

# Accident Prevention & Safety Manual



**GLOBAL  
COMFORT  
GROUP**

KEEPING YOUR WORLD COMFORTABLE



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President

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## **SAFETY POLICY STATEMENT**

It is the policy of Global Comfort Group to provide a safe workplace environment for our workers and subcontractors. The Accident Prevention & Safety Manual is designed with this goal in mind and is the shared responsibility of every worker and subcontractor. Working together, we are able not only to attain excellence in all aspects of our operation but also to maintain a safety record that will be the envy of the industry.

At Global Comfort Group, we believe an effective safety and loss prevention program is the cornerstone of good operating practice. It is our policy to:

- Provide training as required.
- Conduct hazard assessments.
- Use ANSI-approved or comparable personal protective equipment as needed.
- Properly maintain tools, equipment, and facilities.
- Conduct informal and formal inspections to find and correct any unsafe acts or conditions.
- Investigate all incidents and accidents with the objective of preventing recurrence.

Managers must not only promote and demonstrate safe work practices but also ensure subcontractors and workers understand their responsibility to work safely. Managers, subcontractors, *and* workers are accountable for their actions and decisions. Failure to comply with safety policies, practices and procedures will be cause for disciplinary action that may include suspension, dismissal or contract cancellation if warranted. Remember, safety is as important as production, quality, and cost control. If you have any safety-related questions or are unsure of how to complete an assigned task, ask your supervisor or Global Comfort Group Project Manager for assistance.

Although Global Comfort Group policies, practices and procedures follow or exceed current Occupational Safety & Health requirements, they do not take precedence over federal, or state OSHA Regulations nor are they required to exceed legislated regulations. Managers, workers, and subcontractors must ensure they operate within the rules and regulations governing their specific place of operation.

Remember, government regulations are *law*. If the company, its workers, or subcontractors fail to comply with the regulations, the officers of the company and/or subcontractors, supervisors or workers will be held accountable and may be prosecuted. Thus, maintaining a safe work site is everyone's responsibility and is in your best interest. Observe the law and work safely. Everyone is counting on you.

Employees are informed of our written health and safety policies as follows:

- During their new employee orientation at time of hire
- During periodic safety meetings
- Through postings on bulletin boards
- Directly from his/her supervisor

# INJURY & ILLNESS PREVENTION PROGRAM

## Introduction to Our Program

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An Injury and Illness Prevention Program (IIPP) protects you and your co-workers from work-related injuries and illnesses. Please take the time to read it carefully. Direct any questions you may have about our IIPP to the Responsible Safety Officer (RSO).

An effective IIPP includes these elements:

1. A written plan designating who's in charge of safety program implementation.
2. A periodic inspection system to identify workplace hazards.
3. Procedures for investigating the cause of accidents, illnesses, or injuries.
4. Methods to ensure elimination of hazards once they're identified through inspections and accident investigations.
5. A safety and health training program specific to each job that's required for new employees as well as whenever new substances, processes, procedures, or equipment are introduced to the workplace.
6. A system for employees to communicate safety concerns to employers without fear of reprisal.
7. A system for ensuring employee compliance with safety and health practices.
8. Maintenance of appropriate records and steps taken to implement and maintain the accident prevention program.

## Administrative Duties

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Global Comfort Group has overall responsibility for coordinating safety and health programs for Global Comfort Group. He/she has the responsibility, authority, and overall accountability for the OSHA Injury & Illness Prevention Program. Global Comfort Group will review and update the program, as necessary. Copies of the written program may be obtained in Global Comfort Groups office.

## Individual Cooperation Necessary

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Safety in the workplace is a team effort. Everyone must do their part to ensure not only their own safety, but the safety of everyone else as well. Global Comfort Group has established policies and procedures for working safety and provides to our employees mechanical and physical protection, however, "your" safety is ultimately "your" responsibility.

## Safety Program Goals

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Global Comfort Groups goal is to reduce work-related injuries and illnesses to the lowest possible level. Ultimately, our goal is to eliminate all work-related injuries and illnesses. ***"NO JOB IS SO IMPORTANT AND NO SERVICE SO URGENT THAT WE CANNOT TAKE TIME TO PERFORM OUR WORK SAFELY"***

## Basic Safety Rules

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1. Compliance with applicable Federal, State, County, City, Client and Company Safety Rules and Regulations is a condition of employment.
2. Every injury, regardless of its nature or extent, should be reported to your supervisor. Failure to comply with this rule could delay the correction of the situation which caused the injury.
3. The possession or use of alcoholic beverages on company property is prohibited. No worker will report for duty, or perform duties, while under the influence of intoxicants.
4. The use of narcotics or tranquilizers by employees during working hours is prohibited unless under the supervision of a physician and knowledge of your supervisor.
5. Do not remove, displace, damage, destroy or carry off any safety device, safeguard, notice, or warning.
6. Do not engage in fighting, horseplay, or distraction of fellow employees.
7. Do not attempt to lift anything that may be too heavy or bulky for your physical capacity. If in doubt, get help.
8. Good housekeeping will be maintained in all work areas. Clean up waste materials promptly and completely after a job is completed.
9. Observe all traffic rules and regulations when driving.
10. Do not operate a piece of equipment unless you have been instructed in its use.
11. Smoking is allowed "only" in designated areas.
12. Never use a box, bucket, chair, shelf, etc., as a ladder. Use only approved stepstools or ladders.
13. Observe and obey all safety signs and procedures in any area you are assigned to work in.
14. Report all damaged or faulty equipment to your supervisor unless you are authorized to make repairs.
15. No unauthorized person will make electrical or mechanical repairs or adjustments on equipment.
16. Refrain from hanging articles from building fire sprinkler system or insulated steam or water lines.
17. Do not block or obstruct an aisle, passageway, hallway, stairway, escapeway, or exit. Do not use these areas for storage.
18. Maintain adequate access to electrical panels.
19. Do not block or cover fire extinguishers, fire alarms, or sprinkler heads.
20. Approach doors slowly and open them with caution; someone may be on the other side.
21. Fire doors must not be blocked open or locked in such a way that they cannot be opened in the exit direction.
22. When using stairs, do not carry loads so large that the view of stair treads is obscured. Keep one hand free for the handrail.
23. Keep stairs clear of all objects. Pick up anything you find on the stairs and store or dispose of it properly.
24. Know where the fire extinguisher in your area is, how to use it, and for what types of fires it is rated.
25. Burning of decorative candles is not permitted without specific permission from the fire marshal.
26. Electric coffee pots or other heating devices should be set on tile, metal, or other non-flammable surfaces, and must be of industrial quality for use in company buildings.

27. Gasoline or similar flammable solvents should not be used to clean floors, walls, or other surfaces, or for cleaning skin.
28. Do not run over cords, computer cables, or telephone wires across walkways creating a tripping hazard.
29. Do not use extension cords as a substitute for permanent electrical wiring. The only exception to this is "fused" multi-outlet strips which are "UL listed." If extension cords are necessary for short-term use, use only heavy-duty cords.
30. Report unsafe conditions or behavior to your supervisor or to the RSO.
31. Wipe up all spilled liquids immediately, to prevent falls on polished floors. Place some type of warning marker near wet spots until dry. Hazardous material spills must be reported to the RSO. Assistance in cleanup will be provided if requested.
32. Do not remove labels from chemical containers unless the containers are empty and have been thoroughly cleaned. Clean, empty containers may be used for other materials if proper new labels are affixed.
33. Clean machine parts using only approved solvents and parts-washing baths specifically designed for such use. Use with adequate ventilation. Dispose of waste solvents through the safety office.
34. Employees are not permitted to stand in the back of moving vehicles or to sit on the sides of moving pickups. Seat belts are to be used wherever provided.
35. Fall Protection Requirements: (*SEE FALL PROTECTION PROGRAM*)
  - a. Full Body Harness and Lanyards will be worn and secured any time there is a fall hazard of more than 6 feet.
  - b. Lifelines will be erected to provide fall protection where work is required in areas where permanent protection is not in place. Horizontal lifelines will be a minimum of 1/2" diameter wire rope. Vertical lifelines will be 3/4" manila rope or equivalent and will be used in conjunction with an approved rope grab.
  - c. Structural steel erectors are required to "Hook Up" with full body harness and lanyard.
  - d. Workers using their lanyards to access the work or position themselves on a wall or column, etc., must use an ADDITIONAL Safety lanyard for fall protection.
36. Proper use of Aerial Lifts (manlifts) requires all employees to wear approved fall protection devices during operation. Lanyards must be attached inside the bucket to the tie-off point provided. Lifts shall be inspected before each use. This includes function and controls. Only personnel trained and approved to operate the lift shall be in control. Do not exceed the weight capacity of the lift you are operating. Review the operator's manual beforehand. Employees in the bucket shall keep both feet on the floor and not use the side rails to gain height. No adjustments or modifications are allowed to be made by James River personnel to any lift. On scissor lifts, employees are not required to wear harnesses.
37. All personnel will be required to attend a Safety Meeting as required by Project Requirements.
38. Burning and cutting equipment will be checked daily before being used. Flashback arresters will be installed at the regulators on both Oxygen and L.P. bottles. All gas will be shut off and hoses disconnected from bottles and manifolds at the end of the day. Caps will be replaced on bottles when gauges are removed. When gauges are removed and caps replaced, the Oxygen and L.P. bottles will be separated into storage areas not less than 20' apart with a "No Fire or Smoking" sign posted and a fire extinguisher readily available. Makeshift field repairs will not be allowed.

39. Drinking water containers are for drinking water and ice only. Tampering with or placing items such as drinks, etc., in the water cooler may result in disciplinary action. The "common drinking cup" is not allowed. Only disposable cups will be used.
40. All tools, whether company or personal, must be in good working condition. Defective tools will not be used. Examples: chisels with mushroomed heads, hammers with loose or split handles, guards missing on saws or grinders, etc.
41. All extension cords, drop cords and electrical tools will be checked (to include presence of GFCI's) and color coded by a designated competent person each month. This will be part of the assured grounding program. Electrical cords and equipment must be properly grounded with GFCI's in place and checked by a competent person. Cords and equipment which do not meet requirements will be immediately tagged and removed from service until repairs have been made.
42. Jobsite speed limit is 10 MPH. No one is permitted to ride in the bed of a truck standing up. Sitting on outside edges is also prohibited: "YOU MUST BE SITTING DOWN INSIDE THE TRUCK OR TRUCK BED WHEN THE VEHICLE IS IN MOTION." Riding as a passenger on equipment is prohibited unless the equipment has the safe capacity of transporting personnel. All vehicles must have operable back-up alarms.
43. Adequate precautions must be taken to protect employees and equipment from Hot Work such as welding or burning. Fire extinguishing equipment will be no further away than 50 ft. from all Hot Work. Return used extinguishers to the warehouse be replaced immediately. Use of welding blinds are required in high traffic areas.
44. All scaffolding and work platforms must be in accordance with OSHA specifications. All ladders must be in safe condition without broken rungs or split side rails. Damaged ladders will be removed from service. Ladders will be secured at the top and bottom and extend 3 feet past the working surface. Metal ladders around electrical work are prohibited. Never use a step ladder as an extension ladder. A step ladder must only be used when fully opened with braces locked.
45. Crowfoot connections on air hoses will be wired to prevent accidental disconnection. Compressed air will not be used to dust off hands, face, or clothing.
46. All floor openings or excavations will be barricaded on all sides to ensure employees are aware of the hazard. Floor holes will be covered, the covers SECURED, and clearly marked.
47. Warning signs, barricades, and tags will be used to the fullest extent and will be obeyed.
48. Respiratory Protection is required for employees exposed to dust hazards or to other contaminants that may be encountered. **(SEE RESPIRATORY PROTECTION PROGRAM)**
49. Excavation: **(SEE EXCAVATION PROCEDURE)** As a minimum:
- a. All spoils, materials and equipment will be a minimum of 2' from the edge or excavation.
  - b. No employees are permitted to work under loads being handled by lifting or digging equipment.
  - c. A stairway, ladder or ramp will be in trenches 4' or deeper, no more than 25' away from the work area.
  - d. Barricade around work area. A barricade must be erected around the excavation.
50. Confined Space: **(SEE CONFINED SPACE PROGRAM)**
- a. Any vessel, manhole or pit 5' deep or greater-including trenches, or any structure not meant for human occupancy is considered a confined space.
  - b. A completed Confined Space Permit by competent person is required prior to entry into permit required confined spaces.

- c. Contact your supervisor prior to starting any Confined Space work for copies of the permit required and a list of required Safety Equipment.
  - d. See Appendix "A" for detailed requirements of equipment and procedures in use at the job site.
51. Lockout/Tagout Procedures: **(SEE LOCKOUT/TAGOUT PROCEDURE)**
- a. A written Lock Out/Tag Out Program is required to be in use at the jobsite when Lockout/Tagout procedures are used. This is available from the RSO.
  - b. Every employee involved in the work around energized equipment has the right to put on their own tag and lock. Otherwise, a gang-type lock box can be used if agreed upon by all parties involved.
  - c. A responsible person from each craft will be designated to lock and tag. They will be the only people able to remove tags and locks after work is complete.
52. Scaffold Systems:
- a. Green tags are to be placed on 100% complete scaffolds with all braces, locks and hand, mid & toe rails in place before use.
  - b. Yellow tags are for incomplete scaffolds. If scaffold is missing a hand, mid or toe board, it must have a yellow tag and employees on it must be always tied off.
  - c. Red tags are for scaffolds that are in the process of either being erected or disassembled. These scaffolds are not to be used at any time.
  - d. Scaffold tags should be placed in a highly visible location on the scaffolds for all employees to see.
  - e. Scaffolds should be inspected by a competent person on the project before each day's use, or more frequently if deemed necessary.
  - f. Employees will be trained on safe work practices when working from scaffolds. Accessing the scaffold and weather conditions that affect the scaffold will be understood.

## **Designated Responsible Safety Officer (RSO)**

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Global Comfort Group has designated Richard Lowery as our Responsible Safety Officer. The designation of an RSO is the most critical part of preparing ourselves to succeed or fail with the establishment and maintenance of our company safety program. The designated RSO is the glue that holds the many aspects of your program together.

**Accountability** - The person to fulfill these tasks must be accountable **ONLY** to the company CEO or President in all matters of safety and health for these reasons:

- This plainly demonstrates top management's commitment to the safety program.
- Keeps top management in the loop and provides guidance at all stages of the program.
- Prevents creativity of the designated safety person from being thwarted or stifled by intermediate supervisors who are unaware of the tremendous negative impact OSHA fines and increased workers' compensation premiums can have on the company's bottom line.

## **Responsibilities**

- Will be responsible for the administration and implementation of the Safety and Health Regulations as they apply to Global Comfort Group. In addition, he/she will

administer the company safety program and see that it is put into effect and administered as outlined below.

- Will see that a monthly report is completed, listing all accidents which occurred during the preceding month. These will be reviewed to determine type and degree of accident so that corrective measures may be taken through safety talks to personnel, bulletins to employees, purchase of new equipment, or change in work procedures.
- Will see that all sub and trade contractors abide by their safety and health program and that documentation is made of any alleged violations.
- Will maintain and update a set of basic safe work rules. These safety rules will be explained by the company RSO to the President and Supervisor(s) who, in turn, will discuss these with employees. Company safety rules will be posted in all work areas.
- Will periodically conduct safety inspections and file reports.
- Will provide safety training for employees.
- Will read, review, and provide the President and Supervisor(s) with updated OSHA Safety Standards.
- Will make necessary corrections in company policy and work procedures by advising of changes in OSHA rules and regulations.
- Through the purchasing section, will see that all vendors are advised of the company safety and health programs as they apply to the vendor and supplier personnel entering the job site. In addition, all purchase orders will require compliance with OSHA Act.
- Will meet regularly with supervisors/management to review safety procedures on the job, and, in general, check on the supervision's compliance with the company safety and health program.

## **Responsibilities**

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### President's Responsibilities

- Read and review the OSHA Safety Standards and become knowledgeable of federal, state, and local standards.
- Responsible to see that a study is made of the work area(s) to determine the exposure to accidents, which may develop. Particular attention will be given to the protection of the public and to fire prevention facilities.
- Be safety oriented when walking through work areas. Report to the RSO all unsafe acts and conditions either of your company's or sub or trade contractor's personnel.
- Review all accident reports.

### Supervisor's Responsibilities

- The Supervisor is responsible for the implementation of the company safety and health program.
- Make available all necessary personal protective equipment, job safety materials, and First Aid equipment.
- Instruct the employees that safe practices are to be followed and safe conditions maintained throughout the job.
- Inform the Supervisor that they are not to require nor permit their workers to take chances -rather that they instruct the workers in proper and safe procedures.

- Require all contractors and their prime subcontractors to adhere to all safety regulations. The Supervisor will report any unsafe conditions on contractor portions of the work to the RSO.
- Review all accidents with employees and see that corrective action is taken immediately.
- Be familiar with the laws pertaining to safety and their basic requirements.
- Investigate all accidents. File a complete accident report with the RSO and correct the causes immediately. Use OSHA Form 301 or its equivalent.
- Be familiar with the laws pertaining to safety and their basic requirements.

#### Employee Responsibilities

- Work according to good safety practices as posted, instructed, and discussed.
- Refrain from any unsafe act that might endanger himself/herself or his/her fellow workers.
- Use all safety devices provided for his/her protection.
- Immediately report any unsafe situation or acts to his/her supervisor or safety personnel.
- In the event of an injury, report to the designated area for First Aid treatment. In all cases, the employee and Supervisor will report and/or record all accidents.
- Maintain a clean and safe work area.
- Be a safe worker, off the job, as well as on.

#### Safety Committee Responsibilities

In general, the committee will serve in an advisory capacity to the RSO on determining a general plan of action for the company's safety policy as set by management. More specifically, the members of the committee will familiarize themselves with safety standards and assist in formulating plans for the application of the standards in all work areas.

#### **Employee Compliance & Accident-Free Workplace**

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The Company ensures that every employee complies with safe and healthy work practices by incentives, training, re-training programs and disciplinary programs. Global Comfort Group promotes employee compliance with the company IIPP by rewarding employees who avoid work-related injuries and illnesses by working safely, and by submitting suggestions to management that will reduce our injury and illness rates. However, under no circumstances should any employee "not" report a legitimate work-related injury or illness. Timely and accurate reporting of injuries and illnesses is critical to an effective safety program.

To help us all meet our goal of an accident-free workplace, we have instituted a contest: we will offer a prize for each month in which there is not a single time-loss accident at work. The prize will be awarded at random. Each month, the prize will be announced in advance. All employees who worked more than 1 hour in the month are eligible. Failure to report an industrial injury will suspend the prize for two months.

Employees who fail to comply with the safety requirements described in our IIPP will be subject to the company's disciplinary action policy.

## **Disciplinary Policy**

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The disciplinary system does not exist primarily to punish employees. Its purpose should be to control the work environment so that workers are protected, and accidents are prevented. A disciplinary system helps ensure workplace safety and health by letting the Global Comfort Groups employees know what is expected of them. It provides workers with opportunities to correct their behavior before an accident happens.

A disciplinary system is one of the keys to successfully implementing the Company's safety and health program. It ensures that the Company's rules and safe working practices are taken seriously by employees and are followed. It lets employees know how Global Comfort Group expects them to operate in relation to the goals of the Company's safety and health program. And it lays out the actions the Company will take if individuals do not meet the Company's expectations. The employee's supervisor and all members of management are responsible for the enforcement of this disciplinary program.

A disciplinary system cannot work in a vacuum. Before the Company can hold employees accountable for their actions, the Company first needs to establish its safety and health policy and disciplinary rules.

### **Policy Statement**

Employees need to know the Company's position on safety and health and what the Company expects of them. They need a clear understanding of the rules and the consequences of breaking those rules. This is true in all areas of work, but it is especially important for worker safety and health. As part of the policy statement, and in the employee safety handbook, the Company has a written statement setting forth the Company's disciplinary policy. Company managers and supervisors will always be on the lookout for safety violations and will conscientiously and vigorously enforce the Company's commitment to safety.

### **Employee Information and Training**

It is important that employees understand the system and have a reference to turn to if they have any questions. Therefore, in addition to issuing a written statement of the Company's disciplinary policy, the Company has drawn up a list of what it considers major violations of Company policy and less serious violations. This list specifies the disciplinary actions that will be taken for first, second, or repeated offenses. This list is not all-inclusive, other types of violations can result in specific levels of disciplinary action relative to the seriousness of the violation and entirely at the Company's discretion.

The list for immediate termination and grounds for immediate discharge are:

- Drinking alcohol, and/or drug abuse prior to or during working hours.
- Fighting, provoking, or engaging in an act of violence against another person on Company property.
- Theft.
- Willful damage to property.
- Failure to wear Personal Protective Equipment (eye protection, hearing protection, safety helmets, etc.).

- Not using safety harnesses and lanyards when there is a potential for falling.
- Removing and/or making inoperative safety guards on tools and equipment.
- Tampering with machine safeguards or removing machine tags or locks.
- Removing barriers and/or guardrails and not replacing them.
- Failure to follow recognized industry practices.
- Failure to follow rules regarding the use of company equipment or materials.
- Major traffic violations while using a company vehicle.
- Engaging in dangerous horseplay.
- Failure to notify the Company of a hazardous situations.
- Other major violations of company rules or policies

General Offences requiring a warning and can lead to termination:

- Minor traffic violations while using Company vehicles.
- Creating unsafe or unsanitary conditions or poor housekeeping habits.
- Threatening an act of violence against another person while on company property.
- Misrepresentation of facts.
- Unauthorized use of Company property.
- Excessive tardiness and late to work.
- Disrespect and/or insubordination to authority.
- Other violations of Company Policy and rules.

### Training

Training can reduce the need for disciplinary action. The Company will instruct employees in the importance of workplace safety and health, the need to develop safety habits, the Company's operations, safe work practices, and the hazards they control, and the standards of behavior that the Company expects. The Company's employees must understand the disciplinary system and the consequences of any deliberate, unacceptable behavior.

### Supervision

Supervision includes both training and corrective action. Ongoing monitoring of the Company's employees' work and safety habits gives the Company's supervisors the opportunity to correct any problems before serious situations develop. In most cases, effective supervision means correcting a problem before issuing any punishment.

Where the relationship between employees and their supervisors is open and interactive, problems are discussed, and solutions are mutually agreed upon. This type of relationship fosters a work environment where the need for disciplinary action is reduced. When such an action is needed, the parties are more likely to perceive it as corrective than punitive.

### Employee Involvement

Employees are encouraged to help informally in the enforcement of rules and practices. The intent here is not to turn employees into spies and informers, but to encourage them to be their "brother's keeper" and to watch out for the safety and health of their colleagues. Many employers successfully have encouraged an atmosphere -- a company "culture" -- where

employees readily speak up when they see an easily corrected problem, for example, a coworker who needs reminding to put on safety goggles.

The Company's employees deserve the opportunity to correct their own behavior problems. An effective disciplinary system is a two-way process. Once a problem is spotted, discuss it with the employee, who should be given at least one or two opportunities to change their behavior or correct the problem. Only after these discussions (and possibly some retraining) should disciplinary action be taken.

### Appropriate Control Measures

Disciplinary actions need to be proportionate to the seriousness of the offense and the frequency of its occurrence. It is certainly inappropriate to fire someone for occasional tardiness. It is equally inappropriate to issue only oral warnings to an employee who repeatedly removes a machine guard.

Disciplinary procedures should not be instituted without explanation. The Company will provide feedback to the employee on what behavior is unacceptable, why corrective action is necessary, and how the employee can prevent future violations and disciplinary action. In addition, take time to recognize an employee who improves or corrects his/her behavior.

### Consistent Enforcement

Workers must realize that safe work practices are a requirement of employment and that unsafe practices will not be tolerated. It is necessary, therefore, that the employer have a disciplinary system that is implemented fairly and consistently.

If the Company's disciplinary system is to work well and be accepted by the Company's workforce, the system applies equally to everyone. This includes subjecting managers and supervisors to similar rules and similar or even more stringent disciplinary procedures.

For minor violations, supervisors will meet with the employee to discuss the infraction and inform the employee of the rule or procedure that was violated AND describe the corrective action needed to remedy the situation.

### Documentation

One key to ensuring fairness and consistency in a disciplinary system is keeping good records. It is in the best interests of both the Company and the employee to have written rules and disciplinary procedures. It is just as important to document instances of good or poor safety and health behavior, including discussions with the employee, and to place relevant information in the employee's personnel file.

Documentation serves a variety of purposes. It helps the Company to track the development of a problem, corrective actions, and the impact of measures taken. It provides information so the Company can keep employees informed of problems that need correction.

When the Company is evaluating the managerial and supervisory skills of a supervisor, it provides a useful record of how they handled problems.

If warnings, retraining, and other corrective actions fail to achieve the desired effect, and if the Company decides to discharge an employee, then documentation becomes even more critical. Conversely, the Company will conduct an annual clearing of the personnel files of employees whose good overall safety records are marred by minor warnings.

## **Safety & Health Training**

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Global Comfort Group is committed to instructing all employees in safe and healthy work practices. All employees are trained in general safety and healthy work practices and for their specific job assignments. Training should be provided prior to or at the time of the initial job assignment.

The Company will provide training to each employee about general, acceptable, safety procedures and any hazards or safety procedures that are specific to that employee's work situation.

Training can take many forms and is synonymous with education and can be attained in several ways.

**Company Safety Rules:** Employees should read the rules and understand them. The issuance of these rules should be logged, and signed receipts should be kept on file. Each new employee, as he arrives on the job, should be approached in the same manner.

**Periodic Safety Talks** – the company should attempt to hold a safety talk with their employees on a weekly or at least monthly basis. The talk may consist merely of restating the company safety rules or warning of dangerous conditions which exist. A particular subject may be covered, such as lockout tagout, confined space, or fire prevention.

**Changed Conditions** -When any of the job operation changes or when new hazardous materials are brought into the workplace, employees should be made aware of new or added potentially dangerous situations that might occur, and the proper action employees can take to maintain a safe workplace.

**Safety Equipment** -Employees should not simply be issued protective equipment. They should be instructed as to its proper and safe use.

**Consistency/Redundancy** -The employer must consistently and routinely entertain the concept of safety training. Once is not enough. At the orientation meeting of new employees, on through the follow-up weekly/monthly safety talks, the central theme must be to dwell on employees not committing unsafe acts.

**Management Follow-Up** -Management must not be content with advising employees on unsafe practices. A follow-up of employee actions must be made. The Supervisor(s) must be instructed to watch for employees committing unsafe acts. Employees should be reprimanded when found doing unsafe acts. (See disciplinary policy)

Documentation -All actions taken by Management as it relates to Safety Training/Education should be documented. Records are kept to document safety and health training for each employee by name or other identifier, training date, types of training and training providers.

Individual/Group Instruction -Safety Education can be aimed at a group such as at a weekly/monthly safety talk or at an individual as in a case where the employee is being given instruction on use of a new tool, etc., by the Supervisor. Whichever the case may be, it should be documented.

Safety training must be ongoing. It must be given to all employees and members of management. Documentation of instruction and other forms of safety awareness techniques must be made. Never assume everyone knows the safest way of performing his or her task.

The Company provides training and re-training:

- When the program is first established.
- To all new employees.
- To all employees given new job assignments for which training has not previously been received.
- Whenever new substances, processes, procedures, or equipment are introduced to the workplace and represent a new hazard.
- Whenever the employer is made aware of a new or previously unrecognized hazard; and
- For supervisors to familiarize them with the safety and health hazards to which employees under their immediate direction and control may be exposed.
- When employees act in a manner inconsistent with current accepted practices covered in the training.

## **Safety Training Topics**

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We train our workers on the following checked training subjects. Other training may be conducted depending on hazards present in the workplace.

- Confined spaces.
- Safe practices for operating any equipment.
- Good housekeeping, fire prevention, safe practices for operating any construction equipment.
- Safe access to working areas.
- Protection from falls.
- Electrical hazards, including working around high voltage lines.
- Crane operations.
- Proper use of powered tools.
- Guarding of belts and pulleys, gears and sprockets, and conveyor nip points.
- Machine, machine parts, and prime movers guarding.
- Lock-out/tag-out procedures.
- Materials handling.
- Fall protection from elevated locations.
- Use of elevated platforms, including condors and scissor lifts.
- Driver safety.

- Slips, falls, and back injuries.
- Ergonomic hazards, including proper lifting techniques and working on ladders or in a stooped posture for prolonged periods at one time.
- Personal protective equipment.
- Respiratory Equipment.
- Hazardous chemical exposures.
- Hazard communication.
- Physical hazards, such as heat/cold stress, and noise.
- Bloodborne pathogens and other biological hazards.

## **Periodic Safety Training Meetings**

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One purpose of recurring team meetings held by JRAC is to convey safety information and answer employee questions. The format of most safety topics covered in those meetings will be to review, in language understandable to every employee, the content of the injury prevention program, special work site hazards, serious concealed dangers, and material safety data sheets. Weekly safety meetings will review a portion of the company's safe work practices contained in this booklet, or other safety-related information. Whenever a new practice or procedure is introduced into the workplace, it will be thoroughly reviewed for safety. Employee attendance is mandatory and is compensable unless part of an official state approved training program or pre-employment requirement. Global Comfort Group provides tailgate safety meetings on a weekly basis.

## **Employee Training Documentation**

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Global Comfort Group maintains documentation of safety and health training for each employee, including employee name or other identifier, training dates, type(s) of training, and training providers. This documentation will be maintained for one (1) year.

Training records of employees who have worked for less than one (1) year for the Company will not be retained beyond the term of employment if they are provided to the employee upon termination of employment. Employee training records are maintained in the Human Resource office.

## **Employee Communication**

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Global Comfort Group ensures that there is an adequate system in place to communicate with affected employees on safety and health matters. Example: safety meetings, written communications, postings, etc.

Occupational safety and health matters will be promptly communicated with employees using the following methods:

- **BULLETIN BOARDS:** A safety bulletin board will be in each work area. The OSHA Poster and the company's Safety Policy will be permanently posted on all bulletin boards. In addition, the minutes of the last Safety and Health Committee meeting will

be posted on all bulletin boards. Other safety-related items will be posted on the bulletin boards as they become available.

- **TAILGATE TALKS:** Supervisors will give Tailgate talks at least once each week to all employees. Provisions must be made to ensure that employees who were not present are given the information presented during the talk. This may be done by presenting the talk later for the missing employees or by posting an outline of the talk on the safety bulletin board.
- **SAFETY POSTERS:** Safety Posters, either purchased from a vendor or produced by the Safety and Environmental Coordinator, will be posted on the bulletin board and at other appropriate locations.
- **SAFETY PERFORMANCE ANALYSIS:** At least once each quarter, the Safety and Training Director will prepare an analysis of the effectiveness of the safety program. This analysis will include accident statistics for the company. The analysis will be posted on safety bulletin boards.

## **Safety Committees**

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Accident prevention and control of hazards is the result of a well-designed and executed safety and health program. One of the keys to a successful program includes company safety committees composed of management and general labor personnel. Two of the most critical functions of a well-designed, trained safety committee are safety audits and accident investigations. The basic purpose of audits and investigations is to determine measures that can be taken to prevent accidents in the future. Global Comfort Group is committed to accident prevention in the workplace.

A company safety committee has been established composed of management. When possible, new employees will be rotated on to the committee to provide new enthusiasm and perspectives on safety in the workplace.

The safety committee functions/responsibilities are as follows:

- Meets regularly, but not less than quarterly.
- Prepares and makes available to the affected employees written records of the safety and health issues discussed at committee meetings and maintained for review by the Division upon request. The committee meeting records will be maintained for one (1) year.
- Reviews results of the periodic, scheduled worksite inspections.
- Reviews investigations of occupational accidents and causes of incidents resulting in occupational injury, occupational illness, or exposure to hazardous substances and, where appropriate, submits suggestions to management for the prevention of future incidents.
- Review investigations of alleged hazardous conditions brought to the attention of any committee member. When determined necessary by the committee, the committee may conduct its own inspection and investigation to assist in remedial solutions.
- Submits recommendations to assist in the evaluation of employee safety suggestions; and

The safety committee meets monthly to discuss current safety issues and to conduct a safety audit of the job site(s). These activities will be documented.

## **Hazard Identification – Inspections & Abatement**

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Global Comfort Group has a system for identifying and evaluating workplace hazards whenever new substances, procedures or processes are introduced into the workplace. This system requires periodic inspections for safety and health hazards. All inspections are to be documented. Hazards must be corrected in order of priority based on severity in an expeditious manner.

The RSO will inspect each of the operation's facilities monthly. During the inspection, the manager will record the hazards or unsafe procedures observed during the inspection. One copy of the report will be filed at the main office and another copy will be sent to the supervisor directly responsible for the location or work procedure.

Each supervisor receiving an inspection report that has corrections to be made must respond, in writing, to the manager within 7 days. The response will note the estimated time to make necessary corrections or to develop alternative work procedures as uncovered during the inspection. The supervisor's response may also include other suggestions to improve safety within his or her area of responsibility.

The RSO will re-inspect the areas that were found to be unsafe during the inspection within 14 days of the original inspection and each 7-day period thereafter until the hazards are corrected.

Other inspections will be conducted:

- Whenever new substances, processes, procedures, or equipment are introduced to the workplace that represent a new occupational safety and health hazard; and
- Whenever the Company is made aware of a new or previously unrecognized hazard.

When an imminent hazard exists which cannot be immediately abated without endangering employee(s) and/ or property, the Company will remove all exposed personnel from the area except those necessary to correct the existing condition. Employees necessary to correct the hazardous condition will be provided the necessary safeguards.

Global Comfort Group has a system for employees to report safety and health hazards/problems effectively and anonymously without fear of reprisal. This system incorporates the use of a Safety Suggestion Box. Safety hazards and/or suggestions for safety improvement can be dropped in the Safety Suggestion Box.

## **Accident Investigation**

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It is the policy of Global Comfort Group that all work-related accidents, injuries, and illnesses are to be conducted in a professional manner to identify probable causes and are used to develop specific management actions for the prevention of future accidents. Every minor or non-disabling injury will be investigated with the same vigor and thoroughness as serious injuries. Proper and complete investigation of these injuries can be an effective injury prevention tool. The Safety Committee will be responsible for conducting accident investigations.

All accident investigations will be conducted as soon as possible, within 48 hours. All accident investigations will be documented. While conducting accident investigations, particular attention will be given to suggesting ways to prevent future occurrences of the events which caused the accident and corrective action to be taken.

All pictures should be identified. Let people know on tape that they are being recorded. Also, make sure that the names and addresses and day and evening phone numbers of all eyewitnesses are noted or recorded. If a formal police report or other official investigation is conducted by any government agency, get the name and badge number of the official, or a business card, and find out when a copy of the official report will be available to the public. If you are requested to make a statement, you have the right to have the Company lawyer attend your statement at no cost to you.

A satisfactory accident report will answer the following questions:

1. What happened? The investigation report should begin by describing the accident, the injury sustained, the eyewitnesses, the date, time and location of the incident and the date and time of the report. Remember: who, what, when, where and how are the questions that the report must answer.
2. Why did the accident occur? The ultimate cause of the accident may not be known for several days after all the data are analyzed. However, if an obvious cause suggests itself, include your conclusions as a hypothesis at the time you give your information to the person in charge of the investigation.
3. What should be done? Once a report determines the cause of the accident, it should suggest a method for avoiding future accidents of a similar character. This is a decision by the Responsible Safety Officer and the supervisor on the project, as well as top management. Once a solution has been adopted, it is everyone's responsibility to implement it.
4. What has been done? A follow up report will be issued after a reasonable amount of time to determine if the suggested solution was implemented, and if so, whether the likelihood of accident has been reduced.

## **Records**

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Global Comfort Group maintains records of employee training, hazard identification and abatement, and accident investigation.

## **OSHA Records Required**

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Copies of required accident investigations and certification of employee safety training will be maintained by the Responsible Safety Officer.

Global Comfort Group keeps records of its employee fatalities, injuries, and illnesses that:

- Is work-related; and
- Is a new case; and
- Meets one or more of the general recording criteria of applicable regulations.

Each recordable injury or illness is entered on OSHA 300 Log of Work-Related Injuries and Illnesses, OSHA 301 Form Injury and Illness Incident Report, and a separate, confidential list of privacy-concern cases, if any, within (7) calendar days of receiving information that a recordable injury or illness has occurred. The RSO keeps these records up to date.

If there is a privacy-concern case, we have the option to not enter the employee's name on OSHA 300 Log of Work-Related Injuries and Illnesses. Instead, the text "Privacy Case" is entered in the space normally used for the employee's name. This will protect the privacy of the injured or ill employee when another employee, a former employee, or an authorized employee representative is provided access to the OSHA 300 Log. The company will keep a separate, confidential list of the case numbers and employee names for your privacy concern cases so that we can update the cases and provide the information to the government if asked to do so.

At the end of each calendar year, RSO performs the following steps:

1. Reviews OSHA 300 Log of Work-Related Injuries and Illnesses to verify that the entries are complete and accurate,
2. Corrects any deficiencies identified in the entries,
3. Creates an annual summary of injuries and illnesses recorded on OSHA 300 Log of Work-Related Injuries and Illnesses,
4. Ensures that he/she, Richard Lowery, who is the RSO, and the "President" of the company certifies that he reasonably believes, based on his/her knowledge of the process by which the information was recorded, that the annual summary is correct and complete, and
5. Posts OSHA 300-A Summary of Work-Related Injuries and Illnesses on the Main Office bulletin board from February 1 of the year following the year covered by the records and kept in place until April 30 for a total of three (3) months.

All employees, former employees, their personal representatives, and their authorized employee representatives have a right to access our regulatory-required injury and illness records, with the following limitations:

1. We are allowed to give the requester a copy of OSHA 300 Log of Work-Related Injuries and Illnesses by the end of the next business day.
2. We may choose to not record the employee's name on OSHA 300 Log of Work-Related Injuries and Illnesses to protect the privacy of injured and ill employees in certain privacy-concern cases.
3. We are allowed to give an employee, former employee, or personal representative a copy of OSHA 301 Form Injury and Illness Incident Report by End of the next business day. A personal representative is:
  - Any person that the employee or former employee designates as such, in writing; or
  - The legal representative of a deceased or legally incapacitated employee or former employee.
4. We are allowed to give authorized employee representatives under a collective bargaining agreement a copy of OSHA 301 Form Injury and Illness Incident Report within seven (7) calendar days.
5. An authorized employee representative is an authorized collective bargaining agent of employees. The authorized employee representative will be provided the OSHA 301 Incident Report section titled 'Tell us about the case.' The company will remove all other

information from the copy of the OSHA 301 Incident Report or the equivalent substitute form that is given to the authorized employee representative.

6. While the first copy is free, we may charge a reasonable amount for retrieving and copying additional copies.
7. Employees also have access to OSHA 300-A Summary of Work-Related Injuries and Illnesses, which is posted on the Main Office bulletin board from February 1 of the year following the year covered by the records and kept in place until April 30 for a total of three (3) months.

Global Comfort Group does not discriminate against employees who request access to any records or otherwise exercise any rights afforded by the OSH Act.

The RSO saves the following records for (5) years following the end of the calendar year that these records cover:

- OSHA 300 Log, the privacy case list (if one exists),
- the annual summary, and
- the OSHA 301 Incident Report forms.

During the storage period, The RSO updates OSHA 300 Log of Work-Related Injuries and Illnesses to include any newly discovered recordable injuries or illnesses and any changes that have occurred in the classification of previously recorded injuries and illnesses. If our company changes ownership, Richard Lowery and the President are responsible for transferring the records to the new owner.

## **Safety Equipment**

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Proper safety equipment is necessary for your protection. The Company provides protective equipment necessary for your protection. Use all safeguards, safety appliances, or devices furnished for your protection and comply with all regulations that may concern or affect your safety. Wear your gear properly -- all snaps and straps fastened, cuffs not cut or rolled. Your supervisor will advise you as to what protective equipment is required for your job. Certain jobs require standard safety apparel and appliances for the protection of the employee. Your supervisor is aware of the requirements and will furnish you with the necessary approved protective appliances.

These items will be worn and effectively maintained as a condition of your continued employment and part of our mutual obligation to comply with the Occupational Safety and Health Act. Safety goggles, glasses and face shields will correspond to the degree of hazard, i.e., chemical splashes, welding flashes, impact hazard, dust, etc. Do not alter or replace an approved appliance without permission from your supervisor. Rubber gloves and rubber aprons will be worn when working with acids, caustics, or other corrosive materials. Specified footwear must be worn. No jewelry will be worn around power equipment. Hearing protection appliances (approved muffs or plugs) will be worn by all employees working within any area identified as having excess noise levels. Your supervisor will instruct you in the proper use of the appliance.

## **Protective Equipment / Clothing**

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Proper safety equipment is necessary for your protection. The Company provides protective equipment necessary for your protection. Use all safeguards, safety appliances, or devices furnished for your protection and carry out all regulations that may concern or affect your safety. Wear your gear properly - all snaps and traps fastened, cuffs not cut or rolled. Your supervisor will advise you as to what protective equipment is required for your job.

## **Smoking & Fire Safety**

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Fire is one of the worst enemies of any facility. Learn the location of the fire extinguishers. Learn how to use them. You can help prevent fires by observing the smoking rules:

- Smoking is not allowed on the site, except in designated areas.
- Smoking is not permitted in restrooms.
- If you are not sure about where you may smoke, ask the supervisor.

## **Reporting**

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All serious accidents must be reported to OSHA. In cases of hospitalization or death, a full investigation with copies to governmental authorities will be required. In less serious cases, the investigation report must be presented to the company for disclosure to its insurance carrier and for remedial action at the work site.

## **CODE OF SAFE PRACTICES**

### **General Safe Practices**

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- All persons will follow these safe practices rules, render every possible aid to safe operations, and report all unsafe conditions or practices to managers or supervisors.
- Managers and supervisors will insist on employees observing and obeying every rule, regulation, and order as is necessary to the safe conduct of the work and will take such action as is necessary to obtain observance.
- All employees will be given frequent injury and illness prevention instructions.
- Anyone known to be under the influence of drugs or intoxicating substances which impair the employee's ability to safely perform the assigned duties will not be allowed on the job while in that condition.
- Running, jumping, horseplay, scuffling, and other acts which tend to have an adverse influence on the safety or well-being of the employees will be prohibited.
- Work will be well planned and supervised to prevent injuries in the handling of materials and in working together with equipment.
- Employees will be instructed to ensure that all guards and other protective devices are in proper places and adjusted and will report deficiencies promptly to the manager or supervisor.
- Employees will not enter underground vaults, chambers, tanks, manholes, silos, or other similar confined places that receive little ventilation, unless it has been determined that it is safe to enter.

- Employees will not handle or tamper with any electrical equipment, machinery, or air or water lines in a manner not within the scope of their duties, unless they have received instructions from their supervisor or manager. Respect electricity under all circumstances. Never use electrical equipment in areas of excessive moisture unless all safeguards have been taken. Electric power tools are grounded through approved cords, including extension, for your safety. Never remove or alter polarized cords or plugs.
- When lifting heavy objects, the large muscles of the leg instead of the smaller muscles of the back will be used. Learn and practice the proper way to lift or carry material or any object. Do not operate any type of powered material handling or hoisting equipment unless authorized. Get help in handling heavy or bulky loads.
- Stay clear of heavy earthmoving equipment. Remain aware of warning devices such as bells, horns or whistles.
- Hard hats are mandatory; always wear one on any construction job. Use other protective gear as recommended when exposed to unusual hazards.
- Basic first aid is of value in the event of injury. Never attempt to move a person who may possibly suffer from an injured spine or other internal injury unless there is an immediate threat of life. All injuries will be reported promptly to the supervisor or manager so that arrangements can be made for medical or first aid treatment.
- Accident Prevention: All persons must abide by Construction Safety Orders, General Industry Safety Orders and Company rules. Posters and other safety material are displayed for the benefit of employees, read, and abide by these suggestions. Give every possible aid in the event of injury.
- Accident Reporting: Report all personal injuries to a superior immediately. Obtain authorization for any medical attention off the job. Medical release is necessary before returning to work.
- Job Site: Keep work areas free of debris, good housekeeping is essential. Remove or correct any hazards. Never work or pass under suspended loads or equipment.
- Work Habits: Assist other trades when necessary to maintain safe operations. Never place yourself or allow others to work in a dangerous position. Use the right tool or equipment for all work. Use of any alcoholic beverage is strictly prohibited on the job. Don't be party to horseplay, pranks can be fatal. Construction sites offer unusual hazards, walk and work with all due respect for them.
- Hand Tools: Always Use the proper tool and always maintain them in good condition. Loose or broken handles, mushroom heads, dull blades, improper size, or type of tool should never be used.
- Power Tools: Power activated tools must only be used by licensed personnel. Know the proper method of using, a skill saw; never block back the retractable guard it is for your protection. Never use a tool with which you are not fully experienced.
- Protective Devices: Hand or guardrails, protective covers, toe-boards, ramps, and safety devices installed on various tools are for your safety. Do not tamper with, remove, or damage these protective measures. Replace, correct, or report any unsafe guard or device.
- Transportation: When transportation is necessary in other than a passenger vehicle, ride in the cab or sit, do not stand on the bed of the truck. Never ride with arms or legs over the sides, do not sit on the tailgate; it must be closed during transportation of passengers. Be careful of any tools, material or equipment within the truck body which may shift or slide causing injury.
- Flammables, Solvents: Never use gasoline or other highly volatile liquids for cleaning purposes. Oxygen and acetylene cylinders can be dangerous, secure against rolling or

tipping. Do not expose tanks or containers that may contain explosive vapor or liquid to open frame or spark.

Special Note: Non-compliance with these regulations will result in disciplinary action.

## **HAZARD SPECIFIC CODE OF SAFE PRACTICES**

### **General Work Environment**

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- All worksites are clean and orderly.
- Work surfaces kept dry or appropriate means taken to assure the surfaces are slip-resistant.
- All spilled materials or liquids cleaned up immediately.
- Combustible scrap, debris and waste stored safely and removed from the worksite promptly.
- Accumulated combustible dust routinely removed from elevated surfaces, including the overhead structure of buildings.
- Combustible dust cleaned up with a vacuum system to prevent the dust going into suspension.
- Metallic or conductive dust prevented from entering or accumulation on or around electrical enclosures or equipment.
- Covered metal waste cans used for oily and paint-soaked waste.
- All oil and gas fired devices are equipped with flame failure controls that will prevent flow of fuel if pilots or main burners are not working.
- Paint spray booths, dip tanks and the like cleaned regularly.
- The minimum number of toilets and washing facilities provided.
- All toilets and washing facilities clean and sanitary.
- All work areas adequately illuminated.
- Pits and floor openings covered or otherwise guarded.

## **PERSONAL PROTECTIVE EQUIPMENT & CLOTHING**

### **Purpose**

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The Global Comfort Group provides all Employees with required PPE to suit the task and known hazards. This Chapter covers the requirements for Personal Protective Equipment except for PPE used for hearing conservation and respiratory protection or PPE required for hazardous material response to spills or releases, which if applicable are covered under separate programs.

Richard Lowery, RSO is the program coordinator, acting as the representative of the plant manager, who has overall responsibility for the program. The RSO will designate appropriate plant supervisors to assist in training employees and monitoring their use of PPE. This written plan is kept in the RSO's office. Then he/she will review and update the program as necessary. Copies of this program may be obtained from the RSO's office.

We at Global Comfort Group believe it is our obligation to provide a hazard-free environment to our employees. Any employee encountering hazardous conditions must be

protected against the potential hazards. The purpose of protective clothing and equipment (PPE) is to shield or isolate individuals from chemical, physical, biological, or other hazards that may be present in the workplace.

Establishing an overall written PPE program detailing how employees use PPE makes it easier to ensure that they use PPE properly in the workplace and document our PPE efforts in the event of an OSHA inspection. Global Comfort Groups PPE program covers:

- Purpose
- Hazard assessment
- PPE selection
- Employee training
- Cleaning and maintenance of PPE
- PPE specific information

If after reading this program, you find that improvements can be made, please contact the RSO, Richard Lowery. We encourage all suggestions because we are committed to the success of our Personal Protective Equipment Program. We strive for clear understanding, safe behavior, and involvement in the program from every level of the company.

## **Administrative Duties**

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Richard Lowery, RSO, has overall responsibility for coordinating safety and health programs in this company. He is the person having overall responsibility for the PPE Program. Richard Lowery will review and update the program, as necessary and at least annually. Copies of the written program may be obtained in the RSO's office.

## **General Policy**

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Engineering controls shall be the primary methods used to eliminate or minimize hazard exposure in the workplace. When such controls are not practical or applicable, personal protective equipment shall be employed to reduce or eliminate personnel exposure to hazards. Personal protective equipment (PPE) will be provided, used, and maintained when it has been determined that its use is required and that such use will lessen the likelihood of occupational injuries and/or illnesses.

## **Responsibilities**

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The RSO will be responsible for assessing the hazards and exposures that may require the use of PPE, determining the type of equipment to be provided, and purchasing the equipment. Input from managers, supervisors, and employees will be obtained and considered in selecting appropriate equipment.

Managers/supervisors will be responsible for training employees in the use and proper care of PPE, ensuring that all employees are assigned appropriate PPE, and ensuring that PPE is worn by employees when and where it is required.

Employees are responsible for following all provisions of this program and related procedures. They are expected to wear PPE when and where it is required.

## **Hazard Assessment**

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The Company will perform an assessment of the workplace to determine if hazards are present, or likely to be present, which necessitates the use of personal protective equipment (PPE). This assessment will consist of a survey of the workplace to identify sources of hazards to workers. Consideration will be given to hazards such as impact, penetration, laceration, compression (dropping heavy objects on foot, roll-over, etc.), chemical exposures, harmful dust, heat, light (optical) radiation, electrical hazards, noise, etc. Where such hazards are present, or likely to be present, the Company will:

- Select, and have each affected Employee use, the proper PPE.
- Communicate selection decisions to each affected Employee.
- Select PPE that properly fits each affected employee.
- Train employees in the use and care of PPE as described elsewhere in this program.

The Company will verify that the workplace hazard assessment has been performed by conducting a written certification. This certification must include the certifier's name, signature, date(s) and identification of assessment documents. Whenever there is a change in process or in the workplace that might introduce or change an exposure or hazard, the company will perform an assessment to determine if there needs to be additional PPE or a change in the PPE provided. These supplemental hazard assessments will also be documented, signed, and dated by the person performing the assessment. The Company will review and update the workplace hazard assessment on an annual basis.

## **Sources**

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During the walk-through survey the supervisor/lead/employee should observe:

- sources of motion, i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects.
- sources of high temperatures that could result in burns, eye injury or ignition of protective equipment, etc.
- types of chemical exposures.
- sources of harmful dust.
- sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.
- sources of falling objects or potential for dropping objects.
- sources of sharp objects which might pierce the feet or cut the hands.
- sources of rolling or pinching objects which could crush the feet.
- layout of workplace and location of co-workers; and
- any electrical hazards. In addition, injury/accident data should be reviewed to help identify problem areas.

## **Organize Data**

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Following the walk-through survey, it is necessary to organize the data and information for use in the assessment of hazards. The objective is to prepare for an analysis of the hazards in the

environment to enable proper selection of protective equipment.

## **Analyze Data**

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Having gathered and organized data on a workplace, an estimate of the potential for injuries should be made. Each of the basic hazards should be reviewed and a determination made as to the type, level of risk, and seriousness of potential injury from each of the hazards found in the area. The possibility of exposure to several hazards simultaneously should be considered.

## **Controlling Hazards**

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PPE devices alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, engineering controls, and sound manufacturing practices.

## **Assessment and Selection**

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It is necessary to consider certain general guidelines for assessing the foot, head, eye and face, and hand hazard situations that exist in an occupational or educational operation or process, and to match the protective devices to the hazard. It should be the responsibility of the RSO to exercise common sense and appropriate expertise to accomplish these tasks. Personal protective equipment will meet the following standards:

- Eye & Face Protection devices - ANSI Z87.1-1989 "American National Standard Practice for Occupational and Educational Eye and Face Protection"
- Head Protection devices - ANSI Z89.1-1986 "American National Standard for Personal Protection - Protective Headwear for Industrial Workers"
- Foot Protection devices - ANSI Z41-1991 "American National Standard for Personal Protection - Protective Footwear"
- Hand Protection - No national standard available - Selection will be based on task performed, conditions present, duration of use, and the hazards and potential hazards identified.
- Electrical Protective equipment - No national standard - Equipment will be tested electrically before first use and every 6 months thereafter or upon indication that insulating value is suspect.

## **Selection Guidelines**

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When hazards are present or likely to be present, PPE will be selected for each affected employee. Selection and reasons for selection will be given to the employee. The general procedure for selection of protective equipment is to:

- Become familiar with the potential hazards and the type of protective equipment that is available, and what it can do, i.e., splash protection, impact protection, etc.
- compare the hazards associated with the environment, i.e., impact velocities, masses, projectile shape, radiation intensities, with the capabilities of the available protective equipment.
- select the protective equipment which ensures a level of protection greater than the minimum required to protect employees from the hazards; and
- fit the user with the protective device and give instructions on care and use of the PPE. It is very important that end users be made aware of all warning labels for and

limitations of their PPE.

## **Fitting the Device**

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Careful consideration must be given to comfort and fit. PPE that fits poorly will not afford the necessary protection. Continued wearing of the device is more likely if it fits the wearer comfortably. Protective devices are generally available in a variety of sizes. Care should be taken to ensure that the right size is selected. Employees are properly fitted to the PPE they are required to wear. In addition, they will be trained in proper donning, doffing, cleaning, and maintenance.

## **Devices with Adjustable Features**

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Adjustments should be made on an individual basis for a comfortable fit that will maintain the protective device in the proper position. Care should be taken in fitting devices for eye protection against dust and chemical splash to ensure that the devices are sealed to the face. In addition, proper fitting of helmets is important to ensure that it will not fall off during work operations. In some cases, a chin strap may be necessary to keep the helmet on an employee's head. (Chin straps should break at a reasonably low force, however, to prevent a strangulation hazard). Where manufacturer's instructions are available, they should be followed carefully.

## **Employee-Owned PPE**

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Global Comfort Group is responsible for assuring the adequacy, maintenance and sanitation of employee-owned personal protective equipment.

## **Reassessment of Hazards**

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It is the responsibility of the RSO to reassess the workplace hazard situation as necessary, by identifying and evaluating new equipment and processes, reviewing accident records, and reevaluating the suitability of previously selected PPE.

- Defective & Damaged Equipment
- Defective or damaged personal protective equipment shall not be used.
- Selection of Personal Protective Equipment (PPE)

Personal protective equipment (PPE) will be selected based on the hazards to which the workers are exposed or potentially exposed. All selections will be made with input from managers, supervisors, and workers.

## **Training**

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Each employee who is required to use PPE will be trained in the following:

- Why PPE is necessary.
- When PPE is necessary.
- What PPE is necessary and any alternative choices of equipment.
- How to properly don, doff, adjust, and wear PPE.
- Limitations of PPE.
- The proper care, maintenance, storage, useful life, and disposal of PPE.

The training will include an opportunity for employees to handle the PPE and demonstrate that they understand the training and can use the PPE properly. Training will be provided by the manager or supervisor of the affected employees. Training will be documented in writing with the documentation including the names of each employee trained, the date(s) of the training, and the subject matter covered.

Employees must demonstrate an understanding of the training and the ability to use the PPE properly before they are allowed to perform work requiring the use of the equipment.

Employees are prohibited from performing work without donning appropriate PPE to protect them from the hazards they will encounter in the course of that work.

If the RSO has reason to believe an employee does not have the understanding or skill required, the employer must retrain. Since an employee's supervisor is in the best position to observe any problems with PPE use by individual employees, the RSO will seek this person's input when making this determination. Circumstances where retraining may be required include changes in the workplace or changes in the types of PPE to be used, which would render previous training obsolete. Also, inadequacies in an affected employee's knowledge or use of the assigned PPE, which indicates that the employee has not retained the necessary understanding or skills, would require retraining.

The RSO certifies in writing that the employee has received and understands the PPE training.

Because failure to comply with company policy concerning PPE can result in OSHA citations and fines as well as employee injury, an employee who does not comply with this program will be disciplined for noncompliance according to the company's Disciplinary Action Program.

## **Cleaning and Maintenance**

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It is important that all PPE be kept clean and properly maintained by the employee to whom it is assigned. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. PPE is to be inspected, cleaned, and maintained by employees at regular intervals as part of their normal job duties so that the PPE provides the requisite protection. Supervisors are responsible for ensuring compliance with cleaning responsibilities by employees.

If PPE is for general use, the Supervisor, Lead, Employee has responsibility for cleaning and maintenance. If a piece of PPE needs repair or replacement it is the responsibility of the employee to bring it to the immediate attention of his or her supervisor or the RSO. It is against work rules to use PPE that is in disrepair or not able to perform its intended function. Contaminated PPE that cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

## **Personal Protective Equipment**

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Engineering controls shall be the primary methods used to eliminate or minimize hazard exposure in the workplace. When such controls are not practical or applicable, personal protective equipment shall be employed to reduce or eliminate personnel exposure to hazards.

Personal protective equipment (PPE) will be provided, used, and maintained in a sanitary and reliable condition when it has been determined that its use is required and that such use will lessen the likelihood of occupational injuries and/or illnesses. The RSO will recommend and/or provide necessary protective equipment where there is a reasonable probability that the use of the equipment will prevent or reduce the severity of injuries or illness.

### Equipment Specifications and Requirements

All personal protective clothing and equipment will be of a safe design and construction for the work to be performed. Only those items of protective clothing and equipment that meet National Institute of Occupational Safety and Health (NIOSH) or American National Standards Institute (ANSI) standards will be procured or accepted for use.

### Eye and Face Protection

Most occupational eye injuries can be prevented using suitable/approved safety spectacles, goggles, or shields. Approved eye and face protection shall be worn when there is a reasonable possibility of personal injury. Supervisors, with assistance from the RSO, determine jobs and work areas that require eye protection and the type of eye and face protection that will be used.

Typical hazards that can cause eye and face injury are:

- Splashes of toxic or corrosive chemicals, hot liquids, and molten metals.
- Flying objects, such as chips of wood, metal, and stone dust.
- Fumes, gases, and mists of toxic or corrosive chemicals; and
- Aerosols of biological substances.

Prevention of eye accidents requires that all persons who may be in eye hazard areas wear protective eyewear. This includes employees, visitors, researchers, contractors, or others passing through an identified eye hazardous area. To provide protection for these personnel, activities shall procure enough heavy-duty goggles and/or plastic eye protectors which afford the maximum amount of protection possible.

If these personnel wear personal glasses, they shall be provided with a suitable eye protector to wear over them.

