
	FOOT HAZARDS: Tasks that can cause foot injury include: exposure to chemicals or acids, welding or cutting, materials handling, renovation or construction, and electrical work.		
	<i>Check the appropriate box for each hazard:</i>	<i>Description of hazard(s):</i>	<i>Required PPE</i>
	Chemical Exposure		
	High Heat/Cold		
	Impact/Compression		
	Electrical		
	Puncture		
Slippery/Wet Surfaces			
Other:			


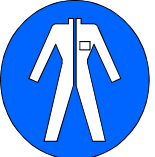



PPE HAZARD ASSESSMENT CERTIFICATE

	HAND HAZARDS: Hand injury can be caused by: work with chemicals or acids, exposure to cut or abrasion hazards (for example, during demolition, renovation, woodworking, or food service preparation), work with very hot or cold objects or materials, and exposure to sharps.		
	<i>Check the appropriate box for each hazard:</i>	<i>Description of hazard(s):</i>	<i>Required PPE</i>
	Chemical Exposure		
	High Heat/Cold		
	UV/IR Radiation		
	Electrical Shock		
	Puncture		
	Cuts/Abrasion		
Other:			
	BODY HAZARDS: Injury of the body (torso, arms, or legs) can occur during: exposure to chemicals, acids, or other hazardous materials; abrasive blasting; welding, cutting, or brazing; chipping, sanding, or grinding; use of chainsaws or similar equipment; and work around electrical arcs.		
	<i>Check the appropriate box for each hazard:</i>	<i>Description of hazard(s):</i>	<i>Required PPE</i>
	Chemical Exposure		
	High Heat/Cold		
	Impact/Compression		
	Electrical Arc		
	Cuts/Abrasion		
	Other:		
	FALL HAZARDS: Personnel may be exposed to fall hazards when performing work on a surface with an unprotected side or edge that is 4 feet or more above a lower level, or 10 feet or more on scaffolds. Fall protection may also be required when using vehicle man lifts, elevated platforms, tree trimming, performing work on poles, roofs, or fixed ladders.		
	<i>Check the appropriate box for each hazard:</i>	<i>Description of hazard(s):</i>	<i>Required PPE</i>
	Fall hazard		
	NOISE HAZARDS: Personnel may be exposed to noise hazards when working in mechanical rooms; machining; grinding; sanding; cage washing; dish washing; working around pneumatic equipment, grounds equipment, generators, chillers, motors, saws, jackhammers, or similar equipment.		
	<i>Check the appropriate box for each hazard:</i>	<i>Description of hazard(s):</i>	<i>Required PPE</i>
	Noise hazard		
	RESPIRATORY HAZARDS: Personnel may be exposed to respiratory hazards that require the use of respirators: during emergency response, when using certain chemicals outside of a chemical fume hood; when working with hazardous powders; when entering fume hood plenums, when working with animals; when applying paints or chemicals in confined spaces; when welding, cutting, or brazing on certain metals; and when disturbing asbestos, lead, silica, or other particulate hazards.		
	<i>Check the appropriate box for each hazard:</i>	<i>Description of hazard(s):</i>	<i>Required PPE</i>
	Chemical exposure		
	Particulate exposure		
	Other:		
I certify that the above hazard assessment was performed to the best of my knowledge and ability, based on the hazards present on this date.			
_____ John A. Monson _____ 3-18-14 _____ (signature) _____			




PPE HAZARD ASSESSMENT FORM

I am reviewing (check the appropriate box):	A worksite	Specify location:	
	A single employee's job description	Name of employee:	
	A job description for a class of employees	Position Title:	
		Position Titles:	
		Location:	
Your Name:		Department/Division:	Date:
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	Impact		
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Other:			
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	Dust/Flying Debris		
	Impact		
	UV/IR Radiation		
	Electrical Shock		
Other:			
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	Impact/Compression		
	Electrical		
	Puncture		
Slippery/Wet Surfaces			
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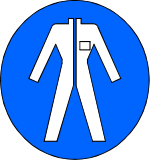



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	Particulate exposure		
	Other:		
I certify that the above hazard assessment was performed to the best of my knowledge and ability, based on the hazards present on this date.			
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PPE HAZARD ASSESSMENT FORM

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Other:			
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	<i>Check the appropriate box for each hazard:</i>	<i>Description of hazard(s):</i>	<i>Required PPE</i>
	Chemical Exposure		
	High Heat/Cold		
	Impact/Compression		
	Electrical		
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Slippery/Wet Surfaces			
Other:			


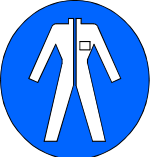



PPE HAZARD ASSESSMENT CERTIFICATE

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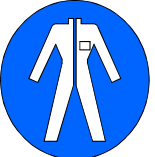



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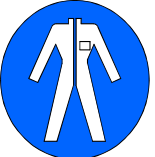



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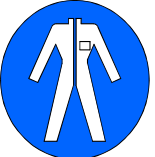



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Grove Roofing Services	Safety & Health Program
	Issue Date: October 2011
Title: Asbestos Compliance Program	Revision #: 1 Revision Date: 3-2014

1.0 Purpose

The purpose of this program is to establish and implement practices and procedures for protecting the health of Grove Roofing Services employees exposed to asbestos in all its various forms on the job. This toxic substance is highly regulated and this program is developed for purposes of establishing uniform procedures and practices.

It is Grove Roofing Services policy not to knowingly engage in work where Asbestos Containing Material (ACM) is present, where ACM must be disturbed, and could result in a potential exposure to our workforce. Given that the presence of ACM in a building may be undocumented or unknown, Grove Roofing will assure that all employees are aware of the hazards and uses, associated with asbestos. Furthermore, in the event the presence of ACM is discovered during a project, Grove Roofing will assure employees are trained in safe handling practices.

2.0 Scope

This program applies to all projects and employees involved with or the potential of being involved with, asbestos containing materials (ACM) which could reasonably be expected to expose employees to asbestos. This program is based on both OSHA 1926.1101 and NYS Code Rule 56 requirements.

3.0 Program

1. In order to adhere to Grove Roofing Services policy of not exposing employees to ACM, each project supervisor must request, BEFORE WORK STARTS, from the building owner (or agent) either;
 - a. A copy of the building ACM survey showing the location of ACM; or
 - b. A statement from the building owner that ACM or presumed ACM (PACM) is not present in the project area.

Actual documentation of the presence (or lack of) need not be obtained on new construction where asbestos-free materials are specified. The project supervisor must however ask the question and document the response in the project log.

2. When working at project sites where multiple contractors are performing work, Grove Roofing shall protect its employees from potential exposures related to other contractor asbestos related work. Protections include but are not limited to stop work in the area or separation meeting the requirements of OSHA and NYS Code Rule 56.
3. All employees who work in areas that contain or may contain asbestos shall be provided asbestos awareness training in the hazards, uses, and recognition of ACM. Every employee is expected to stop work and notify the Grove Roofing field supervisor if suspect materials are discovered during work. Asbestos awareness training shall be documented.

4. Work on or near the suspect material will be stopped until the supervisor contacts the building owner (or agent) who must identify the material as either non-ACM and non-PACM for work to continue. This finding from the owner must be documented. If the supervisor reasonably believes the material contains asbestos, The Safety Director must be contacted directly and work that could disturb the material halted until the matter is resolved.
5. If the material is found to be either ACM or PACM, all work that would disturb the material must be stopped and the Safety Director contacted for further instruction.
6. In the event unexpected ACM or PACM must be disturbed, the Safety Director will determine whether Grove Roofing will continue the operation with an employee(s) certified as an Asbestos Handler under New York State Code Rule 56-3.29(d)(1) and OSHA competent person. In no case will Class I work (i.e. activities involving the removal or thermal system insulation or surfacing ACM/PACM) be conducted. Only Grove Roofing employees that are certified Asbestos Handlers may knowingly disturb ACM/PACM; a list of these employees are contained with their backup paperwork in the “Lead & Asbestos Paperwork” binders in the office and is available upon request.
7. Any work conducted on ACM/PACM conducted by a Grove Roofing certified employee must be performed per NYS Code Rule 56 and OSHA 1926.1101. All work will also be performed using at least a half face APR with P100 filtering cartridge.
8. Before disturbing ACM/PACM the certified employee shall establish a regulated area around the ACM/PACM that will be disturbed. The regulated area will be clearly demarcated (including Asbestos warning signs – 1926.1101(k) (7) from other areas of the work site and only certified Grove Roofing employees will be permitted within the area. Eating, drinking, smoking, and chewing shall not be permitted in regulated areas.
9. Wet methods shall be used to remove ACM whenever possible. ACM/PACM shall never be dropped or thrown to the ground and shall be either kept wet, wrapped in plastic sheeting or placed in an impermeable waste bag. Upon being lowered, unwrapped material shall be transferred to a closed receptacle in such a manner so as to preclude the dispersion of dust.

4.0 Health Effects

Asbestosis is a restrictive lung disease which can be fatal. In addition, exposure to asbestos can cause lung cancer and a cancer of the lung lining called mesothelioma.

- **Asbestosis** – Asbestos causes scarring of lung tissue that eventually restricts one's ability to inhale.
- **Lung Cancer** – Asbestos increases the risk of lung cancer, especially in combination with exposure to tobacco smoke.
- **Mesothelioma** – Asbestos is thought to be the primary cause of this rare and deadly type of cancer of the lung lining and chest wall.

Grove Roofing Services	Safety & Health Program
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While lung cancer has a number of associated causes, asbestosis and mesothelioma are uniquely associated with exposure to asbestos.

Health related symptoms to asbestos exposure may not become apparent until long after the exposure. Although similar to other health issues, symptoms of asbestos health related issues can include:

- Persistent shortness of breath
- A cough or a change in cough pattern
- Blood in the fluid coughed up
- Difficulty in swallowing or prolonged hoarseness
- Significant weight loss without explanation

The combination of smoking and exposure to asbestos greatly increases the risk of developing of lung cancer.

5.0 Exposure Monitoring

For each work project that does not have previously monitored exposure data conducted within the past 12 months during work operations equivalent to the upcoming operation, personal air samples will be collected to determine exposures. For employees performing tasks involving asbestos exposure, representative, full shift and 30-minute short-term air samples will be collected.

Monitoring results will be compared to the OSHA Permissible Exposure Limit (PEL), 0.1 fibers per cubic centimeter of air as an eight hour time-weighted average (TWA) and the OSHA Excursion limit of 1.0 fiber per cubic centimeter of air as averaged over a sampling period of thirty minutes. These results will be used to determine if the respirator being used maintains exposures below the PEL and Excursion limit and if not, what type of respirator must be used.

Air samples will be collected and analyzed according to OSHA. All samples will be analyzed by laboratories accredited for asbestos analysis. All monitored employees will be notified in writing of the monitoring results within 5 days after receiving these results.

6.0 Medical Surveillance

Any Grove Roofing Services employee who works for 30 or more days per year as a Code Rule certified Asbestos Handler, or who may otherwise be exposed at or above the PEL, will participate in Grove Roofing's asbestos medical surveillance program as described in 1926.1101(m). Employees enrolled in this program will;

- Undergo a medical exam prior to being assigned to work with ACM/PACM and annually thereafter;
- The medical exam shall consist of a medical and work history;
- The standardized questionnaire contained in Appendix D of 1926.1101;
- Physical exam of the pulmonary and gastrointestinal system including a chest X-ray (at the discretion of the physician) and pulmonary function tests.

7.0 Protective Clothing and Equipment

Protective clothing used by anyone handling ACM/PCM will include disposable full body coveralls in addition to regular PPE (hard hat, eye protection, etc.). The disposable protective clothing will be used for no more than one work day and will be disposed of as contaminated waste. Protective clothing and equipment will be removed in the contaminated section of the change area and will not be worn into any clean areas not contaminated with asbestos.

8.0 Respiratory Protection

Respiratory protection will be used for all tasks where there is a potential for exposure to airborne asbestos fibers from ACM/PACM. **Respirators will also be worn during any monitoring to determine exposures.** Respiratory protection will be, at a minimum, a half-face APR with P100 (HEPA) filtering cartridge. Employees handling ACM/PACM may, at their option, use powered air-purifying respirators (PAPR).

Anyone wearing a respirator (i.e., handling ACM/PACM) must be enrolled in and compliant with Grove Roofing Services Respiratory Protection Program.

9.0 Housekeeping

Accumulations of asbestos containing dust and debris generated by work activities will be removed and cleaned daily. Only employees certified and trained in performing asbestos activities, respirator qualified, and that participate in the medical surveillance program will be permitted to do cleanup. Wherever feasible, HEPA-filtered vacuum cleaners will be used for housekeeping

10.0 Recordkeeping

All records relating to training, medical examinations, asbestos monitoring, exposure monitoring, and project specific requirements will be documented and maintained for 30 years.

[END]

Grove Roofing Services	Safety & Health Program
	Issue Date: October 2011
Title: Lead Compliance Program	Revision #: 0 Revision Date:

1.0 Purpose

The purpose of this program is to establish and implement practices and procedures for protecting the health of Grove Roofing Services employees exposed to lead on the job. This toxic substance is highly regulated and this program is developed for purposes of establishing uniform procedures and practices.

2.0 Scope

This program applies to all projects and employees involved with or suspected of having lead containing materials and activities which could reasonably be expected to expose employees to lead.

3.0 Action Levels

The Action Level for airborne lead exposure is 30 ug/m^3 , as an 8-hour TWA concentration, without regard to the use of respirators. Whenever workers' airborne exposures exceed or are expected to exceed the Action Level, the following will be implemented for the work project:

- Competent person assigned
- Employee information and training
- Employee medical surveillance
- Recordkeeping

4.0 Permissible Exposure Limits

The Permissible Exposure Limit (**PEL**) for airborne lead exposure is 5 ug/m^3 as an 8-hour TWA concentration. This is the maximum 8-hour average concentration of lead that can be inhaled during each work day. No employee will be exposed to airborne lead above the PEL.

The following methods will be used, as feasible and effective, for maintaining airborne exposures below the PEL:

- Engineering controls, such as general area ventilation for containments, or local exhaust ventilation.
- Work practices, such as housekeeping, protective clothing, proper hygiene facilities and practice
- Respiratory protection
- Administrative control, if applicable

5.0 Competent Person

All work activities where employee airborne exposures may exceed the Action Level will include a competent person in both the planning and performing stages of projects involving lead. This shall be done for both site work and the shop.

The competent person will be a Grove Roofing Services supervisor with training and experience in conducting jobs involving lead exposure. The competent person will have the capability of identifying hazards and the authority to take immediate action to eliminate them.

The competent person will be at the work site at all times while exposure activities are in progress. He or she may have other job duties, but will have the ability to continuously monitor work for hazards or deficiencies, and the authority to take immediate corrective action.

6.0 Employee Information and Training

All employees who work on projects where airborne lead exposures are known to or expected to exceed the Action Level will be provided information and training on the hazards and measures for controlling these hazards and protecting health prior to the time of initial job assignment and annually.

Employees will receive initial comprehensive lead training prior to performing work which may involve airborne exposure. This training will be repeated annually as a refresher. The content of training will include:

- The specific nature of activities or operations which may result in airborne exposure above the PEL.
- The health effects and risks of lead exposure,
- OSHA standards and guidelines for lead exposure.,
- Engineering controls, including containments and ventilation systems,
- Work practices for controlling exposure, including housekeeping, protective clothing, and proper hygiene facilities and practices,
- Respiratory protection for controlling airborne exposure, including fit testing on negative pressure devices,
- The medical surveillance program including medical removal.

When conducting exposure activities on a multi-employer worksite, the company will notify other employers of the nature of the lead exposure work, the need to remain out of exposure areas, the warning sign and labeling system in effect, and the potential need to take measures to protect their employees.

7.0 Written Compliance Program

A written, site specific compliance program will be developed for each project where lead exposures to lead may exceed the PEL. This program (template attached to this program) will be prepared and implemented prior to beginning activities.

8.0 Exposure Monitoring

For each work project that does not have previously monitored exposure data conducted within the past 12 months during work operations equivalent to the upcoming operation, personal air samples will be collected to determine exposures. For employees performing tasks involving lead exposure, full shift (at least 7 hours) air samples will be collected for each job classification in the work area **of the highest expected exposed worker**. The competent person will be responsible to ensure that exposure monitoring is performed as expected.

Where initial monitoring indicates that exposures are below the Action Level, and where work activities and conditions will remain the same as at the time of initial sampling, additional monitoring need not be repeated for that work project unless determined by the competent person.

Where initial monitoring indicates that exposures are at or above the Action Level, additional exposure monitoring will be conducted for each employee during the beginning of each different phase of the project or when changes occur, such as an increase in the number of workers in the area, to determine the range of exposures. If initial air monitoring is above the action level, monitoring will be conducted every six months until two consecutive results are below the action level

All air samples will be collected and analyzed according to OSHA. All samples will be analyzed by laboratories accredited for metals analysis. All monitored employees will be notified in writing of the monitoring results within 5 days after receiving these results and corrective action taken.

Laboratory results of the sampling (included below) indicate that under the operating and test conditions measured lead exposures were below the OSHA PEL.

9.0 Medical Surveillance

All employees who may be exposed above the Action Level or who may be required to wear a respirator will be provided initial and periodic annual medical examinations. Employees who may be exposed to lead above the Action Level for more than 30 days will be provided with initial and periodic blood lead tests. Medical examinations for lead will include biological monitoring for lead. In all cases additional monitoring will be conducted every 6 months until two consecutive blood samples & analysis are acceptable or as prescribed by the health care provider.

All employees who are temporarily removed from toxic exposure due to elevated levels or at the recommendation of a physician may be reassigned other job duties at the site which do not involve exposure above the Action Levels. Blood sampling & monitoring will be performed at least monthly during the removal period. Employees will be notified in writing within five days when lead levels are not acceptable.

10.0 Regulated Areas (SHOP ONLY – NOT FIELD)

A regulated area will be established around activities where exposures may exceed the PEL. The regulated area can be demarcated by ropes, tape, walls, or containments.

Caution signs will be posted at every accessible side of the regulated area. These signs will be easily visible from a distance so that employees can read the sign and take necessary protective measures before entering the regulated areas. Sign colors will be black letters on a yellow background. Signs will read as follows:

WARNING:

LEAD WORK AREA, POISON, NO SMOKING OR EATING.

The competent person will control access of persons into regulated areas. All persons entering regulated areas will wear protective clothing and respirators. Eating, drinking, smoking, and chewing are prohibited in regulated areas and any area where exposure may exceed the PEL.

11.0 Personal Hygiene Facilities and Practices

Clean change areas will be provided for all projects where employee airborne lead exposures may exceed the PEL. These clean change areas will be equipped with storage facilities for street clothing and a separate area for the removal and storage of lead contaminated clothing and equipment. This change area will be designed and used so that contamination of street clothing does not occur.

Shower facilities will be provided for all projects where employee exposures may exceed the PEL. Shower facilities will comply with OSHA Sanitation Standard, 29 CFR 1910.141. All employees whose airborne exposures may exceed the PEL will shower at the end of each work shift or before leaving the project area. Employees required to shower will not leave the workplace wearing any clothing worn while performing lead exposure activities.

Clean lunch areas will be provided for all projects where employee airborne exposures may exceed the PEL. Employees will remove or clean their protective clothing and wash their hands before entering the lunchroom area. Airborne exposures in the lunch area will be maintained below the PEL.

12.0 Protective Clothing and Equipment

Protective clothing and equipment will be worn by all employees whose airborne exposures may exceed the PEL or who enter regulated areas (shop). Protective clothing and equipment, including respirators, will be provided at no cost to the employee.

Protective clothing will include washable or disposable full body coveralls. Clean or new clothing will be provided each work day. Other protective equipment will include face shields, hard hats, eye protection, gloves, shoe coverlets, and hearing protection as appropriate.

Disposable protective clothing will be used for no more than one work day. They will be disposed of as contaminated waste.

Reusable coveralls will be collected at the end of each work day in closed containers. Contaminated clothing will be cleaned by authorized laundries in accordance with all applicable

federal, state, or local regulations pertaining to lead contaminated laundry and water discharge. All containers of lead contaminated laundry will be labeled as follows:

**CAUTION: CLOTHING CONTAMINATED WITH LEAD.
DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD
CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE
LOCAL, STATE, OR FEDERAL REGULATION**

Protective clothing and equipment will be removed in the contaminated section of the change area and will not be worn into any clean areas not contaminated with lead.

13.0 Respiratory Protection

Respiratory protection will be used, in combination with engineering controls and work practices, to maintain employee airborne exposures below the Permissible Exposure Limit. **Respirators will also be worn during any initial monitoring to determine exposures and during the time period necessary to install or implement engineering or work practice controls, where engineering and work practice controls are insufficient and in emergencies.** Respirators will be worn until Grove Roofing determines, through an employee exposure assessment, what actual exposures are. Respirator use during the initial monitoring will be determined as follows;

- Half face APR with P100 cartridge where lead containing coatings or paint are present and manual demolition of structure (e.g., dry wall), manual scraping, manual sanding, heat gun applications, and power tool cleaning with dust collection systems are used.
- Full face APR with P100 cartridge where lead burning (soldering) is conducted, lead mortar is used, lead containing coatings or paint are present and rivet busting, power tool cleaning without dust collection, cleanup activities where dry expendable abrasives are used.
- For any activity not described above such as welding, cutting, abrasive blasting and torch burning lead containing coatings and paint management shall develop a project specific plan. These activities are not to be conducted without prior approval from The Safety Director.

Respirators will be worn by all employees, other contractors, inspectors, or observers who may be exposed to airborne levels at or above the PEL or who enter regulated areas.

14.0 Housekeeping

Accumulations of lead containing dust and debris generated by work activities will be removed and cleaned daily. All persons doing the cleanup will be trained in performing lead activities, respirator qualified, and participate in the medical surveillance program, Respirators and

protective clothing will be worn by all persons doing the cleanup. Wherever feasible, HEPA-filtered vacuum cleaners will be used for housekeeping.

15.0 Recordkeeping

All records relating to training, medical examinations, blood lead monitoring, exposure monitoring, and project specific requirements will be maintained for 30 years.

The enclosed **Job Site Compliance Plan** will be completed for every affected project.

GROVE ROOFING SERVICES

Job Site Lead Compliance Plan *Initial Exposure Assessment*

Date: _____ Job Location: _____

Project Air Monitoring Data or Previous Air Monitoring Data

(Max Risk Worker)

Date		Date	
Employee monitored			
Task		Job type	
Source of lead		Source of lead	
Controls		Controls	
Work practices		Work practices	
Duration of Sample		Time of Sample	
8 hour TWA		8 hour TWA	

Project Air Monitoring Data or Previous Air Monitoring Data

(Max Risk Worker)

Date		Date	
Employee monitored			
Task		Job type	
Source of lead		Source of lead	
Controls		Controls	
Work practices		Work practices	
Duration of Sample		Time of Sample	
8 hour TWA		8 hour TWA	

Negative Initial Determination: When the initial determination results in exposures that are less than the action level for lead, this document will serve as written proof of the assessment

Positive Initial Determination: When the initial determination shows that exposures may exceed the Action Level additional monitoring must be conducted. Contact The Safety Director for guidance.

Positive Initial Determination

When there is the potential for exposures greater than the PEL

Personal Protective Equipment Requirements:

- Respirator (type): _____
- Coveralls Face Shield
- Goggles or Safety Glasses Other: _____
- Other: _____ Other: _____

Work Practice Controls:

- Change Area Hand Wash Facility
- Shower Area HEPA Vacuum
- Wet Wiping Other: _____

Engineering Controls:

- Manual Scrapping/Sanding Local Exhaust Ventilation
- Wetting Agents Lead-free Materials
- Other: _____ Other: _____

Job Site Employees:

Employee Name	Task	Lead Trained

Multi-Contractor Arrangement:

If more than one contractor is working on this job site, the following conditions apply to ensure that employees working in affected areas are aware of possible lead exposure:

**Industrial Hygiene Assessment
Report**

FOR

Grove Roofing Services, Inc.

**131 Reading Street
Buffalo, NY 14220**

Date of Site Visit
September 12 - 13, 2011

Prepared by:


quality risksolutionsllc.
10 North Lincoln Ave.
Orchard Park, NY 14127

Industrial Hygiene Assessment

Grove Roofing Services, Inc.

Table of Contents

Executive Summary

Sampling Description

Recommendations

Laboratory Report

Executive Summary

On September 12 - 13, 2011 Quality Risk Solutions (QRS) conducted a worker exposure assessment for lead while performing soldering work at Grove Roofing's shop and Erie Community College (ECC) job site. The assessment was conducted to provide information to support a comprehensive hazardous substance exposure control program for Grove.

Results of the sampling indicate that under the operating and test conditions measured lead exposures were below the Occupational Safety and Health Administration's (OSHA) Permissible Exposure Limits (PEL).

Sampling Description

Exposure monitoring was conducted at Grove's fabrication shop and job site located at ECC in Buffalo on September 12 - 13, 2011. The monitoring was conducted to compare employee actual exposures to permissible exposure limits for regulated substances (lead). The OSHA PELs are time-weighted averages (TWA) over an eight-hour work day of a forty-hour work week. The sampling and analytical procedures were conducted as specified by OSHA Method ID125G.

The PEL for lead is 0.05 mg/m^3 (50 ug/m^3) and the Action level is 0.030 mg/m^3 (30 ug/m^3). The Action level is used to determine the need for additional monitoring.

Sampling was done on three Grove employees, Jim Carpeno, Joe Carpeo and Mark Fino doing field work at the ECC roofing restoration project. Monitoring was performed for two days, September 12 and 13, 2011.

Sampling was also performed on two Grove employees, Rich Foley and Matt Strojny in the fabrication shop located at 131 Reading Street, Buffalo. The monitoring was conducted while they were doing routine soldering using lead containing solder.

Tables 1 summarize the results. Further details can be found in the appendix, Laboratory Reports.

Table 1: Lead Exposure Results
 (OSHA PEL = 50 ug/m³ 8-hr.- TWA)
 (OSHA AL = 30 ug/m³ 8-hr.- TWA)

<i>Employee</i>	<i>Task</i>	<i>Date Monitored</i>	<i>TWA Exposure ug/m³</i>	<i>Action level Exceeded</i>	<i>PEL Exceeded</i>
Joe Carpino	ECC	9/12/11	1.2	No	No
Mark Fino	ECC	9/12/11	2.5	No	No
Jim Carpino	ECC	9/12/11	1.1	No	No
Joe Carpino	ECC	9/13/11	3.9	No	No
Mark Fino	ECC	9/13/11	4.6	No	No
Jim Carpino	ECC	9/13/11	1.3	No	No
Rich Foley	Fab Shop	9/13/11	3.6	No	No
Matt Strojny	Fab Shop	9/13/11	1.0	No	No

Recommendations

Results indicate that employee exposures are below the OSHA PEL and Action level under the conditions at the time of the sampling.

Laboratory Report



Mr. Don Dustin
Quality Risk Solutions
10 N. Lincoln Ave.
2nd Floor
Orchard Park, NY 14127

September 21, 2011

DOH ELAP# 11626

Account# 18461

Login# L249248

Dear Mr. Dustin:

Enclosed are the analytical results for the samples received by our laboratory on September 16, 2011. All test results meet the quality control requirements of AIHA and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report.

