

ERS

SAFETY MANUAL

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COMPLETE ROOF SYSTEMS

1 SAFETY & HEALTH POLICY



**COMPLETE ROOF SYSTEMS
SAFETY POLICIES AND PROCEDURES MANUAL**

1.1 SAFETY POLICY

Complete Roof Systems has established this written safety program in accordance with OSHA Regulations. It is our policy to provide a safe and healthful workplace for our employees, to observe all State and Federal Laws and Regulations and to provide an environment as free as possible from recognized hazards. We have and will continue to maintain and implement a comprehensive employee Health and Safety Program.

Incident prevention is our goal. This safety program is designed to train our employees to follow safe practices and to recognize and correct unsafe working conditions. We are always working towards improvement. Safety is a part of each employee's job. Active participation and adherence to the Safety Program is a condition of each employee's employment. No employee is required to work at a job that he or she knows is not safe; therefore, we must work to make every workplace safe by detecting and correcting unsafe working conditions as well as the detection of unsafe work practices.

The main objectives of Complete Roof Systems's Safety Program are:

- To protect people (employees, and others), property, and the environment from potential hazards
- To provide a flexible, uniform policy of safety management consistent with the requirements of the government safety, health, and environmental regulations
- To establish and maintain an effective Safety Program involving all levels of the organization including managers, supervisors, and employees
- To cooperate and assist clients, customers, and others involved in the work area to maintain a safe and healthful workplace

It is our goal to completely eliminate accidents and injuries. Because of the many different hazards of our industry, we must maintain a constant safety awareness to achieve this goal.

If a job cannot be performed safely, it must not be done until it can be done safely.

Dean A. Logan	<i>Dean A. Logan</i>	4/19/23
President	Signature	Date
Dean A. Logan	<i>Dean A. Logan</i>	4/19/23
Safety Program Administrator	Signature	Date
Jairo Arias	<i>Jairo Arias</i>	4/19/23
Manager	Signature	Date
Ginna Logan	<i>Ginna Logan</i>	4/19/23
Human Resources	Signature	Date

1.2 PROGRAM OBJECTIVES

The success of the Complete Roof Systems's Safety and Health Program depends on the sincere, constant, and cooperative effort of all Plan officials, management, and employees. Their active participation and support of the safety program and implementation of its procedures will make it a success.

Annual review:

The following objectives and goals have been established to gauge the success of our program, as a minimum guideline, and will be reviewed annually by the Safety Coordinator to evaluate the Plan's safety performance:

Objectives:

1. To provide a Safety and Health Program consistent with good operating practices and maintain compliance with applicable safety and health regulations.
2. To create an attitude of safety consciousness in management, supervision, and employees: We will establish a spirit of cooperation and teamwork throughout all operations regarding all health and safety matters.

In order to accomplish these objectives, our safety program will include:

1. Preplanning for safety in every portion of the operation through the active cooperation and participation of management personnel. We will draw upon their experience and expertise to anticipate and mitigate or eliminate accident-producing situations.
2. Provide mechanical and physical safeguards to the maximum extent possible in compliance with government regulations, i.e., State or Federal OSHA, Fire Codes, etc.
3. Conduct a program of safety and health inspections to discover and correct unsafe working conditions or practices including any new processes or materials that have entered the workplace; to control health hazards; and to comply fully with the safety and health standards for each job, operation, and facility.
4. Training for all employees on good safety and health practices in current and new exposures.
5. Providing the necessary personal protective equipment and instructions for its use and care.
6. Developing and enforcing safety and health rules and requiring all employees to cooperate with these rules as a condition of employment.
7. Investigating every accident promptly to find its cause and correcting the problem in order to prevent recurrence.