Eye and face protectors procured, issued to, and used by Company personnel must conform to the following design and standards:

- Provide adequate protection against the hazards for which they are designed.
- Fit properly and offers the least possible resistance to movement and cause minimal discomfort while in use.
- Be durable.
- Be easily cleaned or disinfected for or by the wearer.
- Be clearly marked to identify the manufacturer.

Persons who require corrective lenses for normal vision, and who are required to wear eye protection, must wear goggles or spectacles of one of the following types:

- Spectacles with protective lenses which provide optical correction.

- Goggles that can be worn over spectacles without disturbing the adjustment of the spectacles.
- Goggles that incorporate corrective lenses mounted behind the protective lenses.

### Description and Use of Eye/Face Protectors

**Safety Spectacles.** Protective eyeglasses are made with safety frames, tempered glass or plastic lenses, temples and side shields which provide eye protection from moderate impact and particles encountered in job tasks such as carpentry, woodworking, grinding, scaling, etc.

**Single Lens Goggles.** Vinyl framed goggles of soft pliable body design provide adequate eye protection from many hazards. These goggles are available with clear or tinted lenses, perforated, port vented, or non-vented frames.

Single lens goggles provide similar protection to spectacles and may be worn in combination with spectacles or corrective lenses to insure protection along with proper vision.

**Welders/Chippers Goggles.** These goggles are available in rigid and soft frames to accommodate single or two eye piece lenses.

Welder's goggles provide protection from sparking, scaling, or splashing metals and harmful light rays. Lenses are impact resistant and are available in graduated shades of filtration.

Chippers/grinders goggles provide eye protection from flying particles. The dual protective eye cups house impact resistant clear lenses with individual cover plates.

**Face Shields.** These normally consist of adjustable headgear and face shield of tinted/transparent acetate or polycarbonate materials, or wire screen. Face shields are available in various sizes, tensile strength, impact/heat resistance and light ray filtering capacity. Face shields will be used in operations when the entire face needs protection and should be worn to protect the eyes and face against flying particles, metal sparks, and chemical/ biological splash.

**Welding Shields.** These shield assemblies consist of vulcanized fiber or glass fiber body, a ratchet/button type adjustable headgear or cap attachment and a filter and cover plate holder. These shields will be provided to protect workers' eyes and face from infrared or radiant light burns, flying sparks, metal spatter and slag chips encountered during welding, brazing, soldering, resistance welding, bare or shielded electric arc welding and oxyacetylene welding and cutting operations.

The RSO maintains a supply of various eye and face protective devices. Personnel requiring prescription safety glasses must contact the RSO.

### Emergency Eyewash Facilities

Emergency eyewash facilities meeting the requirements of ANSI Z358.1-1981 shall be provided in all areas where the eyes of any employee may be exposed to corrosive materials. All such emergency facilities shall be located where they are easily accessible to those in need.

## Hearing Protection

James River does not have a formalized hearing conservation program. Job sites are evaluated to determine if noise levels are such that would put them in the 8-hour TWA (Action Level). If they are, administrative controls (reduced work hours) will be put in place to ensure they will not exceed the 8-hour TWA. Hearing Conservation is an annual training topic, but no monitoring nor audiograms are conducted.

Hearing protection devices are the first line of defense against noise in environments where engineering controls have not reduced employee exposure to safe levels. Hearing protective devices can prevent significant hearing loss, but only if they are used properly.

The most popular hearing protection devices are earplugs which are inserted into the ear canal to provide a seal against the canal walls. Earmuffs enclose the entire external ears inside rigid cups. The inside of the muff cup is lined with acoustic foam and the perimeter of the cup is fitted with a cushion that seals against the head around the ear by the force of the headband.

Preformed earplugs and earmuffs should be washed periodically and stored in a clean area, and foam inserts should be discarded after each use. It is important for you to wash your hands before handling pre-formed earplugs and foam inserts to prevent contaminants from being placed in the ear which may increase your risk of developing infections.

Hearing protective devices (ear plugs, muffs, etc.) shall be the permanent solution only when engineering or administrative controls are infeasible or cost prohibitive. Hearing protective devices are defined as any device that can be worn to reduce the level of sound entering the ear. Hearing protective devices shall be worn by all personnel when they must enter or work in an area where the operations generate noise levels of:

- Greater than 85 dBA sound levels, or
- 115 dB peak sound pressure level or greater

Types of Hearing Protective Devices Hearing protective devices include the following:

- A device designed to provide an air-tight seal with the ear canal. There are three types of insert earplugs.
  1. premolded
  2. formable
  3. custom earplugs.
- Premolded earplugs are pliable devices of fixed proportions. Two standard styles, single flange, and triple flange, come in various sizes, and will fit most people. Personnel responsible for fitting and dispensing earplugs will train users on proper insertion, wear, and care. While premolded earplugs are reusable, they may deteriorate and should be replaced periodically.
- Formable earplugs come in just one size. Some are made of material which, after being compressed and inserted, expands to form a seal in the ear canal. When properly inserted, they provide noise attenuation values that are like those from correctly fitted premolded earplugs. Individual units may procure approved formable earplugs. Supervisors must instruct users in the proper use of these earplugs as part of the annual education program. Each earplug must be held in place while it expands enough to remain firmly seated. A set of earplugs with a cord attached is available. These earplugs may be washed and therefore are reusable but will have to be

replaced after two or three weeks or when they no longer form an airtight seal when properly inserted.

- Custom Molded Earplugs: A small percentage of the population cannot be fitted with standard premolded or formable earplugs. Custom earplugs can be made to fit the exact size and shape of the individual's ear canal. Individuals needing custom earplugs will be referred to an audiologist.
- Earmuffs are devices worn around the ear to reduce the level of noise that reaches the ear. Their effectiveness depends on an airtight seal between the cushion and the head.

Employees will be given the opportunity to select hearing protective devices from a variety of suitable ones provided by the company. In all cases the chosen hearing protectors shall have a Noise Reduction Ratio (NRR) high enough to reduce the noise at the ear drum to 85 dBA or lower.

Instruction on the proper use and care of earplugs and earmuffs will be provided whenever HPDs (hearing protective devices) are dispensed. Personnel requiring earmuffs in addition to earplugs will be informed of this requirement and educated on the importance of using proper hearing protection. The company will dispense earmuffs when necessary and will maintain a supply of disposable earplugs.

Always use and maintain HPDs as originally intended and in accordance with instructions provided.

Reusable earplugs, such as the triple flange or formable devices should be washed in lukewarm water using hand soap, rinsed in clean water, and dried thoroughly before use. Wet or damp earplugs should not be placed in their containers. Cleaning should be done as needed.

Earmuff cushions should be kept clean. The plastic or foam cushions may be cleaned in the same way as earplugs, but the inside of the muff should not get wet. When not in use, earmuffs should be placed in the open air to allow moisture that may have been absorbed into the cups to evaporate.

The maximum sound attenuation one gets when wearing hearing protection devices is limited by the human body and bone conduction mechanisms. Even though a particular device may provide outstanding values of noise attenuation the actual noise reductions may be less because of the noise surrounding the head and body bypasses the hearing protector and is transmitted through tissue and bone pathways to the inner ear.

### Respiratory Protection

Respiratory hazards may occur through exposure to harmful dusts, fogs, fumes, mist, gases, smoke, sprays, and vapors. The best means of protecting personnel is using engineering controls, e.g., local exhaust ventilation. Only when engineering controls are not practical or applicable shall respiratory protective equipment be employed to reduce personnel exposure.

The RSO is responsible for the Respiratory Protection Program at the Company. Workers requiring the use of respirators must first obtain medical approval from the Company physician to wear a respirator before a respirator can be issued. The RSO conducts respirator training and

fit tests and is responsible for determining the proper type of respiratory protection required for the hazard.

Adherence to the following guidelines will help ensure the proper and safe use of respiratory equipment:

- Wear only the respirator you have been instructed to use. For example, do not wear a self-containing breathing apparatus if you have been assigned and fitted for a half-mask respirator.
- Wear the correct respirator for the hazard. For example, some situations, such as chemical spills or other emergencies, may require a higher level of protection than your respirator can handle. Also, the proper cartridge must be matched to the hazard (a cartridge designed for dusts and mists will not provide protection from vapors)
- Check the respirator for a good fit before each use. Positive and negative fit checks should be conducted.
- Check the respirator for deterioration before and after use. Do not use a defective respirator.
- Recognize indications that cartridges and canisters are at their end of service. If in doubt, change cartridges/ canisters before using respirator.
- Practice moving and working while wearing the respirator so that you can get used to it.
- Clean the respirator after each use, thoroughly dry it and place the cleaned respirator in a sealable plastic bag.
- Store respirators carefully in a protected location away from excessive heat, light, and chemicals.

### Head Protection

Hats and caps have been designed and manufactured to provide workers protection from impact, heat, electrical and fire hazards. These protectors consist of the shell and the suspension combined as a protective system. Safety hats and caps will be of nonconductive, fire and water-resistant materials. Bump caps or skull guards are not authorized head protection at Global Comfort Group.

Head protection will be furnished to, and used by, all employees and contractors engaged in construction and other miscellaneous work in head-hazard areas. Head protection will also be required to be worn by engineers, inspectors, and visitors at construction sites.

### Hand Protection

Skin contact is a potential source of exposure to toxic materials; it is important that the proper steps be taken to prevent such contact. Gloves should be selected based on the material being handled, the hazard involved, and their suitability for the operation being conducted. One type of glove will not work in all situations.

Most accidents involving hands and arms can be classified under four main hazard categories: chemicals, abrasions, cutting, and heat. There are gloves available that can protect workers from any of these individual hazards or any combination thereof.

The first consideration in the selection of gloves for use against chemicals is to determine, if possible, the exact nature of the substances to be encountered. Read instructions and warnings on chemical container labels and MSDSs before working with any chemical. Recommended glove types are often listed in the section for personal protective equipment.

All glove materials are eventually permeated by chemicals. However, they can be used safely for limited time periods if specific use and glove characteristics (i.e., thickness and permeation rate and time) are known. The RSO can assist in determining the specific type of glove material that should be worn for a particular chemical.

Gloves should be replaced periodically, depending on frequency of use and permeability to the substance(s) handled. Gloves overtly contaminated should be rinsed and then carefully removed after use or replaced as needed. Gloves should also be worn whenever it is necessary to handle rough or sharp-edged objects, when using any type of ladder and very hot or very cold materials. The type of glove materials to be used (in these situations) include leather, cut resistant gloves, welder's gloves, aluminum-backed gloves, and other types of insulated glove materials.

Careful attention must be given to protecting your hands when working with tools and machinery. Power tools and machinery must have guards installed or incorporated into their design that prevent the hands from contacting the point of operation, power train, or other moving parts. To protect the hands from injury due to contact with moving parts, it is important to:

- Ensure that guards are always in place and used.
- Always lock out machines or tools and disconnect the power before making repairs.
- Treat a machine without a guard as inoperative; and
- Do not wear gloves around moving machinery, such as drill presses, mills, lathes, and grinders.

The RSO can help the supervisor identify appropriate glove selections for their operations. The RSO also maintains a selection of gloves for various tasks.

### Safety Shoes

Safety shoes shall be worn in the shops, warehouses, vehicles, maintenance, customer sites, and other areas as determined by the RSO. Recommendations for safety footwear shall be approved by the RSO. All safety footwear shall comply with American National Standards Institute (ANSI) Standard ANSI Z41-1991, "American National Standard for Personal Protection - Protective Footwear."

Supervisor - Reviews employees' work situation and recommends safety footwear as appropriate in accordance with established Institute policy. Ensures that all employees under his supervision use and maintain safety footwear. Makes determination on the need for replacement or repair of safety shoes.

Employee - Wears approved safety shoes in all areas requiring safety footwear as determined by the supervisor and the RSO.

RSO - Consults with supervisors concerning safety shoe requirements and approves all safety shoes.

If an employee is unable to find appropriate safety footwear at the designated vendors, he or she should check with the RSO for alternate procedures.

Employees who want to have their footwear repaired should be encouraged to do so. Some footwear is designed to be repaired, and some is not. Repairs would include such items as new soles and heels. The Company will reimburse employees for repairs.

## **Walkways**

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- The aisles and passageways kept clear.
- Aisles and walkways marked as appropriate.
- Wet surfaces covered with non-slip materials.
- Holes in the floor, sidewalk or other walking surface repaired properly, covered, or otherwise made safe.
- There is safe clearance for walking in aisles where motorized or mechanical handling equipment is operating.
- The spilled materials cleaned up immediately.
- Materials or equipment stored in such a way that sharp projectiles will not interfere with the walkway.
- Changes of direction or elevations readily identifiable.
- Aisles or walkways that pass near moving or operating machinery, welding operations or similar operations arranged so employees will not be subjected to potential hazards.
- Adequate headroom provided for the entire length of any aisle or walkway.
- Standard guardrails provided wherever aisle or walkway surfaces are elevated more than 30 inches above any adjacent floor or the ground.
- Bridges provided over conveyors and similar hazards.

## **Floor & Wall Openings**

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- Floor openings guarded by a cover, guardrail, or equivalent on all sides (except at entrance to stairways or ladders).
- Toe boards installed around the edges of a permanent floor opening (where people may pass below the opening).
- Skylight screens of such construction and mounting that they will withstand a load of at least 200 pounds.
- The glass in windows, doors, glass walls that are subject to human impact, of sufficient thickness and type for the condition of use.
- Grates or similar type cover over floor openings such as floor drains, of such design that foot traffic or rolling equipment will not be affected by the grate spacing.
- Unused portions of service pits and pits not actually in use either covered or protected by guardrails or equivalent.
- Manhole covers, trench covers and similar covers, plus their supports, designed to carry a truck rear axle load of at least 20,000 pounds when located in roadways and subject to vehicle traffic.

- Floor or wall openings in fire resistive construction provided with doors or covers compatible with the fire rating of the structure and provided with self-closing feature when appropriate.

## **Stairs & Stairways**

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- Standard stair rails or handrails on all stairways having four or more risers.
- All stairways are at least 22 inches wide.
- Stairs have at least a 6'6" overhead clearance.
- Stairway handrails capable of withstanding a load of 200 pounds, applied in any direction.
- Where stairs or stairways exit directly into any area where vehicles may be operated, adequate barriers and warnings are provided to prevent employees stepping into the path of traffic.
- Stairway landings have a dimension measured in the direction of travel, at least equal to width of the stairway.
- The vertical distance between stairway landings is limited to 12 feet or less.

## **Elevated Surfaces**

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- Signs posted, when appropriate, showing the elevated surface load capacity.
- Surfaces elevated more than 30 inches above the floor or ground provided with standard guardrails.
- All elevated surfaces (beneath which people or machinery could be exposed to falling objects) provided with standard 4-inch toe boards.
- A permanent means of access and egress provided to elevated storage and work surfaces.
- Required headroom provided where necessary.
- Material on elevated surfaces piled, stacked, or racked in a manner to prevent it from tipping, falling, collapsing, rolling or spreading.
- Dock boards or bridge plates used when transferring materials between docks and trucks or rail cars.

## **Exiting or Egress**

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- All exits are marked with an exit sign and illuminated by a reliable light source.
- The directions to exits, when not immediately apparent, are marked with visible signs.
- Doors, passageways, or stairways, that are neither exits nor access to exits and which could be mistaken for exits, appropriately marked "NOT AN EXIT", "TO BASEMENT", "STOREROOM", and the like.
- Exit signs provided with the word "EXIT" in lettering at least 5 inches high and the stroke of the lettering at least 1/2 inch wide.
- Exit doors side hinged.
- All exits are kept free of obstructions.
- At least two means of egress provided from elevated platforms, pits, or rooms where the absence of a second exit would increase the risk of injury from hot, poisonous, corrosive, suffocating, flammable, or explosive substances.
- There are sufficient exits to permit prompt escape in case of emergency.

- Special precautions taken to protect employees during construction and repair operations.
- The number of exits from each floor of a building, and the number of exits from the building itself, appropriate for the building occupancy load.
- Exit stairways which are required to be separated from other parts of a building enclosed by at least two-hour fire-resistive construction in buildings more than four stories in height, and not less than one-hour fire resistive construction elsewhere.
- Ramps are used as part of the required exiting from a building, with the ramp slope limited to 1- foot vertical and 12 feet horizontal.
- Exit will be through frameless glass doors, glass exit doors, storm doors, and such are the doors fully tempered and meet the safety requirements for human impact.

## **Exit Doors**

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- Doors that are required to serve as exits are designed and constructed so that the way of exit travel is obvious and direct.
- Windows that could be mistaken for exit doors, made inaccessible by means of barriers or railings.
- Exit doors should open outward from the direction of exit travel without the use of a key or any special knowledge or effort when the building is occupied.
- A revolving, sliding, or overhead door prohibited from serving as a required exit door.
- Where panic hardware is installed on a required exit door, it will allow the door to open by applying a force of 15 pounds or less in the direction of the exit traffic.
- Doors in cold storage rooms provided with an inside release mechanism that will release the latch and open the door even if it's padlocked or otherwise locked on the outside.
- Exit doors open directly onto any street, alley, or other area where vehicles may be operated, are adequate barriers and warnings provided to prevent employees stepping into the path of traffic.
- Doors that swing in both directions and are located between rooms where there is frequent traffic, provided with viewing panels in each door.

## **LADDERS**

### **Purpose**

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Global Comfort Group understands that ladders present unique opportunities for unsafe acts and unsafe conditions. Employees who use ladders must be trained in proper selection, inspection, use and storage. Improper use of ladders has caused a large percentage of accidents in the workplace are of accidents. Use caution on ladders.

### **General Requirements**

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- Ladder rungs, cleats, and steps should be parallel, level, and uniformly spaced, when the ladder is in position for use. This includes job-built ladders.
- Ladders should be inspected by a competent person for visible defects on a periodic basis and after any occurrence that could affect their safe use.
- Ladders should be placed on stable, level surface. Employees should be instructed not to stand on the top two rungs, or top of step ladders. Employees should be instructed not

to carry anything in their hands that could cause injury in case of fall, to face the ladder when ascending or descending.

- The ladder side rails should extend at least 3 feet (.9m) above the upper landing surface. When ladders are not able to be extended then the ladder should be secured at its top to a rigid support that will not deflect.
- Ladders should not be loaded beyond the maximum intended load for which they were built, nor beyond the manufacturer's rated capacity.
- Ladders should be used only for the purpose for which they were designed.
- All employees are required to use appropriate gloves when using any type of ladder.

## **Hazards**

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Falls from ladders can result in broken bones, crippling injuries, and death. Ladder safety is taken very seriously by our company. Ladder hazards include:

- Ladders with missing or broken parts.
- Using a ladder with too low a weight rating.
- Using a ladder that is too short for purpose.
- Using metal ladders near electrical wires.
- Using ladders as a working platform.
- Objects falling from ladders.

## **Inspections**

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Inspect ladders before each use.

- All rungs and steps are free of oil, grease, dirt, etc.
- All fittings are tight.
- Spreaders or other locking devices are in place.
- Non-skid safety feet are in place.
- No structural defects, all support braces intact.
- Do not use broken ladders. Most ladders cannot be repaired to manufacturer specifications. Throw away all broken ladders.

## **Storage**

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Store ladders on sturdy hooks in areas where they cannot be damaged. Store to prevent warping or sagging. Do not hang anything on ladders that are in a stored condition.

## **Ratings & Limits**

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Ladder weight ratings

- IAA 375 pounds (Extra Heavy Duty)
- IA 300 pounds (Extra Heavy Duty)
- I 250 pounds (Heavy Duty)
- II 225 pounds (Medium Duty)
- III 200 pounds (Light Duty)

Limits on ladder Height.

- A stepladder should be no more than 20 feet high.
- A one-section ladder should be no more than 30 feet.
- An extension ladder can go to 60 feet, but the sections must overlap.

## **Ladder Setup**

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The following procedure must be followed to prevent ladder accidents:

- Put on appropriate gloves.
- Place ladder on a clean slip free level surface.
- Extend the ladder to about 3 feet above the top support or work area.
- Anchor the top and bottom of the ladder.
- Place the ladder base 1/4 the height of the ladder, from the wall when using an extension ladder.
- Never allow more than one person on a ladder.
- Use carriers and tool belts to carry objects up a ladder.
- Do not lean out from the ladder in any direction.
- If you have a fear of heights - don't climb a ladder.
- Do not allow others to work under a ladder in use.

## **Maintenance**

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- Keep ladders clean.
- Never replace broken parts unless provided by the original manufacturer.
- Do not attempt to repair broken side rails.
- Keep all threaded fasteners properly adjusted.
- Replace worn steps with parts from manufacturer.

## **Additional State Requirements**

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- Safety requirements for portable wood ladders placed in service after April 18, 1999, must meet the requirements of ANSI A14.1-1994, which is incorporated by reference. Safety requirements for portable wood ladders placed in service on or before April 17, 1999, are based on the ANSI A14.1 provisions in effect at the time such ladders were placed in service.
- Cleat Ladders longer than 30 feet cannot be used.
- The wood side rails of ladders having cleat steps cannot be less than 1 1/2 inches thick and 3 1/2 inches deep (2 by 4 inches nominal).
- Wood cleats need to be inset into side rails not less than 1/2-inch or attached directly to the edge of the side rails. Filler blocks of the thickness of the cleats need to be securely attached to the edge of the rail for the full length between cleats, or equivalent construction. The cleats need to be fastened to each rail by three 10D nails or equivalent.
- The cleats on a double cleat ladder must extend the full width of the ladder.

Extra requirements for portable metal ladders include the following:

- Cross-bracing on the rear section of stepladders cannot be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.
- These ladders cannot be used near electrical circuits if there is a risk of coming in contact with the circuits. The ladders need to be legibly marked with “CAUTION—Do Not Use Around Electrical Equipment” or equivalent.

Extra requirements for fixed ladders include the following:

- If materials other than steel, aluminum, and wood are used, they must meet the design, fabrication, and erection requirements.
- Wood ladders may be coated with a clear sealant after inspection.

## **HAND & POWER TOOLS**

### **Purpose**

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Global Comfort Group is committed to ensuring the safety of all employees who work with hand and power tools. Small hand tools can inflict great injury, as can power tools. By outlining the following safe operating procedures, we learn to prevent injury and safeguard ourselves and our co-workers. This Hand & Power Tool Safety Program was developed to establish guidelines and Safe Operating Procedures for our employees.

### **General Safe Operating Procedures**

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- Whether furnished by the Company or the employee, all tools should be maintained in a safe condition.
- Guards should always be in place and operable while the tool is in use. The guard may not be manipulated in such a way that will comprise its integrity or compromise the protection in which intended. Guarding should meet the requirements set forth in ANSI B15.1.
- Employees using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dust, fumes, mists vapors, or gases will be provided with PPE necessary to protect them from the hazard.
- Any tool not in compliance should either be identified as unsafe by tagging or locking the controls to render them inoperable or should be physically removed from its place of operation.

### **Hammers**

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#### General Safety - Safe Operation

- Wear eye protection. Whenever possible, use soft-faced hammers (plastic, wood, or rawhide) when striking hardened surfaces.
- Check the condition of the handle. Keep handles tightly wedged in hammerheads to prevent injury.

- Replace cracked or splintered handles.
- Select the right size for the job. A light hammer bounces off the work. One that's too heavy is hard to control.
- Grip the handle close to the end to increase leverage for harder, less tiresome blows.
- Prevent injuries to others by swinging in a direction that won't let your hammer strike someone if it slips from your hand.
- Keep the handle dry and free of grease and oil.
- Keep the hammer face parallel with your work. Force is then distributed over the entire hammer face, reducing the tendency of the edges of the hammerhead to chip, or slip off the object being struck.

## **Chisels & Punches**

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### General Safety - Safe Operation

- Wear eye protection.
- Grind off mushroom heads. The sharp edges can tear your skin or chips could break off the mushroomed head and fly into your eyes.
- Keep a smooth bevel ground on the heads of all punches and chisels.
- Don't use chisels and punches for prying.
- Hold the tool steadily but loosely. The best place to hold it is just below the head. If you miss and strike your hand, your hand will not be caught between the hammer and the work piece.
- Select the proper sized tool for the job. Heavy Pounding on tools too small for the job increases the risk of injury from tool breakage.

## **Knives**

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### General Safety - Safe Operation

- Keep blades sharp. The greater the force you must apply, the less control you have over the cutting action of the knife. The safest knife usually has the sharpest edge.
- Cut away from the body. Your hands and fingers should always be behind the cutting edge.
- Keep knife handles clean and dry to keep your hand from slipping onto the blade.
- Never pry with a knife; blades are hardened and can break with a snap.
- Store knives safely. Keep knives in their own box or scabbard when not in use.

## **Screwdrivers**

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### General Safety - Safe Operation

- Use screwdrivers only for driving screws.
- Sharpen screwdrivers properly. File or grind worn or damaged tips to fit the slot of the screw. A sharp, square-edged tip won't slip as easily as a dull one, and less pressure will be required to hold the tip in the slot.

- Don't hold parts in your hand, put the wok on a bench or in a vise to avoid the possibility of piercing your hand with the screwdriver tip.
- Use screwdrivers with insulated handles for electrical work.

## **Hand Saws**

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### General Safety - Safe Operation

- Keep handsaws sharp and free of rust to prevent them from binding or jumping.
- Always make saw cuts directly across the material with a slow, careful, downward stroke.
- Never force the saw through the cut as this may cause the saw to buckle or fly out of the groove causing an injury.

## **Power Carpenter Tools**

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### General Safety - Safe Operation

- Three Types: Electrical, Pneumatic, and Hydraulic.
- Operate power tools only if you are trained and completely familiar with the tool.
- Inspect all power tools and cords before using them. The tools should be clean and in good condition. Do not use a tool that has a damaged cord or hose.
- Make sure the work area is well lit.
- Do not operate power tools if you cannot see the working surface clearly.
- Ensure that the power source is the proper voltage and current for the tool.
- Make sure the tool is turned "OFF" before connecting it to a power source.
- When using a power tool, give the tool your full and undivided attention.
- Do not distract or disturb another worker who is operating a power tool.
- Always disconnect a power source before cleaning or adjusting the tool.
- Ensure that the power source for a hydraulic or pneumatic tool is the correct pressure for the tool.
- Check electrical cords frequently and use only approved extension cords.
- Ensure that cords and hoses are positioned so they do not become tripping hazards.
- Do not use electric tools in areas where water is present.

## **Air Compressors**

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### General Safety - Safe Operation

- Read all manuals included with this product carefully. Be thoroughly familiar with the controls and the proper use of the equipment.
- Only trained personnel shall be allowed to use the compressor.
- Keep visitors away and NEVER allow children in the work area during operation.
- Wear the appropriate personal protective equipment when operating the unit.
- Before each use, inspect compressed air system and electrical components for signs of damage, deterioration, weakness, or leakage. Repair or replace defective items before operating.
- Never weld or drill holes in the air tank.

- Release air slowly when draining moisture or depressurizing the compressor system.
- Keep your fingers away from a running compressor, fast moving and hot parts will cause injury and /or burns.
- Never use air compressor for the purpose of supplying breathing air.
- Never operate or repair in or near flammable gas or vapor.
- Never stand on or use the unit as handhold.
- Disconnect power and release all pressure from the system before attempting to install, service, relocate or perform any maintenance.
- Do not use extension cords with this product. Use additional air hoses instead to avoid power loss and permanent motor damage.
- Do not exceed pressure limits for any component in the system.

## **Table Saw**

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### General Safety - Safe Operation

- Always keep the blade guard and driving knife (splitter) in place and in working order. Keep tools and cords in good repair and clean for better and safe performance.
- Keep the work area clean and well lit. Don't use power tools in damp or wet locations.
- Wear the appropriate personal protective equipment. Do not wear loose clothing or jewelry.
- Disconnect tools, when not in use, before servicing, or when changing attachments, blades, bits, or cutters.
- Never yank cord to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
- Avoid accidental starting, be sure switch is off when plugging in.
- Keep your hands away from the cutting area. Never touch the blade or other moving parts during use.
- Never use it in an explosive atmosphere.
- Never leave tool running unattended.
- Avoid cutting nails.
- Never start a tool when its rotating parts are in contact with the work piece.
- Always secure work firmly against rip fence or miter fence.
- Never stand or have any part of your body in line with the path of the saw blade. Do not reach over any moving parts.
- Never attempt to free a stalled saw blade without first turning the saw off and disconnecting the saw from the power source.
- Avoid kickbacks (work thrown back toward you) by:
  - Keeping blade sharp.
  - Keeping rip fence parallel to the saw blade.
  - Keeping riving knife, anti-kickback pawls, and blade guard in place and operating.
  - Not releasing the work before it is pushed all the way past the saw blade using a push stick.
  - Not ripping work that is twisted or warped or does not have a straight edge to guide along the fence.
  -

## **Drill Press**

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### **General Safety - Safe Operation**

- Only authorized personnel shall operate specific pieces of equipment or power tools.
- Know your equipment - read and understand the owner's manual and labels affixed to the tools. Learn its applications and limitations.
- All electrical or mechanical repairs should be attempted only by trained repair people.
- Keep children away from all operating equipment.
- Do not let visitors come in contact with tools or extension cords. All visitors shall be kept out of the immediate work area.
- Use the drill press in a well-lit area and on a level, clean and smooth surface to reduce the risk of trips and falling around running equipment.
- Do not use power tools in damp or wet locations.
- Do not use the tool in the presence of flammable fluids or gases.

### **Equipment Awareness**

- Don't overreach while using tools and equipment. Always keep proper footing and balance. Adjust the work area height as needed.
- Never place your fingers in a position where they can contact the drill bit or other cutting tool parts.
- Use the appropriate personal protective equipment - do not wear loose clothing or jewelry and restrain long hair which can be caught in moving parts.
- Disconnect tools from power source when not in use and before servicing, when changing wheels, etc.
- Keep all machine guards in place, in proper adjustment and alignment.
- Ensure the switch is in the "off" position before plugging in the tool.
- Before connecting the tool to a power source, be sure the voltage supplied is the same as that specified for the tool.
- Check the tool for damage or needed repairs prior to use.
- Do not leave a tool until it comes to a complete stop. Do not lay it down to stop it.
- Keep the tool dry, clean, and free from oil and grease.

### **Safe Work Surface**

- Always support the work piece so it doesn't shift or bind on the tool.
- Always position backup material underneath the work piece.
- Use a drill press vise, do not do any work "free hand", always fasten your stock to the table. Use fixtures to adequately hold, guide and position the work piece.
- Never move the head or table support while the tool is running.
- Before starting operation, jog the motor switch to make sure the drill bit or other cutting tools do not wobble or cause vibration.
- Use the bit and speed recommended for the job and work piece material. Remember, the longer the bit, the slower the drill speed.
- Never climb on the drill press table, it could break or pull the entire drill press down.

- To avoid injury from thrown work or tool contact, do not perform layout, assemble or setup work on the table while the cutting tool is rotating.
- When drilling wood or metal, raise the drill bit frequently to clean chips from the hole.
- Prior to start, center punch the area to be drilled for an easier start and less chance of slippage.

## **Belt Grinder (Free Standing or Handheld)**

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### General Safety - Safe Operation

- Always wear approved eye respiratory, and hand protection when working with or near grinders. The most common injury is from flying particles in the eye. Kick back causes the most severe grinder injuries.
- Visually inspect wheels for damage before mounting and using them. Chipped or cracked wheels must be discarded - if used they will shatter and cause injury.
- Do not stand directly in line with a newly mounted wheel when beginning start-up.
- Before grinding, always test run a newly mounted wheel at full speed for the following:
  - Thirty (30) seconds for reinforced discs.
  - Sixty (60) seconds for stand-mounted grinders.
- Make sure the R.P.M. of the machine does not exceed the rate wheel speed. The governor mechanism should be checked to make sure it is functioning properly.
- Rests used on grinders shall not be more than (one-eighth) inch from the face, fastened securely and must not be adjusted while the wheel is in motion.
- All spindles, adapters, flanges, and other parts should be inspected periodically and maintained to size and in good condition.
- Proper lubrication of the motor and bearing is essential.
- Use proper safety guards on grinders. Special guards are available for all grinders when working in confined areas. Make sure the guards are properly secured.
- Grind only on the face of a straight wheel. Use disk wheels or angle grinders for side grinding. Light side grinding is permitted with a cup or saucer wheel.
- Make sure the wheel has stopped before putting the grinder down as it can travel, thus injuring a person or damaging equipment. Lay the machine down with the disk up.
- Avoid dropping or bumping the wheel. Do not allow anything to strike a wheel which is not in use. Handle and store wheels carefully, following manufacturer's specifications.

## **Training**

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Richard Lowery, RSO is responsible for ensuring that all employees that use hand tools have the necessary training to perform their job safely.

## **ELECTRICAL SAFETY**

### **Purpose**

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The Electrical Safety program is designed to prevent electrically related injuries and property damage. This program also provides for proper training of maintenance employees to ensure they have the requisite knowledge and understanding of electrical work practices and

procedures. Only employees qualified in this program may conduct adjustment, repair or replacement of electrical components or equipment. Electricity has long been recognized as a serious workplace hazard, exposing employees to such dangers as electric shock, electrocution, fires, and explosions.

## **Equipment Grounding Conductor Program**

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This written plan is intended to establish and implement specific procedures for an equipment grounding conductor program covering:

- all cord sets,
- receptacles which are not a part of the building or structure, and
- equipment connected by cord and plug which are available for use or used by employees.

These requirements apply to all of Global Comfort Groups construction job sites.

## **Equipment Grounding Conductor Inspection**

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Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, are visually inspected by Site Supervisor before each day's use for external defects, such as deformed or missing pins or insulation damage, and indications of possible internal damage.

Equipment found damaged or defective is not to be used until repaired and is to be removed from service immediately by the person finding it and handed over to Site Supervisor.

## **Equipment Grounding Conductor Testing**

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The following tests are performed on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord- and plug-connected equipment required to be grounded:

- All equipment grounding conductors are tested for continuity and are electrically continuous.
- Each receptacle and attachment cap or plug is tested by (enter your answer) for correct attachment of the equipment grounding conductor. The equipment grounding conductor is connected to its proper terminal.

All required tests are performed:

- Before first use.
- Before equipment is returned to service following any repairs.
- Before equipment is used after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over).
- At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage will be tested at intervals not exceeding 6 months.

Global Comfort Group does not provide or permit employees to use any equipment which has not met the requirements of this program.

## **Recordkeeping**

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Tests performed as required in this program are recorded. The test records identify each receptacle, cord set, and cord- and plug-connected equipment that passed the test and indicate the last date it was tested or the interval for which it was tested.

This record is kept by means of an inspection log and is maintained until replaced by a more current record. The record is made available on the job site for inspection by OSHA and any affected employee.

## **Safe Work Practices**

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Safe work practices will be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contact when work is performed near or on equipment or circuits which are or may be energized. These safe work practices are detailed throughout this program.

## **Working On Electric Circuit Parts or Equipment**

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Only qualified personnel are permitted to work on electric circuit parts or equipment that have not been de-energized. Qualified personnel will be made familiar with the use of special precautionary techniques, including but not limited to the following:

- Proper personal protective equipment.
- Insulating and shielding materials.
- The use of insulated tools to ensure safety.

## **Overhead Lines**

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If work is to be performed near overhead lines, the lines will be deenergized and grounded, or other protective measures will be provided before work is started. If the lines are to be deenergized, arrangements will be made with the person or organization that operates or controls the electric circuits involved in deenergizing and ground them. If protective measures, such as guarding, isolating, or insulating, are provided, these precautions will prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.

### Unqualified Persons

When an unqualified person is working in an elevated position near overhead lines or working on the ground in the vicinity of overhead lines, the location will be such that the person and the longest conductive object he or she may contact cannot come closer to any unguarded, energized overhead line than the following distances:

- For voltages to ground 50kV or below - 10 feet (305 cm).
- For voltages to ground over 50kV - 10 feet (305 cm) plus 4 inches (10 cm) for every 10kV over 50kV.

Note: For voltages normally encountered with overhead power line, objects which do not have an insulating rating for the voltage involved are conductive.

### Qualified Persons.

When a qualified person is working in the vicinity of overhead lines, whether in an elevated position or on the ground, the person may not approach or take any conductive object without an approved insulating handle closer to exposed energized parts than shown in Table S-5 unless:

- The person is insulated from the energized part (gloves, with sleeves, if necessary, rated for the voltage involved are considered to be insulation of the person from the energized part on which work is performed), or
- The energized part is insulated both from all other conductive objects at a different potential and from the person, or
- The person is insulated from all conductive objects at a potential different from that of the energized part.

TABLE S-5 - APPROACH DISTANCES FOR QUALIFIED  
EMPLOYEES - ALTERNATING CURRENT

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| Voltage range (phase to phase)   Minimum approach distance |                        |
|------------------------------------------------------------|------------------------|
| <hr/>                                                      |                        |
| 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).  |

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### **Warnings and Barricades**

Warnings and barricades will be employed to alert unqualified Employees of the present danger related to exposed energized parts. The following rules apply:

- Safety signs, warning tags, etc., must be used to warn Unqualified Employees of the electrical hazards present, even temporarily, that may endanger them.
- Non-conductive barricades will be used with safety signs to prevent Unqualified Employees access to exposed energized parts or areas.
- Where barricades and warning signs do not provide adequate protection from electrical hazards, an Attendant will be stationed to warn and protect Employees.

## **Working Clearances: 600 Volts, Nominal or Less**

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### **Working Space About Electric Equipment**

Sufficient access and working space will be provided and maintained about all electric equipment to permit ready and safe operation and maintenance of such equipment.

### **Working Clearances**

Except as required or permitted elsewhere in this Chapter, the dimension of the working space in the direction of access to live parts operating at 600 volts or less and likely to require examination, adjustment, servicing, or maintenance while alive will not be less than indicated in Table 1.

In addition to the dimensions shown in Table 1, workspace will not be less than 30 inches (762 mm) wide in front of the electric equipment. Distances will be measured from the live parts if they are exposed, or from the enclosure front or opening if the live parts are enclosed. Walls constructed of concrete, brick, or tile are grounded.

Working space is not required behind assemblies such as dead-front switchboards or motor control centers where there are no renewable or adjustable parts such as fuses or switches on the back and where all connections are accessible from locations other than the back.

TABLE 1 WORKING CLEARANCES

| Nominal voltage to ground | Minimum clear distance for conditions <sup>1</sup> |                          |                          |
|---------------------------|----------------------------------------------------|--------------------------|--------------------------|
|                           | (a)<br>Feet <sup>2</sup>                           | (b)<br>Feet <sup>2</sup> | (c)<br>Feet <sup>2</sup> |
| 0 - 150 .....             | 3                                                  | 3                        | 3                        |
| 151 - 600 .....           | 3                                                  | 3 ½                      | 4                        |

<sup>1</sup> Conditions (a), (b), and (c) are as follows: (a) Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by insulating material. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts. (b) Exposed live parts on one side and grounded parts on the other side. (c) Exposed live parts on both sides of the workspace (not guarded as provided in Condition (a)) with the operator between.

<sup>2</sup> **NOTE:** For International System of Units (SI): one foot = 0.3048 m.

### **Clear Spaces**

The working space required will not be used for storage. When normally enclosed live parts are exposed for inspection or servicing, the working space, if in a passageway or general open space, will be guarded.

## Access & Entrance to Working Space

At least one entrance will be provided to give access to the working space about electric equipment.

## Front Working Space

Where there are live parts normally exposed on the front of switchboards or motor control centers, the working space in front of such equipment will not be less than 3 feet (914 mm).

## Headroom

The minimum headroom of working spaces for service equipment, switchboards, panelboards, or motor control centers will be 6 feet 3 inches (1.91 m).

## Guarding of Live Parts

Except as required or permitted elsewhere, live parts of electric equipment operating at 50 volts or more will be guarded against accidental contact by cabinets or other forms of enclosures, or by any of the following means:

- By location in a room, vault, or similar enclosure that is accessible only to qualified persons.
- By partitions or screens so arranged that only qualified persons will have access to the space within reach of the live parts. Any openings in such partitions or screens will be so sized and located that people are not likely to come into accidental contact with the live parts or to bring conducting objects into contact with them.
- By location on a balcony, gallery, or platform so elevated and arranged as to exclude unqualified persons.
- By elevation of 8 feet (2.44 m) or more above the floor or other working surface and so installed as to exclude unqualified persons.
- In locations where electric equipment would be exposed to physical damage, enclosures or guards will be so arranged and of such strength as to prevent such damage.
- Entrances to rooms and other guarded locations containing exposed live parts will be marked with conspicuous warning signs forbidding unqualified persons to enter.

## **Additional State Requirements - Low-Voltage Electrical Installations and Equipment (<600 volts)**

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- Suitable insulated gloves must be worn for voltages more than 300 volts, nominal.
- Suitable accident prevention tags must be used to control a specific hazard. Such tags must provide the reason for placing the tag, the name of person placing the tag and how that person may be contacted, and the date the tag was placed.
- No electrical power source, permanent or temporary, may be connected to a premises wiring system, or parts of such a system, unless positive means are used to prevent the transmission of electricity beyond the premises wiring system, or beyond any intentionally segregated parts of such system.
- Equipment intended to break current at fault levels must have an interrupting rating sufficient for the system voltage and the current, which is available at the line terminals of

the equipment. Equipment intended to break current at other than fault levels must have an interrupting rating at system voltage sufficient for the current that must be interrupted.

- Attics, furred ceilings, and underfloor spaces must have minimum unobstructed access openings of 22 inches by 30 inches.
- Each motor controller must be legibly marked to indicate the motor it controls, and each motor must have the same marking unless located and arranged so that the control point is evident.
- When a circuit is abandoned or discontinued, its conductors must be removed from the raceways, or be maintained as if in use.
- Open wiring and cables must be 16 feet above areas (other than thoroughfares) where it is possible to drive vehicles, and 12 feet above areas accessible to pedestrians only.
- Conductors run above the top level of a window may be less than 3 feet above the window if they are at the maximum practical distance and that in no case are they less than 1 foot above the window.
- Under the following conditions, the frame of a portable or a vehicle-mounted generator need not be grounded and will be permitted to serve as the grounding electrode for a system supplied by the generator:
  - The noncurrent-carrying metal parts of equipment located on the vehicle and the equipment grounding conductor terminals of the receptacles are bonded to the generator or vehicle frame; and
  - The generator supplies only equipment located on the vehicle or the generator and/or cord- and plug-connected equipment through receptacles mounted on the vehicle or on the generator; and
  - The frame of a vehicle-mounted generator is bonded to the vehicle frame; or
  - The generator is single-phase, portable, or vehicle-mounted, rated not more than 5 KW, and the circuit conductors of the generator are insulated from the generator frame and all other grounded surfaces.
  - Circuits for electric cranes operating over combustible fibers in Class III locations must not be grounded.
- Exposed, noncurrent-carrying metal parts of the following kinds of equipment, regardless of voltage, must be grounded:
  - Switchboard frames and structures supporting switching equipment (except frames of DC, single-polarity switchboards where effectively insulated, and marked "Switchboard Frame Not Grounded," or equivalent wording).
  - Generator and motor frames in an electrically operated organ (except where the generator is effectively insulated from ground and from the motor driving it, and marked "Generator Frame Not Grounded," or equivalent wording);
  - Motor frames.
  - Enclosures for motor controllers, except lined covers of snap switches.
  - Electric equipment for elevators and cranes.
  - Electric equipment in garages, theaters, and motion picture studios.
  - Electric signs and associated equipment, except where insulated from ground and from other conductive objects and accessible only to qualified persons.
  - Motion picture projection equipment.
  - Equipment supplied by Class 1, 2, and 3 remote-control and signaling circuits; and
  - Lighting fixtures.
- The path to ground from circuits, equipment, and conductor enclosures must have ample carrying capacity to conduct safely any currents liable to be imposed on it and have

impedance sufficiently low to limit the potential above ground and to facilitate the operation of the overcurrent devices in the circuit.

- Where an AC system is connected to a grounding electrode in or at a building, the same electrode must be used to ground conductor enclosures and equipment in or on that building. Two or more electrodes that are effectively bonded together will be considered as a single electrode in this sense.
- For the grounding of noncurrent-carrying metal parts of equipment, raceways, and other enclosures, the following requirements apply:
  - Individually covered or insulated grounding conductors must have a continuous outer finish that is either green, or green with one or more yellow stripes.
  - An insulated conductor larger than No. 6, and (where the conditions of maintenance and supervision assure that only qualified persons will service the installation) an insulated conductor in a multiconductor cable may, at the time of installation, be permitted to be permanently identified as a grounding conductor at each end and at every point where the conductor is accessible. Identification must be accomplished by stripping the insulation from the entire exposed length, coloring the exposed insulation green, or marking the exposed insulation with green colored tape or green colored adhesive labels.
  - Bare, covered, or insulated equipment grounding conductors are permitted.
- Noncurrent-carrying metal parts of cord- and plug-connected equipment, where required to be grounded, must be grounded by means of:
  - The metal enclosure of the conductors supplying such equipment, if a grounding-type attachment plug with one fixed grounding contact is used for grounding the metal enclosure, and if the metal enclosure of the conductors is secured to the attachment plug and to equipment by connectors approved for the purpose.
  - A grounding conductor run with the power supply conductors in a cable assembly or flexible cord properly terminated in a grounding-type attachment plug with one fixed grounding contact: or
  - A separate flexible wire or strap, insulated or bare, protected as well as practicable against physical damage, where part of approved portable equipment.
- The metal noncurrent-carrying parts of the following equipment must be effectively bonded together:
  - service raceways, cable trays, or service cable armor or sheath.
  - all service equipment enclosures containing service-entrance conductors, including meter fittings, boxes, or the like, interposed in the service raceway or armor; and
  - any metallic raceway or armor enclosing a grounding electrode conductor.
- An equipment bonding jumper must be used to connect the grounding terminal of a grounding-type receptacle to a grounded box, with certain exceptions.
- Equipment bonding jumpers must be of copper or other corrosion-resistant material and may be installed inside or outside of a raceway or enclosure. When installed on the outside, the length of the equipment bonding jumper must not exceed 6 feet and must be routed with the raceway or enclosure.
- Where available on the premises, a metal underground water pipe must always be used as the grounding electrode, regardless of its length and whether supplied by a community or a local underground water piping system or by a well on the premises. Where the buried portion of the water pipe (including any metal well casing effectively bonded to the pipe) is less than 10 feet long or where the water pipe is or is likely to be isolated by insulated sections or joints so that the effectively grounded portion is less than 10 feet long, it must be

supplemented using an additional electrode. The interior metal cold water piping system must always be bonded to the service-equipment enclosure, the grounded conductor at the service, the grounding electrode conductor where of sufficient size, or to the one or more grounding electrodes used. Where a water system is not available, the grounding connection must be made to:

- the metal frame of the building, where effectively grounded.
  - an electrode encased by at least 2 inches of concrete, located within and near the bottom of a concrete foundation or footing that is in direct contact with the earth, consisting of at least 20 feet of one or more steel reinforcing bars or rods of not less than 1/2-inch diameter, or consisting of at least 20 feet of bare copper conductor not smaller than No. 4 AWG.
  - an electrically continuous metal underground gas piping system that is uninterrupted with insulating sections or joints and without an outer nonconductive coating (if acceptable to the gas supplier and the authority having jurisdiction); or
  - other local metal underground systems or structures, such as piping systems and underground tanks.
- Where none of the electrodes specified above is available, one of the following must be used:
    - rod and pipe electrodes at least 8 feet long, or
    - plate electrodes that expose at least 2 square feet of surface to exterior soil. A single electrode consisting of a rod, pipe, or plate, which does not have a resistance to ground of 25 ohms or less must be augmented by one additional electrode.
  - Connection devices or fittings that depend on solder must not be used.
  - Where more than one equipment grounding conductor of a branch circuit enters a box, all such conductors must be in good electrical contact with each other and the arrangement must be such that the disconnection or removal of a receptacle, fixture, or other device fed from the box will not interfere with or interrupt the grounding continuity.
  - A connection must be made between the one or more equipment grounding conductors and a metal box by means of a grounding screw, which must be used for no other purpose, or an approved grounding device. One or more equipment grounding conductors brought into a nonmetallic outlet box must be so arranged that a connection can be made to any fitting or device in that box requiring grounding.
  - For temporary wiring, multi-conductor cords and cables must be hard service type or equivalent, with multi-conductor fittings, and open wire taps, not exceeding 6 inches in length, may be made from permanent wiring outlet boxes to supply approved lamp holders.
  - The minimum size of a temporary wood pole must be 6 inches by 6 inches (nominal) if square or have a top diameter of at least 5 inches if round and be of sufficient length to maintain all required overhead clearances, but at least 20 feet long. The lower end must be embedded at least 4 feet in the ground.
  - Open exposed wiring must not be installed in any building or portion of a building, except in substations, transformer vaults, transformer enclosures, on the supply side of electric furnace electrodes, or in tunnels or similar locations, where such spaces are restricted to electrical use and are accessible to qualified and authorized persons only.
  - All manually operated switches must be of an approved externally operable type, unless operating at 50 volts or less, and must be enclosed in boxes or cabinets.

- Grounding conductors must be continuously marked with a green color or a green color with one or more yellow stripes and must not be used for anything other than grounding purposes. The identifying color(s) must be on the insulation or on a braid.
- Lamp holders, fixtures, or standard receptacles rated 15 amperes or less must not be supplied by voltages exceeding 150 volts to ground, with some exceptions.
- Attachment plugs or other connectors supplying equipment at more than 300 volts must be of the skirted type, unless designed so that the arc will be confined within the body or case of the device.
- All new or replacement 15- and 20-ampere attachment plugs must be of dead-front construction such that there are no exposed current-carrying metal parts except the prongs, blades, or pins.
- Grounding-type receptacles, cord connectors, and attachment plugs must be provided with one fixed grounding pole in addition to the circuit poles. Grounding-type receptacles, adapters, cord connectors, and attachment plugs must be grounded.
- All smoothing irons and portable electrically heated appliances that are rated at more than 50 watts and produce temperatures more than 250°F on surfaces with which the cord is likely to be in contact must be provided with approved heater cords.
- Portable immersion-type electric heaters must be constructed and installed so that current-carrying parts are effectively insulated from electrical contact with the substance in which they are immersed.
- Each electrically heated appliance that is intended by size, weight, and service to be in a fixed position must be so placed as to provide ample protection between the appliance and adjacent combustible material.
- Each smoothing iron and other portable electrically heated appliance intended to be applied to combustible material must be equipped with an approved stand, either as a separate piece of equipment or a part of the appliance.
- Electrically heated appliances intended to be applied to combustible material must be provided with a signal, unless provided with an integral temperature-limiting device.
- Infrared heating lamps rated at 300 watts or less are permitted with lamp holders of the medium base, unswitched porcelain type or other types approved for the purpose. Screw shell lamp holders must not be used with infrared lamps over 300 watts rating.
- A separable connector or a plug and receptacle combination in the supply line to an oven or cooking unit used only for ease in servicing or for installation must not be installed as the disconnecting means and must be approved for the temperature of the space in which it is located.
- All heating elements that are rated over one ampere, replaceable in the field, and a part of an appliance must be legibly marked with the ratings in volts and amperes, or in volts and watts, or with the manufacturer's part number.
- If an appliance is to be used on a specific frequency or frequencies, or when motor overload protection external to the appliance is required, it must be so marked. The marking on an appliance consisting of a motor with other load(s) or motors with or without other load(s) must specify the minimum circuit size and the maximum rating of the circuit overcurrent protective device (with some exceptions).
- Means must be provided to disconnect the heater, controller(s), and overcurrent protective device(s) of all fixed electric space heating equipment from all ungrounded conductors. Switches and circuit breakers used as disconnecting means must be of the indicating type. Duct heater controller equipment must be accessible with the disconnecting means installed

at or within sight of the controller unless the disconnecting means is arranged to be locked in the "open" position.

- All fixed outdoor electric de-icing and snow melting equipment must be provided with a means for disconnection from all ungrounded conductors. Where readily accessible to the user of the equipment, the branch circuit switch or circuit breaker may serve as the disconnecting means. Switches used as disconnecting means must be of the indicating type.
- The presence of electric pipeline and vessel heating equipment must be evident by the posting of appropriate signs or other markings at frequent intervals in the area involved. Means must be provided to disconnect all fixed electric pipeline or vessel heating equipment from all ungrounded conductors. The branch circuit switch or circuit breaker, readily accessible to the user of the equipment, may serve as the disconnecting means. Switches used as disconnecting means must be of the indicating type and must be provided with a positive lockout in the "off" position. The factory-installed attachment plugs of cord-connected equipment, rated 20 amperes or less and 150 volts or less to ground is an acceptable means of disconnection.
- A motor-running overload device that can restart a motor automatically after overload tripping must not be installed unless approved for use with the motor it protects. A motor that can restart automatically after shutdown may not be installed if its automatic restarting can result in injury to people.
- Where a transformer or other device is used to obtain a reduced voltage for the control circuit and is in the controller, the transformer or other device must be connected to the load side of the disconnecting means for the control circuit.
- Each motor controller must be capable of starting and stopping the motor it controls and must be capable of interrupting the stalled-rotor current of the motor. An autotransformer starter must provide an off position, a running position, and at least one starting position. It must be so designed that it cannot rest in the starting position or in any position that will render the overload device in the circuit inoperative. Motor-starting rheostats must be so designed that the contact arm cannot be left on intermediate segments. The point or plate on which the arm rests when in the starting position must have no electrical connection with the resistor. Motor-starting rheostats for direct current motors operated from a constant voltage supply must be equipped with automatic devices that will interrupt the supply before the speed of the motor has fallen to less than 1/3 its normal value.
- The controller must have a horsepower rating not lower than the horsepower rating of the motor, with certain exceptions. The controller does not have to open all conductors to the motor.
- Capacitors containing more than 3 gallons of flammable liquid must be enclosed in vaults or outdoor fenced enclosures. Capacitors must be enclosed, located, or guarded so that persons cannot come into accidental contact or bring conducting materials into accidental contact with exposed energized parts, terminals, or buses associated with them.
- The residual voltage of a capacitor must be reduced to 50 volts or less within one minute after the capacitor is disconnected from the source of supply. The discharge circuit must be either permanently connected to the terminals of the capacitor or capacitor bank or provided with automatic means of connecting it to the terminals of the capacitor bank on removal of voltage from the line. Manual means of switching or connecting the discharge circuit must not be used.
- A disconnecting means must be provided in each ungrounded conductor for each capacitor bank unless a capacitor is connected on the load side of a motor-running overcurrent device. The disconnecting means is not required to open all ungrounded conductors simultaneously

and may disconnect the capacitor from the line as a regular operating procedure. The rating of the disconnecting means must not be less than 135 percent of the rated current of the capacitor.

- Some states have classified and adopted special precautions for vehicle service and repair operations, aircraft hangars, gasoline dispensing and service stations, bulk storage plants, finishing area (locations where paints, lacquers, or other flammable finishes are applied), wastewater wells, and oil and gas wells.
- Some states have adopted a variety of specific electrical requirements for the following:
  - places of assembly.
  - theaters.
  - motion-picture studios.
  - motion-picture projectors; and
  - sound recording equipment.
- The bottom of sign and outline lighting enclosures must be at least 16 feet above areas accessible to vehicles, unless protected from physical damage. Other specific clearances for signs and outline lighting systems must be followed.
- For cranes and hoists, the following requirements apply:
  - Where a crane or hoist operates over readily combustible material, the resistors must be placed in a well-ventilated cabinet composed of noncombustible material so constructed that it will not emit flames or molten metal.
  - On floor operated overhead cranes, a suitable work platform with means of access must be provided, attached to the building structure, or on the overhead crane bridge, giving ready and safe access to electrical control cabinets for service, maintenance, or repair.
  - On every new installation, major replacement, modification, or repair made after 3/15/72, the dimension of the working space in the direction of access to energized parts which are likely to require examination, adjustment, service, or maintenance while energized must be in accordance with §2340.16.
  - All cranes using a lifting magnet must have a magnet circuit switch of the enclosed type with provision for locking in the "open" position. A separate means for discharging the inductive load of the magnet must be provided.
  - Conductors must be enclosed in a raceway or must be Type MC or MI cable, with certain exceptions.
  - Some states have adopted numerous requirements for crane and hoist controls.
- Each welder must have overcurrent protection rated or set at not more than 200 percent of the rated primary current of the welder.
- For data processing systems, the following requirements apply:
  - The branch-circuit conductors to which one or more units of a data processing system are connected to a source of supply must have an ampacity not less than 125 percent of the total connected load.
  - The data processing system may be connected by means of computer or data processing cable or flexible cord and an attachment plug cap or cord-set assembly specifically approved as a part of the data processing system. Separate units may be interconnected by means of flexible cords and cables specifically approved as part of the data processing system. When run on the surface of the floor, they must be protected against physical damage.
  - Power cables, communications cables, and interconnecting cables associated with the data processing equipment are permitted under a raised floor provided the raised floor is of suitable construction, and the branch-circuit supply conductors to

receptacles are in rigid metal conduit, intermediate metal conduit, electrical metallic tubing, metal wireway, metal surface raceway with metal cover, flexible metal conduit, liquid-tight flexible metal conduit, mineral-insulated, metal-sheathed cable, metal-clad cable, or Type AC cable, and ventilation in the underfloor area is used for the data processing equipment and data processing area only.

- For electrically driven or controlled irrigation machines. The following requirements apply:
  - Irrigation cable must be secured by approved straps, hangers, or similar fittings so designed and installed as not to injure the cable. Cable must be supported at intervals not exceeding 4 feet.
  - Fittings must be used at all points where irrigation cable terminates. The fittings must be designed for use with the cable and suitable for the conditions of service.
  - All electrical equipment on the irrigation machine, all electrical equipment associated with the irrigation machine, metallic junction boxes and enclosures, and control panels or control equipment that supply or control electrical equipment to the irrigation machine must be grounded. Grounding is not required on machines where the machine is electrically controlled but not electrically driven, the control voltage is 30 volts or less, and the control or signal circuits are current limited.
  - A cord-connected swimming pool filter pump must incorporate an approved system of double insulation or its equivalent and must be provided with means of grounding only the internal and non-accessible noncurrent-carrying metal parts of the appliance. The means for grounding must be an equipment grounding conductor run with the power-supply conductors in the flexible cord that is properly terminated in a grounding-type attachment plug having a fixed grounding contact member.
  - All electric equipment, including power-supply cords, used with storable swimming pools must be protected by ground-fault circuit interrupters.

## **Over 600 Volts, Nominal**

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Conductors and equipment used on circuits exceeding 600 volts, nominal, will comply with all applicable provisions of the OSHA standard.