Please contact Charlene Moser at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G. Unangst
Laboratory Director

Enclosure(s)



LABORATORY ANALYSIS REPORT

6601 Kirkville Road	Client	: Quality Risk Solutions
East Syracuse, NY 13057	Site	: Grove Roofing
(315) 432-5227	Project No.	: ECC City
FAX: (315) 437-0571	Date Sampled	: 12-SEP-11 - 13-SEP-11
www.galsonlabs.com	Date Received	: 16-SEP-11
	Date Analyzed	: 19-SEP-11
	Report ID	: 708094
	Account No.:	: 18461
	Login No.:	: L249248

Lead

<u>Sample ID</u>	<u>Lab ID</u>	<u>Air Vol</u> <u>liter</u>	<u>Total</u> <u>ug</u>	<u>Conc</u> <u>mq/m3</u>
1 JOE CARPINO	L249248-1	728	0.84	0.0012
2 MARK FINO	L249248-2	768	0.46	0.00060
3 JIM CARPINO	L249248-3	340	0.38	0.0011
4 JOE CARPINO	L249248-4	578	2.2	0.0039
5 MARK FINO	L249248-5	952	2.4	0.0025
6 JIM CARPINO	L249248-6	962	1.2	0.0013
7 RICH FOLEY	L249248-7	839	3.0	0.0036
8 MATT STROJNY	L249248-8	839	0.85	0.0010

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.38 ug	Submitted by: cri
Analytical Method : mod. NIOSH 7300/ mod. OSHA 125G; ICP	Approved by : LLS
OSHA PEL (TWA) : 0.05 mg/m3	Date : 21-SEP-11 NYS DOH # : 11626
Collection Media : Filter	QC by: Tony D'Amico

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	



LABORATORY FOOTNOTE REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client Name : Quality Risk Solutions
Site : Grove Roofing
Project No. : ECC City

Date Sampled : 12-SEP-11 - 13-SEP-11 Account No.: 18461
Date Received: 16-SEP-11 Login No. : L249248
Date Analyzed: 19-SEP-11

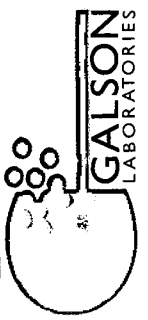
Unless otherwise noted below, all quality control results associated with the samples were within established control limits.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

L249248 (Report ID: 708094):
Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.
SOPs: MT-SOP-9(15), im-mwvfilt(14)

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	



6601 Kirkville Rd
 East Syracuse, NY 13057-9672
 Tel: 315-432-5227
 888-432-5227
 Fax: 315-437-0571
 www.galsonlabs.com

Invoice To*: SAME

Report To*: QRS

Client Account No.*: ATT: DONALD DUSTIN
10 NORTH LINCOLN
ORCHARD PARK, NY 14127

Phone No.*: 716-662-3858

Cell No.: _____

Email: _____

Purchase Order No.: _____

Credit Card: Credit Card on File Call for Credit Card Info

Samples submitted using the FreeSamplingBadges™ Program:

State samples were collected in (ex. NY): NY

Please indicate which OEL this data will be used for:
 OSHA PEL ACGIH TLV Cal OSHA
 MSHA Other (specify): _____

Analysis Requested*
 Hexavalent Chromium (Cr6) mod. OSHA ID-215

Method Reference^
OSHA 125 C

Hexavalent Chromium Process (ex. welding, plating, painting, etc.):
Welding

Sampled By: DONALD DUSTIN

Site Name: GROVE ROOFING Project: ECC CITY

Comments: _____

List description of industry or process/interferences present in sampling area:
SOLDERING

Need Results By* (surcharge)	Sample Identification* (Maximum of 20 characters. ID's longer than 20 characters will be abbreviated)	Date Sampled* (mm/dd/yy)	Collection Medium	Sample Volume, Sample Time, or Sample Area*	Sample Units* L, ml, min., in2, cm2, ft2	Analysis Requested*	Method Reference^	Hexavalent Chromium Process (ex. welding, plating, painting, etc.)
<input checked="" type="checkbox"/> 5 Business Days	Example	01/01/11	2pc UW PVC Medium	960	L	Hexavalent Chromium (Cr6)	mod. OSHA ID-215	Welding
<input type="checkbox"/> 4 Business Days	1: JOE CARPINO	9/12/11	3pc UW MCE	728	L	LEAD	OSHA 125 C	SOLDERING
<input type="checkbox"/> 3 Business Days	2: MARK FINO	9/13/11		765				
<input type="checkbox"/> 2 Business Days	3: JIM CARPINO	9/12/11		340				
<input type="checkbox"/> Next Day by 6pm	4: JOE CARPINO	9/13/11		578				
<input type="checkbox"/> Next Day by Noon	5: MARK FINO	9/12/11		952				
<input type="checkbox"/> Same Day	6: JIM CARPINO	9/13/11		962				
	7: RICH FOLEY	9/13/11		839				
	8: MATT STROSNY	9/13/11		839				

Chain of Custody

Relinquished by: DONALD DUSTIN Signature: Donald Dustin Date/Time: 9/15/11 PM

Received by LAB: M. K. [unclear] Signature: M. K. [unclear] Date/Time: 9/16/11 1230

Galson Laboratories will substitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ please indicate if the lower LOQ is required (only available for certain analytes see SAG): _____

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*: _____

*Required fields, failure to complete these fields may result in a delay in your samples being processed.

**Industrial Hygiene Assessment
Report**

FOR

Grove Roofing Services, Inc.

**131 Reading Street
Buffalo, NY 14220**

Date of Site Visit
September 28, 2012

Prepared by:


quality risksolutionsllc.
10 North Lincoln Ave.
Orchard Park, NY 14127

Industrial Hygiene Assessment

Grove Roofing Services, Inc.

Table of Contents

Executive Summary

Sampling Description

Recommendations

Laboratory Report

Executive Summary

On September 28, 2012 Quality Risk Solutions (QRS) conducted a worker exposure assessment for lead while performing soldering work at Grove Roofing's Niagara University job site. The assessment was conducted to provide information to support a comprehensive hazardous substance exposure control program for Grove.

Results of the sampling indicate that under the operating and test conditions measured lead exposures were below the Occupational Safety and Health Administration's (OSHA) Permissible Exposure Limits (PEL).

Sampling Description

Exposure monitoring was conducted at Grove's job site located at Niagara University in Lewiston on September 28, 2012. The monitoring was conducted to compare employee actual exposures to permissible exposure limits for regulated substances (lead). The OSHA PELs are time-weighted averages (TWA) over an eight-hour work day of a forty-hour work week. The sampling and analytical procedures were conducted as specified by OSHA Method ID125G.

The PEL for lead is 0.05 mg/m³ (50 ug/m³) and the Action level is 0.035 mg/m³ (35 ug/m³). The Action level is used to determine the need for additional monitoring.

Sampling was done on two Grove employees, Jim Carpino and Mark Fino during a routine work day while soldering. The two were doing roofing work.

Tables 1 summarize the results. Further details can be found in the appendix, Laboratory Reports.

Table 1: Lead Exposure Results

<i>Employee</i>	<i>PEL, mg/m³</i>	<i>TWA Exposure mg/m³</i>	<i>Action level Exceeded</i>	<i>PEL Exceeded</i>
Jim Carpino	0.05	<0.00048	No	No
Mark Fino	0.05	<0.00048	No	No

Recommendations

Results indicate that employee exposures are below the OSHA PEL and Action level under the conditions at the time of the sampling.

Laboratory Report



Mr. Don Dustin
Quality Risk Solutions
10 N. Lincoln Ave.
2nd Floor
Orchard Park, NY 14127

October 05, 2012

DOH ELAP# 11626
AIHA # 100324

Account# 18461

Login# L275062

Dear Mr. Dustin:

Enclosed are the analytical results for the samples received by our laboratory on October 01, 2012. All test results meet the quality control requirements of AIHA and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Charlene Moser at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G. Unangst
Laboratory Director

Enclosure(s)



LABORATORY ANALYSIS REPORT

6601 Kirkville Road
 East Syracuse, NY 13057
 (315) 432-5227
 FAX: (315) 437-0571
 www.galsonlabs.com

Client : Quality Risk Solutions
 Site : NIAGARA UNIVERSITY
 Project No. : GROVE ROOFING
 Date Sampled : 28-SEP-12
 Date Received : 01-OCT-12
 Date Analyzed : 03-OCT-12
 Report ID : 754568
 Account No.: 18461
 Login No. : L275062

Lead

<u>Sample ID</u>	<u>Lab ID</u>	<u>Air Vol</u> <u>liter</u>	<u>Total</u> <u>ug</u>	<u>Conc</u> <u>mg/m3</u>
1. JIM CARPINO	L275062-1	782	<0.38	<0.00048
2. MARK FINO	L275062-2	777	<0.38	<0.00048

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.38 ug
 Analytical Method : mod. NIOSH 7300/ mod. OSHA ID-125G; IC
 OSHA PEL (TWA) : 0.05 mg/m3
 Collection Media : Filter
 Submitted by: jam
 Approved by : keg
 Date : 04-OCT-12 NYS DOH # : 11626
 QC by: Karen Becker

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
 > -Greater Than ug -Micrograms l -Liters NS -Not Specified
 NA -Not Applicable ND -Not Detected ppm -Parts per Million



LABORATORY FOOTNOTE REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client Name : Quality Risk Solutions
Site : NIAGARA UNIVERSITY
Project No. : GROVE ROOFING

Date Sampled : 28-SEP-12
Date Received: 01-OCT-12
Date Analyzed: 03-OCT-12

Account No.: 18461
Login No. : L275062

Unless otherwise noted below, all quality control results associated with the samples were within established control limits.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L275062 (Report ID: 754568):
Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.
SOPs: MT-SOP-9(21), im-mwvfilt(17)

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	



6601 Kirkville Rd
 East Syracuse, NY 13057-9672
 Tel: 315-432-5227
 888-432-5227
 Fax: 315-437-0571
 www.galsonlabs.com

New Client?

Report To*: QUALITY RISK SOLUTIONS Invoice To*: SAME

Client Account No.*:

10 NORTH LINCOLN
ORCHARD PARK, NY
14127

Phone No.*: 716-662-3858 Phone No.:

Cell No.:

Email Results To: DONALD DUSTIN Purchase Order No.:

Email Address: DDUSTIN@QUALITYRISK.COM

Samples submitted using the FreePumpLoan™ Program. Credit Card on File Call for Credit Card Info

Samples submitted using the FreeSamplingBadges™ Program.

Site Name: Niagara University Project: GROVE ROOFING Sampled By: D. DUSTIN

Comments:

List description of industry or process/interferences

present in sampling area:

SOLDERING

State samples were collected in (ex. NY):

NY

Please indicate which OEL this data will be used for:

OSHA PEL ACGIH TLV Cal OSHA
 MSHA Other (specify):

Hexavalent Chromium Process (ex. welding, plating, painting, etc.):

Method Reference^

mod. OSHA ID-215

Analysis Requested*

Hexavalent Chromium (Cr6)

LEAD

Welding

Sample Volume, Sample Time, or Sample Area*

960

782

777

Sample Units*: L, ml, min., in2, cm2, ft2

L

L

L

Collection Medium

2pc UW PVC

3pe ACE

Date Sampled* (mm/dd/yy)

01/01/11

9/28/12

1

Sample Identification* (Maximum of 20 characters, ID's longer than 20 characters will be abbreviated.)

Example

1. JIM CARPINO

2. MARK FINO

^Galson Laboratories will substitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ please indicate if the lower LOQ is required (only available for certain analytes see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

Chain of Custody	Print Name	Signature	Date/Time
Relinquished by:	<u>DONALD DUSTIN</u>	<u>[Signature]</u>	<u>9/28/12</u>
Received by LAB:	<u>[Signature]</u>	<u>[Signature]</u>	<u>10/12/12</u>

Samples received after 3pm will be considered as next day's business.

*Required fields, failure to complete these fields may result in a delay in your samples being processed.

LAB ORIGINAL

INDUSTRIAL HYGIENE REPORT

For



At

**Grove Roofing Services Fabrication Shop &
Hamburg Drain Project**

Date

September 13, 2013

Prepared by:



10 North Lincoln Ave.
Orchard Park, NY 14127

INDEX

- Executive Summary

- Results

Lead

Attachment 1 – Laboratory Report

Executive Summary

September 13, 2013, Quality Risk Solutions, LLC (QRS) conducted worker exposure assessments for airborne lead levels during welding operations at Grove Roofing Services Inc.'s Fabrication Shop (131 Reading Street Buffalo, NY 14220) and the "Hamburg Drain" jobsite (Scott Street Buffalo, NY 14203).

Results of the assessment indicate that under the operating and test conditions;

- Exposures monitored for airborne lead levels of the two (2) workers grinding and welding lead components at the fabrication shop were **below** the Occupational Safety and Health Administration's (OSHA) 29 CFR Part 1910.1025 general Industry regulated Permissible Exposure Limit (PEL) and Action Level (AL).
- Exposures monitored for airborne lead levels of the two (2) welders installing/welding metal components at the Hamburg Drain project were **below** the Occupational Safety and Health Administration's (OSHA) 29 CFR Part 1926.62 construction regulated Permissible Exposure Level (PEL) and Action Level (AL).

Results

OSHA AL: 0.03 mg/m³
OSHA PEL: 0.05 mg/m³

Name	Task/Location	Results mg/m ³	Acceptable
Rich Foley	Welding/Shop	0.015	yes
Matt Serojny	Welding/Shop	0.0086	yes
Jeff Wolf	Welding/ Hamburg Drain	0.0064	yes
Steve Usiak Jr.	Welding/ Hamburg Drain	0.0068	yes

Grove Roofing Services

Attachment 1

Laboratory Report



Mr. Garrett Schmidbauer
Quality Risk Solutions
10 N. Lincoln Ave.
2nd Floor
Orchard Park, NY 14127

September 24, 2013

DOH ELAP# 11626
AIHA # 100324

Account# 18461

Login# L300111

Dear Mr. Schmidbauer:

Enclosed are the analytical results for the samples received by our laboratory on September 17, 2013. All test results meet the quality control requirements of AIHA and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact James Trainer at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G. Unangst
Laboratory Director

Enclosure(s)



LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : Quality Risk Solutions
Site : Grove Roofing
Project No. : Shops & Hamburg Drain
Date Sampled : 13-SEP-13
Date Received : 17-SEP-13
Date Analyzed : 19-SEP-13
Report ID : 799011

Account No.: 18461
Login No. : L300111

Lead

Table with 5 columns: Sample ID, Lab ID, Air Vol (liter), Total (ug), Conc (mg/m3). Rows include RICH FOLEY SHOP, MATT SEROVNY SHOP, JEFF WOLF FIELD, and STEVE USIAK FIELD.

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.38 ug Submitted by: mlh/kml
Analytical Method : mod. NIOSH 7300/mod. OSHA ID-125G; ICP Approved by : crd
OSHA PEL (TWA) : 0.05 mg/m3 Date : 20-SEP-13 NYS DOH # : 11626
Collection Media : Filter QC by: Karen Becker

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million



LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client Name : Quality Risk Solutions
Site : Grove Roofing
Project No. : Shops & Hamburg Drain

Date Sampled : 13-SEP-13
Date Received: 17-SEP-13
Date Analyzed: 19-SEP-13

Account No.: 18461
Login No. : L300111

Unless otherwise noted below, all quality control results associated with the samples were within established control limits.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L300111 (Report ID: 799011):
Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.
SOPs: MT-SOP-9(24), im-mwvfilt(18)

<	-Less Than	mg	-Milligrams	m3	-Cubic Meters	kg	-Kilograms
>	-Greater Than	ug	-Micrograms	l	-Liters	NS	-Not Specified
NA	-Not Applicable	ND	-Not Detected	ppm	-Parts per Million		



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 888-432-5227
 Fax: 315-437-0571
 www.galsonlabs.com

New Client?

Report To*: QUALITY RISK SOLUTIONS

Invoice To*: - SAME -

Client Account No.*: 10 NORTH LINCOLN AVE

ORCHARD PARK NY

Phone No.*: 716 662 3858 ext 104

Phone No.:

Cell No.: 716 432 3093

Email:

Email Results To: GARRETT SCHMIDBAUER

Purchase Order No.:

Email Address: G.SCHMIDBAUER@QUALITYRISK.COM

Credit Card: Credit Card on File Call for Credit Card Info

Samples submitted using the FreePumpLoan* Program.

Samples submitted using the FreeSamplingBadges™ Program.

Need Results By*:	(surcharge)
<input checked="" type="checkbox"/> Standard	0%
<input type="checkbox"/> 4 Business Days	35%
<input type="checkbox"/> 3 Business Days	50%
<input type="checkbox"/> 2 Business Days	75%
<input type="checkbox"/> Next Day by 6pm	100%
<input type="checkbox"/> Next Day by Noon	150%
<input type="checkbox"/> Same Day	200%

Site Name: GRAVE ROOFING Project: SHOPS & HANGERS DRAIN Sampled By: G.SCHMIDBAUER
 Comments: RF & MS - IN SHOP FABRICATION/ASSEMBLY
HW & WS - IN FIELD - HANGERS DRAIN JOBSITE - INSTALLATION

Date Sampled* (mm/dd/yy)	Collection Medium	Sample Volume, Sample Time, or Sample Area*	Sample Units* L, ml, min., in2, cm2, ft2	Analysis Requested*	Method Reference^	State samples were collected in (ex. NY):	Please indicate which OEL this data will be used for:
01/01/11	2pc UW PVC	960	L	Hexavalent Chromium (Cr6)	mod. OSHA ID-215	NEW YORK	<input checked="" type="checkbox"/> OSHA PEL <input type="checkbox"/> Cal OSHA <input type="checkbox"/> MSHA <input type="checkbox"/> Other (specify):
9/13/13	3pc UW MCL	535 ml	1043	LEAD	N7300	NEW YORK	Flexivalent Chromium Process (ex. welding, plating, painting, etc.) Welding
9/13/13	3pc UW MCL	535 ml	1043	LEAD	N7300	NEW YORK	WELDING WELDING
9/13/13	3pc UW MCL	496 ml	967	LEAD	N7300	NEW YORK	WELDING
9/13/13	3pc UW MCL	498 ml	971	LEAD	N7300	NEW YORK	WELDING

List description of industry or process/interferences present in sampling area: LEAD WELDING & GRINDING OF ROOFING SHEET METAL

Chain of Custody	Print Name/Signature	Date/Time	Date/Time
Relinquished by: <u>G.SCHMIDBAUER</u>		9/16/13 12:00	
Relinquished by:	<u>M. Kausy / m.kausy</u>		9/17/13 12:30

*Galson Laboratories will substitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: Use method(s) listed on COC
 For metals analysis: if requesting an analyte with the option of a lower LOQ please indicate if the lower LOQ is required (only available for certain analytes see SAG):
 For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

Samples received after 3pm will be considered as next day's business.
 *Required fields, failure to complete these fields may result in a delay in your samples being processed.

LAB ORIGINAL



SILICA EXPOSURE CONTROL PLAN UNDER 29 CFR §1926.1153(g)

Section 1. Introduction

Silica refers to the chemical compound silicon dioxide (SiO_2), the most common form of which is quartz. Sand, a key component in many building products such as mortar, clay and concrete tiles or pavers, and brick, is mainly composed of silica in the form of quartz.

Silica can present a danger to construction workers when these building materials are cut, drilled or ground using powered equipment and abrasive blades, drills or other equipment, resulting in dust containing tiny particles of silica, known as respirable crystalline silica (RCS). These particles are small enough to penetrate to the gas exchange area of the lungs; larger particles cannot travel as deep into the lungs and are purged by natural actions of the body. Respirable particles remain in the lungs and cause permanent scarring of lung tissue, making breathing increasingly more difficult—an occupational disease known as silicosis that often does not manifest until many years after exposure. According to the American Lung Association, silicosis also increases the risk of other lung issues, such as tuberculosis, lung cancer and chronic bronchitis.

The U.S. Occupational Safety and Health Administration (OSHA) has published a new rule regarding worker exposure to RCS in construction that takes effect **Sept. 23, 2017**.

In accordance with OSHA's construction silica regulation, **Grove Roofing Services** has developed the following written exposure control plan to identify the hazards our workers may be exposed to and the means our company has established to control those hazards, ensuring the safety of our workers and others in proximity to our job sites. Although RCS exposures are minimal in the majority of roofing work and the risk of contracting silicosis is low, RCS is a serious danger that can cause permanent damage, and it is critical for all supervisors and workers to follow the control practices set out in this plan.

Section 2. Scope and Description of Tasks

The OSHA regulation applies to all exposures to RCS in construction workplaces except those where worker exposures will remain below 25 micrograms per cubic meter of air as an eight-hour time-weighted average (TWA) under any foreseeable conditions.

Following are specific tasks a worker for **Grove Roofing** may perform that could involve exposure to silica, quartz or sand (not necessarily RCS). These tasks were determined based on information found in manufacturers' safety data sheets (SDSs) for products being used or installed, as well as company and industry sampling of commonly encountered roofing and building products.

- Abrasive, powered cutting of concrete or clay tile or pavers
- Grinding of mortar joints or masonry for counterflashing or tuckpointing with powered tools equipped with abrasive blades
- Removal and installation of asphalt roofing products such as built-up, polymer-modified bitumen and shingle roof systems
- Removal or installation of gravel surfacing material on roof systems
- Drilling or screwing into concrete, masonry or mortar for installation of termination bars, fasteners or other accessories
- Using handheld manually operated &or power saws for cutting fiber-cement board used in roof system construction

With worker input, **Grove Roofing's** management and supervisors will review this list of tasks at least once a year and supplement or revise it to properly describe tasks that may involve silica, quartz or sand or could result in exposure to RCS. This review will use industry sources of silica information, company sampling and testing, and government agency and third-party research and publications to determine additional sources of RCS exposure that initially may not have been identified.

Prior to the start of any project, company supervisors and safety staff will analyze the tasks to be performed on the project and determine whether any of those tasks fall into one of the categories listed above or might involve an exposure to RCS that has not been identified previously. In performing the hazard analysis, a preliminary determination also will be made by company supervisors and safety staff regarding any possible exposure to RCS from sources outside our company's control as well as potential exposures to third parties who may be affected by our company operations. Hazards identified will be addressed by company staff in consultation with third-party entities if applicable and procedures to control those hazards will be incorporated into this plan.

Any identified task that exposes—or reasonably is expected to expose—company workers to RCS at or above the action level requires company supervisors and safety personnel to assess the nature of the exposure by air monitoring or objective data comparison sufficient to characterize the exposure.

Section 3. Limiting Worker Exposures to RCS

Although most tasks performed by workers at **Grove Roofing** will not expose workers to harmful levels of RCS, two categories of tasks described by OSHA in Table 1 of 29 CFR §1926.1153(c)(1) may be performed by our workers. When our workers are using hand-held power saws or hand-held grinders for mortar removal, as described in 29 CFR §1926.1153(c)(1)(ii) and (c)(1)(xi), respectively, our workers will follow the engineering and work practice control methods and wear the required respiratory protection described in each provision as applicable unless such controls are not feasible.

- A. If, while performing tasks described in paragraph A, workers do not fully implement the engineering controls, work practices and respiratory protection described in Table 1, our company will ensure no worker is exposed to RCS in an amount that exceeds the permissible exposure limit (PEL) of 50 micrograms per cubic meter of air as an eight-hour TWA. In addition, our company will analyze air monitoring data or objective data sufficient to accurately characterize worker exposures to RCS.

Alternatively, our company will perform initial monitoring to assess the eight-hour TWA exposure for each worker on the basis of one or more personal breathing zone air samples that reflect the exposures of workers on each shift, for each job classification, in each work area. Where several workers perform the same tasks on the same shift and in the same work area, our company will sample a representative fraction of these workers to meet this requirement. In representative sampling, our company will sample the worker(s) who are expected to have the highest exposure to RCS.

If initial monitoring indicates worker exposures are below the action level, we will discontinue monitoring for those workers whose exposures are represented by such monitoring.

Where the most recent exposure monitoring indicates worker exposures are at or above the action level but at or below the PEL, our

company will repeat such monitoring within six months of the most recent monitoring. Where the most recent exposure monitoring indicates worker exposures are above the PEL, our company will repeat such monitoring within three months of the most recent monitoring.

Where the most recent (noninitial) exposure monitoring indicates worker exposures are below the action level, our company will repeat such monitoring within six months of the most recent monitoring until two consecutive measurements, taken seven or more days apart, are below the action level, at which time we will discontinue monitoring for those workers whose exposures are represented by such monitoring, except as otherwise provided under "Reassessment of exposures" below.

Reassessment of exposures: Our company will reassess exposures whenever a change in the production, process, control equipment, personnel or work practices may reasonably be expected to result in new or additional exposures at or above the action level or when we have any reason to believe new or additional exposures at or above the action level have occurred.

Methods of sample analysis: Our company will ensure all samples taken to satisfy the monitoring requirements are evaluated by a laboratory that analyzes air samples for RCS in accordance with the procedures in Appendix A of 29 CFR §1926.1153.

Worker notification of assessment results: Within five working days after completing an exposure assessment, our company will individually notify each affected worker in writing of the results of the assessment or post the results in an appropriate location accessible to all affected workers. Whenever an exposure assessment indicates that a worker exposure is above the PEL, our company will describe in the written notification the corrective action being taken to reduce worker exposure to or below the PEL.

Observation of monitoring: Where air monitoring is performed to comply with the requirements of this section, our company will provide affected workers or their designated representatives an opportunity to observe any monitoring of worker exposure to RCS. When observation of monitoring requires entry into an area where the use of protective clothing or equipment is required for any workplace hazard, our company will provide the observer with protective clothing and

equipment at no cost and ensure the observer uses such clothing and equipment.

B. Procedures described in paragraph B also will be applied to tasks not listed in Table 1 of 29 CFR §1926.1153(c)(1) that may involve exposure to silica, quartz or sand as determined by information found in applicable manufacturers' SDSs for products found in the workplace.

C. Methods of compliance:

Engineering and work practice controls: Our company will use engineering and work practice controls to reduce and maintain worker exposure to RCS at or below the PEL unless we demonstrate such controls are not feasible. Wherever such feasible engineering and work practice controls are not sufficient to reduce worker exposure to or below the PEL, we will nonetheless use them to reduce worker exposure to the lowest feasible level and supplement them with the use of respiratory protection that complies with the requirements of paragraph E below.

D. Respiratory protection, general:

Where respiratory protection is required under our company program or 29 CFR §1926.1153, our company will provide each worker an appropriate respirator that complies with the requirements of this paragraph and 29 CFR §1910.134. Respiratory protection is required:

- Where specified by Table 1 of 29 CFR §1926.1153
- For tasks not listed in Table 1 or where the engineering controls, work practices and respiratory protection described in Table 1 are not fully and properly implemented:
 - Where exposures exceed the PEL during periods necessary to install or implement feasible engineering and work practice controls
 - Where exposures exceed the PEL during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible
 - During tasks for which our company has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce exposures to or below the PEL.

Respiratory protection program: Where respirator use is required by 29 CFR §1926.1153, our company's respiratory protection program developed under 29 CFR §1910.134 will be applicable.

Section 4. Housekeeping Measures

Compressed air may not be used to clean worker clothing or surfaces if it could contribute to worker exposure to RCS. It may be used if no other method is feasible or if a ventilation system is used to capture the resulting dust cloud.

The use of leaf or debris blowers or dry sweeping or brushing of areas soiled by abrasive powered cutting or grinding of materials containing silica must be avoided if wet sweeping or HEPA-filtered vacuuming could be safely used to clean the areas.

Leaf or debris blowers may be required to clean roof surfaces if wet sweeping or HEPA-filtered vacuuming is not feasible on certain job sites for one or more of the following reasons:

- Slip, trip or fall hazards are created by wet surfaces
- Slip, trip or fall hazards are created by equipment power cords or hoses
- The new roof tile that has been installed will be permanently stained by such action
- Water intrusion may damage other building elements

In instances where wet sweeping or HEPA-filtered vacuuming is determined to be infeasible, **Grove Roofing** workers will wear disposable particulate respirators (filtering facepieces or dust masks) with a minimum assigned protection factor of 10 (APF 10) to reduce or eliminate potential exposure to RCS. The filtering facepiece must be worn during the cleaning operation and for such time thereafter until the dust cloud dissipates.

Section 5. Procedures to Restrict Access to RCS Work Areas

On projects where potential exposure to RCS exists, **Grove Roofing** workers will take the following steps to limit exposure to co-workers and third parties:

- On projects with ladder access to roof areas, the base area around the ladder will be flagged with warning lines and high-visibility signage will be posted stating, "Do Not Enter—**Grove Roofing** Workers Only." Ladder use by non-company employees is not allowed and will not be permitted.

- Only company workers needed to perform tasks in the area where potential exposure to RCS may occur will be permitted in that specific roof area.
- On projects where third parties may have shared access to roof areas where exposure to RCS may exist, company workers will use warning lines and place signage, as described above, to control third parties' access to those areas. If, because of the nature of the access, such as a common stairwell or exterior scaffold stairway, third parties can be denied access to the roof area, company workers will post the above signage on the roof level entry door or access point to restrict third party entry to the roof.

Section 6. Designation of RCS Competent Persons and Inspection Protocol

The following employees of **Grove Roofing** are designated "competent persons" for purposes of the OSHA silica regulation by virtue of each individual's knowledge of the hazards related to exposure to RCS, the control methods our company employs to control those hazards, and the authority granted to each to take corrective measures to reduce or eliminate RCS hazards to our workers:

<u>John Embow</u>	<u>Andrew Wilkens</u>
<u>Chris Gannon</u>	<u>Steven G Usiak</u>
<u>Steve Kopp</u>	<u>Lawrence Usiak</u>
<u>Shane Baxter</u>	<u>Frank Schoeneman</u>

Any one or all listed competent persons for RCS may inspect our job sites on a regular basis to assess the tasks being performed and the equipment and materials in place to ensure proper implementation of our company's written RCS exposure control plan. The competent person will note any deficiencies in the plan's implementation and discuss any required revisions with supervisory personnel. If any deficiency is significant enough to immediately affect the health and safety of company workers or others, the competent person has complete authority to stop work until the issue can be resolved. During the inspection process, the competent person also will be responsible for identifying exposures to RCS that may arise from unforeseen activity being performed by third-party entities unrelated to our company work. The competent person immediately will notify company supervisors and management to determine the necessity of action to protect exposed company workers. This may require outreach to those third-party entities as well as establishing additional protocols to maintain the safety of our workers. A dated, written record of all inspections hereunder, with a specific notation as to remedial action taken, if any, will be made by the competent person.

Section 7. Description of Company RCS Worker Training and Information

The hazards related to RCS have been included in company hazard communication training under 29 CFR §1910.1200. In addition, a specific training module, "**Training - NRCA Silica Roofing Worker.pptx**", is used for current workers and new hires that focuses on the following:

- Specific health hazards associated with RCS, including cancer dangers, lung or respiratory dangers, and immune system and kidney effects
- Roofing tasks or other common tasks that could result in RCS exposure
- Specific measures, including engineering controls, work practices and respirator use, that our company has implemented to protect our workers from RCS exposure
- The provisions of the OSHA construction RCS regulation
- The names of RCS competent persons designated by our company under Section 6 of this plan
- The purpose and description of our company medical surveillance program required by the OSHA rule and set out in Section 8 of this plan

The above module will be supplemented on a regular basis with RCS-specific toolbox talks; manufacturer or supplier materials addressing equipment, tools and products as they become available; OSHA training materials such as Quick Cards; and training offered by building owners, general contractors, and engineers or architects on specific projects.