Limitations:

All operations are not the same, and the policies and procedures set forth in this manual need to be tailored to the specific operations and characteristics of each operation. The successful implementation of this manual will largely **depend on the enthusiasm and common sense of each supervisor and coordinator.**

COMPLETE ROOF SYSTEMS

2 RESPONSIBILITY

COMPLETE ROOF SYSTEMS ASSIGNMENT OF RESPONSIBILITY

2.1 EXECUTIVE MANAGEMENT

Management will oversee the administration of the safety and health program. Any member is committed to providing a safe and healthful place of employment for all employees. In addition, it is the primary goal of administrative management to comply with all applicable State, Federal, and local safety and health regulations.

Management will rely on the involvement and participation of any and all management representatives to fulfill their individual responsibilities in the administration, coordination, and implementation of the safety and health program.

It is without question that management would hope that all employees comply with the safety and health program voluntarily. Should any individual fail to comply with their responsibility for the safety and health of their workforce, they will be held accountable within the guidelines and restrictions of the disciplinary program outlined within this program.

2.2 COMPLIANCE

All workers, including managers and supervisors, are responsible for complying with safe and healthful work practices. Our system of ensuring that all workers comply with these practices include one or more of the following practices:

- Informing workers of the provisions of our safety program.
- Evaluating the safety performance of all workers.
- Recognizing employees who perform safe and healthful work practices.
- Providing training to workers whose safety performance is deficient.
- Disciplining workers for failure to comply with safe and healthful work practices.

2.3 SAFETY COORDINATOR RESPONSIBILITY

The Safety Coordinator will advise management, as well as the supervisors and employees, of unsafe conditions and problems related to accident prevention and recommendations for safety and health. The Safety Coordinator will assist and advise management and supervision in how best to provide a safe work environment, necessary safety equipment needed on the job, safety training that may be required, or sample safety inspections in the interest of accident prevention. advise and train employees in the safe use of any new equipment or hazards introduced into the workplace.

The duties of the Safety Coordinator will include but are not limited to the following activities:

1. The development and administration of the safety and health program.
2. Development of methods and procedures for the implementation of the program.
3. Provide support and direction in the training and development of personnel.
4. Monitor the implementation of the program and develop means of accountability for the enforcement of the program.
5. The Safety Coordinator will publish and distribute the minutes of any safety meetings to appropriate management staff covering new dangers that may have entered the workplace.
6. Monitor the supervisor's performance in the investigation of accidents and documentation.
7. Monitor corrective action necessary to prevent recurrence.
8. Assist in the preparation of safety and health bulletins, posters, and publicity as needed

2.4 SUPERVISOR'S SAFETY RESPONSIBILITY

Each supervisor, and every employee with supervisory authority, has full responsibility for the safe actions of their employees under their control and the safe performance of machines and equipment within their operating area. The full potential of an effective safety program can only be realized when all levels of supervision cooperate in all phases of the program. The following is a list of responsibilities of each Supervisor:

- Each supervisor must assume full responsibility and authority to enforce the provisions of this SAFETY POLICY AND PROCEDURES MANUAL AND PROGRAM DISCIPLINARY POLICIES.
- Each supervisor must assume full responsibility for the safe and healthful working areas for his/her employees in the new safe practices of the equipment or materials.
- Each supervisor must be fully accountable for preventable injuries, collisions, and liabilities caused by his employees.
- Each supervisor must make sure the necessary safety equipment and protective devices for each job are available, used, and maintained properly.
- Each supervisor must take the initiative in recommending correction of deficiencies noted in work procedures, equipment, facilities, employee job training, or attitudes that adversely affects our efforts to control accidents and injuries including new dangers.
- Each supervisor must be firm in the enforcement of work policies by being impartial in taking disciplinary action, as defined in this safety manual against those who fail to conform. And at the same time each supervisor is encouraged to be prompt with positive recognition to those who perform well.
- Each supervisor must ensure that each employee is fully trained for the job he is assigned to do, that each employee is familiar with published procedures and work rules, and that each employee certifies in writing that he or she understands compliance is mandatory. This is especially important when working with new equipment or hazards.
- Each supervisor must ensure that each new employee receives, reads, and understands the company CODE OF SAFE PRACTICES. A copy of the Code, signed by the new employee, must be forwarded to the Safety Coordinator. A copy of the Code, signed by the employee, shall be given to the employee.
- Each supervisor must continually observe and evaluate job conditions and work procedures to detect and correct any unsafe conditions and/or unsafe work practices.
- Each supervisor should periodically meet personally with each employee to review and discuss safety policies and procedures that pertain to their jobs and the operations.
- Should an employee have a work related injury or illness, it is the responsibility of the supervisor to investigate the claim and provide the necessary "Employee Report of Injury" form to the employee when informed of the injury or illness.
- Each supervisor must fully cooperate with the Safety Coordinator, Insurance Company Safety Personnel, and OSHA Compliance Officers in shutting down operations considered to be an imminent danger to employees, or in removing personnel from hazardous jobs when they are not wearing or using prescribed protective equipment.
- Each supervisor must attend any management Safety Meetings when held and participate in the promotion of safety awareness.
- Each supervisor should encourage their employees to participate in the recognition, correction, or reporting of any safety or health problems without fear of reprisal.