### Enclosure for Electrical Installations

Electrical installations in a vault, room, closet or in an area surrounded by a wall, screen, or fence, access to which is controlled by lock and key or other equivalent means, are accessible to qualified persons only. A wall, screen, or fence less than 8 feet (2.44 m) in height is not considered adequate to prevent access unless it has other features that provide a degree of isolation equivalent to an 8-foot (2.44-m) fence. The entrances to all buildings, rooms or enclosures containing exposed live parts or exposed conductors operating at over 600 volts, nominal, will be kept locked or will be always under the observation of a qualified person.

### Installations Accessible to Qualified Persons Only

Electrical installations having exposed live parts will be accessible to qualified persons only and will comply with the applicable provisions of the OSHA standard.

### Installations Accessible to Unqualified Persons

Electrical installations that are open to unqualified people will be made with metal-enclosed equipment or will be enclosed in a vault or in an area, access to which is controlled by a lock. Metal-enclosed switchgear, unit substations, transformers, pull boxes, connection boxes, and other similar associated equipment will be marked with appropriate caution signs. If equipment is exposed to physical damage from vehicular traffic, guards will be provided to prevent such damage. Ventilating or similar openings in metal-enclosed equipment will be designed so that foreign objects inserted through these openings will be deflected from energized parts.

### Workspace About Equipment

Sufficient space will be provided and maintained for electric equipment to permit ready and safe operation and maintenance of such equipment. Where energized parts are exposed, the minimum clear workspace will not be less than 6 feet 6 inches (1.98 m) high (measured vertically from the floor or platform), or less than 3 feet (914 mm) wide (measured parallel to the equipment). The depth will be as required in Table 2. The workspace will be adequate to permit at least a 90-degree opening of doors or hinged panels.

### Working Space

The minimum clear working space in front of electric equipment such as switchboards, control panels, switches, circuit breakers, motor controllers, relays, and similar equipment will not be less than specified in Table 2 unless otherwise specified in this Chapter. Distances will be measured from the live parts if they are exposed, or from the enclosure front or opening if the live parts are enclosed. However, working space is not required behind equipment such as dead front switchboards or control assemblies where there are no renewable or adjustable parts (such as fuses or switches) on the back and where all connections are accessible from locations other than the back. Where rear access is required to work on de-energized parts on the back of enclosed equipment, a minimum working space of 30 inches (762 mm) horizontally will be provided.

TABLE 2 MINIMUM DEPTH OF CLEAR WORKING SPACE IN FRONT OF ELECTRIC EQUIPMENT

| Nominal voltage to ground | Conditions <sup>1</sup> |                   |                   |
|---------------------------|-------------------------|-------------------|-------------------|
|                           | (a)                     | (b)               | (c)               |
|                           | Feet <sup>2</sup>       | Feet <sup>2</sup> | Feet <sup>2</sup> |
| 601 to 2,500 .....        | 3                       | 4                 | 5                 |
| 2,501 to 9,000 .....      | 4                       | 5                 | 6                 |
| 9,001 to 25,000 .....     | 5                       | 6                 | 9                 |
| 25,001 to 75 kV .....     | 6                       | 8                 | 10                |
| Above 75 kV .....         | 8                       | 10                | 12                |

<sup>1</sup> Conditions (a), (b), and (c) are as follows: (a) Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by insulating material. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts. (b) Exposed live parts on one side and grounded parts on the other side. Walls constructed of concrete, brick or tile are grounded surfaces. (c) Exposed live parts on both sides of the workspace (not guarded as provided in Condition (a)) with the operator between.

<sup>2</sup> **NOTE:** For SI units: one foot = 0.3048 m.

### Lighting Outlets & Points of Control

The lighting outlets will be so arranged that persons changing lamps or making repairs on the lighting system will not be endangered by live parts or other equipment. The points of control will be so located that persons are not likely to come in contact with any live part or moving part of the equipment while turning on the lights.

### Elevation of Unguarded Live Parts

Unguarded live parts above working space will be maintained at elevations not less than specified in Table 3.

TABLE 3 ELEVATION OF UNGUARDED ENERGIZED PARTS ABOVE WORKING SPACE

| Normal voltage between phases | Minimum elevation                       |
|-------------------------------|-----------------------------------------|
| 601 - 7,500 .....             | 8 feet 6 inches <sup>1</sup>            |
| 7,501 - 35,000 .....          | 9 feet                                  |
| Over 35 kV .....              | 9 feet + 0.37 inches per kV above 35 kV |

<sup>1</sup> **NOTE:** For SI units: one inch = 25.4 mm; one foot = 0.3048 m.

### Entrance & Access to Workspace

At least one entrance not less than 24 inches (610 mm) wide and 6 feet 6 inches (1.98 m) high will be provided to give access to the working space for electric equipment. On switchboard and control panels exceeding 48 inches (1.22 m) in width, there will be one entrance at each end of such board where practicable. Where bare energized parts at any voltage or insulated energized parts above 600 volts are located adjacent to such entrance, they will be guarded.

### Working On or Near Energized Equipment

When an employee's work on exposed live parts involves direct contact or contact by means of tools or materials, or work is near enough to live parts for the employee to be exposed to a hazard, the following requirements apply.

Working On Energized Equipment - Only qualified people may work on electric circuit parts or equipment that have not been de-energized. The qualified person must be capable of working safely on energized circuits and must know the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

### Vehicular and Mechanical Equipment

Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines will be operated so that a clearance of 10 ft. (305 cm) is maintained. If the voltage is higher than 50kV, the clearance will be increased 4 in. (10 cm) for every 10kV

over that voltage. However, under any of the following conditions, the clearance may be reduced:

- If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 ft. (122 cm). If the voltage is higher than 50kV, the clearance will be increased 4 in. (10 cm) for every 10 kV over that voltage.
- If insulating barriers are installed to prevent contact with the lines, and if the barriers are rated for the voltage of the line being guarded and are not a part of or an attachment to the vehicle or its raised structure, the clearance may be reduced to a distance within the designed working dimensions of the insulating barrier.
- If the equipment is an aerial lift insulated for the voltage involved, and if the work is performed by a qualified person, the clearance (between the uninsulated portion of the aerial lift and the power line) may be reduced per the OSHA standard.
- Employees standing on the ground may not contact the vehicle or mechanical equipment or any of its attachments, unless:
  - The employee is using protective equipment rated for the voltage; or
  - The equipment is located so that no uninsulated part of its structure (that portion of the structure that provides a conductive path to employees on the ground) can come closer to the line than permitted in the OSHA standard.

If any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines is intentionally grounded, employees working on the ground near the point of grounding may not stand at the grounding location whenever there is a possibility of overhead line contact. Additional precautions, such as the use of barricades or insulation, will be taken to protect employees from hazardous ground potentials, depending on earth resistivity and fault currents, which can develop within the first few feet or more outward from the grounding point.

### Illumination

Employees may not enter spaces containing exposed energized parts unless illumination is provided that enables the employees to perform the work safely.

Where lack of illumination or an obstruction precludes observation of the work to be performed, employees may not perform tasks near exposed energized parts. Employees may not reach blindly into areas which may contain energized parts.

### Confined or Enclosed Workspaces

When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, Global Comfort Group will provide, and the employee will use, protective shields, protective barriers, or insulating materials as necessary to avoid inadvertent contact with these parts. Doors, hinged panels, and the like will be secured to prevent their swinging into an employee and causing the employee to contact exposed energized parts.

### Conductive Materials and Equipment

Conductive materials and equipment that are in contact with any part of an employee's body will be handled in a manner that will prevent them from contacting exposed energized conductors or

circuit parts. If an employee must handle long dimensional conductive objects (such as ducts and pipes) in areas with exposed live parts, Global Comfort Group will institute work practices (such as the use of insulation, guarding, and material handling techniques) which will minimize the hazard.

### Portable Ladders

Portable ladders will have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized parts.

### Conductive Apparel

Conductive articles of jewelry and clothing (such as watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) may not be worn if they might contact exposed energized parts. However, such articles may be worn if they are rendered nonconductive by covering, wrapping, or other insulating means.

### Housekeeping Duties

Where live parts present an electrical contact hazard, employees may not perform housekeeping duties at such close distances to the parts that there is a possibility of contact, unless adequate safeguards (such as insulating equipment or barriers) are provided. Electrically conductive cleaning materials (including conductive solids such as steel wool, metalized cloth, and silicon carbide, as well as conductive liquid solutions) may not be used in proximity to energized parts unless procedures are followed which will prevent electrical contact.

## **Working On or Near Exposed Deenergized Parts**

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If conductors or parts of electric equipment have been deenergized but not locked out or tagged, they must be treated as energized parts. While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been deenergized, the circuits energizing the parts must be locked out or tagged or both. As used in this section, fixed equipment refers to equipment fastened in place or connected by permanent wiring methods. Lockout and tagging procedures must comply with the document "*The Control of Hazardous Energy (Lockout/Tagout Requirements and Procedures): OSHA Standard 1910.147.*" The employer must maintain a written copy of the procedures followed to comply with this standard and must make it available for inspection by employees and by OSHA.

## **Lockout and Tagging of Circuits**

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This portion of the plan has been created to maintain a written copy of procedures to be followed during work on or near enough to exposed de-energized parts of conductors and electric equipment to expose employees to any electrical hazard they present. The requirements apply to all of Global Comfort Groups construction job sites.

This written procedure includes procedural steps for each one of the following:

- de-energizing equipment,
- application of locks and tags,

- verification of de-energized condition, and
- re-energizing equipment.

While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been de-energized, the circuits energizing the parts will be locked out or tagged or both according to the requirements of this written plan.

Conductors and parts of electric equipment that have been de-energized but have not been locked out or tagged according to these procedures will be treated as energized parts.

The requirements must be followed in the order in which they are presented.

Global Comfort Group maintains this written copy of procedures RSO's Office and makes it available for inspection by employees and the Assistant Secretary of Labor (the head of OSHA) and his or her authorized representatives.

### **De-energizing Equipment**

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Safe procedures for de-energizing circuits and equipment will be determined by Site Supervisor before circuits or equipment are de-energized.

The circuits and equipment to be worked on will be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, may not be used as the sole means for de-energizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for lockout and tagging procedures.

Stored electric energy which might endanger personnel will be released. Capacitors will be discharged, and high capacitance elements will be short-circuited and grounded, if the stored electric energy might endanger personnel.

If the capacitors or associated equipment are handled in meeting this requirement, they will be treated as energized. Stored non-electrical energy in devices that could re-energize electric circuit parts will be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.

### **Application of Locks and Tags**

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A lock and a tag will be placed on each disconnecting means used to de-energize circuits and equipment on which work is to be performed. Employees can obtain these locks and tags from Site Supervisor.

The lock will be attached so it prevents persons from operating the disconnecting means unless they resort to undue force or the use of tools. Each tag will contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.

A lock may be placed without a tag only under the following conditions:

- Only one circuit or piece of equipment is de-energized, and
- The lockout period does not extend beyond the work shift, and

- Employees exposed to the hazards associated with re-energizing the circuit or equipment are familiar with this procedure.

Use of either of these exceptions must be approved by Site Supervisor

### **Verification of De-energized Condition**

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The following requirements must be met before any circuits or equipment can be considered and worked as de-energized:

1. A qualified person will operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.
2. A qualified person will use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and will verify that the circuit elements and equipment parts are de-energized.

The test will also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage back feed even though specific parts of the circuit have been de-energized and presumed to be safe. If the circuit to be tested is over 600 volts, nominal, the test equipment will be checked for proper operation immediately before and immediately after this test.

Only authorized employees that have been trained and designated as qualified persons are authorized to perform duties in that capacity.

### **Re-Energizing Equipment**

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The following requirements will be met, in order given, before circuits or equipment are re-energized, even temporarily:

1. A qualified person will conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.
2. Employees exposed to the hazards associated with re-energizing the circuit or equipment will be warned to stay clear of circuits and equipment.
3. Each lock and tag will be removed by the employee who applied it or under his or her direct supervision. However, if this employee is absent from the workplace, then the lock or tag may be removed by a qualified person designated to perform this task provided that the employee who applied the lock or tag is not available at the workplace, and the employee is aware that the lock or tag has been removed before he or she resumes work at that workplace.
4. There will be a visual determination that all employees are clear of the circuits and equipment.

**See the Lockout Tagout Program for complete details.**

## **Training**

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Training is provided to ensure that employees are familiar with the requirements of this plan. This training is provided to employees at the time of hire and annually thereafter. Richard Lowery, RSO is responsible for conducting training.

The training program addresses the required written elements for electrical safety for:

- The assured equipment grounding conductor program.
- Lockout and tagging procedures to be used when working on exposed de-energized parts.

### **Training for Unqualified Employees**

Employees who face a risk of electric shock but who are not qualified persons will be trained & familiar with electrically related safety practices. Employees will be trained in safety-related work practices that pertain to their respective job assignments. Employees will be trained in appropriate clearance distances.

Electrical Safety Rules for Non-Qualified Workers:

1. Do not conduct any repairs to electrical equipment
2. Report all electrical deficiencies to your supervisor
3. Do not operate equipment if you suspect an electrical problem
4. Water and electricity do not mix.
5. Even low voltages can kill or injure you
6. Do not use cords or plugs if the ground prong is missing
7. Do not overload electrical receptacles

### **Training for Qualified Employees**

Training for Qualified Employees includes specific equipment procedures and requirements of applicable OSHA standards. Qualified persons (i.e., those permitted to work on or near exposed energized parts) shall, at a minimum, be trained in and familiar with the following:

- The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment.
- The skills and techniques necessary to determine the nominal voltage of exposed live parts, and
- The clearance distances specified in 1910.333(c) and the corresponding voltages to which the qualified person will be exposed.

Note 1: For the purposes of 1910.331 through 1910.335, a person must have the training required by paragraph (b)(3) of this section to be considered a qualified person.

Note 2: Qualified people whose work on energized equipment involves either direct contact or contact by means of tools or materials must also have the training needed to meet 1910.333(C)(2).

## **Program Evaluation**

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The Electrical Safety Plan is evaluated and updated annually by RSO to ensure the continued effectiveness of the program.

## **LOCKOUT TAGOUT: CONTROL OF HAZARDOUS ENERGY**

### **Purpose**

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The following procedure is provided for use in both lockout and tagout programs. This procedure may be used when there are limited number or types of machines or there is a single power source. For more complex systems, a more comprehensive procedure will need to be developed, documented, and utilized.

Lockout is the preferred method of isolating machines or equipment from energy sources. This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources, and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury such as minor to serious shock, burns (chemical or thermal), cuts, or abrasions.

### **Scope of Practice**

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All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. Servicing is to be done only by trained, authorized employees. Each new or transferred affected employee and other employees whose work operations are or may be in the area shall be instructed in the purpose and use of the lockout or tagout procedures. 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 the machine or equipment.

Contractors are required to utilize this company's procedure except when the contractor can demonstrate that their current lockout procedure affords the same level of safety as Global Comfort Group' procedure.

### **Basic Rules for Using Lockout or Tagout System Procedure**

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All equipment shall be locked out or tagged out to protect against accidental or inadvertent operations when such operations could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy-isolating device where it is locked or tagged out.

This standard does not apply to work on cord and plug connected to electrical equipment for which exposure to the hazards of unexpected energization or start up the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.

In the event a piece of equipment is to be isolated for a period exceeding one normal shift and the isolating means is not capable of being locked out, a reasonable effort will be made to affix a device to the isolating means to make capable of being locked out.

Lockout-Tagout protects workers from these energy sources:

- Moving machinery (kinetic)
- Stored energy (potential)
- Electrical
- Chemical
- Thermal
- Hydraulic
- Gravitational
- Pneumatic

## **Definitions**

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### *Authorized (Qualified) Employees*

The only ones certified to lock and tagout equipment or machinery. Whether an employee is qualified will depend upon various circumstances in the workplace. It is likely for an individual to be considered "qualified" regarding certain equipment in the workplace, but "unqualified" as to other equipment. An employee who is undergoing on-the-job training and who, during such training, has demonstrated an 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 "qualified" for the performance of those duties.

### *Affected Employees*

Those employees who operate machinery or equipment upon which lockout or tagging out is required under this program. Training of these individuals will be less stringent in that it will include the purpose and use of the lockout procedures.

### *Other Employees*

Identified as those that do not fall into the authorized, affected, or qualified employee category. Essentially, it will include all other employees. These employees will be provided instruction in what the program is and not to touch any machine or equipment when they see that it has been locked or tagged out.

## **Machinery and Equipment**

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Lockout is the preferred method of isolating machines or equipment from energy sources. Tagout is to be performed instead of lockout only when there is no way to lockout a machine.

## **Routine Maintenance & Machine Adjustments**

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Lockout/tagout procedures are not required if equipment must be operating for proper adjustment. This rare exception may be used only by trained and authorized Employees when specific procedures have been developed to safely avoid hazards with proper training. All considerations shall be made to prevent the need for an employee to break the plane of a normally guarded area of the equipment by use of tools and other devices.

## **Locks, Hasps and Tags**

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If an energy source can be locked out this method shall be utilized. **LOCKOUT DEVICE:** A device that utilizes a lock, either key or combination to hold an energy isolating device in a safe position.

All Qualified Maintenance Personnel will be assigned a lock with one key, hasp, and tag. All locks will be keyed differently, except when a specific individual is issued a series of locks for complex lockout-tagout tasks. In some cases, more than one lock, hasp and tag are needed to completely de-energize equipment and machinery. Additional locks may be checked out from the Department or Maintenance Supervisor on a shift-by-shift basis. All locks and hasps shall be uniquely identifiable to a specific employee.

If an energy source cannot be locked out a tagout system shall be utilized. **TAGOUT DEVICE:** A warning tag (weather & chemical resistant) standardized in size, color, with wording warning of hazardous energy (Do Not Start) (Do Not Open) (Do Not Close) (Do Not Energize) (Do Not Operate).

## **Preparation for Lock and Tag Out Procedures**

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A Lockout/Tagout survey has been conducted to locate and identify all energy sources to verify which switches or valves supply energy to machinery and equipment. Dual or redundant controls have been removed.

A Lockout Tagout Schedule has been developed for each piece of equipment and machinery. This schedule describes the energy sources, location of disconnects, type of disconnect, special hazards and special safety procedures. The schedule will be reviewed each time to ensure employees properly lock and tag out equipment and machinery. If a Tagout Schedule does not exist for a particular piece of equipment, machinery, and process, one must be developed prior to conducting a Lockout - Tagout. As repairs and/or renovations of existing electrical systems are made, standardized controls will be used.

The established procedures for the application of energy control covers the following elements & must be done in sequence:

1. Preparation for shutdown.
2. Machine or equipment shutdown.
3. Machine or energy isolation.
4. Lockout and/or tagout application.
5. Relief of stored energy.
6. Verification of Isolation
7. Restoring machine or equipment to normal operation.

## **Sequence of Lockout System Procedure**

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1. Lockout locks cannot be used for any purpose other than lockout, and must meet the following provisions:
  - a. Standardized throughout the plant by color, shape, or size.

- b. Durable enough to withstand heat, cold, humidity or corrosiveness.
  - c. Strong enough so that it cannot be removed without heavy force or tools such as bolt cutters.
  - d. Identified by the name of the employee who installs and removes it.
- 2. The authorized employee (one who performs maintenance or servicing) shall identify the type and magnitude of the energy that the machine or equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.
- 3. The authorized employee is to notify all affected employees that servicing, or maintenance is required on a machine or equipment, and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.
- 4. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open switch, close valve, etc.). An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees because of the equipment stoppage.
- 5. De-activate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).
- 6. Lockout the energy isolating devices with a lock(s) as follows:
  - a. Lockout or tagout devices are to be affixed to each energy isolating device by authorized employees.
  - b. Lockout devices, where used, are to be affixed in a manner that will hold the energy isolating devices in a safe or off position.
  - c. Tagout devices, where used, are to be affixed in such a manner as will clearly indicate that the operation or movement of energy isolating devices from the safe or off position.
  - d. Where tagout devices are used with energy isolating devices designed with the capability of being locked, the tag attachment is to be fastened at the same point at which the lock would have been attached.
  - e. Where a tag cannot be affixed directly to the energy isolating device, the tag is to be located as close as safely as possible to the device in a position that will be immediately obvious to anyone attempting to operate the device.
- 7. Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy is to be relieved, disconnected, restrained & otherwise rendered safe. If there is a possibility of reaccumulating of stored energy level, verification of isolation is to be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.
- 8. Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s), or by testing to make certain the equipment will not operate.

**CAUTION: RETURN OPERATING CONTROL(S) TO NEUTRAL OR "OFF" POSITION AFTER VERIFYING THE ISOLATION OF THE EQUIPMENT.**

- 9. The machine or equipment is now locked out. Maintenance or servicing may be performed.

## Sequence of Tagout System Procedure

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The authorized employee shall use the tagout procedure ***ONLY WHEN THE MACHINE OR EQUIPMENT IS NOT CAPABLE OF BEING LOCKED OUT.***

1. The tagout device shall be standardized throughout the plant, and shall meet the following provisions:
  - Easy to read and understand, even if used in dirty, corrosive, or damp areas.
  - Can't be released with less than 50 pounds of pressure.
  - Can be attached by hand.
  - Is self-locking.
  - Shows the identity of the authorized employee.
  - Can't be reused.
2. The tagout device shall be attached at the same location that the lockout device would have been attached.
3. Authorized employees shall utilize additional means as necessary to provide the equivalent safety available from the use of a lockout device. Additional safety measures that reduce the likelihood of inadvertent energization may include:
  - The removal of an isolating circuit element.
  - Blocking of a controlling switch.
  - Opening of an extra disconnecting device; or
  - The removal of a valve handle.

## Restoring Machines/Equipment to Normal Production Operations & Safety Testing

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When the servicing is completed and the equipment is ready to return to normal operating condition, the following steps shall be taken:

1. Check the work area to ensure that all employees are a safe distance from the equipment.
2. Check the machine or equipment and the immediate area around the machine or equipment to ensure that nonessential items (such as tools) have been removed, and that the machine or equipment components are operationally intact.
3. Reinstall any machine guards.
4. Verify that the controls are in neutral.
5. Remove the lockout and/or tagout devices and reenergize the machine or equipment.
6. Notify affected employees that the servicing or maintenance is completed, and the machine or equipment is ready for use.
7. Safety testing should be documented with who performs the procedure and verifies safe operation.

**NOTE:** The removal of some forms of blocking may require re-energization of the machine before safe removal. When maintenance or service is done, only the same authorized employee who installed the lock may remove it. When the authorized employee is not available to remove the lock, a "Lockout Removal" form must be completed by the employee removing the lock.

## **Temporary Removal**

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Occasionally, lockout/tagout devices must be temporarily removed to test the equipment or machine. When this occurs, the following steps should be taken.

1. Clear away any tools from the danger area.
2. Remove any employees from the danger area.
3. Remove the lockout/tagout device(s).
4. Carefully re-energize and proceed with testing.
5. De-energize and reapply lockout/tagout device(s) following the sequence of lockout/tagout procedures listed above.
6. Document the name and title of the individual(s) who performs and verifies this process.

## **Procedure Involving More Than One Person**

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In the preceding steps, if more than one individual is required to lockout or tagout equipment, each shall place his or her own personal lockout or tagout device on the energy isolating device(s).

When an energy-isolating device cannot accept multiple locks or tags, a multiple lockout or tagout device (hasp) may be used. If a lockout is used, a single lock may be used to lockout the machine or equipment with the key being placed in a lockout box or cabinet which allows the multiple locks to secure it. Each employee will then use his or her own lock to secure the box or cabinet. As a person no longer needs to maintain his or her lockout protection, that person will remove his or her lock from the box or cabinet.

If a single authorized employee is given the primary responsibility for a set number of employees working under the protection of a group lockout or tagout device, then the following safety measures must be adhered to:

- Authorized employees must ascertain the exposure status of individual group members.
- Each employee shall attach a personal lockout/tagout device to the group's device while he/she is working. The device shall be removed when finished.

These procedures afford the group of employees a level of protection equal to that provided by a personal lockout or tagout device.

## **Stored Energy**

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Following the application of the lockout or tagout devices to the energy isolating devices, all potential or residual energy will be relieved, disconnected, restrained, and otherwise rendered safe.

Where the re-accumulation of stored energy to a hazardous energy level is possible, verification of isolation will be continued until the maintenance or servicing is complete.

Release stored energy (capacitors, springs, elevated members, rotating fly wheels, and hydraulic/air/gas/steam systems) must be relieved or restrained by grounding, repositioning, blocking and/or bleeding the system.

## **Extended Lockout/Tagout**

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Should the shift change before the machinery or equipment can be restored to service, the lock and tag out must remain. If the task is reassigned to the next shift, those Employees must lock and tag out before the previous shift may remove their lock and tag.

## **Procedure for Electrical Plug-Type Equipment**

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This procedure covers all Electrical Plug-Type Equipment such as Battery Chargers, some Product Pumps, Office Equipment, Powered Hand Tools, Powered Bench Tools, Lathes, Fans, etc.

When working on, repairing, or adjusting the above equipment, the following procedures must be utilized to prevent accidental or sudden startup:

1. Unplug Electrical Equipment from wall socket or in-line socket.
2. Attach "Do Not Operate" Tag and Plug Box & Lock on end of power cord.
3. An exception is granted to not lock & tag the plug if the cord & plug remain in the exclusive control of the Employee working on, adjusting, or inspecting the equipment.
4. Test Equipment to assure power source has been removed by depressing the "Start" or "On" Switch.
5. Perform required operations.
6. Replace all guards removed.
7. Remove Lock & Plug Box and Tag.

Inspect power cord and socket before plugging equipment into power source. Any defects must be repaired before placing the equipment back in service.

**NOTE:** Occasionally used equipment may be unplugged from power source when not in use.

## **Management's Removal of Lock and Tag Out**

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Only the Employee that locks and tags out machinery, equipment or processes may remove his/her lock and tag. However, should the Employee leave the facility before removing his/her lock and tag, the Maintenance Manager may remove the lock and tag. The Maintenance Manager must be assured that all tools have been removed, all guards have been replaced and all Employees are free from any hazard before the lock and tag are removed and the machinery, equipment or process are returned to service. Notification of the employee who placed the lock is required prior to lock removal. This process must be properly documented.

## **Affected Employees for Lockout/Tagout**

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Because people may be moved from one work area to another, it would not be appropriate or practical to generate a list of people identified with a particular area. Therefore, the person who initiates, or terminates, a lockout or tagout procedure will notify those persons in the affected area.

## **Periodic Inspection**

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A periodic inspection is done, looking at the energy control procedures performed to ensure that the procedure and requirements of the standard are being followed. This inspection is performed annually. A certified review of the inspection including date, equipment, employees & the inspector is documented.

## **Training**

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### **Authorized Employees Training**

All Field Employees, Department Supervisors and Leads will be adequately trained to use the Lockout/Tagout Procedures. The training will be conducted by the Maintenance Supervisor or Safety Coordinator at the time of initial hire. Retraining shall be held at least annually. The training will consist of the following:

- Recognition of hazardous energy sources.
- Type & magnitude of energy available.
- Methods & means necessary for energy isolation & control.
- Review of General Procedures.
- Review of Specific Procedures for machinery, equipment, and processes.
- Location and use of Specific Procedures.
- When tagout systems are used, including the limitations of a tag (tags are warning devices & do not provide physical restraint).
- Procedures when questions arise.

### **Affected Employee Training**

- Only trained and authorized Employees will repair, replace, or adjust machinery, equipment or processes.
- Affected Employees may not remove Locks, locking devices or tags from machinery, equipment, or circuits.
- The tag is never to be ignored or defeated in any way.
- Purpose and use of the lockout procedures.

### **Other Employee Training**

- Only trained and authorized Employees will repair, replace, or adjust machinery or Equipment.
- The tag is never to be ignored or defeated in any way.
- Other Employees may not remove locks, locking devices or tags from machinery, equipment, or circuits.

### **Retraining**

Retraining is required when there is a change in job assignments, in machines, a change in the energy control procedures, or a new hazard is introduced.

## Training Records

All training and/or retraining must be documented with the employee's name and dates of training.

## **Documentation**

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Documentation of employee training shall be kept on file in each employee's training file.

An inspection shall be performed, certified, and documented annually, under the direction of the RSO, to assure compliance with the written program. The inspection will include a current list of machinery and/or equipment in the workplace for which written energy control procedures are required. This is kept in the RSO's office. The purpose is to ensure that the written procedures and the requirements of the standard are being followed, and that employees understand their responsibilities under the procedures.

## **Material Handling**

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- There is safe clearance for equipment through aisles and doorways.
- Aisle ways designated, permanently marked, and kept clear to allow unhindered passage.
- Motorized vehicles and mechanized equipment inspected daily or prior to use.
- Vehicles shut off and brakes set prior to loading or unloading.
- Containers or combustibles or flammables, when stacked while being moved, always separated by dunnage sufficient to provide stability.
- Dock boards (bridge plates) used when loading or unloading operations are taking place between vehicles and docks.
- Trucks and trailers secured from movement during loading and unloading operations.
- Dock plates and loading ramps constructed and maintained with sufficient strength to support imposed loading.
- Hand trucks maintained in safe operating condition.
- Chutes equipped with sideboards of sufficient height to prevent the materials being handled from falling off.
- Chutes and gravity roller sections firmly placed or secured to prevent displacement.
- At the delivery end of rollers or chutes, provisions are made to break the movement of the handled materials.
- Pallets are usually inspected before being loaded or moved.

## **Rigging Safety**

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The purpose of this safety policy and procedure is to establish the methods and guidelines for the safe use of slings throughout Global Comfort Group. Slings, a component of hoisting and rigging systems, are used to lift and move loads. In Global Comfort Group, synthetic web slings are typically used. Slings can lift tremendous loads.

This safety policy and procedure provides guidelines for implementing an effective safe sling use program. It includes provisions for training, recognizing the types of slings used in James River Air Conditioning, understanding the attachments used with slings, and inspecting slings. Additionally, it presents information on sling repair requirements and subsequent removal from service.

It is the policy of Global Comfort Group to provide a place of employment free from recognized hazards that cause or are likely to cause death or serious physical harm to employees or the public. Therefore, to minimize and eliminate material lifting hazards, properly rated slings that are not damaged or defective will be used in Global Comfort Group. When hazards exist that cannot be eliminated, then engineering practices, administrative practices, safe work practices, Personal Protective Equipment (PPE), and proper training regarding Slings will be implemented. These measures will be implemented to minimize those hazards to ensure the safety of employees and the public. It is the responsibility of each manager, supervisor, and employee to ensure implementation of Global Comfort Groups safety policy and procedure on Slings. It is also the responsibility of each James River Air Conditioning employee to report immediately any unsafe act or condition of equipment to his or her supervisor.

Sling selection for a particular task is based on:

- Rated capacity of the sling.
- Nature of the task.
- Amount of weight required to be lifted, hoisted, or moved.

The user should determine that the sling is being used in accordance with rated capacity as listed in the manufacturer's catalog.

Synthetic web slings must be marked or coded to show the rated capacities for each type of hitch, type of web material, and manufacturer. Additionally, synthetic web slings must not be exposed to fumes, vapors, sprays, mists, liquid acids, liquid phenolics, or liquid caustics.

All attachments including hooks, rings, oblong links, pear shaped links, and welded link components will be rated at least at the capacity of the sling itself. Makeshift links or other shop fabricated attachments will not be used. Slings twisted more than 10 degrees from the plane of the unbent hook will not be used.

Slings will be inspected each day prior to use. Any visual defect will be reported. Damaged slings will not be used. In severe conditions (e.g., temperature, corrosion, etc.), slings will be inspected throughout the day. Alloy chain slings will be inspected every six months by a supervisor or designated employee for wear and defects in composition and welds. This inspection will consider not only the physical aspects, but also the total service life of the slings. This inspection will be recorded and maintained on file with the date of the inspection and the name and signature of the employee performing the inspection. Slings must be in good condition and not damaged or defective to ensure safe and reliable use. If slings are worn, damaged or defective they shall not be used. If the slings are believed to be repairable, then those slings will be returned to the sling manufacturer for repairs. The manufacturer must proof-test all repaired slings before they are accepted for reuse. Under no circumstances will employees attempt to repair slings for reuse. Additionally, any sling with temporary repairs will not be used. If slings are damaged or defective, they shall not be used. Until repairs are made on defective or damaged slings, they will be removed from service. If these slings are not repairable, they will be permanently removed from service.

The following procedures will be followed when using slings:

- Slings damaged or defective will be removed from service.
- Slings will not be shortened with knots or bolts or other makeshift devices.
- Sling legs will not be kinked.
- Slings will not be loaded beyond their rated capacity.
- Slings used in a basket hitch will have the loads balanced to prevent slippage.

- Slings will be securely attached to their loads.
- Slings will be padded or protected from the sharp edges of loads.
- Suspended loads will be kept clear of obstructions.
- All employees will be kept clear of loads about to be lifted and of suspended loads.
- Hands or fingers will be kept clear of loads and not placed between the load and the strap.
- Shock loading will not be allowed.
- Slings will not be removed while loads are resting on the sling.

## **Crane Hand Signals**

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The purpose of this safety policy and procedure is to establish the methods and guidelines for the safe use of crane hand signals during rigging/hoisting activities at Global Comfort Group. Knowledge of crane hand signals helps to ensure the safe operation of cranes. Using standardized hand signals helps maintain continuity between job sites and promotes safety across the entire construction industry. The supervisor shall designate a competent signal person to provide hand signals to the crane operator during rigging/hoisting activities for Global Comfort Group. Below you find explanations for standard cranes hand signals.

### **Stop Signals:**

Stop – Extend one arm, palm down, then swing the arm back and forth, touching the chest, then back out to the side.



Emergency Stop – Extend both arms with palms down, then swing arms back and forth, touching the chest, then back out the sides.



Dog Everything – Clasp both hands together and hold them in front of the navel.



## Boom and Load Signals:

Raise boom – Extend an arm outward and point the thumb upward with a closed fist.



Lower boom – Extend an arm outward and point the thumb downward with a closed fist.



Swing boom – Extend an arm outward, pointing with an index finger in the direction the boom should swing.



Hoist load – Extend an arm vertically, pointing a finger toward the sky, and make small clockwise circles with the hand.



Lower load – Extend an arm vertically. Pointing a finger toward the ground and make small clockwise circles with the hand.



Raise boom and lower load – Extend arm outward and point the thumb upward, opening and closing the other fingers.



Lower boom and hoist load – Extend an arm outward and point the thumb downward, opening and closing the other fingers.



Telescope out – Place the hands at the waist level and point the thumbs outward, fists closed.



Telescope in – Place the hands at waist level and point the thumbs inward, fists closed.



Move slowly – A hand is placed in front of the hand that is giving the action signal.



## Environmental Controls

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- All work areas properly illuminated.
- Employees instructed in proper first aid and other emergency procedures.
- Hazardous substances identified which may cause harm by inhalation, ingestion, skin absorption or contact.
- Employees are aware of the hazards involved with the various chemicals they may be exposed to in their work environment, such as ammonia, chlorine, epoxies, and caustics.
- Employee exposure to chemicals in the workplace is kept within acceptable levels.
- Whenever possible a less harmful method or product be used.

- The work area's ventilation system is appropriate for the work being performed.
- Spray painting operations are done in spray rooms or booths equipped with an appropriate exhaust system.
- Employee exposure to welding fumes is controlled by ventilation, use of respirators, exposure time, or other means.
- Welders and other workers nearby are provided with flash shields during welding operations.
- If forklifts and other vehicles are used in buildings or other enclosed areas, the carbon monoxide levels are kept below maximum acceptable concentration.
- There has been a determination that noise levels in the facilities are within acceptable levels.
- Steps will be taken to use engineering controls to reduce excessive noise levels.
- Proper precautions being taken when handling asbestos and other fibrous materials.
- Caution labels and signs used to warn of asbestos.
- Wet methods used, when practicable, to prevent the emission of airborne asbestos fibers, silica dust and similar hazardous materials.
- Vacuuming with appropriate equipment is used whenever possible rather than blowing or sweeping dust.
- Grinders, saws, and other machines that produce respirable dusts vented to an industrial collector or central exhaust system.
- All local exhaust ventilation systems are designed and operating properly such as airflow and volume necessary for the application. Are the ducts free of obstructions or the belts slipping.
- Personal protective equipment is provided, used, and maintained wherever required.
- They're written standard operating procedures for the selection and use of respirators where needed.
- Restrooms and washrooms are kept clean and sanitary.
- All water provided for drinking, washing, and cooking is potable.
- All outlets for water not suitable for drinking clearly identified.
- Employees' physical capacities assessed before being assigned to jobs requiring heavy work.
- Employees are instructed in the proper manner of lifting heavy objects.
- Where heat is a problem, all fixed work areas have been provided with spot cooling or air conditioning.
- Employees screened before assignment to areas of high heat to determine if their health condition might make them more susceptible to having an adverse reaction.
- Employees working on streets and roadways where they are exposed to the hazards of traffic, required to wear bright colored warning vests.
- Exhaust stacks and air intakes located that contaminated air will not be recirculated within a building or other enclosed area.
- Equipment producing ultra-violet radiation is properly shielded.

## **Control of Harmful Substances by Ventilation**

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- The volume and velocity of air in each exhaust system is sufficient to gather dust, fumes, mists, vapors, or gases to be controlled, and to convey them to a suitable point of disposal.

- Exhaust inlets, ducts and plenums are designed, constructed, and supported to prevent collapse or failure of any part of the system.
- Clean-out ports or doors provided at intervals not to exceed 12 feet in all horizontal runs of exhaust ducts.
- Where two or more different types of operations are being controlled through the same exhaust system, the combination of substances being controlled will not constitute a fire, explosion, or chemical reaction hazard in the duct.
- Adequate makeup air is provided to areas where exhaust systems are operating.
- The intake for makeup air is located so that only clean, fresh air, which is free of contamination, will enter the work environment.
- Where two or more ventilation systems are serving a work area, their operation is such that one will not offset the functions of the other.

## **Fire Prevention & Safety**

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The Company Fire Safety Plan has been developed to work in conjunction with company emergency plans and other safety programs. This includes reviewing all new building construction and renovations to ensure compliance with applicable state, local, and national fire, and life safety standards. Fire prevention measures reduce the incidence of fires by eliminating opportunities for ignition of flammable materials.

This FPP is in place at this company to control and reduce the possibility of fire and to specify the type of equipment to use in case of fire. This plan addresses the following issues:

- Major workplace fire hazards and their proper handling and storage procedures.
- Potential ignition sources for fires and their control procedures.
- The type of fire protection equipment or systems which can control a fire involving them.
- Regular job titles of personnel responsible for maintenance of equipment and systems installed to prevent or control ignition of fires and for control of fuel source hazards.

Under this plan, our employees will be informed of the plan's purpose, preferred means of reporting fires and other emergencies, types of evacuations to be used in various emergency situations, and the alarm system. The plan is closely tied to our emergency action plan where procedures are described for emergency escape procedures and route assignments, procedures to account for all employees after emergency evacuation has been completed, rescue and medical duties for those employees who perform them. Please see the emergency action plan for this information.

## **RSO Responsibilities**

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Here at Global Comfort Group, the RSO is responsible for the following activities. He/she must:

- Develop a written fire prevention plan for regular and after-hours work conditions.
- Immediately notify the local fire department, fire or police departments, and the building owner/superintendent in the event of a fire affecting the office.
- Integrate the fire prevention plan with the existing general emergency plan covering the building occupied.

- Distribute procedures for reporting a fire, the location of fire exits, and evacuation routes to each employee.
- Conduct drills to acquaint the employees with fire procedures, and to judge their effectiveness.
- Satisfy all local fire codes and regulations as specified.
- Train designated employees in the use of fire extinguishers and the application of medical first-aid techniques.
- Keep key management personnel home telephone numbers in a safe place in the office for immediate use in the event of a fire. Distribute a copy of the list to key persons to be retained in their homes for use in communicating a fire occurring during non-work hours.
- Decide to remain in or evacuate the workplace in the event of a fire.

If evacuation is deemed necessary, the RSO ensures that:

- All employees are notified, and a head count is taken to confirm the total evacuation of all employees.
- When practical, equipment is placed and locked in storage rooms or desks for protection.
- The building owner/superintendent is contacted, informed of the action taken, and asked to assist in coordinating security protection.

In locations where the building owner/superintendent is not available, security measures to protect employee records and property are arranged as necessary.

## **Workplace Fire Hazards**

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It is the intent of this company to assure that hazardous accumulations of combustible waste materials are controlled so that a fast-developing fire, rapid spread of toxic smoke, or an explosion will not occur. Employees are to be made aware of the hazardous properties of materials in their workplaces, and the degree of hazard each pose.

Fire prevention measures must be developed for all fire hazards found. Once employees are made aware of the fire hazards in their work areas, they must be trained in the fire prevention measures developed and use them in the course of their work. For example, oil-soaked rags must be treated differently than general paper trash in office areas. In addition, large accumulations of wastepaper or corrugated boxes, etc., can pose a significant fire hazard. Accumulations of materials which can cause large fires or generate dense smoke that are easily ignited or may start from spontaneous combustion, are the types of materials with which this fire prevention plan is concerned. Such combustible materials may be easily ignited by matches, welder's sparks, cigarettes, and similarly low-level energy ignition sources. It is the intent of this company to prevent such an accumulation of materials.

Certain equipment is often installed in workplaces to control heat sources or to detect fuel leaks. An example is a temperature limit switch often found on deep-fat food fryers found in restaurants. There may be similar switches for high temperature dip tanks, or flame failure and flashback arrester devices on furnaces and similar heat producing equipment. If these devices are not properly maintained or if they become inoperative, a definite fire hazard exists. Again, employees and supervisors should be aware of the specific type of control devices on equipment involved with combustible materials in the workplace and should make sure, through

periodic inspection or testing, that these controls are operable. The manufacturer's recommendations should be followed to ensure proper maintenance procedures.

Fuel is used throughout the building and work areas/sites as an energy source for various systems or equipment. This fuel can be a significant fire hazard and must be monitored and controlled. Flammables are stored in safe, approved areas away from flames, sparks, heat, or other ignition sources.

## **Potential Ignition Sources**

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Flammable or combustible materials may not ignite on their own without an external source of ignition.

Many of the thousands of chemicals in use in the workplace are both highly toxic and highly volatile. Extreme caution must be used to prevent and fight fires resulting from chemical spills and accidents. Chemicals can cause serious injuries through physical (fire or explosion) or health (burns or poisons) hazards. Chemicals are classified by the inherent properties that make them hazardous.

- Flammable - these chemicals catch fire very easily; hazards include property damage, burns and injuries that result when toxic and corrosive compounds are released into the air.
- Reactive - a reactive material is one that can undergo a chemical reaction under certain conditions; reactive substances can burn, explode, or release toxic vapor if exposed to other chemicals, air, or water.
- Explosive - an explosive is a substance that undergoes a very rapid chemical change producing large amounts of gas and heat; explosions can also occur because of reactions between chemicals not ordinarily considered explosive.

The National Fire Protection Association (NFPA) has classified four general types of fires, based on the combustible materials involved and the kind of extinguisher needed to put them out. The four fire classifications are A, B, C and D.

- Class A. This type of fire is the most common. The combustible materials are wood, cloth, paper, rubber, and plastics. The common extinguisher agent is water, but dry chemicals are also effective. Carbon dioxide extinguishers and those using sodium or potassium bicarbonate chemicals are not to be used on this type of fire.
- Class B. Flammable liquids, gases and grease create class B fires. The extinguishers to use are foam, carbon dioxide and dry chemicals. Also, water fog and vaporizing liquid extinguishers can be used.
- Class C. Class C fires are electrical fires, and a non-conducting agent must be used. Carbon dioxide and dry chemical extinguishers are to be used. Never use foam or water-type extinguishers on these fires.
- Class D. Combustible metals, such as magnesium, titanium, zirconium, and sodium fires are class D. These fires require specialized techniques to extinguish them. None of the common extinguishers should be used since they can increase the intensity of the fire by adding an additional chemical reaction.

There are only two dry chemical extinguishers that can be used on A, B, and C fires, and those are multi-purpose ABC extinguishers, either stored pressure or cartridge operated. Multi-

purpose extinguishers (ABC) will handle all A, B, and C fires. All fire extinguishers are labeled with either ABC, or A, or B, or C.

It is important to know what type of fire is in progress. If you use a fire extinguisher, be sure to use one only on fires for which that fire extinguisher is designed. Using the wrong agent on a fire may increase the intensity of the fire. Check the label on the fire extinguisher; it should list the fire class(es) it is meant to put out.

## **Fire Protection Equipment**

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Fire protection equipment, selected and purchased by Richard Lowery, RSO, in use at this company includes the following extinguishers to protect from the various types of fire hazards.

Type of Fire: A, combustibles like wood, paper, etc..

Type of Extinguisher: A or ABC, water, or dry chemicals.

Type of Fire: B, flammable liquids, gases, and greases.

Type of Extinguisher: B or ABC, foam, carbon dioxide, dry chemicals.

Type of Fire: C, electrical fires.

Type of Extinguisher: C or ABC, non-conducting agent such as carbon dioxide and dry chemicals.

Type of Fire: D, combustible metals such as titanium and sodium.

Type of Extinguisher: This type of fire calls for specialized techniques for which the fire department will be called.

## **Maintenance of Fire Protection Equipment**

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Once hazards are evaluated and equipment is installed to control them, that equipment must be monitored on a regular basis to make sure it continues to function properly. Strict guidelines for maintaining the equipment are followed. Fire extinguishers are inspected monthly with each receiving an annual hydrostatic test. The Company records the annual maintenance date.

## **Housekeeping Procedures**

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Our company controls accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire. The following procedures have been developed to eliminate or minimize the risk of fire due to improperly stored or disposed of materials:

- All aisles, emergency exits, fire extinguishers, eye wash stations, etc., will be kept clear (a minimum of three feet in front of and to either side) of product storage, material storage, fork trucks and pallet jacks always.
- Storage areas will always be maintained orderly. When supplies are received, the supplies will be stored properly.
- Spills will be cleaned up immediately and waste disposed of properly.

- All process leaks will be reported to supervision and maintenance for immediate repair and clean-up.
- All refuse and waste materials will be placed in the recognized waste containers for disposal keeping the floor free of paper or saw dust, storing oily rags in specially designed containers, storing all flammables in fire cabinets when not in use.
- At the end of the business day, turn off all office equipment (area heaters, lamps, coffeemaker, PCs, etc.) and lights to save energy and prevent fires. All space heaters be unplugged at the end of the day to assure they have been turned-off.

## **Training**

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At the time of a fire, employees should know what type of evacuation is necessary and what their role is in carrying out the plan. In cases where the fire is large, total, and immediate evacuation of all employees is necessary. In smaller fires, a partial evacuation of nonessential employees with a delayed evacuation of others may be necessary for continued plant operation. We must be sure that employees know what is expected of them during a fire to assure their safety.

This document is not one for which casual reading is intended or will suffice in getting the message across. If passed out as a statement to be read to oneself, some employees will choose not to read it, or will not understand the plan's importance. In addition, training on the plan's content is required by OSHA.

A better method of communicating the fire prevention plan is to give all employees a thorough briefing and demonstration. Global Comfort Group has chosen to train employees through presentation followed by a drill. Our local fire department requires one or more fire drill(s) each year, so we cover related FPP information at that time.

Training, conducted on initial assignment, includes:

- What to do if an employee discovers a fire.
- Demonstration of alarm, if more than one type exists.
- How to recognize fire exits.
- Evacuation routes.
- Assisting employees with disabilities.
- Measures to contain fire (e.g., closing office doors, windows, etc. in the immediate vicinity).
- Head count procedures (see EAP for details).
- Return to the building after the "all-clear" signal.

The Company must inform employees of the fire hazards of the materials and processes to which they are exposed.

The Company reviews with each employee upon initial assignment those parts of the fire prevention plan which the employee must know to protect the employee in the event of an emergency.

The written plan shall be kept in the workplace and made available for employee review. For

those employers with 10 or fewer employees, the plan may be communicated orally to employees and the employer need not maintain a written plan.

If the RSO has reason to believe an employee does not have the understanding required, the employee must be retrained. The RSO certifies in writing that the employee has received and understands the fire prevention plan training.

Because failure to comply with company policy concerning fire prevention can result in OSHA citations and fines as well as employee injury, an employee who does not comply with this program will be disciplined.

## **Fire Prevention Equipment**

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The Company provides an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved in incipient stage firefighting. Training, before an individual is assigned responsibility to fight a fire, includes:

- Types of fires
- Types of fire prevention equipment
- Location of fire prevention equipment
- How to use fire prevention equipment
- Limitations of fire prevention equipment
- Proper care and maintenance of assigned fire prevention equipment and

Training is conducted upon initial assignment and at least annually thereafter.

Employees must demonstrate an understanding of the training and the ability to use the equipment properly before they are allowed to perform work requiring the use of the equipment.

If the RSO has reason to believe an employee does not have the understanding or skill required, the employee must be retrained. The RSO certifies in writing that the employee has received and understands the fire prevention equipment training.

## **Hazardous Chemical Exposures**

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- Employees are trained in the safe handling practices of hazardous chemicals such as acids, caustics, and the like.
- Employees are aware of the potential hazards involving various chemicals stored or used in the workplace--such as acids, bases, caustics, epoxies, and phenols.
- Employee exposure to chemicals is kept within acceptable levels.
- Eye wash fountains and safety showers provided in areas where corrosive chemicals are handled.
- All containers, such as vats and storage tanks labeled as to their contents--e.g., "CAUSTICS".
- All employees are required to use personal protective clothing and equipment when handling chemicals (i.e., gloves, eye protection, and respirators).
- Flammable or toxic chemicals kept in closed containers when not in use.
- Chemical piping systems clearly marked as to their content.

- Where corrosive liquids are frequently handled in open containers or drawn from storage vessels or pipelines, adequate means are readily available for neutralizing or disposing of spills or overflows properly and safely.
- Standard operating procedures have been established and they are being followed when cleaning up chemical spills.
- Where needed for emergency use, respirators are stored in a convenient, clean, and sanitary location.
- Respirators intended for emergency use adequate for the various uses for which they may be needed.
- Employees are prohibited from eating in areas where hazardous chemicals are present.
- Is personal protective equipment provided, used, and maintained whenever necessary.
- There are written standard operating procedures for the selection and use of respirators where needed.
- Respirator protection program requires employees to be instructed on the correct usage and limitations of the respirators.
- The respirators NIOSH approved for this application.
- They regularly inspected and cleaned, sanitized, and maintained.
- Hazardous substances are used in your processes that require a medical or biological monitoring system in operation.
- Familiar with the Threshold Limit Values or Permissible Exposure Limits of airborne contaminants and physical agents used in your workplace.
- Control procedures have been instituted for hazardous materials, where appropriate, such as respirators, ventilation systems, handling practices, and the like.
- Whenever possible, hazardous substances are handled in properly designed exhaust booths or similar locations.
- Use general dilution or local exhaust ventilation systems to control dust, vapors, gases, fumes, smoke, solvents, or mist which may be generated in your workplace.
- Ventilation equipment is provided for removal of contaminants from such operations as production grinding, buffing, spray painting, and/or vapor decreasing, and is it operating properly.
- If internal combustion engines are used, carbon monoxide is kept within acceptable levels.
- Vacuuming is used, rather than blowing or sweeping dust whenever possible for cleanup.
- Materials, which give off toxic asphyxiant, suffocating or anesthetic fumes, are stored in remote or isolated locations when not in use.

## HAZARD COMMUNICATION

### Purpose

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This Hazard Communication Program provides detailed safety guidelines and instructions for receipt, use and storage of chemicals at our facility by employees and contractors. A written Hazard Communication Program will be developed, implemented & maintained at each workplace.

## **General Program Information**

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This written Hazard Communication Plan (HAZCOM) has been developed based on OSHA's Hazard Communication Standard and consists of the following elements:

- Identification of Hazardous Materials
- Product Warning Labels
- Safety Data Sheets (SDS)
- Written Hazard Communication Program
- Effective Employee Training

Some chemicals are explosive, corrosive, flammable, or toxic. Other chemicals are relatively safe to use and store but may become dangerous when they interact with other substances. To avoid injury and/or property damage, people who handle chemicals in any area of the Company must understand the hazardous properties of the chemicals. Before using a specific chemical, safe handling methods and health hazards must always be reviewed. Supervisors are responsible for ensuring that the equipment needed to work safely with chemicals is accessible and maintained for all employees on all shifts.

## **Employee Training**

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Global Comfort Group will communicate hazard communications to non-English speaking employees by have training and communication materials in the employee's language and/or using an interpreter.

## **Initial Orientation Training**

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All new employees shall receive safety orientation training covering the elements of the HAZCOM and Right to Know Program. This training will consist of general training covering:

- Location and availability of the written Hazard Communication Program
- Location and availability of the List of Chemicals used in the workplace.
- Any operations in the work area where hazardous chemicals are present.
- Methods and observation used to detect the presence or release of a hazardous chemical in the workplace by use of monitoring devices, visual appearance, or odor.
- The specific physical and health hazard of all chemicals in the workplace
- Specific control measures for protection from physical or health hazards, including:
  - Appropriate work practices,
  - Emergency procedures, and/or
  - Proper PPE to be used.
- Details of the Hazard Communication Program
- Explanation of the chemical labeling system and the SDS and how employees can obtain & use the appropriate hazard information.

## **Job Specific Training**

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Employees will receive on-the-job training from their supervisor. This training will cover the proper use, inspection and storage of necessary personal protective equipment and chemical safety training for the specific chemicals they will be using or will be working around.

Annual Hazard Communication refresher training will be conducted as part of the company's continuing safety training program.

### **Immediate On-the-Spot Training**

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This training will be conducted by supervisors for any employee that requests additional information or exhibits a lack of understanding of the safety requirements.

### **Non-Routine Tasks**

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Non-routine tasks are defined as working on, near, or with unlabeled piping, unlabeled containers of an unknown substance, confined space entry where a hazardous substance may be present and/or a one-time task using a hazardous substance differently than intended (example: using a solvent to remove stains from tile floors).

#### *Steps for Non-Routine Tasks*

- Step 1: Hazard Determination
- Step 2: Determine Precautions
- Step 3: Specific Training & Documentation
- Step 4: Perform Task

All non-routine tasks will be evaluated by the Area Supervisor and RSO before the task commences, to determine all hazards present. This determination will be conducted with quantitative/qualitative analysis (air sampling, substance identification/analysis, etc., as applicable).

Once the hazard determination is made, the Department Supervisor and Safety Department will determine the necessary precautions needed to either remove the hazard, change to a non-hazard, or protect from the hazard (use of personal protective equipment) to safeguard the Employees present. In addition, the Department Supervisor or Safety Department will provide specific safety training for Employees present or affected and will document the training.

### **Off-Site Use or Transportation of Chemicals**

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A SDS will be provided to employees for each chemical and each occurrence of use or transport away from the company facilities. All State and Federal DOT Regulations will be followed including use of certified containers, labeling & marking, securing of containers and employee training.

### **General Chemical Safety**

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Assume All Chemicals Are Hazardous. The number of hazardous chemicals and the number of reactions between them is so large that prior knowledge of all potential hazards cannot be assumed. Use chemicals in as small quantities as possible to minimize exposure and reduce possible harmful effects.

## **General Safety Rules**

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- Read and understand the Safety Data Sheets.
- Keep the work area clean and orderly.
- Use the necessary safety equipment.
- Carefully label every container with the identity of its contents and appropriate hazard warnings.
- Store incompatible chemicals in separate areas.
- Substitute less toxic materials whenever possible.
- Limit the volume of volatile or flammable material to the minimum needed for short operation periods.
- Provide means of containing the material if equipment or containers should break or spill their contents.

## **Task Evaluation**

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Each task that requires the use of chemicals should be evaluated to determine the potential hazards associated with the work. This hazard evaluation must include the chemical or combination of chemicals that will be used in the work, as well as other materials that will be used near the work. If a malfunction during the operation has the potential to cause serious injury or property damage, a Safe Operational Procedure (SOP) should be prepared and followed. Operations must be planned to minimize the generation of hazardous waste.

## **Airborne Contaminants**

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Exposures by inhalation of airborne contaminants (gases, vapors, fumes, dusts, and mists) must not exceed the levels listed in the latest edition of Threshold Limit Values of Airborne Contaminants (TLV) published by the American Conference of Governmental Industrial Hygienists. These TLV levels refer to airborne concentrations of substances and represent conditions under which it is believed that workers may be repeatedly exposed without adverse effect. In all cases of potentially harmful exposure, feasible engineering or administrative controls must first be established. In cases where respiratory protective equipment, alone or with other control measures, is required to protect the employee, the protective equipment must be approved by the Responsible Safety Officer, for each specific use.

## **Safety Equipment**

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Eyewash fountains are required if the substance in use presents an eye hazard. The eyewash fountain must provide a soft stream or spray of aerated water. In areas where a corrosive chemical or rapid-fire hazard exists, safety showers must be provided for immediate first aid treatment of chemical splashes and for extinguishing clothing fires. The shower must be capable of drenching the victim immediately in the event of an emergency. Eyewash fountains and safety showers should be located close to each other so that, if necessary, the eyes can be washed while the body is showered. Access to these facilities must always remain open. In case of accident, flush the affected part for at least 15 minutes. Report the accident to the Responsible Safety Officer immediately.

## Chemical Storage

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The separation of chemicals (solids or liquids) during storage is necessary to reduce the possibility of unwanted chemical reactions caused by accidental mixing. Explosives should be stored separately outdoors. Use either distance or barriers (e.g., trays) to isolate chemicals into the following groups:

- Flammable Liquids: stored in approved flammable storage lockers.
- Acids: treat as flammable liquids
- Bases: do not store bases with acids or any other material
- Other liquids: ensure other liquids are not incompatible with any other chemical in the same storage location.
- Lips, strips, or bars are to be installed across the width of storage shelves to restrain the chemicals in case of earthquake.

Chemicals will not be stored in the same refrigerator used for food storage. Refrigerators used for storing chemicals must be appropriately identified by a label on the door.

## Disposal of Chemicals

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All Global Comfort Group employees are responsible for disposing of chemicals safely. Federal and state regulations mandate strict disposal procedures for chemicals. To comply with these regulations all people must observe these procedures. Routine Disposal of Chemicals In general the disposal of hazardous chemicals to the sanitary sewer is not permitted. The Responsible Safety Officer will advise on the proper disposal of chemical waste. In using chemical waste storage containers, certain procedures must be observed, as listed below: Incompatible chemicals must not be mixed in the same container (e.g., acids should not be mixed with bases; organic liquids should not be mixed with strong oxidizing agents). Waste oils must be collected in 55-gallon drums. Disposal solids and explosive materials must be stored in separate containers.