Section 8. Description of Medical Surveillance for RCS Exposures

The medical surveillance provisions that our company will implement for RCS exposures is based on the requirements of 29 CFR §1926.1153(h) and will include the following:

- **Grove Roofing** will make medical surveillance available at no cost to any company worker required to use a respirator under 29 CFR §1926.1153 for 30 days or more per year.
- All medical exams required under this provision of the plan must be conducted by a physician or other licensed health care professional (PLHCP) as defined in 29 CFR §1926.1153(b).
- An initial, baseline medical examination will be made available to a worker within 30 days after an initial assignment unless the worker has had a similar examination within the past three years. The examination must consist of the following:

- a) A medical work history with emphasis on past, present and anticipated exposures to RCS, dust and other agents affecting the respiratory system; any history of respiratory system dysfunction, including signs and symptoms of respiratory disease; history of tuberculosis; and smoking status and history
 - b) A physical examination with special emphasis on the respiratory system
 - c) A chest X-ray (a single posteroanterior radiographic projection or radiograph of the chest at full inspiration either recorded on film [no less than 14 x 17 inches and no more than 16 x 17 inches] or digital radiography systems), interpreted and classified according to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconioses by a NIOSH-certified B Reader
 - d) A pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV₁) and FEV₁/FVC ratio, administered by a spirometry technician with a current certificate from a NIOSH-approved spirometry course
 - e) Testing for latent tuberculosis infection
 - f) Any other tests deemed appropriate by the PLHCP
- Periodic examinations will be made available by our company every three years or more frequently as recommended by the PLHCP for affected workers. Examinations will include the elements described in (c) above.
 - Additional protocols for information to be provided to the PLHCP, the PLHCP's written medical report to an employee and the PLHCP's written medical opinion to our company will follow 29 CFR §1926.1153(h)(4), (5) and (6).
 - If the PLHCP's written medical opinion indicates an employee should be examined by a specialist, our company will make available a medical examination by a specialist within 30 days after receiving the PLHCP's written opinion. Our company will ensure the examining specialist is provided with all the information the company is obligated to provide to the PLHCP in accordance with 29 CFR §1926.1153(h)(4). Our company will ensure the specialist explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of the examination. The written report shall meet the requirements of 29 CFR §1926.1153(h)(5) except paragraph (h)(5)(iv). Our company will obtain a written opinion from the specialist within 30 days of the medical examination. The written opinion shall meet the requirements of 29 CFR §1926.1153(h)(6) except paragraph (h)(6)(i)(B) and (ii)(B).

Section 9. Recordkeeping

Records of our workers' personal breathing zone sampling to assess RCS exposure (*employee exposure records* as defined in 29 CFR §1910.1020) conducted on behalf of our company by third parties or those conducted by our staff will be maintained for a period of 30 years from the date of the record's initial creation. The initial record must include:

- The date of the measurement for each RCS sample taken
- The task monitored
- The sampling and analytical methods used
- The number, duration and results of the samples taken
- The identity of the laboratory that performed the analysis
- A description of any PPE worn by workers who were monitored
- The names, job classifications and social security numbers of workers sampled along with similar information for other workers present at the sampling location who performed similar tasks but were not sampled

This RCS exposure control plan is available for examination and copying by all employees who may be covered under the OSHA construction RCS regulation, their designated representatives, and officials of the U.S. Department of Labor or allied state agencies.

GROVE ROOFING SAFETY TRAINING MATRIX

Training Topic	Reference	Required Training		Training Frequency		
		All	Affected	Initial	Annual	Periodic
New Hire Safety Orientation	Grove Policy	YES	NO	YES	NO	NO
General Safety Rules	1926.21(b)(2)	YES	NO	YES	YES	NO
Competent Person	OSHA – Various Regulations	NO	YES	YES	NO	NO
Accident Investigation	Grove Policy	YES	YES - Supervisor	YES	NO	NO
Job Safety Analysis	Grove Policy	NO	YES	YES	NO	NO
OSHA 10 Hour Construction	Grove Policy	NO	YES	YES	NO	NO
OSHA 30 Hour Construction	Grove Policy	NO	YES - Supervisor	YES	NO	NO
Employee Rights to Access Medical Records	OSHA 5(a)(1)	YES	NO	YES	YES	NO
Recordkeeping Practices & Reporting	OSHA 1904	YES	NO	YES	NO	NO
Bloodborne Pathogens	OSHA 11926.21(b)(2) & 1910.1030	NO	YES	YES	YES	YES*
Emergency Action Plan	OSHA 1926.35 & 1910.38	YES	NO	YES	NO	YES*
Fire Prevention Plan	OSHA 1926.21(b)(2), .24 & 1910.39	YES	NO	YES	NO	YES*
Gas Welding & Cutting	OSHA 1926.350	NO	YES	YES	NO	NO
Hot Work	OSHA 1926.352	NO	YES	YES	NO	NO
Flammable & Combustible Liquid/Gas Safety	OSHA 1926.21(b)(4)	NO	YES	YES	NO	NO
Fire Protection & Fire Extinguisher Use	OSHA 1926.150 & 1910.157	NO	YES	YES	YES	NO
Non-Ionizing Radiation	OSHA 1926.54	NO	YES	YES	YES	NO
Personal Protective Equipment (PPE) Use	OSH A1926.21(b)(3) & (b)(4)	NO	YES	YES	NO	YES*
Respiratory Protection	OSHA 1926.103 & 1910.134	NO	YES	YES	YES	YES*
Hearing Conservation	OSHA 1926.101 & 1910.95	NO	YES	YES	YES	NO
Powder Operated Tools	OSHA 1926.302	NO	YES	YES	NO	NO
Compressed Air Safety	OSHA 1926.803	NO	YES	YES	NO	NO
Fall Protection	OSHA 1926. 503	NO	YES	YES	NO	YES*
Ladder Safety	OSHA 1926.1060	NO	YES	YES	NO	YES*
Scaffolding – General User	OSHA 1926.454	NO	YES	YES	NO	YES*
Scaffolding – Erector Dismantling	OSHA 1926.454	NO	YES	YES	NO	YES
Electrical Safety	OSHA 1926.21(b)(2) & 1926.404	YES	NO	YES	YES	YES*
Lockout / Tagout	OSHA 1910.147	NO	YES	YES	NO	YES*
Mechanical Power Presses	OSHA 1910.127	NO	YES	YES	YES	YES*
Trenching & Excavation	OSHA 1926.651 & 1926.21(b)(2)	NO	YES	YES	NO	NO
Crane Operator Training	OSHA 1926 Subpart CC	NO	YES	YES	NO	YES*
Qualified Rigger	OSHA 1926 Subpart CC	NO	YES	YES	NO	NO
Qualified Signal Person	OSHA 1926 Subpart CC	NO	YES	YES	NO	YES*
Crane Safety, Conveyors, & Hoists (General)	OSHA 1926 Subpart CC, .555, & .552	YES	NO	YES	NO	YES*

GROVE ROOFING SAFETY TRAINING MATRIX

Training Topic	Reference	Required Training		Training Frequency		
		All	Affected	Initial	Annual	Periodic
Powered Industrial Truck	OSHA 1910.178	NO	YES	YES	NO	YES**
Demolition Operations	OSHA 1926 Subpart T & 1926.21(b)(2)	NO	YES	YES	NO	YES*
Safety Signs & Colors	OSHA 11926.21(b)(2) & 1910.144	YES	NO	YES	NO	NO
CPR/First Aid	OSHA 1926.50	NO	YES	YES	NO	YES*
Process Safety Management Awareness	OSHA 1926.64	NO	YES	YES	NO	NO
Hazard Communication	OSHA 1926.59	YES	NO	YES	NO	YES*
Asbestos Awareness	OSHA 1926.58	NO	YES	YES	YES	NO
Lead Safety	OSHA 1926.62	NO	YES	YES	YES	NO
Motor Vehicle CDL Driver Road Test	FMCSA/Grove Policy	NO	YES	YES	NO	NO
Motor Vehicle New Hire Safe Driver	Grove Policy	NO	YES	YES	NO	YES*
Back Injury Prevention	Grove Policy	YES	NO	YES	YES	NO
Tool Box Talks	Grove Policy	YES	NO	NO	NO	YES

* - When deficiency is noted, change in job assignment, change in equipment, change in process occurs, change in the plan occurs, and/or issuing authority certification expires.

** - Every three years or when deficiency is noted

Grove Roofing Services	Safety & Health Program
	Issue Date: March 2013
Title: Waste Management Program	Revision #: 0 Revision Date:

1.0 Purpose

Roofing work involves the installation of a wide variety of materials on buildings of all shapes, sizes and uses. Whether a roof technician is installing a built-up-roof system with hot asphalt or coal tar pitch, an asphalt shingle roof system, a single-ply roof system or one of the numerous other roof systems in use today, some type of roofing waste is generated at the job site.

Grove Roofing's goal is to reduce the amount of roofing generated waste placed into landfills.

2.0 Scope

Grove Roofing Services shop, services, and project work.

3.0 Program

General

1. Grove Roofing employees shall be informed of project specific waste disposal methods as part of the project work plan. Additionally a general disposal guide can be found in this program below under the Trash and Recycling section.
2. Grove Roofing and its employees shall comply with the federal, state, local and customer requirements for construction debris, non-hazardous, and hazardous waste disposal.
3. The proper storage, organization, segregation, and handling of waste materials are important in protecting both workers and the environment. Improper storage, organization, segregation, and handling can result in an environmental event. Grove Roofing employees must follow all manufacture storage, handling, segregation, and use labels.
4. Many of our customers and project locations implement different recycling methods. Grove Roofing employees should follow the environmental and waste disposal procedures outline in the project plan and the methods specific to the location you are performing work.
5. When in doubt as to the proper disposal method for any material or waste, employees should contact their supervisor or the main office for direction.

Waste Reduction & Elimination Considerations and Planning

Project and shop generated construction waste, trash, scrap materials, and other waste shall be taken into consideration as part of our project pre-planning process and normal business operations. These considerations shall take place before work begins. Considerations to reduce or eliminate waste, disposal costs, and improve recycling opportunities include:

- Training Grove Roofing employees on waste reduction techniques.
- Reviewing and complying with LEED material requirements as applicable to the project.
- The procurement and use of materials with recycled content when possible per job specifications
- Ordering only what is needed for the project, not what you might needs for future projects or stages
- Maintaining an up to date inventory of materials in the shop. Check for in-house availability before ordering new materials.
- The use of materials on a first in first our basis to prevent degradation in storage.
- Substituting less hazardous materials in processes such as acrylic bonding adhesives or coatings.
- The reuse of materials by making the product of one process the raw material for a later process.
- Coordinate and centralize waste storage when possible on projects.
- Store materials per manufactures recommendations to protect the product for possible reuse or resale.
- Use all requisitioned hazardous materials for the project, on the project. Avoid returning materials back to the shop.
- Discuss return policies with vendors for unused materials.
- Recycling asphalt shingles and related products whenever possible
- Understanding the recycling options for the project
- Design for deconstruction to salvage materials for re-use or divert materials from landfill when possible and allowable by project specifications

Proper Storage, Organization, Segregation, Handling, & Disposal

In addition to other requirements specified herein it is a requirement that Grove Roofing and its subcontractors comply with the applicable federal, state and local waste disposal requirements.

Waste disposal in landfills or incinerators shall be minimized where practical and possible. Project generated waste materials shall be salvaged for reuse and or recycling where practical and possible. Project waste handling and storage controls shall include:

- Whenever possible, there will be a designated area on the construction site reserved for materials that can be recycled. This can be coordinated with the facility owner, construction manager, or general contractor.
- When used, onsite recycling containers and/or areas will be plainly marked. Segregation of materials shall comply with the marking system.
- Salvageable materials will be diverted from disposal where feasible.
- Liquid materials such as adhesives, oils, solvents, etc. shall be stored away from storm sewers, streams, lakes, ponds, and other waterways. Follow code and manufacture storage requirements.
- Storage areas shall be secured to prevent unwarranted and unauthorized access.

Grove Roofing Services	Safety & Health Program
	Issue Date: March 2013
Title: Waste Management Program	Revision #: 0 Revision Date:

- Storage areas should be away from storage of other job-site materials that may be incompatible.
- Dispose of containers only after the entire product has been used or transferred out of the container. The container must be completely empty. Empty containers are not considered hazardous waste and can be disposed of as normal construction debris on the job-site.
- Hazardous waste disposal will be managed by a licensed hazardous waste vendor.

Construction Debris, Trash, and Recycled Waste

All trash must be disposed of properly in designated containers, dumpsters, or locations. Scrap materials must be placed in designated dumpsters marked for recycling.

The following chart identifies waste materials expected on our projects, their expected disposal methods and handling procedures. New items may be added as needed.

Material	Disposal Method	Segregation & Handling Procedures
Beverage/Pop Cans	Recycle locally	Keep separated in designated areas onsite.
Cardboard	Recycle locally	Place in recycling dumpster onsite when applicable.
Clean dimensional wood and palette wood	Keep separate for reuse by on-site construction or return to shop.	Keep separated in designated areas onsite. Place in recycling dumpster onsite when applicable.
Plywood, OSB, particle board, painted or treated wood	Reuse onsite when possible, landfill or recycle off site.	Keep separated in designated areas onsite. Place in "Trash" container if dirty or contaminated.
Concrete, bricks, masonry	Recycle when possible.	Place in recycling dumpster onsite when applicable.
Asphalt shingles, rolls, etc.	Recycle when possible.	Place in recycling dumpster onsite when applicable. Return unused materials to shop.
Adhesives	Use all material whenever possible. Follow MSDS/SDS procedure for disposal.	Return unused materials to shop. Empty containers can be placed in construction waste stream.
Solvents	Follow MSDS/SDS for disposal.	Collect solvents used to clean tools. Return to shop or authorized vendor.
Insulation	Reuse, landfill.	Return salvageable unused materials to shop.

Material	Disposal Method	Segregation & Handling Procedures
Metal Scraps: Aluminum Carbon Steel Copper Flashing Galvanized “Tin” Stainless Steel	Recycle scraps when possible. Return unused materials to shop.	Place in designated recycling dumpster onsite when applicable.
Oils, Fuels, Adhesives	Recycle when possible. Return unused materials to shop.	Keep separated in properly labeled containers for pick up. Oils and fuels must <u>not</u> be poured or flushed down drains. Storage, handling, and use procedures must be followed to eliminate contamination of soil.
Compressed Gas Cylinders	Recycle with supplier.	Keep in separated area onsite designated for pickup.
Florescent Bulbs	Keep separate for recycling or proper disposal.	Keep separated in designated areas onsite for pick up and return to shop.

4.0 Responsibility

1. The project manager shall be responsible for the implementation of the administrative portions of this program, including the notification of subcontractor management, the training of the employees and the onsite posting of this plan.
2. The project foreman will be responsible for the implementation of the onsite portions of this program. Employees will be informed of each projects disposal requirements.
3. Each subcontractor will be made aware of the intent of this project with respect to reduction of waste and recycling. The subcontractor will be expected to make sure all their crews comply with the Grove Roofing Waste Management Plan.

[END]



10 North Lincoln Ave.
Orchard Park, NY 14127

Phone: 716 662-3858
Fax: 716 462-4904
www.qualityrisk.com

April 29, 2014

Mr. John Embow
Grove Roofing Services, Inc.
131 Reading Street
Buffalo, NY 14220

Dear John,

This letter is to confirm and certify that on March 18, 2014, I conducted a confined space assessment at the Grove Roofing Services, Inc. property located at 131 Reading Street, Buffalo, NY 14220.

- Per OSHA 1910.146(c)(1) the employer shall evaluate the workplace to determine if any spaces are permit-required confined spaces. The assessment on March 18, 2014 was performed to meet this requirement.

The assessment was performed using the OSHA 1910.146 Appendix A decision flow chart methodology. The entire property including the shop, warehouse, office, and yard were evaluated. I have attached the completed Confined Space Inventory document generated from the assessment.

If you have any questions, please call me at (716) 662-3858 x103 or on my cell phone at (716) 771-7516.

Regards,

A handwritten signature in black ink that reads 'John A. Monson'. The signature is written in a cursive style and extends to the right with a long horizontal stroke.

John A. Monson
Quality Risk Solutions, LLC



Grove Roofing Services, Inc.
131 Reading St., Buffalo

Safety & Health Program

Issue Date: March 2014





Revision Date: None

Completed By; Quality Risk Solutions, LLC

Title: Confined Space/Permit Required Confined Space Inventory

Revision #: 0

Confined Space & Permit Required Confined Space Inventory

Confined Space Name	Location	Type - Non Permit or Permit Required	Potential or Known Atmospheric Hazard	Engulfment Hazard	Internal Configuration Hazard	Mechanical / Electrical Hazard	Heat / Cold Hazard	Comments	ID Photo
Storm Drain Access Points	General Property & Parking Lot	Permit	YES	YES	Potential	NO	NO	NO	 Representative Photo
Sanitary Sewer Access Points	General Property	Permit	YES	YES	Potential	NO	NO	NO	 Representative Photo
Small Dumpster	Parking Lot	* Non Permit	NO	NO	NO	NO	NO	NO	
Roll Off Container – Open Top	Parking Lot	* Non Permit	NO	NO	NO	NO	NO	NO	

[END]

*** Important Note: Work, such as welding, in a Non- Permit Confined Space can make that space Permit Required.**



Emergency Action Plan

131 Reading Street

Buffalo, NY



Contents

PURPOSE.....2

SCOPE.....2

PRE-EMERGENCY PLANNING2

EMERGENCY PLAN MANAGERS.....2

EMERGENCY CONTACT NUMBERS2

EMERGENCY COORDINATORS2

GENERAL EMERGENCY & FIRE PREVENTION INFORMATION3

EMERGENCY EQUIPMENT & SYSTEMS5

EMERGENCY PROCEDURE QUICK GUIDE.....6

FIRE EMERGENCY PROCEDURE6

BUILDING EVACUATION PROCEDURE6

ACCOUNTABILITY PROCEDURE7

BUILDING EVACUATION – OTHER.....7

MEDICAL EMERGENCY RESPONSE PROCEDURES.....8

SEVERE WEATHER EVENTS8

CHEMICAL SPILLS9

SUSPICIOUS OBJECTS10

BOMB THREAT PROCEDURE10

SUSPICIOUS PERSON PROCEDURE11

TRAINING.....11

DRILLS12

TRAINING RECORDS12

PLAN EVALUATION.....12

ATTACHMENTS12



PURPOSE

This Emergency Action and Fire Prevention Plan has been developed to protect lives and property of Grove Roofing Services, Inc. (Grove Roofing) employees, visitors, and contractors during emergencies at our 131 Reading Street, Buffalo, NY location.

SCOPE

This plan applies to Grove Roofing employees, visitors, and contractors located at the 131 Reading Street, Buffalo facility.

PRE-EMERGENCY PLANNING

A systematic assessment has been conducted to identify potential hazardous that can cause an emergency. This plan addresses these risks and the emergency procedures / actions that apply when an emergency occurs.

EMERGENCY PLAN MANAGERS

The Grove Roofing President and CFO shall manage the Emergency Action and Fire Prevention Plan.

EMERGENCY CONTACT NUMBERS

911 is the primary number for all emergencies.

All Life Threatening Emergencies	911
President John Embow	716-828-1870
Safety Coordinator Jeff Embow	716-828-1870
After Hours – Call 911 then John Embow	911

This information is also contained in the Emergency Procedures Quick Guide (Appendix A)

EMERGENCY COORDINATORS

1. REK will maintain three (3) emergency coordinators.
2. Emergency coordinators should be employees able to assist others, stay calm in an emergency situation, and have the authority to direct employees.
3. The emergency coordinators are responsible for instituting the procedures in this plan in their designated areas in the event of an emergency. This may include but is not limited to accounting for employees, contractors, visitors, and interacting with emergency response officials if the need arises.



4. Emergency coordinators are as follows:

Role	Name	Phone
Facility Emergency Coordinator	John Embow	716-828-1870
Front Office Emergency Coordinator	Janice Vertlieb	716-828-1870
Shop/Warehouse Emergency Coordinator	Jeff Embow	716-828-1870

GENERAL EMERGENCY & FIRE PREVENTION INFORMATION

General

Questions regarding fire prevention, fire protection, flammable liquid hazards, fuel hazards, maintenance of mechanical systems, and ignition sources should be directed to Jeff Embow, Grove Roofing safety coordinator.

Housekeeping

Maintain housekeeping at your workspace, office, suite, and building on a frequent basis. This includes but is not limited to:

1. Ensuring that doorways, hallways, fire extinguishers, emergency exits, exit lights, and emergency lighting are not blocked by boxes, stored materials, office items, vehicles, and equipment etc.
2. Computer and electrical cables are kept organized to prevent clutter and do not rest on hot objects.
3. Frayed electrical cords are taken out of service and discarded.
4. Electrical outlets are not overloaded with multiple electrical cords.

Fire Fuel Hazards

Major fire hazards for the office, shop, warehouse, and yard include:

1. Liquid fuel hazards including diesel, regular gasoline, and kerosene.
2. Compressed gases such as propane, oxygen, and acetylene.
3. Flammable and combustible specialized roofing adhesives and bonding materials.
4. Combustible cardboards, rags, pallets, trash, and other materials.
5. Combustible roofing materials.
6. Plastics and foam
7. Normal building materials

Potential Ignition Sources



Ignition sources for the office, shop, warehouse, and yard include:

1. Electrical system overloading
2. Electrical system improper installation
3. Electrical system improper use
4. Hot vehicle exhaust systems
5. Hot portable tool/equipment exhaust systems
6. Roofing kettles
7. Portable electrical heaters
8. Furnace and hot water system pilots
9. Torch cutting, welding, brazing, and grinding of metals
10. Smoking, candles, open flame
11. Static electricity

Open flames, smoldering materials, and smoking are a major cause of fire. In order to reduce this potential risk the following are to be followed:

1. A "NO SMOKING POLICY" within the building is strictly enforced. This policy also meets NYS Health Law requirements.
2. No open flame and/or smoldering objects are permitted within the offices, shop, or warehouse without the approval of the safety coordinator. This includes items include but are not limited to; candles, scent pots, and incense.
3. When using portable heaters, a 36 inch clearance from combustible materials must be maintained.
4. Hot work performed on the shop floor shall be controlled through hot work procedures including removal of combustibles within 20 feet, a fire watch, and fire extinguisher located with the fire watch.
5. When dispensing or transferring flammable liquids bonding and grounding shall take place to prevent ignition from static.

Material and Trash Accumulation

The accumulation of trash generated in the course of the workday provides an environment conducive to the spread of fire. In order to reduce this potential risk the following steps are to be considered.

1. Combustible waste material should be kept at least six (6) feet from any heat source. Heat sources would include such things as ceiling heaters, wall heaters, water heaters, furnaces, etc.
2. Special attention should be given to the location of paper, rag, cardboard, foam, and other easily ignitable materials.

Storage of Combustible and Flammable Materials



Improper storage of materials can contribute to the ignition and spread of fire. To reduce this risk the following procedures are to be followed.

1. Flammable liquids must be stored in approved containers. If flammable liquids are removed from their original container, they are to be stored in an approved safety can which is properly labeled and meeting the requirements of the OSHA Hazard Communication Standard.
2. Minimal inventory of flammable liquids shall be maintained within the facility.
3. Minimal inventory of flammable adhesives shall be maintained within the facility.
4. Do not store flammable or combustible materials near a heat source. If in doubt of storage requirements, consult the label, the appropriate material safety data sheet or contact the safety coordinator.
5. Flammable liquids shall be bonded and grounded during dispensing and transfer.
6. Propane with the exception of in use quantities shall be stored outdoors.
7. Oxygen and fuel gases when in storage shall be separated by 20 feet or a 5 foot high ½ hour rated fire wall.
8. Compressed gas cylinders shall be secured to prevent accidental release.

EMERGENCY EQUIPMENT & SYSTEMS

Questions or concerns regarding fire protection and fire evacuation systems should be directed to the Grove Roofing safety coordinator, Jeff Embow.

Fire Systems

1. Facility fire protection and related systems shall be inspected, tested, and maintained by authorized contractors per applicable NFPA requirements.
2. Facility fire extinguishers will be inspected, tested, and maintained by our authorized contractor per applicable OSHA and NFPA requirements.

Emergency Lights and Exit Lights

1. Facility emergency lights shall be inspected, tested, and maintained per applicable OSHA and NFPA requirements.
2. Facility emergency exit lights shall be inspected, tested, and maintained per applicable OSHA and NFPA requirements.

First Aid Kits

1. First Kits are located throughout the facility and are inspected monthly.

Eyewash Stations

1. Eyewash stations are inspected monthly and maintained per manufactures



requirements.

EMERGENCY PROCEDURE QUICK GUIDE

This plan contains an Emergency Procedures Quick Guide as Appendix A. This quick guide can be used as a reference and employee training tool. The guide contains:

- Basic Emergency Procedures
- Emergency Contact Numbers
- Suspicious Package Information
- Bomb Threat Checklist
- Suspicious Person Description Checklist

FIRE EMERGENCY PROCEDURE

1. If you discover a fire, from a safe location call the Fire Department at 911. Report the nature and location of the fire. Our address is 131 Reading St., Buffalo. Do not hang up until the 911 dispatcher tells you to do so.
2. When possible you or a co-worker must immediately make an announcement over the telephone intercom system – **FIRE, FIRE, FIRE – Evacuate. Repeat the announcement.**
3. Follow the evacuation procedures outlined in this plan.
4. Office employees and visitors should make no attempt to extinguish the fire. Your role is to evacuate the building.
5. Shop and warehouse employees are authorized to use a fire extinguisher on incipient (very small) stage fires if safe to do so. Our first priority is life safety. At no time should an employee attempt to extinguish a fire that could put their safety at risk.

BUILDING EVACUATION PROCEDURE

1. The primary notification signal to evacuate the building is a telephone intercom system announcement. Phone system speakers are located throughout the building. All alarm announcements should be treated as real unless otherwise advised in advance.
2. Evacuate the building utilizing the evacuation routes posted in your work area. You may collect valuables, i.e. purse, coats, etc., if within a reasonable reach and will not interfere with the evacuation of the building. Doors should be closed but not locked upon evacuating.
3. Emergency coordinators will “sweep” the facility to assist in notification and evacuation of employees.
4. If you come into contact with a visitor or contractor you should direct them to evacuate the building and assist them to the primary assembly point.
5. If you come into contact with an occupant who is having difficulty evacuating you should assist those individuals in evacuating the building if safe to do so.
6. If you are trapped by smoke, close the door to your office, stay low, cover your mouth



with wet cloth if possible, stay near a window, slightly open the window if possible, but do not break it, hang something out the window to let fire personnel know you are there and put something in cracks around the door, phone 911 if possible.

7. If rescue duties are called for, the Buffalo Fire Department will perform these duties. Please pay attention to the location and status of any person needing rescue and immediately relay that information to the responding emergency personnel. Grove Roofing employees and contractors are not permitted to attempt rescue.
8. Once out of the building, gather at the **Assembly Area – Storage Building to the left of the Main Office**. Stay at the assembly area until you are accounted for.
9. In the event that the primary assembly point is not safe or available, you should gather at an alternate area directed by your emergency coordinator or other management.
10. You should not leave the assembly area, either to re-enter the building, go to your car, or leave the site, until advised to do so by your emergency coordinator.

ACCOUNTABILITY PROCEDURE

1. After assisting with evacuation emergency coordinators will report to the assembly area to perform accountability functions.
2. Time records, vacation logs, visitor sign in, and other information will be used to account for onsite employees, visitors, and contractors.
3. If a person is determined missing/not accounted for the emergency coordinator will immediately inform the Emergency Response Agency at the scene.

BUILDING EVACUATION – OTHER

There may be times when an emergency other than a fire occurs and the building requires evacuation. This evacuation may be building wide or just affect a certain area or business. In these cases Emergency Responders may advise that the building/area be evacuated without the use of the standard evacuation system. In these cases:

1. The primary notification signal to evacuate the building will be determined by the Emergency Responders. The emergency coordinators will then activate the evacuation signal in this manner.
2. Evacuate the building/area utilizing the information provided by Emergency Responders. You may be asked to evacuate differently than you would for a fire. Some areas may be asked not to evacuate or “shelter in place”.
3. Follow directions given to you by your supervisor, your emergency coordinators, and/or local emergency responders.
4. If no information/direction is given and you are asked to evacuate, follow the normal evacuation procedure you would for a fire emergency.



MEDICAL EMERGENCY RESPONSE PROCEDURES

Procedure – Medical Emergency

Under no circumstances shall a Grove Roofing employee provide advanced medical care and treatment (with the exception of CPR or choking). These situations shall be left to emergency responders, who have the necessary training, equipment, and experience. When a medical emergency (heart attack, stroke, unconscious, trauma) occurs:

1. Evaluate the scene. If the scene is safe evaluate the victim and their severity of injury / medical needs. If the scene is not safe, do not get near the victim.
2. Comfort but do not move the victim.
3. Call 911 immediately. When reporting the emergency provide the following information:
 - a. Type of Emergency
 - b. Location of the Victim – 131 Reading St., Buffalo, NY
 - c. Condition of the Victim
 - d. Any dangerous conditions
 - e. Do not move the individual unless authorized by some medical authority, or it is obvious that delay in movement would be detrimental to the individual.
4. Have a co-worker, visitor, or other person notify the receptionist. The receptionist will assist and direct the Emergency Responders to your location.
5. For a heart attack, if trained and willing to do so, perform CPR and apply/operate AED. Grove Roofing employees are not required to perform first aid/CPR.
6. For choking, if trained and willing to do so, administer the Heimlich maneuver.

Procedure – First Aid

Grove Roofing first aid/CPR trained employees may perform basic first aid on injuries that are non-serious at their discretion. REK employees are not required to perform first aid/CPR.