NOTE: In the absence of any supervisors, the president and management will administer the above responsibilities.

2.5 EMPLOYEE RESPONSIBILITIES

All employees are required, as a condition of employment, to develop and exercise safe work habits in the course of their work to prevent injuries to themselves, their fellow workers, and conserve material resources and time.

The items listed below are part of the employee responsibilities as outlined by OSHA. However, they are only minimum guidelines. It is important that each employee assist in the safety program on a voluntary basis. Failure to do so will mean that disciplinary guidelines will be implemented.

1. Promptly report to your supervisor all accidents, near misses and injuries occurring within the course of their employment.
2. Cooperate with and assist in investigation of accidents to identify correctable cause and to prevent reoccurrence.
3. Promptly report to their supervisor all unsafe actions, practices, or conditions they observe.
4. Become familiar with and observe approved safe work procedures during the course of their work activities, especially when working with any new dangers entering the workplace.
5. Keep work areas clean and orderly at all times.
6. Avoid engaging in any horseplay and avoid distracting others.
7. Obey all safety rules and follow published work instructions.
8. Wear protective equipment when working in hazardous areas or jobs, and/or as required by supervision.
9. Inspect all equipment prior to use and report any unsafe conditions to your supervisor immediately.
10. Submit any suggestions for accident prevention, without fear of reprisal, which may assist in improved working conditions or work practices to your immediate supervisor. Pay special attention when working with any new procedures, equipment, chemicals or jobs that are new to the operation of the company.

COMPLETE ROOF SYSTEMS
3 SAFETY ORIENTATION

COMPLETE ROOF SYSTEMS SAFETY ORIENTATION

3.1 NEW EMPLOYEE ORIENTATION

- All new workers will receive safety orientation, no later than the first workday on the job.
- The employee's Supervisor will provide the orientation. The orientation will be documented on the "Orientation Checklist for New Employees" form.
- Each person assigned to a job must sign the indoctrination form upon receiving instruction from the supervisor.
- The responsible supervisor must also sign the forms signifying the employee was given orientation.
- In addition to orientation material made available, each supervisor must explain the safety criteria for individual jobs.
- A signed copy of the new employee orientation form will be maintained at the office.

3.2 EMPLOYEE RESPONSIBILITIES FOR SAFETY

All employees are required, as a condition of employment and as outlined in the OSHA regulations, to develop and exercise safe work habits in the course of their work to prevent injuries to themselves and their fellow workers. It is the policy of Complete Roof Systems that all employees shall:

- Immediately report to their supervisor, all accidents, near misses and injuries, no matter how slight occurring within the course of their employment.
- Cooperate with and assist in investigation of accidents to identify correctable causes and to prevent recurrence.
- Promptly report to their supervisor all unsafe actions, practices, or conditions they observe.
- Become familiar with and observe approved safe work procedures during the course of their work activities.
- Keep work areas clean and orderly at all times.
- Avoid engaging in any horseplay and avoid distracting others.
- Obey all safety rules and follow published work instructions.
- Wear personal protective equipment when working in hazardous operations area, and/or as required by the supervisor.
- Inspect all equipment prior to use and report any unsafe conditions to their immediate supervisor.
- Submit any suggestions for accident prevention, without fear of reprisal, to their immediate supervisor, which may assist in improved working conditions or work practices.