The following requirements must be met as a condition for pickup and disposal of chemicals by the Responsible Safety Officer:

- Chemicals must be separated into compatible groups.
- Leaking containers of any sort will not be accepted.
- Dry materials (gloves, wipes, pipettes, etc.) must be securely contained in plastic bags and over packed in a cardboard box.
- Packages that are wet or have sharp protruding objects will not be accepted for pick up.
- Unknown chemicals will require special handling.

The responsible department must make every effort to identify the material that is to be disposed of. If all the user's attempts to identify the waste chemicals have failed, the Responsible Safety Officer will accept the waste and analyze the material. For more information call the Responsible Safety Officer.

Each breakable container must be properly boxed. Place all bottles in plastic bags, then place in a sturdy container and use an absorbent cushioning material that is compatible with the chemicals. Each primary container must be labeled with content, amount, physical state, and

the percentage breakdown of a mixture. Each box must have a complete list of contents or description written on an official Responsible Safety Officer hazardous materials packing list.

Periodically review your stock of chemicals on hand. Ensure that storage areas, or equipment containing large quantities of chemicals, are secure from accidental spills. Rinse emptied bottles that contain acids or inflammable solvents before disposal. Recycle unused laboratory chemicals wherever possible.

**DO NOT** place hazardous chemicals in salvage or garbage receptacles. Pour chemicals onto the ground. Dispose of chemicals through the storm drain system. Dispose of highly toxic, malodorous, or lachrymatory chemicals down sinks or sewer drains.

## **List of Hazardous Materials**

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The Company has compiled a list of hazardous materials employees may be potentially exposed to. Safety Data Sheets for each hazardous material are kept on file. This list is kept with the Safety Data Sheets or in the Chemical Management application. Consumer products may be exempt from this requirement. Please contact the RSO for additional information.

## **Container Labels**

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It is extremely important that all containers of chemicals are properly labeled. This includes every type of container from a 5000-gallon storage tank to a spray bottle of degreaser. The following requirements apply:

- Container labels should contain the following information: Identity of hazardous chemicals, appropriate hazard warnings and name & address of the chemical manufacturer, importer, or other responsible party.
- Employers or employees shall not remove or deface labels on incoming containers of hazardous chemicals.
- Portable containers which contain a small amount of chemical need not be labeled if they are used immediately in that shift but must be under the strict control of the employee using the product.
- All warning labels, tags, etc., must be maintained in a legible condition and not be defaced. Facility weekly supervisor inspections will check for compliance of this rule.
- Incoming chemicals are to be checked for proper labeling.

## **Hazard Warnings**

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Methods to address appropriate hazard warnings may include words, pictures, symbols, or combinations thereof.

### **Specific Hazards**

- The marking in the bottom white square
- OXY - Oxidizer (causes fire through release of oxygen)
- ACID - Acid
- ALK – Alkali
- CORR - Corrosive (both CORR & ALK material create burns on human skin)

- **W** - Use No Water
-  Radiation Hazard

## Emergencies and Spills

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- In case of an emergency, implement the proper Emergency Action & Response Plan.
- Evacuate people from the area.
- Isolate the area.
- If the material is flammable, turn off the ignition and heat sources.
- Only personnel specifically trained in emergency response are permitted to participate in chemical emergency procedures beyond those required to evacuate the area.
- Call for Emergency Response Team assistance if required.

## Housekeeping

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- Maintain the smallest possible inventory of chemicals to meet immediate needs.
- Periodically review stock of chemicals on hand.
- Ensure that storage areas, or equipment containing large quantities of chemicals, are secure from accidental spills.
- Rinse emptied bottles that contain acids or inflammable solvents before disposal.
- Recycle unused laboratory chemicals wherever possible.

**DO NOT** Place hazardous chemicals in salvage or garbage receptacles.

**DO NOT** Pour chemicals onto the ground.

**DO NOT** Dispose of chemicals through the storm drain system.

**DO NOT** Dispose of highly toxic, malodorous chemicals down sinks or sewer drains.

## Contractors

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All outside contractors working inside Company Facilities are required to follow the requirements of this program. The Company will provide Contractor's information concerning:

- Location of SDS.
- Precautions to be taken to protect contractor employees.
- Potential exposure to hazardous substances.
- Chemicals used in or stored in areas where they will be working.
- Location and availability of Safety Data Sheets.
- Recommended Personal Protective Equipment.
- Labeling system for chemicals.

## SDS Information

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*Safety Data Sheets* are provided by the chemical manufacturer to provide additional information concerning the safe use of the product. Each SDS provides:

- Common Name and Chemical Name of the material,
- Name, address, and phone number of the manufacturer,
- Emergency phone numbers for immediate hazard information,

- Date the SDS was last updated,
- Listing of hazardous ingredients,
- Chemical hazards of the material,
- Information for identification of chemical and physical properties,

Lay terms for potential health risks will be provided along with the SDS's.

SDS shall be maintained and readily accessible in each work area. SDS can be maintained at the primary work site. However, they should be available in case of an emergency. SDS must be made available, upon request, to employees, their designated representatives, the Assistant Secretary & the Director. Contact your supervisor to obtain an SDS on any hazardous chemical in our workplace.

### **Information Chemical Users Must Know**

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- Fire and/or Explosion Information.
- Material Flash Point, auto-ignition temperature, and upper/lower flammability limits.
- Proper fire extinguishing agents to be used.
- Firefighting techniques.
- Any unusual fire or explosive hazards.

### Chemical Reaction Information

- Stability of Chemical.
- Conditions and other materials which can cause reactions with the chemical.
- Dangerous substances that can be produced when the chemical reacts.

### Control Measures

- Engineering Controls required for safe product use.
- Personal protective equipment required for use of product.
- Safe storage requirements and guidelines.
- Safe handling procedures.

### Health Hazards

- Permissible Exposure Limit (PEL) and Threshold Limit Value (TLV).
- Acute or Chronic symptoms of exposure.
- Main routes of entry into the body.
- Medical conditions that can be made worse by exposure.
- Cancer causing properties if any.
- Emergency and First Aid treatments.

### **Employee Use of SDS**

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For SDS use to be effective, employees must:

- Know the location of the SDS.
- Understand the major points for each chemical.
- Check SDS when more information is needed, or questions arise.
- Be able to quickly locate the emergency information on the SDS.
- Follow the safety practices provided on the SDS.

## **Responsibilities**

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### Management

- Ensure compliance with this program.
- Conduct immediate corrective action for deficiencies found in the program.
- Maintain an effective Hazard Communication training program.
- Make this plan available to employees or their designated representative.
- Shipping & Receiving Manager.
- Ensure all received containers are properly labeled and that labels are not removed or defaced.
- Ensure all shipped containers are properly labeled.
- Ensure shipping department employees are properly trained in spill response.
- Ensure received Safety Data Sheets (SDS) are properly distributed.

### RSO

- Maintain a list of hazardous chemicals using the identity that is referenced on the SDS.
- Monitor the effectiveness of the program.
- Conduct an annual audit of the program.
- Monitor employee training to ensure effectiveness.
- Keep management informed of necessary changes.
- Ensure SDSs are available as required.
- Monitor facility for proper use, storage, and labeling of chemicals.
- Ensure SDS are available for emergency medical personnel when treating exposed employees.
- Provide information, as requested, concerning health effects and exposure symptoms listed on SDSs.

### Supervisors

- Comply with all specific requirements of the program.
- Provide specific chemical safety training for assigned employees.
- Ensure chemicals are properly used stored & labeled.
- Ensure only the minimum amount necessary is kept at workstations.
- Ensure up to date SDS are readily accessible to all employees on all shifts.

### Employees

- Comply with chemical safety requirements of this program.

- Report any problems with storage or use of chemicals.
- Immediately report spills of suspected spills of chemicals.
- Use only those chemicals for which they have been trained.
- Use chemicals only for specific assigned tasks in the proper manner.

### Contractors

- Comply with all aspects of this program.
- Coordinate information with the RSO.
- Ensure Contractor employees are properly trained.
- Notify the RSO before bringing any chemicals into company property or facilities.
- Monitor and ensure proper storage and use of chemicals by Contractor employees.

### **Multi-Employer Workplace**

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The RSO is responsible for informing Contractors and Sub-Contractors of hazardous substances to which they or their employees may be exposed while performing their work. The RSO will provide all necessary SDS and information on our hazardous material labeling system. This information will be provided to the contractor during the pre-construction meeting.

The RSO is also responsible for obtaining a list of SDS for any hazardous substance that a Contractor is bringing on to a worksite. This information shall be provided to the Project Director/Site Coordinator prior to initiation of the Contract.

The program will be made available, upon request, to employees, their designated representatives, the Assistant Secretary & the Director. Where employees must travel between workplaces during a work shift (multi job sites), the written program may be kept at a primary job site. If there is no primary, then the program should be sent with employees.

### **Appendices**

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- Hazard Communication List of Hazardous Substances
- Request for Safety Data Sheet (SDS)

### **Transporting Employees & Materials**

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- Employees who operate vehicles on public thoroughfares have valid operator's licenses.
- Vehicles used to transport employees, equipped with lamps, brakes, horns, mirrors, windshields and turn signals in good repair.
- Transport vehicles provided with handrails, steps, stirrups, or similar devices, so placed and arranged that employees can safely mount or dismount.
- A fully charged fire extinguisher, in good condition, is in each employee transport vehicle.
- When cutting tools with sharp edges are carried in passenger compartments of employee transport vehicles, they are placed in closed boxes or containers which are secured in place.
- Employees prohibited from riding on top of any load, which can shift, topple, or otherwise become unstable.

# EMERGENCY ACTION PLAN

## Purpose

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Global Comfort Group is dedicated to the protection of its employees from emergencies such as tornadoes and fires. When emergencies do occur, our Emergency Action Plan (EAP) is initiated. This EAP is in place to ensure employee safety from emergencies during regular hours and after hours. It provides a written document detailing and organizing the actions and procedures to be followed by employees in case of a workplace emergency.

OSHA's Emergency Action Plan requirements require Global Comfort Group to have a written emergency action plan (EAP). This EAP addresses emergencies that our company expects may reasonably occur at our site.

The EAP communicates to employees, policies, and procedures to follow in emergencies. This written plan is available, upon request, to employees, their designated representatives, and any OSHA officials who ask to see it.

Our emergency action plan must be in writing, kept in the workplace, and available to employees for review. However, if Global Comfort Group has 10 or fewer employees, we may communicate the plan orally to employees.

## Administrative Duties

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Richard Lowery, RSO (or designee) is the EAP administrator, who has overall responsibility for the plan. This responsibility includes the following:

- Developing and maintaining a written Emergency Action Plan for regular and after hours work conditions.
- Notifying the local fire or police departments, and the building owner/superintendent in the event of an emergency affecting the facility.
- Taking security measures to protect employees.
- Integrating the Emergency Action Plan with any existing general emergency plan covering the building or work area occupied.
- Distributing procedures for reporting emergencies, the location of safe exits, and evacuation routes to each employee.
- Conducting drills to acquaint employees with emergency procedures and to judge the effectiveness of the plan.
- Training designated employees in emergency response such as the use of fire extinguishers and the application of first aid.
- Deciding which emergency response to initiate (evacuate or not).
- Ensuring that equipment is placed and locked in storage rooms or desks for protection.
- Maintaining records and property as necessary; and
- Ensuring that our facility meets all local fire codes, building codes, and regulations.

The RSO is responsible for reviewing and updating the plan as necessary. Copies of this plan may be obtained from the RSO's office.

The RSO has full authority to decide to implement the EAP if he believes an emergency might threaten human health. The following potential emergencies might reasonably be expected at this facility or work areas and thus call for the implementation of this EAP:

- Fire emergencies (process area fires, non-pressurized tank fires, pressurized tank fires, fires at loading facilities, warehouse fires, office building fires, electrical fires).
- Toxic gas releases.
- Flammable gas releases.
- Hazardous liquid spills.
- Oil spills.
- Release of radiation.
- Tornadoes.
- Winter storms.
- Flooding.
- Earthquakes.
- Bomb threat/Civil disturbance.
- First-aid emergencies.

The RSO can be contacted regarding further information about duties under this written Emergency Action Plan

Key management personnel home telephone numbers are kept in a safe place, on office and work area bulletin boards, and in company vehicles, for immediate use in the event of an emergency. These telephone numbers of key management personnel have been distributed all supervisors to be retained in their homes for use in communicating an emergency occurring during non-work hours:

If, after reading this plan, you find that improvements can be made, please contact the plan administrator, Richard Lowery. We encourage all suggestions because we are committed to the success of our Emergency Action Plan. We strive for clear understanding, safe behavior, and involvement in the program from every level of the company.

## **Alarms**

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Different emergencies call for different alarms to indicate what actions employees should take. Global Comfort Group has established an employee alarm system that complies with OSHA regulations. The Company has and maintains an employee alarm system. The employee alarm system uses a distinctive signal for each purpose. We will use the tornado alarm to warn employees of tornado warnings only.

We have posted the emergency telephone numbers near telephones, or emergency notice boards, and other conspicuous locations for use when telephones serve as a means of reporting emergencies.

## **Emergency Reporting and Weather Monitoring Procedures**

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### In the Event of an Emergency Requiring Evacuation

When employees detect an emergency that requires an evacuation, such as a fire or hazardous release, they should activate the fire alarm and exit the building to the designated safe area for a headcount. The fire department will be notified via telephone.

### In the Event of a Tornado Watch

We monitor tornadoes with severe weather radio. When available, our backup method for monitoring tornadoes includes city and county tornado sirens.

## **Emergency Evacuation Procedures**

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Some emergencies require evacuation or escape procedures, while some require employees to stay indoors, or in a safe area. Our emergency escape procedures are designed to respond to many potential emergencies, depending on the degree of seriousness. Nothing in these procedures precludes the plan administrator's authority in determining whether employees should remain inside or evacuate.

The Company must designate and train employees to assist in the safe and orderly evacuation of other employees.

Global Comfort Group procedures for evacuation must include type of evacuation and exit route assignments.

At this company, the following types of emergency evacuations exist:

- total and immediate evacuation

Our emergency escape procedures and assignments are designed to respond to many potential emergencies that require them, including fire, tornado, bomb threat, and chemical release.

Employees need to know what to do if they are alerted to a specific emergency. After an alarm is sounded to evacuate, employees should take the following steps:

- Cease work immediately and proceed to the nearest available exit.
- Go to your designated safe area for a headcount and further instructions.

### Procedures to Account for Employees

Trained evacuation personnel assist in safe and orderly evacuation for all types of emergencies that require evacuation. Once evacuation is complete, they conduct head counts. The employees selected are trained in the complete workplace layout and the various alternative escape routes from the workplace. All trained personnel are made aware of employees with disabilities who may need extra assistance, such as using the buddy system, and of hazardous areas to be avoided during emergencies. Before leaving, these employees check rooms and other enclosed spaces in the workplace for employees who may be trapped or otherwise unable to evacuate the area.

Frontline supervisors must be aware of the locations of those employees working on a particular day when an emergency occurs and be aware of who is absent or otherwise away from the

premises. Accounting for employees will aid local responding fire/rescue departments in determining whether rescue efforts are necessary.

Once each evacuated group of employees have reached their evacuation destinations, each trained evacuation employee:

- Takes roll of his or her group,
- Makes sure all persons are accounted for,
- Reports into a central checkpoint managed by Richard Lowery, RSO, and
- Assumes role of department contact to answer questions.

NO employees should remain in the affected area(s). Head count results should be given to the Fire Chief or firefighter, if requested.

No employees are to return to their work area until advised by Richard Lowery, RSO or designee (after determination has been made that such re-entry is safe).

## **Fire**

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Upon alarm sounding, all personnel shall evacuate the work area by the most direct route. The routes are shown on the workplace maps posted on the bulletin boards.

Prior to exiting, turn off machine at your workstation or close the valves on gas operated equipment such as oxygen/acetylene carts. Do not try to retrieve items or tools.

Richard Lowery, prior to exiting the area, shall ensure that all equipment is secured, and all areas are checked to ensure that no employee remains in his area.

All employees shall go directly upon sounding the alarm to the parking lot and assemble with your Supervisor for a head count. At no time will you leave this area unless directed by management or supervision. Do not try to re-enter the work area to obtain personal items or tools. Supervisors will report to Richard Lowery or his or representative with the names of all employees counted and any unaccounted-for personnel as soon as the head count is completed.

Any firefighting, rescue or medical duties will be performed by the fire department, police department, or hospital medical personnel. At no time will our personnel attempt on their own initiative, a rescue or fire suppression, after departing the area. The only firefighting attempted by our personnel will be in the incipient stage of the fire.

Should an employee discover a fire, he or she will notify the Supervisor in that area who will advise Richard Lowery or his or her representative. At the same time the Supervisor will direct the use of fire extinguishers against the fire and evacuate when he or she deems it necessary.

Richard Lowery will be responsible for providing any further information to the employees concerning this plan.

## **Tornado**

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Upon being advised of the distinct possibility that a tornado may strike the area Richard Lowery or his representative shall sound the alarm. All personnel shall seek shelter immediately by either crawling under sturdy work benches, equipment, inside rooms or basements within the shop after shutting off power to machines.

Upon sounding all clear signal, which will be a voice signal and providing the tornado missed the shop, all personnel shall resume normal production duties.

If the tornado strikes the shop and all clear is sounded by the U.S. Weather Bureau, it may be necessary to evacuate part of the work area.

Personnel in each building will be advised by voice communication by Richard Lowery or his representative as to what action is necessary. If evacuation is deemed necessary, those personnel to be evacuated will proceed directly to the parking lot. Do not try to retrieve personal items or tools. Head counting procedures will be the same as for fires. At no time will you leave this area unless directed by management or supervisory personnel.

All firefighting, rescue and medical duties will be performed by fire department, police department, and hospital medical personnel. At no time will our personnel attempt on his/her own initiative a rescue after departing the work area.

Richard Lowery will be responsible for providing any further information to the employees.

### **Evacuation**

Upon alarm sounding, personnel shall evacuate the area by the most direct exit.

The routes are shown on the workplace maps posted on bulletin boards.

Prior to exit, turn off your machine at the workstation or close valves on gas operated equipment. Do not try to retrieve personal items, tools, or vehicles. Richard Lowery, prior to exiting the work area, shall ensure that all equipment is secured, and all areas are checked to ensure no employees remain in the work area. LEAVE THE LIGHTS ON TO ASSIST SEARCH PERSONNEL.

The employees shall go directly, upon sounding of the alarm, to the parking lot and assemble with your Supervisor for a head count.

At no time will you leave this area unless directed by management or supervisory personnel. Do not try to re-enter the building or grounds to obtain personal items or tools or cars. Supervisors shall report to Richard Lowery or his representative the names of all employees counted and any unaccounted-for personnel as soon as the head count is completed.

## **Hazardous Chemical Release**

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In the event of an accidental release of hazardous chemicals, an evacuation would be required if the release is in a significant amount to cause, or have potential to cause, harm to employees.

After it is determined that there is a hazardous chemical emergency, the Management Team will be notified and make the decision whether to evacuate any areas. All unqualified Employees should remain clear of any spill or release of any hazardous material. If evacuation procedures have been initiated, ALL EMPLOYEES MUST LEAVE THE PLANT and proceed to the designated meeting area.

NO ONE MAY ENTER THE RELEASE/SPILL/AFFECTED AREAS WITHOUT PROPER PERSONAL PROTECTIVE EQUIPMENT AND MANAGEMENT PERMISSION.

PPE is always required until the hazard has been dissipated with proof by proper testing procedures.

Warehouse Manager will proceed directly to the emergency area to determine if evacuation or outside help is necessary.

Management will activate the Emergency Response Team if required.

Management will implement the **Emergency Spill Procedures** of the **Spill Prevention Control & Countermeasures Plan** if any hazardous material is released.

Notification of State Department of Environmental Monitoring and EPA is required if spilled oil material discharges or threatens to discharge into a waterway of the State causing a visible sheen on or a discoloration of the surface water or shorelines, or if a reportable quantity for a hazardous substance is discharged or may unavoidably be discharged to a waterway of the State.

### **Rescue or Medical Duties**

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Global Comfort Group employees are prohibited from engaging in rescue and/or medical duties. Local Emergency Medical Services (EMS) and Fire Departments should be contact by dialing 911.

### **Plan Administrator Duties**

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During an emergency, Richard Lowery, RSO will do the following:

- Take all necessary measures to contain the hazard and prevent its spread to other nearby areas, with the assistance of emergency personnel.
- If the emergency is a hazardous material spill, ensure that the hazardous material and any material with which it came into contact (gravel, soil, etc.), will be scraped up using shovels and/or brooms. All this combined material will be considered hazardous waste unless analysis shows otherwise.
- Provide for collection, treatment, and disposal of waste and contaminated material by the emergency crew or outside contractor, as appropriate.
- Ensure that contaminated soil, liquids, or other material is placed in drums and handled as a hazardous waste.

- Ensure that the emergency crew restores all emergency equipment to full operational status.
- Assisted by other qualified persons, begin to investigate the cause of the emergency, and take steps to prevent a recurrence of such or similar incidents.
- Ensure that the cause of the emergency has been eliminated and that cleanup and restoration have progressed at least to the point of not jeopardizing the health and safety of the employees, and that EPA, state, and local authorities have been notified, if required.
- Ensure that for spills or releases involving a hazardous substance at or above its reportable quantity, the following necessary information is recorded and reported: name of chemical(s) involved, whether the substance is listed under 40 CFR 302—extremely hazardous substances, estimated quantity of the released substance, time of the release and duration, medium into which the substance was released, health risks associated with the release, precautions taken to respond to the release, name and telephone numbers of persons who can be contacted for further information.

Employees should contact Richard Lowery, RSO, for more information about the plan or an explanation of their duties under the plan.

## **Training**

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Our Plan Administrator reviews with each of our employees at the following times, those parts of the Emergency Action Plan that employees must know to protect themselves in the event of an emergency:

- Initially when the plan is developed or the employee initially to a job,
- Whenever an employee's responsibilities or designated actions under the plan change, and
- Whenever the plan is changed.

The information in this plan is not intended for casual reading but is intended to get the appropriate message across.

Drills are conducted annually. After a drill, the Plan Administrator judges the effectiveness of the plan and reviews any employee input concerning the drill. Employees performing the drill may identify something that did not follow procedure or was ineffective. For example, they may discover doors that would not open; they may enter storage closets instead of exiting; they may get lost and confused. These are the types of things the Plan Administrator needs to hear about after a drill. That way, they can be addressed before a real emergency.

## **Emergency Action Diagram**

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The company Emergency Action Diagram showing the following:

- Exit Locations.
- Fire Extinguisher Locations.
- Storage Locations for Hazardous/Flammable Materials.
- Storage Area for Spill Response Supplies and Personal Protective Equipment.

- Tornado Shelters.

A copy of this diagram is posted on company bulletin boards and near each exit.

## **Ergonomics**

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- The work can be performed without eyestrain or glare to the employees.
- Tasks will not require prolonged raising of the arms.
- The neck and shoulders will not have to be stooped to view the task.
- There are no pressure points on any parts of the body (wrists, forearms, back of thighs).
- The work can be done using the larger muscles of the body.
- The work can be done without twisting or overly bending the lower back.
- Sufficient rest breaks, in addition to the regular rest breaks, to relieve stress from repetitive-motion tasks.
- Tools, instruments, and machinery shaped, positioned, and handled so that tasks can be performed comfortably.
- All pieces of furniture adjusted, positioned, and arranged to minimize strain on all parts of the body.

## **Back & Lifting Safety**

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Lifting things and moving them from one place to another is a very simple operation. However, if this operation is done incorrectly, it may cause many injuries. You can wrench your back or pull a muscle, or crush or pinch your hands or feet.

- Learn how to lift and prevent injuries.
- Use the right kind of personal protective gear.
- Hand protection and safety shoes are a must for most lifting jobs.
- Some jobs might call for hard hats and goggles.
- If it is too big or too heavy for you to handle alone, get help.
- Check the material for nails, splinters, rough stripping that might injure your hands.

## **Lifting Procedures**

1. Face the load.
2. Put one foot alongside the object, and one foot behind.
3. Bend at the knees. Let your legs do the work.
4. Keep back straight and the load as close as possible.
5. Get a good, firm grip with the palms of your hands while lifting by straightening your legs.
6. Avoid twisting as you turn with a load. Shift your feet instead.
7. Don't try to lift something above waist level in one motion. Set the load on a table or bench, then change your grip for lifting higher.
8. To put the object down, just follow the lifting procedure, but in reverse.

## Housekeeping

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Office areas are to be kept neat and orderly. The following general rules apply to prevent injuries and maintain a professional appearance.

- All aisles, emergency exits, fire extinguishers, etc., will always be kept clear (a minimum of three feet on either side) of material storage (temporary and permanent).
- Storage areas will always be maintained orderly. When supplies are received, the supplies will be stored properly.
- Spills will be cleaned up immediately and waste disposed of properly.
- All waste receptacles will be lined with a plastic trash bag to avoid direct contact while handling. Custodial Employees will use rubber gloves and compaction bars when handling waste.
- Keep file and desk drawers closed when not attended to avoid injuries. Open only one drawer at a time to prevent tipping of file cabinets.
- At the end of the business day, turn off all office equipment (area heaters, lamps, coffeemaker, PCs, etc.) and lights to save energy and prevent fires. All space heaters must be unplugged at the end of the day to assure they have been turned-off.

Work areas will be kept neat and orderly, during operations and as follows:

- All aisles, emergency exits, fire extinguishers, eye wash stations, etc., will be kept clear (a minimum of three feet in front of and to either side) of product storage, material storage, fork trucks and pallet jacks always.
- Spills will be cleaned up immediately.
- All process leaks will be reported to supervision and maintenance for immediate repair and clean-up.
- Utility Employees will be responsible to keep aisles and work floors clear of excessive debris and waste materials during shift operation, between breaks and at shift change when necessary or directed by supervision; however, all Employees are responsible to communicate slippery floors to supervision for immediate clean-up.
- All refuse and waste materials will be placed in the recognized waste containers for disposal.

Restrooms and break areas are provided as a convenience for all Employees. The following rules will apply:

- Employees are expected to clean up after themselves as a common courtesy to fellow Employees.
- Flammable materials (fireworks, explosives, gasoline, etc.) may not be stored in break areas or brought on company property.
- Personal food items will not be stored in break areas overnight.
- All waste receptacles will be lined with a plastic trash bag to avoid direct contact while handling and Custodial Employees will use rubber gloves and compaction bar when handling wastes.
- All refuse and waste materials will be placed in the recognized waste containers for disposal.

Maintenance Areas, the following rules apply:

- All aisles, emergency exits, fire extinguishers, etc., will always be kept clear (a minimum of three feet on either side) of material storage (temporary and permanent).
- Storage Areas will always be maintained orderly.
- Pipe stock stored horizontally on racks and sorted by size.
- Metal stock stored horizontally on racks and sorted by size.
- Sheet metal stock stored vertically in racks and sorted by type.
- All fittings, etc., stored in bins on shelves and sorted by type and use.
- All flammables stored in OSHA-approved Fire Cabinets and self-closing cans where necessary.
- Spills will be cleaned up immediately by the person responsible and wastes disposed of properly.
- All refuse and waste materials will be placed in the recognized waste containers for disposal.

The grounds surrounding our main facility and worksites are an extension of the workplace. Grounds that are kept neat and orderly show pride by the Company for Employees, customers, and neighbors to enjoy. The following general rules will apply:

- Keep the parts of buildings that are visible to public roads clean by washing them at regular intervals.
- Keep the other parts of buildings cleaned at regular intervals.
- Keep all doors and loading docks completely free of debris, shrubs, or other obstructions.
- Maintain visibility through all windows by washing at regular intervals.
- Keep doors and windows properly maintained in good working order.
- Repair any damage to doors and windows at regular intervals.
- All trash will be discarded only in the waste containers provided.
- Park only in the designated assigned area.
- The Maintenance Department will be responsible for grounds keeping (mowing, trimming, etc.) as needed. Maintenance will also establish procedures for ice/snow removal, when necessary, prior to operations each day.
- Provide any stairs or platforms adjacent to or leading into the building(s) with adequate rails, adequate treads to climb, and an area clean and free of materials.
- Keep grounds neat and orderly, free of refuse and unnecessary materials.
- Store materials outdoors only in designated areas of the grounds.
- Provide designated walkways through grounds, preferably paved, and kept clear of snow, ice, materials, or any other physical hazards.
- Provide a lighting system that is adequate to allow employees to navigate around the grounds as necessary at dusk and after dark.
- Maintain a neat landscaping appearance--trim lawn, trees, and shrubs in such a way as to minimize any possible safety hazards.
- Trim grass short enough to prevent trip hazards to employees.
- Prevent trees and shrubs from obstructing doors and windows.

## Material Storage

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Proper storage procedures are required for dry, raw materials, flammables, and compressed gases storage to prevent fires, keep exits and aisles clear and avoid injuries and illnesses. General rules for material storage are as follows:

- Materials may not be stored any closer than 18 inches to walls or sprinkler heads. A minimum of 3 feet side clearance will be maintained around doorways and emergency exits. Passageways and aisle will be properly marked and a minimum of six feet in width. Materials, forklifts, pallet jacks, etc., may not be stored in aisles or passageways.
- Aisles and passageways will be kept clear of debris. All spilled materials will be immediately cleaned-up by the person responsible.
- All platforms and racks will have maximum load capacity displayed. The weight of stored material will not exceed the rated load capacity.
- All flammables will be stored in OSHA-approved flammable storage cabinets or stored outside (at least 50 feet from any structure)
- Fuels, solvents, and other flammables (not stored in original shipping containers) will be stored in OSHA-approved self-closing containers with flame arresters. Flammables may not be stored in open containers (open parts baths, etc.).
- Flammable storage areas will be kept dry and well ventilated. No storage of combustible materials, open flames or exposed electrical components are permitted in the flammable storage area.
- Flammable or combustible materials may not be stored in electrical rooms. Electrical rooms must always be kept clean and dry.
- Inspect bottle for defects & proper marking/labels.
- Ensure the stamped date on bottle has not expired.
- Inspect valve assembly and adapter thread area.
- Ensure SDS is on file or with shipment.
- Follow SDS requirements for storage.

## DRIVING SAFETY

### Purpose

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Half of all accidental deaths in the US are caused by motor vehicles. The greatest cause of job-related fatalities in the U.S., is the driving of personal or company vehicles. The safety of our employees and the protection of the property of others is a concern of Global Comfort Group. This Driving Safety Program was developed to assure this safety and protection.

The Driving Safety Program applies to all locations where Company vehicles operate. Company operated vehicles include:

- Company Cars and Vans
- Company pool cars and vans
- Company delivery vehicles and trucks

## Policy

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Any employee that is authorized to operate a Company truck or vehicle must meet all requirements of the Federal Highway Administration and State Government Regulations. Employees that are assigned to operate any kind of vehicle that has a gross combination weight rating of 26,000 or more pounds are required to have a current, valid Commercial Driver's License (CDL), issued by the state.

Only authorized employees will drive a motor vehicle in the course and scope of work or operate a company- owned vehicle. Vehicles will always be maintained in a safe condition. In the event of an unsafe mechanical condition, the vehicle will be immediately placed out of service and the RSO notified. Only qualified company vehicle mechanics or approved service facilities are permitted to perform maintenance on company vehicles.

All vehicles will be operated, licensed, and insured in accordance with applicable local, state, and federal laws. All employees authorized to operate any company owned or leased vehicle will be included in the company random drug-testing program. Drivers must be appropriately assessed, licensed, and trained to operate the vehicle. All authorized employees must possess a valid state driver's license for the class vehicle authorized. Authorized employees must have a driving record at least equal to that required for maintaining a commercial driver's license.

Drivers will not operate a motor vehicle while under the influence of alcohol, illegal drugs, or prescription or over-the counter medications that might impair their driving skills.

## Driver Qualifications

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Accident control for our fleet begins with the selection of company drivers. Only the most qualified drivers should be selected, both for full-time and part-time drivers.

Employees are often responsible for operating expensive equipment and handling valuable or hazardous cargo. Employee selection must begin with well-defined requirements for each job that include the duties of the job, the physical and mental attributes required, and the education of training required. The applicant's ability and skills, experience with similar jobs, job knowledge and attitude towards safety are to be considered.

The following lists the "minimum" qualifications that must be met (and maintained) by any employee assigned to drive a Company truck or vehicle, other than a company care or passenger van:

- Applicants must be at least 21 years of age.
- Applicants must be able to read, speak and write fluently in English.
- Applicants must understand highway traffic signs and signals.
- Applicants must be able to respond to official inquiries and to make written entries in reports and records.
- Is physically qualified to operate a motor vehicle and has no movement limitations concerning their arms, legs, foot, head, waist, back, hands or fingers.
- Has no established medical history that would interfere with their ability to operate a motor vehicle to include:

- Myocardial infarction, coronary difficulty, or any heart condition.
  - Diabetes.
  - Respiratory dysfunction.
  - High Blood Pressure.
  - Epilepsy.
  - Mental, nervous, or other functional or psychiatric disorder.
  - Arthritis, neuromuscular, or vascular disease.
- Has visual acuity and binocular vision of at least 20/40 (with or without corrective lenses), and the field of vision of at least 70 degrees in each eye.
  - Does not have an average hearing loss in the better ear greater than 40 decibels at 500 Hz, 1000 Hz, and 2000 Hz with or without a hearing aid.
  - Has passed a pre-employment drug test.
  - Does not use drugs that fall into the following categories: opiate, hallucinogenic, depressant, or stimulants.
  - Have a valid Commercial Driver's License.
  - Has furnished a list of all motor vehicle accidents AND convictions that have occurred in the last 3 years.
  - Has successfully completed a Company monitored road test.
  - Has completed a Company written examination.
  - A background investigation of the applicant's driving record and employment record over the past three years has been completed.

## Home Use

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Only Management may approve the use of Company vehicles between residence and place of employment. The approval process for the use of vehicles between residence and place of employment will be different based on the reason for approval.

Employees engaged in fieldwork will be approved based on positions. Each office requesting approval of vehicle use between residence and place of employment for employees engaged in field work shall submit justification, in memorandum form, to the RSO. This justification shall include the position title and series, number of employees affected, name and title of person requesting approval, dates, location of official duty station, frequency and duration of the field work, and justification for the use of the vehicles.

After the initial justification for each position has been approved, the requesting office should reassess and resubmit justification every year.

If a position is approved for the use of a vehicle between residence and place of employment based on field work, the approval is only in effect when an employee is engaged in field work and should not be interpreted as authorization to use the vehicle at any time other than when conducting field work.

## **Usage Documentation**

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Each employee using a vehicle between his or her residence and place of employment will maintain a record identifying the vehicle used (license plate number), destination, starting and ending mileage and purpose of trip. This record will be turned into the RSO monthly. The record(s) shall be maintained together with the request for and approval of the use of a government vehicle between residence and place of employment. These records shall be readily available for audit until disposed of according to established records management procedures.

## **Driver Education**

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Initial education of a new employee and ongoing training of current employees is extremely important in a motor vehicle safety program. All employees should be familiar with the correct procedures in operating Company motor vehicles, as well as loading or unloading any property onto vehicles.

## **Seat Belts**

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Seatbelts must always be worn by all occupants whenever a vehicle is in motion.

## **Use and Care of Company Vehicles**

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Anyone who operates a licensed vehicle owned or controlled by this company must possess a valid driver's license. You are responsible for all personal property left in any company vehicle.

## **The Vehicle**

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- All drivers are required to inspect their vehicles on a regular basis.
- Check oil level, water or antifreeze, tires, exhaust system, and windshield wipers.
- Check for loose wheel nuts, oil, water, fuel, or air leaks.
- Check for proper vision and clean windshield. Adjust seat, mirror, etc.
- Check all safety equipment assigned to your vehicle.
- Check all instruments.
- Check air and/or hydraulic pressure.
- Check sound of engine.
- Start equipment and make sure all controls are operating properly.
- Winter Checklist:
  - Clear snow, ice and/or frost from all windows.
  - Check proper ventilation when operating or sitting inside a vehicle with the motor running.
  - Keep the vehicle clean of trash and cans, etc., that could impede operation.
  - Large items such as toolboxes and fire extinguishers should be secured.
  - Orange cones must be placed at the front and rear of the vehicle when parked.
  - Loads must be secure and should not exceed the manufacturer's specifications and legal limits for the vehicle.

## **Safety Driving Practices**

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All authorized drivers must adhere to the following safe driving practices:

### **Stay Safe**

- Never exceed the posted speed limit.
- Always maintain a safe distance between other vehicles.
- Always use a seat belt – driver and passenger(s).
- Be well-rested before driving.
- Avoid taking medications that make you drowsy.
- Set a realistic goal for the number of miles that you can drive safely each day.
- If you are impaired by alcohol or any drug, do not drive.

### **Stay Focused**

- Driving requires your full attention. Avoid distractions, such as adjusting the radio or other equipment that must cause distraction, eating or drinking, and talking on the phone.
- Continually search the roadway to be alert to situations requiring quick action.
- Stop about every two hours for a break. Get out of the vehicle to stretch, take a walk, and get refreshed.
- If cell phones must be used, they must be in hands-free mode.

### **Avoid Aggressive Driving**

- Keep your cool in traffic!
- Be patient and courteous to other drivers.
- Do not take other drivers' actions personally.
- Reduce your stress by planning your route ahead of time (bring the maps and directions), allowing plenty of travel time, and avoiding crowded roadways and busy driving times.

## **Accident Reporting & Investigation**

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Authorized drivers will report any collision or traffic violation while driving on company duties to the appropriate personnel. Management has the responsibility to see that drivers are adequately trained in what to do when an accident occurs. All information should be recorded and reported promptly to the insurance carrier. The driver involved in an accident has the important duty of making the initial report of the accident. The driver will usually contact the home base or terminal about the accident and then gather the information needed. Even minor accidents must be reported to management to protect against potential claims.

The importance of the driver's report and conduct at the scene cannot be minimized. What they say and do at the accident scene can either help or hinder the successful settlement of the accident case. Drivers must know what to do and say to handle situations as they arise.

The following is the recommended procedure for drivers at the scene of an accident in which they were involved:

1. Stop the vehicle immediately and shut off the engine.
2. Protect the accident scene from further mishap by turning on four-way flashers and by placing flares and reflectors at a safe distance. Extinguish fires and do not smoke at the scene. If necessary, direct traffic around the accident scene.
3. (Department of Transportation regulations specify the location and distance of warning devices in disabled vehicle situations.)
4. See that injured persons are cared for until medical help arrives.
5. See that help, such as police, medical personnel, and wreckers, are summoned to the scene as needed. Make sure the police inspect the damage and make notes of bodily injury (if any). Write down names, badge numbers, and stations of investigating officers.
6. Be prepared to provide lists of any hazardous materials involved to fire department personnel.
7. Be alert to statements made by occupants of other vehicles. Take down any remarks concerning admissions of guilt, defective conditions of other vehicles, extent of injuries and property damage.
8. Make no statements to occupants of other vehicles or witnesses regarding your fault, injuries, or condition of your vehicle.
9. Always obtain:
10.
  - License plate numbers of other vehicles.
  - Other driver's license numbers, names, and addresses.
  - Names and addresses of owners or vehicles.
  - Information on damage to other vehicles and any injuries.
  - Name and address of all witnesses (including vehicle occupants).
  - Take photographs of accident scenes and damage.
11. A diagram of the accident scene showing the location of vehicles after the collision.

***All accidents should be reported to the Supervisor and Safety Director as soon as possible.***

## **Vehicle Maintenance**

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The vehicle must be fit for the purpose and should be maintained in safe working order. The primary purpose of a vehicle maintenance system is to ensure safe and efficient vehicle performance which can help to extend the vehicle's life and avoid accidents. The Company maintenance program provides the following benefits:

- Accidents caused by brakes, tires, steering, and other component failures can be substantially reduced by proper maintenance.

- Preventative maintenance can minimize interruptions of regular work schedules caused by breakdowns.
- Regularly scheduled inspections made at proper intervals provide opportunities to make minor repairs and adjustments that may help to prevent unnecessary and costly repairs.
- Commercial drivers may take pride in equipment that is kept in top operating condition and may be more likely to drive safely and to handle equipment with care.
- Fleet management recognizes the important sales and public relation value of keeping equipment clean and well maintained. Trucks are traveling billboards and can reflect a safety-minded company.
- Drivers should be responsible for the condition and safe operation of their assigned vehicles.
- Drivers should check their vehicles for possible defects and report them for correction according to company policy. Driver vehicle conditions reports furnish valuable information for evaluating the efficiency of the maintenance system.

## **DEFENSIVE DRIVING MANAGEMENT**

### **Purpose**

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The defensive driver tries to recognize potentially hazardous situations sufficiently in advance to allow time to safely maneuver past them. The defensive driver assumes that other drivers may make mistakes and is on guard in the event an error is made. The defensive driver searches ahead of what is immediately in front, to have advance warning of approaching hazards.

### **Responsibilities**

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#### Management

- Make sure drivers understand how they should be driving to be defensive drivers.
- Make sure drivers recognize that common situations such as crossing intersections, entering expressways, and stopping can be hazardous.
- Encourage defensive driving.
- Make sure drivers been trained regarding defensive driving.
- Make sure drivers are aware of the concept of "preventable accident".
- Have an accident review program for classifying preventable and non-preventable accidents.
- Define a standard for judging safe driving performance for its drivers.

#### Drivers

- Learn to recognize driving situations that can be hazardous.
- Assume other drivers will make errors.
- Adjust speed, position, direction, and attention to be able to maneuver safely if a hazard develops.
- Scan far enough ahead to be able to react safely to approaching situations.

- Scan frequently to the side and rear for passing or approaching vehicles.
- Scan thoroughly before changing speed or direction.
- Defensive drivers are more than just attentive and cautious.
- Defensive Drivers manage the drive space to ensure they have room to make changes in maneuvering and to react to changes in traffic around them. They look well ahead and behind them and plan lane changes and turns well in advance.
- Defensive drivers use a 2 to 3 second rule in following distance to ensure they have adequate time to react to changes in traffic ahead. If traveling at speeds of 50 miles-per-hour, use a four second gap to provide enough stopping room.
- Defensive Driver ensures they have adequate visual lead time of ten to twelve seconds to ensure timely identification of potential hazards ahead. Continuous visual scanning of the traffic situation ahead will prevent accidents.

## **Defensive Driving Procedures**

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**Intersections.** Getting into and out of intersections without an accident is a mark of a good defensive driver. Besides your own skill level, intersections also demand anticipation of the actions of other drivers and taking appropriate evasive action as required.

**Backing.** Backing is an extremely hazardous maneuver. If you are backing with the assistance of a guide, the ultimate responsibility for the safety of the backing maneuver remains with you as the driver.

**Front-End Collisions.** The primary way to avoid front-end collisions is by maintaining a safe and adequate following distance. You should be prepared for possible obstructions on the roadway, either in plain sight or hidden by curves or the crests of hills. A special situation occurs at night, when speed should be kept to a level that will allow you to stop within the distance illuminated by the headlights of your vehicle.

**Rear-End Collisions.** As a driver, you risk being struck from behind if you do not maintain an adequate margin of safety in your own following distance. If enough space is not allowed in front of your vehicle, chances go way up that somebody can (and will) impact you from the rear.

**Passing.** Failure to pass safely indicates faulty judgment on your part as a defensive driver, and failure to consider one or more of the factors that need to be checked:

- Is there enough room ahead?
- Is there adequate space to move back into your lane of traffic after passing?
- Have you signaled your intentions?

**Being Passed.** As a driver, you must be aware of the actions of other drivers and give way if another driver begins to sideswipe you or to cut you off. A good defensive driver will avoid problems with this kind of accident situation.

**Encroaching on Other Traffic Lanes.** Observant defensive drivers will not usually get trapped when other drivers change lanes abruptly. In the same manner, entrapment in merging traffic can be avoided by a good defensive driver with a little preplanning and willingness to

yield. Blind spots are not valid excuses for this kind of accident – allowances must be made in areas of limited sight distance.

**Railroad Grade Crossings.** Driving across railroad crossings, or in areas where there are rail vehicles of some sort, demands special care. Careful observance of the traffic situation is your best defense.

**Oncoming Traffic.** A defensive driver will avoid a collision with an oncoming vehicle at all costs. Even if the vehicle enters your lane of traffic, an accident can be avoided with some evasive maneuvers.

**Turning.** Turning, like passing, is a dangerous maneuver, and demands special care and an observant eye from you as a defensive driver. You should be aware of other vehicles in your path, and of the complete configuration of the turn you are about to undertake.

**Pedestrians.** As a sensible defensive driver, always assume that if there is a pedestrian (or small vehicle of some sort) involved in a situation, slowing down is your best defense. Be certain to give people and small vehicles the benefit of the doubt.

**Extreme Weather and Road Conditions.** Bad weather and other road hazards place special stress upon any defensive driver. The best rule in any kind of bad weather or extreme road condition is to get off the road safely and as soon as possible. If you absolutely must continue, slowing way down and increasing the following distance are your best defenses, along with increased awareness.

**Fog.** Fog reduces available visibility and impairs distance perception, making it perhaps the most dangerous type of extreme weather condition. Whenever possible, drivers are to avoid driving in extremely foggy conditions. Pull off the road and park safely until such time as the fog dissipates or is burned off, if possible.

**Rain.** Rain causes roadways to become slippery, especially when it first begins. Roadways become covered with a thin layer of oil and other residues. When rain mixes with this layer, it results in an extremely slippery and dangerous road surface. This condition remains until additional rain can break down and wash away the oily mixture from the pavement. This process can take anywhere from a few minutes to several hours, depending on the severity of the rain.

**Night Driving.** All drivers need to be aware of the potential hazards driving at night present. These hazards include fatigue, reduced visibility, poor lighting, other (impaired) motorists, and animals on the road. Fatigue is perhaps the most dangerous hazard of driving at night. Nothing we do is worth anyone getting hurt. Fatigue usually sets in at night, but a tired driver, at any time of day, is an unsafe driver. Fatigue reduces drivers' reaction time and perception.

**Underpasses.** Hitting a bridge, underpass, or viaduct is a danger you should be constantly aware of. This type of accident, often referred to as "topping" a trailer, is always preventable. Drivers need to be aware that the posted height of an underpass is not always accurate. Repaving and packed snow can reduce the clearance of an overpass enough to cause a problem. In addition, an empty trailer will ride higher than when it is loaded. You should make thorough trip plans. When in doubt about the clearance of an underpass, you should get out of your vehicle and make a visual inspection or find an alternate route.

**Fixed Objects and Special Intersections.** A good defensive driver will observe items in the area around the vehicle that might cause problems. Checking to be certain there is adequate clearance is the primary thing to watch. In the areas of driveways, alleyways or plant entrances, the effective defensive driver will analyze the situation carefully, slow down, sound a warning when appropriate, and be ready to yield to the other driver involved.

## **Company Vehicles**

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Some company employees are provided with vehicles for use in their jobs. The following rules apply:

- The company requires all drivers of company vehicles to have current, valid licenses.
- Company policy prohibits anyone without a valid driver's license from driving a company vehicle.
- An employee who becomes uninsurable by the company's insurance company will be subject to termination.
- Company vehicles are to be used only for job-related activities.
- People who are not employed by the company or who are not assisting in work-related activities should not be transported in company vehicles as passengers because it presents a potential exposure to liability.
- All traffic laws and regulations are to be obeyed.
- Every effort should be made to keep mileage driven to a minimum by combining trips whenever possible. Special circumstances that may require deviation from this policy must first be cleared by your supervisor.
- It is important that when you do drive a company vehicle you obey all traffic regulations, including the 55 miles per hour speed limit. On company roads, a much slower speed should always be maintained.
- Cones must be used at any time the vehicle is parked. This includes home and company parking lot.

## **Tire Inflation**

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- Where tires are mounted and/or inflated on drop center wheels a safe practice procedure is posted and enforced.
- Where tires are mounted and/or inflated on wheels with split rims and/or retainer rings a safe practice procedure is posted and enforced.
- Each tire inflation hose has a clip-on chuck with at least 24 inches of hose between the chuck and an in-line hand valve and gauge.
- The tire inflation control valve automatically shuts off the airflow when the valve is released.
- A tire restraining device such as a cage, rack or other effective means is used while inflating tires mounted on split rims, or rims using retainer rings.
- Employees are strictly forbidden from taking a position directly over or in front of a tire while it's being inflated.

## **Fueling**

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- It is prohibited to fuel an internal combustion engine with a flammable liquid while the engine is running.
- Fueling operations are done in such a manner that the likelihood of spillage will be minimal.
- When spillage occurs during fueling operations, the spilled fuel is cleaned up completely, evaporated, or other measures taken to control vapors before restarting the engine.
- Fuel tank caps replaced and secured before starting the engine.
- In fueling operations there is always metal contact between the container and fuel tank.
- Fueling hoses of a type designed to handle a specific type of fuel.
- It is prohibited to handle or transfer gasoline in open containers.
- Open lights, open flames, or sparking or arcing equipment prohibited near fueling or transfer of fuel operations.
- Smoking is prohibited in the vicinity of fueling operations.
- Fueling operations are prohibited in buildings or other enclosed areas that are not specifically ventilated for this purpose.
- Where fueling or transfer of fuel is done through a gravity flow system, the nozzles are of the self-closing type.

## **WORKING IN THE COLD**

### **Purpose**

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Many workers spend most, if not part, of their working day in a cold environment. Global Comfort Group is committed to ensuring the safety of all employees subject to extreme temperatures while at work. This Cold Stress Safety Program was developed to establish guidelines and Safe Operating Procedures for our employees.

### **Goals**

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To prevent work-related injuries or deaths that may result from exposure to cold weather- or weather-related conditions.

### **Prevention & Work Practices**

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- Engineering Controls
- Personal Protective Equipment
- Wearing the proper clothes may be the most significant precaution to reducing cold stress. Wearing appropriate clothes for cold weather involves using three layers of clothing. Also use layering to protect the head, hands, and feet.
- Drink plenty of fluids, preferably warm, sweet beverages. Thirst is suppressed in a cold environment and dehydration may occur when fluid intake is reduced.
- Increase caloric intake when working in cold environments. Workers in cold environments who wear heavy, protective clothing expend more heat and so require 10-15 percent more calories.

- A work warm-up schedule should be used to provide periodic times for warm-up breaks. Additional breaks should be provided as the wind velocity increases and/or the temperature drops.
- Avoid taking certain drugs such as alcohol, nicotine, caffeine, and medication that inhibits the body's response to cold or impairs judgment.
- Avoid the cold if you are becoming exhausted or immobilized. These conditions can accelerate the effects of cold weather.
- Shield work areas from drafty or windy conditions. Provide a heated shelter for workers with prolonged exposure to equivalent wind-chill temperatures of 20° F or less.
- Select the warmest hours of the day when braving the cold. Minimize activities that reduce circulation.
- Educate employees on symptoms of cold-related stresses: heavy shivering, uncomfortable coldness, severe fatigue, drowsiness, and/or euphoria.
- Use the buddy system. Always work in pairs when working in extreme weather conditions so partners can monitor one another and obtain help quickly in an emergency.

## **Factors**

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The environmental factors that affect the amount of stress a worker faces.

- 1) Temperature.
- 2) Humidity.
- 3) Air Velocity.

Individual Factors:

- 1) Age.
- 2) Weight.
- 3) Fitness.
- 4) Medical Condition.
- 5) Acclimatization to the cold.

In cold environments, the blood's circulation to the extremities is decreased to maintain a core temperature to sustain life.

## **Acclimatization**

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Allowing time for the employee to become used to cold through short exposures followed by longer periods of work in the cold environment.

## **Cold Injuries**

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## Frostnip

- Freezing of top layers of skin tissue.
- Generally reversible.
- White, waxy skin, the top layer feels hard, rubbery but deeper tissue is still soft. Numbness is most typically seen on cheeks, earlobes, fingers, and toes.
- Treatment
  - Rewarm the area gently, generally by blowing warm air on it or placing the area against a warm body part.
  - Do not rub the area -this can damage the affected area by having the ice crystals tear the tissue cells.

## Frostbite

- Skin is white and has a “wooden” feeling all the way through.
- Superficial frostbite includes all layers of skin.
- Numbness, possible anesthesia.
- Deep frostbite can include freezing of muscle and/or bone.
- Treatment
  - It is very difficult to rewarm the appendage without some damage occurring.
  - Superficial frostbite may be rewarmed as frostnip if only a small area is involved.
  - If deep frostbite, see below for rewarming techniques.

## Rewarming of Deep Frostbite

- Rewarm the effected body part by immersion into a water bath of 105-110 degrees Fahrenheit. No hotter or additional damage will result. This is the temperature which is warm to your skin.
- Monitor the temperature of the water with a thermometer.
- Remove constricting clothing.
- Place the appendage in the water and continue to monitor the water temperature. This temperature will drop so additional warm water will be needed to maintain the 105-110 degrees. Do not add this warm water directly to the injury.
- Circulate the water constantly to maintain an even temperature.
- The effected appendage should be immersed for 25-40 minutes.
- Thawing is complete when the part is pliable, and color and sensation has returned.
- Once the area is rewarmed, there can be significant pain. Discontinue the warm water bath when thawing is complete.
- Do not use dry heat to rewarm. It cannot be effectively maintained at the correct temperature and can cause burns further damaging the tissues.
- Once rewarming is complete, the injured area should be wrapped in sterile gauze and protected from movement and further cold.
- Once a body part has been rewarmed it cannot be used for anything.

- It is essential that the body part be kept from refreezing. Refreezing after rewarming causes extensive tissue damage and may result in loss of tissue.
- If you cannot guarantee that the tissue will stay warm, do not rewarm it. Once the tissue is frozen, major harm has been done. Keeping it frozen will not cause significant additional damage.

### Hypothermia

- Feeling cold, then numb, with tingling, aching or brief pain.
- Skin also may appear white or grayish and may blister.
- Signaled by chills, shivering, and feelings of drowsiness and confusion.
- Treatment.
  - The priority is to perform a careful check for breathing and a pulse and initiate cardiopulmonary resuscitation (CPR) as necessary.
  - If the person is unconscious, having severe breathing difficulty, or is pulseless, call 911 for an ambulance.
  - Because the victim's heartbeat may be very weak and slow, the pulse check should ideally be continued for at least 1 minute before beginning CPR. Rough handling of these victims may cause deadly heart rhythms.
  - The second priority is rewarming.
  - Remove all wet clothes and move the person inside.
  - The victim should be given warm fluids if he or she is able to drink, but do not give the person caffeine or alcohol.
  - Cover the person's body with blankets and aluminum-coated foils and place the victim in a sleeping bag. Avoid actively heating the victim with outside sources of heat such as radiators or hot water baths. This may only decrease the amount of shivering and slow the rate of core temperature increase.
  - Strenuous muscle exertion should be avoided.

### Freezing of the Cornea

- Caused by forcing the eyes open during strong winds and not using goggles.
- Treatment
  - Controlled, rapid rewarming - placing a warm hand or compress over the closed eye.
  - After rewarming, the eyes must be completely covered with patches for 24-48 hours.

### Snow blindness - Sunburn of the eyes

- Wear good sunglasses with side shields or goggles.
- In SNOW - eye protection is necessary on cloudy or overcast days as it is in full sunlight.
- Snow blindness can even occur during a snowstorm if the cloud cover is thin.
- Occurs 8-12 hours after exposure.

- Eyes feel dry and irritated, as if they are full of sand. Moving or blinking becomes painful, exposure to light hurts the eyes, eyelids may swell, eyes become red, and excessive tearing may occur.
- Treatment
  - Cold compresses and a dark environment
  - Do not rub your eyes.

### Eyelashes Freezing Together

- Put hand over the eye until ice melt. Wipe away moisture with a soft dry cloth.

## **WORKING IN THE HEAT**

### **Purpose**

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Many workers spend most, if not part, of their working day in a cold or hot environment. They often face hot conditions which pose special hazards to safety and health. Global Comfort Group is committed to ensuring the safety of all employees subject to extreme temperatures while at work. This Heat Stress Safety Program was developed to establish guidelines and Safe Operating Procedures for our employees.

### **Definitions**

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"Acclimatization" means temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours per day in the heat.

"Heat Illness" means a serious medical condition resulting from the body's inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

"Environmental risk factors for heat illness" means working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload severity and duration, protective clothing and personal protective equipment worn by employees.

"Personal risk factors for heat illness" means factors such as an individual's age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and use of prescription medications that affect the body's water retention or other physiological responses to heat.

"Preventative recovery period" means a period to recover from the heat in order to prevent heat illness.

"Shade" means blockage of direct sunlight. Canopies, umbrellas and other temporary structures or devices may be used to provide shade. One indicator that blockage is sufficient is when

objects do not cast a shadow in blocked sunlight. Shade is not adequate when heat in shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning.

## **Factors**

The environmental factors that affect the amount of stress a worker faces:

- 1) Temperature.
- 2) Humidity.
- 3) Radiant Heat.
- 4) Air Velocity.

Individual Factors:

- 1) Age.
- 2) Weight.
- 3) Fitness.
- 4) Medical Condition.
- 5) Acclimatization to the heat.

The body reacts to high external temperatures by circulating blood to the skin which increases skin temperature and allows the body to give off its excess heat through the skin. If the muscles are being used for physical labor, less blood is available to flow to the skin and release the heat.

In cold environments, the reverse occurs, the blood's circulation to the extremities is decreased to maintain a core temperature to sustain life.

## **Heat Disorders**

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### Heat Stroke

- Failure of the body's internal mechanism to regulate its core temperature.
- Sweating stops.
- Mental confusion, loss of consciousness, convulsions, or coma.
- Body temperature of 106 degrees F or higher.
- Hot dry skin which may be red, mottled, or bluish.
- Treatment.
  - Move to cool, shaded area, soak clothing with cool water.
  - Fan to cool down quickly.
  - Prompt first aid can prevent permanent injury to the brain and vital organs.

## Heat Exhaustion

- Results from loss of fluid - worker has failed to drink enough fluids or take in enough salt or both.
- Extreme weakness or fatigue, giddiness, nausea, or headache.
- Sweats.
- Skin is clammy and moist, paled, or flushed.
- The body temperature is normal or slightly higher.
- Treatment.
  - Rest in a cool place and drink water or an electrolyte solution (such as Gatorade).
  - Severe cases may include vomiting and loss of consciousness - seek medical attention.

## Heat Cramps

- Painful spasms of the muscles are caused when workers drink large quantities of water but fail to replace the body's salt loss.
- Affects the tired muscles - the ones used to work.
- May occur during or after working hours.
- Take liquids by mouth or seek medical care.

## Fainting

- May be a problem for those not accustomed to a hot environment and who stand still in the heat.
- Treatment.
  - Lying down for a short time.
  - Moving around while working, rather than standing still.

## **Prevention**

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- Engineering Controls.
- General ventilation and spot cooling by exhaust system.
- Protection from radiant heat sources.
- Cooling fans in hot conditions.
- Eliminating steam leaks.
- Equipment modifications.
- Personal protective equipment.