For any injury that requires treatment beyond first aid, but is not a medical emergency contact the Grove Roofing safety coordinator. When in doubt Call 911.

SEVERE WEATHER EVENTS

1. For low probability severe weather events such as a tornado, direction will be taken through local emergency officials. This information and specific instructions will be communicated by the president to the emergency coordinators.
2. During severe thunderstorms, high wind events, etc., employees, visitors, and contractors should remain inside the building. Persons should move away from



windows when possible.

3. The decision to close business operations due to severe weather will be made and communicated by the Grove Roofing president.

SEVERE WEATHER PROCEDURE

The following procedures apply to Grove Roofing employees.

1. In a severe weather event such as significant snow, etc. the Grove Roofing president will determine if office based business operations should be “closed”. The president will consider information provided by local emergency officials, law enforcement, and the safety coordinator.
2. Upon the decision to “close” office business operations during work hours:
 - a. The president will notify key managers who will in turn notify employees.
 - b. Grove Roofing managers shall communicate this and any other safety related information to employees.
 - c. This information may be communicated through multiple media such as meetings, e-mail, texts, etc.
3. Upon the decision to “close” the office business operations during off hours:
 - a. The Grove Roofing president will notify key managers and supervisors.
 - b. A designated representative from Grove Roofing will contact local radio and television stations and submit the closure through pre-arranged procedures for each station.
 - c. During such events employees should monitor local radio and television statements for business closure information.

CHEMICAL SPILLS

In the event of a chemical spill the Grove Roofing safety coordinator must be informed immediately, regardless the size (small or large). The MSDS/SDS sheets must be read and thoroughly understood before any type of cleanup is performed. Proper personal protective equipment must be worn when cleaning up the spill.

LARGE CHEMICAL SPILL PROCEDURE

In the unlikely event a large chemical spill occurs within or outside of the building:

1. Remove yourself and others from the area.
2. Secure the area from entry.
3. If an emergency exists or if anyone is in danger, move away from the hazard to a safe location and call 911.
4. After calling 911 notify the safety coordinator, Jeff Embow.
5. Retrieve the MSDS/SDS for the chemical spilled.



6. If safe to do so, contain the spill with available resources. Close a door, create a dike, etc.
7. Deal with the spill in accordance with the instructions described in the MSDS/SDS. For SDS reference Section 6.
8. Large spills cleanup will be performed by a trained and authorized contractor.

SMALL CHEMICAL SPILL PROCEDURE

1. Immediately notify the safety coordinator, Jeff Embow.
2. Small spill cleanup will be directed by the safety coordinator.
3. The spill should be cleaned up in accordance with the instructions described in the MSDS/SDS. For SDS reference Section 6.
4. Small spills must be handled in a safe manner, while wearing the proper PPE.
5. Spill materials must be disposed of per applicable local, state, and federal regulations. Contact the safety coordinator if more information is required.

SUSPICIOUS OBJECTS

Suspicious package/mail information is also contained in the Emergency Procedures Quick Guide (Appendix A)

1. If you observe a suspicious object or package in or near the building, do not touch the object.
2. Clear the area and immediately call the Grove Roofing safety coordinator, Jeff Embow. Do not use a cell phone near the object. The safety coordinator will help determine if the package is suspicious.
3. If the safety coordinator is not available and/or you believe the object or package appears hazardous or like a bomb call 911.
4. If you believe the package is a bomb, move everyone from the area and contact 911 immediately using a land line phone.
5. Follow instructions from the 911 dispatcher or Emergency Responders.

BOMB THREAT PROCEDURE

A bomb threat checklist is also contained in the Emergency Procedures Quick Guide (Appendix A)

1. If a bomb threat, immediately call 911 and then notify the Grove Roofing safety coordinator.
2. Any person receiving a phone call bomb threat should obtain the following information from the caller:
 - a. When is the bomb going to explode?
 - b. Where is the bomb located?



- c. What kind of bomb is it?
 - d. What does the bomb look like?
 - e. Why did you place the bomb?
3. Keep talking to the caller as long as possible and record the following:
 - a. Time of the call.
 - b. Age and sex of the caller.
 - c. Speech pattern, accent, possible nationality, etc.
 - d. Emotional state of the caller.
 - e. Background noise.
4. Do not activate the building alarm. Do not touch suspicious objects. Do not open cabinets, drawers or closets. Do not turn lights or office equipment on or off.
5. Due to the special nature of a bomb threat, evacuation procedures, assembly points, and gathering sites for evacuees are not pre-determined and will be provided through the advisement of Emergency Responders.
6. When Emergency Responders arrive, follow their instructions exactly. Law enforcement personnel will conduct a detailed bomb search.

SUSPICIOUS PERSON PROCEDURE

A suspicious person checklist is also contained in the Emergency Procedures Quick Guide (Appendix A)

1. Do not physically confront the person.
2. Immediately call 911 and report the person.

TRAINING

Employee Training

1. Grove Roofing facility based employees shall receive instruction on this Emergency Action Plan as part of New Employee Orientation upon hire. Additional training shall be provided:
 - a. When there are any changes to the plan and/or facility;
 - b. When an employee's responsibilities change; and
 - c. Annually as refresher training.

Plan Responsibility Training

1. Training for those employees who have responsibilities within this plan shall be provided:
 - a. Upon assignment
 - b. When there are any changes to the plan and/or facility;



- c. When an employee's responsibilities change; and
 - d. Annually as refresher training.
2. This training will be arranged by the plan manager.

DRILLS

1. Fire/Evacuation and emergency drills will be conducted at least annually.
2. Additional drills shall be conducted as otherwise deemed necessary.

TRAINING RECORDS

1. The Grove Roofing safety coordinator shall maintain emergency action plan records.

PLAN EVALUATION

This Emergency Action Plan shall be reviewed annually, or as needed if changes to the facility are made, by the safety coordinator. Following each fire drill, the safety coordinator shall evaluate the drill for effectiveness of the plan, and may implement changes to improve it.

ATTACHMENTS

Appendix A – Emergency Procedure Quick Guide











Grove Roofing Services, Inc.
131 Reading Street
Buffalo, New York

Emergency Procedures Quick Guide

Emergencies Call 911

Non – Emergencies call John Embow @ 716-828-1870

	<p>Fire</p> <ul style="list-style-type: none"> • If you discover a fire, from a safe area immediately call 911 and report the fire. • If possible, at the same time have a co-worker immediately make an announcement over the intercom system – FIRE, FIRE, FIRE – Evacuate. Repeat. • If a co-worker is not available, make the above announcement as soon as possible. • Evacuate the building following evacuation procedures (listed below) • Do not enter building until told to do so by your emergency coordinator.
	<p>Building Evacuation</p> <ul style="list-style-type: none"> • If a fire or other emergency is reported requiring evacuation, an announcement over the intercom system – FIRE, FIRE, FIRE – Evacuate will be made. • Evacuate using the nearest exit (or alternate exit if nearest is blocked) • Report to the Evacuation Assembly Point – Storage Building to Left of Main Building • Wait at the assembly point to be accounted for.
	<p>Medical Emergency</p> <ul style="list-style-type: none"> • For medical emergencies (heart attack, amputation, etc.) call 911 immediately. • Have a coworker help direct responders to your location. • For minor injury or illness, provide first aid care only to the extent of your training. • For heart attack and if trained and willing start CPR. • Do not move the victim unless imminent danger exists (fire, explosion, etc.)
	<p>Suspicious Person</p> <ul style="list-style-type: none"> • Do not physically confront the person • Call 911. • Stay in a safe area.
	<p>Suspicious Object</p> <ul style="list-style-type: none"> • Do not touch or disturb the object • Call John Embow at 716-828-1870. Do not use cell phone near object. • If you believe the object is harmful or a bomb call 911 from a land line phone. • Be prepared to evacuate upon order from 911/Emergency Responders.
	<p>Power Outage</p> <ul style="list-style-type: none"> • Remain calm, provide assistance to others if needed • Remain at work area until power is restored or until told to leave by your Emergency Coordinator. • If asked to leave work area, move cautiously to lighted area per instructions. • Turn off computers and other voltage sensitive equipment.
	<p>Severe Weather</p> <ul style="list-style-type: none"> • The decision to close operations due to severe weather will be made and communicated by the company president and his designees. • For low probability severe weather events such as a tornado, direction will be taken through local emergency officials. Specific instructions will be communicated to employees.
	<p>Chemical Spill</p> <ul style="list-style-type: none"> • Alert others to stay out of the area. • For small spills consult the MSDS/SDS and follow spill and leak requirements. • If an emergency exists, if a flammable liquid, or if anyone is in danger, move away from the hazard to a safe location and call 911 and report the emergency • After calling 911, call Jeff Embow at 716-828-1870.



Grove Roofing Services, Inc.
 131 Reading Street
 Buffalo, New York

Emergency Procedures Quick Guide

Emergencies Call 911

Non – Emergencies call John Embow @ 716-828-1870

Emergency Contact Numbers

911 is the primary contact number for all emergencies.

For events that do not require calling 911, call Jeff or Jeff Embow at 716-828-1870.

All Emergencies.....	911
Office	716-828-1870
John Embow, President	716-828-1870
Janice Vertlieb, CFO	716-828-1870
Jeff Embow, Safety Coordinator	716-828-1870
Poison Control	(800) 222-1222



Grove Roofing Services, Inc.
131 Reading Street
Buffalo, New York

Emergency Procedures Quick Guide

Emergencies Call 911

Non – Emergencies call John Embow @ 716-828-1870

SUSPICIOUS MAIL OR PACKAGES

Protect yourself, your business, and your mailroom.

If you receive a suspicious letter or package:

- Stop. Don't handle.
- Isolate it immediately.
- Don't open, smell, or taste.
- Activate your emergency plan. Notify a supervisor.



If you suspect the mail or package contains a bomb (explosive), or radiological, biological, or chemical threat:

- Isolate area immediately
- Call 911
- Wash your hands with soap and water



To enter this poster, call 1-800-332-0317.

Poster 04
September 2008
PSN 7050 OF 000-7050

Bomb Threat Checklist

- When will the bomb explode?
- What kind of bomb is it?
- What will cause it to explode?
- Where is it right now?
- What does it look like?
- Did you place the bomb?
- Why did you place the bomb?
- What is your address?

Suspicious Person Description Checklist

- Gender
- Age
- Height
- Weight
- Race
- Complexion
- Hair Color
- Hair Style
- Scars/Tattoos
- Pants
- Shirt
- Shoes
- Jewelry
- Glasses
- Weapon Description
- Direction of Travel
- Vehicle: make, model, color, tag number

Grove Roofing Services 131 Reading Street Facility

Equipment Name: **Emerson Air Compressor**
Location: **Shop Area**

Issue Date: **4-2014**
Rev #: **0**

LOCK OUT / TAG OUT PROCEDURE

PURPOSE: This procedure establishes the requirements for the lock out and tag out of energy isolating devices whenever maintenance or servicing is done on machines or equipment. This procedure shall be used to ensure the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out / tagged out before authorized employees perform maintenance or servicing where the unexpected energization or start up of the machine could cause injury.

COMPLIANCE: All employees are required to comply with the restrictions and limitations imposed upon them during the use of lock out / tag out. The authorized employees are required to lock out in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

SEQUENCE OF LOCKOUT

Step 1	a) Notify all affected employees that servicing or maintenance is required on the machine. b) Notify all affected employees that the machine must be shut down and locked / tagged out to perform servicing or maintenance. c) Identify hazardous type and magnitude of energy sources for this machine or equipment. Energy sources and magnitudes are listed below.
ENERGY SOURCE(S)	
Electrical	120/240 Volts
Pneumatic	135 max
Step 2	If the machine or equipment is operating, shut it down by the normal stopping procedure.
Step 3	Isolate energy sources by de-activating energy isolating devices so that the machine or equipment is isolated from energy. Isolating devices and locations are listed below.
ENERGY ISOLATING DEVICES	
Electrical – Cord and Plug	At Compressor
Pneumatic – Hose Disconnect	At Compressor
Step 4	Place energy control devices such as your lock and tag on all energy isolating device(s). Ensure your name is on your tag. Use only a lock designated for lockout purposes.
Step 5	Dissipate stored residual energy such as that stored in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure. Stored residual energy sources and dissipation / restrain method listed below.
STORED RESIDUAL ENERGY	
Pneumatic	Open Relief Valve on Air Tank
Step 6	a) Ensure that the equipment or machine is disconnected from the energy source(s) by first checking that no personnel are exposed. b) VERIFY the isolation of the equipment and zero energy exists. c) CAUTION: Return operating control(s) to the neutral or “off” position after verifying the isolation of the equipment.
VERIFICATION CONTROLS	
ON/OFF Switch	Turn Switch to the ON Position.

THE AIR COMPRESSOR IS NOW LOCKED OUT.

**Grove Roofing Services
131 Reading Street Facility**

Perform Servicing or Maintenance.

RETURNING EQUIPMENT TO SERVICE

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.

Step 1	Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
Step 2	Check the work area to ensure that all employees have been safely positioned or removed from the area.
Step 3	Verify the controls for the machine are neutral or in the off position.
Step 4	Remove the lock out devices and reenergize the machine or equipment. Note: the removal of some forms of blocking may require reenergization of the machine before safe removal.
Step 5	Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

Grove Roofing Services 131 Reading Street Facility

Equipment Name: **Chop Saw**
Location: **Facility Wide**

Issue Date: **4-2014**
Rev #: **0**

LOCK OUT / TAG OUT PROCEDURE

PURPOSE: This procedure establishes the requirements for the lock out and tag out of energy isolating devices whenever maintenance or servicing is done on machines or equipment. This procedure shall be used to ensure the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out / tagged out before authorized employees perform maintenance or servicing where the unexpected energization or start up of the machine could cause injury.

COMPLIANCE: All employees are required to comply with the restrictions and limitations imposed upon them during the use of lock out / tag out. The authorized employees are required to lock out in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

SEQUENCE OF LOCKOUT

Step 1	a) Notify all affected employees that servicing or maintenance is required on the machine. b) Notify all affected employees that the machine must be shut down and locked / tagged out to perform servicing or maintenance. c) Identify hazardous type and magnitude of energy sources for this machine or equipment. Energy sources and magnitudes are listed below.
ENERGY SOURCE(S)	
Electrical	110 Volts
Step 2	If the machine or equipment is operating, shut it down by the normal stopping procedure.
Step 3	Isolate energy sources by de-activating energy isolating devices so that the machine or equipment is isolated from energy. Isolating devices and locations are listed below.
ENERGY ISOLATING DEVICES	
Cord End – Unplug Cord	Attached to Chop Saw
Step 4	Place energy control devices such as your lock and tag on all energy isolating device(s). Ensure your name is on your tag. Use only a lock designated for lockout purposes.
Step 5	Dissipate stored residual energy such as that stored in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure. Stored residual energy sources and dissipation / restrain method listed below.
STORED RESIDUAL ENERGY	
Moving Saw Blade	Allow Blade to Completely Stop
Step 6	a) Ensure that the equipment or machine is disconnected from the energy source(s) by first checking that no personnel are exposed. b) VERIFY the isolation of the equipment and zero energy exists. c) CAUTION: Return operating control(s) to the neutral or “off” position after verifying the isolation of the equipment.
VERIFICATION CONTROLS	
Chop Saw Trigger	Depress trigger to confirm saw does not operate.

THE CHOP SAW IS NOW LOCKED OUT.

**Grove Roofing Services
131 Reading Street Facility**

Perform Servicing or Maintenance.

RETURNING EQUIPMENT TO SERVICE

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.

Step 1	Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
Step 2	Check the work area to ensure that all employees have been safely positioned or removed from the area.
Step 3	Verify the controls for the machine are neutral or in the off position.
Step 4	Remove the lock out devices and reenergize the machine or equipment. Note: the removal of some forms of blocking may require reenergization of the machine before safe removal.
Step 5	Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

Grove Roofing Services 131 Reading Street Facility

Equipment Name: **Drill Press**
Location: **Facility Wide**

Issue Date: **4-2014**
Rev #: **0**

LOCK OUT / TAG OUT PROCEDURE

PURPOSE: This procedure establishes the requirements for the lock out and tag out of energy isolating devices whenever maintenance or servicing is done on machines or equipment. This procedure shall be used to ensure the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out / tagged out before authorized employees perform maintenance or servicing where the unexpected energization or start up of the machine could cause injury.

COMPLIANCE: All employees are required to comply with the restrictions and limitations imposed upon them during the use of lock out / tag out. The authorized employees are required to lock out in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

SEQUENCE OF LOCKOUT

Step 1	a) Notify all affected employees that servicing or maintenance is required on the machine. b) Notify all affected employees that the machine must be shut down and locked / tagged out to perform servicing or maintenance. c) Identify hazardous type and magnitude of energy sources for this machine or equipment. Energy sources and magnitudes are listed below.
ENERGY SOURCE(S)	
Electrical	
MAGNITUDE	
110 Volts	
Step 2	If the machine or equipment is operating, shut it down by the normal stopping procedure.
Step 3	Isolate energy sources by de-activating energy isolating devices so that the machine or equipment is isolated from energy. Isolating devices and locations are listed below.
ENERGY ISOLATING DEVICES	
Cord End – Unplug Cord	
LOCATION	
Attached to Drill Press	
Step 4	Place energy control devices such as your lock and tag on all energy isolating device(s). Ensure your name is on your tag. Use only a lock designated for lockout purposes.
Step 5	Dissipate stored residual energy such as that stored in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure. Stored residual energy sources and dissipation / restrain method listed below.
STORED RESIDUAL ENERGY	
Moving Bit	
STORED RESIDUAL ENERGY DISIPATION / RESTRAINT METHOD	
Allow Bit to Completely Stop	
Step 6	a) Ensure that the equipment or machine is disconnected from the energy source(s) by first checking that no personnel are exposed. b) VERIFY the isolation of the equipment and zero energy exists. c) CAUTION: Return operating control(s) to the neutral or “off” position after verifying the isolation of the equipment.
VERIFICATION CONTROLS	
Drill Press On/Off Switch	
VERIFICATION PROCEDURE	
Activate On/Off switch to the ON position to confirm drill press does not operate.	

THE DRILL PRESS IS NOW LOCKED OUT.

**Grove Roofing Services
131 Reading Street Facility**

Perform Servicing or Maintenance.

RETURNING EQUIPMENT TO SERVICE

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.

Step 1	Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
Step 2	Check the work area to ensure that all employees have been safely positioned or removed from the area.
Step 3	Verify the controls for the machine are neutral or in the off position.
Step 4	Remove the lock out devices and reenergize the machine or equipment. Note: the removal of some forms of blocking may require reenergization of the machine before safe removal.
Step 5	Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

**Grove Roofing Services
131 Reading Street Facility**

Perform Servicing or Maintenance.

RETURNING EQUIPMENT TO SERVICE

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.

Step 1	Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
Step 2	Check the work area to ensure that all employees have been safely positioned or removed from the area.
Step 3	Verify the controls for the machine are neutral or in the off position.
Step 4	Remove the lock out devices and reenergize the machine or equipment. Note: the removal of some forms of blocking may require reenergization of the machine before safe removal.
Step 5	Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

Grove Roofing Services 131 Reading Street Facility

Equipment Name: **Niagara Press Brake Model IB-15-3-4**
Location: **Shop**

Issue Date: **4-2014**
Rev #: **0**

LOCK OUT / TAG OUT PROCEDURE

PURPOSE: This procedure establishes the requirements for the lock out and tag out of energy isolating devices whenever maintenance or servicing is done on machines or equipment. This procedure shall be used to ensure the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out / tagged out before authorized employees perform maintenance or servicing where the unexpected energization or start up of the machine could cause injury.

COMPLIANCE: All employees are required to comply with the restrictions and limitations imposed upon them during the use of lock out / tag out. The authorized employees are required to lock out in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

SEQUENCE OF LOCKOUT

Step 1	a) Notify all affected employees that servicing or maintenance is required on the machine. b) Notify all affected employees that the machine must be shut down and locked / tagged out to perform servicing or maintenance. c) Identify hazardous type and magnitude of energy sources for this machine or equipment. Energy sources and magnitudes are listed below.
ENERGY SOURCE(S)	
Electrical	230 Volts 3 Phase
Mechanical	Gravity
Pneumatic	35 PSI (minimum)
Step 2	If the machine or equipment is operating, shut it down by the normal stopping procedure.
Step 3	Isolate energy sources by de-activating energy isolating devices so that the machine or equipment is isolated from energy. Isolating devices and locations are listed below.
ENERGY ISOLATING DEVICES	
Electrical – Sylvania Local Disconnect	At Press Brake
Electrical – Breaker 26, 28, 30	In Panel on exterior wall
Mechanical – Gravity	At Press Brake
Pneumatic	Internal to machine – electrically controlled
Step 4	Place energy control devices such as your lock and tag on all energy isolating device(s). Ensure your name is on your tag. Use only a lock designated for lockout purposes.
Step 5	Dissipate stored residual energy such as that stored in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure. Stored residual energy sources and dissipation / restrain method listed below.
STORED RESIDUAL ENERGY	
Mechanical/Flywheel	Confirm Flywheel comes to complete stop, engage treadle lock and remove treadle
Gravity	Lowering ram into bottom of stroke, blocking ram at top of stroke, pinning ram at top of stroke, and chaining ram at top of stroke, are the common methods of controlling the release of stored energy in the press brakes

Grove Roofing Services 131 Reading Street Facility

Step 6	a) Ensure that the equipment or machine is disconnected from the energy source(s) by first checking that no personnel are exposed. b) VERIFY the isolation of the equipment and zero energy exists. c) CAUTION: Return operating control(s) to the neutral or “off” position after verifying the isolation of the equipment.
VERIFICATION CONTROLS	VERIFICATION PROCEDURE
On/Off Switch	Activate On/Off switch to the ON position to confirm press brake does not operate.

**THE PRESS BRAKE IS NOW LOCKED OUT.
Perform Servicing or Maintenance.**

RETURNING EQUIPMENT TO SERVICE

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.

Step 1	Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
Step 2	Check the work area to ensure that all employees have been safely positioned or removed from the area.
Step 3	Verify the controls for the machine are neutral or in the off position.
Step 4	Remove the lock out devices and reenergize the machine or equipment. Note: the removal of some forms of blocking may require reenergization of the machine before safe removal.
Step 5	Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

**Grove Roofing Services
131 Reading Street Facility**

Equipment Name: Roper Whitney Autobrake –Model AB1014E
Issue Date: 4-2014
Location: Shop Rev #: 0

LOCK OUT / TAG OUT PROCEDURE

PURPOSE: This procedure establishes the requirements for the lock out and tag out of energy isolating devices whenever maintenance or servicing is done on machines or equipment. This procedure shall be used to ensure the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out / tagged out before authorized employees perform maintenance or servicing where the unexpected energization or start up of the machine could cause injury.

COMPLIANCE: All employees are required to comply with the restrictions and limitations imposed upon them during the use of lock out / tag out. The authorized employees are required to lock out in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

SEQUENCE OF LOCKOUT

Step 1	a) Notify all affected employees that servicing or maintenance is required on the machine. b) Notify all affected employees that the machine must be shut down and locked / tagged out to perform servicing or maintenance. c) Identify hazardous type and magnitude of energy sources for this machine or equipment. Energy sources and magnitudes are listed below.
ENERGY SOURCE(S) MAGNITUDE	
Electrical 230 Volts 3 Phase 60 CY	
Pneumatic (air) Varies	
Step 2	If the machine or equipment is operating, shut it down by the normal stopping procedure.
Step 3	Isolate energy sources by de-activating energy isolating devices so that the machine or equipment is isolated from energy. Isolating devices and locations are listed below.
ENERGY ISOLATING DEVICES LOCATION	
Electrical – Local Disconnect Switch At Machine Control Center	
Electrical – Local Disconnect switch On Wall Labeled Auto Brake	
Pneumatic – Air Hose Detach Under Table At Air Gauge	
Step 4	Place energy control devices such as your lock and tag on all energy isolating device(s). Ensure your name is on your tag. Use only a lock designated for lockout purposes.
Step 5	Dissipate stored residual energy such as that stored in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure. Stored residual energy sources and dissipation / restraint method listed below.
STORED RESIDUAL ENERGY STORED RESIDUAL ENERGY DISIPATION / RESTRAINT METHOD	
Varies on service performed – Mechanical, Pneumatic, Gravity Dissipate per work to be performed – reference owner manual.	
Step 6	a) Ensure that the equipment or machine is disconnected from the energy source(s) by first checking that no personnel are exposed. b) VERIFY the isolation of the equipment and zero energy exists. c) CAUTION: Return operating control(s) to the neutral or “off” position after verifying the isolation of the equipment.
VERIFICATION CONTROLS VERIFICATION PROCEDURE	
On/Off Switch Activate On/Off switch to the ON position to confirm auto brake does not operate.	

**Grove Roofing Services
131 Reading Street Facility**

**THE AUTOBRAKE IS NOW LOCKED OUT.
Perform Servicing or Maintenance.**

RETURNING EQUIPMENT TO SERVICE

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.

Step 1	Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
Step 2	Check the work area to ensure that all employees have been safely positioned or removed from the area.
Step 3	Verify the controls for the machine are neutral or in the off position.
Step 4	Remove the lock out devices and reenergize the machine or equipment. Note: the removal of some forms of blocking may require reenergization of the machine before safe removal.
Step 5	Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

Grove Roofing Services 131 Reading Street Facility

Equipment Name: **Roper Shear America**
Location: **Shop**

Issue Date: **4-2014**
Rev #: **0**

LOCK OUT / TAG OUT PROCEDURE

PURPOSE: This procedure establishes the requirements for the lock out and tag out of energy isolating devices whenever maintenance or servicing is done on machines or equipment. This procedure shall be used to ensure the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out / tagged out before authorized employees perform maintenance or servicing where the unexpected energization or start up of the machine could cause injury.

COMPLIANCE: All employees are required to comply with the restrictions and limitations imposed upon them during the use of lock out / tag out. The authorized employees are required to lock out in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

SEQUENCE OF LOCKOUT

Step 1	a) Notify all affected employees that servicing or maintenance is required on the machine. b) Notify all affected employees that the machine must be shut down and locked / tagged out to perform servicing or maintenance. c) Identify hazardous type and magnitude of energy sources for this machine or equipment. Energy sources and magnitudes are listed below.
ENERGY SOURCE(S)	
Electrical	230 Volts 3 Phase 60 CY
Pneumatic	Air pressure varies
Mechanical	Gravity
Step 2	If the machine or equipment is operating, shut it down by the normal stopping procedure.
Step 3	Isolate energy sources by de-activating energy isolating devices so that the machine or equipment is isolated from energy. Isolating devices and locations are listed below.
ENERGY ISOLATING DEVICES	
Electrical – Local Disconnect	At Machine Control Panel
Pneumatic – Air Hose Disconnect	Connected at Shear at Gauge
Mechanical –	
Step 4	Place energy control devices such as your lock and tag on all energy isolating device(s). Ensure your name is on your tag. Use only a lock designated for lockout purposes.
Step 5	Dissipate stored residual energy such as that stored in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure. Stored residual energy sources and dissipation / restrain method listed below.
STORED RESIDUAL ENERGY	
Varies on service performed – Mechanical, Pneumatic, Gravity	STORED RESIDUAL ENERGY DISIPATION / RESTRAINT METHOD
	Dissipate per work to be performed – reference owner manual.
Step 6	a) Ensure that the equipment or machine is disconnected from the energy source(s) by first checking that no personnel are exposed. b) VERIFY the isolation of the equipment and zero energy exists. c) CAUTION: Return operating control(s) to the neutral or “off” position after verifying the isolation of the equipment.
VERIFICATION CONTROLS	
VERIFICATION PROCEDURE	

**Grove Roofing Services
131 Reading Street Facility**

On/Off Switch	Activate On/Off switch to the ON position to confirm shear does not operate.
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**THE SHEAR IS NOW LOCKED OUT.
Perform Servicing or Maintenance.**

RETURNING EQUIPMENT TO SERVICE

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.

Step 1	Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
Step 2	Check the work area to ensure that all employees have been safely positioned or removed from the area.
Step 3	Verify the controls for the machine are neutral or in the off position.
Step 4	Remove the lock out devices and reenergize the machine or equipment. Note: the removal of some forms of blocking may require reenergization of the machine before safe removal.
Step 5	Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

Grove Roofing Services 131 Reading Street Facility

Equipment Name: **Bench/Pedestal Grinder**
Location: **Facility Wide**

Issue Date: **4-2014**
Rev #: **0**

LOCK OUT / TAG OUT PROCEDURE

PURPOSE: This procedure establishes the requirements for the lock out and tag out of energy isolating devices whenever maintenance or servicing is done on machines or equipment. This procedure shall be used to ensure the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out / tagged out before authorized employees perform maintenance or servicing where the unexpected energization or start up of the machine could cause injury.