COMPLETE ROOF SYSTEMS

3.3 EMPLOYEE ACKNOWLEDGEMENT FORM

CODE OF SAFE PRACTICES

I _____ (PRINT) hereby acknowledge that I have received, read, and understood the "Code of Safe Practices" for Complete Roof Systems.

I agree to conform to all practices, safety rules, and regulations relating to safe work performance.

I understand that my failure to follow these safety procedures will result in disciplinary action up to and including discharge.

I further understand that:

1. It is my responsibility to report all unsafe conditions or violations of the Code of Safe Practices to my supervisor or other management personnel in order to minimize the potential of injury to my fellow workers.
2. I am encouraged to inform my immediate superior of any hazards on the job without fear of reprisal, and that should my assistance create any such action or related intimidation, that I am encouraged to contact the Safety Coordinator or management by phone or mail.

Signature of Employee

Date

Signature of Supervisor

Date

copies to: office (original), safety coordinator, and employee

3.4 EMPLOYEE RECOGNITION

3.4.1 ENCOURAGE POSITIVE PERFORMANCE

Monitoring performance is a constant reminder that safety should be practiced at all times. Proper safety practices will result in an easier job, and better working conditions for everyone. Each supervisor, as an example setter, is held responsible for monitoring performance.

Whenever an unsafe practice is observed, it must be immediately brought to the attention of the employee. On the other hand, when an employee is observed making an effort to approach a problem in a safe manner, a gesture of recognition and approval should be immediately made.

Performance is monitored to encourage safety consciousness and to convince employees that unsafe working habits will not be tolerated. Where a continued failure to comply with safety procedures is observed, the employee **will** receive a written warning from their supervisor according to written policy. See the disciplinary policy for establishing corrective action.

3.4.2 SAFETY AWARDS AND RECOGNITION

Complete Roof Systems will periodically conduct incentive programs to recognize the significant contributions that have a positive impact on the safety and health program. Awards will be established for individual accomplishments, for the recognition of groups of employees, or by job location. These programs are designed to stimulate interest and recognize special achievement and personal contributions to the safety program and concepts.

COMPLETE ROOF SYSTEMS
4 ACCIDENT/LOSS REPORTING PROCEDURES

COMPLETE ROOF SYSTEMS ACCIDENT/LOSS REPORTING PROGRAM

4.1 PURPOSE

To establish a standard system for the notification and reporting of accidents involving occupational injury or illness, property damage of public or private property.

4.2 OBJECTIVES

- To obtain the information necessary for the local, state and federal agencies and the insurance carriers.
- To inform management of accidents resulting in serious employee injury or illness and property damage.

PROCEDURE

4.3 GENERAL REQUIREMENTS

Timely reporting, within 8 hours, of any accident or loss is mandatory. The supervisor must thoroughly investigate the cause of each accident or loss occurring within their area of operation and record their findings and recommendations on the appropriate reporting form. The office copy should be critically reviewed and signed by the Safety Coordinator, where applicable. A copy may be retained in the supervisor's file for their record.