## **Work Practices**

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- Provide and drink plenty of water - 1 quart per worker per hour.
- Train workers to recognize and treat heat stress disorders.
- Employers should consider an individual worker's physical condition and fitness for working in the hot environments. Some personnel may be at greater risk.

- Alternate work and rest periods - in a cool area.
- Schedule heavy work during the cooler parts of the day.
- Supervisors should be trained in the detection of early signs of heat stress and should permit workers to interrupt their work if they are extremely uncomfortable.
- Appropriate use of personal protective equipment.

## **Acclimatization**

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Allowing time for the employee to become used to heat through short exposures followed by longer periods of work in the hot environment. New employees and workers returning from an absence of two weeks or more should have a 5-day period of acclimatization. This period should begin with 50% of the normal workload and time exposure the first day and gradually build up to 100 percent on the 5th day.

## **Provisions of Water**

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Employees shall have access to potable drinking water meeting the requirements of safety regulations, as applicable. Where it is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift. Employers may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour. The frequent drinking of water should be encouraged.

## **Access to Shade**

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Employees suffering from heat illness or believing a preventative recovery period is needed shall be provided access to an area with shade that is either open to the air or provided with ventilation or cooling for a period of no less than five minutes. Such access to shade shall always be permitted. Except for employers in the agricultural industry, cooling measures other than shade (e.g., use of misting machines) may be provided in lieu of shade if the employer can demonstrate that these measures are at least as effective as shade in allowing employees to cool.

## **Training**

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### Employee Training

Training in the following topics shall be provided to all supervisory and non-supervisory employees:

- The environmental and personal risk factors for heat illness.
- The employer's procedures for complying with the requirements of this standard.
- The importance of frequent consumption of small quantities of water, up to 4 cups per hour, when the work environment is hot, and employees are likely to be sweating more than usual in the performance of their duties.
- The importance of acclimatization.

- The different types of heat illness and the common signs and symptoms of heat illness.
- The importance to employees of immediately reporting to the employer, directly or through the employee's supervisor, symptoms, or signs of heat illness in themselves, or in co-workers.
- The employer's procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary.
- The employer's procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider.
- The employer's procedures for ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders.

### Supervisor Training

Prior to assignment to supervision of employees working in the heat, training on the following topics shall be provided:

- The information required to be provided to employees.
- The procedures the supervisor is to follow to implement the applicable provisions in this section.
- The procedures the supervisor is to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

The employer's procedures required by subsections (e)(1)(B), (G), (H), and (I) shall be in writing and shall be made available to employees and to representatives of the Division upon request.

### **Magnetic Umbrella – Pop-up Canopy Use**

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- Global Comfort Group would recommend a heavy-duty magnetic umbrella that can attach to the outdoor unit for sun protection. You may use a pop-up canopy providing that it is secured in such a way that it cannot blow away.
- Always follow the manufacturers guidelines for securing the pop-up canopy and the magnetic umbrella.
- Make sure that the winds are forecast for less than 15 MPH. This includes wind gusts. Monitor regularly to confirm that umbrella/canopy is secure.
- When using a pop-up canopy on ground, use ropes and stakes to securely anchor your pop-up canopy. Use supplied stakes made of steel with a hooked head so you can secure the rope to them more tightly. Ropes and stakes must be used at each corner/leg.
- If you are unable to use ropes and stakes to secure the canopy you may use a tent weight on each leg of the canopy. The weight should weigh approximately 25 lbs. or in excess.
- Avoid using canopies on all roof tops. If you feel you must use one, you will need to send pictures of how it is secured and receive approval from your Team Lead or Supervisor.
- Under no circumstances should the umbrella or pop-up canopy be left unattended as winds could pick up and cause the umbrella or pop-up canopy to fly away.

## Sun Exposure

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By far, the most common cause of skin cancer is overexposure to the sun. Ninety percent of all skin cancers occur on parts of the body that usually are not covered by clothing. People who sunburn easily and have fair skin with red or blond hair are most prone to develop skin cancer. The amount of time spent in the sun also affects a person's risk of skin cancer.

To prevent skin cancer:

- Cover up with a wide-brimmed hat and a bandanna for your neck. Wear long-sleeved shirts and pants that the sun cannot penetrate.
- Use sunscreens to help prevent skin cancer as well as premature aging of your skin. Use a Sun Protective Factor (SPF) rating of 15 or higher. Women may receive added protection by using tinted opaque cosmetic foundation along with a sunscreen. Apply sunscreen at least an hour before going into the sun and again after swimming or perspiring a lot. Do not use indoor sunlamps, tanning parlors, or tanning pills.
- You can still get burned on a cloudy day. Try to stay out of the direct sun at midday, because sunrays are the strongest between 10 a.m. and 3 p.m. Beware of high altitudes – where there is less atmosphere to filter out the ultraviolet rays. Skiers should remember that snow reflects the sun's rays, too.

Know your skin. Whatever your skin type, do a monthly self-examination of your skin to note any moles, blemishes, or birthmarks. Check them once a month and if you notice any changes in size, shape, or color, or if a sore does not heal, see your physician without delay.

## Wet Weather

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- Area supervisors should be aware of the safety of their area and be alert to wet floor hazards.
- Wet floor signs or cones should be placed at entranceways during times of inclement weather.
- Housekeeping crews shall inspect entrances and keep water accumulations removed throughout the workday.
- Door mats should be located inside doorways and length-way with the hall.
- Doormats should be periodically examined for saturation.

## GENERAL SAFETY POLICIES & PROGRAMS

Hazard Identification & Risk Assessment

### Purpose

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To explain how to conduct a Job Safety Analysis (JSA) and how to use it as an effective tool for employee safety training and in the injury and illness prevention process. Processes are in place to identify potential hazards using JSA's, JHA's, facility wide or area specific analysis/inspections.

## Definition

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A Job Safety Analysis (JSA) is a method that can be used to identify, analyze and record:

- the steps involved in performing a specific job.
- the existing or potential safety and health hazards associated with each step; and
- the recommended action(s)/procedure(s) that will eliminate or reduce these hazards and the risk of a workplace injury or illness.

Hazard: a source of danger; potential for loss or injury; a condition or practice with the potential for accidental loss.

Risk: the chance of a loss occurring; a measure of the probability and potential severity of harm or loss.

## General

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Global Comfort Group has implemented processes to ensure employees and/or subcontractors are actively involved in the hazard identification process and hazards are reviewed with all employees concerned.

Involve employees by:

- discussing what you are going to do and why.
- explaining that you are studying the task, not employee performance; and
- involving the employees in the entire process

Global Comfort Group will review our company's accident/injury/illness/near miss history to determine which jobs pose the highest risk to employees. We identify the safety standards that apply to our jobs and incorporate their requirements into our JHA.

The challenge is to minimize the risk of the hazard becoming more severe and subsequently causing major injury, damage to property or loss of process.

Pre-job hazard identification requires the following steps:

- Identifying the hazards associated with a particular task or job.
- Identifying the hazards associated with a new worksite/environment.
- Identifying the required controls designed to either eliminate or mitigate the hazards so that they cannot result in loss.
- Implement the required controls, through:
  - effective communication and training of workers as to the location/nature of the hazards and required controls.
  - development of task-specific procedures.
  - provision and use of required equipment.
  - eliminating, barricading, and identifying hazards.

Some formal processes to ensure effective pre-job hazard identification involve the use of:

Pre-job Plans and Planning Exercises involve a review of the job and tasks to be performed at a specific work site or as part of a project, with all personnel concerned. Hazards are identified, procedures are written and required equipment is identified and acquired before the job starts. The scope of the job associated hazards and controls are discussed with all personnel in a pre-job meeting.

A Safe Work Permit is a checklist designed to be used by the owner or person most familiar with the worksite, process, and work to be completed. It provides examples of typical hazards and required controls, such as the need for lockouts or gas testing. It is then used as a communication tool, to review all potential hazards and required controls with those personnel performing the task. Permits issued are usually specific to location, time, and task. To be effective, the issuer of the permit needs to visit the work site to perform an effective hazard identification before the job.

Pre-job Hazard Identification Checklists can be used by a service provider when a new work site is first entered, or a new critical task is to be undertaken. Much like the permit, this is a checklist, which is usually specific to the types of work usually completed by the service company (i.e.: pipeline contractor). It also provides examples of typical hazards, such as overhead/underground utilities, terrain hazards, etc.

To ensure maximum effectiveness, this checklist should be completed by a group of the workers involved in the job, including one that is most familiar with the job/work and tasks, the work site, and the associated hazards. This checklist is used at the new job site before any equipment is moved on site and before work starts. When task and worksite/environment hazards and required controls are identified on the checklist, the list is reviewed with all workers in a pre-job safety meeting.

Pre-job Safety Meetings are used to discuss the results of the pre-job hazard identification (plans, permits, checklists) with all those working on the site. Pre-job meetings are important and should be completed before entering onto a new work site or before undertaking a critical job (pre-rig move, pre-confined space entry, etc.). If written procedures exist for the task to be undertaken, these should also be reviewed in this meeting.

## **Setting Priorities**

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The hazard identification process is used for routine and non-routine activities as well as new processes, changes in operation, products, or services as applicable. Hazards are classified/prioritized and addressed based on the risk associated with the task / (Risk analysis matrix outlining severity and probability).

Global Comfort Group gives priority to:

- Jobs with the highest injury or illness rates.
- Jobs where there have been "close calls" - where an incident occurred but no one got hurt.
- Jobs where you have identified violations of safety standards.

- Jobs with the potential to cause serious injuries or illness, even if there is no history of such problems.
- Jobs in which one simple human mistake could lead to severe injury.
- Jobs that are new to your operation or have been changed; and
- Jobs complex enough to require written instructions.

## **Basic Procedure**

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Once the job has been selected, the supervisor and/or RSO discusses the JSA procedure and its purpose with the employees who perform the job. Using the JSA form, the supervisor and employees list each job step in order of occurrence. Being sure to provide enough information but do not make the breakdown too detailed. The wording for each job step should begin with an action word such as "remove," "open" or "pour."

Once the job steps have been recorded, identify, and list the potential hazards or accidents which might occur for each step. To do this, ask yourself and your employees the following questions:

- Is there a danger of striking against, being struck by, or otherwise making injurious contact with an object?
- Can the employee be caught in, by, or between objects?
- Can the employee be strained by pushing, pulling, lifting, bending, or twisting?
- Does the work environment contain a potential safety and health hazard such as toxic gas, vapor, mist, fumes, dust, noise, heat or electrical hazard?
- Is there a potential for a slip or trip?
- Can the employee fall from one level to another?

The next step in the JSA process is to develop a safe job procedure or control action to address the hazard(s) in each job step. The safe job procedure should clearly identify exactly what the employee needs to do and/or what the employee needs to know to perform the task safely. Avoid general statements such as "be careful" or "use caution." Identify ways to eliminate or reduce the hazards:

- Safer way to do the job.
- Describe each step.
- Be specific - don't use generalizations like "Be Careful".
- Changes in equipment.
- Equipment changes, or engineering controls, are the first choice because they can eliminate the hazard.
- E.g., machine guards, improved lighting, better ventilation.
- Changes in work processes.
- Administrative controls, or changes in how the task is done, can be used if engineering controls aren't possible.
- E.g., rotating jobs, changing the steps, training.
- Changes in personal protective equipment.
- When engineering and administrative controls aren't possible or don't adequately protect the workers, use personal protective equipment.

- E.g., gloves, hearing protection.

The JSA form includes a section to list all the required personal protective equipment the employee must wear when performing the job. The safe job procedure for each job step must specify when the employee needs to wear the protection based on the hazards of that job step.

The JSA form includes a section to list all the required tools and equipment needed to perform the job. Remember, injuries frequently occur because the employee selected the improper tool or equipment to perform a job. When the JSA has been completed, the supervisor should sign and date it and send a copy to the RSO for review and for filing in a central JSA file.

Identified hazards are addressed and mitigated by dedicated assignment, appropriate documentation of completion, and implemented controls.

## **Hazard Ranking**

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Having identified the hazards through the hazard identification process, the next step is to decide if action is required to minimize the hazard or its effects. The hazards need to be prioritized according to the risk associated with them. One method, to assist with prioritization, is to **quantify the risk**. There are two variables involved – determining the **Severity** of injury that the hazard could produce, and the **Probability** that the hazard will result in an accident.

### Hazard Priority Ranking

The first ranking estimates the severity of the problem if the potential accident/ incident were to occur:

1. **Imminent Danger** (e.g., causing death, widespread occupational illness, loss of facilities).
2. **Serious** (e.g., severe injury, serious illness, property, and equipment damage).
3. **Minor** (e.g., non-serious injury, illness, or damage).
4. **Negligible/OK** (e.g., minor injury, requiring first aid or less).

The second ranking estimates the probability (think in terms of risk assessment) of the accident/incident occurring:

1. **Probable** – likely to occur immediately or soon.
2. **Reasonably probable** – likely to occur eventually.
3. **Remote** – could occur at some point.
4. **Extremely remote** – unlikely to occur.

Each hazard is assigned both rankings, and the result is clear priorities in terms of corrective action. A hazard ranked 1-A obviously is more important than one ranked 1-D; 2-B comes ahead of 3-A, and so on. For each hazard, identify appropriate corrective action and set a specific target date for its completion. Whenever possible, identify and correct the cause as well as the specific problem.

Forward the report to those who have the responsibility and authority to implement the corrections you are recommending. Inspection findings should also be communicated to workers during safety meetings.

## **JSA Utilization/Training**

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Each supervisor will establish a department JSA file and shall make it accessible to employees for review when needed. Whenever possible, a copy of the JSA should be laminated and secured to the machine/equipment or at the permanent location where the job is being performed. When a job involves the use of highly toxic or extremely dangerous hazardous substances, it's a good idea to attach the MSDS pages for these substances to the JSA.

Employees will be trained in the hazard identification process including the use and care of proper PPE. The JSA is used for the orientation and training of new or transferred employees who will perform the job and whenever the need for retraining is determined. All training is to be documented.

## **JSA Process Review**

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A review process is in place to avoid creating new hazards derived from the corrective measures. Within one month of completion of a JSA, the RSO, area supervisor and affected employee(s) will review the JSA to ensure that the corrective measures have not unintentionally recreated new hazards.

## **Management Communication**

### **Purpose**

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Management regularly communicates to employees, contractors, subcontractors, suppliers, and clients the company's commitment to safety. Global Comfort Group management informs them of the following:

- safety program goals and performance expectations.
- hazardous conditions and corrective measures.
- allocation of safety responsibilities.
- Why safety is important and who it affects.
- incident and accident reporting procedures (as required for each group).

The more employees, contractors and subcontractors know about our safety program, the better able they will be to support the program. In initiating communications, management makes itself more accessible to others working for our company. This will ultimately result in greater participation of employees, contractors and subcontractors in the development and maintenance of our program. It will also lead to higher morale and improved safety performance.

### **Frequency**

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At the minimum, management communicates to employees, contractors, and subcontractors annually to describe the company's commitment to safety, why safety is important and who it

affects. These communications occur in meetings where senior managers and most employees, contractors and subcontractors are present.

In addition, managers and supervisors tour worksites to observe work practices and talk to workers about safety. The frequency of tours will vary according to the types of operations and locations of Company sites. Generally, senior managers tour worksites at least once a year, middle managers tour worksites at least once every six months, and supervisors tour worksites at least once every two weeks. Records of all management communications are kept on file.

## **Types of Communication**

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To communicate company commitment to safety, management can do any or all the following:

- tour worksites to observe operations and encourage discussions on safety.
- send motivational letters or memos to employees.
- participate in committees and meetings dealing with safety.
- include safety topics as regular agenda items in meetings.
- highlight safety at company functions.
- provide detailed job instruction for new, transferred or temporarily assigned personnel.
- hold regular safety meetings for all staff.
- invite safety professionals to speak at meetings.
- recognize workers who work safely.
- provide regular feedback to all employees on safety performance or concerns.
- Inspections.

## **Inspections**

### **Purpose**

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Through regular inspections, Global Comfort Group can effectively monitor worksite conditions and work procedures. Inspections enable us to ensure company safety standards and regulatory requirements are being followed (e.g.: logbooks for hoisting equipment) as well as meeting inspection requirements recommended by equipment manufacturers. They also enable us to identify hazards before they become problems by revealing where improvements to equipment, work procedures, worker training and worksite conditions are needed.

The result of our inspections should be a list of problems, potential problems, and corrective measures. To ensure employees (i.e., managers, supervisors, safety committee members, workers), contractors and subcontractors support any corrective measures, they are included in inspections and the selection of corrective measures. All inspection findings and corrective measures are documented and shared with employees and others on the worksite.

### **Types of Company Inspections**

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Company inspections include:

- general site inspections.

- equipment and vehicle inspections.
- engineering safety inspections.

### General Site Inspections

General sites include all field and office worksites, maintenance shops, work camps and company leisure areas such as employee lounges and cafeterias. All these sites should be regularly inspected for any possible hazards, including unsafe work practices and conditions.

Your inspections should be scheduled according to the hazards at the sites and the hazardousness of the work: for example, a gas processing facility may require weekly inspections while a seismic campsite may require monthly inspections.

### What to Inspect

Worksite inspections should assess the:

- Physical layout and conditions of the site, including location, terrain, season, and weather.
- Hazards of materials handled.
- Condition of equipment and tools used.
- Work practices and behavior of people at the site (employees, contractors, subcontractors, visitors, and clients).
- The level and quality of supervision given to workers.

Examples of site, equipment and material hazards to check are:

- Slipping and tripping hazards.
- The presence of dangerous gases.
- Faulty or missing emergency equipment.
- Improper or missing signs.
- Faulty machinery, cables, tie downs, etc.
- Poor housekeeping.
- Confined spaces.
- Inadequate or missing personal protective equipment.
- Blocked exits.
- Overhead hazards.
- Electrical hazards.
- Difficult terrain for vehicular or personal movement.
- Flammable, corrosive, or explosive materials.
- Missing material safety data sheets.

### Work Practices to Inspect

Employees should be observed and questioned where applicable, to ensure they:

- Know and follow standard work procedures.
- Properly use tools and equipment.

- Correctly use personal protection and other safety equipment.
- Are adequately trained to perform their work properly.
- Know emergency response procedures.
- Properly supervise and direct workers under their supervision.

If an inspector notices any unsafe behavior, work practices or conditions, the worker should stop the work immediately and ensure the problems are rectified. This sends a strong signal that proper behavior and work practices must always be followed. Also, if the inspector witnesses safe work or safe worksites, he or she should let the workers involved know that their efforts to maintain a safe workplace are working and appreciated.

### Equipment and Vehicle Inspections

All vehicles and equipment should be thoroughly inspected daily by their operators to monitor wear and tear. If more than one person is responsible for the equipment or vehicle, responsibility for inspections should be assigned. Fluid levels, belts, hoses, and electrical connections should be checked. This type of inspection is commonly called a 'walkaround' or 'pre-use' inspection.

### Emergency & Fire Equipment Inspections

All emergency equipment must be routinely inspected to ensure it is kept in usable condition, is easily accessed and in its pre-determined location. All fire, rescue and emergency equipment are inspected as required under provincial regulatory requirements and the manufacturer's recommendations. Emergency equipment can either be included in other inspection processes or be a separate process, with its own checklist. Either way, this equipment should be inspected monthly.

### **Company Inspection Checklists**

To ensure Global Comfort Group inspections are thorough, we should use checklists. Checklists help direct the inspector and ensure nothing is missed. In addition, checklists create a detailed record of the findings of an inspection and corrective measures needed. Checklists should be available for all applications, which would include all facilities, systems, equipment, and job sites.

### Inspection Training

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Managers, supervisors, employees, and safety committee members that are asked to participate in conducting inspections should be provided with appropriate training. The training should cover the preplanning required, how to conduct the inspection, identification of hazards, assigning corrective action, follow-up and close-out of deficiencies identified as part of the inspection. Training is documented to confirm attendance at training sessions and the content of the training.

## **Government Inspections**

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To ensure our worksites and work practices comply with regulatory requirements, occupational health and safety inspectors can inspect our worksites. Government inspectors can be useful sources of information and may be able to help you improve our safety performance. Their prime objective is to ensure Global Comfort Group worksites are safe; as a result, they can advise us on several topics related to safety programming.

Government inspectors may assess records, plans, policies, equipment, or work procedures. The inspectors may interview anyone on the worksite, and they have the right to remove any item they need to inspect further. Anyone on the site at the time of the inspection must cooperate with government inspectors. If inspectors discover violations, they may issue stop-work orders, if the violations present life-threatening conditions. Alternatively, they may issue orders to correct the violations or deficiencies.

## **Controlling Hazards**

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After every inspection, we should specify who is responsible for controlling any hazards found. You should also set deadlines for implementing control measures. Some control measures are:

- Performing maintenance on equipment and vehicles.
- Marking hazards with signs, flags, lights, alarms, barricades, fences, labels, placards, or other materials.
- Providing protective and other safety equipment to workers.
- Using engineering controls to eliminate or reduce the impact of hazards.
- Using purchasing controls to replace unacceptable or faulty items.
- Informing workers of the hazards.

Whenever possible, hazards should be eliminated. If elimination is not possible, other control measures should be used to protect workers.

## **Hazard Reporting**

### **Purpose**

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Hazard reports are used to alert site supervisors to any hazardous conditions or work procedures found by workers and others on the site. Hazard reports fill in the gaps between Global Comfort Groups regular inspections, enabling supervisors to provide a continuously safe worksite.

### **Reporting Hazards**

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Employees, contractors, and subcontractors should notify the appropriate supervisor of any hazards they notice at our company's worksites. Hazard reports can be given verbally or in writing. A hazard report should include:

- A description of the hazard and its location.
- The risks it presents.

- Control measures needed and interim actions taken.

All hazards should be immediately investigated and controlled.

## **Controlling Hazards**

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After every report of a hazard, a worker should be assigned to correct the hazard by a specific date. Some corrective measures are:

- Marking hazards with signs, flags, lights, alarms, barricades, fences, labels, placards, or other materials.
- Providing personal protection and other safety equipment to workers.
- Using engineering controls to eliminate or reduce the impact of hazards.
- Following purchasing controls to replace unacceptable or faulty items.
- Informing workers of the hazards.

Whenever possible, hazards should be eliminated. If elimination is not possible, other control measures should be used to protect workers.

## **Risk Control**

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The final stage in conducting the hazard identification review is to determine ways to eliminate or control the hazards identified. The generally accepted measures, in order of preference, are:

- Eliminate the hazard: this is the most effective measure. These techniques should be used to eliminate hazards:
  - Choose a different process.
  - Modify an existing process.
  - Substitute with less hazardous substance.
  - Improve environment (e.g., ventilation)
  - Modify or change equipment or tools.
- Revise work procedures: consideration might be given to modifying steps which are hazardous, changing the sequence of steps, or adding additional steps (such as locking out energy sources).
- Contain the hazard: if the hazard cannot be eliminated, contact might be prevented by using enclosures, machine guards, worker booths or similar devices.
- Reduce exposure: these measures are the least effective and should only be used if no other solutions are possible. One way of minimizing exposure is to reduce the number of times the hazard is encountered (e.g., scheduling of workers to minimize hazardous exposures, taking work breaks in hot or cold temperatures, etc.). The use of appropriate personal protective equipment may be required (e.g., respirators and self-contained breathing units, fire retardant clothing, etc.).

Remember, for each hazard that you have identified there should be at least one control in place to prevent exposure to the hazard resulting in an incident or accident in the workplace. A

high risk associated with the hazard would also mean that you may require more than one control in place.

Global Comfort Group is familiar with the applicable standards and regulations that are related to our work activities and utilizes them to reduce the risk of experiencing loss. The equipment maintenance requirements for Global Comfort Group are in line with manufacturers' specifications (as a minimum) but also should consider industry recommended standards and guidelines, and government regulations to ensure a safe operation. Examples of equipment controlled by legislation would include pressure relief valves, rig masts, crane operation, etc.

## SAFETY TRAINING

Global Comfort Group is committed to instructing all employees in safe and healthy work practices. The Company will provide training to each employee about general, acceptable, safety procedures and any hazards or safety procedures that are specific to that employee's work situation. Training can take many forms and is synonymous with education and can be attained in several ways.

- **Company Safety Rules:** Employees should read the rules and understand them. The issuance of these rules should be logged and signed receipts should be kept on file. Each new employee, as he arrives on the job, should be approached in the same manner.
- **Periodic Safety Talks** – the company should attempt to hold a safety talk with their employees on a weekly or at least monthly basis. The talk may consist merely of restating the company safety rules or warning of dangerous conditions which exist. A particular subject may be covered, such as lockout tagout, confined space, or fire prevention.
- **Changed Conditions** -When a of the job operation changes or when new hazardous materials are brought into the workplace, employees should be made aware of new or added potentially dangerous situations that might occur, and the proper action employees can take to maintain a safe workplace.
- **Safety Equipment** -Employees should not simply be issued protective equipment. They should be instructed as to its proper and safe use.
- **Consistency/Redundancy** -The employer must consistently and routinely entertain the concept of safety training. Once is not enough. At the orientation meeting of new employees, on through the follow-up weekly/monthly safety talks, the central theme must be to dwell on employees not committing unsafe acts.
- **Management Follow-Up** -Management must not be content with advising employees on unsafe practices. A follow-up of employee actions must be made. The Supervisor(s) must be instructed to watch for employees committing unsafe acts. Employees should be reprimanded when found doing unsafe acts. (See disciplinary program)
- **Documentation** -All actions taken by Management as it relates to Safety Training/Education should be documented. Documentation of good faith efforts in meeting the training requirements can be invaluable in defending a lawsuit that results from an injury due to an unsafe act by an employee. Also, documentation

substantiates your commitment to and compliance with the OSHA Training Requirements.

- Individual/Group Instruction -Safety Education can be aimed at a group such as at a weekly/monthly safety talk or at an individual as in a case where the employee is being given instruction on use of a new tool, etc., by the Supervisor. Whichever the case may be, it should be documented.

## **Safety Orientation**

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Orientation helps new and transferred workers become familiar with the company's safety program and the worksite. Every employee, contractor and subcontractor who is new to a job or worksite should receive a safety orientation. The orientation should occur before the person starts his or her new job. A second orientation can be conducted six to eight weeks after the first orientation to test and reinforce the individual's knowledge of your company's safety program.

The orientation should cover:

- Company safety policies and procedures.
- Specific job hazards.
- Safety precautions.
- Job responsibilities.
- Regulatory requirements.
- Company enforcement policy.
- Worker's right.
- Procedures for workers to refuse to do unsafe work.
- What supervisors must do when unsafe conditions are reported.

Critical issues, such as emergency evacuation procedures, alarm systems, hazard and accident reporting, fire protection and locations of first aid facilities, should be described to individuals on their first day of employment.

Records of all orientations should be kept as part of each employee's training records. You can use these records to track an individual's progress as well as training. In addition, every person receiving an orientation should be required to sign an acknowledgement form following the orientation. The form should state that the individual has received the orientation and will comply with your company's safety program.

## **On-the-Job Training**

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On-the-job training is an important part of ongoing job-skills training. It provides hands-on experience in proper work procedures for each job and helps ensure employees are competent to do their work. In addition, it can be used as refresher training.

The jobs that require on-the-job training are the same list of jobs identified in the Hazardous Job Inventory. Employees must be made aware of the hazards associated with the jobs they are to perform and demonstrate competency to perform the jobs safely. Some jobs may require certain qualifications and prior training (i.e., H2S Alive, Confined Space, Defensive Driving, etc.) for employees before they are allowed to perform their job. Organizations should check

qualifications and certifications at the time of hire and continuously update training records to indicate the initial and refresher training that has been provided to employees.

On-the-job training should be provided to all workers new to a job or worksite. It should also be conducted when work procedures or requirements are changed. On-the-job training can be used to demonstrate several things. Examples are new or revised safety requirements, new or remodeled equipment, or new processes or methods.

Training should be conducted by employees familiar with the worksite and competent in the job for which they are providing training. Workers receiving the training benefit from the trainer's knowledge of the details of the job and the worksite. The training process also helps the trainer reinforce his or her own knowledge.

The jobs with highest priority for training are those:

- With serious hazards.
- That are done frequently.
- Where there is high staff turnover.
- Where accidents frequently occur.

The following are your first steps in implementing on-the-job training:

- Determine what jobs on your worksites are suitable for on-the-job training.
- Develop standards and procedures for training in each job.
- Start on-the-job training at your worksites.
- Add to your safety program binder descriptions of all on-the-job training programs you develop.

Topics for on-the-job training include:

- Company and regulatory requirements.
- Standard work procedures.
- Hazards.
- Critical tasks.
- Equipment operation.
- Proper use of tools.
- Effective use of manuals, checklists, and records.
- Use of personal protective equipment.
- Emergency response procedures.
- First aid skills.
- Signs, hand signals, codes, etc.

After you have initiated on-the-job training, you should start keeping records. These records should be kept along with records of orientations and other training. Training records can be used to track past training and plan future training needs.

# Incident & Accident Reporting

## Purpose

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Incident and accident reporting is very useful because it:

- Collects information you can use to calculate statistics and other information for tracking accident trends.
- Helps identify training needs, problems with work procedures; and needs for personal protective, safety and emergency equipment.
- Collects information necessary for completing investigation and insurance reports and complying with regulatory requirements.
- Identifies weaknesses in the safety management system/program.

## Definitions

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Incident: "An undesired event that, under slightly different circumstances, could have resulted in personal harm, property damage, or loss." (Incidents are also referred to as near misses.)

Accident: "An undesired event that results in physical harm to a person or damage to property."

## Types of Events to Report

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Employees, contractors, and subcontractors should report the following types of events to supervisors:

- Fatalities.
- Injuries or occupational illnesses that prevent a worker from performing regular tasks.
- Injuries that can be treated at the worksite.
- Any emergency or loss, such as a motor vehicle accident, fire, explosion, vandalism, theft, or spill.
- All incidents (near misses).

Supervisors will manage the response to the event and notify the appropriate authorities where necessary.

## When to Prepare Reports

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Reports of incidents and accidents should be prepared immediately after the events have occurred. This is necessary to ensure important evidence is not lost or disturbed and details are not forgotten by those involved. Reports of accidents must be provided and kept on file to ensure regulatory compliance.

## Report Form

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To ensure incident and accident reporting is consistent, you should have report forms available at all worksites. The report form should provide sufficient information for supervisors and

management to make a preliminary evaluation of the potential consequences of the incident and determine the extent to which the actual investigation will be carried out. The form should request the following information:

- Names of everyone involved.
- Location, date and time of incident or accident.
- Names of victims and descriptions of illnesses or injuries (if applicable).
- Description of damage (if applicable).
- Description of incident or accident (including diagrams, if appropriate).
- Description of events immediately prior to the incident or accident.
- Preliminary determination of cause.

## **Incident & Accident Investigation/Follow-Up**

### **Purpose**

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Incident and accident investigation and follow-up allow you to determine why incidents and accidents occurred and how to prevent them from recurring. Without investigation, you can only guess the causes and solutions. All incidents and accidents, regardless of their severity, should be investigated. From your findings, you can recommend changes to work procedures, worksite conditions, training programs, communication systems or equipment.

### **Training**

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Any employee investigating an incident or accident should be trained in investigation techniques. The investigator should also know in what instances insurance or government investigators should be called in. Training ensures the investigator knows how to look for the underlying cause of the incident or accident. Ideally, worksite supervisors should be trained in investigation techniques because they will most likely be on site when accidents occur. They also know more about the worksite and work in progress than would an investigator from head office.

### **Looking For Root Causes**

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The purpose of investigations is to identify both the factors that contributed to an accident and the root causes behind those factors. Take the case, for example, where a worker driving a vehicle has a tire explode, panics, loses control of the vehicle, and is seriously injured. The exploding tire is a contributing factor to the accident, as is the panicked reaction of the driver to the explosion. The root causes behind these factors may be:

- a. An excessive workload, which prevented the driver from getting enough sleep, and affected his ability to respond well to the accident.
- b. Inadequate purchasing controls, which allowed tires to be purchased that were undersized for the truck's weight.

- c. Inadequate pre-trip inspection procedures prevented the driver from noticing the tires were underinflated.

## **Investigation Procedure**

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Your company should have its own investigation procedure, such as the stepwise one listed below:

- a. After being notified of an incident or accident, the on-site company investigator should survey the area to determine if the work must be stopped to prevent injuries and preserve evidence. (In a major emergency, work should be stopped immediately. It is not necessary to wait for the investigator to make this decision.
- b. The on-site investigator should notify management, or the designated manager or supervisor who is responsible for the coordination of the investigation process, to ensure all steps in the emergency response plan are being carried out. The designated manager should determine if government and insurance investigators should be called if they have not already been notified as a part of the emergency response.
- c. The on-site investigator should gather evidence and interview witnesses and people involved in the accident. The investigator should also photograph the site to record evidence and damage on film.
- d. If insurance or government investigators are called in, the on-site company investigator should assist them as required.
- e. Once all the evidence is collected, then the investigator can complete the investigation process, which includes:
  - i. Determining the contributing factors and root causes of the incident or accident.
  - ii. Completing the Incident or Accident Report Form.
  - iii. Develop recommendations to prevent a recurrence and a list of actions required, along with identified responsible parties and target dates for completion.
  - iv. Present the report and recommendations to management and, if required, to the insurance company and government.
  - v. Discuss the report and recommendations with everyone who was working on the site at the time of the accident and all other employees that were affected by the accident.
- f. The individuals assigned action items should then carry out the investigator's recommendations and provide feedback to management monthly until all actions are completed and signed-off.
- g. Management, or the designated manager or supervisor who is responsible for the coordination of the investigation process, should verify that all corrective action is completed, and the incident report is closed out.

## **Accident Statistics**

### **Purpose**

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Accident statistics can be calculated for use in your company's safety performance assessment. In addition, accident statistics enable you to identify accident trends.

## Types of Statistics

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The following statistics should be calculated annually:

- Frequency of lost-time injury accidents (including fatalities).
- Severity of lost-time injury accidents.

The information needed to calculate these statistics can be found on your Accident or Incident Report Form.

### Calculating Frequency and Severity

Calculate frequencies and severities as shown below:

$$\text{injury frequency} = \frac{\text{no. of lost-time injuries} \times 200,000}{\text{no. of work hours worked}}$$

$$\text{injury severity} = \frac{\text{no. of lost days} \times 200,000}{\text{no. of work hours worked}}$$

A fatality accounts for 6,000 lost workdays or 48,000 lost work hours. All workers, office, and field should be included in your calculations. Ensure you calculate your statistics consistently from year to year.

## Access to Employee Exposure & Medical Records

### Purpose

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The purpose of our Access to Employee Exposure & Medical Records Program is to provide employees and their designated representatives a right of access to relevant exposure and medical records; and to provide representatives of the Assistant Secretary a right of access to these records to fulfill responsibilities under the Occupational Safety and Health Act. Access by employees, their representatives, and the Assistant Secretary is necessary to yield both direct and indirect improvements in the detection, treatment, and prevention of occupational disease.

### Scope & Application

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This program applies to all employee exposure and medical records, and analyses thereof, of such employees, whether the records are mandated by specific occupational safety and health standards. This program applies to all employee exposure and medical records, and analyses thereof, made, or maintained in any manner, including on an in-house or contractual (e.g., fee-for-service) basis. Global Comfort Group assures that the preservation and access requirements of this program are complied with regardless of the way records are made or maintained.

## Administrative Duties

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Richard Lowery, RSO, is the Safety and Training Director and is responsible for its implementation. Copies of the written program may be obtained in the RSO's office.

## Definitions

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- "Access" means the right and opportunity to examine and copy.
- "Analysis using exposure or medical records" means any compilation of data or any statistical study based at least in part on information collected from individual employee exposure or medical records or information collected from health insurance claims records, provided that either the analysis has been reported to the company or no further work is currently being done by the person responsible for preparing the analysis.
- "Designated representative" means any individual or organization to whom an employee gives written authorization to exercise a right of access. For the purposes of access to employee exposure records and analyses using exposure or medical records, a recognized or certified collective bargaining agent will be treated automatically as a designated representative without regard to written employee authorization.
- "Employee" means a current employee, a former employee, or an employee being assigned or transferred to work where there will be exposure to toxic substances or harmful physical agents. In the case of a deceased or legally incapacitated employee, the employee's legal representative may directly exercise all the employee's rights under the regulation.
- "Employee exposure record" means a record containing any of the following kinds of information:
  - Environmental (workplace) monitoring or measuring of a toxic substance or harmful physical agent, including personal, area, grab, wipe, or other form of sampling, as well as related collection and analytical methodologies, calculations, and other background data relevant to interpretation of the results obtained.
  - Biological monitoring results which directly assess the absorption of a toxic substance or harmful physical agent by body systems (e.g., the level of a chemical in the blood, urine, breath, hair, fingernails, etc.) but not including results which assess the biological effect of a substance or agent, or which assess an employee's use of alcohol or drugs.
  - Material safety data sheets indicating that the material may pose a hazard to human health; or
  - In the absence of the above, a chemical inventory or any other record which reveals where and when used and the identity (e.g., chemical, common, or trade name) of a toxic substance or harmful physical agent.
- "Employee medical record" means a record concerning the health status of an employee which is made or maintained by a physician, nurse, or other health care personnel, or technician, including:
  - Medical and employment questionnaires or histories (including job description and occupational exposures),

- The results of medical examinations (pre-employment, pre-assignment, periodic, or episodic) and laboratory tests (including chest and other X-ray examinations taken for the purpose of establishing a baseline or detecting occupational illnesses and all biological monitoring not defined as an "employee exposure record"),
  - Medical opinions, diagnoses, progress notes, and recommendations,
  - First aid records,
  - Descriptions of treatments and prescriptions, and
  - Employee medical complaints.
- "Employee medical record" does not include medical information in the form of:
  - Physical specimens (e.g., blood or urine samples) which are routinely discarded as a part of normal medical practice, or
  - Records concerning health insurance claims if maintained separately from the company's medical program and its records, and not accessible to the company by employee name or other direct personal identifier (e.g., social security number, payroll number, etc.), or
  - Records created solely in preparation for litigation which are privileged from discovery under the applicable rules of procedure or evidence; or
  - Records concerning voluntary employee assistance programs (alcohol, drug abuse, or personal counseling programs) if maintained separately from the company's medical program and its records.
- "Company" means a current company, a former company, or a successor company.
- "Exposure" or "exposed" means that an employee is subjected to a toxic substance or harmful physical agent in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes past exposure and potential (e.g., accidental or possible) exposure, but does not include situations where the company can demonstrate that the toxic substance or harmful physical agent is not used, handled, stored, generated, or present in the workplace in any manner different from typical non-occupational situations.
- "Health Professional" means a physician, occupational health nurse, industrial hygienist, toxicologist, or epidemiologist, providing medical or other occupational health services to exposed employees.
- "Record" means any item, collection, or grouping of information regardless of the form or process by which it is maintained (e.g., paper document, microfiche, microfilm, X-ray film, or automated data processing).
- "Specific chemical identity" means a chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance.
- "Specific written consent" means a written authorization containing the following:
  - The name and signature of the employee authorizing the release of medical information,
  - The date of the written authorization,
  - The name of the individual or organization that is authorized to release the medical information,

- The name of the designated representative (individual or organization) that is authorized to receive the released information,
  - A general description of the medical information that is authorized to be released,
  - A general description of the purpose for the release of the medical information, and
  - A date or condition upon which the written authorization will expire (if less than one year).
  - A written authorization does not operate to authorize the release of medical information not in existence on the date of written authorization, unless the release of future information is expressly authorized, and does not operate for more than one year from the date of written authorization.
  - A written authorization may be revoked in writing prospectively at any time.
- "Toxic substance or harmful physical agent" means any chemical substance, biological agent (bacteria, virus, fungus, etc.), or physical stress (noise, heat, cold, vibration, repetitive motion, ionizing and non-ionizing radiation, hypo - or hyperbaric pressure, etc.) which:
    - Is listed in the latest printed edition of the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances (RTECS) which is incorporated by reference as specified in Sec. 1910.6; or
    - Has yielded positive evidence of an acute or chronic health hazard in testing conducted by, or known to, the company; or
    - Is the subject of a material safety data sheet kept by or known to the company indicating that the material may pose a hazard to human health?
  - "Trade secret" means any confidential formula, pattern, process, device, or information or compilation of information that is used in a company's business and that gives the company an opportunity to obtain an advantage over competitors who do not know or use it.

## **Preservation of Records**

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Unless a specific occupational safety and health standard provides a different period of time, Global Comfort Group will assure the preservation and retention of records as follows:

- The medical record for each employee will be preserved and maintained for at least the duration of employment plus thirty (30) years, except that the following types of records need not be retained for any specified period:
  - Health insurance claims records maintained separately from the company's medical program and its records,
  - First aid records (not including medical histories) of one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and the like which do not involve medical treatment, loss of consciousness, restriction of work or motion, or transfer to another job, if made on-site by a non-physician and if maintained separately from the company's medical program and its records, and

- The medical records of employees who have worked for less than (1) year for the company need not be retained beyond the term of employment if they are provided to the employee upon the termination of employment.
- Each employee exposure record will be preserved and maintained for at least thirty (30) years, except that:
  - Background data to environmental (workplace) monitoring or measuring, such as laboratory reports and worksheets, need only be retained for one (1) year so long as the sampling results, the collection methodology (sampling plan), a description of the analytical and mathematical methods used, and a summary of other background data relevant to interpretation of the results obtained, are retained for at least thirty (30) years; and
  - Material safety data sheets and all other applicable records concerning the identity of a substance or agent need not be retained for any specified period as long as some record of the identity (chemical name if known) of the substance or agent, where it was used, and when it was used is retained for at least thirty (30) years (1); and
  - Material safety data sheets must be kept for those chemicals currently in use that are affected by the Hazard Communication Standard.

Biological monitoring results designated as exposure records by specific occupational safety and health standards will be preserved and maintained as required. Each analysis using exposure or medical records will be preserved and maintained for at least thirty (30) years.

Nothing in this program is intended to mandate the form, manner, or process by which a company preserves a record so long as the information contained in the record is preserved and retrievable, except that chest X-ray films will be preserved in their original state.

## **Access to Records**

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Whenever an employee or designated representative requests access to a record, Global Comfort Group will assure that access is provided in a reasonable time, place, and manner. If the company cannot reasonably provide access to the record within fifteen (15) working days, the company will within the fifteen (15) working days apprise the employee or designated representative requesting the record of the reason for the delay and the earliest date when the record can be made available.

The company may require of the requester only such information as should be readily known to the requester, and which may be necessary to locate or identify the records being requested (e.g., dates and locations where the employee worked during the time in question). Whenever an employee or designated representative requests a copy of a record, the company will assure that either:

- A copy of the record is provided without cost to the employee or representative,
- The necessary mechanical copying facilities (e.g., photocopying) are made available without cost to the employee or representative for copying the record, or
- The record is loaned to the employee or representative for a reasonable time to enable a copy to be made.

In the case of an original X-ray, the company may restrict access to on-site examination or make other suitable arrangements for the temporary loan of the X-ray.

Whenever a record has been previously provided without cost to an employee or designated representative, the company may charge reasonable, non-discriminatory administrative costs (i.e., search and copying expenses but not including overhead expenses) for a request by the employee or designated representative for additional copies of the record, except that:

- The company will not charge for an initial request for a copy of new information that has been added to a record which was previously provided; and
- The company will not charge for an initial request by a recognized or certified collective bargaining agent for a copy of an employee exposure record or an analysis using exposure or medical records.

Nothing in this program is intended to preclude employees and collective bargaining agents from collectively bargaining to obtain access to information in addition to that available under this regulation.

## **Employee & Designated Representative Access**

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### **Employee Exposure Records**

The company will, upon request, ensure access to each employee and designated representative to employee exposure records relevant to the employee. To this section, an exposure record relevant to the employee consists of:

- A record which measures or monitors the amount of a toxic substance or harmful physical agent to which the employee is or has been exposed.
- In the absence of such directly relevant records, such records of other employees with past or present job duties or working conditions related to or like those of the employee to the extent necessary to reasonably indicate the amount and nature of the toxic substances or harmful physical agents to which the employee is or has been subjected, and
- Exposure records to the extent necessary to reasonably indicate the amount and nature of the toxic substances or harmful physical agents at workplaces or under working conditions to which the employee is being assigned or transferred.

Requests by designated representatives for unconsented access to employee exposure records will be in writing and will specify with reasonable particularity:

- The record requested to be disclosed; and
- The occupational health needs for gaining access to these records.

### **Employee Medical Records**

The company will, upon request, ensure access to each employee-to-employee medical records of which the employee is the subject, except as provided in the regulation. The company will,

upon request, assure the access of each designated representative to the employee medical records of any employee who has given the designated representative specific written consent.

Whenever access to employee medical records is requested, a physician representing the company may recommend that the employee or designated representative:

- Consult with the physician for the purposes of reviewing and discussing the records requested,
- Accept a summary of material facts and opinions in lieu of the records requested, or
- Accept release of the requested records only to a physician or other designated representative.

Whenever an employee requests access to his or her employee medical records, and a physician representing the company believes that direct employee access to information contained in the records regarding a specific diagnosis of a terminal illness or a psychiatric condition could be detrimental to the employee's health, the company may inform the employee that access will only be provided to a designated representative of the employee having specific written consent, and deny the employee's request for direct access to this information only. Where a designated representative with specific written consent requests access to information so withheld, the company will assure the access of the designated representative to this information, even when it is known that the designated representative will give the information to the employee.

A physician, nurse, or other responsible health care personnel maintaining employee medical records may delete from requested medical records the identity of a family member, friend, or fellow employee who has provided confidential information concerning an employee's health status.

### Analyses Using Exposure or Medical Records

The company will, upon request, ensure access to each employee and designated representative to each analysis using exposure or medical records concerning the employee's working conditions or workplace. Whenever access is requested to an analysis which reports the contents of employee medical records by either direct identifier (name, address, social security number, payroll number, etc.) or by information which could reasonably be used under the circumstances indirectly to identify specific employees (exact age, height, weight, race, sex, date of initial employment, job title, etc.), the company will assure that personal identifiers are removed before access is provided. If the company can demonstrate that removal of personal identifiers from an analysis is not feasible, access to the personally identifiable portions of the analysis need not be provided.

### **OSHA Access**

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The company will, upon request, and without derogation of any rights under the Constitution or the Occupational Safety and Health Act of 1970, 29 U.S.C. 651 "et seq.," that the company chooses to exercise, assure the prompt access of representatives of the Assistant Secretary of Labor for Occupational Safety and Health to employee exposure and medical records and to analyses using exposure or medical records. Rules of agency practice and procedure governing OSHA access to employee medical records are contained in 29 CFR 1913.10.

Whenever OSHA seeks access to personally identifiable employee medical information by presenting to the company a written access order, the company will prominently post a copy of the written access order and its accompanying cover letter for at least fifteen (15) working days.

### Trade Secrets

Except as provided in elsewhere in the regulation, nothing in this section precludes the company from deleting from records requested by a health professional, employee, or designated representative any trade secret data which discloses manufacturing processes or discloses the percentage of a chemical substance in mixture, if the health professional, employee, or designated representative is notified that information has been deleted. Whenever deletion of trade secret information substantially impairs evaluation of the place where or the time when exposure to a toxic substance or harmful physical agent occurred, the company will provide alternative information which is sufficient to permit the requesting party to identify where and when exposure occurred.

The company may withhold the specific chemical identity, including the chemical name and other specific identification of a toxic substance from a disclosable record provided that:

- The claim that the information withheld is a trade secret can be supported.
- All other available information on the properties and effects of the toxic substance is disclosed.
- The company informs the requesting party that the specific chemical identity is being withheld as a trade secret; and
- The specific chemical identity is made available to health professionals, employees, and designated representatives in accordance with the specific applicable provisions of the regulation.

Where a treating physician or nurse determines that a medical emergency exists and the specific chemical identity of a toxic substance is necessary for emergency or first-aid treatment, the company will immediately disclose the specific chemical identity of a trade secret chemical to the treating physician or nurse, regardless of the existence of a written statement of need or a confidentiality agreement. The company may require a written statement of need and confidentiality agreement, in accordance with the provisions of the regulation as soon as circumstances permit.

In non-emergency situations, the company will, upon request, disclose a specific chemical identity, otherwise permitted to be withheld under the regulation, to a health professional, employee, or designated representative if:

- The request is in writing.
- The request describes with reasonable detail one or more of the following occupational health needs for the information:
  - To assess the hazards of the chemicals to which employees will be exposed.
  - To conduct or assess sampling of the workplace atmosphere to determine employee exposure levels.

- To conduct pre-assignment or periodic medical surveillance of exposed employees.
- To provide medical treatment to exposed employees.
- To select or assess appropriate personal protective equipment for exposed employees.
- To design or assess engineering controls or other protective measures for exposed employees; and
- To conduct studies to determine the health effects of exposure.

The request explains in detail why the disclosure of the specific chemical identity is essential and that, in lieu thereof, the disclosure of the following information would not enable the health professional, employee or designated representative to provide the occupational health services.

- The properties and effects of the chemical.
- Measures for controlling workers' exposure to the chemical.
- Methods of monitoring and analyzing worker exposure to the chemical; and
- Methods of diagnosing and treating harmful exposures to the chemical.
- The request includes a description of the procedures to be used to maintain the confidentiality of the disclosed information; and
- The health professional, employee, or designated representative and the company or contractor of the services of the health professional or designated representative agree in a written confidentiality agreement that the health professional, employee or designated representative will not use the trade secret information for any purpose other than the health need(s) asserted and agree not to release the information under any circumstances other than to OSHA, as provided in the regulation, except as authorized by the terms of the agreement or by the company.

The confidentiality agreement authorized by this program:

- May restrict the use of the information to the health purposes indicated in the written statement of need.
- May provide for appropriate legal remedies in the event of a breach of the agreement, including stipulation of a reasonable pre-estimate of likely damages; and,
- May not include requirements for the posting of a penalty bond.

Nothing in this section is meant to preclude the parties from pursuing non-contractual remedies to the extent permitted by law. If the health professional, employee, or designated representative receiving the trade secret information decides that there is a need to disclose it to OSHA, the company who provided the information will be informed by the health professional prior to, or at the same time as, such disclosure. If the company denies a written request for disclosure of a specific chemical identity, the denial must:

- Be provided to the health professional, employee, or designated representative within thirty days of the request.
- Be in writing.
- Include evidence to support the claim that the specific chemical identity is a trade secret.
- State the specific reasons why the request is being denied; and,
- Explain in detail how alternative information may satisfy the specific medical or occupational health need without revealing the specific chemical identity.

The health professional, employee, or designated representative whose request for information is denied may refer the request and the written denial of the request to OSHA for consideration. When a health professional, employee, or designated representative refers a denial to OSHA, OSHA will consider the evidence to determine if:

- The company has supported the claim that the specific chemical identity is a trade secret.
- The health professional employee, or designated representative has supported the claim that there is a medical or occupational health need for the information; and
- The health professional, employee or designated representative has demonstrated adequate means to protect confidentiality.

If OSHA determines that the specific chemical identity requested is not a "bona fide" trade secret, or that it is a trade secret, but the requesting health professional, employee or designated representatives has a legitimate medical or occupational health need for the information, has executed a written confidentiality agreement, and has shown adequate means for complying with the terms of such agreement, the company will be subject to citation by OSHA.

If the company demonstrates to OSHA that the execution of a confidentiality agreement would not provide sufficient protection against the potential harm from the unauthorized disclosure of a trade secret specific chemical identity, the Assistant Secretary may issue such orders or impose such additional limitations or conditions upon the disclosure of the requested chemical information as may be appropriate to assure that the occupational health needs are met without an undue risk of harm to the company.

Notwithstanding the existence of a trade secret claim, the company will, upon request, disclose to the Assistant Secretary any information which this section requires the company to make available. Where there is a trade secret claim, such claim will be made no later than at the time the information is provided to the Assistant Secretary so that suitable determinations of trade secret status can be made, and the necessary protections can be implemented.

Nothing in this program will be construed as requiring the disclosure under any circumstances of process or percentage of mixture information which is a trade secret.

## **Employee Information**

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Upon an employee's first entering employment, and at least annually thereafter, the company will inform current employees covered by this section of the following:

- The existence, location, and availability of any records covered by this section.
- The person responsible for maintaining and providing access to records; and
- Each employee's rights of access to these records.

The company will keep a copy of this section and its appendices, and make copies readily available, upon request, to employees. The company will also distribute to current employees any informational materials concerning this section which are made available to the company by the Assistant Secretary of Labor for Occupational Safety and Health.

## **Transfer of Records**

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If the company were to cease to do business, the company would transfer all records subject to this section to the successor company. The successor company will receive and maintain these records. If the company was to cease to do business and there is no successor company to receive and maintain the records subject to this standard, the company will notify affected current employees of their rights of access to records at least three (3) months prior to the cessation of the company's business.

If the company were to cease to do business and there is no successor company to receive and maintain the records, or intends to dispose of any records required to be preserved for at least thirty (30) years, the company will:

- Transfer the records to the Director of the National Institute for Occupational Safety and Health (NIOSH) if so, required by a specific occupational safety and health standard; or
- Notify the Director of NIOSH in writing of the impending disposal of records at least three (3) months prior to the disposal of the records.

Where the company regularly disposes of records required to be preserved for at least thirty (30) years, the company may, with at least (3) months' notice, notify the Director of NIOSH on an annual basis of the records intended to be disposed of in the coming year.

## **Modified Work Program**

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Global Comfort Groups Modified Work Program is a key component in the case management of work-related injuries or illnesses and some long-standing statistics support this as fact. Research shows, if an employee is off work for six months due to a work-related injury/illness, there is only a 50 percent chance the employee will ever return to work. If an employee is off for one year, there is only a 25 percent chance of the employee returning to work. If an employee is off for two years, there is virtually no chance of the employee ever returning to work.

Effective modified work programs seek to bring employees back to work after an absence due to an injury or illness that physically restricts the worker. When injured or ill employees are off work for an extended period, they often develop a set of common problems other than the injury or illness itself.

Examples of common problems may include:

- Progressive loss of self-esteem and depression.
- Fear of re-injury, and of a delayed recovery.
- Exaggeration of the physical and psychological demands of their job.
- A feeling of loss of control over their lives, often seeing themselves as victims.
- Marital or family problems.
- Alcohol/substance/medication abuse.

- Weight gain.

## **Program Objectives**

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The primary goals of establishing an effective, well-managed, modified work program are to decrease costs associated with disability, improve outcomes through a speedy recovery, and generally improve employee morale.

An effective program should benefit all employees, whether the disability is work-related. Reserving assistance for only work-related cases tends to encourage employees to turn non-work-related disabilities into workers' compensation claims to get the additional benefits. It also sends the message that you are only concerned with managing these costs.

The likelihood of a successful modified work program is enhanced if both the injured employee and you perceive it as being beneficial. Unfortunately, the general rule is that employees and employers often hold diverging perspectives concerning the consequences of a work injury. Understanding the perspectives of each is necessary in dealing effectively with work injury and work re-entry.

Global Comfort Groups development and continued adherence to a philosophy that focuses on employees as the most valued asset is most important in bridging the differences between each viewpoint. In keeping with this philosophy, it is important for Global Comfort Group to make every attempt to accommodate not only employees suffering a work-related injury/illness, but also those temporarily or permanently disabled from performing their customary jobs due to personal injuries/illnesses.

## **Influencing Factors**

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Multiple factors may potentially affect an employee's return to work following a work-related injury/illness. Work re-entry may be affected by the following:

- Medical status.
- Physical capabilities and limitations.
- Physical status.
- Work tolerance.
- Psychological/behavioral resources.
- Worker traits.
- Psychological readiness.
- Pain management.
- Work demands.
- Bio-mechanical (physical).
- Psychological.

## **Employee Education**

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Global Comfort Group informs all employees which company representative will be following the medical case to ensure the best possible care. The Company will be assisting in a safety investigation to provide accurate information to the insurance carrier.

Many employees have the sense of being out of control and at the mercy of the system; however, providing education, and establishing responsibilities for return-to-work issues can put them back in control. Providing this information in a caring way can help their self-esteem and give them confidence that they are an important part of the team. Global Comfort Group focuses on the employee's well-being so that the Company is not perceived as pushy or nosy, acting as a resource and a liaison, and allaying fears that they will lose benefits for asking questions.

## **Worker Support**

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Global Comfort Group has a policy whereby management personnel or the immediate supervisor is on hand immediately after the injury. When the employee needs emergency medical treatment, someone should accompany the employee to the hospital/physician's office, even if the employee is taken by ambulance, thus reassuring the injured worker that he/she will receive proper care.

There may be urgent questions regarding the employee's work environment or exposure that the company nurse/supervisor can provide for the medical provider. The supervisor can inform the provider that work restrictions will be accommodated if possible.

While an employee is off work, the supervisor should maintain regular contact with the injured employee, at least weekly; personal contact at the employee's residence is best. If that is not possible, maintain regular telephone contact. This ensures the employee that he/she is obtaining appropriate, quality, timely, and effective therapy. In addition, it assists the worker with any problems that have arisen concerning his/her care or compensation. Finally, this contact facilitates communication between the company and medical provider allowing for a smooth transition back to work.

## **The Supervisor's Role**

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Management and supervisory personnel must understand all the components of work injury, and they need to appreciate their role in the management of the injury. At our company, it may mean that someone accompanies the individual to the doctor or supervise the restricted duty.

Global Comfort Groups policy is made known to supervisors and indicates what their roles are within the company. In general, the supervisory staff is taught how to stay in weekly contact with the employee while he/she is off work, and to offer support when he/she returns.

The Company enlists the supervisor's involvement and cooperation and participation in:

- Knowing the facts surrounding the incident by being involved in the investigation.
- Knowing the nature of the injury, and how long any resulting disability or restricted duty is likely to last.
- Reviewing the return-to-work restrictions by consulting with others if necessary - nurse, treating physician, human resources, or safety personnel.

- Being responsible for the identification of appropriate restricted duty, consistent with the physician's recommendations. The job or task should be meaningful and necessary but need not necessarily be desirable in the employee's mind.
- Being responsible to see that the injured worker assigned to a restricted duty job understands his/her restrictions.
- Maintaining regular and personal contact with the injured worker.
- To determine the source of any problems the employee experiences in the performance of the assigned, restricted duties; the supervisor should determine the source of these problems and deal with them accordingly.

## **Communicating With the Medical Provider**

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Communication with the treating doctor is one of the most important factors in modified work programs. The Company will provide the attending physician and other medical providers with a written summary of the physical demands of the employee's customary job, and notification of the availability of restricted-duty assignments.