COMPLIANCE: All employees are required to comply with the restrictions and limitations imposed upon them during the use of lock out / tag out. The authorized employees are required to lock out in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

SEQUENCE OF LOCKOUT

Step 1	a) Notify all affected employees that servicing or maintenance is required on the machine. b) Notify all affected employees that the machine must be shut down and locked / tagged out to perform servicing or maintenance. c) Identify hazardous type and magnitude of energy sources for this machine or equipment. Energy sources and magnitudes are listed below.
ENERGY SOURCE(S)	MAGNITUDE
Electrical	110 Volts
Step 2	If the machine or equipment is operating, shut it down by the normal stopping procedure.
Step 3	Isolate energy sources by de-activating energy isolating devices so that the machine or equipment is isolated from energy. Isolating devices and locations are listed below.
ENERGY ISOLATING DEVICES	LOCATION
Cord End – Unplug Cord	Attached to Bench/Pedestal Grinder
Step 4	Place energy control devices such as your lock and tag on all energy isolating device(s). Ensure your name is on your tag. Use only a lock designated for lockout purposes.
Step 5	Dissipate stored residual energy such as that stored in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure. Stored residual energy sources and dissipation / restrain method listed below.
STORED RESIDUAL ENERGY	STORED RESIDUAL ENERGY DISIPATION / RESTRAINT METHOD
Moving Abrasive Wheel/Brushes	Allow Wheel/Brush to Completely Stop
Step 6	a) Ensure that the equipment or machine is disconnected from the energy source(s) by first checking that no personnel are exposed. b) VERIFY the isolation of the equipment and zero energy exists. c) CAUTION: Return operating control(s) to the neutral or “off” position after verifying the isolation of the equipment.
VERIFICATION CONTROLS	VERIFICATION PROCEDURE
ON/OFF Switch	Turn Switch to the on position.

THE GRINDER IS NOW LOCKED OUT.

**Grove Roofing Services
131 Reading Street Facility**

Perform Servicing or Maintenance.

RETURNING EQUIPMENT TO SERVICE

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.

Step 1	Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
Step 2	Check the work area to ensure that all employees have been safely positioned or removed from the area.
Step 3	Verify the controls for the machine are neutral or in the off position.
Step 4	Remove the lock out devices and reenergize the machine or equipment. Note: the removal of some forms of blocking may require reenergization of the machine before safe removal.
Step 5	Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

**Grove Roofing Services
131 Reading Street Facility**

Equipment Name: **Table Saw**
Location: **Facility Wide**

Issue Date: **4-2014**
Rev #: **0**

LOCK OUT / TAG OUT PROCEDURE

PURPOSE: This procedure establishes the requirements for the lock out and tag out of energy isolating devices whenever maintenance or servicing is done on machines or equipment. This procedure shall be used to ensure the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out / tagged out before authorized employees perform maintenance or servicing where the unexpected energization or start up of the machine could cause injury.

COMPLIANCE: All employees are required to comply with the restrictions and limitations imposed upon them during the use of lock out / tag out. The authorized employees are required to lock out in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

SEQUENCE OF LOCKOUT

Step 1	a) Notify all affected employees that servicing or maintenance is required on the machine. b) Notify all affected employees that the machine must be shut down and locked / tagged out to perform servicing or maintenance. c) Identify hazardous type and magnitude of energy sources for this machine or equipment. Energy sources and magnitudes are listed below.
ENERGY SOURCE(S)	
Electrical	MAGNITUDE 110 Volts
Step 2	If the machine or equipment is operating, shut it down by the normal stopping procedure.
Step 3	Isolate energy sources by de-activating energy isolating devices so that the machine or equipment is isolated from energy. Isolating devices and locations are listed below.
ENERGY ISOLATING DEVICES	
Cord End – Unplug Cord	LOCATION Attached to Table Saw
Step 4	Place energy control devices such as your lock and tag on all energy isolating device(s). Ensure your name is on your tag. Use only a lock designated for lockout purposes.
Step 5	Dissipate stored residual energy such as that stored in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure. Stored residual energy sources and dissipation / restrain method listed below.
STORED RESIDUAL ENERGY	
Moving Saw Blade	STORED RESIDUAL ENERGY DISIPATION / RESTRAINT METHOD Allow Blade to Completely Stop
Step 6	a) Ensure that the equipment or machine is disconnected from the energy source(s) by first checking that no personnel are exposed. b) VERIFY the isolation of the equipment and zero energy exists. c) CAUTION: Return operating control(s) to the neutral or “off” position after verifying the isolation of the equipment.
VERIFICATION CONTROLS	
Table Saw On/Off Switch	VERIFICATION PROCEDURE Activate On/Off switch to the ON position to confirm saw does not operate.

THE TABLE SAW IS NOW LOCKED OUT.

**Grove Roofing Services
131 Reading Street Facility**

Perform Servicing or Maintenance.

RETURNING EQUIPMENT TO SERVICE

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.

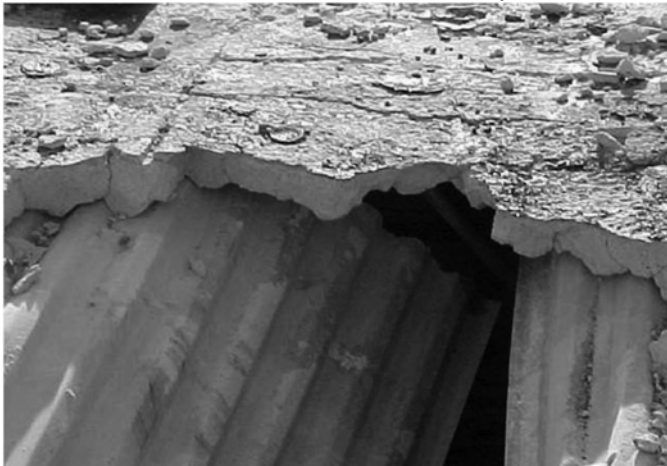
Step 1	Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
Step 2	Check the work area to ensure that all employees have been safely positioned or removed from the area.
Step 3	Verify the controls for the machine are neutral or in the off position.
Step 4	Remove the lock out devices and reenergize the machine or equipment. Note: the removal of some forms of blocking may require reenergization of the machine before safe removal.
Step 5	Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

NRCA's Fall-protection Compliance Program student handout

In 2010, there were 751 fatal work injuries in construction—260 of those were from falls—and 52 roofing workers died in falls.

OSHA's Fall-protection Requirements:

- Workers must be protected when **6 feet or more above** lower level.
- Workers also must be protected from **objects falling** on them.
- Work surfaces must be **structurally safe**.



Exception to OSHA construction fall-protection rules:

Construction fall-protection rules do not apply when workers are inspecting, investigating or assessing a workplace:

- **Before** the work has started
- **After** the work has been completed

Protection devices set out in OSHA regulations for workers on **low-slope roofs** (4:12 or less):

- Guardrails
- Safety nets
- Personal fall-arrest (PFA) systems

For low slope roofing work, the following systems also are allowed:

- Warning line and guardrail
- Warning line and safety net
- Warning line and PFA system
- Warning line and safety-monitoring system

- Safety-monitoring system alone on roofs 50 feet wide or narrower

Hoist Areas

Workers in a hoist area must be protected from falling 6 feet or greater by:

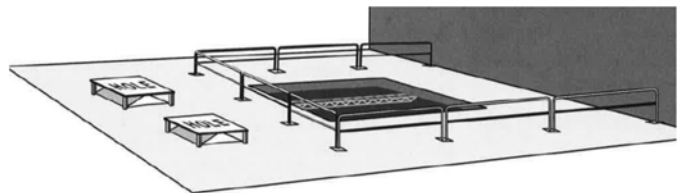
- Guardrail systems
- PFA systems



Holes and skylights

Workers must be protected from falls through holes or skylights by:

- PFA systems
- Guardrail systems
- Covers



On steep-slope roofs **greater than 4:12**, workers must be protected by:

- Guardrail systems with toeboards
- Safety nets
- PFA systems

Fall-protection Plan

In residential construction, if conventional fall protection is infeasible or creates a greater hazard, a written plan addressing fall-protection issues may take the place of conventional systems if 10 requirements are met, including:

1. Written, site-specific or by style and/or model
2. Prepared by a qualified person
3. Discussion of measures to address fall hazards

Specific fall-protection system requirements

Guardrail system

- Height of the **toprail** must be between **39 and 45 inches** from the roof surface
- Toprail must be capable of withstanding **200 pounds** of force applied in a downward or outward direction
- A **midrail** is required if there is no parapet wall of at least **21 inches** in height

PFA system

Required components of PFA system:

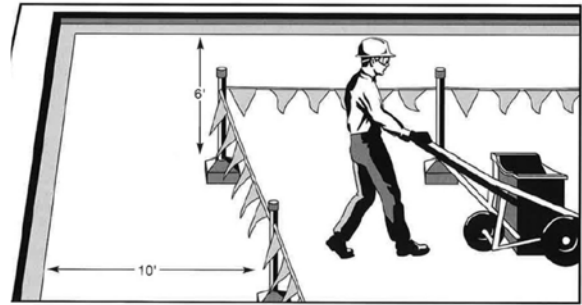
- Anchor
- Body harness
- Connectors

A PFA may include:

- Lanyard
- Lifeline
- Deceleration device

Anchors and other components of a PFA system must be capable of supporting at least **5,000 pounds** per employee attached.

A PFA must be rigged so a worker cannot free fall more than 6 feet or hit the ground or lower level.



Warning-line system

Warning-line systems must meet the following requirements:

- Height of the warning line must be between **34 and 39 inches**
- Warning line must be **flagged** every 6 feet or less
- The line must have a tensile strength of **500 pounds**
- The line must be at least **6 feet** from every edge unless mechanical equipment is being used in which case the warning line perpendicular to the line of travel of the equipment must be at least **10 feet** from the edge.



Safety-monitoring system

A safety monitor must:

- Be a **competent** person
- Be on the same roof **level** as workers being monitored
- Be able to **see** all workers
- Be able to **communicate** with workers

- Not have other responsibilities that could *distract* from the monitoring function

Safety-net system

- Safety nets cannot be installed more than **30 feet below** the level on which workers are working.
- Nets must be capable of supporting a drop-test weight of **400 pounds** dropped from the level on which workers are working.

Covers for holes or skylights

Covers must be:

- Capable of supporting *two times the weight* of employees, materials and equipment imposed on them
- Secured
- Color coded or marked “Hole” or “Cover”

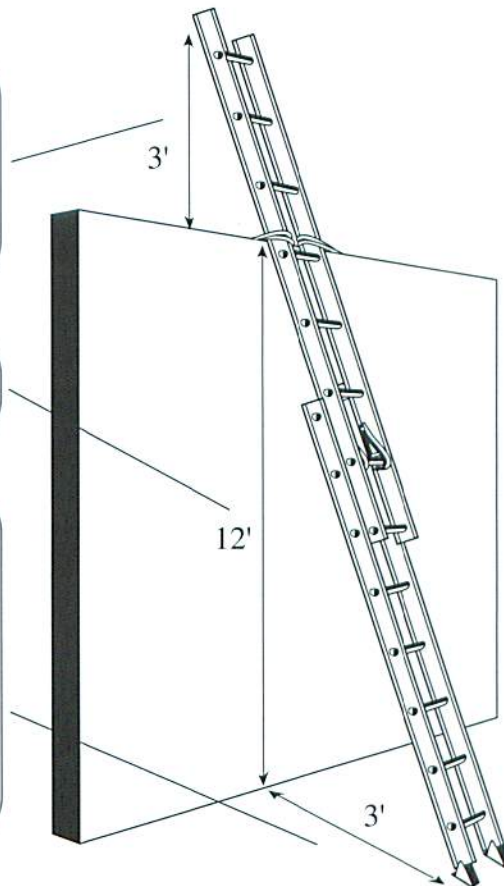
Ladder Safety

- ☛ **Before setting up a ladder, inspect it for defects.**
 - Make sure the latches on extension ladders are secured before climbing.
 - Never use a ladder with split or missing rungs.
 - Never use a ladder with grease, oil, or any other slippery substance on the rungs or rails.
 - Defective ladders that cannot be repaired on the spot must be tagged and removed.
 - Make sure the ladder feet move freely and are slip-resistant.

- ☛ **The ladder should extend three feet over the top of the building and be secured.**
 - If the ladder is not tall enough to extend three feet over then it must be tied off, and there must be a secure grab rail.

- ☛ **For every four feet of building height, the base of the ladder should be set one foot away from the building.**

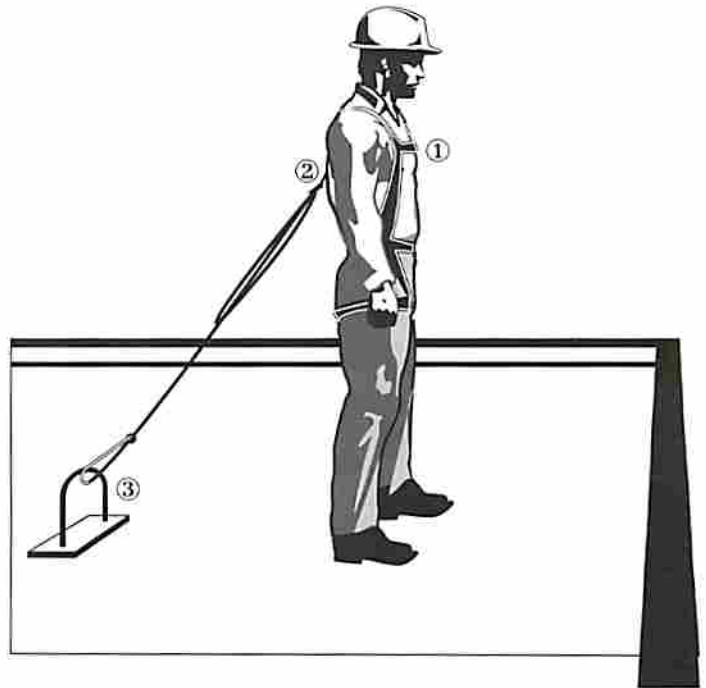
- ☛ **Set the ladder on firm ground and make sure that it is secure.**
 - Concrete or compact soil are ideal surfaces.
 - Avoid unstable rocks, loose sand, mud, and ice.
 - If the ladder does not have slip-resistant feet, dig a small trench and place the base of the ladder in the trench to keep it from slipping.



- ☛ **Follow safe work practices for climbing and carrying ladders.**
 - Keep at least one hand on the ladder at all times when climbing up or down.
 - Face the ladder when climbing in either direction.
 - Keep ladders, especially metal ones, away from overhead power lines.
 - Get help when moving heavy ladders.

Personal Fall Arrest Systems

- ☛ A personal fall arrest system consists of a full body harness (body belts cannot be used for personal fall arrest), a lanyard with locking snaphooks, a safety line, and an anchorage point.
- ☛ The design of the system must meet certain specifications.
 - ① Straps have to be made of synthetic fiber.
 - ② Locking snap hooks or D-rings are required, and they must attach to the body in the center of the back.
 - ③ The anchorage must meet manufacturer's requirements. Anchorages cannot be connected to platforms, guardrails, or hoists.
- ☛ Fall protection devices have to be inspected before each use.
 - Look for wear, damage or deterioration.
 - Check for broken or deformed snaphooks or D-rings.
 - Equipment with defects must be removed and tagged for repair, or discarded.
- ☛ Make sure the system is installed and worn correctly.
 - Avoid tying off around rough or sharp edges.
 - A fall must be limited to six feet (1.829 m).
- ☛ When the equipment is actually used to arrest a fall, it must be removed from service and a competent person must inspect it to determine whether or not it is reusable.
- ☛ Never use a body harness to hoist materials.
- ☛ Fall arrest equipment should not be stored where it will be exposed to sunlight or extreme temperatures.



SECTION 2 - BODY SUPPORT (continued)

Harnesses Donning:

STEP ONE



Getting Started:

- Inspect the harness (see Sec, 7)
- Hold harness by back D-ring.
- Make certain straps are not twisted.



STEP TWO

Shoulder Straps:

- Slip harness over arms and onto shoulders.
- Make certain all straps are not tangled and hang freely.
- Shoulder straps should be kept vertical, not pulled into center of body.



STEP THREE

Leg Straps:

- Grab leg straps and connect to buckles
- Pass excess strap through loop keepers.
- Leg straps should fit snugly.



STEP FOUR

Chest Strap:

- Attach chest strap
- Strap should be six inches below top of shoulders.
- Pass excess strap through loop keeper.



STEP FIVE

Adjusting:

- Shoulders: To tighten, pull up on free ends of straps as shown, to loosen, push down on parachute adjuster buckle frame. Straps should be adjusted to same length.
- Chest Strap: To tighten, pull free end of strap, to loosen, push on strap from free end through adjuster buckle and take up slack by pulling on adjuster buckle. To position, slide keeper up or down shoulder strap.
- Back D-ring: Center between shoulder blades, slide D-ring and pad up or down along the webbing to position.

NOTE :

If a harness fails the pre-use inspection it must be retired. As with all other fall arrest equipment, full body harnesses should be retired immediately following a fall. Follow all manufacturers recommendations for harness inspection, donning and adjustment.

Full Body Harnesses

Objectives

By the end of this chapter, students should be able to:

- Perform a full body harness inspection and name the four key inspection components.
- Explain the difference between a prior-to-use inspection vs. a CSA/ANSI, and manufacturer's recommended inspection
- Use an inspection log sheet to record a harness inspection.
- Recommend criteria for harnesses storage, cleaning, and maintenance.

General

The full body harness is an integral part of the fall arrest system. Though designed ruggedly for practical use in the construction industry, the harness requires daily and annual inspections. Further, there may be legislative requirements in some locations that require more frequent inspections than the CSA and ANSI standards dictate. In the end, all of the rules and regulations are there to make sure that if you were ever to fall, your harness is going to work.

The four key components of the full body harness requiring inspection are:

- Hardware
- Webbing
- Labels
- Stitching



FREQUENCY

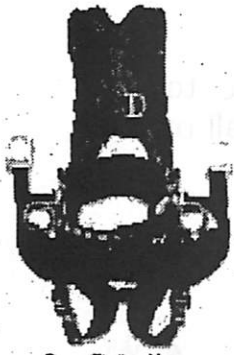
- Before each use, by the user
- By a competent person, other than the user, at least annually
- The results of the inspection should be recorded

IMPORTANT: If the full body harness has been subjected to fall arrest or impact forces it must be immediately removed from service.

IMPORTANT: Extreme working conditions (harsh environments, prolonged use, etc.) may require increasing the frequency of inspections.

Inspection Criteria

Hardware: is any integral metal and plastic component on the harness:

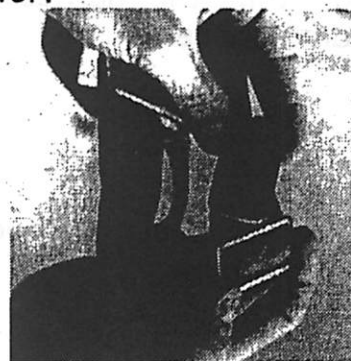


- Dorsal D ring
- Dorsal back pad
- Buckles
- Keepers
- D, E L, P, positioning rings



Webbing: is the synthetic fiber straps that make up the harness; all stitch patterns and webbing must be checked for:

- Frays
- Cuts
- Broken fibers
- Tears
- Abrasions
- Mold
- Burns
- Discoloration
- Holes
- Or any other damage



INSPECTION STEPS:

Step 1

Inspect harness hardware (buckles, D-rings, back pad, loop keepers); these items must not be damaged, broken, distorted, and must be free of sharp edges, burrs, cracks, worn parts, or corrosion.



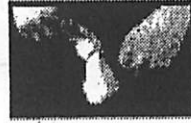
Pass-Thru Buckle:

Pass male buckle through female buckle and pull free end of webbing to tighten.



Quick-Connect Buckle:

Insert male portion into receptor until click is heard. Pull free end of web to tighten.



Parachute Buckle:

Pass web up through center slot of buckle, over knurled bar and back under frame. Pull web to tighten.



Tongue Buckle:

Pass webbing through buckle and then tongue through grommet. Secure web through keeper.

PVC coated hardware must be free of cuts, rips, tears, holes, etc. to ensure non-conductivity. Ensure buckles work freely. Inspect all buckle springs.

Step 2



Inspect webbing material it must be free of all:

- frays
- cuts
- broken fibers



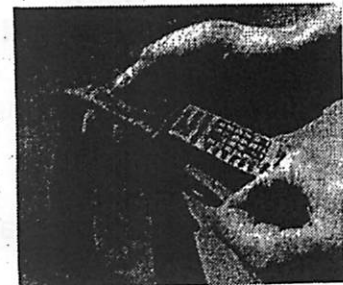
Also check for tears, abrasions, mold, burns, or discoloration.

Inspect stitching; check for pulled or cut stitches. Broken stitches may be an indication that the harness has been impact loaded and must be removed from service.

Step 3




Inspect labels; all labels should be present and fully legible.



Step 4

Inspect each system component or subsystem according to manufacturer's instructions.

Step 5:

Record the inspection date and results in the company inspection and maintenance log, and check off the inspection box on the label attached to the harness. 

If inspection reveals a defective condition, remove unit from service immediately and destroy.

NOTE: Harnesses approved by CSA after 2006 will have an impact indicator. Ensure to check for deployment

NOTE: Only DBI-SALA or parties authorized in writing may make repairs to this equipment.

MAINTENANCE, SERVICING, STORAGE

- Clean full body harness with water and a mild soap solution.
- Do not use bleach or bleach solutions.
- Wipe off hardware with a clean, dry cloth, and hang to air dry.
- Do not force dry with heat.
- Store full body harnesses in a cool, dry, clean environment out of direct sunlight.
- Avoid areas where chemical vapors may exist.
- Thoroughly inspect the full body harness after extended storage.

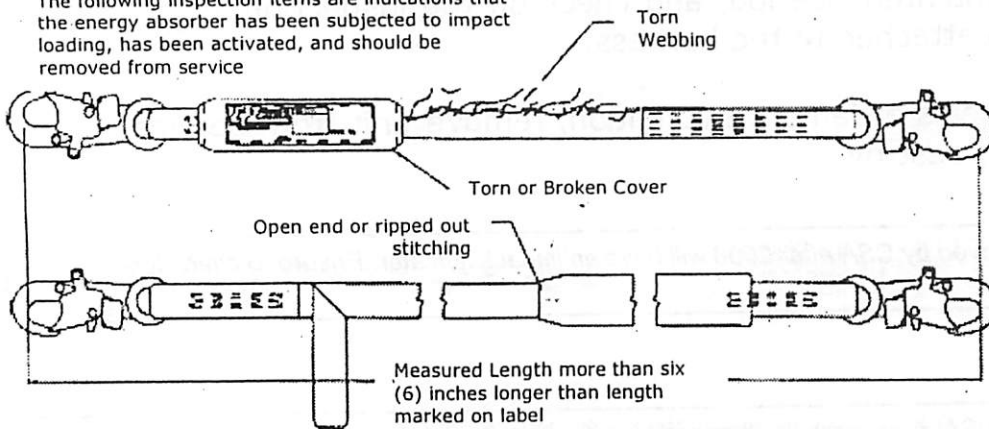


An excessive buildup of dirt, paint, etc. may prevent the full body harness from working properly, and in severe cases degrade the webbing to a point where it should be removed from service.

More information on cleaning is available from DBI-SALA. If you have questions concerning the condition of your harness, or have any doubt about putting it into service contact DBI-SALA.

Inspecting the Energy Absorber for Activation

The following inspection items are indications that the energy absorber has been subjected to impact loading, has been activated, and should be removed from service



FREQUENCY

- Before each use, by the user
- By a competent person, other than the user, at least annually
- The results of the inspection should be recorded

IMPORTANT: Extreme working conditions (harsh environment, prolonged use, etc.) may require increasing the frequency of inspections.

IMPORTANT: If the energy absorbing lanyard or energy absorber component has been subjected to fall arrest or impact forces, it must be immediately removed from service.

Inspection Steps: Energy Absorbing Lanyard

Step 1

Inspect energy absorbing lanyard or energy absorber component hardware

- Snap hooks
- Adjusters
- Swages
- Thimbles, etc

These items must not be damaged, broken, distorted, or have any sharp edges, burrs, cracks, worn parts, or corrosion. Ensure the connecting hooks work properly. Hook gates must move freely and lock upon closing. Ensure adjusters (if present) work properly.

Step 2

Inspect the energy absorbing lanyard or energy absorber component per the following as applicable:

WEBBING AND STITCHING:

- ✓ The webbing material must be free of
 - Frays, cuts, or broken fibers
- ✓ Check for tears, abrasions, mold, burns, or discoloration, etc.
- ✓ The webbing must be free of knots
 - Excessive soiling
 - Heavy paint buildup
 - Rust staining
- ✓ Check for chemical or heat damage indicated by
 - Brown
 - Discolored, and/or
 - Brittle areas
- ✓ Check for ultraviolet damage indicated by
 - Discoloration
 - The presence of splinters or slivers on the webbing surface.

All of the above factors are known to reduce webbing strength. Damaged or questionable webbing should be replaced.

- ✓ Inspect stitching for pulled or cut stitches.
 - Broken stitches may be an indication the energy-absorbing lanyard or energy absorber component has been impact loaded and must be removed from service

WIRE ROPE:

Inspect entire length of the wire rope. Always wear protective gloves when inspecting wire rope.



- ✓ Inspect for broken wires by passing cable through gloved hands and:
 - Flexing it every few inches to expose breaks
 - Broken wires can be removed by bending the wire back and forth parallel to the rope length

Do not attempt to pull wires out of rope.

- ✓ Remove the energy-absorbing lanyard from service immediately and destroy if there are six or more randomly distributed broken wires in one lay or three or more broken wires in one strand in one lay.
- ✓ A "lay" of wire rope is the length of wire rope that it takes for a strand (the larger groups of wires) to complete one revolution or twist along the rope.
- ✓ Remove the energy-absorbing lanyard from service immediately and destroy if there are any broken wires within 1 inch of the metal compression sleeves (swages) at either end of the assembly.
- ✓ The wire rope should be free of corrosion.

Step 3

ENERGY ABSORBING COMPONENT: Inspect energy absorber to determine if it has been activated. There should be no evidence of elongation. Ensure energy absorber cover is secure and not torn or damaged. On the EZ Stop® III Shockwave™ Lanyard models, the lanyard webbing will stretch out to reveal the warning on the impact indicator label.

Step 4

All labels should be present and fully legible

Step 5

Inspect each system component or subsystem per associated manufacturer's instructions.

Step 6

Record the inspection date and results in the inspection log

If inspection reveals an unsafe condition, remove unit from service immediately, or contact an authorized service center for repair.

NOTE: Only DBI-SALA or parties authorized in writing may make repairs to this equipment.

SECTION 3 - CONNECTORS

Just the Facts...

- Snaphooks and carabiners used in fall protection or rescue operations must be auto-locking and withstand a 5,000 lb. load.
- Some hazards associated with snaphooks and carabiners include forced rollout, false connection and loading over a sharp edge.
- A captive eye or split pin will prevent a carabiner from cross gate loading.
- Lanyards used for fall arrest must not be longer than 6 feet.
- Lanyards should never be connected together (unless they are specifically designed to be used in this manner), or tied in knots.
- All lanyards used for fall arrest should incorporate a built in, or integral shock absorber.
- A shock absorber will reduce the forces of a fall to below 900 lbs. but in doing so, can extend up to 3.5 feet.
- You can never connect a snap hook to a carabiner.

Connectors include equipment that are used to couple or attach different components of a fall protection and/or rescue systems together. For example, a connector may be used to join the workers full body harness to an anchorage or anchorage connector. Some connectors used in fall protection and rescue operations include snaphooks, carabiners, lanyards, and shock absorbers.

Snaphooks

A snaphook is a connector with a hook-shaped body that has an opening for attachment to a fall protection or rescue component and a self-closing gate to retain the component within the opening. Snaphooks are commonly used in fall protection and come in a variety of shapes, sizes and models. Some snaphooks have integral swivels to prevent twisting of the system. Impact indicators are also incorporated into some snaphooks to indicate if the snaphook has been previously loaded. If the snaphook has been involved in a fall, it should be taken out of service.

Snaphooks are either automatic locking, or non-locking.

Auto-locking snaphooks are the only types that are to be used for fall protection. They have a self-closing, self-locking gate, which remains closed and locked until intentionally unlocked and opened. Although banned from use and sale, non-locking snaphooks are frequently found on work sites. They have gates that are self-closing, but cannot be locked.

CONNECTORS:

Connectors include lanyards, snap-hooks, carabiners, deceleration devices such as SRL's, ladder climbing systems, vertical & horizontal lifelines and rope grabs

Connecting assemblies shall have a minimum tensile strength of 5,000 lbs. (22 kN).



DBI-SALA
9502116
Standard snap hook
with 3/4" (19 mm) gate
opening



DBI-SALA
9502058
Alum. hook with a
2-1/4" gate opening



DBI-SALA
2109193
Flat steel rebar hook
with 2-1/2" (62.5 mm)
gate opening.

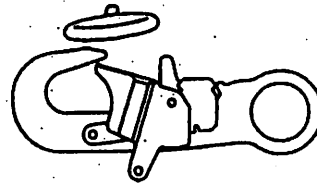
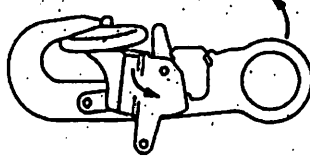
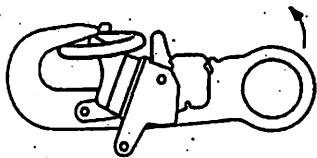
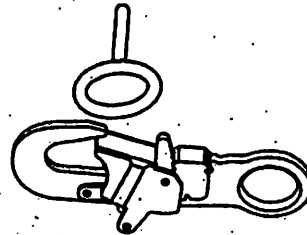
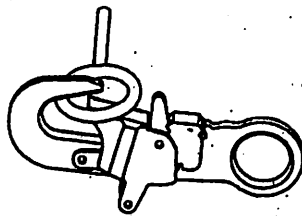
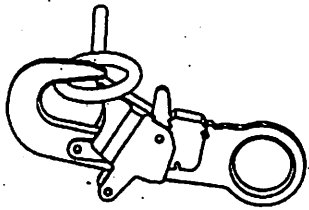
Note:

Non-locking snaphooks must not be used for fall protection because of the hazard of "Rollout". This is the accidental disengagement of a connector from whatever it is attached. It occurs if the gate is forced open with a minimal amount of pressure.