If the physician is uncertain as to the injured worker's functional capacities, and the company requires a more accurate statement of what the employee can do to assist all interested parties in the work accommodation process.

Following are some common categories of medical restrictions for which work accommodation are often sought:

- One-handed limitations,
- Force and weight restriction,
- Range of motion restriction,
- Standing/sitting/walking,
- Bending/twisting/stooping/squatting,
- Climbing,
- Limited work hours,
- Wetness restriction, and
- Repetition limitation.

## **Modified Work Objectives**

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An effort must be made to return the employee to his/her customary job under the supervision of his/her usual supervisor; this accommodation will best use the employee's prior work experience. The transition back to work will be less stressful because the tasks, personnel, and work area will be familiar.

If the employee is unable to perform the customary job with/without job modification, place the employee in a transitional job within his/her department or customary surroundings and under the supervision of his/her usual supervisor. When a transitional job is unavailable within his/her department, place the employee in an alternate department or situation where acceptable transitional work is available.

## **Engineering Controls**

### **Purpose**

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Engineering controls are methods of designing facilities and sites to prevent or control worker exposure to safety or health hazards. Methods include:

- Eliminating hazards.
- Enclosing hazards.
- Isolating workers from hazards.
- Reducing transmission of hazards to workers.

Engineering controls help reduce worker injuries and inefficient workplace designs and work practices.

### **Engineering Standards**

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In buying, designing, and constructing materials, equipment, parts, machinery, facilities and processes, our company and its engineers should follow regulatory requirements as minimum operating standards. They should also follow engineering standards prepared by the following organizations or their equivalents:

- American National Standards Institute
- American Petroleum Institute
- American Society of Mechanical Engineers
- National Fire Protection Association

Copies of relevant standards should be kept in company files.

### **Reviews**

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You should review plans for new facilities and assess new equipment to ensure the following will not occur because of design flaws:

- Worker contact with moving machinery parts.
- Tripping and slipping hazards.
- Fire hazards.
- Explosion hazards.
- Worker exposure to toxic substances.

## **Equipment Preventive Maintenance**

### **Purpose**

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Preventive maintenance of vehicles and other mechanical, electrical, and hydraulic equipment allows you to spot and correct weaknesses before they become problems. Through preventive maintenance, accidents and costly breakdowns can be prevented and equipment life can be extended.

### **Inspections**

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The first step in a preventive maintenance program is regular inspections.

### **Maintenance Schedules**

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Global Comfort Group maintains detailed schedules for each piece of equipment that requires maintenance. The schedules should itemize parts and systems to check, how often the work should be done and who is responsible. They should include all critical parts or systems, which are those parts or systems that would inflict severe injuries or damage if they fail. Schedules should be based on manufacturers' recommendations.

### **Unscheduled Repairs**

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When problems arise outside of regular scheduled maintenance, repairs should be done immediately. If accidental damage occurs to any piece of equipment, it should be reported and investigated before any repair work is done.

### **Maintenance Request and Records**

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All maintenance, whether scheduled or not, should be recorded and records kept on file.

## **Purchasing Controls**

### **Purpose**

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Purchasing controls protect employees, contractors, and subcontractors. They examine all equipment, tools and materials purchased, as well as leased or rented meet government and industry standards.

### **Purchasing Standards**

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Purchasers for your company should ensure that equipment and supplies (including safety items):

- Meet the standards specified in occupational health and safety legislation.
- Are compatible with the work environment and the task requiring them.

- Are backed by appropriate documentation, warranties, guarantees, and/or service contracts.
- Are purchased from reliable suppliers.

Some of your company's standards might be the following:

- Chemicals must come with material safety data sheets.
- Hard hats must meet NIOSH and ANSI standards.

In addition, purchasing guidelines for some types of equipment can be obtained from various industry associations and government departments.

## **Safety Performance Assessment**

### **Purpose**

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To ensure Global Comfort Groups program remains current and effective, goals should be set by all employees and overall safety performance should be regularly assessed. Assessments are useful for highlighting successes and identifying areas where improvements are needed. Assessment results are also useful in setting goals for the next assessment period.

### **Assessment Period**

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To ensure our safety performance keeps pace with company needs, we evaluate it annually.

### **Documenting the Performance Assessment**

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To keep our assessment organized, we document both our assessment plans and results.

### **Scope of Performance Assessment**

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Global Comfort Groups assessment should cover all our safety initiatives and evaluate the contributions and impacts of everyone working for our company. Goals, audit results, accident trends, and accident costs should be included in our assessment. Each of these basic performance indicators is discussed on the following pages.

### **Progress Toward Program Goals**

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At the beginning of each assessment period, employees should jointly set goals for our safety program, such as:

- The upgrading of personal protective or other safety equipment.
- An increase in safety meetings.
- Increased interaction between management and all other employees on.
- Safety program development and maintenance.
- An increase in the number of employees participating in first aid or other safety training programs.
- Introduction of standard work procedures for all new hazardous jobs.

Choose specific goals that you can reasonably expect to achieve given the Company's financial resources, worker support and time available. At the end of the assessment period, you will be able to objectively evaluate our progress by comparing our achievements with company goals.

### **Safety Program Audit Results**

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Another useful safety performance indicator is the Safety Program Audit. If you have recently performed an audit of your program, include the results in your performance assessment.

### **Incident and Accident Trends**

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Throughout our assessment period, keep track of any incidents and accidents that occur on company's sites (refer to "Incident and Accident Reporting and Investigation"). When you do your assessment, use this information to identify trends in incidents and accidents.

For example, you may find that of four accidents, two were caused by faulty equipment and two were caused by worker inexperience. From this and other information collected during accident investigations you may determine that increasing equipment inspections and maintenance programs and improving worker safety orientations will prevent similar accidents in future. These corrective measures can become goals for your next assessment period.

You may also choose to monitor injury accident frequencies and severities as part of your program assessment. Refer to Accident Statistics for more information on these performance indicators.

### **Cost of Injury Accidents**

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Direct costs of accidents should also be monitored as part of our safety performance assessment. Direct costs are:

- Lost production from shut-downs and stop-work orders.
- Workers' compensation assessments.
- Equipment repair and replacement.
- Fines and legal fees.
- Increases in insurance premiums.

Indirect costs, which are less obvious but are estimated to be two to four times higher than direct costs, are difficult to calculate. Indirect costs include:

- Lower productivity and higher staff turnover due to low morale.
- Lost business due to tarnished image and failure to fill orders.
- Hiring and training time for replacement workers.
- Salaries of convalescing and replacement workers.
- Overtime wages.

## **Tips to Improving Performance**

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If Global Comfort Groups assessments show little improvement from period to period, you will have to identify the weak links in our safety program and determine how to strengthen them. To find the weak links, determine where performance is poorest and why. Poor performance may be caused by:

- Unrealistic goals. Company safety program goals may exceed our capability to achieve them.
- Hazardous conditions at the worksite. If so, hazard assessment procedures may need revising.
- Workers using unsafe practices. The solution to this problem may be to improve work procedures and on-the-job training.
- Inadequate worker support of the safety program. workers may need to see a stronger and more sincere commitment to safety from management. They may also need proof that their contributions to safety count and unsafe work practices will not be tolerated.
- Inadequate supervision: supervisors may be in short supply or require additional training.
- Inadequate safety program: a complete safety program audit would provide a detailed assessment of every aspect of your safety program and improvements needed.

## **Training Courses**

### **Purpose**

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Training courses can improve employee safety performance by:

- providing knowledge
- improving skills
- changing behavior

Both the employee and his or her immediate supervisor or manager should participate in determining the employee's training needs.

### **Assessing Training Needs**

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One method of assessing training needs is to check employee performance in necessary job skills. Checklists provide an efficient format for doing this type of assessment. Following assessments, employees should be trained in the areas in which they are found to be deficient. Training may be provided through courses or on the job.

### **Types of Training**

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Training courses can be provided for:

- Managers, to help them direct and monitor the company's safety program (e.g., auditing, communications, and loss control).

- Supervisors, to enable them to oversee technical work, anticipate safety needs and troubleshoot safety problems on the worksite (e.g., supervisor training, WHMIS, TDG and emergency response).
- Workers, to improve job skills and knowledge, and to teach them to work safely (e.g., H2S safety, first aid, confined space entry and fire control).

## **Evaluating Training**

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Training courses should be evaluated to ensure they produce results. After training, employees should demonstrate a measurable improvement in skill or behavior. Global Comfort Group should ask training companies or institutions to provide evidence of measurable improvement at the course end. In addition, employees participating in training should be interviewed for their thoughts on the courses taken.

## **Training Records**

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All training should be recorded for each employee. These records should include the name of the employee, location and name of the course, final grade (if applicable) and date completed. Training records should also include certification renewal dates, if applicable.

## **Drug & Alcohol-Free Workplace**

### **Purpose**

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Global Comfort Group is dedicated to the protection of its employees from situations arising from substance abuse. To ensure that its workforce is productive, its facility is safe, and the success of its business is not hindered by substance abuse, Global Comfort Group has established a Substance Abuse Program. At the same time, the program will promote morale and reduce absenteeism, accident potential, and health and workers' compensation insurance.

### **Administrative Duties**

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Our company's Substance Abuse Program Administrator is responsible for developing and maintaining the written substance Abuse Program. This person is solely responsible for all facets of the program and has full authority to make necessary decisions to ensure the success of this program. The Substance Abuse Program Administrator is also qualified via appropriate training and experience that is commensurate with the complexity of the program to administer or oversee it and conduct the required evaluations of program effectiveness.

### **Company Policy**

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Because our company is concerned about:

- Workplace safety,
- Worker health,
- Product quality,
- Productivity,

- Public liability, or
- Regulatory compliance.

It is committed to a drug- and alcohol-free workplace. Our company substance abuse policy statement is as follows:

*The possession, sale, or use of illegal drugs is inconsistent with the company's objective of operating in a safe and efficient manner. Accordingly, no officer, employee, agent, contractor, or visitor shall use or have in his or her possession illegal drugs during working hours or on company property at any time. Additionally, no officer, employee, agent, or contractor shall report to work while under the influence of alcohol or illegal drugs.*

The services of any employee who engages in such conduct will be subject to discipline up to and including discharge per vested authority. The only exception is the taking of prescribed drugs under the direction of a physician. The unlawful involvement with drugs or narcotics off company property will constitute grounds for severe disciplinary action, up to and including termination of employment.

Global Comfort Group will give each employee a copy of our drug-free workplace policy statement.

If you have a substance abuse problem, it is your responsibility to seek and complete treatment. If you think someone you know (like a co-worker or a family member) has a drug problem, you could tell the person that, based on what you've seen, you believe something is happening and it concerns you. Urge that person to get help. If nothing is done, that person could adversely affect the well-being of not only himself/herself, but you, your family, and the company.

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## **Drug and Alcohol Testing**

We retain the right to test our employees for alcohol and drugs according to the following guidelines:

- Testing of potential new hires for the presence of drugs will be required at the sole discretion of Global Comfort Groups management.
- Employees who exhibit through identification of abnormal job performance or behaviors which suggest that drug or alcohol abuse may be a factor, may be requested to test for the presence of alcohol or drug test.
- All employees will undergo unannounced drug testing based on a computerized random selection process.
- Will involve any employee in an accident or contributing to an accident as defined in this policy.
- All employees who receive some form of rehabilitation may be required to undergo a drug test.

If a test reveals a positive result, then the employee(s) will be subject to disciplinary action up to including termination of employment.

See the Drug and Alcohol Testing section later in this written program for more details.

## **Company-Sponsored Activities**

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The Company prohibits the use of alcohol during company-sponsored activities.

## **Supervisor Training**

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Supervisors are the key to the success of our policy. As the people in direct contact with employees, supervisors can detect performance problems that may indicate substance abuse. Supervisors are responsible for:

- Observing and documenting unsatisfactory work performance or behavior.
- Talking to employees about work problems and what needs to be done about them (i.e., contacting the Employee Assistance Program or local resources); and
- Other responsibilities.

To carry out their responsibilities properly, supervisors must understand the substance abuse policy, be able to explain the policy to employees, and know when to act.

Our supervisors are not responsible for diagnosing substance abuse problems and treating substance abuse problems.

Our supervisors are trained to observe employees' job performance noting the following items:

- Physical signs: unusual clumsiness and frequent illness.
- Mood: Unusually lighthearted one day and depressed the next.
- Absenteeism: More than usual.
- Actions: Violent reactions when things go wrong or when upset.
- Accidents: Increased number of accidents; and
- Relationships: Easily irritated by others; would prefer being left alone rather than interacting with other employees.

Other training topics we cover with our supervisors include the following:

- Information on specific drugs,
- Methods of detecting drug and alcohol use,
- Insurance coverage for substance abuse treatment,
- Prevention and education strategies, and
- Background on drug testing issues and how the drug testing program relates to the EAP.

The company training program uses classroom instruction that uses lectures, discussions, videotapes, and/or conference formats.

The Human Resources Department is responsible for providing supervisor training.

The Human Resource Director and/or RSO are responsible for conducting the training.

## **Employee Education and Awareness**

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Our employees must understand and remain aware of our ongoing commitment to a drug-free workplace. All new and current employees must successfully complete Global Comfort Groups Employee Education and Awareness Program.

The Human Resource Department will identify when each employee receives retraining. The Human Resources Department and/or RSO are responsible for conducting this training.

The company training program uses Classroom instruction including lecture, discussion, videotape, and/or conferences.

Through training, Global Comfort Group ensures that employees are knowledgeable in the following:

- Dangers of drug abuse,
- Our drug-free workplace policy,
- The availability of any drug counseling programs,
- The possible penalties for drug abuse violations occurring in the workplace,
- Your company's EAP and its services,
- How drugs and alcohol affect the company and the employee including productivity,
- Product quality,
- Absenteeism,
- Health care costs and/or accident rates,
- Testing procedures,
- Health effects of alcohol and drugs,
- How drugs affect the community,
- Illegal drugs (what they look like, how they are used, their effects),
- The symptoms of overdose and withdrawal,
- How the use of alcohol and drugs can influence their children's behavior,
- How to help others avoid involvement in substance abuse, and
- How to recognize the signs of substance abuse.

## **Drug and Alcohol Testing**

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Our drug and alcohol testing program are also part of our Substance Abuse Program. We have set up a drug testing program for the following reasons:

- It is the right business decision for your company; or
- The work your employees do falls under rules that require drug testing.

## **Recordkeeping**

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Human Resource Department is responsible for maintaining all records and documentation related to employee training and testing.

## **Conviction Notification**

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Global Comfort Group will ensure that the contracting agency is notified within 10 days after receiving notice that an employee has been convicted of violating any criminal drug statute.

## **Employee Sanction**

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Global Comfort Group will ensure that any employee who is convicted of violating any criminal drug statute, will have sanctions imposed or will be required to satisfactorily participate in a drug abuse assistance or rehabilitation program.

## **Workplace Violence Prevention**

### **Company Policy**

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Our establishment, Global Comfort Group, is committed to our employees' safety and health. We refuse to tolerate any form of violence in the workplace and will make every effort to prevent violent incidents from occurring by implementing a Workplace Violence Prevention Program (WVPP). We will provide adequate authority and budgetary resources to responsible parties so that our goals and responsibilities can be met.

All managers, supervisors and employees are responsible for implementing and maintaining our WVPP Program. We encourage employee participation in designing and implementing our program. We require prompt and accurate reporting of all violent incidents in which physical injury has occurred. We will not discriminate against victims of workplace violence.

A copy of this policy statement and WVPP Plan is readily available to all employees and from each manager and supervisor.

Our plan ensures that all employees, including supervisors and managers, adhere to work practices that are designed to make the workplace more secure, and do not engage in verbal threats or physical actions which create a security hazard for others in the workplace.

All employees, including managers and supervisors, are responsible and accountable for using safe work practices, for following all directives, policies, and procedures, and for assisting in maintaining a safe and secure work environment.

The management of our establishment is responsible for ensuring that all safety and health policies and procedures involving workplace security are clearly communicated and understood by all employees. Managers and supervisors are expected to enforce the rules fairly and uniformly.

The WVPP Plan will be reviewed and updated annually.

## **Responsibility and Accountability**

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The Workplace Violence Prevention Program Administrator has the authority and responsibility for implementing the provisions of this program for Global Comfort Group. All managers, supervisors and employees are responsible for implementing and maintaining the WVPP in their work areas and for answering employee questions about the program.

In addition, a WVPP Planning Group will be established to assess the vulnerability to workplace violence at our establishment and reach agreement on preventive actions to be taken. This group will be responsible for developing employee training programs in violence prevention and plans for responding to acts of violence. They will also audit our overall Workplace Violence Prevention Program.

## **Compliance**

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All employees are responsible and will be held accountable for using safe work practices, for following all directives, policies, and procedures, and for assisting in maintaining a safe and secure work environment.

Managers, supervisors, and employees will comply with work practices that are designed to make the workplace more secure and will not engage in threats or physical actions which create a security hazard for others in the workplace. Managers and supervisors will:

- Inform employees, supervisors, and managers about our Workplace Violence Prevention Program.
- Evaluate the performance of all employees in complying with our establishment's workplace security measures.
- Recognize employees who perform work practices which promote security in the workplace.
- Provide training and/or counseling to employees who need to improve work practices designed to ensure workplace security.
- Discipline employees for failure to comply with workplace security practices.
- Follow established workplace security directives, policies, and procedures.

Managers and supervisors will maintain an open, two-way communications system on all workplace safety, health, and security issues. Our establishment has a communication system designed to encourage a continuous flow of safety, health and security information between management and our employees without fear of reprisal and in a form that is readily understandable. Our communication system consists of the following items:

- New employee orientation on our establishment's workplace security policies, procedures, and work practices.
- Periodic review of our Workplace Violence Prevention Program with all personnel.
- Training programs designed to address specific aspects of workplace security unique to our establishment.

- Regularly scheduled safety meetings with all personnel that include workplace security discussions.
- A system to ensure that all employees, including managers and supervisors, understand the workplace security policies.
- Posted or distributed workplace security information.
- A system for employees to inform management about workplace security hazards or threats of violence.
- Procedures for protecting employees who report threats from retaliation by the person making the threats.

## **Hazard Assessment**

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The Workplace Violence Prevention Group will perform workplace hazard assessment for workplace security in the form of record keeping and review, periodic workplace security inspections, and a workplace survey. The assessment group will identify workplace violence and security issues and make recommendations to management and employees.

## **Recordkeeping and Review**

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Care must be taken to ensure appropriate confidentiality of medical and personnel records, as required by State Administrative Rules, The ADA (Americans with Disabilities Act) and other applicable regulations or policies.

Periodic updates and reviews of the following workplace violence reports and records will be made:

- Occupational Safety and Health Administration (OSHA) 300 logs
- Workplace violence incident reports
- Information compiled for recording assault incidents or near-assault incidents (i.e., Threat & Assault Log)
- Insurance records
- Police reports
- Workplace survey
- Accident investigations
- Training records
- Grievances
- Inspection information
- Other relevant records or information

The records are reviewed annually, except for training records of employees who have worked for less than one year which are provided to the worker upon termination of employment. OSHA 300 Logs are reviewed and maintained per applicable OSHA requirements.

## **Workplace Security Inspections**

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Periodic inspections to identify and evaluate workplace security hazards and threats of

workplace violence will be performed by the following observer(s) in the following areas of our workplace:

| Observer       | Area |
|----------------|------|
| Richard Lowery | All  |
|                |      |
|                |      |

Periodic inspections are performed according to the following schedule:

- Monthly.
- When we initially established our Workplace Violence Prevention Program.
- When new, previously unidentified security hazards are recognized.
- When occupational injuries or threats of injury occur; and
- Whenever workplace security conditions warrant an inspection.

Periodic inspections for security hazards consist of identification and evaluation of workplace security hazards and changes in employee work practices and may require assessment for more than one type of workplace violence. Our establishment performs inspections for each type of workplace violence by using the methods specified below to identify and evaluate workplace security hazards.

Inspections for workplace security hazards from violence by strangers (Type 1) include assessing:

- The exterior and interior of the workplace for its attractiveness to robbers.
- The need for security surveillance measures, such as mirrors or cameras.
- Posting signs notifying the public that limited cash is kept on the premises.
- Procedures for employee response during a robbery or other criminal act.
- Procedures for reporting suspicious persons or activities.
- Posting of emergency telephone numbers for law enforcement, fire, and medical services where employees have access to a telephone with an outside line.
- Limiting the amount of cash on hand and using time access safes for large bills.
- Staffing levels during evening hours of operation and at other high-risk times.
- The use of work practices such as "buddy" systems, as appropriate, for identified risks (e.g., walking employees to their cars or mass transit stops at the end of the workday).
- Adequacy of lighting and security for designated parking lots or areas.

Inspections for workplace security hazards from violence by customers or clients (Type 2) include assessing:

- Access to, and freedom of movement within, the workplace.

- Adequacy of workplace security systems, such as door locks, security windows, physical barriers, and restraint systems.
- Frequency and severity of threatening or hostile situations that may lead to violent acts by persons who are service recipients of our establishment.
- Employees' skill in safely handling threatening or hostile service recipients.
- Effectiveness of systems and procedures to warn others of a security danger or to summon assistance, e.g., alarms or panic buttons.
- The use of work practices such as "buddy" systems, as appropriate, for identified risks (e.g., walking employees to their cars or mass transit stops at the end of the workday).
- Adequacy of lighting and security for designated parking lots or areas.
- The availability of employee escape routes.

Inspections for workplace security hazards from violence by co-workers (Type 3) include assessing:

- How well our establishment's anti-violence policy has been communicated to employees, supervisors, and managers.
- How well our establishment's management and employees communicate with each other.
- How well our employees, supervisors and managers know the warning signs of potential workplace violence.
- Access to, and freedom of movement within, the workplace by non-employees, specifically recently discharged employees.
- Frequency and severity of employee-reported threats of physical or verbal abuse by managers, supervisors, or other employees.
- Any prior violent acts, threats of physical violence, verbal abuse, property damage or other signs of strain or pressure in the workplace.
- Employee disciplinary and discharge procedures.

Inspection for workplace security hazards from violence by personal relations include assessing:

- Access to, and freedom of movement within, the workplace by non-employees, specifically personal relations with whom one of our employees is having a dispute.
- Frequency and severity of employee-reported threats of physical or verbal abuse which may lead to violent acts by a personal relation.
- Adequacy of workplace security systems, such as door locks, security windows, and physical barriers.
- Any prior violent acts, threats of physical violence, verbal abuse, property damage or other signs.
- The use of work practices such as "buddy" systems, as appropriate, for identified risks (e.g., walking employees to their cars or mass transit stops at the end of the workday).
- Adequacy of lighting and security for designated parking lots or areas.
- Warnings or police involvement to remove personal relations of employees from the worksite and effectiveness of restraining orders.

## Workplace Survey

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Under the direction of the Workplace Violence Prevention Administrator & Group, we distributed a survey among all our employees to identify any additional issues that were not noted in the records review or the security inspection.

## Workplace Hazard Control and Prevention

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The Threat Assessment Team should identify and institute a combination of control measures designed to eliminate or mitigate the risks of violent incidents. Traditional methods of engineering and administrative controls include the following:

| Engineering Controls                                                                                                             | Administrative Controls                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Control access to building</li></ul>                                                     | <ul style="list-style-type: none"><li>• Train employees in emergency action and safety</li></ul>               |
| <ul style="list-style-type: none"><li>• Enhance outside visibility of entrances</li></ul>                                        | <ul style="list-style-type: none"><li>• Develop escape plans</li></ul>                                         |
| <ul style="list-style-type: none"><li>• Install interior and exterior lighting</li></ul>                                         | <ul style="list-style-type: none"><li>• Develop working relationships with local authorities</li></ul>         |
| <ul style="list-style-type: none"><li>• Install security devices, such as, alarms, video cameras, corner mirrors, etc.</li></ul> | <ul style="list-style-type: none"><li>• Close business during late evening and night hours</li></ul>           |
| <ul style="list-style-type: none"><li>• Hire and train security personnel</li></ul>                                              | <ul style="list-style-type: none"><li>• Assign two or more employees to work at all times</li></ul>            |
| <ul style="list-style-type: none"><li>• Install bullet-resistant glass in reception area</li></ul>                               | <ul style="list-style-type: none"><li>• Provide escort to accompany staff to parking lots</li></ul>            |
| <ul style="list-style-type: none"><li>• Use drop safes to minimize cash on hand</li></ul>                                        | <ul style="list-style-type: none"><li>• Provide management support during emergencies</li></ul>                |
|                                                                                                                                  | <ul style="list-style-type: none"><li>• Respond promptly to all complaints</li></ul>                           |
|                                                                                                                                  | <ul style="list-style-type: none"><li>• Require employees to report violence incidents to management</li></ul> |

## Training and Instruction

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We have established the following policy on training all employees with respect to workplace violence and security.

All employees, including managers and supervisors, shall have training and instruction on general and job-specific workplace security practices. Training and instruction shall be provided when the Workplace Violence Prevention Program is first established and periodically thereafter. Training shall be provided to all new employees and to other employees for whom training has not previously been provided. It shall also be provided to all employees, supervisors, and managers given new job assignments for which specific workplace security training for the job assignment has not previously been provided. Additional training and instruction will be provided to all personnel whenever the employer is made aware of new or previously unrecognized security hazards.

General workplace violence and security training and instruction includes, but is not limited to, the following:

- Explanation of the Workplace Violence Prevention Program including measures for reporting any violent acts or threats of violence.
- Recognition of workplace security hazards including the risk factors associated with the four types of violence.
- Measures to prevent workplace violence, including procedures for reporting workplace security hazards or threats to managers and supervisors.
- Ways to defuse hostile or threatening situations.
- Measures to summon others for assistance.
- Employee routes of escape.
- Notification of law enforcement authorities when a criminal act may have occurred.
- Emergency medical care is provided in the event of any violent act upon an employee.
- Post-event trauma counseling for those employees desiring such assistance.

In addition, we provide specific instructions to all employees regarding workplace security hazards unique to their job assignment, to the extent that such information was not already covered in other training.

We have chosen the following items for training and instruction for managers, supervisors, and employees:

- Crime awareness.
- Location and operation of alarm systems, panic buttons and other protective devices.
- Communication procedures.
- Proper work practices for specific workplace activities, occupations, or assignments, such as late-night retail sales, taxi-cab driver, security guard, law enforcement, health care, public transportation, etc.
- Self-protection.
- Dealing with angry, hostile, or threatening individuals.
- Using the "buddy" system or other assistance from co-employees.
- Awareness of indicators that lead to violent acts by service recipients.
- Employee assistance programs.
- Review of anti-violence policy and procedures.
- Managing with respect and consideration for employee well-being.
- Pre-employment screening practices.
- Role playing in a violent incident.

## **Incident Investigation**

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Our procedures for investigating incidents of workplace violence—threats and physical injury—include:

- Reviewing all previous incidents.
- Visiting the scene of an incident as soon as possible.

- Interviewing threatened or injured employees and witnesses.
- Examining the workplace for security risk factors associated with the incident, including any previous reports of inappropriate behavior by the perpetrator.
- Determining the cause of the incident.
- Taking corrective action to prevent the incident from recurring.
- Recording the findings and corrective actions taken.

## Disciplinary Program

### **Purpose**

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The disciplinary system does not exist primarily to punish employees. Its purpose should be to control the work environment so that workers are protected, and accidents are prevented. A disciplinary system helps ensure workplace safety and health by letting the Global Comfort Groups employees know what is expected of them. It provides workers with opportunities to correct their behavior before an accident happens.

A disciplinary system is one of the keys to successfully implementing the Company's safety and health program. It ensures that the Company's rules and safe working practices are taken seriously by employees and are followed. It lets employees know how Global Comfort Group expects them to operate in relation to the goals of the Company's safety and health program. And it lays out the actions the Company will take if individuals do not meet the Company's expectations. The employee's supervisor and all members of management are responsible for the enforcement of this disciplinary program.

A disciplinary system cannot work in a vacuum. Before the Company can hold employees accountable for their actions, the Company first needs to establish its safety and health policy and disciplinary rules.

### **Policy Statement**

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Employees need to know the Company's position on safety and health and what the Company expects of them. They need a clear understanding of the rules and the consequences of breaking those rules. This is true in all areas of work, but it is especially important for worker safety and health. As part of the policy statement, and in the employee safety handbook, the Company has a written statement setting forth the Company's disciplinary policy. Company managers and supervisors will always be on the lookout for safety violations and will conscientiously and vigorously enforce the Company's commitment to safety.

### **Employee Information and Training**

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It is important that employees understand the system and have a reference to turn to if they have any questions. Therefore, in addition to issuing a written statement of the Company's disciplinary policy, the Company has drawn up a list of what it considers major violations of Company policy and less serious violations. This list specifies the disciplinary actions that will be taken for first, second, or repeated offenses. This list is not all-inclusive, other types of

violations can result in specific levels of disciplinary action relative to the seriousness of the violation and entirely at the Company's discretion.

The list for immediate termination and grounds for immediate discharge are:

- Drinking alcohol, and/or drug abuse prior to or during working hours.
- Fighting, provoking, or engaging in an act of violence against another person on Company property.
- Theft.
- Willful damage to property.
- Failure to wear Personal Protective Equipment (eye protection, hearing protection, safety helmets, etc.).
- Not using safety harnesses and lanyards when there is a potential for falling.
- Removing and/or making inoperative safety guards on tools and equipment.
- Tampering with machine safeguards or removing machine tags or locks.
- Removing barriers and/or guardrails and not replacing them.
- Failure to follow recognized industry practices.
- Failure to follow rules regarding the use of company equipment or materials.
- Major traffic violations while using a company vehicle.
- Engaging in dangerous horseplay.
- Failure to notify the Company of a hazardous situation and,
- Other major violations of company rules or policies

General Offences requiring a warning and can lead to termination:

- Minor traffic violations while using Company vehicles.
- Creating unsafe or unsanitary conditions or poor housekeeping habits.
- Threatening an act of violence against another person while on company property.
- Misrepresentation of facts.
- Unauthorized use of Company property.
- Excessive tardiness and late to work.
- Disrespect and/or insubordination to authority.
- Other violations of Company Policy and rules.

## **Training**

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Training can reduce the need for disciplinary action. The Company shall instruct employees in the importance of workplace safety and health, the need to develop safety habits, the Company's operations, safe work practices, and the hazards they control, and the standards of behavior that the Company expects. The Company's employees must understand the disciplinary system and the consequences of any deliberate, unacceptable behavior.

## **Supervision**

---

Supervisors are responsible for the enforcement of this Disciplinary Action Program. Supervision includes both training and corrective action. Ongoing monitoring of the Company's employees' work and safety habits gives the Company's supervisors the opportunity to correct

any problems before serious situations develop. In most cases, effective supervision means correcting a problem before issuing any punishment. Physical inspections by company officials that indicate violations showing overall lack of commitment to company safety goals will be under the same level of disciplinary actions.

Where the relationship between employees and their supervisors is open and interactive, problems are discussed, and solutions are mutually agreed upon. This type of relationship fosters a work environment where the need for disciplinary action is reduced. When such an action is needed, the parties are more likely to perceive it as corrective than punitive.

### **Employee Involvement**

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Employees are encouraged to help informally in the enforcement of rules and practices. The intent here is not to turn employees into spies and informers, but to encourage them to be their "brother's keeper" and to watch out for the safety and health of their colleagues. Many employers successfully have encouraged an atmosphere -- a company "culture" -- where employees readily speak up when they see an easily corrected problem, for example, a coworker who needs reminding to put on safety goggles.

The Company's employees deserve the opportunity to correct their own behavior problems. An effective disciplinary system is a two-way process. Once a problem is spotted, discuss it with the employee, who should be given at least one or two opportunities to change their behavior or correct the problem. Only after these discussions (and possibly some retraining) should disciplinary action be taken.

### **Appropriate Control Measures**

---

Disciplinary actions need to be proportionate to the seriousness of the offense and the frequency of its occurrence. It is certainly inappropriate to fire someone for occasional tardiness. It is equally inappropriate to issue only oral warnings to an employee who repeatedly removes a machine guard.

Disciplinary procedures should not be instituted without explanation. The Company will provide feedback to the employee on what behavior is unacceptable, why corrective action is necessary, and how the employee can prevent future violations and disciplinary action. In addition, take time to recognize an employee who improves or corrects his/her behavior.

### **Consistent Enforcement**

---

Workers must realize that safe work practices are a requirement of employment and that unsafe practices will not be tolerated. It is necessary, therefore, that the employer have a disciplinary system that is implemented fairly and consistently.

If the Company's disciplinary system is to work well and be accepted by the Company's workforce, the system applies equally to everyone. This includes subjecting managers and supervisors to similar rules and similar or even more stringent disciplinary procedures.

For minor violations, supervisors shall meet with the employee to discuss the infraction and inform the employee of the rule or procedure that was violated AND describe the corrective action needed to remedy the situation.

## **Documentation**

---

One key to ensuring fairness and consistency in a disciplinary system is keeping good records. It is in the best interests of both the Company and the employee to have written rules and disciplinary procedures. It is just as important to document instances of good or poor safety and health behavior, including discussions with the employee, and to place relevant information in the employee's personnel file.

Documentation serves a variety of purposes. It helps the Company to track the development of a problem, corrective actions, and the impact of measures taken. It provides information so the Company can keep employees informed of problems that need correction.

When the Company is evaluating the managerial and supervisory skills of a supervisor, it provides a useful record of how they handled problems.

If warnings, retraining, and other corrective actions fail to achieve the desired effect, and if the Company decides to discharge an employee, then documentation becomes even more critical. Conversely, the Company will conduct an annual clearing of the personnel files of employees whose good overall safety records are marred by minor warnings.

## **FIRST AID**

### **Purpose**

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Global Comfort Group is dedicated to the protection of its employees from on-the-job injuries and illnesses. However, when injuries or illnesses do occur, we are prepared to see that the needs of the injured or ill are met.

This written First Aid Program is intended to ensure that Global Comfort Group meets the requirements of applicable OSHA regulations.

### **Administrative Duties**

---

Richard Lowery, RSO, our First Aid Program Administrator, is responsible for establishing and implementing the written First Aid Program. This person has full authority to make necessary decisions to ensure the success of this program. Copies of this written program may be obtained from RSO in his office. If after reading this program, you find that improvements can be made, please contact Richard Lowery, RSO. We encourage all suggestions because we are committed to the success of this written program.

## **Company Policy**

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A person(s) who has a valid certificate in first aid training, the American Red Cross or equivalent will be available at work sites to render emergency first aid. Provisions will be made prior to commencement of a project for prompt medical attention in case of serious injury.

The Company provides a First Aid Kit on the premises. It is there for employees' use in the treatment of minor scratches, burns, headaches, nausea, etc. All employees shall know the location of the First Aid Kit and shall notify their supervisor if they need to use the First Aid Kit.

If an employee has a work-related injury or illness that requires professional medical assistance, they shall notify their supervisor and let him/her know before they receive this assistance. If they fail to notify their supervisor, they may be ineligible for Worker's Compensation, benefits to pay for doctor's bills, and/or lost wages.

The RSO shall inspect First Aid Kits before the kits are sent out to each area, and on a weekly basis to ensure that they are filled and complete.

In all cases requiring emergency medical treatment, immediately call, or have a co-worker call, to request emergency medical assistance.

## **First Aid Station**

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If a fixed establishment employs more than 200 employees at one central location, First-aid stations shall be located as close as practicable to the highest concentration of personnel. First-aid stations are well-marked and available to personnel during all working hours. One person holding a valid first-aid certificate shall be responsible for the proper use and maintenance of the first-aid station. First-aid stations are equipped with a minimum of two first-aid kits, the size of which shall be dependent upon the number of personnel normally employed at the work site. One first-aid kit may be a permanent wall-mounted kit, but in all cases the station shall be equipped with at least one portable first-aid kit. When required by the circumstances, the station shall be equipped with two wool blankets and a stretcher in addition to first-aid kits. A roster, denoting the telephone numbers and addresses of doctors, hospitals, and ambulance services available to the work site, shall be posted at each first-aid station.

## **First Aid Kits**

---

First aid kits consist of appropriate items and are stored in a weatherproof container with individual sealed packages of each type of item. First-aid kits and required contents are maintained in a serviceable condition and easily accessible. The contents of the first aid kits are checked before being sent out to each job & at least weekly on each job to ensure that the expended items are replaced.

Unit-type kits have all items in the first-aid kit individually wrapped, sealed, and packaged in comparable sized packages. The commercial or cabinet-type kits do not require all items to be individually wrapped and sealed, but only those which must be kept sterile. Items such as scissors, tweezers, tubes of ointments with caps, or rolls of adhesive tape, need not be individually wrapped, sealed, or disposed of after a single use or application. Individual packaging and sealing shall be required only for those items, which must be kept sterile in a first-aid kit. First-aid kits shall contain at least the following items:

- 10 Package Kit:
  - 1 Pkg. Adhesive bandages, 1" (16 per pkg.)
  - 1 Pkg. Bandage compress, 4" (1 per pkg.)
  - 1 Pkg. Scissors\* and tweezers (1 each per pkg.)
  - 1 Pkg. Triangular bandage, 40" (1 per pkg.)
  - 1 Pkg. Antiseptic soap or pads (3 per pkg.)
  - 5 Pkgs. of consulting physician's choice
- 16 Package Kit:
  - 1 Pkg. Absorbent gauze, 24" x 72" (1 per pkg.)
  - 1 Pkg. Adhesive bandages, 1" (16 per pkg.)
  - 2 Pkgs. Bandage compresses, 4" (1 per pkg.)
  - 1 Pkg. Eye dressing (1 per pkg.)
  - 1 Pkg. Scissors\* and tweezers (1 each per pkg.)
  - 2 Pkgs. Triangular bandages, 40" (1 per pkg.)
  - 1 Pkg. Antiseptic soap or pads (3 per pkg.)
  - 7 Pkgs. of consulting physician's choice
- 24 Package Kit:
  - 2 Pkgs. Absorbent gauze, 24" x 72" (1 per pkg.)
  - 2 Pkgs. Adhesive bandages, 1" (16 per pkg.)
  - 2 Pkgs. Bandage compresses, 4" (1 per pkg.)
  - 1 Pkg. Eye dressing (1 per pkg.)
  - 1 Pkg. Scissors\* and tweezers (1 each per pkg.)
  - 6 Pkgs. Triangular bandages (1 per pkg.)
  - 1 Pkg. Antiseptic soap or pads (3 per pkg.)
  - 9 Pkgs. of consulting physician's choice
- 36 Package Kit:
  - 4 Pkgs. Absorbent gauze, 24" x 72" (1 per pkg.)
  - 2 Pkgs. Adhesive bandages, 1" (16 per pkg.)
  - 5 Pkgs. Bandage compresses, 4" (1 per pkg.)
  - 2 Pkgs. Eye dressing (1 per pkg.)
  - 1 Pkg. Scissors\* and tweezers (1 each per pkg.)
  - 8 Pkgs. Triangular bandages, 40" (1 per pkg.)
  - 1 Pkg. Antiseptic soap or pads (3 per pkg.)
  - 13 Pkgs. of consulting physician's choice

Scissors shall be capable of cutting 2 layers of 15 oz. cotton cloth or its equivalent. The first-aid kits are maintained at the ten, sixteen, twenty-four or thirty-six package levels. Where the eyes or body of any person may be exposed to injurious chemicals and/or materials, suitable facilities for quick drenching or flushing of the eyes and body are provided, within the work area, for immediate emergency use. A poster shall be fastened and maintained either on or in the cover of each first- aid kit and at or near all phones plainly stating the phone numbers of available doctors, hospitals, and ambulance services within the district of the work site.

## **Minor First Aid Treatment**

First aid kits are stored in the main office building and in each company vehicle. If an employee sustains an injury or are involved in an accident requiring minor first aid treatment, they shall:

- Inform their supervisor.
- Administer first aid treatment to the injury or wound.
- If a first aid kit is used, indicate usage on the accident investigation report.
- Access to a first aid kit is not intended to be a substitute for medical attention.
- Provide details for the completion of the accident investigation report.

### **Non-Emergency Medical Treatment**

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For non-emergency work-related injuries requiring professional medical assistance, management must first authorize treatment. If an employee sustains an injury requiring treatment other than first aid, they shall:

- Inform your supervisor.
- Proceed to the posted medical facility. Your supervisor will assist with transportation, if necessary.
- Provide details for the completion of the accident investigation report.

Proper equipment for prompt transportation of an injured person to a physician or hospital or a communication system for contacting necessary ambulance service will be provided.

Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities will be provided within the work area. Portable eye wash stations shall be used in the event an employee accidentally spills or splashes injurious chemicals or liquids on their clothing or body. Employees shall notify their supervisor if they use an eye wash station.

### **Emergency Medical Treatment**

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If an employee sustains a severe injury requiring emergency treatment:

1. Call for help.
2. Fixed line telephones and mobile or cellular phones are available to contact emergency medical service.
3. Use the emergency telephone numbers and instructions posted next to the telephone in your work area to request assistance and transportation to the local hospital emergency room.
4. Provide details for the completion of the accident investigation report.

In areas where 911 is not available, the numbers of physicians, hospitals, or ambulances shall be conspicuously posted. Refer to the company's Emergency Action Plan for a complete list of emergency telephone numbers.

# BLOODBORNE PATHOGENS

## Purpose

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The purpose of this exposure control plan is to eliminate or minimize employee occupational exposure to blood or other infectious body fluids. Other potentially infectious body fluids include semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, and anybody fluid visibly contaminated with blood.

## Administrative Duties

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Richard Lowery, RSO, is the Safety and Training Director and is responsible for its implementation. Copies of the written program may be obtained in the RSO's office.

## Definitions

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"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), hepatitis C Virus (HCV) and human immunodeficiency virus (HIV).

"Contaminated" means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on a surface or in or on an item.

"Contaminated Laundry" means laundry which has been soiled with blood or other potentially infectious materials or may contain sharps.

"Decontamination" means the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal. Decontamination includes procedures regulated by applicable Health and Safety codes.

"Engineering Controls" means controls (e.g., sharps disposal containers, needleless systems, and sharps with engineered sharps injury protection) that isolate or remove the bloodborne pathogens hazard from the workplace.

"Engineered Sharps Injury Protection" means either:

- A physical attribute built into a needle device used for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids, which effectively reduces the risk of an exposure incident by a mechanism such as barrier creation, blunting, encapsulation, withdrawal, or other effective mechanisms; or
- A physical attribute built into any other type of needle device, or into a non-needle sharp, which effectively reduces the risk of an exposure incident.

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

"Hand washing Facilities" means a facility providing an adequate supply of running potable water, soap and single use towels or hot air-drying machines.

"HBV" means hepatitis B virus.

"HCV" means hepatitis C virus.

"HIV" means human immunodeficiency virus.

"Needle" or "Needle Device" means a needle of any type, including, but not limited to, solid and hollow-bore needles.

"Occupational Exposure" means reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

"OPIM" means other potentially infectious materials.

"Other Potentially Infectious Materials" means:

- The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any other body fluid that is visibly contaminated with blood such as saliva or vomitus, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids such as emergency response.
- Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and
- Any of the following, if known or reasonably likely to contain or be infected with HIV, HBV, or HCV:
  - Cell, tissue, or organ cultures from humans or experimental animals.
  - Blood, organs, or other tissues from experimental animals; or
  - Culture medium or other solutions.

"Parenteral contact" means piercing mucous membranes or the skin barrier through such events as needlesticks, human bites, cuts, and abrasions.

"Personal Protective Equipment" is specialized clothing or equipment worn or used by an employee for protection against a hazard. General work clothes (e.g., uniforms, pants, shirts, or blouses) not intended to function as protection against a hazard are not considered to be personal protective equipment.

"Sharp" means any object used or encountered in the industries covered by subsection (a) that

can be reasonably anticipated to penetrate the skin or any other part of the body, and to result in an exposure incident, including, but not limited to, needle devices, scalpels, lancets, broken glass, broken capillary tubes, exposed ends of dental wires and dental knives, drills, and burs.

"Sharps Injury" means any injury caused by a sharp, including, but not limited to, cuts, abrasions, or needlesticks.

"Sharps Injury Log" means a written or electronic record satisfying the requirements of the OSHA regulation.

"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, or HCV, and other bloodborne pathogens.

"Work Practice Controls" means controls that reduce the likelihood of exposure by defining the way a task is performed (e.g., prohibiting recapping of needles by a two-handed technique and use of patient-handling techniques).

## **Exposure Control Plan**

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Global Comfort Group has established an effective Exposure Control Plan which is designed to eliminate or minimize employee exposure. This Plan applies to all occupational exposure to blood or other potentially infectious materials. This Exposure Control Plan is in writing and contains at least the following elements:

- The exposure determination.
- The schedule and method of implementation for each of the applicable subsections:
  - Methods of Compliance,
  - HIV, HBV and HCV Research Laboratories and Production Facilities,
- Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up,
- Communication of Hazards to Employees, and
- Recordkeeping, of this standard.
- An effective procedure for gathering the information required by the Sharps Injury Log.
- An effective procedure for periodic determination of the frequency of use of the types and brands of sharps involved in the exposure incidents documented on the Sharps Injury Log.
  - NOTE: Frequency of use may be approximated by any reasonable and effective method.
- An effective procedure for identifying currently available engineering controls, and selecting such controls, where appropriate, for the procedures performed by employees in their respective work areas or departments.
- An effective procedure for obtaining the active involvement of employees in reviewing and updating the exposure control plan with respect to the procedures performed by employees in their respective work areas or departments.

Employees may request a copy or see the original Exposure Control Plan by asking their supervisor or Responsible Safety Officer. The Exposure Control Plan is reviewed and updated at least annually and whenever necessary as follows:

- To reflect new or modified tasks and procedures which affect occupational exposure.
- If sharps are used, to reflect progress in implementing the use of needleless systems and sharps with engineered sharps injury protection.
- To include new or revised employee positions with occupational exposure.
- To review and evaluate the exposure incidents which occurred since the previous update; and
- To review and respond to information indicating that the Exposure Control Plans are deficient in any area.

The Exposure Control Plan will be made available to the Chief or NIOSH or their respective designee upon request for examination and copying.

### **Sharps Injury Log**

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Global Comfort Group has established and maintains a Sharps Injury Log, which is a record of each exposure incident involving a sharp. Each exposure incident will be recorded on the log within 14 working days of the date the incident is reported to the Company. The information recorded will include the following information, if known or reasonably available:

- Date and time of the exposure incident.
- Type and brand of sharp involved in the exposure incident.
- Job classification of the exposed employee.
- Department or work area where the exposure incident occurred.
- The procedure that the exposed employee was performing at the time of the incident.
- How the incident occurred.
- The body part involved in the exposure incident.
- If the sharp had engineered sharps injury protection, whether the protective mechanism was activated, and whether the injury occurred before the protective mechanism was activated, during activation of the mechanism or after activation of the mechanism, if applicable.
- If the sharp had no engineered sharps injury protection, the injured employee's opinion as to whether and how such a mechanism could have prevented the injury; and
- The employee's opinion about whether any other engineering, administrative or work practice control could have prevented the injury.

### **Exposure Determination**

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Global Comfort Group will conduct an exposure determination for each employee(s) with occupational exposure. Exposure determination is made without regard to personal protective equipment. This exposure determination will contain the following:

- A list of all job classifications in which all employees in those job classifications have occupational exposure.

- A list of job classifications in which some employees have occupational exposure; and
- A list of all tasks and procedures or groups of closely related tasks and procedures in which occupational exposure occurs and that are performed by employees in job classifications.

The following job classifications have been determined to have the possibility of an occupational exposure to bloodborne pathogens:

- Category I
  - First Aid Personnel
- Category II
  - Supervisors
  - Maintenance Personnel
  - Custodial

## **Methods of Compliance**

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- Universal precautions will be observed to prevent contact with blood or OPIM. When differentiation between body fluid types is difficult or impossible, all body fluids will be considered potentially infectious materials.
- Engineering and work practice controls will be used to eliminate or minimize employee exposure.
- Engineering controls will be examined and maintained or replaced on a regular schedule to ensure their effectiveness.
- Work practice controls will be evaluated and updated on a regular schedule to ensure their effectiveness.
- Appropriate personal protective equipment will be made available to employees at no cost.
- In the event of an exposure, immediately cleanse the area with antiseptic soap and notify your supervisor to initiate the post-exposure protocol detailed in the Hepatitis B Vaccine section of this plan.

## **Prohibited Practices**

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- Shearing or breaking of contaminated needles and other contaminated sharps is prohibited.
- Contaminated sharps will not be bent, recapped, or removed from devices.
  - EXCEPTION: Contaminated sharps may be bent, recapped, or removed from devices if the procedure is performed using a mechanical device or a one-handed technique, and the Company can demonstrate that no alternative is feasible or that such action is required by a specific medical or dental procedure.
- Sharps that are contaminated with blood or OPIM will not be stored or processed in a manner that requires employees to reach by hand into the containers where these sharps have been placed.

- Disposable sharps will not be reused.
- Broken glassware which may be contaminated will not be picked up directly with the hands. It will be cleaned up using mechanical means, such as a brush and dustpan, tongs, or forceps.
- The contents of sharps containers will not be accessed unless properly reprocessed or decontaminated.
- Sharps containers will not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of sharps injury.
- Mouth pipetting/suctioning of blood or OPIM is prohibited.
- Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.

### **Requirements for Handling Contaminated Sharps**

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- Immediately or as soon as possible after use, contaminated sharps will be placed in containers meeting the requirements of OSHA regulations.
- At all times during the use of sharps, containers for contaminated sharps will be:
  - Easily accessible to personnel and located as close as is feasible to the immediate area where sharps are used or can be reasonably anticipated to be found (e.g., laundries).
  - Maintained upright throughout use, where feasible; and
  - Replaced as necessary to avoid overfilling.

### **Sharps Containers for Contaminated Sharps**

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- All sharps' containers for contaminated sharps will be:
  - Rigid.
  - Puncture resistant.
  - Leak proof on the sides and bottom.
  - Portable, if portability is necessary to ensure easy access by the user as required by OSHA regulations; and
  - Labeled in accordance with OSHA regulations.
- If discarded sharps are not to be reused, the sharps container will also be closeable and sealable so that when sealed, the container is leak resistant and incapable of being reopened without great difficulty.

### **Hygiene**

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- The Company will provide hand washing facilities which are readily accessible to employees.
- When provision of hand washing facilities is not feasible, the Company will provide either an appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes. When antiseptic hand cleansers or towelettes are used, hands will

be washed with soap and running water as soon as feasible.

- Companies will ensure that employees wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.
- Companies will ensure that employees wash hands and any other skin with soap and water, or flush mucous membranes with water immediately or as soon as feasible following contact of such body areas with blood or OPIM.

## **Personal Protective Equipment**

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Where occupational exposure remains after institution of engineering and work practice controls, the Company will provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, face shields or masks and eye protection. Personal protective equipment will be considered "appropriate" only if it does not permit blood or OPIM to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

The Company will ensure that appropriate personal protective equipment in the appropriate sizes is readily accessible at the worksite or is issued to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives will be readily accessible to those employees who are allergic to the gloves normally provided.

## **Hepatitis B Vaccination & Post-exposure Evaluation and Follow-up**

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The Company will make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident. When consent is refused, the Company will make immediately available to exposed employees a confidential medical evaluation and follow-up from a healthcare professional.

EXCEPTION: Designated first aid providers who have occupational exposure are not required to be offered pre-exposure hepatitis B vaccine if the following conditions exist:

- The primary job assignment of such designated first aid providers is not the rendering of first aid.
  - Any first aid rendered by such persons is rendered only as a collateral duty responding solely to injuries resulting from workplace incidents, generally at the location where the incident occurred.
  - This exception does not apply to designated first aid providers who render assistance on a regular basis, for example, at a first aid station, clinic, dispensary, or other location where injured employees routinely go for such assistance, and emergency or public safety personnel who are expected to render first aid in the course of their work.
- The Company's Exposure Control Plan will specifically address the provision of

hepatitis B vaccine to all unvaccinated first aid providers who have rendered assistance in any situation involving the presence of blood OPIM (regardless of whether an actual exposure incident, as defined by the OSHA regulation) and the provision of appropriate post-exposure evaluation, prophylaxis and follow-ups for those employees who experience an exposure incident as defined by the OSHA regulation, including:

- Provisions for a reporting procedure that ensures that all first aid incidents involving the presence of blood or OPIM will be reported to the Company before the end of work shift during which the first aid incident occurred.
  - The report must include the names of all first aid providers who rendered assistance, regardless of whether personal protective equipment was used and must describe the first aid incident, including time and date.
  - The description must include a determination of whether, in addition to the presence of blood or OPIM, an exposure incident, as defined in the OSHA regulation.
  - This determination is necessary to ensure that the proper post-exposure evaluation, prophylaxis, and follow-up procedures required OSHA are made available immediately if there has been an exposure incident, as defined in the OSHA regulation.
  - The report will be recorded on a list of such first aid incidents. It will be readily available to all employees and will be provided to the Chief upon request.
- Provision for the bloodborne pathogens training program, required by OSHA for designated first aiders to include the specifics of the reporting requirements the OSHA regulation and of this exception.
- Provision for the full hepatitis B vaccination series to be made available as soon as possible, but in no event later than 24 hours, to all unvaccinated first aid providers who have rendered assistance in any situation involving the presence of blood or OPIM regardless of whether a specific exposure incident, as defined by subsection (b), has occurred.
- The Company must implement a procedure to ensure that all the provisions of the OSHA regulation are complied with if pre-exposure hepatitis B vaccine is not to be offered to employees meeting the conditions of the OSHA regulation.
- The Company will ensure that all medical evaluations and procedures including the hepatitis B vaccine and vaccination series and post-exposure evaluation and follow-up, including prophylaxis, are:
  - Made available at no cost to the employee.
  - Made available to the employee at a reasonable time and place.
  - Performed by or under the supervision of a licensed physician or by or under the supervision of another licensed healthcare professional; and
  - Provided according to recommendations of the U.S. Public Health Service current at the time these evaluations and procedures take place, except as specified by the OSHA regulation.

- The Company will ensure that all laboratory tests are conducted by an accredited laboratory at no cost to the employee.

### Hepatitis B Vaccination

Hepatitis B vaccination will be made available after the employee has received the training required by OSHA and within 10 working days of initial assignment to all employees who have occupational exposure unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons. The Company will not make participation in a prescreening program a prerequisite for receiving hepatitis B vaccination. If the employee initially declines hepatitis B vaccination but later while still covered under the standard decides to accept the vaccination, the Company will make available hepatitis B vaccination at that time. The Company will assure that employees who decline to accept hepatitis B vaccination offered by the Company sign the declination statement. If a routine booster dose(s) of hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster dose(s) will be made available in accordance with the OSHA regulation.

### Post-Exposure Evaluation & Follow-Up

Following a report of an exposure incident, the Company will make immediately available to the exposed employee a confidential medical evaluation and follow-up, including at least the following elements:

- The Company will document the route(s) of exposure, and the circumstances under which the exposure incident occurred.
- The Company will identify and document the source individual, unless the Company can establish that identification is infeasible or prohibited by state or local law.
  - The source individual's blood will be tested as soon as feasible and after consent is obtained to determine HBV, HCV, and HIV infectivity. If consent is not obtained, the Company will establish that legally required consent cannot be obtained. When the source individual's consent is not required by law, the source individual's blood, if available, will be tested and the results documented.
  - When the source individual is already known to be infected with HBV, HCV, or HIV, testing for the source individual's known HBV, HCV or HIV status need not be repeated.
  - Results of the source individual's testing will be made available to the exposed employee, and the employee will be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.
- The Company will provide for collection and testing of the employee's blood for HBV, HCV, and HIV serological status.
  - The exposed employee's blood will be collected as soon as feasible and tested after consent is obtained.
  - If the employee consents to baseline blood collection but does not give consent at that time for HIV serologic testing, the sample will be preserved for at least 90 days. If, within 90 days of the exposure incident, the employee elects to have the

- baseline sample tested, such testing will be done as soon as feasible.
- Additional collection and testing will be made available as recommended by the U.S. Public Health Service.
- The Company will provide for post-exposure prophylaxis, when medically indicated, as recommended by the U.S. Public Health Service.
- The Company will provide for counseling and evaluation of reported illnesses.

#### Information Provided to the Healthcare Professional

The Company will ensure that the healthcare professional responsible for the employee's hepatitis B vaccination is provided a copy of this regulation. The Company will ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:

- A copy of this regulation.
- A description of the exposed employee's duties as they relate to the exposure incident.
- Documentation of the route(s) of exposure and circumstances under which exposure occurred, as required by the OSHA regulation.
- Results of the source individual's blood testing, if available; and
- All medical records relevant to the appropriate treatment of the employee including vaccination status which are the Company's responsibility to maintain, as required by the OSHA regulation.

#### Healthcare Professional's Written Opinion

The Company will obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation. The healthcare professional's written opinion for hepatitis B vaccination will be limited to whether hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination. The healthcare professional's written opinion for post-exposure evaluation and follow-up will be limited to the following information:

- That the employee has been informed of the results of the evaluation; and
- That the employee has been told about any medical conditions resulting from exposure to blood or OPIM which require further evaluation or treatment.

All other findings or diagnoses will remain confidential and will not be included in the written report.

#### Medical Recordkeeping

Medical records required by this standard will be maintained in accordance with the OSHA regulation.

## Information and Training

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

- At the time of initial assignment to tasks where occupational exposure may take place.
- At least annually thereafter.

For employees who have received training on bloodborne pathogens in the year preceding the effective date of the standard, only training with respect to the provisions of the standard which were not included need be provided. Annual training for all employees will be provided within one year of their previous training. Companies will provide additional training when changes such as:

- introduction of new engineering, administrative or work practice controls,
- modification of tasks or procedures or
- institution of new tasks or procedures affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created.

Material appropriate in content and vocabulary to educational level, literacy, and language of employees will be used. The training program will contain at a minimum the following elements:

- Copy and Explanation of Standard. An accessible copy of the regulatory text of this standard and an explanation of its contents.
- Epidemiology and Symptoms. A general explanation of the epidemiology and symptoms of bloodborne diseases.
- Modes of Transmission. An explanation of the modes of transmission of bloodborne pathogens.
- Company's Exposure Control Plans. An explanation of the Company's exposure control plan and how the employee can obtain a copy of the written plan.
- Risk Identification. An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and OPIM.
- Method of Compliance. An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, administrative or work practice controls and personal protective equipment.
- Decontamination and Disposal. Information on the types, proper use, location, removal, handling, decontamination, and disposal of personal protective equipment.
- Personal Protective Equipment. An explanation of the basis for selection of personal protective equipment.
- Hepatitis B Vaccination. Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge.
- Emergency. Information on the appropriate actions to take and people to contact in an emergency involving blood or OPIM.
- Exposure Incident. An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident the medical follow-up that will

be made available and the procedure for recording the incident on the Sharps Injury Log

- Post-Exposure Evaluation and Follow-up. Information on the post-exposure evaluation and follow-up that the Company is required to provide for the employee following an exposure incident.
- Signs and Labels. An explanation of the signs and labels and/or color coding required by the OSHA regulation; and
- Interactive Questions and Answers. An opportunity for interactive questions and answers with the person conducting the training session.