Snaphook Rollout

Although, auto locking snaphooks prevent rollout, they should still be coupled with much larger diameter hardware to prevent forced rollout. Forced rollout may occur when a snaphook is attached in a manner that causes the side of the gate to be pried open.

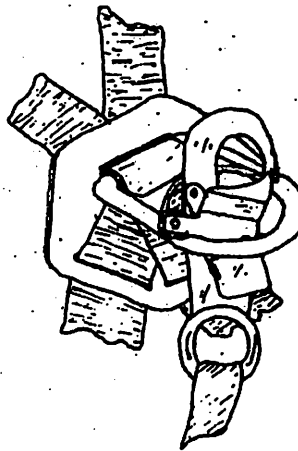
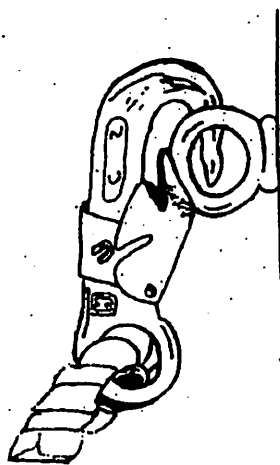
REMEMBER: You always want a smaller hook than the D-ring



COMPATIBLE CONNECTION

**NOT COMPATIBLE
Forced Rollout**

**NOT COMPATIBLE
False Connection**



All snaphooks chosen for fall protection or rescue operations should be simple to operate thus ensuring they will be used correctly. They should have user friendly, one handed operation even when wearing large gloves. A possible hazard that should be avoided is the false connection of a snaphook. This may occur when the user can not see the attachment of the snaphook with the other component (e.g. the attachment of a snaphook to a D-ring on the back of a harness).

To minimize the hazard of false connection a manufacturer can be requested to put an extension onto the dorsal D-ring of the harness, or by integrally connecting a lanyard or shock absorber to the harness. Regular buddy checks (having a fellow worker inspect all connections) will minimize this danger as well.

SECTION 3 - CONNECTORS (continued)

NOT COMPATIBLE CONNECTIONS

Snaphooks should not be attached together to connect two lanyards for additional length, because of the increased potential of forced rollout and free-fall. Users should also ensure that a snaphook does not rest over a sharp edge, which may load the snaphook incorrectly and cause it to fail during a fall. Please refer to Care and Maintenance section for proper inspection, servicing and storage of snaphooks

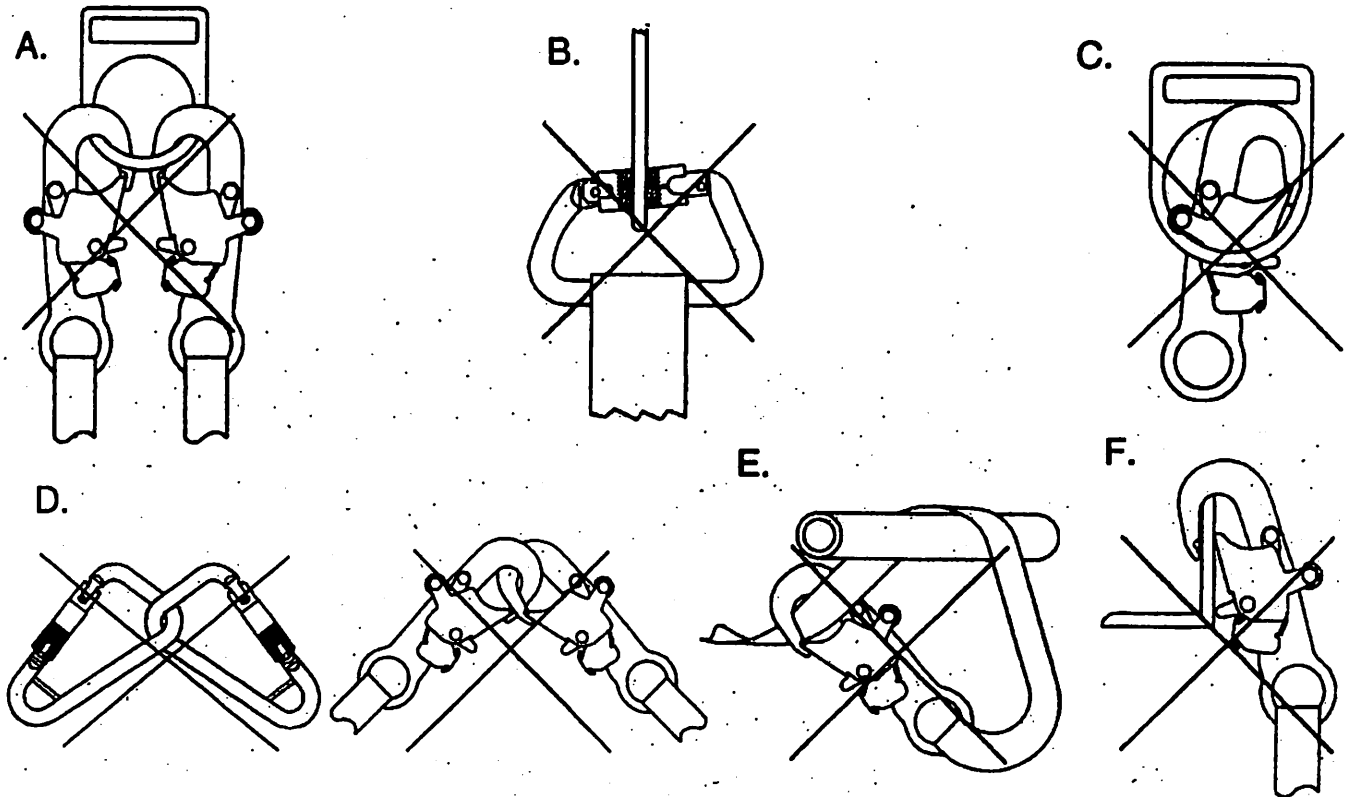


Figure 4 shows inappropriate connections. Snap hooks and carabiners should not be connected:

- A. To a D-ring to which another connector is attached.
- B. In a manner that would result in a load on the gate.
- C. In a false engagement, where features that protrude from the snap hook or carabiner catch on the anchor and without visual confirmation seems to be fully engaged to the anchor point.
- D. To each other.
- E. Directly to webbing or rope lanyard or tie-back (unless the manufacturer's instructions for both the lanyard and connector specifically allow such a connection).
- F. To any object which is shaped or dimensioned such that the snap hook or carabiner will not close and lock, or that roll-out could occur.

NOTE: Large throat opening snap hooks should not be connected to standard size D-rings (exception: DBI-SALA 3,600 lb. gate hook) or similar objects which will result in a load on the gate if the hook or D-ring twists or rotates. Large throat snap hooks are designed for use on fixed structural elements such as rebar or cross members that are not shaped in a way that can capture the gate of the hook.

INSPECTION

FREQUENCY:

- ✓ **Before each Use:** Inspect the lifeline as per the outline listed on the following pages.
- ✓ **Formal Inspection:** A formal inspection of the lifeline must be performed at least annually by a competent other than the user. The frequency of formal inspections should be based on conditions of use or exposure.
- ✓ **Recording:** Record the inspection results in the inspection and maintenance log, as detailed at the end of this module

WARNING: If this equipment has been subjected to fall arrest forces, remove from service and destroy.

IMPORTANT: Extreme working conditions (harsh environments, prolonged use, etc.) may require increasing the frequency of inspections.

INSPECTION STEPS LIFELINES:

Step 1

Inspect lifeline hardware (snap hooks, ferrules, thimbles, etc.). These items must not be damaged, broken, or distorted. These items must be free of sharp edges, burrs, cracks, worn parts, or corrosion. Hook gates must move freely and lock upon closing.

Step 2

Inspect the lifeline per the following:

SYNTHETIC ROPE: Inspect rope for concentrated wear. Material must be free of frayed strands, broken yarns, cuts, abrasions, burns, and discoloration. The rope must be free of knots, excessive soiling, paint build-up, and rust staining. Rope splices must be tight, with five full tucks, and thimbles must be held firmly by the splice. Check for chemical or heat damage; indicated by brown, discolored, or brittle areas. Check for ultraviolet damage; indicated by discoloration and splinters and slivers along the rope surface. All of the above factors are known to reduce rope strength. Damaged or questionable rope should be replaced.

WIRE ROPE: Inspect entire length of wire rope. Always wear protective gloves when inspecting wire rope. Inspect for broken wires by passing cable through gloved hands, flexing the rope every few inches to expose breaks. Broken wires can be removed by bending the wire back and forth parallel to the rope length. Do not pull broken wires out of the rope. Replace the wire rope if there are six or more randomly distributed broken wires in one lay; or three or more broken wires in one strand in

one lay. A "lay" of wire rope is the length of wire rope it takes for a strand (the larger group of wires) to complete one revolution along the rope. Replace the wire rope if there are broken wires within one inch of the swages at either end of the assembly. Wire rope should be free of corrosion.

Step 3

Inspect labels. All labels must be present and fully legible.

Step 4

Inspect each system component or subsystem according to manufacturer's instructions.

Step 5

Record the inspection date and results. If inspection reveals an unsafe or defective condition, remove equipment from service and destroy, or contact an authorized service center for repair.

MAINTENANCE, SERVICING, STORAGE

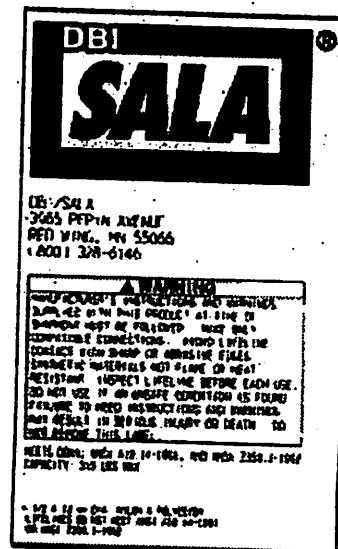
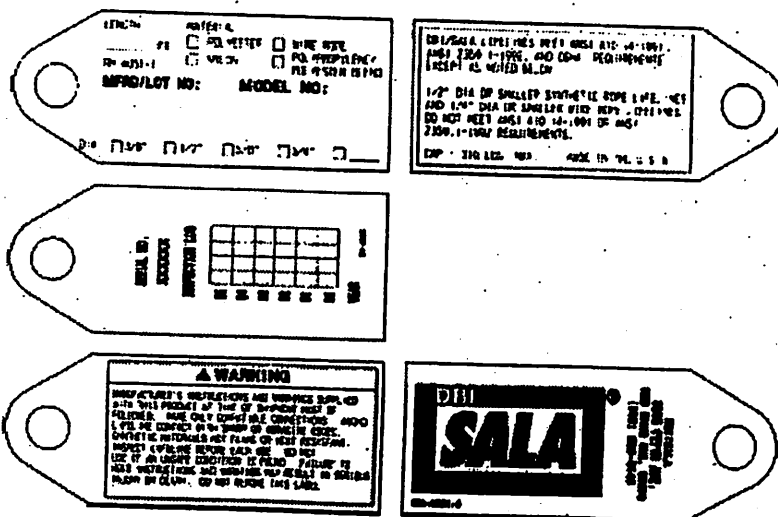
Clean the lifeline with water and a mild detergent. Wipe hardware dry with a clean, dry cloth and hang to air dry. Do not force dry with heat. An excessive build-up of dirt, paint, etc. may prevent the lifeline from working properly, and in severe cases, weaken the rope.

Additional maintenance and servicing procedures must be completed by and authorized service center.

Authorization must be in writing. Do not disassemble this equipment.

Store the lifeline in a cool, dry, clean environment, out of direct sunlight. Avoid areas where chemical vapors may be present. Thoroughly inspect the lifeline after extended storage.

A Selection of Lifeline Labels:



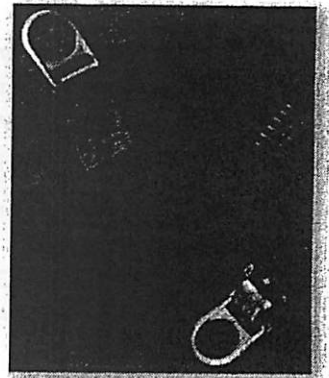
SECTION 4 - ANCHORAGES

Just the Facts...

- Choose an anchorage that will support 5,000 lbs.
- Anchorages used for fall restraint and positioning systems may be designed differently than fall arrest systems, but be careful.
- Locate your anchorage directly above your work area.
- Clearly identify anchorages used for fall protection only.
- Don't use water pipes, electrical conduits, light fixtures or guardrails.
- Protect yourself from a fall even while you are installing the anchorage system.
- Horizontal Lifeline anchorages are different than individual points used for fall arrest, consult an engineer.
- Inspect, inspect, inspect your anchorages and anchorage connectors.
- A "Certified" (or Engineered) anchor is one that can support 2 times the actual load and have a 2-to-1 safety factor.
- A "Non-Certified" (improvised) anchor must be able to support a 5,000 lb. load for fall arrest, 3,000 lbs. for work positioning, ascent/descent and 1,000 lbs. for restraint.

(Rescue)

Anchorages can be defined as **secure points** to attach a lifeline, lanyard, deceleration device, or any other fall arrest or rescue system. Some examples of typical anchorages include structural steel members, pre-cast concrete beams, and wooden trusses. In most situations, when setting up an anchorage system, an anchorage connector (or anchor) will be required. This piece of equipment is used as a safe means of attachment for the lanyard or lifeline to the anchorage. Some types include cable and synthetic slings, roof anchors, and beam clamps.



Anchorage Strength Requirements:

Fall Arrest Systems - The anchorage must be capable of supporting a load of 5,000 lb. (22kN) per worker attached to the anchorage or shall be designed, installed and used as part of a complete personal fall arrest system which maintains a safety factor of at least 2.

- Non-Certified Anchorages must be able to withstand a static load of 5,000 lbs. (22.2 kN)
- Certified Anchorages must withstand two-times the maximum arresting force.
- If two workers are required to attach to the same steel I-beam for fall arrest protection, then the I-beam should be capable of supporting a load of 10,000 lbs., 5,000 lbs. for each worker.

Fall (Travel) Restraint Systems - In a properly designed fall restraint system, the worker is not permitted to fall from the work platform, so the impact force is a result of the worker leaning or stumbling into the system. A non-certified fall restraint anchorage be capable of withstanding a static load of 1,000 lbs. (4.5 kN) or two-times the foreseeable force for certified anchorages.

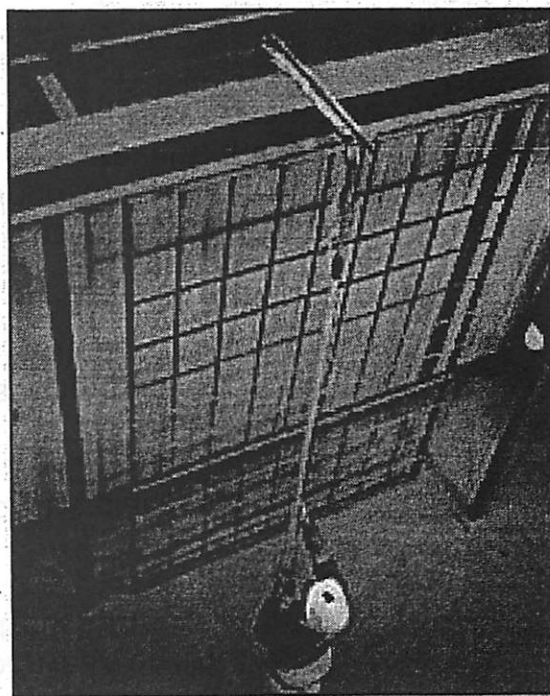
Work Positioning Systems - Work positioning systems should be backed up by a secondary fall arrest system where possible. However, when they are used alone (e.g. utility pole climbing) the system shall be rigged such that the worker cannot free fall more than 2 feet (0.9 m). In these cases the work positioning anchorage must be capable of supporting a minimum of 3000 lbs. (13.3 kN) for non-certified anchorages or two-times the foreseeable force for certified anchorages.

Rescue Systems - Anchorages for rescue systems must withstand a static load of 3,000 lbs. (13.3 kN) for non-certified anchorages or five-times the applied load for certified anchorages.

Important Considerations for Anchorages

There are a number of important points that should be considered when choosing or installing an anchorage or anchorage connector, they include:

- When possible, the anchorage should be located directly above the work area to minimize swing falls. A swing fall is a pendulum type motion created by the worker falling back toward an anchorage that is not directly over his/her head.
- The free fall distance should be minimized by locating the anchor system as high as possible. A common practice is to ensure that the anchorage is located at or above your shoulder.
- Do not connect anchorages to items like: electrical conduit, fluid carry pipes, antennas, guard-rails, catwalk grating or mesh, non-approved scaffolding.
- You can not connect a snaphook to two d-rings.
- When tie-off adaptors are used, the anchorages should be free from sharp edges, this would also include any edges that the tie-off adaptor may come in contact with during a fall. If this is not possible a wear pad must be used.
- All components of the anchorage system should be inspected prior to each use, as well as on a regular basis by a competent or qualified person.
- For most applications, an anchorage must be able to withstand 5000 lbs. in the direction that the force of the fall will be applied, and should be separate from the anchorage used for work positioning or supporting the workers weight.
- Anchorages must also be chosen for ease of use and safe access, ensuring that the worker is not exposed to a fall hazard while attempting to set up the anchor system. This can be accomplished by choosing a location for the anchorage beside a protected catwalk or by using a "First Man Up" system to install the anchorage connector easily and safely. Locating the anchorage for ease of rescue is also an important factor to consider.



INSPECTION STEPS FOR ROPE GRABS:

Step 1

Inspect action of locking roller; it should be free to travel the full length of the guide slots.

Step 2

Inspect the lanyard connection handle for freedom of motion. There should be no binding or sticking. Also inspect for wear on the nose of the handle where it contacts the roller. The lever must push the roller into the rope.

Step 3

Inspect handle spring. It should be in its correct place and undamaged.

Step 4

Inspect detent pin. The top button should spring back up when pushed down. The pin should easily slide through the rope grab body and hinge.

Step 5

The rope grab hinge must pivot freely and close completely. Check that the gravity lock on the hinge works freely. When the rope grab is held upside down, the gravity lock should drop down and prevent the hinge from fully closing. Inspect the hinge for signs of rope wear. There should be no dips or depressions worn into the rope channel.

Step 6

Inspect labels and markings. All labels and markings must be present and fully legible.

Step 7

Inspect each system component or subsystem per associated manufacturer's instructions.

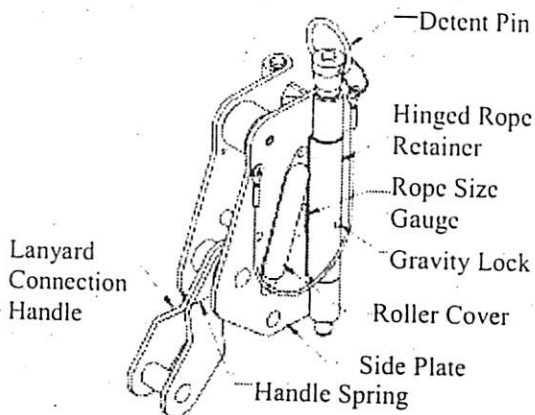
Step 8

Record the inspection date and results in the inspection log.

IMPORTANT: If inspection reveals a defective condition, remove unit from service immediately and destroy, or contact a factory authorized service center for repair

IMPORTANT: Do not attempt to alter, repair, or make substitutions to the rope grab or rope grab parts. Equipment found to be in defective condition must be removed from service. Repairs may only be performed by DBI-SALA or those authorized in writing to do so.

Rope Grabs



PURPOSE: DBI-SALA rope grab fall arresters are intended to be used as part of a personal fall arrest or restraint system when coupled to an appropriate lifeline. The rope grab will move up and down the lifeline, but in the event of a



fall, lock onto the lifeline to arrest the falling worker.

INSPECTION OF ROPE GRABS

FREQUENCY:

- ✓ **Before each Use:** Inspect the rope grab as per the outline listed below.
- ✓ **Formal Inspection:** A formal inspection of the rope grab must be performed at least annually by a competent other than the user. The frequency of formal inspections should be based on conditions of use or exposure.
- ✓ **Recording:** Record the inspection results in the inspection and maintenance log, as detailed at the end of this module.

IMPORTANT: If the rope grab has been subjected to fall arrest or impact forces, it must be immediately removed from service and destroyed.

IMPORTANT: Extreme working conditions (harsh environments, prolonged use, etc.) may require increasing the frequency of the inspections

PFAS Inspection Instructions.

THE 6 CHECKLISTS TO HELP STOP FALLS

This Tailgate Talk includes 6 checklists to help you demonstrate how to inspect and don PFAS. You can use one checklist per session in 6 sessions or hold one longer session. Ideally, each participant will have a harness and a lanyard or lifeline. If not, be sure to let each one see and feel exactly what is being inspected. The checklists were designed with leading roofing trainers and in consultation with J. Nigel Ellis, Ph.D., CSP, P.E., CPE. The checklists are:

- Inspection of Harness
- Harness Donning
- Inspection of Shock Absorbing Lanyard
- Inspection of Shock Pack Lanyard
- Inspection of Retractable Web Lifeline
- Inspection of Retractable Wire Lifeline

Multiple copies of this sign-in sheet can be printed for multiple sessions.

HOW TO USE THE TAILGATE TALK.

SESSION 1
Inspection of Harness.

SESSIONS 2-6
Harness Donning
Lanyard Inspections
Lifeline Inspection

Other safety issues or suggestions made by crew members:

Record of those attending:

Name (please print):

Signature:

Company:

1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____

Remarks: _____




Competent Person/Supervisor: _____

(signature)

	Trainee Names	Pass	Fail	Date
1				
2				
3				
4				
5				

Inspection of Harness

Trainee Number

		1	2	3	4	5
1. Prepare for Inspection 	a. Grab harness by D-ring.					
	b. Shake out harness and unwind twisted straps.					
	c. Lay out harness on table or bench for inspection, if possible.					
2. Fall Indicator 	a. Locate fall indicator, if present.					
	b. Examine for stress on tear out stitches or deployment of message tag or broken or stretched members.					
3. Webbing Material 	a. Grasp webbing with hands 6 to 8 inches apart.					
	b. Bend webbing in an inverted "U" to make damaged fibers or cuts easier to detect.					
	c. Look for holes, frayed edges, broken fibers, pulled stitches, cuts, burns, discolorations, shiny spots, stiffness, and chemical damage.					
	d. Follow procedure the entire length of the webbing, inspecting both sides of each strap.					

Inspection of Harness (Continued)

Trainee Number				
1	2	3	4	5

4. Web Stitching



- a. Check all stitch patterns on the harness.
- b. Make sure that no stitch pattern has more than 2 broken stitches. (Don't mistake broken stitches for start and end stitches.)
- c. Check for distortion in shape of the stitch pattern boxes. They should be square, not distorted.

5. Tongue Buckles

IF APPLICABLE



- a. Run fingers over buckles to check for distortion, cracks, breaks, rough or sharp edges, or corrosion.
- b. Check that buckle tongues are free of distortion in shape and motion.
- c. Check that buckle tongues overlap the buckle frame and move freely back and forth in their socket.
- d. Check rollers. Spin them on frames to check they turn freely.
- e. Bend and fold webbing of buckle attachments to check for unusual wear, frayed or cut fibers, or broken stitching.

6. Tongue Buckle Grommets

IF APPLICABLE



- a. Check for misshapen, elongated, cracked, corroded, or loose grommets.
- b. Check that no "non-manufacturer" holes are added to the buckle strap.
- c. Bend and fold webbing of grommetted belt to check for wear, frayed or cut fibers, or broken stitching. If any breaks in stitches or patterns, remove from service. Look for cuts or holes – 1/16-inch (thickness of a dime) removes harness from service.

Inspection of Harness (Continued)

7. Sliding Bar Buckles

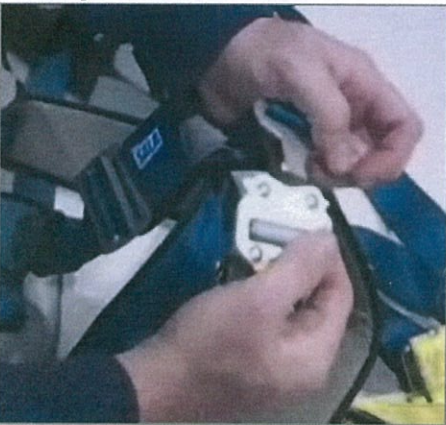


- a. Check buckle for distortion; outer bars and center bars must be in place, functioning, and straight.
- b. Run fingers over buckles to check for sharp edges, cracks, or corrosion. Special attention to corners and attachment points at the center bar.
- c. Check that springs operate. Must move freely and have contact.
- d. Pull webbing attachment through loop and check for unusual wear, frayed or cut fibers, or broken stitching.

Trainee Number				
1	2	3	4	5

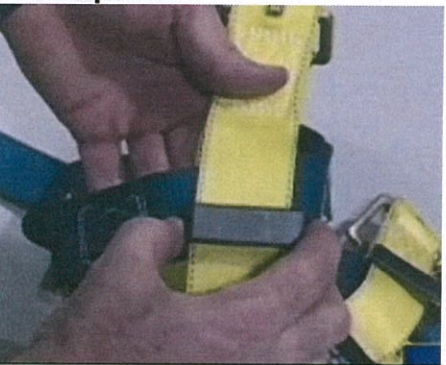
8. Bayonet Buckles

IF APPLICABLE



- a. Run fingers over buckles to check for distortion, cracks or corrosion.
- b. Make sure dual-tab (ear) release mechanisms are free of debris and engage properly. Look inside the mechanisms for dirt.
- c. Ensure release tabs of the buckles work freely and that click is heard when each buckle engages.
- d. Inspect buckle springs or locks to assure they allow webbing to move but will secure it when needed.

9. Keepers

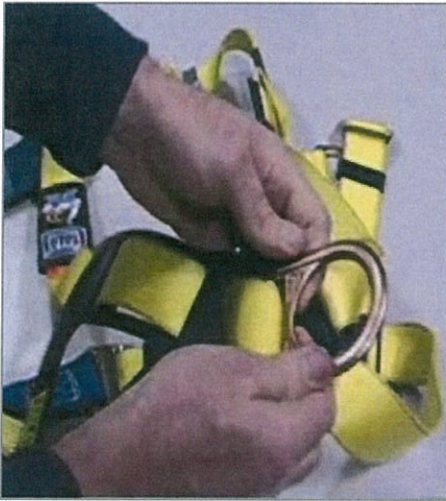


- a. Inspect all keepers to make sure they are not cracked, broken, or missing.
- b. Check that all keepers slide freely on webbing but stay in place where stopped.

Inspection of Harness (Continued)

Trainee Number				
1	2	3	4	5

10. D-Ring, O-Rings, Back Pads



- a. Run fingers around inside and outside of D-Ring or other O-rings. Check for distortion, cracks, breaks, rough or sharp edges, or corrosion.
- b. check the operation of the D-ring and D-ring spring (if applicable).
- c. Bend and fold webbing of D-ring or O-ring attachments to check for wear, frayed or cut fibers, or broken stitching. Check both sides. Check web for twists.
- d. Check back pads for cracks, excessive wear, or other signs of damage or weathering.
- e. Check area for foreign objects.

11. Labels



- a. Check that labels are present and readable.
- b. Check manufacturer date. If more than five years old or older than contractor's service life policy, do not use.
- c. Check that serial number is present and legible.

Notes



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	Trainee Names	Pass	Fail	Date
1				
2				
3				
4				
5				

Harness Donning

Trainee Number

1. Prepare



- a. Empty pockets, as necessary.
- b. Locate back (dorsal) D-ring and hold harness in position by D-ring.
- c. Lift up harness and hold by back (dorsal) D-ring.
- d. Shake it out so straps hang straight.
- e. Make sure buckles are open and straps are not twisted
- f. Make sure straps are not twisted – check under legs.
- g. Consider buddy system – especially to check twisted straps and help adjust dorsal D-ring in correct position.

1	2	3	4	5

2. Insert Arms



- a. Grasp shoulder strap and slip harness onto one arm. Dorsal D-ring will be located between shoulder blades on back.
- b. Make sure straps are not tangled and hang freely.
- c. Slip free arm into harness and position shoulder straps on top of shoulder.
- d. Straighten harness on body ready for buckling. Buddy can help.
- e. Chest strap with pass-through buckle is on front side and Dorsal D-ring is on back when worn properly. Adjust for comfort.

3. Connect Leg Straps



- a. Reach between legs and grasp a leg strap.
- b. Bring strap up between legs and connect. Make sure not twisted.
- c. Pull free end of the strap away from buckle to make a snug fit on each leg strap.
- d. Adjust keeper so free hanging webbing is no longer than 3 inches. Double back strap into keeper. Use 2 finger rule to verify proper fit.
- e. Make sure at least 3 inches of webbing extend beyond buckle connection.
- f. Repeat with next leg.
- g. Check position of buckles to make sure straps are set to same length.

Harness Donning (Continued)

4. Connect Chest Strap



- a. Connect the chest strap.
- b. Position chest strap approximately 6 inches down from top of shoulders toward sternum.*
- c. Snug the strap by adjusting web length.
- d. Pass all excess strap through loop keepers.

*Note: females should position chest strap above breast line and avoid all areas of the neck. Both males and females should secure long hair to avoid entrapment in straps moving during a fall incident.

5. Adjust Harness Fit



- a. Adjust shoulder straps to a snug fit by pulling excess strap through buckles on each side of harness.
- b. Center back (dorsal) D-ring between shoulder blades.
- c. Adjust leg straps to a snug fit.
- d. Adjust each shoulder strap by pulling or releasing the slack end so that the sub-pelvic strap is firmly in place under the buttocks.

6. Check Fit Details




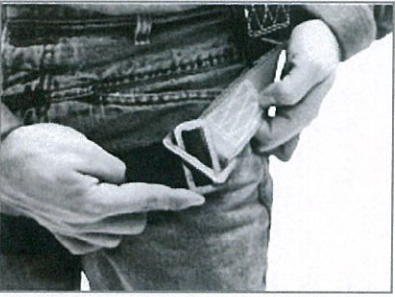
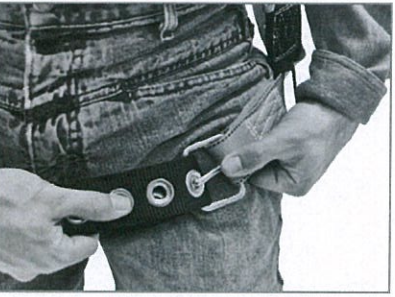

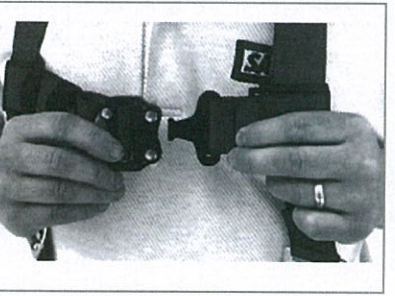
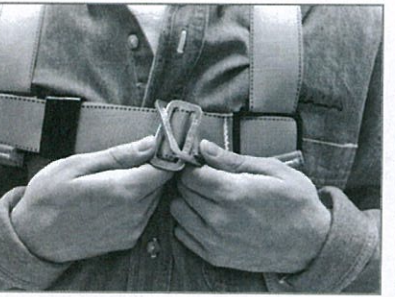
- a. Left/right sides of shoulder straps should be adjusted to same length.
- b. Chest strap centered on lower chest, 6 inches down from shoulder.*
- c. Back (dorsal) D-ring centered between shoulder blades.
- d. 3 inches of webbing extends past all buckles.
- e. Keepers are in use and no more than 3 inches of webbing hangs loose.
- f. Proper leg tension is a 2-finger thickness space between straps and legs.
- g. If not proper fit for comfort, adjust webbing and buckles.

Trainee Number				
1	2	3	4	5

Notes



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DETAILS: LEG STRAPS BAYONET, TONGUE AND MATING STYLE BUCKLES	NOTES	
	<p>Quick Connect Buckle: Insert the tab of the buckle into the receptor of the quick connect buckle until a click is heard.</p>	
	<p>Mating Buckle: Pass male buckle through female buckle and pull free end of webbing to tighten. Keep shirt and clothing out of buckle area</p>	
	<p>Tongue Buckle: Pass webbing through buckle and insert tongue through grommet. Check grommets same number each side.</p>	
	<p>Sliding Bar Buckle: Pass webbing under buckle and over roller and down between roller and frame.* Pull web end to tighten. Three inches of web must extend past buckle. * No other method of strap buckling is allowed; re-check with Buddy for correctness.</p>	
	<p>Bayonet Buckle: Attach chest strap by inserting the tab of the buckle into the receptor of the Bayonet or quick connect buckle until a click is heard. Note: To detach, press ears towards each other.</p>	
	<p>Mating Buckle: Pass male buckle through female buckle and pull free end of webbing to tighten. Adjust keeper to remove excess strap.</p>	

	Trainee Names	Pass	Fail	Date
1				
2				
3				
4				
5				

Inspection of Shock Absorbing Lanyard

Trainee Number

1	2	3	4	5

1. Impact Indicator



- a. **Locate Impact Indicator.** Observe if stressed. (It is located near a snap hook.)
- b. **Examine threads** to determine they are not broken. When broken, the webbing will also stretch out and reveal a warning that the lanyard has been impacted. This indicator may show when no other expansion of the webbing is seen and indicates lanyard should be removed from service.

2. Labels



- a. **Find, read lanyard label.** Tag must identify lanyard, model, manufacture date, limitations, other warnings.
- b. **If date of manufacture** is past adopted service life policy, remove from service.
- c. **If inspection tag is missing,** remove from service.
- d. **Check for out of service tag.**

3. Snap Hooks



- a. **Check snap hook gate.** Open, release SLOWLY. Repeat several times. Take extra time for large-opening hooks. If loose and if gate can pass nose, tag and reject.
- b. **Check lock.** Push gate in all directions without releasing lock (gate must not open). Gate must touch nose; no separation gap allowed.
- c. **Make sure snap hook gate capacity is labeled or stamped 3600 lbs.** per ANSI Z359.1-2007 standard. **REJECT** if Z359.1 1992 and R1999 labeled or Z359 (alone) with only 220 lbs. gates.
- d. **Check condition.** Run fingers over snap hook. Check for cracks, rough or sharp edges, rust, pits, corrosion, twists, bends, deformations, or distortions or elongation of hook, eye, or hinge, or any other abnormality.

Inspection of Shock Absorbing Lanyard (Continued)

4. Webbing and Stitching



- a. Run finger over all stitches. No broken stitches permitted.
- b. Pull webbing through hands, stretching it out while pulling hands over it and visually inspecting it.
- c. Feel for uneven, rough or hard spots. Look for frayed edges, broken fibers, pulled stitches, cuts, burns, shiny spots, discolorations, and chemical damage.
- d. Follow this procedure the entire length of the webbing, inspecting both sides of the lanyard.

Trainee Number				
1	2	3	4	5

Notes


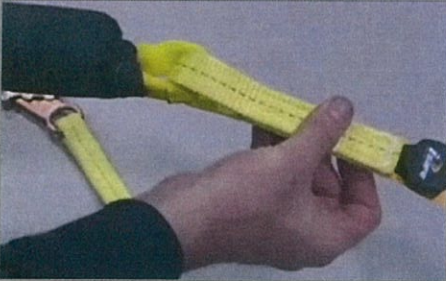



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	Trainee Names	Pass	Fail	Date
1				
2				
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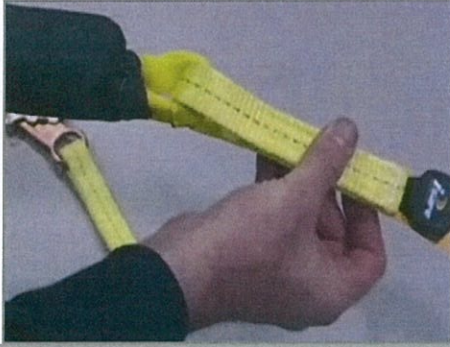
Inspection of Shock Pack Lanyard

Trainee Number

		1	2	3	4	5
1. Shock Pack Label  <p>a. Find and read lanyard label. Label must identify lanyard model, limitations, and other warnings. If label is missing or damaged remove lanyard from service. Marking must be compliant with ANSI Z359.1-2007 and Z359.12-2009.</p> <p>b. Check date. If date of manufacture indicates product is beyond service life policy of contractor, tag and remove from service.</p>						
2. Shock Pack  <p>a. Check stitching and pack to assure it has not been activated. Check cover for holes, damage etc.</p> <p>b. Check attachment of hook to shock absorber. Pull hard on hook link to confirm. Check inside attachment loop for dirt, debris, wear or damage.</p>						
3. Snap Hooks  <p>a. Check snap hook gate. Open, release SLOWLY. Repeat several times. Take extra time for large-opening hooks. If loose and if gate can pass nose, tag and reject.</p> <p>b. Check lock. Push gate in all directions without releasing lock (gate must not open). Gate must touch nose; no separation gap allowed.</p> <p>c. Make sure snap hook gate capacity is labeled or stamped 3600 lbs. per ANSI Z359.1-2007 standard. REJECT if Z359.1 1992 and R1999 labeled or Z359 (alone) with only 220 lbs. gates.</p> <p>d. Check condition. Run fingers over snap hook. Check for cracks, rough or sharp edges, rust, pits, corrosion, twists, bends, deformations, or distortions or elongation of hook, eye, or hinge, or any other abnormality.</p>						

Inspection of Shock Pack Lanyard (Continued)

4. Webbing and Stitching



- a. Run finger over all stitches. No broken stitches permitted.
- b. Grasp webbing with hands 6 inches to 8 inches apart.
- c. Bend webbing in an inverted 'U'. The resulting surface tension makes damaged fibers or cuts easier to detect discoloration, chemical damage.
- d. Look for frayed edges, broken fibers, pulled stitches, cuts, burns, chemical damage. Repeat for entire length.

Trainee Number				
1	2	3	4	5

Notes



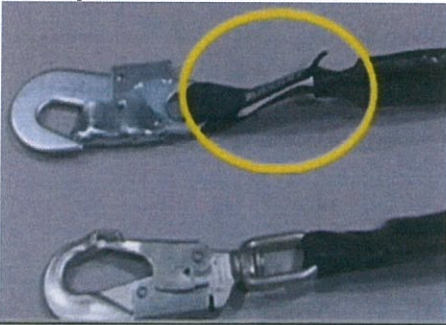
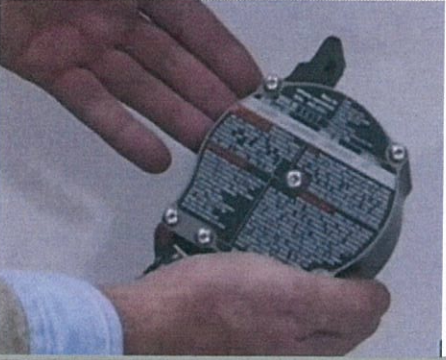

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	Trainee Names	Pass	Fail	Date
1				
2				
3				
4				
5				

Inspection of Retractable Web Lifeline

Trainee Number

		1	2	3	4	5
1. Impact Indicator						
	<p>a. Locate impact indicator on or near snap hook. Confirm Indicator warning is not be visible.</p>					
	<p>b. If indicator is not on snap hook, check webbing for stress-tab. Locate and examine. Reject if evidence of stress.</p>					
2. Case						
	<p>a. Inspect housing for damage. Check for cracks, missing bolts, screws.</p>					
	<p>b. Inspect swivel. Make sure it rotates smoothly.</p>					
	<p>c. Check labels. Make sure all labels are present and are fully legible. Confirm SRL is the proper one for situation.</p>					
3. Webbing and Stitching						
	<p>a. Run finger over all stitches. No broken stitches permitted.</p>					
	<p>b. Grasp webbing with hands 6 to 8 inches apart.</p>					
	<p>c. Bend webbing in an inverted 'U'. The resulting surface tension makes damaged fibers or cuts easier to detect.</p>					
	<p>d. Look for frayed edges, broken fibers, pulled stitches, cuts, burns and chemical damage. Repeat for entire length of webbing.</p>					

Inspection of Retractable Web Lifeline (Continued)

4. Lifeline



a. Pull lifeline slowly from case. Line should play out smoothly. Pull out full length of line and then allow it to recoil slowly.

b. Pull fast and hard on lifeline. Lifeline should lock up within 6 inches.

Trainee Number				
1	2	3	4	5

5. Snap Hooks



a. Check condition. Run fingers over snap hook. Check for cracks, rough, sharp edges, rust, pits, corrosion, twists, bends, deformations, or distortions or elongation of hook, eye, or hinge.

b. Check gate. Open and release. It should open without binding and close quickly – no hang up and no lateral movement.

c. Check lock. Push keeper without releasing lock (keeper should not open).

Notes






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	Trainee Names	Pass	Fail	Date
1				
2				
3				
4				
5				

Inspection of Retractable Wire Lifeline

Trainee Number

		1	2	3	4	5
1. Impact Indicator  <p>a. Check impact indicator on snap hook (or case). Swivel snap. Red area should not be visible.</p>						
2. Case  <p>a. Inspect housing for damage. Check for cracks, missing bolts, screws.</p> <p>b. Inspect swivel. Make sure it rotates smoothly.</p> <p>c. Check labels. Make sure all labels are present and are fully legible. Confirm SRL is the proper one for situation.</p>						
3. Wire Cable  <p>a. Review cable inspection log. Identify location of previously found broken wires and defects.</p> <p>b. Re-inspect cable. Wearing gloves, use a cotton cloth to check entire length of the cable for broken, worn, or abraded or shiny wires and kinks, bends, bulges, crushing, corrosion, pitting, rust, lack of lubrication, or bird caging. (See illustrations on last page.)</p> <p>c. Take appropriate action. Report problems to supervisor. Do not use.</p>						

Inspection of Retractable Wire Lifeline (Continued)

4. Lifeline



a. Pull lifeline slowly from case. Line should play out smoothly. Pull out full length of line and then allow it to recoil slowly.

b. Pull fast and hard on lifeline. Lifeline should lock up within 6 inches.

Trainee Number				
1	2	3	4	5

5. Snap Hooks



a. Check condition. Run fingers over snap hook. Check for cracks, rough, sharp edges, rust, pits, corrosion, twists, bends, deformations, or distortions or elongation of hook, eye, or hinge.

b. Check gate. Open and release. It should open without binding and close quickly – no hang up and no lateral movement.

c. Check lock. Push keeper without releasing lock (keeper should not open).

6. Ferules



THIS INSPECTION ACTION PERFORMED BY COMPETENT PERSON.

a. Pull off stopper and check ferules for damage. Check the ferules for cracks, corrosion, or other damage.

b. Check cable near ferules. Remove SRL from service if any broken wires are found within 1 inch of the closest ferule.

c. Manufacturer's ferules only.

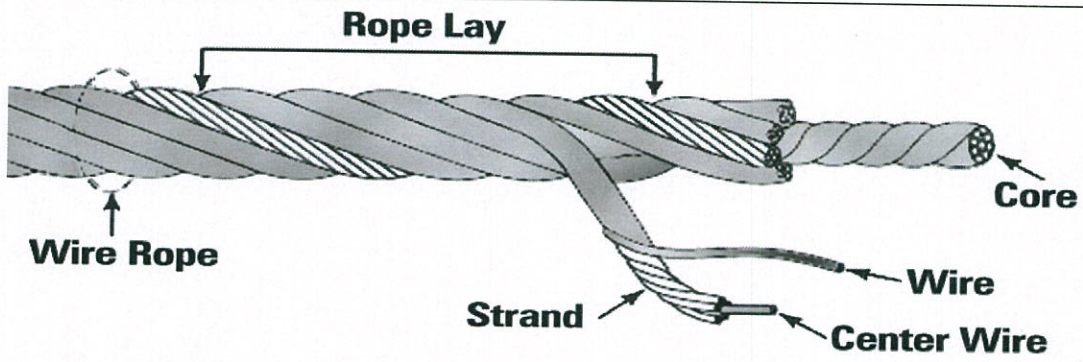
Notes



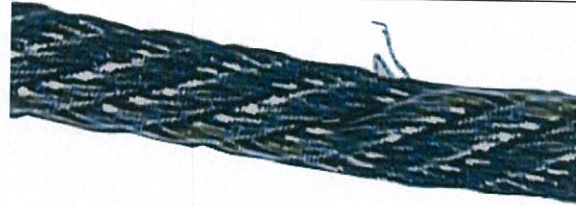
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Wire Rope Problems



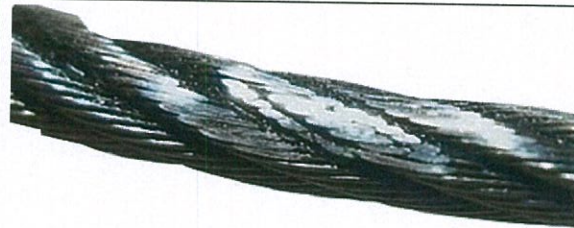
Rust or Corrosion



Broken Wires



Abrasions



Flattened Wires



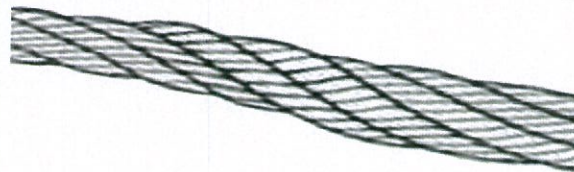
Closed Kinks



Open Kinks



Crushed or Flattened



Reduction or Bulges



Bends



Bird Caging

Tool Box Talk



Hazard Communication 2012 Globally Harmonized System (GHS)



What's all this about Hazard Communication and GHS (the new OSHA Hazard Communication rule)?

On March 26, 2012, OSHA's final revised Hazard Communication Standard (HCS) was published in the Federal Register. The HCS is now aligned with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). This will improve the quality and consistency of chemical hazard information making it safer for workers by providing easily understandable information they can easily reference and use. The new rule also harmonized U.S. hazard communication rules with those used by the majority of the rest of the world.

What is the Globally Harmonized System?

The Globally Harmonized System (GHS) is an international approach to hazard communication, providing agreed criteria for the classification of chemical hazards, and a standardized approach to label elements and safety data sheets. The GHS provides harmonized classification criteria for health, physical, and environmental hazards of chemicals. OSHA has not included the environmental hazards in the HCS.

How will chemical hazard evaluation change under the revised Hazard Communication Standard?

The revised HCS has specific criteria for each health and physical hazard, along with detailed instruction for hazard evaluation and determination for classifying chemical substances and mixtures. It also established both hazard classes and hazard categories. Chemical manufacturers and importers are responsible for classifying the hazards of the chemicals they manufacture or import.

What are the major changes I need to be aware of?

The three major areas of change are in hazard classification, labels, and safety data sheets (SDS).

- **Hazard classification:** The definitions of hazard have been changed to provide specific criteria for classification of health and physical hazards, as well as classification of mixtures. These specific criteria will help to ensure that evaluations of hazardous effects are consistent across manufacturers, and that labels and safety data sheets are more accurate as a result.
- **Labels:** Chemical manufacturers and importers will be required to provide a label that includes a harmonized signal word, pictogram, and hazard statement for each hazard class and category. Precautionary statements must also be provided.
- **Safety Data Sheets:** SDSs will now have a specified 16-section format. These SDSs will replace the current Material Safety Data Sheets (MSDS).

When will all this happen?

The changes will happen over the next 2 years. The new standard contains four (4) phase in periods. The periods are:

- **December 1, 2013** — Train employees on the new label elements and safety data sheet (SDS) format.
- **June 1, 2015** — Compliance with all modified provisions of the final rule, except:
- **December 1, 2015** — Distributors shall not ship containers of hazardous materials labeled by the chemical manufacturer or importer unless it carries the appropriate HCS label.
- **June 1, 2016** — Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards.

Tool Box Talk

During the transition period, employers may comply with the existing standard, the revised standard, or both.

Why do we have to take the training now?

Employers are required to train employees before the other phase in periods because some manufactures, importers, and distributors may start shipping chemicals with the new label and SDS now.

LABELING

What are the label requirements?

Labels, as defined in the HCS, are an appropriate group of written, printed or graphic informational elements concerning a hazardous chemical that are affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging.

To develop labels under the revised HCS, manufacturers, importers and distributors must first identify and classify the chemical hazard(s).

What is the required information (elements) on the new label?

The HCS now requires the following information/elements on labels of hazardous chemicals:










- **Name, Address and Telephone Number** of the chemical manufacturer, importer or other responsible party.
- **Product Identifier** is how the hazardous chemical is identified. This can be (but is not limited to) the chemical name, code number or batch number. The manufacturer, importer or distributor can decide the appropriate product identifier. The same product identifier must be both on the label and in section 1 of the SDS.
- **Signal Words** are used to indicate the relative level of severity of the hazard and alert the reader to a potential hazard on the label. There are only two words used as signal words, “Danger” and “Warning.” Within a specific hazard class, “Danger” is used for the more severe hazards and “Warning” is used for the less severe hazards. There will only be one signal word on the label no matter how many hazards a chemical may have. If one of the hazards warrants a “Danger” signal word and another warrants the signal word “Warning,” then only “Danger” should appear on the label.
- **Hazard Statements** describe the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard. For example: “Causes damage to kidneys through prolonged or repeated exposure when absorbed through the skin.” All of the applicable hazard statements must appear on the label. Hazard statements may be combined where appropriate to reduce redundancies and improve readability. The hazard statements are specific to the hazard classification categories, and chemical users should always see the same statement for the same hazards no matter what the chemical is or who produces it.
- **Precautionary Statements** describe recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to the hazardous chemical or improper storage or handling. There are four types of precautionary statements: prevention (to minimize exposure); response (in case of accidental spillage or exposure emergency response, and first-aid); storage; and disposal. For example, a chemical presenting a specific target organ toxicity (repeated exposure) hazard would include the following on the label: “Do not breathe dust/fume/gas/mist/ vapors/spray. Get medical advice/attention if you feel unwell. Where a chemical is classified for a number of hazards and the precautionary statements are similar, the most stringent statements must be included on the label.

Tool Box Talk

- Pictograms** are graphic symbols used to communicate specific information about the hazards of a chemical. On hazardous chemicals being shipped or transported from a manufacturer, importer or distributor, the required pictograms consist of a red square frame set at a point with a black hazard symbol on a white background, sufficiently wide to be clearly visible. A square red frame set at a point without a hazard symbol is not a pictogram and is not permitted on the label. The pictograms OSHA has adopted improve worker safety and health, conform with the GHS, and are used worldwide.

While the GHS uses a total of nine pictograms, OSHA will only enforce the use of eight. The environmental pictogram is not mandatory but may be used to provide additional information. Workers may see the ninth symbol on a label because label preparers may choose to add the environment pictogram as supplementary information. Figure 1 shows the symbol for each pictogram, the written name for each pictogram, and the hazards associated with each of the pictograms. Most of the symbols are already used for transportation and many chemical users may be familiar with them.

Figure 1
Pictograms and Hazards

<p>Health Hazard</p>  <ul style="list-style-type: none"> • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity 	<p>Flame</p>  <ul style="list-style-type: none"> • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides 	<p>Exclamation Mark</p>  <ul style="list-style-type: none"> • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
<p>Gas Cylinder</p>  <ul style="list-style-type: none"> • Gases Under Pressure 	<p>Corrosion</p>  <ul style="list-style-type: none"> • Skin Corrosion/ Burns • Eye Damage • Corrosive to Metals 	<p>Exploding Bomb</p>  <ul style="list-style-type: none"> • Explosives • Self-Reactives • Organic Peroxides
<p>Flame Over Circle</p>  <ul style="list-style-type: none"> • Oxidizers 	<p>Environment (Non-Mandatory)</p>  <ul style="list-style-type: none"> • Aquatic Toxicity 	<p>Skull and Crossbones</p>  <ul style="list-style-type: none"> • Acute Toxicity (fatal or toxic)

Tool Box Talk

- **Supplementary Information.** The label producer may provide additional instructions or information that it deems helpful. It may also list any hazards not otherwise classified under this portion of the label. This section must also identify the percentage of ingredient(s) of unknown acute toxicity when it is present in a concentration of $\geq 1\%$ (and the classification is not based on testing the mixture as a whole). If an employer decides to include additional information regarding the chemical that is above and beyond what the standard requires, it may list this information under what is considered “supplementary information.”

An example of an item that may be considered supplementary is the personal protective equipment (PPE) pictogram indicating what workers handling the chemical may need to wear to protect themselves. For example, the Hazardous Materials Information System (HMIS) pictogram of a person wearing goggles may be listed.

Other supplementary information may include directions of use, expiration date, or fill date, all of which may provide additional information specific to the process in which the chemical is used.

What will the new label look like?

The following example below (figure 2) demonstrates how a manufacturer or importer may display the appropriate information on the label. As mentioned earlier, once the manufacturer determines the hazard classification(s) of the chemical it would determine the required pictograms, signal words, hazard statements, and precautionary statements. The final step is to put the information on the label.

GHS Label Sample
Figure 2

The Basic Parts of A GHS-Compliant Label

1 → **n-Propyl Alcohol**
UN No. 1274
CAS No. 71-23-8

2 → **DANGER**

3 → Highly flammable liquid and vapor. Causes serious eye damage.
May cause drowsiness and dizziness.

4 → Keep away from heat/sparks/open flames/hot surfaces. No smoking. Avoid breathing fumes/mist/vapours/spray. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present. Continue rinsing.

Fill Weight: 18.65 lbs. Lot Number: B56754434
Gross Weight: 20 lbs. Fill Date: 6/21/2013
Expiration Date: 6/21/2020

See SDS for further information.

5 → Acme Chemical Company • 711 Roadrunner St. • Chicago, IL 60601 USA • www.acmechem.com • 123-444-5567

6 →

1. **Product Identifier** - Should match the product identifier on the Safety Data Sheet.
2. **Signal Word** - Either use “Danger” (severe) or “Warning” (less severe)
3. **Hazard Statements** - A phrase assigned to a hazard class that describes the nature of the product’s hazards
4. **Precautionary Statements** - Describes recommended measures to minimize or prevent adverse effects resulting from exposure.
5. **Supplier Identification** - The name, address and telephone number of the manufacturer or supplier.
6. **Pictograms** - Graphical symbols intended to convey specific hazard information visually.

Sample label courtesy of Weber Packaging Solutions • www.weberpackaging.com

Tool Box Talk

Will in-house (secondary container) labeling system alternatives be permitted?

Yes. Employers may choose to label workplace containers either with the same label that would be on shipped containers for the chemical under the revised rule, or with label alternatives that meet the requirements for the standard. Alternative labeling systems such as the National Fire Protection Association (NFPA) 704 Hazard Rating and the Hazardous Material Information System (HMIS) are permitted for workplace containers; however, the information supplied must be consistent with the revised HCS.

For example, hazard classifications must be revised as necessary to conform to the final rule, and the other information provided must be revised accordingly to ensure the appropriate message is conveyed. Moreover, since these alternative labels would, at a minimum, only provide the product identifier and "general" information regarding the hazards of the chemicals, the employer must also make "specific" information regarding the physical and health hazards of the chemical immediately available to employees through other means under the hazard communication program.

Do GHS Pictograms replace the DOT diamond shape labels?

It is important to note that the OSHA pictograms do not replace the diamond-shaped labels that the U.S. Department of Transportation (DOT) requires for the transport of chemicals, including chemical drums, chemical totes, tanks or other containers. Those labels must be on the external part of a shipped container and must meet the DOT requirements set forth in 49 CFR 172, Subpart E.

SAFETY DATA SHEETS (SDS)

Why the change from a Material Safety Data Sheet (MSDS) to a Safety Data Sheet?

The Hazard Communication Standard (HCS) revised in 2012, requires that the chemical manufacturer, distributor, or importer provide Safety Data Sheets (SDSs) (formerly MSDSs or Material Safety Data Sheets) for each hazardous chemical to downstream users to communicate information on these hazards.

What is the difference between a SDS and a MSDS?

The information contained in the SDS is largely the same as the MSDS, except now the SDSs are required to be presented in a consistent user-friendly, 16-section format.

What information does the SDS contain?

The SDS includes information such as the properties of each chemical; the physical, health, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical. The information contained in the SDS must be in English (although it may be in other languages as well). In addition, OSHA requires that SDS preparers provide specific minimum information as detailed in the new standard.

What information is contained in each of the 16 sections?

Sections 1 through 8 contain general information about the chemical, identification, hazards, composition, safe handling practices, and emergency control measures (e.g., firefighting). This information should be helpful to those that need to get the information quickly.

Sections 9 through 11 and 16 contain other technical and scientific information, such as physical and chemical properties, stability and reactivity information, toxicological information, exposure control information, and other information including the date of preparation or last revision. The SDS must also state that no applicable information was found when the preparer does not find relevant information for any required element.

The SDS must also contain Sections 12 through 15, to be consistent with the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS), but OSHA will not enforce the content of these sections because they concern matters handled by other agencies.

Tool Box Talk

A description of all 16 sections of the SDS, along with their contents, is presented below:

Section 1 – Identification

This section identifies the chemical on the SDS as well as the recommended uses. It also provides the essential contact information of the supplier. The required information consists of:

- Product identifier used on the label and any other common names or synonyms by which the substance is known.
- Name, address, phone number of the manufacturer, importer, or other responsible party, and emergency phone number.
- Recommended use of the chemical (e.g., a brief description of what it actually does, such as flame retardant) and any restrictions on use (including recommendations given by the supplier).

Section 2 – Hazard(s) Identification

This section identifies the hazards of the chemical presented on the SDS and the appropriate warning information associated with those hazards. The required information consists of:

- The hazard classification of the chemical (e.g., flammable liquid, category1).
- Signal word.
- Hazard statement(s).
- Pictograms (the pictograms or hazard symbols may be presented as graphical reproductions of the symbols in black and white or be a description of the name of the symbol (e.g., skull and crossbones, flame).
- Precautionary statement(s).
- Description of any hazards not otherwise classified.
- For a mixture that contains an ingredient(s) with unknown toxicity, a statement describing how much (percentage) of the mixture consists of ingredient(s) with unknown acute toxicity. Please note that this is a total percentage of the mixture and not tied to the individual ingredient(s).

Section 3 – Composition/Information of Ingredients

This section identifies the ingredient(s) contained in the product indicated on the SDS, including impurities and stabilizing additives. This section includes information on substances, mixtures, and all chemicals where a trade secret is claimed. The required information consists of:

Substances

- Chemical name.
- Common name and synonyms.
- Chemical Abstracts Service (CAS) number and other unique identifiers.
- Impurities and stabilizing additives, which are themselves classified and which contribute to the classification of the chemical.