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

## **Recordkeeping**

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### **Medical Records.**

The Company will establish and maintain an accurate record for each employee with occupational exposure, in accordance with the OSHA regulation. This record will include:

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

The Company will ensure that employee medical records required by subsection (h)(1) are:

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

The Company will maintain the records required by the OSHA regulation for at least the duration of employment plus 30 years in accordance with the applicable OSHA section.

### **Training Records**

Training records will include the following information:

- The dates of the training sessions.
- The contents or a summary of the training sessions.

- The names and qualifications of persons conducting the training; and
- The names and job titles of all the people attending the training sessions.

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

### Sharps Injury Log

The Sharps Injury Log will be maintained 5 years from the date the exposure incident occurred.

### Transfer of Records

The Company will comply with the requirements involving transfer of records set forth in the applicable OSHA section. If the Company ceases to do business and there is no successor Company to receive and retain the records for the prescribed period, the Company will notify NIOSH, at least three months prior to their disposal and transmit them to the NIOSH, if required by the NIOSH to do so, within that three-month period.

## **POISONOUS SNAKES, INSECTS & PLANTS**

### **Purpose**

Like most accidents and injuries, prevention is important in controlling hazards from poisonous snakes, insects, and plants. Therefore, each employee should review the work activities planned to determine what exposures might exist. Efforts should then be made to minimize situations, which might result in a snakebite, insect sting or exposure to poisonous plants. Employees should also avoid wearing bright clothes, perfumes, after-shaves, etc., to help minimize the attraction of snakes or insects.

### **Snakes**

- Employees should wear work boots, long pants and long-sleeved shirts when going into hazardous areas.
- Employees should make as much noise as possible when approaching a possible snake area to give the snake time to leave.
- Employees should be equipped with a bush axe for clearing underbrush and for protection.
- Employees should avoid reaching or stepping into hidden areas whenever possible.
- If a snakebite should occur, the employee should:
  - Remain as calm as possible.
  - Move away from the snake.
  - Apply a constricting bandage (not tourniquet) between the wound and heart. A finger should be able to pass under it. Apply ice to the bite area, if available.
  - Allow a fellow worker to transport him/her to the closest medical facility.
  - If possible, kill the snake and carry to medical facility for identification.
- Under no circumstances should incisions and suction be used to treat a snakebite unless:
  - The victim is over 1.5 hours from medical assistance, and

- The person administering first aid has received advanced training in medical assistance such as First Responder, EMT, etc.

## **Insect Stings**

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Employees should:

- Wear appropriate clothing.
- Avoid areas where insects might be whenever possible.
- Schedule work in infested areas during the cool months.
- Avoid high smelling after-shaves, colognes, etc., that may attract insects.
- Use available insect repellents.
- If a sting does occur, any stinger should be removed with a knife blade or fingernail. The area should then be treated with Sting Kill Swabs.

## **Ticks**

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Ticks are especially important to pay attention to because of the possibility of Rocky Mountain Spotted Fever or Lyme Disease. To minimize exposure, employees should follow these guidelines:

- Wear appropriate clothing when working in a wooded area.
- Check yourself at least twice a day, paying particular attention to the hair, neck, and groin area.
- Use the available Tick Repellent.
- Notify your supervisor if a tick is found and request that the date and condition (i.e., attached? crawling?) be noted for future reference. (If possible, retain engorged ticks and place them in a container for identification of the tick type by a company preferred provider.)
- Call your company preferred provider if fever, chills, headaches, or muscle aches develop within 3-10 days after exposure. In some cases, a rash may develop on the wrists and ankles 1-3 days after the fever begins.

## **Poisonous Plants**

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The typical Global Comfort Group employee has exposure to at least three types of poisonous plants:

1. poison oak,
2. poison ivy and
3. poison sumac.

Reactions range from mild (very little or none) to severe (rash and blisters). Employees who have no reaction may not have become sensitized, but once they are, future exposures can result in an allergic reaction.

To avoid problems with poisonous plants, employees should:

- Avoid working in severely infested areas if possible. (Learn what the plants look like.)
- Wear long sleeve shirts, long pants, and work gloves. If you are performing clearing activities with either hand (e.g., bush axes, machetes, etc.) or powered tools use eye goggles/Safety glasses to prevent poisonous plants from entering your eyes.
- Use silicone protective or other barrier creams where available.
- Use a poison ivy wash on any place that may have been exposed. In some cases, even 24 hours after exposure may help.
- Be sure that any clothes or shoes that may have been exposed receive thorough washing. Leftover oils on anything could cause a reaction even days later.
- If a severe reaction develops, contact your company preferred provider for possible treatments. If you do not know the preferred provider, contact the RSO.
- Avoid rubbing your eyes if you have been in contact with poisonous plants.

## EXCAVATION, TRENCHING & SHORING

### Purpose

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One of the preventable hazards of sitework is the danger of trench cave-ins. Yet every year in the U.S., there are an estimated 75 to 200 deaths and more than 1,000 lost workdays per year from trenching accidents. Other hazards associated with trenches include contact with numerous underground utilities, hazardous atmospheres, water accumulation, and collapse of adjacent structures. For these reasons, we have written Trenching, Shoring, & Excavation Procedures for both our daily and occasional excavation workers. It is the policy at Global Comfort Group to conduct awareness training only for employees as they should not need to enter or create an excavation or trench.

### Definitions

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**Aluminum hydraulic shoring** means an engineered shoring system comprised of aluminum hydraulic cylinders (cross braces), used in conjunction with vertical rails (uprights) or horizontal rails (walers). Such a system is designed specifically to support the sidewalls of an excavation and prevent cave-ins.

**Benching** means a method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

**Cave-in** means the separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

**Competent person** means one who can identify existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. All competent persons must complete the 4-hour Physical Plant trenching and shoring class, successfully pass

the exam, and be certified for successful completion of the class. A competent person should have and be able to demonstrate the following:

- Training, experience, and knowledge of:
  - soil analysis,
  - use of protective systems, and
  - requirements of applicable OSHA regulations.
- Ability to detect:
  - conditions that could result in cave-ins,
  - failures in protective systems,
  - hazardous atmospheres, and
  - other hazards including those associated with confined spaces.
- Authority to take prompt corrective measures to eliminate existing and predictable hazards and to stop work when required.

**Excavation** means any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

**Registered professional engineer** means a person who is registered as a professional engineer.

**Shield (shield system)** means a structure that can withstand the forces imposed on it by a cave-in and thereby protect employees with the structure. Shields can be permanent structure or can be designed to be portable and moved along as work progresses. Also known as trench box or trench shield.

**Shoring (shoring system)** means a structure such as a metal hydraulic, mechanical, or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

**Sloping (sloping system)** means a method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation to prevent cave-ins. The angle of incline varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.

**Trench (trench excavation)** means a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet or less, the excavation is also considered to be a trench.

## **Trenching Plan**

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To ensure the safety of Global Comfort Groups employees, we have established the follow Trenching Plan:

## General Safe Practices

- All surface encumbrances that are located to create a hazard to employees will be removed or supported, as necessary, to safeguard employees.
- The estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during excavation work, will be determined prior to opening an excavation.
- Utility companies or owners will be contacted within established or customary local response times, advised of the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation. When utility companies or owners cannot respond to a request to locate underground utility installations within 24 hours (unless a longer period is required by state or local law), or cannot establish the exact location of these installations, the Company may proceed, provided the Company does so with caution, and provided detection equipment or other acceptable means to locate utility installations are used.
- When excavation operations approach the estimated location of underground installations, the exact location of the installations will be determined by safe and acceptable means.
- While the excavation is open, underground installations will be protected, supported, or removed as necessary to safeguard employees.

## Structural Design

All design related to our excavation, trenching and shoring projects will be conducted by the Project Engineer. This competent person has the knowledge, training, and experience necessary to meet the responsibilities of his/her duties. Responsibilities include:

- Design of structural ramps, benching, sloping, shoring, and shielding of excavations.

The Project Supervisor is the competent person in charge of the oversight of the construction of ramps, benching, sloping, shoring, and shielding to ensure construction meets the design requirements of the Project Engineer.

## Access & Egress

- Structural ramps that are used solely by employees as a means of access or egress from excavations will be designed by a competent person. Structural ramps used for access or egress of equipment will be designed by a competent person qualified in structural design and will be constructed in accordance with the design.
- Ramps and runways constructed of two or more structural members will have the structural members connected to prevent displacement.
- Structural members used for ramps and runways will be of uniform thickness.
- Cleats or other appropriate means used to connect runway structural members will be attached to the bottom of the runway or will be attached in a manner to prevent tripping.
- Structural ramps used in lieu of steps will be provided with cleats or other surface treatments on the top surface to prevent slipping.

- Means of egress from trench excavations. A stairway, ladder, ramp or other safe means of egress will be located in trench excavations that are 4 feet (1.22 m) or more in depth so as to require no more than 25 feet (7.62 m) of lateral travel for employees.

### Exposure to Vehicular Traffic

Employees exposed to public vehicular traffic will be provided with, and will wear, warning vests or other suitable garments marked with or made of reflectorized or high-visibility material.

### Exposure to Falling Loads

No employee will be permitted underneath loads handled by lifting or digging equipment. Employees will be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped, in accordance with applicable OSHA standards, to provide adequate protection for the operator during loading and unloading operations.

### Warning System for Mobile Equipment

When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system will be utilized such as barricades, hand, or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

### Hazardous Atmospheres

In addition to the requirements set forth in applicable OSHA standards, to prevent exposure to harmful levels of atmospheric contaminants and to assure acceptable atmospheric conditions, the following requirements will apply:

- Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, the atmospheres in the excavation will be tested before employees enter excavations greater than 4 feet (1.22 m) in depth.
- Adequate precautions will be taken to prevent employee exposure to atmospheres containing less than 19.5 percent oxygen and other hazardous atmospheres. These precautions include providing proper respiratory protection or ventilation in accordance with subparts D and E of this part respectively.
- Adequate precautions will be taken such as providing ventilation, to prevent employee exposure to an atmosphere containing a concentration of a flammable gas more than 20 percent of the lower flammable limit of the gas.
- When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable levels, testing will be conducted as often as necessary to ensure that the atmosphere remains safe.

## Emergency Rescue Equipment

Emergency rescue equipment, such as breathing apparatus, a safety harness and line, or a basket stretcher, will be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation. This equipment will be attended when in use.

Employees entering bell-bottom pier holes, or other similar deep and confined footing excavations, will wear a harness with a lifeline securely attached to it. The lifeline will be separate from any line used to handle materials and will be individually always attended while the employee wearing the lifeline is in the excavation.

## Protection from Hazards Associated with Water Accumulation

All trenches will be inspected by a competent person before work begins. Employees will not work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation. The precautions necessary to protect employees adequately vary with each situation but could include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of a safety harness and lifeline.

If water is controlled or prevented from accumulating using water removal equipment, the water removal equipment and operations will be monitored by a competent person to ensure proper operation.

If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means will be used to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains will require an inspection by a competent person and compliance with applicable OSHA standards.

## Stability of Adjacent Structures

Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning will be provided to ensure the stability of such structures for the protection of employees.

Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees will not be permitted except when:

- A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure; or
- The excavation is in stable rock; or
- A registered professional engineer has approved the determination that the structure is sufficiently removed from the excavation to be unaffected by the excavation activity; or
- A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees.

Sidewalks, pavements, and appurtenant structure will not be undermined unless a support system or another method of protection is provided to protect employees from the possible collapse of such structures.

### Protection of Employees from Loose Rock or Soil

Adequate protection will be provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection will consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the face to stop and contain falling material; or other means that provide equivalent protection.

Employees will be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection will be provided by placing and keeping such materials or equipment at least 2 feet (.61 m) from the edge of excavations or using retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

### Inspections

Daily inspections of excavations, the adjacent areas, and protective systems will be made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection will be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections will also be made after every rainstorm or other hazard increasing occurrence. These inspections are only required when employee exposure can be reasonably anticipated.

Where the competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees will be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

### Fall Protection

Walkways will be provided where employees or equipment are required or permitted to cross over excavations. Guardrails which comply with applicable OSHA standards will be provided where walkways are 6 feet (1.8 m) or more above lower levels.

### Soil Classifications

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The determination of soil types & special considerations must be done in specific measures. Shoring, sloping, shield & excavation must be done as needed. Timber shoring, aluminum hydraulic shoring must be determined according to the applicable OSHA standard(s). The devices should be used while under good repair & maintenance; if damaged, they must be inspected. The employees should be protected from hazards of falling, rolling, or sliding materials or equipment. They should not be subjected to excessive forces and be installed to

protect employees from lateral loads, employees must be restricted from being in the shield when installing or removing; the shield must be designed to resist calculated trench forces.

## **Underground Installations**

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The location of underground installations shall be determined before excavation. When utility companies or owners cannot respond to a request to locate underground utility installations within 24 hours, or cannot establish exact location of these installations, the Company may proceed, provided the Company does so with caution and provided detection equipment or other acceptable means to locate utility installations are used.

## **Before Excavating**

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Before anyone at this company begins excavating, we follow the steps below:

- Contact the utility companies or property owners and ask the companies or owners to find the exact location of the underground installations in the area.
- If the utility companies or owners do not respond within 24 hours or the period established by law or ordinance, or if they cannot establish the location of the utility lines, the excavation may proceed with caution. In this situation, provide employees with detection equipment or other safe and acceptable means to locate utility installations.
- Remove or adequately support the following objects (i.e., trees, rocks, and sidewalks) in the excavation area that could create a hazard to employees.
- Using applicable OSHA regulations, classify the type of soil and rock deposits at the site as either stable rock, Type A, Type B, or Type C soil. The soil classification is based on the results of at least one visual and at least one manual analysis conducted by a competent person. Details of the acceptable visual and manual analyses are to be found in the OSHA regulation. NOTE: Soil classification is not necessary if the excavation is sloped to an angle of one and one-half horizontal to one vertical.
- Have the competent person choose the appropriate method for protective support systems, as necessary. See the Protective Support Systems section for the procedures he/she used for selecting this system.

## **Testing Methods**

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The competent person in charge of the excavation will be responsible for determining whether the soil is Type B or C. The competent person will use a visual test coupled with one or more manual tests.

The determination of soil types & special considerations must be done in specific measures. Shoring, sloping, shielding of the excavation will be conducted as needed. Timber shoring, aluminum hydraulic shoring must determine according to the appendixes A & C of the standard. The devices should be used while under good repair & maintenance; if damaged, they must be inspected. The employees should be protected from hazards of falling, rolling, or sliding materials or equipment. They should not be subjected to excessive forces and be installed to

protect employees from lateral loads, employees must be restricted from being in the shield when installing or removing; the shield must be designed to resist calculated trench forces.

## **Visual test**

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The competent person should perform a visual test to evaluate the conditions around the site. In a visual test, the entire excavation site is observed, including the soil adjacent to the site and the soil being excavated. The competent person also checks for any signs of vibration.

During the visual test, the competent person should check for crack-line openings along the failure zone that would indicate tension cracks, look for existing utilities that indicate that the soil has been previously disturbed, and observe the open side of the excavation for indications of layered geologic structuring.

This person should also look for signs of bulging, boiling, or sloughing, as well as for signs of surface water seeping from the sides of the excavation or from the water table.

In addition, the area adjacent to the excavation should be checked for signs of foundations or other intrusions into the failure zone, and the evaluator should check for surcharging and the spoil distance from the edge of the excavation.

## **Manual tests**

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**Thumb penetration test-** Attempt to press the thumb firmly into the soil in question. If the thumb penetrates no further than the length of the nail, it is probably Type B soil. If the thumb penetrates the full length of the thumb, it is Type C. It should be noted that the thumb penetration test is the least accurate testing method.

**Dry strength test-** Take a sample of dry soil. If it crumbles freely or with moderate pressure into individual grains, it is considered granular (Type C). Dry soil that falls into clumps that subsequently break into smaller clumps (and the smaller clumps can only be broken with difficulty) it is probably clay in combination with gravel, sand, or silt (Type B).

**Plasticity or Wet Thread Test-** Take a moist sample of the soil. Mold it into a ball and then attempt to roll it into a thin thread approximately 1/8 inch in diameter by two inches in length. If the soil sample does not break when held by one end, it may be considered Type B.

A pocket penetrometer, shearvane, or torvane may also be used to determine the unconfined compression strength of soils.

## **Spoil**

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Temporary spoil will be placed no closer than 2 feet from the surface edge of the excavation, measured from the nearest base of the spoil to the cut. This distance should not be measured from the crown of the spoil deposit. This distance requirement ensures that loose rock or soil from the temporary spoil will not fall on employees in the trench.

Spoil should be placed so that it channels rainwater and other run-off water away from the excavation. Spoil should be placed so that it cannot accidentally run, slide, or fall back into the excavation. Permanent spoil should be placed some distance from the excavation.

### **Surface Crossing of Trenches**

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Surface crossing of trenches should not be made unless necessary. However, if necessary, they are only permitted under the following conditions:

- Vehicle crossings must be designed by and installed under the supervision of a registered professional engineer.
- Walkways or bridges must: have a minimum clear width of 20 inches, be fitted with standard rails, and extend a minimum of 24 inches past the surface edge of the trench.

### **Ingress & Egress**

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- Trenches 4 feet or more in depth will be provided with a fixed means of egress.
- Spacing between ladders or other means of egress must be such that a worker will not have to travel more than 25 feet laterally to the nearest means of egress.
- Ladders must be secured and extend a minimum of 36 inches above the landing.
- Metal ladders should be used with caution, particularly when electric utilities are present.

### **Protective Support Systems**

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The company protects each employee in an excavation from cave-ins during an excavation by an adequate protective system designed in accordance with OSHA standards. Protective system options include proper sloping or benching of the sides of the excavation; supporting the sides of the excavation with timber shoring or aluminum hydraulic shoring; or placing a shield between the side of the excavation and the work area. Global Comfort Group has the following standard operating procedures regarding protective support systems for excavations, in accordance with safe practices and procedures and OSHA excavation regulations:

- If the excavation is made entirely of stable rock, then no protective system is necessary or used.
- If the excavation is less than 5 feet in depth (provided there is no indication of a potential cave-in), then no protective system is necessary or used.
- If the excavation is less than or equal to 20 feet in depth, then competent person chooses the most practical design approach (that meets required performance criteria) for the circumstance, and/or
- A registered professional engineer designs all protective systems for use in the excavation.

## Sloping

When sloping is used to protect against cave-ins, these options can be chosen for designing sloping systems:

- If a soil classification is not made, then slope the sides of the excavation to an angle not steeper than one and one-half horizontal to one vertical (34 degrees). A slope of this gradation or less is considered safe for any type of soil.
- Use the OSHA standard to determine the maximum allowable slope and allowable configurations for sloping systems. The soil type must be determined to use this option.
- Use other tabulated data approved by a registered professional engineer.
- Have an engineer design and approve the system to be used.

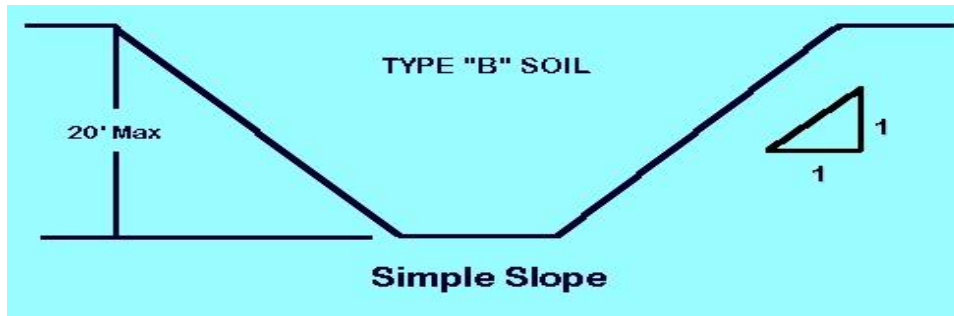
There are several exceptions or special cases to these general sloping guidelines, which can be utilized by your company if the conditions meet the exception's requirements. The exceptions and conditions are outlined below:

- In Type A soil, simple slope excavations which are open 24 hours or less (short term) and which are 12 feet high or less in depth may have a maximum allowable slope of 1/2 horizontal to 1 vertical.
- In Type A soil, all excavations 8 feet or less in depth which have unsupported vertically sided lower portions must have a maximum vertical side of 3.5 feet.
- In Type A soil, excavations over 8 feet but less than 12 feet in depth with unsupported vertically sided lower portions must have a maximum allowable slope of 1H:1V and a maximum vertical side of 3.5 feet.
- In Type A soil, excavations 20 feet or less with vertically sided lower portions that are supported or shielded will have a maximum allowable slope of 3/4 H:1V. The support or shield system must extend at least 18 inches above the top of the vertical side.
- In Type B soil, all excavations 20 feet or less which have vertically sided lower portions will be shielded or supported to a height at least 18 inches above the top of the vertical side. The excavation will have a maximum allowable slope of 1H:1V.
- In Type C soil, all excavations 20 feet or less which have vertically sided lower portions will be shielded or supported to a height at least 18 inches above the top of the vertical side. The excavation will have a maximum allowable slope of 1-1/2 H:1V.
- When an excavation contains layers of different types of soils, the general sloping requirements do not apply. The excavation must be sloped according to the OSHA standard.

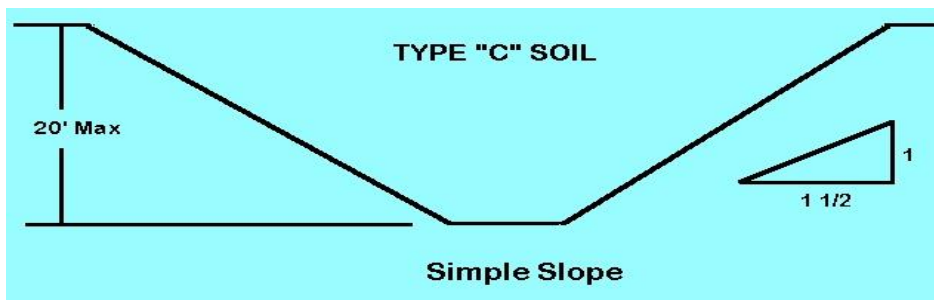
Maximum allowable slopes for excavations less than 20' based on soil type and angle to the horizontal are as follows:

| <b>Soil Type</b> | <b>Height/depth ratio</b> | <b>Slope angle</b> |
|------------------|---------------------------|--------------------|
| Type B           | 1:1                       | 45 degrees         |
| Type C           | 1 1/2:1                   | 34 degrees         |

A 10-foot-deep trench in Type B soil would have to be sloped to a 45-degree angle or sloped 10 feet back in both directions. Total distance across a 10-foot-deep trench would be 20 feet, plus the width of the bottom of the trench itself.



In Type C soil, the trench would be sloped at a 34-degree angle, or 15 feet back in both directions for at least 30 feet across, plus the width of the bottom of the trench itself. All simple slope excavations 20 feet or less in depth will have a maximum allowable slope of 1 1/2:1.



The competent person chooses the best option for sloping for the job at hand.

### Benching

When benching is used to protect against cave-ins, these options can be chosen for designing benching systems:

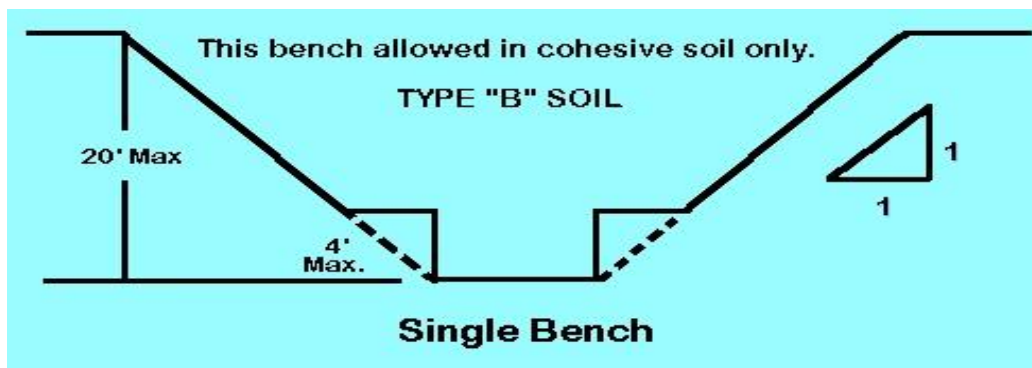
- Use Appendices A and B of 29 CFR 1926, Subpart P to determine the maximum allowable slope and allowable configurations for benching systems. The soil type must be determined to use this option.
- Use other tabulated data approved by a registered professional engineer.
- Have an engineer design and approve the system to be used.

There are a few exceptions or special cases to these general benching guidelines, which should be utilized by your company if the conditions meet the exception's requirements. The exceptions and conditions are outlined below:

- In Type A soil, simple slope excavations which are open 24 hours or less (short term) and which are 12 feet high or less in depth may have a maximum allowable slope of 1/2 horizontal to 1 vertical.
- In Type A soil, all excavations 8 feet or less in depth which have unsupported vertically sided lower portions must have a maximum vertical side of 3.5 feet.

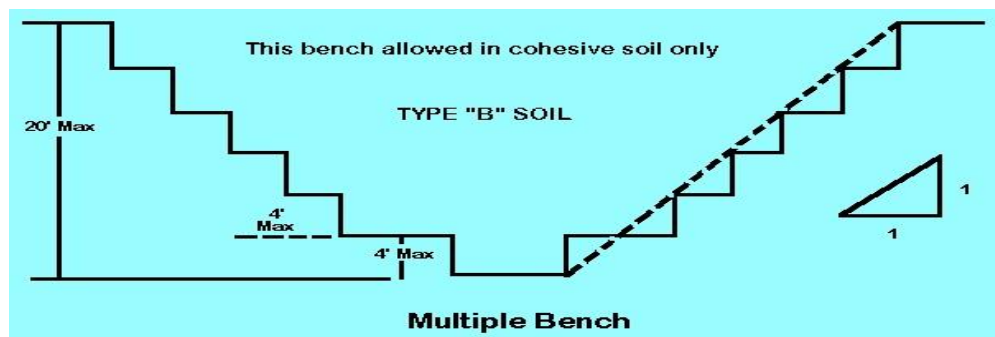
- In Type A soil, excavations over 8 feet but less than 12 feet in depth with unsupported vertically sided lower portions must have a maximum allowable slope of 1H:1V and a maximum vertical side of 3.5 feet.
- In Type A soil, excavations 20 feet or less with vertically sided lower portions that are supported or shielded will have a maximum allowable slope of 3/4H:1V. The support or shield system must extend at least 18 inches above the top of the vertical side.
- In Type B soil, all excavations 20 feet or less which have vertically sided lower portions will be shielded or supported to a height at least 18 inches above the top of the vertical side. The excavation will have a maximum allowable slope of 1H:1V.
- In Type C soil, all excavations 20 feet or less which have vertically sided lower portions will be shielded or supported to a height at least 18 inches above the top of the vertical side. The excavation will have a maximum allowable slope of 1-1/2 H:1V.

When an excavation contains layers of different types of soils, the general sloping requirements do not apply. The excavation must be sloped according to the OSHA standard.



There are two basic types of benching, single and multiple, which can be used in conjunction with sloping.

All benched excavations 20 feet or less in depth will have a maximum allowable slope of 1:1. In Type B soil, the vertical height of the benches must not exceed 4 feet. Benches must be below the maximum allowable slope for that soil type. In other words, a 10-foot-deep trench in Type B soil must be benched back 10 feet in each direction, with the maximum of a 45-degree angle.



Benching is not allowed in Type C soil.

The competent person chooses the best option for sloping for the job at hand.

## **Support Systems, Shield Systems, and Other Protective Systems**

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### **Timber Shoring**

When trenches do not exceed 20 feet, timber shoring according to OSHA design specifications may be used. Designs for timber shoring in trenches for company work sites are determined by the competent person using the following method(s):

- Use the requirements set forth by OSHA. The design specifications for timber shoring provided by OSHA may be found in the OSHA standard. These tables refer to the actual dimensions and not nominal dimensions of the timber. If the competent person chooses to use nominal size shoring, he/she must use the additional tables found in the OSHA standard. The soil type in which the excavation is made must be determined using the OSHA data.

NOTE: The specifications do not apply in every situation experienced in the field; the data were developed to apply to most common trenching situations. If the specifications do not apply to the situation encountered in the field, the competent person will decide what approach to use to allow safe protective support of the excavation.

- Use data provided by the manufacturer of the support system.
- Use other tabulated data approved by an engineer.
- Have a registered professional engineer design the system.

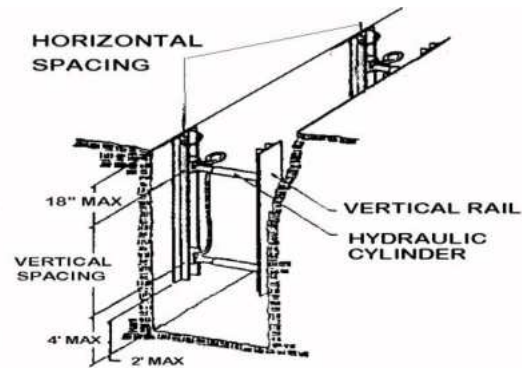
### **Aluminum Hydraulic Shoring**

Determined by the competent person, each design for aluminum hydraulic shoring is based upon the following method(s):

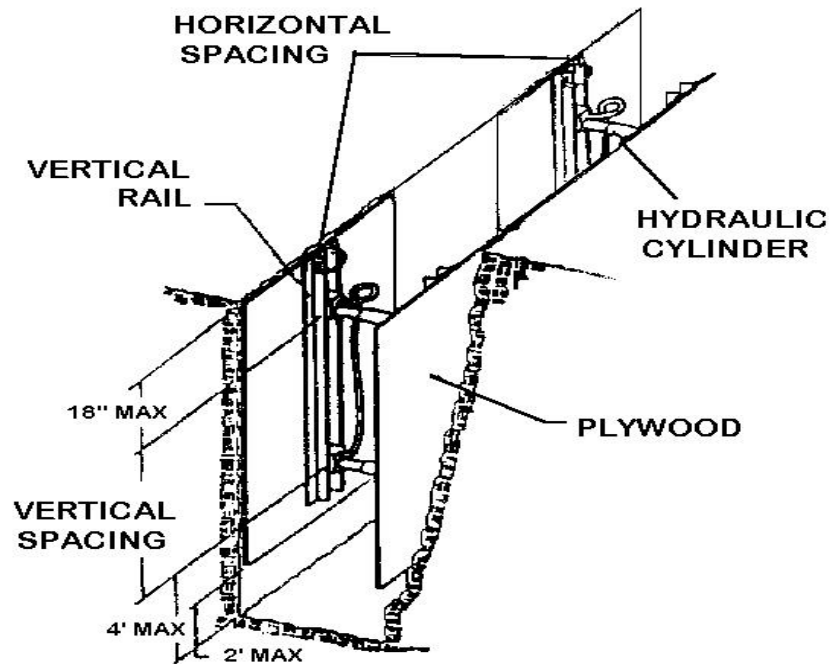
- Use the manufacturer's tabulated data and design in accordance with the manufacturer's specifications, recommendations, and limitations. Deviations from the manufacturer's specifications, recommendations, or limitations are only allowed upon written approval of the manufacturer, which must be obtained by the competent person prior to implementation. The written approval is kept at the job site during construction of the protective system.
- Use the OSHA specifications if the manufacturer's tabulated data cannot be utilized. NOTE: Before using the OSHA data, the soil type must be determined.
- Use other tabulated data approved by an engineer.

Here are some typical installations of aluminum hydraulic shoring:

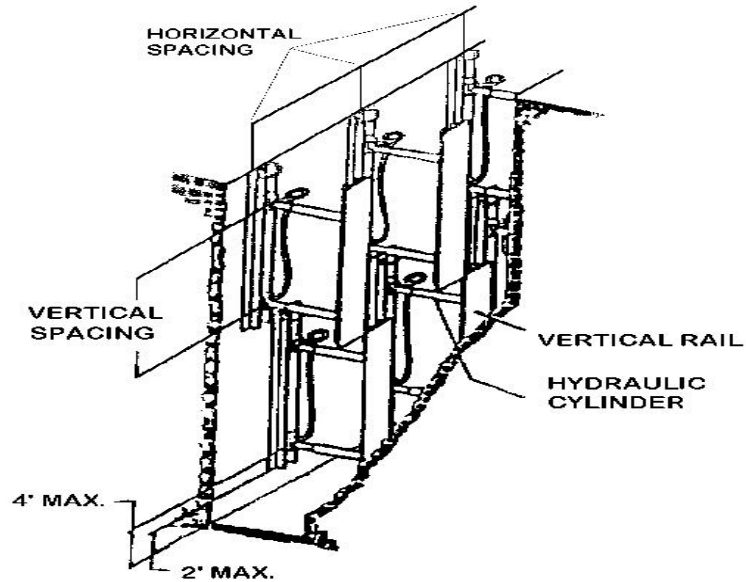
Vertical aluminum hydraulic shoring (spot bracing)



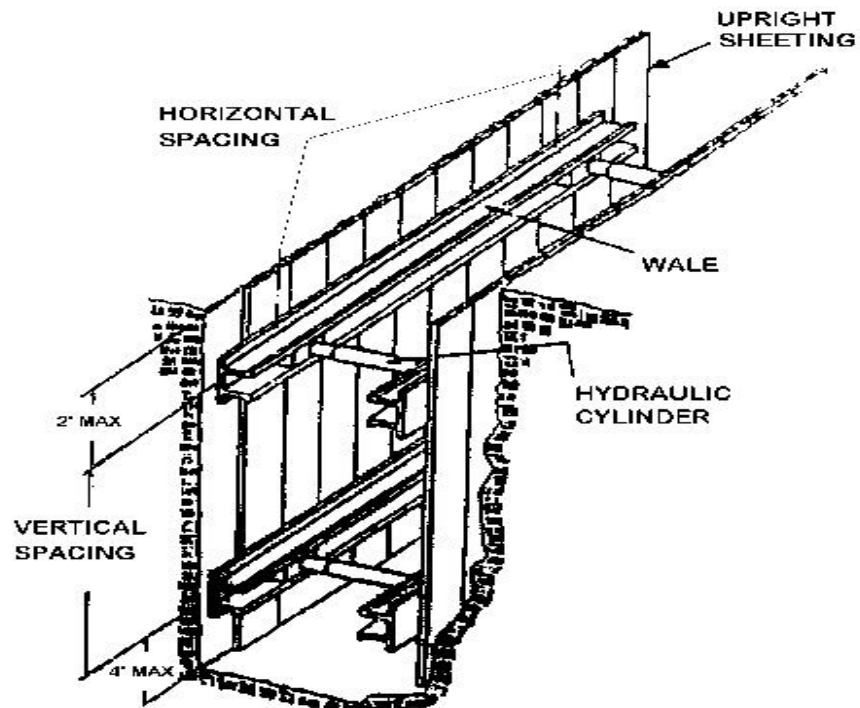
Vertical aluminum hydraulic shoring (with plywood)



## Vertical aluminum hydraulic shoring (stacked)



## Aluminum hydraulic shoring waler system (typical)



## Other Support Systems

Designs for our support systems are determined by the competent person using the following method(s):

- Use data provided by the manufacturer of the support system.
- Use other tabulated data approved by an engineer.
- Have a registered professional engineer design the system.

### Shielding

Determined by the competent person, designs for shielding are based upon the following method(s):

- Use data provided by the manufacturer of the support system.
- Use other tabulated data approved by an engineer.
- Have a registered professional engineer design the system.

### Other Protective Systems

Designs for our protective systems are determined by the competent person using the following method(s):

- Use data provided by the manufacturer of the support system.
- Use other tabulated data approved by an engineer.
- Have a registered professional engineer design the system.

## **General Requirements for Excavations**

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The following rules are to be always followed by all employees working on, in, or near excavations, as applicable:

- Employees exposed to public vehicular traffic must wear warning vests or other suitable garments made of reflectorized or high-visibility material.
- The competent person inspects the excavation and the adjacent areas daily for possible cave-ins, failure of protective systems and equipment, hazardous atmospheres, or other hazardous conditions (see appendices for Daily Inspection Checklist. Inspections are also required after the occurrence of any natural (such as rain) or man-made events (such as blasting) that could increase the potential for hazards. Employees may not begin work until after being informed by the competent person that these inspections are complete.
- A warning system is used to alert operators of heavy equipment and other employees at the work site of the edge of an excavation.
- Adequate protection is provided to protect employees from falling rock, soil, or other materials and equipment. Protection is provided by placing and keeping such materials or equipment at least 2 feet from the edge of excavations or using retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.
- Employees are not permitted under loads that are handled by lifting or digging equipment. Employees are not allowed to work in the excavation above other employees unless the lower-level employees are adequately protected.

- While the excavation is open, underground installations are protected, supported, or removed as necessary to safeguard employees. Adjacent structures are supported to prevent possible collapse.
- Employees are not permitted to work in excavations where water has accumulated or is accumulating unless adequate precautions have been taken. Shields, diversion ditches, dikes, or other means are used to prevent surface water from entering an excavation and to provide drainage to the adjacent area and must be inspected by a competent person before work begins.
- Before an employee enters an excavation greater than 4 feet in depth, the competent person must test the atmosphere where oxygen deficiency or a hazardous atmosphere exists or could reasonably exist (i.e., excavations in landfill areas or excavations in areas where hazardous substances are stored nearby). Emergency rescue equipment is readily available and attended when hazardous atmospheric conditions exist or may develop. Ventilation will be provided where necessary.
- Sufficient means for exiting excavations 4 feet deep or more are provided and are within 25 feet of lateral travel for employees.
- Guardrails are provided if there are walkways or bridges crossing over an excavation.

## WELDING, CUTTING & HOTWORK

### Purpose

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These written Welding & Cutting Procedures establish guidelines to be followed whenever any of our employees work with welding and cutting equipment at this company. The procedures here establish uniform requirements designed to ensure that welding and cutting safety training, operation, and maintenance practices are communicated to and understood by the affected employees. These requirements are also designed to ensure that procedures are in place to safeguard the health and safety of all employees.

It is the intent of Global Comfort Group to comply with the requirements of all applicable OSHA regulations. These regulations have requirements for welding and cutting operations. We also comply with applicable requirements of:

| Standard or Regulation | Name                                                                              |
|------------------------|-----------------------------------------------------------------------------------|
| ANSI A13.1-1956        | <i>American National Standard Scheme for the Identification of Piping Systems</i> |
| ANSI B31.3-1967        | <i>American National Standard Code for Pressure Piping</i>                        |
| ANSI C33.2-1956        | <i>Safety Standard for Transformer-Type Arc-Welding Machines</i>                  |

|                                                       |                                                                                                                            |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| ANSI Z48.1-1954                                       | <i>American National Standard Method for Marking Portable Compressed Gas Containers to Identify the Material Contained</i> |
| ANSI Z49.1-1967                                       | <i>Safety in Welding and Cutting</i>                                                                                       |
| ANSI Z54.1-1963                                       | <i>American National Standard Safety Standard for Non-Medical X-ray and Sealed Gamma-Ray Sources</i>                       |
| ANSI B57.1-1965                                       | <i>American National Standard Compressed Gas Cylinder Valve Outlet and Inlet Connections</i>                               |
| ANSI Z87.1-1968                                       | <i>American National Standard Practice for Occupational and Educational Eye and Face Protection</i>                        |
| API Std. 1104-1968                                    | <i>Standard for Welding Pipelines and Related Facilities</i>                                                               |
| API Std. PSD No. 2201-1963                            | <i>Welding or Hot Tapping on Equipment Containing Flammables</i>                                                           |
| ASTM B88-66a                                          | <i>Standard Specification for Seamless Copper Water Tube</i>                                                               |
| AWS A6.1-1966                                         | <i>Recommended Safe Practices for Gas-Shielded Arc Welding</i>                                                             |
| CGA--Regulator Connection Standards-1958              | ----                                                                                                                       |
| CGA & RMA--Specification for Rubber Welding Hose-1958 | ----                                                                                                                       |
| CGA--Standard Hose Connection Specifications-1957     | ----                                                                                                                       |
| NEMA EW-1-1962                                        | <i>Requirements for Electric Arc-Welding Apparatus</i>                                                                     |
| NFPA Standard 51B-1962                                | <i>Standard for Fire Prevention in Use of Cutting and Welding Processes</i>                                                |
| NFPA 80-1970                                          | <i>Standard for the Installation of Fire Doors and Windows</i>                                                             |

|                           |                                                           |
|---------------------------|-----------------------------------------------------------|
| 29 CFR 1910.132           | <i>Personal Protective Equipment—General Requirements</i> |
| 29 CFR 1910.217           | Mechanical Power Presses                                  |
| 29 CFR 1910.219           | Mechanical Power-Transmission Apparatus                   |
| 29 CFR 1910,<br>Subpart S | Electrical                                                |
| 29 CFR 1910.1000          | Air Contaminants                                          |
| 42 CFR 84                 | <i>Approval of Respiratory Protective Devices</i>         |
| 49 CFR 171-179            | <i>Hazardous Materials Regulations</i>                    |

## Training

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It is the policy of Global Comfort Group to permit only trained and authorized personnel to operate welding and cutting equipment. The RSO will identify all new employees in the employee orientation program and make arrangements with department management to schedule training. The RSO will ensure that all instructor(s) have the necessary knowledge, training, and experience to train new welding and cutting equipment operators.

Cutters, welders, and their supervisors must be suitably trained in the safe operations of their equipment and the safe use of the processes.

Training consists of on-the-job operational training. All welders and cutters are trained and tested on the equipment they will be operating before they begin their job. Global Comfort Group covers the operational hazards of our welding and cutting operations, including:

- Hazards associated with the make and model of the welding and cutting equipment.
- Hazards of the workplace; and
- General hazards that apply to the operation of all or most welding and cutting equipment.

Each potential welder or cutter who has received training in any of the elements of our training program for the types of equipment which that employee will be authorized to operate and for the type of workplace in which the welding and cutting equipment will be operated need not be retrained in those elements before initial assignment in our workplace if Global Comfort Group has written documentation of the training and if the employee is evaluated to be competent.

Assigned fire watchers must be trained in the use of fire extinguishing equipment and familiar with the facilities for sounding an alarm in the event of a fire.

## Hot-Work Permit

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Prior to any cutting, welding, or brazing activities a hot work permit must be completed. Before cutting or welding is permitted the area will be inspected by either the RSO or Supervisor for inspection and granting authorized welding and cutting operations. Precautions that are to be taken shall be in the form of a written permit.

## Operating Procedures

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If the object to be welded or cut cannot readily be moved, all moveable fire hazards should be removed. If the object to be welded or cut cannot be moved and if all the fire hazards cannot be removed, then guards should be used to confine the heat sparks and slag and to protect the immovable fire hazards. If these conditions cannot be met then welding and cutting is prohibited.

Employees assigned to operate arc welding equipment must be properly instructed and qualified to operate such equipment. Employees assigned must be familiar with this the applicable regulations. If gas shielded arc welding is done, they must be familiar with the American Welding Society Standard A6-1-1966.

Operators of equipment should report any equipment defect or safety hazards and discontinue use of equipment until its safety has been assured. Repairs will be made only by qualified personnel.

Welding and cutting can create certain hazards that only safe work practices can prevent. That's why we have created a set of operating procedures. Our operating procedures follow:

- Compressed Gas Cylinders
  - Handling, storage, and use of compressed gases around the workplace represents a few hazards. Questions are resolved through supervisors or use of the Compressed Gas Association Pamphlet P-1-1965.
  - Approved practices include:
    - Always keep valve protection cap in place when a cylinder is not in use.
    - Use care in handling and storage of cylinders, safety valves, relief valves, etc., to prevent damage.
    - When cylinders are hoisted, secure them on a cradle, sling board, or pallet.
    - Move cylinders by tilting and rolling them on their bottom edges. Care in handling is required.
    - Secure cylinders in an upright position always, especially when moving them by machine.
    - Oxygen cylinders must be stored in an upright, secured position 20 feet from any flammable gases or petroleum products.
    - Use carriers or carts provided for the purpose when cylinders are in use.
    - When in use, isolate cylinders from welding or cutting or suitably shield them. Care will be taken to prevent them from becoming part of an electrical circuit.

- Maintain a distance of at least 20 feet or provide a non-combustible barrier at least five feet high in separating fuel gas cylinders from oxygen cylinders. This applies to indoor and outdoor storage.
- The supervisor will designate:
  - Well-ventilated storage areas for cylinders inside buildings. Care will be taken to keep storage areas out of traffic areas or other situations where they could be knocked over, damaged, or tampered with.
  - Locations for fuel gas and oxygen manifolds in well-ventilated areas.
  - Before a regulator is removed, check that the valve is closed, and the gas released from the regulator.
  - Keep cylinders, cylinder valves, couplings, regulators, hoses, and apparatus free of oily or greasy substances.
  - Keep empty compressed gas cylinders appropriately marked and their valves closed.
  - Store full and empty cylinders apart.
  - Group cylinders by types of gas.
  - Use old stock before newer stock.
- Prohibited practices include:
  - Use of valve protection caps for lifting cylinders.
  - Use of damaged or defective cylinders. The plant manager will provide appropriate tags and designate an appropriate storage area for these cylinders.
  - Use of a wrench or hammer to open cylinder valves. Attempting to repair a cylinder valve. The supplier should be contacted.
  - Mixing of gases.
  - Use of a magnet or choker sling when hoisting cylinders. Use of a bar to pry cylinders from frozen ground. Warm, not boiling, water is used to thaw cylinders.
  - Taking oxygen, acetylene, or other fuel gas or manifolds with these gases into confined spaces.
  - Storing cylinders near elevators, stairs, or gangways. Using cylinders as rollers or supports.
- Gas Welding and Cutting
  - Safe practices in using fuel gas include:
    - Before a regulator to a cylinder valve is connected, "crack" the valve to clear it of dust or dirt. Stand on one side of the outlet, not in front of it. Do not do this where the gas would reach welding work, sparks, flame, or other possible sources of ignition.
    - Open cylinder valves slowly to prevent damage to the regulator. For quick closing, do not open valves on fuel gas cylinders more than 1 1/2 turns. When a special wrench is required, leave it in position on the valve stem

while the cylinder is in use. In the case of manifold or coupled cylinders, make sure at least one such wrench is always available for immediate use.

- Do not place anything on top of a fuel gas cylinder, when in use, which may damage the safety device or interfere with quick closing.
- Do not use fuel gas directly from cylinders through torches or other devices equipped with shutoff valves without reducing the pressure through a suitable regulator.
- Before a regulator is removed from a cylinder valve, always close the cylinder valve, and release the gas from the regulator.
- If gas leaks around the valve stem, close the valve, and tighten the gland nut. If this doesn't work, do not use the cylinder. Properly tag it and remove it from the work area.
- If fuel gas leaks from the cylinder valve and the gas cannot be shut off, properly tag, and remove the cylinder from the work area. If a regulator will effectively stop a leak through the valve seat, the cylinder can be used.
- Do not use oxygen for personal cooling, cleaning off surfaces, ventilation, or blowing dust from clothing.
- Do not weld or cut an acetylene or oxygen pipeline, including the attachment of hangers or supports, until the line has been purged.
- Only use pressure-reducing regulators for gas and pressures for which they are intended.
- Do not attempt to repair a regulator or parts of a regulator. Have a skilled mechanic do so.

○ Safe practices in using manifolds include:

- Do not place fuel gas and oxygen manifolds in enclosed spaces.
- Do not place oxygen manifolds in an acetylene generator room.
- Use manifolds and their parts only for the gas(es) for which they are approved.
- Do not alter or substitute manifold hose connections to allow interchange between fuel gas and oxygen manifolds and supply header connections. Keep hose connections free of grease and oil.
- Cap manifold and header hose connections when not in use.
- Do not place anything on top of a manifold, when in use, which will damage the manifold and interfere with quick closing of valves.
- Install approved flash arresters between each cylinder and the coupler block when acetylene cylinders are coupled.
- Manifold acetylene and liquefied fuel-gas cylinders only in a vertical position.

○ Safe practices in using hoses include:

- Make sure fuel gas hose and oxygen hose are easily distinguishable from each other, by different colors or by surface characteristics readily distinguishable by the sense of touch. Do not allow use of a single hose with more than one gas passage.
- Do not interchange hoses, including use of adapters, between fuel gas and oxygen sources.

- When parallel sections of oxygen and fuel gas hose are taped together, do not cover more than four inches out of 12 inches with tape.
  - Inspect all hose at the beginning of each working shift. Do not use defective hose.
  - Hose subjected to flashback, or with evidence of severe wear or damage, must be tested to twice the normal pressure to which they are subject, but in no case less than 300 P.S.I. Do not use defective hose, or hose in doubtful condition.
  - Use only hose couplings that cannot be unlocked or disconnected by means of a straight pull without rotary motion.
  - Do not store gas hose in unventilated boxes.
  - Keep hoses, cables, and other equipment clear of passageways, ladders, and stairs.
  - Clamp or securely fasten hose connections in a manner that will withstand, without leakage, twice the pressure to which they are normally subjected in service, but in no case less than a pressure of 300 P.S.I. Oil-free air or an oil-free inert gas shall be used for the test.
- Safe practices in using torches include:
    - Clean clogged tip openings only with suitable cleaning wires, drills, or other devices designed for such purposes.
    - Inspect at the beginning and end of each shift for leaking shutoff valves, hose couplings, and tip connections. Do not use defective torches.
    - Light only with friction lighters or other approved devices. Do not use matches or hot work.
  - Safe practices in using regulators and gauges include:
    - Make sure oxygen and fuel gas pressure regulators, including their related gauges are in proper working order.
    - Keep oxygen cylinders and fittings away from oil or grease. Oxygen shall not be directed at oily surfaces, greasy clothes, or within a fuel oil or other storage tank or vessel.
- Arc Welding and Cutting
    - When arc welding is performed in wet conditions, or under conditions of high humidity, special protection against electric shock shall be supplied.
    - Do not dip a hot electrode into water.
    - Use holders, cable, and other apparatus specifically designed for the purpose, matched to the job and other components and in good repair.
    - When leaving electrode holders unattended, electrodes must be removed, and holders placed so that accidental electrical contact is not made.
    - Use non-combustible or flame-proof screens to protect employees and passersby from arc rays wherever practicable.
    - Keep chlorinated solvents at least 200 feet from an inert-gas metal-arc welder or provide adequate shielding. Surfaces prepared with chlorinated solvents will be thoroughly dry before welding.

- Workman assigned must be familiar with this section (1910.254) and with 1910.252(a)(b) & (c). If gas shielded arc welding is done, they must be familiar with the American Welding Society Standard A6-1-1966.
  - Before starting operations all connections to the machine shall be checked to make certain they are properly made. The work lead shall be firmly attached to the work; magnetic work clamps shall be freed from adherent metal particles of spatter on contact surfaces. Coiled welding cable shall be spread out before use to avoid serious overheating and damage to insulation.
  - Grounding of the welding machine frame shall be checked. Special attention shall be given to safety ground connections of portable machines.
  - There shall be no leaks of cooling water, shielding gas, or engine fuel.
  - It shall be determined that proper switching equipment for shutting down the machine is provided.
  - Printed rules and instructions covering operation of equipment supplied by the manufacturers shall be strictly followed.
  - Electrode holders when not in use shall be so placed that they cannot make electrical contact with persons, conducting objects, fuel, or compressed gas tanks.
  - Cables with splices within 10 feet (3 m) of the holder shall not be used. The welder should not coil or loop welding electrode cable around parts of his body.
  - The operator should report any equipment defect or safety hazard to his supervisor and the use of the equipment shall be discontinued until its safety has been assured. Only qualified personnel shall make repairs.
  - Machines that have become wet shall be thoroughly dried and tested before being used.
  - Cables with damaged insulation or exposed bare conductors shall be replaced. Joining lengths of work and electrode cables shall be done using connecting means specifically intended for the purpose. The connecting means shall be insulation adequate for the service conditions.
- Fire Prevention
    - The supervisor will use this guide to assess fire hazards at the workplace:
      - If the object to be welded or cut cannot readily be moved, all movable fire hazards in the vicinity shall be taken to a safe place.
      - If the object to be welded or cut cannot be moved and if all the fire hazards cannot be removed, then guards shall be used to confine the heat, sparks, and slag, and to protect the immovable fire hazards.
      - If the requirements stated in the two boxes above cannot be followed, then welding and cutting shall not be performed.
      - Wherever there are floor openings or cracks in the flooring that cannot be closed, precautions shall be taken so that no readily combustible materials on the floor below will be exposed to sparks that might drop through the floor. The same precautions shall be observed regarding cracks or holes in walls, open doorways, and open or broken windows.
      - Suitable fire extinguishing equipment shall be provided and maintained in a state of readiness for instant use. Such equipment may consist of pails of water, buckets of sand, hose or portable extinguishers depending upon the nature and quantity of the combustible material exposed. A Fire Watch

must be maintained at least ½ hour after the welding and cutting operation has been completed.

- Before cutting or welding is permitted, the area shall be inspected by the individual responsible for authorizing cutting and welding operations. He shall designate precautions to be followed in granting authorization to proceed, preferably in the form of a written permit.
- Special precautions shall be taken for floors covered with combustible materials; combustibles within 35 feet of the work area; ducts that might carry sparks; combustible walls; combustibles on the other side of a noncombustible wall; combustible coverings; pipes in contact with combustible walls; storage of readily ignitable materials; drums, barrels, tanks, other containers that may contain flammable materials; pipes leading to a drum or vessel; and all hollow spaces, cavities or containers.
- The company will establish procedures for cutting and welding and designate an individual responsible for authorizing welding operations in areas not designed for such processes.
- The company will advise all contractors about flammable materials or hazardous conditions.
- Cutting or welding shall not be permitted in the following situations:
  - In areas not authorized by management.
  - In sprinklered buildings such protection is impaired.
  - In the presence of explosive atmospheres (mixtures of flammable gases, vapors, liquids, or dusts with air), or explosive atmospheres that may develop inside unclean or improperly prepared tanks or equipment which have previously contained such materials, or that may develop in areas with an accumulation of combustible dusts.

- Fire Watchers

- Firewatchers shall be required whenever welding or cutting is performed in locations where other than a minor fire might develop, or any of the following conditions exist:
  - Appreciable combustible material, in building construction or contents, closer than 35 feet (10.7m) to the point of operation.
  - Appreciable combustibles are more than 35 feet (10.7m) away but are easily ignited by sparks.
  - Wall or floor openings within a 35-foot (10.7m) radius expose combustible material in adjacent areas including concealed spaces in walls or floors.
  - Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation.
  - Fire watchers shall have fire-extinguishing equipment readily available and be trained in its use.
  - Fire watchers will be trained in the specific fire hazards.
  - Assigned fire watchers must be trained in the use of fire extinguishing equipment and familiar with the facilities for sounding an alarm in the event of a fire.

- Fire watchers must be maintained at least a half-hour after completion of welding or cutting operations to detect and extinguish possible smoldering fires.
- Ventilation
  - The supervisor will determine the number, location, and capacity of ventilation devices.
  - Ventilation will be sufficient to protect passersby as well as the welder.
  - Oxygen shall never be used for ventilation.
  - Don't rely on general ventilation as the only means of protection when air contaminants are toxic.
  - Where ventilation is not sufficient to provide clean, respirable air, respirators will be specified according to specifications applicable to your facility and policies.
- Personal Protective Equipment
  - Proper eye protection i.e., helmets, hand shields, goggles, and spectacles, must be provided.
  - Proper protective clothing must be provided.
  - First-aid equipment shall always be available.
  - Airline respirators will be provided for confined space jobs when sufficient ventilation cannot be provided without blocking the exit.
  - When known or unknown toxic materials are present in a job, respirators will be provided that match the hazard for all employees. The hazards include zinc or zinc-bearing base or filler metals, lead base metals, cadmium-bearing filler metals, chromium-bearing or chromium-coated metals, mercury, nitrogen dioxide, and beryllium. Due to beryllium's extreme danger, both ventilation and air line respirators will be used.
  - Where screens are not sufficient to protect welders and passersby from arc radiation, the company will provide eye protection with appropriate helmets, filter lens goggles, or hand shields. The helmets and shields will be maintained in good repair.
  - When a toxic preservative is detected on a surface in a confined space, airline respirators will be provided (or the toxic coating will be stripped from at least four inches around the heated area).
- Confined Spaces
  - Evaluate the space, the hazardous atmosphere, the floor surface, and the interior surface for flammability, combustibility, or toxic fumes that could result from the welding process.
  - Perform atmospheric testing for oxygen deficiency, and for toxic and flammable or combustible gases before and during entry. If the tests show that flammable or combustible gases are present, the space must be ventilated until safe to enter. If the atmosphere is toxic and cannot be cleared through ventilation, appropriate respiratory equipment must be used. All energy sources that could cause employee injury must be disconnected and locked in the "off" position before entry.

- Ventilation must be provided. Confined spaces such as manholes, tunnels, trenches, and vaults, are particularly hazardous working areas made more dangerous by welding.
  - Gas cylinders and welding machines shall be left on the outside of the confined space. Before operations are started, heavy portable equipment mounted on wheels shall be securely blocked to prevent accidental movement.
  - Where a welder must enter a confined space through a manhole or other small opening, means shall be provided for quickly removing him in case of emergency. When safety harnesses and lifelines are used for this purpose, they shall be so attached to the welder's body that his body cannot be jammed in a small exit opening. An attendant with a preplanned rescue procedure shall be stationed outside to always maintain communication with the welder and be capable of putting rescue operations into effect.
  - When arc welding is to be suspended for any substantial period, such as during lunch or overnight, all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur, and the machine disconnected from the power source.
  - To eliminate the possibility of gas escaping through leaks of improperly closed valves, when gas welding or cutting, the torch valves shall be closed and the fuel-gas and oxygen supply to the torch positively shut off at some point outside the confined area whenever the torch is not to be used for a substantial period, such as during lunch hour or overnight. Where practicable the torch and hose shall also be removed from the confined space after welding operations are completed the welder.
  - Applicable warning signs will be posted as necessary.
- Flammable, Toxic, or Hazardous Materials
    - The company will designate a competent person to test the flammability of unknown coatings.
    - When a coating is found to be highly flammable, it will be stripped from the area to prevent fire.
    - Any welding, cutting, or burning of lead base metals, zinc, cadmium, mercury, beryllium or exotic metals or paints not listed here shall have proper ventilation or respiratory protection.
- Electrical Equipment
    - Do not arc weld while standing on damp surfaces or in damp clothing.
    - Properly ground, install, and operate equipment.
    - Do not use defective equipment.
    - Use well-insulated electrode holders and cables.
    - Insulate yourself from both the work and the metal electrode and holder.
    - Don't wrap a welding cable around your body.
    - Wear dry gloves and rubber-soled shoes.
    - Do not use damaged or bare cables and connectors.
    - In case of electric shock, don't touch the victim. Turn off the current at the control box and then call for help. After the power is off, you may perform cardiopulmonary resuscitation (CPR) if necessary.