Mixtures

- Same information required for substances.
- The chemical name and concentration (i.e., exact percentage) of all ingredients which are classified as health hazards and are:
 - Present above their cut-off/concentration limits or
 - Present a health risk below the cut-off/concentration limits.
- The concentration (exact percentages) of each ingredient must be specified except concentration ranges may be used in the following situations:
 - A trade secret claim is made,
 - There is batch-to-batch variation, or
 - The SDS is used for a group of substantially similar mixtures.

Tool Box Talk

Chemicals where a trade secret is claimed

- A statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

Section 4 – First Aid Measures

This section describes the initial care that should be given by untrained responders to an individual who has been exposed to the chemical. The required information consists of:

- Necessary first-aid instructions by relevant routes of exposure (inhalation, skin and eye contact, and ingestion).
- Description of the most important symptoms or effects, and any symptoms that are acute or delayed.
- Recommendations for immediate medical care and special treatment needed, when necessary.

Section 5 – Firefighting Measures

This section provides recommendations for fighting a fire caused by the chemical. The required information consists of:

- Recommendations of suitable extinguishing equipment, and information about extinguishing equipment that is not appropriate for a particular situation.
- Advice on specific hazards that develop from the chemical during the fire, such as any hazardous combustion products created when the chemical burns.
- Recommendations on special protective equipment or precautions for firefighters.

Section 6 – Accidental Release Measures

This section provides recommendations on the appropriate response to spills, leaks, or releases, including containment and cleanup practices to prevent or minimize exposure to people, properties, or the environment. It may also include recommendations distinguishing between responses for large and small spills where the spill volume has a significant impact on the hazard. The required information may consist of recommendations for:

- Use of personal precautions (such as removal of ignition sources or providing sufficient ventilation) and protective equipment to prevent the contamination of skin, eyes, and clothing.
- Emergency procedures, including instructions for evacuations, consulting experts when needed, and appropriate protective clothing.
- Methods and materials used for containment (e.g., covering the drains and capping procedures).
- Cleanup procedures (e.g., appropriate techniques for neutralization, decontamination, cleaning or vacuuming; adsorbent materials; and/or equipment required for containment/clean up)

Section 7- Handling & Storage

This section provides guidance on the safe handling practices and conditions for safe storage of chemicals. The required information consists of:

- Precautions for safe handling, including recommendations for handling incompatible chemicals, minimizing the release of the chemical into the environment, and providing advice on general hygiene practices (e.g., eating, drinking, and smoking in work areas is prohibited).
- Recommendations on the conditions for safe storage, including any incompatibilities. Provide advice on specific storage requirements (e.g., ventilation requirements)

Section 8 – Exposure Controls/Personal Protection

This section indicates the exposure limits, engineering controls, and personal protective measures that can be used to minimize worker exposure. The required information consists of:

- OSHA Permissible Exposure Limits (PELs), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.
- Appropriate engineering controls (e.g., use local exhaust ventilation, or use only in an enclosed system).

Tool Box Talk

- Recommendations for personal protective measures to prevent illness or injury from exposure to chemicals, such as personal protective equipment (PPE) (e.g., appropriate types of eye, face, skin or respiratory protection needed based on hazards and potential exposure).
- Any special requirements for PPE, protective clothing or respirators (e.g., type of glove material, such as PVC or nitrile rubber gloves; and breakthrough time of the glove material).

Section 9 – Physical & Chemical Properties

This section identifies physical and chemical properties associated with the substance or mixture. Information consists of:

- Appearance (physical state, color, etc.)
- Upper/lower flammability or explosive limits
- Odor information
- pH
- Melting point/freezing point
- Solubility
- Initial boiling point and boiling range
- Flash point
- Evaporation rate
- Flammability (solid, gas)
- Upper/lower flammability or explosive limit
- Vapor pressure & density
- Auto-ignition temperature
- Decomposition temperature
- Viscosity
- Other information

The SDS may not contain every item on the above list because information may not be relevant or is not available. When this occurs, a notation to that effect must be made for that chemical property. Manufacturers may also add other relevant properties, such as the dust deflagration index (Kst) for combustible dust, used to evaluate a dust's explosive potential

Section 10 – Stability/Reactivity

This section describes the reactivity hazards of the chemical and the chemical stability information. This section is broken into three parts: reactivity, chemical stability, and other. The required information consists of:

Reactivity

- Description of the specific test data for the chemical(s). This data can be for a class or family of the chemical if such data adequately represent the anticipated hazard of the chemical(s), where available.

Chemical Stability

- Indication of whether the chemical is stable or unstable under normal ambient temperature and conditions while in storage and being handled.
- Description of any stabilizers that may be needed to maintain chemical stability.
- Indication of any safety issues that may arise should the product change in physical appearance.

Other

- Indication of the possibility of hazardous reactions, including a statement whether the chemical will react or polymerize, which could release excess pressure or heat, or create other hazardous conditions. Also, a description of the conditions under which hazardous reactions may occur.
- List of all conditions that should be avoided (e.g., static discharge, shock, vibrations, or environmental conditions that may lead to hazardous conditions).

Tool Box Talk

- List of all classes of incompatible materials (e.g., classes of chemicals or specific substances) with which the chemical could react to produce a hazardous situation.
- List of any known or anticipated hazardous decomposition products that could be produced because of use, storage, or heating. (Hazardous combustion products should also be included in Section 5 (Fire-Fighting Measures) of the SDS.)

Section 11 - Toxicological Information

This section identifies toxicological and health effects information or indicates that such data are not available. The required information consists of:

- Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact). The SDS should indicate if the information is unknown.
- Description of the delayed, immediate, or chronic effects from short- and long-term exposure.
- The numerical measures of toxicity (e.g., acute toxicity estimates such as the LD50 (median lethal dose)) - the estimated amount [of a substance] expected to kill 50% of test animals in a single dose.
- Description of the symptoms. This description includes the symptoms associated with exposure to the chemical including symptoms from the lowest to the most severe exposure.
- Indication of whether the chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions) or found to be a potential carcinogen by OSHA

Section 12 , 13, 14, & 15

These sections contain ecological, disposal, transportation, and other information not regulated by OSHA.

Section 16 – Other Information

This section indicates when the SDS was prepared or when the last known revision was made. The SDS may also state where the changes have been made to the previous version. You may wish to contact the supplier for an explanation of the changes. Other useful information also may be included here.

What if I have questions?

If you have any questions on the new Hazard Communication Standard please contact your supervisor or safety representative.

[END]

Gove Roofing COVID-19 Corporate Safety Plan

Overview:

Grove Roofing, Inc. has identified critical actions to help reduce the potential spread of COVID-19. This project will implement the following standards.

Designated Representative

- The designated representative for this project is: **John Embow**
- The designated representative is responsible for:
 - Administering COVID-19 Safety Plan.
 - Screening employees for potential COVID-19 exposure (see **Jobsite / Office Best Practices**).
 - Evaluating the effectiveness of the COVID-19 Safety Plan through jobsite observations. The evaluation findings will be discussed with Department staff daily.
 - Communicating potential noncompliance of the COVID-19 Safety Plan to project stakeholders and/or equivalent designated representative(s).
 - Receiving and promptly addressing potential noncompliance of the COVID-19 Safety Plan.

Personal Responsibilities

- It is critical that employees **NOT** report to work while they are experiencing illness symptoms such as fever, cough, or shortness of breath, chills, muscle pain, sore throat, recent loss of taste or smell
 - Employees should seek medical attention if they have or develop symptoms.
- Employees developing **emergency warning signs** for COVID-19 should get **medical attention immediately**.
 - Emergency warning signs include: Trouble breathing, persistent pain or pressure in the chest, new confusion or inability to arouse, bluish lips or face. This list is not all inclusive.
 - Please consult your medical provider for any other symptoms that are severe or concerning.
- To prevent catching or spreading COVID-19, follow good hygiene practices.
 - Wash / clean hands frequently.
 - Hand hygiene includes cleaning hands with soap and water or with an alcohol-based hand rub.
 - Cover your nose and mouth with a flexed elbow or paper tissue when coughing or sneezing. Immediately dispose of the tissue and perform hand hygiene.
 - Refrain from touching your mouth and nose.
- All employees are responsible to identify and report noncompliance with the COVID-19 Safety Plan to their designated representative.

Social Distancing

- Employees are expected to refrain from close contact with other individuals on the job site.
- In person group meetings of 10 or more people will not be organized.
- Meetings should be held via online, telephone or outdoors (maintain 6-foot distance).
- Visits to project field offices or trailers will be for essential functions only.

- Avoid using other workers' phones, desks, pen/pencils, or other work tools and equipment when possible.
- Employees are to refrain from physical contact such as hand-shaking and other contact greetings.

Jobsite / Office Practices

- Screening Questions: Designated Representatives should ask the following questions to their designated employees prior to entering the workplace.
 - Have you, or anyone in your family or anyone you have been in close contact (within 6 feet) with, been in contact with a person that has tested positive for COVID-19?
 - Have you been medically directed to self-quarantine due to possible exposure to COVID-19?
 - Are you having trouble breathing or have you had flu-like symptoms within the past 48 hours, including: fever (greater than 100.4 F), cough, or shortness of breath, chills, muscle pain, sore throat, recent loss of taste or smell?

If they answer "yes" to any, they should be asked to leave the workplace immediately. Anyone asked to leave should not return to work until 72 hours after they are free from a fever or signs of a fever without the use of fever-reducing medication.

- Employees shall wear appropriate PPE on the job site as required and shall not share personal PPE with another employee.
- Fresh air ventilation is encouraged in enclosed areas such as vehicles, equipment, offices, and trailers. This can be achieved by opening windows or with fans.
- Project Site Cleaning Protocol: While working in a potential COVID-19 environment, it is important to reduce the risk of potential exposures by keeping all work vehicles, equipment and tools clean.
- The following cleaning and disinfection practices will be followed:
 - Support respiratory etiquette and hand hygiene for employees, customers, and worksite visitors:
 - Provide soap and water in the workplace. If soap and water are not readily available, use alcohol-based hand sanitizer that is at least 60% alcohol.
 - Discourage handshaking.
 - Place posters that encourage hand hygiene to help stop the spread in workplace areas where they are likely to be seen.
- Perform routine environmental cleaning and disinfection:
 - Routinely clean and disinfect all frequently touched surfaces in the workplace, such as workstations, keyboards, telephones, handrails, and doorknobs.
 - If frequently touched surfaces are dirty, they should be cleaned using a detergent or soap and water prior to disinfection.
 - For disinfection, most common EPA-registered household disinfectants should be effective.
 - Discourage workers from using other workers' phones or other work tools and equipment, when possible. If necessary, clean and disinfect them before and after use.
- Perform enhanced cleaning and disinfection after persons suspected/confirmed to have COVID-19 have been in the facility:
 - If a sick employee is suspected or confirmed to have COVID-19, follow the [CDC cleaning and disinfection recommendations](#).

- Signage: A "COVID-19 Safety Plan in effect" sign will be installed at the project entrance and reasonable locations on the project site.

Managing Sick Employees

- Employees who appear to have acute respiratory illness symptoms (i.e. cough, shortness of breath, chills, muscle pain, sore throat, recent loss of taste or smell) upon arrival to work or become sick during the day will be isolated from other employees and should seek medical attention and / or be sent home immediately.
- If employee is diagnosed with COVID-19 or shows symptoms of COVID-19, the employee should consult the employee's primary care provider and the employer before returning to work.
- For any employees who are higher risk for serious illness from COVID-19 because of age or because of a serious long-term health problem, it is important for them to take actions to reduce the risk of getting sick with the disease as per CDC guidance - [Groups with High Risk](#)
- In the event that someone that has reported to a construction site within the last 14 days is either showing symptoms consistent with COVID-19 or knows they have been in contact with someone outside the construction site that has tested positive for COVID-19, that person should no longer report to work and self-quarantine until that person is symptom-free for 14 days. Furthermore, the contractor is to notify the County, personnel at the facility and all other contractors (prime and sub) on the site within the same previous 14-day period immediately, no exceptions.
 - Each situation will be handled on a case-by-case basis and the County reserves the right to terminate construction activities immediately, if necessary.
- After notification from an employee that tests positive for COVID-19, the designated representative will take the following steps and follow current CDC guidelines:
 - Project will initiate a safety stand-down in accordance with CDC guidelines for return to work.
 - Communication of positive test to employees who were present at the jobsite and stakeholders without communicating the name of the individual or specific medical diagnosis.
 - Supervisor shall investigate additional potential exposure.
 - Deep clean of project as described in the **Jobsite / Office Practices** section.

Material Deliveries & Anyone Entering the Jobsite

- Anyone entering the project site including all vendors and truck drivers are to practice social distancing.
- Only one (1) individual will be designated to collect all delivery tickets.

Subcontractors

- Subcontractors and suppliers are required to have their own COVID-19 safety plan or may opt by letter to follow the prime contractor's plan.

Training, Education, and Communication

- Prior to work, employees will receive an orientation on the components of the COVID-19 Safety Plan.
- The project COVID-19 Safety Plan will be conveyed to subcontractors and material suppliers.

- During safety meetings and jobsite discussions on COVID-19 guidelines, employees will be asked if anyone is feeling ill. If employees answer “yes”, see section under **Managing Sick Employees**.
- Communicate key CDC recommendations
- Place posters/handouts that encourage hand hygiene and staying home when sick at the entrance to the workplace and in other areas where they are likely to be seen
- A “COVID-19 Safety Plan in effect” sign will be posted at project entrance and reasonable locations as agreed upon at the project site.
- The COVID-19 Safety Plan will be updated periodically with the latest information from the CDC & OSHA

Risk-Based Inspection Guidelines

- The Contractor is 100% committed to quality and safety in addition to accepting an increased awareness while inspector presence may be limited due to COVID-19 restrictions and procedures.
- Prior to physical work, virtual meetings will be held with the representative, inspection field staff, and the Contractor project field staff to jointly discuss startup operations for the first week.
 - At this meeting, the following will be reviewed: COVID-19 Safety Plan, risk-based inspection principles/ policy, and a review of the operations where this is to be implemented on the project.
 - A process to evaluate the effectiveness of the plan daily.
- Pre-Operation meetings are recommended for certain operations. If practical, these meetings will be held virtually and will, at a minimum, review: operations work limits, specifications, and material usage, identify hold points and protocols for contractor request for hold point inspections, to establish response times and advance communications on scheduling and execution of work, and social distancing best practices.

If you are looking for any additional information or have any additional questions information can be found at <https://www.cdc.gov/coronavirus/2019-ncov/index.html>



NY HERO ACT

Model Airborne Infectious Disease Exposure Prevention Plan for Construction Industry

The purpose of this plan is to protect employees against exposure and disease during an airborne infectious disease outbreak. This plan goes into effect when an airborne infectious disease is designated by the New York State Commissioner of Health as a highly contagious communicable disease that presents a serious risk of harm to the public health. This plan is subject to any additional or greater requirements arising from a declaration of a state of emergency due to an airborne infectious disease, as well as any applicable federal standards.

Employees should report any questions or concerns with the implementation this plan to the designated contact.

This plan applies to all “employees” as defined by the New York State HERO Act, which means any person providing labor or services for remuneration for a private entity or business within the state, without regard to an individual’s immigration status, and shall include part-time workers, independent contractors, domestic workers, home care and personal care workers, day laborers, farmworkers and other temporary and seasonal workers. The term also includes individuals working for digital applications or platforms, staffing agencies, contractors or subcontractors on behalf of the employer at any individual work site, as well as any individual delivering goods or transporting people at, to or from the work site on behalf of the employer, regardless of whether delivery or transport is conducted by an individual or entity that would otherwise be deemed an employer under this chapter. The term does not include employees or independent contractors of the state, any political subdivision of the state, a public authority, or any other governmental agency or instrumentality.

As of the date of the publication of this document, while the State continues to deal with COVID-19 and a risk still exists, no designation is in effect at this time. Please check the websites of Departments of Health and Labor for up to date information on whether a designation has been put into effect, as any such designation will be prominently displayed. No employer is required to put a plan into effect absent such a designation by the Commissioner of Health.

CONTENTS

I. RESPONSIBILITIES	2
II. EXPOSURE CONTROLS DURING A DESIGNATED OUTBREAK	2
A. Minimum Controls During an Outbreak	2
B. Advanced Controls During an Outbreak	4
C. Exposure Control Readiness, Maintenance and Storage:	6
III. HOUSEKEEPING DURING A DESIGNATED OUTBREAK	6
IV. INFECTION RESPONSE DURING A DESIGNATED OUTBREAK	6
V. TRAINING AND INFORMATION DURING A DESIGNATED OUTBREAK	7
VI. PLAN EVALUATIONS DURING A DESIGNATED OUTBREAK	7
VII. RETALIATION PROTECTIONS AND REPORTING OF ANY VIOLATIONS	8

I. RESPONSIBILITIES

This plan applies to all employees of _____, and [all]/[the following work sites]:

This plan requires commitment to ensure compliance with all plan elements aimed at preventing the spread of infectious disease. The following supervisory employee(s) are designated to enforce compliance with the plan. Additionally, these supervisory employees will act as the designated contacts unless otherwise noted in this plan:

Name	Title	Location	Phone

II. EXPOSURE CONTROLS DURING A DESIGNATED OUTBREAK

A. MINIMUM CONTROLS DURING AN OUTBREAK

During an airborne infectious disease outbreak, the following minimum controls will be used in all areas of the worksite:

- General Awareness:** Individuals may not be aware that they have the infectious disease and can spread it to others. Employees should remember to:
 - Maintain physical distancing;
 - Exercise coughing/sneezing etiquette;
 - Wear face coverings, gloves, and personal protective equipment (PPE), as appropriate;
 - Individuals limit what they touch;
 - Stop social etiquette behaviors such as hugging and hand shaking, and
 - Wash hands properly and often.
- “Stay at Home Policy”:** If an employee develops symptoms of the infectious disease, the employee should not be in the workplace. The employee should inform the designated contact and follow New York State Department of Health (NYSDOH) and Centers for Disease Control and Prevention (CDC) guidance regarding obtaining medical care and isolating.
- Health Screening:** Employees will be screened for symptoms of the infectious disease at the beginning of their shift. Employees are to self-monitor throughout their shift and report any new or emerging signs or symptoms of the infectious disease to the designated contact. An employee showing signs or symptoms of the infectious disease should be removed from the workplace and should contact a healthcare professional for instructions. The health screening elements will follow guidance from NYSDOH and CDC guidance, if available.

4. **Face Coverings:** To protect your coworkers, employees will wear face coverings throughout the workday to the greatest extent possible. Face coverings and physical distancing should be used together whenever possible. The face covering must cover the nose and mouth, and fit snugly, but comfortably, against the face. The face covering itself must not create a hazard, e.g. have features could get caught in machinery or cause severe fogging of eyewear. The face coverings must be kept clean and sanitary and changed when soiled, contaminated, or damaged.
5. **Physical Distancing:** Physical distancing will be followed as much as feasible. Avoid unnecessary gatherings and maintain a distance of at least six feet (or as recommended by the NYSDOH/CDC for the infectious agent) from each other. Use a face covering when physical distance cannot be maintained.

In situations where prolonged close contact with other individuals is likely, use the following control methods: (Note to employer: Check off the controls you intend to use and add any additional controls not listed here.)

- restricting or limiting customer or visitor entry;
- limiting occupancy;
- allowing only one person at a time inside small enclosed spaces with poor ventilation;
 - reconfiguring workspaces;
 - physical barriers;
- signage;
 - floor markings;
- telecommuting;
- remote meetings;
- preventing gatherings;
- restricting travel;
 - creating new work shifts and/or staggering work hours;
 - adjusting break times and lunch periods;
 - delivering services remotely or through curbside pickup;
 - _____
 - _____
 - _____

6. **Hand Hygiene:** To prevent the spread of infection, employees should wash hands with soap and water for at least 20 seconds or use a hand sanitizer with at least 60% alcohol to clean hands BEFORE and AFTER:
 - Touching your eyes, nose, or mouth;
 - Touching your mask;
 - Entering and leaving a public place; and
 - Touching an item or surface that may be frequently touched by other people, such as door handles, tables, gas pumps, shopping carts, or electronic cashier registers/screens.

Because hand sanitizers are less effective on soiled hands, wash hands rather than using hand sanitizer when your hands are soiled.

7. **Cleaning and Disinfection:** See Section V of this plan.
8. **“Respiratory Etiquette”:** Because infectious diseases can be spread by droplets expelled from the mouth and nose, employees should exercise appropriate respiratory etiquette by covering nose and mouth when sneezing, coughing or yawning.
9. **Special Accommodations for Individuals with Added Risk Factors:** Some employees, due to age, underlying health condition, or other factors, may be at increased risk of severe illness if infected. Please inform your supervisor or the HR department if you fall within this group and need an accommodation.

B. ADVANCED CONTROLS DURING AN OUTBREAK

For activities where the Minimum Controls alone will not provide sufficient protection for employees, additional controls from the following hierarchy may be necessary. Employers should determine if the following are necessary:

1. Elimination: Employers should consider the temporary suspension or elimination of risky activities where adequate controls could not provide sufficient protection for employees.
2. Engineering Controls: Employers should consider appropriate controls to contain and/or remove the infectious agent, prevent the agent from being spread, or isolate the worker from the infectious agent. Examples of engineering controls include:
 - Opening outside windows and doors;
 - Opening windows on one side of the room to let fresh air in and installing window exhaust fans on the opposite side of the room so that they exhaust air outdoors;
 - Automatic disinfection systems such as ultraviolet light disinfection systems;
 - Install additional timeclocks to avoid overcrowding. Consider touch free options;
 - Air purifiers;
 - Install hand washing or sanitizing stations throughout the worksite; and
 - Utilize doors, walls, or plastic sheeting as physical barriers to separate workers;

Subject to changes based on operations and circumstances surrounding the infectious disease, engineering controls that are anticipated to be used are listed in the following table:

Engineering Controls Utilized/Location:

Note to Employer: One of the best ways to reduce exposure to infectious agents is to improve ventilation. The aim is to deliver more “clean air” into an occupied area and exhaust the contaminated air to a safe location. In some cases, the air may have to be filtered before it enters the work area and/or before it is exhausted. Direct the contaminated air away from other individuals and from the building’s fresh air intake ports. Consult your ventilation system’s manufacturer or service company to determine if improvements are possible for your system.

3. “Administrative Controls” are policies and work rules used to prevent exposure. Examples include:
 - Increasing the space between workers;
 - Prohibit eating and drinking in the work area;
 - Do not allow sharing of tools;
 - Cancelling any recreational activity on site;
 - Disinfecting procedures for specific operations;
 - Employee training;
 - Identify and prioritize job functions that are essential for continuous operations;
 - Cross-train employees to ensure critical operations can continue during worker absence;

- Post signs reminding employees of respiratory etiquette, masks, hand hygiene;
- Rearrange traffic flow to allow for one way walking paths;
- Provide clearly designated entrance and exits;
- Provide additional short breaks for handwashing and cleaning;
- Prohibit using compressed air or dry sweeping for cleaning;
- Clean equipment and tools prior to handoff;
- Limit attendance to in-person meetings (including toolbox talks, pre-shift meeting, safety meetings). Host the meetings outdoors;
- Ensure portable toilets are kept clean.

Subject to changes based on operations and circumstances surrounding the infectious disease, the following specific administrative controls are anticipated to be used:

Administrative Controls Utilized/Location:

4. Personal Protective Equipment (PPE): Devices like eye protection, face shields, respirators, and gloves that protect the wearer from infection. PPE will be provided, used and maintained in a sanitary and reliable condition at no cost to the employee. The PPE provided to an employee will be based on a hazard assessment for the workplace. The following PPE that are anticipated to be used are in the following table:

PPE Required - Activity Involved/Location:

1 The use of respiratory protection, e.g. an N95 filtering facepiece respirator, requires compliance with the OSHA Respiratory Protection Standard 29 CFR 1910.134 or temporary respiratory protection requirements OSHA allows for during the infectious disease outbreak.

2 Respirators with exhalation valves will release exhaled droplets from the respirators. Respirators are designed to protect the wearer. Surgical masks and face coverings, which are not respirators, are designed to protect others, not the wearer.

C. EXPOSURE CONTROL READINESS, MAINTENANCE AND STORAGE:

The controls we have selected will be obtained, properly stored, and maintained so that they are ready for immediate use in the event of an infectious disease outbreak and any applicable expiration dates will be properly considered.

III. HOUSEKEEPING DURING A DESIGNATED OUTBREAK

A. Disinfection Methods and Schedules

Objects that are touched repeatedly by multiple individuals, such as door handles, light switches, control buttons/levers, dials, levers, water faucet handles, computers, phones, or handrails must be cleaned frequently with an appropriate disinfectant. Surfaces that are handled less often, or by fewer individuals, may require less frequent disinfection.

The disinfection methods and schedules selected are based on specific workplace conditions.

The New York State Department of Environmental Conservation (NYSDEC) and the Environmental Protection Agency (EPA) have compiled lists of approved disinfectants that are effective against many infectious agents (see [dec.ny.gov](https://www.dec.ny.gov) and [epa.gov/pesticide-registration/selected-epa-registered-disinfectants](https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants)). Select disinfectants based on NYSDOH and CDC guidance and follow manufacturer guidance for methods, dilution, use, and contact time.

B. Adjustments to Normal Housekeeping Procedures

Normal housekeeping duties and schedules should continue to be followed during an infectious disease outbreak, to the extent practicable and appropriate consistent with NYSDOH and/or CDC guidance in effect at the time. However, routine procedures may need to be adjusted and additional cleaning and disinfecting may be required.

Housekeeping staff may be at increased risk because they may be cleaning many potentially contaminated surfaces. Some housekeeping activities, like dry sweeping, vacuuming, and dusting, can resuspend into the air particles that are contaminated with the infectious agent. For that reason, alternative methods and/or increased levels of protection may be needed.

Rather than dusting, for example, the CDC recommends cleaning surfaces with soap and water before disinfecting them. Conducting housekeeping during “off” hours may also reduce other workers’ exposures to the infectious agent. Best practice dictates that housekeepers should wear respiratory protection. See [cdc.gov](https://www.cdc.gov) for more guidance.

- C. If an employee develops symptoms of the infectious disease at work, it is ideal to isolate the area in accordance with guidance issued by NYSDOH or the CDC, before cleaning and disinfecting the sick employee’s work area. This delay will allow contaminated droplets to settle out of the air and the space to be ventilated.
- D. As feasible, liners should be used in trash containers. Empty the containers often enough to prevent overfilling. Do not forcefully squeeze the air out of the trash bags before tying them closed. Trash containers may contain soiled tissue or face coverings.

IV. INFECTION RESPONSE DURING A DESIGNATED OUTBREAK

If an actual, or suspected, infectious disease case occurs at work, take the following actions:

- Instruct the sick individual to wear a face covering and leave the worksite and follow NYSDOH/CDC guidance.
- Follow local and state authority guidance to inform impacted individuals.

V. TRAINING AND INFORMATION DURING A DESIGNATED OUTBREAK

- A. _____ will verbally inform all employees of the existence and location of this Plan, the circumstances it can be activated, the infectious disease standard, employer policies, and employee rights under the HERO Act. (Note: training need not be provided to the following individuals: any individuals working for staffing agencies, contractors or subcontractors on behalf of the employer at any individual work site, as well as any individual delivering goods or transporting people at, to or from the work site on behalf of the employer, where delivery or transport is conducted by an individual or entity that would otherwise be deemed an employer under this chapter)
- B. When this plan is activated, all personnel will receive training which will cover all elements of this plan and the following topics:
1. The infectious agent and the disease(s) it can cause;
 2. The signs and symptoms of the disease;
 3. How the disease can be spread;
 4. An explanation of this Exposure Prevention Plan;
 5. The activities and locations at our worksite that may involve exposure to the infectious agent;
 6. The use and limitations of exposure controls
 7. A review of the standard, including employee rights provided under Labor Law, Section 218-B.
- C. The training will be
1. Provided at no cost to employees and take place during working hours. If training during normal work hours is not possible, employees will be compensated for the training time (with pay or time off);
 2. Appropriate in content and vocabulary to your educational level, literacy, and preferred language; and
 3. Verbally provided in person or through telephonic, electronic, or other means.

VI. PLAN EVALUATIONS DURING A DESIGNATED OUTBREAK

The employer will review and revise the plan periodically, upon activation of the plan, and as often as needed to keep up-to-date with current requirements. Document the plan revisions below:

Plan Revision History			
Date	Participants	Major Changes	Approved By

Plan Revision History			
Date	Participants	Major Changes	Approved By

VII. RETALIATION PROTECTIONS AND REPORTING OF ANY VIOLATIONS

No employer, or his or her agent, or person, , acting as or on behalf of a hiring entity, or the officer or agent of any entity, business, corporation, partnership, or limited liability company, shall discriminate, threaten, retaliate against, or take adverse action against any employee for exercising their rights under this plan, including reporting conduct the employee reasonably believes in good faith violates the plan or airborne infectious disease concerns to their employer, government agencies or officials or for refusing to work where an employee reasonably believes in good faith that such work exposes him or her, other workers, or the public to an unreasonable risk of exposure, provided the employee, another employee, or representative has notified the employer verbally or in writing, including electronic communication, of the inconsistent working conditions and the employer’s failure to cure or if the employer knew or should have known of the consistent working conditions.

Notification of a violation by an employee may be made verbally or in writing, and without limitation to format including electronic communications. To the extent that communications between the employer and employee regarding a potential risk of exposure are in writing, they shall be maintained by the employer for two years after the conclusion of the designation of a high risk disease from the Commissioner of Health, or two years after the conclusion of the Governor’s emergency declaration of a high risk disease. Employer should include contact information to report violations of this plan and retaliation during regular business hours and for weekends/other non-regular business hours when employees may be working.