- Fall Protection
  - A welder or helper working on platforms, scaffolds, or runways shall be protected against falling. This may be accomplished using railings, safety belts, lifelines, or some other equally effective safeguards.
  - Welders shall place welding cable and other equipment so that it is clear of passageways, ladders, and stairways.
  - Maintain a clear welding or cutting area to prevent slips, trips, and falls.

## **First Aid Equipment**

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First aid equipment is always available.

## **Inspections**

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Several inspections are required under the welding and cutting regulations. To make inspections efficient, we have compiled a list of inspection items to be checked before welding or cutting.

## **Maintenance**

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Any deficiencies found in our welding and cutting equipment are repaired, or defective parts replaced, before continued use. However, no modifications or additions that affect the capacity or safe operation of the equipment may be made without the manufacturer's written approval. If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals, must be changed accordingly. In no case can the original safety factor of the equipment be reduced.

While defective parts may be found, we prefer to invest time and effort into the proper upkeep of our equipment, which results in day-to-day reliability. Keeping up with the manufacturer's recommended maintenance schedules, and completing the proper records, will also increase our welding and cutting equipment's longevity.

The Warehouse Department follow(s) the manufacturer's operator instruction manual for daily or weekly maintenance.

Periodic maintenance (those completed monthly or less frequently) is done by a factory-trained-expert, or a dealer.

## **Signs and Labels**

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Our company posts signs as follows:

- Warning Sign: After welding operations are completed, the welder shall mark the hot metal or provide some other means of warning other workers.
- Precautionary Labels: Several potentially hazardous materials are employed in fluxes, coatings, coverings, and filler metals used in welding and cutting or are released to the atmosphere during welding and cutting. These include but are not limited to the materials

itemized in OSHA regulations. The suppliers of welding materials shall determine the hazard, if any, associated with the use of their materials in welding, cutting, etc.

- All filler metals and fusible granular materials shall carry the following notice, as a minimum, on tags, boxes, or other containers:

**CAUTION**

Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. Use adequate ventilation. See ANSI Z49.1-1967 Safety in Welding and Cutting published by the American Welding Society.

Brazing (welding) filler metals containing cadmium in significant amounts shall carry the following notice on tags, boxes, or other containers:

**WARNING**

CONTAINS CADMIUM--POISONOUS FUMES MAY BE FORMED ON HEATING Do not breathe fumes. Use only with adequate ventilation such as fume collectors, exhaust ventilators, or air-supplied respirators. See ANSI Z49.1-1967. If chest pains, cough, or fever develops after use call physician immediately.

Brazing and gas welding fluxes containing fluorine compounds shall have a cautionary wording to indicate that they contain fluorine compounds. One such cautionary wording recommended by the American Welding Society for brazing and gas welding fluxes reads as follows:

**CAUTION**

**CONTAINS FLUORIDES**

This flux when heated gives off fumes that may irritate eyes, nose, and throat.

1. Avoid fumes--use only in well-ventilated spaces.
2. Avoid contact of flux with eyes or skin.
3. Do not take internally.

Compressed gas cylinders shall be legibly marked, for the purpose of identifying the gas content, with either the chemical or the trade name of the gas. Such marking shall be by means of stenciling, stamping, or labeling, and shall not be readily removable. Whenever practical, the marking shall be located on the shoulder of the cylinder. This method conforms to the American National Standard Method for Marking Portable Compressed Gas Containers to Identify the Material Contained, ANSI Z48.1-1954, which is incorporated by reference as specified in 29 CFR 1910.6.

A warning should be placed near cylinders having leaking fuse plugs or other leaking safety devices not to approach them with a lighted cigarette or other source of ignition.

Such cylinders should be plainly tagged; the supplier should be promptly notified, and his instructions followed as to their return.

The following sign shall be conspicuously posted at each manifold:

|                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p style="text-align: center;"><b>Low-Pressure Manifold</b></p> <p>Do Not Connect High-pressure Cylinder</p> <p>Maximum Pressure--250 PSIG (1.7 MPa)</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|

- Aboveground piping systems shall be marked in accordance with the American National Standard Scheme for the Identification of Piping systems, ANSI A13.1-1956, which is incorporated by reference as specified in 29 CFR 1910.6. 06-01-96
- Station outlets shall be marked to indicate the name of the gas.
- Gages on oxygen regulators shall be marked USE NO OIL.
- Acetylene generators.
  - Generators shall be of approved construction and shall be plainly marked with the maximum rate of acetylene in cubic feet per hour for which they are designed.
  - the weight and size of carbide necessary for a single charge.
  - the manufacturers name and address; and the name of number of the type of generator.
- Carbide shall be of the size marked on the generator nameplate.
- Rating and pressure limitations. The total hourly output of a generator shall not exceed the rate for which it is approved and marked. Unless specifically approved for higher ratings, carbide-feed generators shall be rated at 1 cubic foot (0.028 m<sup>3</sup>) per hour per pound of carbide required for a single complete charge.
- Operating instructions shall be posted in a conspicuous place near the generator or kept in a suitable place available for ready reference.
- Packages containing calcium carbide shall be conspicuously marked CALCIUM CARBIDE--DANGEROUS IF NOT KEPT DRY or with equivalent warning.

## COMPRESSED GASES

### Purpose

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It is the policy of Global Comfort Group to permit only trained and authorized employees to handle, store, use, and inspect compressed gases and equipment at any time. This policy is applicable to daily users and those who only occasionally have cause to use the equipment.

This written Compressed Gas Plan describes methods and practices for care and use of compressed gases that can be read and understood by all managers, supervisors, and employees at Global Comfort Group. This written plan is intended to be used to:

- Create an awareness of the hazards among our workforce,

- Standardize procedures for use and care of the equipment,
- Provide a consistent format for training employees on the proper procedures to be used,
- Minimize the possibility of injury or harm to our employees, and
- Demonstrate Global Comfort Groups compliance with OSHA's compressed gas requirements.

## **Personal Protective Equipment**

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We have assessed the hazards associated with the compressed gases and equipment at Global Comfort Group and have taken measures to eliminate or reduce their presence with engineering and administrative controls. Where these controls were not enough for employee protection, our company provides all necessary personal protective equipment according to both our written respirator and personal protective equipment (PPE) programs. See the respirator program for details about respirator selection, training, inspection, cleaning, maintenance, storage, work area surveillance, program evaluation, user physical fitness determination, and air quality standards. See the PPE program for details about hazard assessments, PPE selection, employee training, PPE cleaning and maintenance, and PPE-specific information.

## **Inspection Procedures**

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The RSO and/or Maintenance Supervisor is qualified to determine that compressed gas cylinders at the company are in a safe condition to the extent that can be determined by visual inspection. Inspections of cylinders are conducted monthly.

Our inspections are conducted as prescribed by the following, as applicable:

- 49 CFR 171 - 179 and 49 CFR 103 (Hazardous Materials Regulations under the Department of Transportation).
- Compressed Gas Association Pamphlet C-6-1968 (Standards for Visual Inspection of Steel Compressed Gas Cylinders).
- Compressed Gas Association Pamphlet C-8-1962 (Standard for Requalification of DOT-3HT Seamless Steel Cylinders).

Of course, if a cylinder is found to be unfit in its present condition, then the RSO and/or Maintenance Supervisor must determine whether it can be repaired or must be scrapped. If a cylinder is repaired, it can only go back into service if the defect is corrected as specified according to the requirements listed above.

## **Handling Procedures**

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Compressed gases are handled when employees perform any of the following activities:

- Identify contents.
- Fill, transfill, change gas service, maintain, and move containers; and
- Connect containers and withdraw content.

We follow the safe handling procedures found in the CGA pamphlet series, including the P-1-1991 pamphlet. Our handling procedures include the following:

- Identify a gas and its dangers before using it. Look for this information on labels, MSDSs, and cylinder markings. If you don't know what's in a cylinder, don't use it.
- Examine cylinders as soon as you receive them. If you detect signs of damage or leakage, move them to a safe, isolated area and return them to the supplier as soon as possible.
- Use only regulators, pressure relief devices, valves, hoses, and other auxiliary equipment that is designed for the specific container and compressed gas/cryogenic liquid to be used.
- Do not interchange equipment between different types of gases.
- Make sure valves, hoses, connectors, and regulators are in good condition. Don't use cylinders without them.
- Use pressure relief devices and safety devices to help maintain cylinder or system pressure at the desired levels. (Exceeding the desired pressure could damage the cylinder or system.)
- Check to see if regulators, hoses, and gauges can be used with different gases. Assume they cannot.
- Never open valves until regulators are drained of gas and pressure-adjusting devices are released. When opening cylinders, point outlets away from people and sources of ignition, such as sparks or flames. Open valves slowly. On valves without hand wheels, use only supplier-recommended wrenches. On valves with hand wheels, never use wrenches.
- Do not tamper with connections and do not force connections together.
- Do not hammer valves open or closed.
- Do not drop, bang, slide, clank, or roll cylinders.
- Cylinders may be rolled along the bottom rim.
- Don't let cylinders fall or have things fall on them.
- Don't lift a cylinder with its cap unless using hand trucks so designed.
- Use carts or other material handling equipment to move cylinders. Use ropes and chains to move a cylinder only if the cylinder has special lugs to accommodate this. Some cylinders may require special hand trucks.
- Keep cylinders secured and upright. (But never secure cylinders to conduit carrying electrical wiring.)
- When transporting compressed gas cylinders, be sure the vehicle is adequately equipped to haul compressed gases safely. Stop the engine while loading or unloading flammable compressed gases.
- Don't drive a vehicle hauling liquefied hydrogen through a tunnel.
- Know accident procedures.

## **Storage Procedures**

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The following activities are involved in safely storing compressed gases:

- Post areas where gases are present,
- Group gases,

- Separate combustibles,
- Avoid corrosives or areas where container damage can occur,
- Position containers properly, and
- Use indoor and outdoor storage appropriately.

We follow the safe storage procedures found in the CGA pamphlet series, including the P-1-1991 pamphlet. Our storage procedures for compressed gases include the following:

- Store cylinders upright.
- When a cylinder is in storage, keep the steel protective cap screwed on. This step reduces the chance that a blow to the valve will allow gas to escape.
- Group cylinders by types of gas.
- Store full and empty cylinders apart.
- Store gases so that old stock is removed and used first.
- To keep cylinders from falling over, secure them with chains or cables.
- Store compressed gas containers in dry, well-ventilated areas away from exits and stairways. If outside, store containers off the ground and out of extremely hot or cold environments.
- Do not store compressed gas containers in high pedestrian and vehicle traffic areas. (Containers are more likely to be damaged there.)
- Store oxygen cylinders at least 20 feet from flammables or combustibles or separate them by a 5-foot, fire-resistant barrier.
- Keep oil and grease away from oxygen cylinders, valves, and hoses.
- If your hands, gloves, or clothing are oily, do not handle oxygen cylinders.
- Make sure fire extinguishers near the storage area are appropriate for gases stored there.
- Post signs stating the name(s) of gas present and NO SMOKING where gases are stored.

## **Usage Procedures**

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Safe use of compressed gases involves the following activities:

- Properly handle leaking containers,
- Prevent abuse,
- Identify contents,
- Properly use container and valve caps and plugs, and
- Return empty containers.

We follow the safe usage procedures found in the CGA pamphlet series, including the P-1-1991 pamphlet. Our procedures for using compressed gases include the following:

- Remove any leaking containers to a well-ventilated area and post a warning of the hazard.
- Shut a leaking valve and tighten the valve gland or nut. Then try opening the valve; if it still leaks, close it, and tag the container unserviceable.

- Make sure labels are legible before using containers; otherwise, return the containers to the supplier.
- Do not misuse containers (i.e., using them for support); only use them as they were intended.
- Keep containers away from fire, sparks, and electricity.
- Don't smoke or allow others to smoke in the vicinity of flammable compressed gas containers.
- Do not subject containers to extreme heat or cold.
- Use a respirator or SCBA (self-contained breathing apparatus) according to OSHA regulations when using toxic compressed gas.
- Contact the manufacturer/supplier with questions about safe handling.
- Always keep removable caps and valve outlet caps/plugs on containers except when connecting to dispensing equipment.
- Do not use oxygen and compressed air interchangeably. They are not the same.
- Comply with ANSI Z49.1 when using or storing oxyfuel-gas containers for welding and cutting and other similar activities.
- When empty, close, and return cylinders. Empty cylinders must be marked MT or Empty.
- Empty acetylene cylinders must be labeled.
- Be sure valves are closed when not using the container and before returning containers.
- Properly label returning containers.
- Do not refill non-refillable containers once they are empty.

## **Gas-Specific Safety Procedures**

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Global Comfort Group complies with the following gas-specific procedures:

- General requirements for gases such as chlorine, sulfur dioxide, and nitrogen, in 29 CFR 1910.101.
- Acetylene requirements in 29 CFR 1910.102.
- Hydrogen gas requirements in 29 CFR 1910.103.
- Liquid hydrogen requirements in 29 CFR 1910.103.
- Oxygen gas requirements in 29 CFR 1910.104.
- Liquid oxygen requirements in 29 CFR 1910.104.
- Nitrous oxide requirements in 29 CFR 1910.105.
- Anhydrous ammonia compressed gas requirements in 29 CFR 1910.111.

## **Compressed Gas Emergency Procedures**

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In an emergency, the RSO may seek advice from the Chemical Transportation Emergency Center, known as CHEMTREC, which can be reached 24 hours a day by dialing (800) 424-9300. This service is provided by the Chemical Manufacturers Association. A similar Canadian service, CANMTEC, is available at (613) 996-6666.

Refer to our written emergency action plan for employee escape procedures and assignments during a compressed gas emergency.

## **Training Program**

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The RSO is responsible for training personnel who will handle, store, or use compressed gas. Under no circumstances will an employee handle, store, or use compressed gas until he/she has successfully completed this company's compressed gas training program. This includes all new workers who will handle, store, and use compressed gases, regardless of claimed previous experience.

The RSO and the Area Supervisor is responsible for identifying all new employees in our Employee Orientation Program and planning with department management to schedule the instruction for those employees previously identified in this policy as needing training.

General training elements include the following:

- Compressed gases and equipment at the company.
- Hazards of compressed gases and equipment at the company.
- Personal protective equipment.
- Inspection procedures.
- Handling procedures.
- Storage procedures.
- Usage procedures.
- Gas-specific safety procedures.
- Compressed gas emergency procedures.

## **Disciplinary Procedures**

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Constant awareness of and respect for compressed gas safety procedures and compliance with all safety rules are considered conditions of employment. Supervisors and individuals in the Safety and Personnel Department reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this compressed gas safety program.

## **ENVIRONMENTAL MANAGEMENT PLAN**

### **Purpose**

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This plan summarizes Global Comfort Groups environmental management system. The principal elements of this plan described in this manual are:

- Environmental Policy
- Facility Impact Analysis
- Goals and Objectives
- Employee Awareness and Education
- Incident Preparedness Plan
- Public Education/Communication
- Work with Suppliers and Contractors
- Inform Regulatory Agencies

- Information and Technology Exchange
- Measurement of Progress and Performance
- Corrective Action Plan

## **Scope**

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This plan provides a description of Global Comfort Group environmental management system. The program is designed to proactively manage environmental issues to improve environmental performance.

## **Environmental Policy**

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Top management endorses the Global Comfort Groups Environmental Policy. Global Comfort Groups Environmental Policy is reviewed annually by management. The policy is communicated to all employees and is available to the public upon request.

### Global Comfort Groups Environmental Policy:

It is Global Comfort Groups policy to operate its business as a corporate citizen committed to sound environmental management and with concern for the well-being of our common environment. Our goal is to ensure that company facilities and operations are in compliance with federal, state, and local environmental standards. We believe that an appropriate balance can and should be achieved between environmental goals and economic health. We intend to be a leader in responsible environmental management. This requires each Global Comfort Group employee to participate in and accept responsibility for achieving the following goals:

- Operation of our facilities in an environmentally sound manner.
- Safe handling of production materials and byproducts.
- Conservation and recycling of raw materials and reduction in the amount of waste generated by the company's production processes.

The company's commitment to these goals includes the following specific elements:

- All Global Comfort Group employees will operate in an environmentally responsible manner and in compliance with environmental laws and regulations.
- Global Comfort Group will maintain compliance programs to inform and train employees in the performance of their duty to fulfill the company's environmental policies.
- Global Comfort Group management will make environmental responsiveness and resource conservation an integral part of business management and will support finding sound solutions to such environmental problems as may arise.

Due to the nature of Global Comfort Group business, sensible and responsible environmental management is principally a matter for our local operations. Global Comfort Group strives to manage its activities in a manner that will achieve the goals of this Environmental Policy. Each employee is expected to work toward these goals and is encouraged to advise his or her supervisor promptly of any situation that may conflict with this Policy.

## **Goals and Objectives**

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Our environmental goals have been developed based on our environmental impacts, technological options, and financial, operational, and business plans.

## **Employee Awareness and Education**

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Global Comfort Group conducts environmental awareness training for all employees. The training includes awareness of the environmental policy of the organization, significant environmental impacts of their work, their roles, and responsibilities in conformance with regulations and attainment of goals and objectives. Global Comfort Group monitors the training activity for all personnel. The training coordinator is responsible for maintaining and reviewing employee training records.

## **Incident Preparedness Plan**

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Global Comfort Group has the appropriate plans in place to identify the potential for and respond to accidents and emergency situations. These plans are reviewed on an annual basis or after the occurrence of accidents or emergency situations.

## **Public Education/Communication**

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Global Comfort Group has established a procedure for communications with the public, media, neighbors, community groups, regulators, local officials, responders, and other interested groups regarding the environmental management program. External communication regarding the environmental policy or other aspects of the environmental program is conducted by [Safety Manager Name].

## **Work with Suppliers and Contractors**

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Global Comfort Group relies on input from our suppliers and contractors with regards to their products. The Company educates all first-tier vendors and contractors on the environmental management program and our organization's environmental policy, goals, and objectives and asks for vendors' and contractors' help in adhering to the policy and meeting the goals and objectives.

## **Work with Customers**

Prior to any project, plans should be established to remove and control all waste materials leaving the customer location. The lead technician can conduct this assessment and making the necessary arrangements.

Materials that can be separated for scrap or recycling shall be identified and arrangements made to have those materials removed from the location in a timely manner and handled accordingly.

All employees understand the goal to reduce the amount of trash we send to local landfills. Technicians understand the protocol to capture and recycle all fluids and materials possible to lessen the impact on the environment.

# FALL PROTECTION

## Purpose

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The purpose of this program is to provide fall protection procedures to prevent injury to employees while performing work assignments at elevated levels.

Any changes to this Fall Protection Program must be approved by the Safety Manager, who is designated as the Qualified Person. This is based on training received in fall protection planning and has demonstrated skills and knowledge in the preparation of fall programs, plans and the hazards involved.

## Scope

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Applies to all Global Comfort Group employees who have work assignments at work levels that exceed 6 feet in height where guardrails or nets are not utilized when doing a construction industry function and 4 feet when doing a general industry function. This includes work near and around excavations. Guardrails, safety nets, or personal fall arrest systems shall be used where practical. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers Global Comfort Group employees and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

## Definitions

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"Anchorage" means a secure point of attachment for lifelines, lanyards, or deceleration devices.

"Body belt (safety belt)" means a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device.

"Body harness" means straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders with means for attaching it to other components of a personal fall arrest system.

"Buckle" means any device for holding the body belt or body harness closed around the employee's body.

"Carabineer" - see Snap hook.

"Connector" means a device which is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a carabineer, or it may be an integral component of part of the system (such as a buckle or D-ring sewn into a body belt or body harness, or a snap-hook spliced or sewn to a lanyard or self-retracting lanyard).

"Deceleration device" means any mechanism, such as a rope grab, rip-stitch lanyard, specially woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards, etc., which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

"Deceleration distance" means the additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's body belt or body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.

"Equivalent" means alternative designs, materials, or methods to protect against a hazard which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

"Failure" means load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

"Free fall" means the act of falling before a personal fall arrest system begins to apply force to arrest the fall.

"Free fall distance" means the vertical displacement of the fall arrest attachment point on the employee's body belt or body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

"Guardrail system" means a barrier erected to prevent employees from falling to lower levels.

"Infeasible" means that it is impossible to perform the inspection work using a conventional fall protection system (i.e., guardrail system, safety net system, or personal fall arrest system) or that it is technologically impossible to use any one of these systems to provide fall protection.

"Lanyard" means a flexible line of rope, wire rope, or strap which generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline, or anchorage.

"Leading edge" means the edge of a floor, roof, or formwork for a floor or other walking/working surface (such as the deck) which changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed. A leading edge is an "unprotected side and edge" during periods when it is not actively and continuously under construction.

"Lifeline" means a component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

"Lower levels" means those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.

"Personal fall arrest system" means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt, or body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.

"Positioning device system" means a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.

"Rope grab" means a deceleration device which travels on a lifeline and automatically, by friction, engages the lifeline and locks to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking, or both.

"Safety Nets...Safety nets shall be provided when workplaces are higher than 25 feet above ground or water surfaces or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines or safety belts are impractical.

Nets shall extend 8 feet beyond the edge of the work surface where employees are exposed and shall be installed as close under the work surface as practical but in no case more than 25 feet below the work surface. Nets shall be positioned in a manner to prevent the user from coming into contact with below surfaces or structures. Proper clearance positioning of nets shall be determined by impact load testing. Work procedures shall not begin until nets are in place and have been properly tested.

New nets shall meet accepted performance standards of 17,500-foot pounds minimum impact resistance as determined and certified by the manufacturers and shall bear a label of proof test. Edge ropes shall provide a minimum breaking strength of 5000 pounds.

"Self-retracting lifeline/lanyard" means a deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

"Snap hook" means a connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. Snap hooks are generally one of two types: (1) The locking type with a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection; or (2) The non-locking type with a self-closing keeper which remains closed until pressed open for connection or disconnection. As of January 1, 1998, the use of a non-locking snap hook as part of personal fall arrest systems and positioning device systems is prohibited.

"Unprotected sides and edges" mean any side or edge (except at entrances to points of access) of a walking/working surface, e.g., floor, roof, ramp, or runway where there is no wall or guardrail system at least 39 inches (1.0 m) high.

"Walking/working surface" means any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork, and concrete reinforcing steel but not including ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.

"Work area" means that portion of a walking/working surface where job duties are being performed.

### Drawing of Components



Figure A

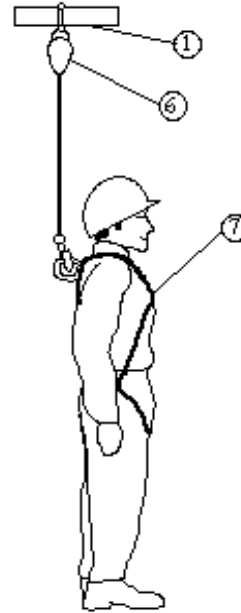


Figure B

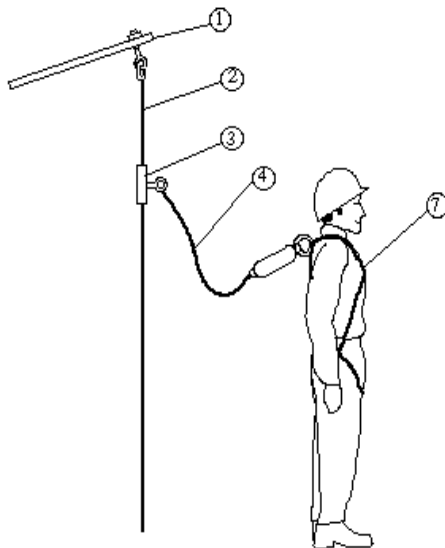


Figure C

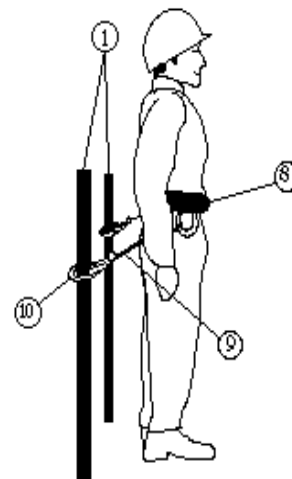


Figure D

1. Tie-off Point
2. Lifeline
3. Rope Grab
4. Shock Absorbing Lanyard
5. Cross-Arm Strap
6. Retractable Lifeline
7. Full-Body Harness
8. Restraining Belt

## **Responsibilities**

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### **Operations Manager**

It is the responsibility of the local operations manager (designated competent person) to implement this Fall Protection Program. Continual observational safety checks of work operations and the enforcement of the safety policy and procedures shall be regularly enforced. All jobs shall be pre-planned prior to the start of work.

### **Supervisor**

The Supervisor shall ensure that all persons assigned to work at elevated levels, exceeding 6 feet in height or more for construction activities and 4 feet or more for general industry activities above lower level and where guardrails or nets are not utilized, be protected by personal fall protection equipment.

- Supervisors shall make exposure determinations and shall discuss with their employees the extent to which scaffolds, ladders or vehicle mounted work platforms can be used.
- Ensure that fall protection equipment is available and in safe working condition.
- Provide for emergency rescue in the event of a fall. Pre-plan the job to ensure that employees have been properly trained in the use, limitations, inspections and rescue procedures and that training records are on file.

### **Employees**

Employees shall ensure they have and use the fall protection equipment as required by this program and:

- Understand the potential hazards of working at elevated levels as well as gaining access to and from the work location.
- Understand the use and limitations of such equipment.
- Pre-plan the job with his/her supervisor to agree that the job can be done safely.
- Inspect such equipment before each use and to report defective equipment immediately to their supervisor.

## **Procedure**

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Fall protection is required whenever employees are potentially exposed to falls from heights of six feet or greater to lower levels for construction activities (4 feet or more for general industry activities). This includes work near and around excavations. Use of guard rails, safety net, or personal fall arrest systems should be used when the standard methods of protection are not feasible, or a greater hazard would be created.

When purchasing equipment and raw materials for use in fall protection systems applicable ANSI, ASTM or OSHA approved equipment shall be used.

### **Minimum Standards**

The following are minimum standards for Global Comfort Group employee personal fall protection systems:

- Connectors shall be drop forged, pressed, or formed steel, or made of equivalent materials.

- Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.
- D-rings and snap hooks shall have a minimum tensile strength of 5,000 pounds.
- D-rings and snap hooks shall be proof-tested to a minimum tensile load of 3,600 pounds without cracking, breaking, or taking permanent deformation.
- Snap hooks shall be sized to be compatible with the member to which they are connected to prevent unintentional disengagement of the snap hook. Only a locking type of snap hook designed and used to prevent disengagement of the snap hook by the contact of the snap hook keeper by the connected member shall be used.
- Horizontal lifelines shall be designed, installed, and used, under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two.
- Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds. Where vertical lifelines are used, each employee shall be attached to a separate lifeline.
- Lifelines shall be protected against being cut or abraded.
- Self-retracting lifelines and lanyards which automatically limit free fall distance to 2 feet or less shall be capable of sustaining a minimum tensile load of 3,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.
- Self-retracting lifelines and lanyards which do not limit free fall distance to 2 feet or less, rip stitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of 5,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.
- Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached, or shall be designed, installed, and used as part of a complete personal fall arrest system which maintains a safety factor of at least two and under the supervision of a qualified person.
- Systems used by an employee having a combined person and tool weight more than 310 pounds shall be modified to provide proper protection for such heavier loads.
- The attachment point of the body harness shall be in the center of the wearer's back near shoulder level, or above the wearer's head, except when climbing.
- Body harnesses and components shall be used only for employee protection and not to hoist materials.
- Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.
- Provide for prompt rescue of employees in the event of a fall or assure that employees can rescue themselves.
- Personal fall arrest systems shall be inspected prior to each use for wear, damage and other deterioration, and defective components shall be removed from service.
- Personal fall arrest systems shall not be attached to guardrail systems, nor shall they be attached to hoists unless prior approval is obtained from a competent person.
- When a personal fall arrest system is used at hoist areas, it shall be rigged to allow the movement of the employee only as far as the edge of the walking/working surface.

## **Stopping a Fall**

The arresting force on an employee stopped by a fall shall be limited to a maximum arresting force of 1,800 pounds when wearing a body harness.

The fall arrest system shall be rigged such that an employee can neither free fall more than 6 feet, nor contact any lower level.

The fall arrest system shall bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet.

The fall arrest system shall have sufficient strength to withstand twice the potential impact energy of an employee free falling 6 feet, or the free fall distance permitted by the system, whichever is less.

## **Protection From Falling Objects**

When employees are required to work in the near vicinity of others working with materials, tools, or equipment at elevated levels, Barricades around the immediate area of the overhead work shall be erected to prohibit employees from entering the barricaded area.

Employees performing work at elevated levels shall keep tools, materials, and equipment away from the edge to keep potential objects from falling over the side. Where practical, tools, etc. shall be secured with rope, wire, etc. to keep them from falling.

## **Portable Ladders**

Three-point climbing is required while ascending/descending ladders. While on ladders, both hands and one foot, or both feet and one hand shall always be in contact with the ladder.

Tools required to perform a task shall be transported by a mechanical carrier such as a tag line, suspended bucket, or tool belt.

- Tools shall not be carried by hand while climbing.
- Hands must be free to grip the ladder.
- Tools shall not be carried in clothing pockets.
- Tools shall be pulled up to the job site only after reaching the area of work.

When work is to be performed from straight/extension ladders, fall protection shall be utilized when heights exceed 6 feet.

Straight ladders shall be tied off at the top to prevent them from moving. A second person shall steady the ladder at the base while it is being tied off at the top by another employee. Do not tie off fall protection equipment to the ladder.

## **Storage**

A dedicated storage area shall be provided for the storage of fall protection equipment and all components. The storage area shall keep the equipment clean, dry, and free from oils, chemicals, paints, and excessive heat.

## **Inspections**

Fall protection equipment shall be inspected before each use for wear, damage, other deterioration, or other defects.

## **Elevated Personnel Platforms**

Work performed, regardless of the nature of the work, from personnel platforms raised by forklifts, cranes, scissor lifts, etc., shall require the use of a full body harness and shall be connected to the platform.

## **Rescue**

Prompt rescue of employees shall be provided in the event of a fall or shall assure the employees are able to rescue themselves. The pre-planning stage prior to the beginning of each elevated work assignment shall be evaluated by the supervisor to provide rescue of employees involved in a fall.

## **Fall Protection Plan**

This option is available only to employees engaged in leading edge work who can demonstrate that it is infeasible, or it creates a greater hazard to use conventional fall protection equipment. The fall protection plan shall conform to the following provisions:

- The fall protection plan shall be prepared by a qualified supervisor and developed specifically for the site where the leading-edge work is being performed.
- The fall protection plan shall document the reasons why the use of conventional fall protection systems (guardrail systems, personal fall arrest systems, or safety net systems) are infeasible or why their use would create a greater hazard.
- The fall protection plan shall identify each location where conventional fall Protection methods cannot be used.
- These locations shall then be classified as controlled access zones.

## **Controlled Access Zones**

When used to control access to areas where leading edge or other operations are taking place the controlled access zone shall be defined by a control line or by any other means that restricts access.

When control lines are used, they shall be erected not less than 6 feet (1.8 m) nor more than 25 feet (7.7 m) from the unprotected or leading edge.

The control line shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge.

The control line shall be connected on each side to a guardrail system or wall.

- Control lines shall consist of ropes, wires, tapes, or equivalent materials.
- Each line shall be flagged or otherwise clearly marked at not more than 6-foot (1.8 m) intervals with high-visibility material.
- Each line shall be rigged and supported in such a way that its lowest point (including sag) is not less than 39 inches (1 m) from the walking/working surface and its highest point is not more than 45 inches (1.3 m).

- Each line shall have a minimum breaking strength of 200 pounds.

Only employees engaged in the related work shall be permitted in the controlled access zone.

### **Safety Monitoring System**

When the use of conventional fall protection equipment is deemed infeasible, or the use of this equipment creates a greater hazard a Fall Protection Plan which includes a safety monitoring system shall be implemented by the supervisor.

Supervisors shall designate a competent person to monitor the safety of other employees. The competent person shall be assigned to:

- Recognize fall hazards.
- Warn employees if they are unaware of fall hazard or are acting in an unsafe manner.
- Be on the same working surface and in visual contact of working employees.
- Stay close enough for verbal communication; and
- Not have other assignments that would take his/her attention from the monitoring function.

### **Incident Investigations**

All incidents and near misses must be investigated according to Global Comfort Groups incident investigation procedure. Changes to the fall protection program shall be implemented if deemed appropriate from incident corrective actions.

### **Training**

Employees who may be exposed to fall hazards shall be trained to recognize the hazards of falling and understand the procedures to be followed to minimize these hazards.

The employee will be trained in the use and operation of fall arrest systems, inspections, and maintenance procedures.

Training must be conducted initially, and refresher training conducted annually or as needed due to deficiencies in training, changes in the workplace, changes in fall protection systems or procedures that render previous training obsolete or inadequacies in an employee's understanding of previous training.

Training must be documented in writing. Training records shall include:

- Who was trained.
- When and dates of training.
- Signature of person providing training.
- Date training was deemed adequate.

Training records shall be retained on the Global Comfort Group server by HR.

# CONFINED SPACE

## PURPOSE

The purpose of this program is to ensure the safety of all James River Air employees and to comply with all federal and state requirements that pertain to confined spaces.

## SCOPE

This program covers all employees and other workers that may be involved in confined space entry. In general, James River Air employees are not allowed to enter Permit Required Confined Spaces. When work is performed on a non-owned or operated site, the operator's program shall take precedence. This policy provides James River Air with basic guidelines for confined space to protect employees in the event an operator's program doesn't exist or is less stringent.

## DEFINITIONS

Acceptable entry conditions - the conditions that must exist in a confined space to allow entry and to ensure that employees involved with a confined space entry can safely enter and work within the space.

Attendant - an individual stationed outside one or more Confined spaces who monitors the authorized Entrants and who performs all Attendant's duties. Attendants must have sufficiently completed and fully understands the Confined Space training and is approved by the HSE Manager to work in a confined space as an Attendant.

Authorized Entrant - an individual who is authorized to enter a confined space. Entrants must have sufficiently completed and fully understand the Confined Space training and is approved by the James River Air to work in a confined space as an Authorized Entrant.

Blanking or Blinding - the absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that can withstand the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

Confined Space is defined as: 1) A space that is large enough and so configured that an employee can bodily enter and perform assigned work; 2) Has limited or restricted means for entry or exit (for example, tanks, vessels, coolers, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and 3) Is not designed for continuous occupancy.

Double block and bleed - the closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

Emergency - any occurrence (including any failure of hazard control or monitoring equipment) or an event internal or external to the confined space that could endanger Entrants.

Engulfment - the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the

respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Entry - the action by which a person passes through an opening into a confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the Entrant's body breaks the plane of an opening into the space.

Entry permit - the written or printed document that is provided by H & M Electric and Construction, Inc. to allow and control entry into a confined space that contains the information specified in this program.

Entry Supervisor - the person responsible for determining if acceptable entry conditions are present at a confined space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this section.

Entry Supervisors must have sufficiently completed and fully understand the Confined Space training and is approved by the HSE Manager to work in a confined space. An Entry Supervisor may also serve as an Attendant or as an authorized Entrant if that person is trained and equipped as required by this section for each role he or she fills. Also, the duties of Entry Supervisor may be passed from one individual to another during an entry operation. The Entry Supervisor is responsible for testing and monitoring the atmosphere conditions.

Hazardous atmosphere - an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a confined space), injury, or acute illness from one or more of the following causes:

- Flammable gas, vapor, or mist more than 10 percent of its lower flammable limit (LFL), (0% is normal).
- Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent, (20.9 % is normal).
- Any other atmospheric condition that is immediately dangerous to life or health. (Ex. - H<sub>2</sub>S 10%, 0% is normal).

Note: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communication Standard, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

Hot work permit - the written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

Immediately dangerous to life or health (IDLH) - any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a confined space.

**Inerting** - the displacement of the atmosphere in space by a non-combustible gas (such as nitrogen) to such an extent that the resulting atmosphere is non-combustible. This procedure produces an IDLH oxygen deficient atmosphere.

**Isolation** - the process by which a confined space is removed from service and completely protected against the release of energy and material into the space by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.

**Line Breaking** - the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

**Non-Permit Confined Space** - A confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

**Oxygen deficient atmosphere** - an atmosphere containing less than 19.5 percent oxygen by volume.

**Oxygen enriched atmosphere** - an atmosphere containing more than 23.5 percent oxygen by volume.

**Permit-Required Confined Space** - a confined space that has one or more of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere.
- Contains material that has the potential for engulfing an Entrant.
- Has an internal configuration such that an Entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard.

**Permit system** - the employer's written procedure for preparing and issuing permits for entry and for returning the confined space to service following termination of entry.

**Prohibited condition** - any condition in a confined space that is not allowed by the permit during the period when entry is authorized.

**Rescue service** - the personnel designated to rescue employees from Permit-Required Confined Spaces.

**Retrieval system** - the equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from confined spaces.

Testing - the process by which the hazards that may confront Entrants of a confined space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

## **RESPONSIBILITIES**

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### **Managers/Supervisor**

- Shall ensure that all employees have been trained and fully understand the requirements of this program.
- Shall provide the necessary equipment to comply with these requirements and ensure that all employees are trained in its use.
- Shall ensure that all confined space assessments have been conducted and documented.
- Shall ensure that provisions and procedures are in place for the protection of employees from external hazards including but not limited to pedestrians, vehicles, and other barriers and by use of the pre-entry checklist verifying that conditions in the permit space are acceptable for entry during its duration.
- Shall ensure that all Permit-Required Confined Spaces permits are posted.
- Shall ensure an annual review of the program including all entry permits issued that during that annual period.
- Shall ensure that confined spaces are identified properly as either a Non-Permit Confined Space or a Permit-Required Confined Space.
- Shall ensure that all confined spaces that have been identified as “no entry” have signs that state, “DANGER- DO NOT ENTER”.
- Shall ensure signs have been posted at all Permit-Required Confined Space areas that state, “DANGER – PERMIT ENTRY CONFINED SPACE” along with the proper warning word such as “ASPHYXIAANT, FLAMMABILITY or TOXIC HAZARD”
- Shall file all permits at the area offices for review. Permits shall be kept on file for one year.

### **Affected Employee**

- Shall attend Confined Space Entry training commensurate with their duties and when duties change as required.
- Shall comply with all aspects of this program.

### **Authorized Entry Supervisor Duties**

- Shall have a tailgate safety meeting, with all workers to be involved in the confined space entry and review the job to be performed and what safety concerns may be present.
- Shall confirm that all isolation, Lock/out and Tag/outs have been completed prior to entry into a confined space.
- Shall ensure that the requirements of this program are followed and maintained.
- Shall test all atmosphere conditions prior to entry and shall complete and maintain the confined space permit form and have always it accessible for review on the job site.
- Shall notify the supervisor of entry into a confined space and notify the supervisor of any changes that may occur, during an entry.

- If the confined space poses a hazard that cannot be eliminated, the Entry Supervisor must arrange for a rescue service.

### **Authorized Attendant Duties**

- Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- Is aware of possible behavioral effects of hazard exposure in authorized Entrants.
- Continuously maintains communication and an accurate count of authorized Entrants in the confined space and ensures that the means used to identify authorized Entrants, and accurately identifies who is in the confined space.
- Remains outside the confined space during entry operations until relieved by another Attendant.
- Attendants are NOT allowed to monitor more than one confined space.
- Note: Attendants may enter a confined space to attempt a rescue, if they have been trained and equipped for rescue operations as required and only when they have been relieved by another authorized Attendant.
- Monitors activities inside and outside the confined space to determine if it is safe for Entrants to remain in the space and orders the authorized Entrants to evacuate the confined space immediately under any of the following conditions:
  - o If the Attendant detects a prohibited condition.
  - o If the Attendant detects the behavioral effects of hazard exposure in an authorized Entrant.
  - o If the Attendant detects a situation outside the space that could endanger the authorized Entrants.
  - o If the Attendant cannot effectively and safely perform all the duties required.
- Summon rescue and other emergency services as soon as the Attendant determines that authorized Entrants may need assistance to escape from confined space hazards.
- Takes the following actions when unauthorized persons approach or enter a confined space while entry is underway:
  - Warn the unauthorized persons that they must stay away from the confined space.
  - Advise the unauthorized persons to exit the confined space immediately, if they have entered the space.
  - Inform the authorized Entrants and the Entry Supervisor if unauthorized persons have entered the confined space.
- Performs no duties that might interfere with the Attendant's primary duty to monitor and protect the authorized Entrants.
- Authorized Attendants shall not monitor more than one confined space at a time.

### **Authorized Entrant Duties**

- Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.

- Uses appropriate personal protective equipment properly, e.g., face and eye protection, and other forms of barrier protection such as gloves aprons, coveralls, and breathing equipment.
- Is aware of possible behavioral effects of hazard exposure in authorized Entrants.
- Shall witness and verify calibrated air monitoring data and if approved, sign off, before entry is made.
- Is entitled to request additional monitoring at any time.
- Maintain communication with the Attendants to enable the Attendant to monitor the Entrants status as well as to alert the Entrant to evacuate if needed; and
- Exit from confined spaces as soon as possible when ordered by an Attendant or Entry Supervisor, when the Entrant recognizes the warning signs or symptoms of an exposure exists, or when a prohibited condition exists, or when an alarm is activated.

## **PROCEDURE**

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### **Non-Permit Confined Space Entry**

If testing of the confined space atmosphere is within acceptable limits without the use of forced air ventilation and the space is properly isolated, the space can be reclassified as a Non-Permit Confined Space.

Entrants and/or their representative shall be given the opportunity to observe and participate in the air monitoring process. Entrants shall review and sign the confined space permit. Employees may enter and work in the confined space if LEL, O<sub>2</sub>, and toxicity hazards remain at safe levels.

Complete the Confined Space Entry Permit to document that there are no confined space hazards. Make this certification available to all personnel entering space. A trained Attendant must always be outside the confined space. The Attendant must monitor the authorized entrants for the duration of the entry operation.

Exception: The Attendant requirements for Level I confined space entry may be exempted, if the job assessment is performed and has determined that there are no inherent dangers to allow single person entry.

- A stand-by rescue team is not required to be on site for Non-Permit Confined Space entries. When there are changes in the use and configuration of a confined space that might increase the hazards to the Entrants (e.g., using epoxy coating on a tank floor, welding, painting, etc.), re-evaluate the space. If necessary, reclassify the space as a Permit-Required Confined Space.
- Continuously monitor the confined space atmosphere to ensure that it is still safe.
- The space must not contain a hazardous atmosphere while personnel are inside.
- If a hazardous atmosphere is detected during an entry, personnel must immediately evacuate the space.
- Re-evaluate space to determine how the hazardous atmosphere developed.
- The Entry Supervisor shall cancel the entry permit.
- If necessary, reclassify the space as a Permit-Required Confined Space and reissue a new permit.

## **Permit-Required Confined Space Entry**

Permit-Required Confined Space entry is prohibited unless the Safety Manager is contacted, provided with the hazard information, confined space program policies are reviewed, and the employees are given the OK to do so. If the space is properly isolated and results of air monitoring are above acceptable parameters without local exhaust ventilation in operation, classify the entry as a Permit-Required Confined Space.

- Complete the Confined Space Entry Permit before proceeding with work in a Permit-Required Confined Space.
- Entrants and/or their representative shall be given the opportunity to observe and participate in the air monitoring process.
- Entrants shall review and sign the confined space permit.
- At least one trained Attendant must always be outside the Permit-Required Confined Space.
- The Attendant must monitor the authorized Entrants for the duration of the entry operation.
- Only authorized Entrants may enter a Permit-Required Confined Space.
- All Entrants must sign in and out on the entry permit when entering and leaving a Permit-Required Confined Space.
- The back of the permit or a sign-in sheet must be used for this purpose.
- Post signs and barricades outside all Permit-Required Confined Spaces to notify personnel that a confined space entry is in progress and unauthorized entry is prohibited.
- Conditions must be continuously monitored where Entrants are working to determine that acceptable conditions are maintained during entry.
- If a hazardous atmosphere is detected during an entry, personnel must immediately evacuate the space.
- The Entry Supervisor shall cancel the entry permit.
- Re-evaluate space to determine how the hazardous atmosphere developed.
- Take action to protect personnel before any subsequent activity to re-enter space takes place.
- Re-issue the Confined Space Entry Permit before allowing Entrants to re-enter the space.
- Employees or their representatives are entitled to request additional monitoring at any time.
- The permit must be terminated when the entry operations are complete or when permit conditions change (i.e., hazardous air monitoring results are noted, unsafe behaviors are observed, etc.).
- The minimum rescue equipment required for Permit-Required Confined Space entry is covered in the Rescue & Emergency section of this program.
- Permit-Required Confined Space entry operations will be reviewed when James River Air believes that the requirements of this confined space program may not adequately protect personnel.
- If deficiencies are found in the program, the program will be revised, and personnel will be trained in the new revisions before subsequent entries are authorized.

## **Pre-Job Planning and Space Preparation**

The Entry Supervisor must contact the Safety Manager to review the pre-job planning and testing prior to any Permit-Required Confined Space entry.

The Entry Supervisor must determine that the confined space is properly isolated by blinding, disconnecting, and/or by following local Lockout/Tagout procedures.

The Entry Supervisor must discuss with all Entrants the hazards of the space, communication methods and emergency procedures during the confined space entry.

Eliminate any condition making it unsafe to open the equipment to atmosphere.

Promptly guard the opening to prevent an accidental fall through the opening and to protect each employee working in the space from foreign objects entering the space.

If applicable, wash, steam, ventilate or degas the confined space to properly free it of possible contaminants. Vent vapors to a safe location.

Do not allow unauthorized personnel to enter a confined space. Barricade and/or guard all confined spaces to prevent entry of unauthorized Entrants.

Ensure that vehicle or other equipment exhaust does not enter the space.

### **Pre-Entry Safety Meeting**

The Entry Supervisor must declare when the confined space is ready for entry.

The Entry Supervisor shall hold a pre-entry safety meeting to discuss all requirements and procedures with all authorized Entrant(s) and Attendant(s) involved with the entry. He/she will discuss other concerns such as previous contents, vessel coating, PPE required etc., during this meeting.

The Entry Supervisor must coordinate entry operations when employees of more than one company are working simultaneously in the confined space. This coordination is necessary so that one company's work does not endanger the employees of another company.

### **Air Monitoring**

Before an employee enters the space, the internal atmosphere shall be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order. Monitoring of the space must inform the entrants of the potential hazards and results and they must participate in the permit review and signing. The air shall be periodically tested while continuous ventilation is applied.

Any employee who enters the space, or that employee's authorized representative, shall be provided an opportunity to observe the pre-entry testing required by this paragraph.

Employees or their representatives are entitled to request additional air monitoring at any time.

### **Ventilation**

Continuous forced air ventilation must be used and tested as follows:

- An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere.

- The forced air ventilation shall be so directed as to ventilate the immediate areas where an employee is or will be present within the space and shall continue until all employees have left the space.
- The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in the space.
- The atmosphere within space shall be periodically tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.

Any employee who enters the space, or that employee's authorized representative, shall be provided with an opportunity to observe the periodic testing and may request additional monitoring at any time. If a hazardous atmosphere is detected during entry each employee shall leave the space immediately and the space shall be evaluated to determine how the hazardous atmosphere developed; and measures shall be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.

### **Multiple Employer Procedure**

In order not to endanger the employees of any other employer, the Entry Supervisor shall:

- Verify that all contractor employees have been trained in confined space and that all contractor employees fully understand the Global Comfort Group procedures pertaining to Confined Space.
- Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the requirements of this section.
- Apprise the contractor of the elements, including the hazards identified and the employees experience with the space, that make the space in question a permit space.
- Inform the contractor of any precautions or procedures that Global Comfort Group has implemented for the protection of employees in or near permit spaces where contractor personnel will be working.
- Coordinate entry operations with the contractor, when both Global Comfort Group personnel and contractor personnel will be working in or near confined spaces.
- Debrief the contractor at the conclusion of the entry operations regarding the permit space program followed and regarding any hazards confronted or created in confined spaces during entry operations.

In addition to complying with the confined space requirements that apply to all employees; each contractor, who is retained to perform permit space entry operations, shall:

- Obtain any available information regarding confined space hazards and entry operations from the Entry Supervisor.
- Inform Global Comfort Group of the confined space program that the contractor will follow and of any hazards confronted or created in the confined space, either through a debriefing or during the entry operation.

## Rescue and Emergency Services

### General

- If entry is to be made into an IDLH atmosphere, or into a space that can quickly develop an IDLH atmosphere (if ventilation fails or for other reasons), the trained rescue team or service must be standing by at the permit space while work is being performed.
- In case of an emergency and/or injuries, the confined space site shall be secured, and emergency response personnel shall be notified to respond per the host facility emergency plan.
- If there is reliance on host facility or outside services for rescue the facility host or outside rescue team must be given an opportunity to examine the entry site, practice rescue and decline as appropriate. Reliance on host facilities for rescue services must be stated and agreed to in contract language.
- The Attendant shall order the other Entrants not to move the injured nor allow untrained or unauthorized workers into the space that are not trained to handle a confined space rescue.
- Safety Data Sheet's for substances that an injured Entrant was exposed to must be provided to the medical facility treating the injured worker.

### Permit-Required Confined Space Rescue:

- When the Attendant becomes aware of the need for rescue, the Attendant shall immediately summon the rescue team by the agreed upon communication method, verbally, radio or cell phone, without leaving the vicinity of the confined space.
- The Attendant shall prevent unauthorized personnel from attempting a rescue.
- After the rescue team has been notified, the Attendant shall alert the Entry Supervisor of the emergency via the same communication methods.
- The preferred means of providing rescue service is using a qualified outside rescue service vendor.

The outside rescue service vendor must be:

- Informed of the hazards that they may confront during a rescue.
- Provided access to the Permit-Required Confined Space.
- Access to the space allows the rescue service and local supervision to jointly develop appropriate rescue plans.

### Non-entry Rescue

- To facilitate non-entry rescue, an Entrant must be attached to a retrieval system whenever he/she enters a Permit Required Confined Space with a vertical depth of more than 5 feet.
- The retrieval equipment is not required if it will increase the overall risk of entry, e.g., creating an entanglement hazard, or will not contribute to the rescue of the Entrant.
- Each Entrant shall use a full body harness equipped with a "D" ring located between the shoulders or above the head.
- Wristlets may be used instead of the full body harness if the use of the full body harness is not feasible or creates a greater hazard *and* that using wristlets is the safest and most effective alternative.

- The retrieval line must be attached to the “D” ring and the other end of the retrieval line attached to a retrieval device or fixed point located outside the space so that rescue can begin as soon as the rescuer becomes aware that rescue is necessary.

### **Issuance/Reviewing of Permit**

Only when all pre-entry requirements are satisfied, the Entry Supervisor shall issue a completed and signed confined space permit. The confined space permit is valid for one shift.

In the event of any unauthorized entry, employee complaints, a hazard not covered by the permit, the occurrence of an injury or near miss the entry permit shall be cancelled and a review shall be conducted to provide employee protection and for revising the program prior to authorizing subsequent entries.

An annual review of this program, using the cancelled permits retained within 1 year after each entry shall be conducted by Global Comfort Group to revise the program as necessary, to ensure that employees are protected. If no confined space entries were performed during a 12-month period, no review is necessary.

### **Cancellation/Closure of Permits**

The Entry Supervisor shall cancel the confined space permit, at the end of the job operation, at the end of the shift or when the Entry Supervisor or Attendant determine that conditions in or near the confined space have changed and is hazardous to the Entrants.

The Entry Supervisor shall, at the conclusion of entry operation, close out the permit and provide the Safety Director with the original copy of the Confined Space Permit.

### **Training**

Training shall be provided so that all employees whose work is regulated by this program acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned to them.

Training shall be provided and documented to each affected employee, before the employee is first assigned duties under this program, if a new hazard has been created or special deviations have occurred and before there is a change in assigned duties.

The employee shall be retrained:

- Whenever there is a change in confined space operations that presents a hazard about which an employee has not previously been trained.
- Whenever the supervisor has reason to believe either that there are deviations from the permit space entry procedures required by this section or that there are inadequacies in the employee's knowledge or use of these procedures.
- The training shall establish employee proficiency in the duties required by this program and shall introduce new or revised procedures, as necessary.
- The supervisor shall certify that the training required by this program has been accomplished.

- The certification shall contain each employee's name, the signatures or initials of the trainers, and the dates of training.
- The certification shall be available for inspection by employees, their authorized representatives, management, clients, and the safety department.

## **LEAD AWARENESS**

The purpose of this section is to make employees aware of the hazards of lead. At no time are Global Comfort Group employees to work in areas where lead exposure is eminent and can be remediated by the Owner. Employees will receive training on the hazards of lead upon hire during orientation training and as a separate training topic throughout the year. Training will be documented.

### **What is Lead?**

Lead is a heavy metal, bluish grey in color, and very pliable. It is corrosion resistant and used in many compounds. Common locations lead can be found are in lead batteries, certain paints and coatings, solder, and several other construction products. Activities Global Comfort Group conducts that may put an employee at-risk of exposure include maintenance operations, soldering, or working near demolition/renovation projects.

### **Health Concerns**

Lead will enter the body through inhalation or ingestion.

Once in the body, lead gets into the blood stream and is circulated throughout the body. The body tries to remove or excrete lead; however, the amount of exposure can overwhelm the body and the body will absorb lead into tissues and bones. Health effects include damage to the nervous system, urinary system, and reproductive systems. You may suffer frequent headaches, fatigue, memory loss, nausea, loss of appetite, and kidney failure is extreme exposure cases. Other symptoms may include difficulty sleeping, vomiting, muscle aches, and anemia. Air monitoring can be conducted to determine if employees are exposed. If there is concern on exposure after-the-fact, blood samples can be drawn and analyzed for exposure.

### **Safety Focus**

For Global Comfort Group employees, at no time are they to disturb lead containing materials. Pro-job evaluations should capture any potential exposure concerns and the necessary abatement completed prior to beginning any work. If employees are working in an environment with multiple contractors where abatement is under way, employees must abide by all signs, assessments, or pre-job reviews and take the necessary precaution to protect themselves while in the area. Employees should report any conditions with potential exposure to the Owner (or General Contractor) and their supervisor and leave the area until the exposure potential is rectified.

If employees are working in or near potential exposure locations of lead, they should practice proper personal hygiene and wash all exposed skin before leaving the site. Compressed air should never be used to clean dust or debris from clothing. In known exposure locations, best practice would be to wear a Tyvek suit that can be disposed of to avoid carrying lead from the job site.

## **ASBESTOS AWARENESS**

The purpose of this section is to make employees aware of the hazards of asbestos. At no time are Global Comfort Group employees to work in areas where asbestos exposure is eminent and can be remediated by the Owner. Employees will receive training on the hazards of asbestos upon hire during orientation training and as a separate training topic throughout the year. Training will be documented.

On some job sites, employees may have potential exposure to asbestos if precautionary steps noted below are not taken. Asbestos can be found in older tile flooring, pipe and mechanical insulation, plaster, fireproofing, soundproofing, roofing materials, and in sprayed-on materials located on beams, in crawl spaces, and between walls. Undisturbed, it is perfectly safe. Asbestos is not a specific mineral, but rather a fibrous form of various minerals. It is resistant to corrosive chemicals, it is a nonconductor of electricity, it has a high tensile strength (equal to that of steel wire) and is resistant to heat (it will not burn but will disintegrate at extremely high temperatures). Other types of asbestos have fibers which cannot be spun but are excellent for their frictional properties (brakes) and their insulation and sound deadening properties. The actual minerals found in asbestos include iron, magnesium, silica, and water. Unfortunately, asbestos is hazardous to your health.

There are two types of asbestos, friable and non-friable.

Friable asbestos can be crumbled with hand pressure and is likely to emit minute fibers that can cause serious long-term health effects. Fluffy sprayed-on materials used for fireproofing, insulation, or sound proofing are friable.

Non-friable asbestos, undisturbed, poses no health risk. Vinyl-asbestos floor tile or roofing felt are considered non-friable if intact and generally do not emit airborne fibers unless subjected to sanding, sawing, and other aggressive operations.

Asbestos-cement pipe or sheet can emit airborne fibers if the materials are cut or sawed, or if they are broken.

The health hazards associated with asbestos are caused by the microscopic fibers which, when released, enter the deepest portion of the lung (past your natural defenses such as hairs, mucus, cilia, and macrophages). Scar tissues can develop, and the lung stiffens thus reducing gas exchange. This is called asbestosis. Another disease associated with asbestos is lung cancer. High exposure levels of asbestos increase one's chance of lung cancer by a factor of five. Mesothelioma, a disease caused primarily by exposure to amosite and crocidolite, can be fatal. Lastly, though not likely, it is possible to get cancer of the stomach and colon.

The health hazards associated with asbestos are chronic and, as such, present themselves after a long period of time.

Asbestos Awareness Training is required for all employees who work in areas that contain or may contain asbestos. This training will be documented.

Steps to avoid asbestos exposure:

A. Under no circumstances will asbestos containing material (ACM) or presumed asbestos containing material (PACM) be disturbed during work activities.

B. If you believe the materials, you will be working with contain asbestos, do not disturb the material, and contact your supervisor.

C. Obey all asbestos warning signs and labels. ACM and PACM will not be disturbed.

D. If our employees are working on a multi-contractor worksite adjacent to a Class I asbestos abatement job and possible exposure occurs because of inadequate containment (an unlikely scenario because not only would the containment be faulty, but the negative pressure system would also have to fail), they are to immediately remove themselves from the area until the breach and containment systems is repaired.

E. All exposure to thermal system insulation, sprayed-on, and troweled-on surfacing material will be assumed to be asbestos exposure unless results of laboratory analysis show that the material does not contain asbestos.

For the record, permissible exposure to airborne asbestos fibers may not exceed 0.1 fibers per cubic centimeter of air (0.1 f/cc) averaged over the 8-hour workday, and 1 fiber per cubic centimeter of air (1.0 f/cc) averaged over a 30-minute work period.