REPORTING EMPLOYEE INJURIES

- Regardless of the degree of injury, the employee must report to his supervisor or in writing on the State "Employee's Claim For Worker's Compensation Benefits" (DWC - 1) that he was injured. **THIS FORM MUST BE COMPLETED WITHIN 24 HOURS AS REQUIRED BY YOUR STATE OF OPERATION.**
- First aid/medical treatment will be provided or arranged for by the supervisor. If necessary, the injured employee will be taken to the designated medical facility as applicable.
- The supervisor must complete the form "ACCIDENT INVESTIGATION REPORT" within 24 hours. Once the supervisor is told by the employee or is aware of the work-related injury, **IT MUST BE REPORTED TO THE OFFICE WITHIN 24 HOURS EVEN IF THEY THINK THE INJURY:**
 - Is minor;
 - Or might have been caused by unsafe actions such as inattention;
 - Or negligence;
 - Or aggravated an old injury;
 - Or is not work-related.

If the supervisor thinks any of the four above items are applicable, it should be stated on the "report" forms. **AT NO TIME SHOULD A SUPERVISOR WITHHOLD OR HINDER THE FILING OF AN EMPLOYEE INJURY REPORT TO THE OFFICE.**

- A supervisor must **not** allow an employee to return to work after an occupational injury or occupational illness unless they receive a signed authorization to return to work from the treating physician. If the injured employee has been off work more than 30 calendar days and is in a non-sedentary position, he/she will be required to take a special physical exam.

- **Upon their return to work, we will make every attempt to put employees to work within the limitations specified by the treating physician.**
- Because of the complexity of worker's compensation laws, rules, and procedures, the supervisor should not attempt to answer any questions about workers' compensation insurance. Refer the injured employee to the office.

4.4 RECORDKEEPING

All accidents or injuries of any type must be recorded, logged, and filed in their respective office and personnel folders as may be applicable.

4.5 EMPLOYEE INJURIES

4.5.1 OSHA LOG OF RECORDABLE INJURIES

When an injury occurs which is more than a first aid injury (See definition below), this would be classified as a "recordable injury" by OSHA definition. This log of injuries will be maintained by the Office on the OSHA log (see OSHA Record-keeping Guidelines).

4.5.2 FIRST REPORT OF INJURY

A copy of the State "First Report of Injury" form must be attached to the Supervisor's "Accident Investigation Report" for all accidents entered on the OSHA log by the office and must be retained for at least 5 years.

4.6 VEHICLE, PROPERTY DAMAGE, AND PUBLIC LIABILITY ACCIDENT REPORTS

All other accidents and injuries reported to the office will be kept in separate accident files in order to maintain and monitor the accident history for each type category; I.E. vehicle accidents, customer property damage, and public liability. The files will identify the persons involved, i.e., driver, etc., site/location, supervisor, a short description of the accident, injury, time, date, and estimated cost.

COMPLETE ROOF SYSTEMS
5 ACCIDENT INVESTIGATION

COMPLETE ROOF SYSTEMS ACCIDENT INVESTIGATION

5.1 EMPLOYEE ACCIDENTS

All accidents regardless of whether or not they result in injury should be thoroughly investigated by the employee's immediate Supervisor and reported to the Office within **24 hours**. This should include "near miss" accidents. The investigation should be extensive enough to allow the Supervisor to suggest practical corrective action.

A written report should be made which includes:

- Injured employee's statement concerning the accident.
- Statements from other witnesses.
- Complete description of the accident including the type of work in which the employee was involved.
- Evaluation of unsafe conditions and acts.
- Recommendations for action to prevent similar accidents.

5.2 DEFINITIONS

Industrial Injury:

An injury arising out of and during the course of employment.

Occupational Illness:

A disease caused by specific hazardous conditions or materials when there is a direct relationship between the conditions under which the work is performed and the occupational disease.



ACCIDENT INVESTIGATION REPORT

EMPLOYEE INJURY OR ILLNESS		DATE	FLEET OR PROPERTY DAMAGE		
Name		Property damaged			
Occupation	Part of body	Estimated cost	Actual cost		
Nature of injury or illness		Nature of damage	Vehicle speed		
Object/ equipment/ element inflicting injury or illness		Object/ equipment inflicting damage	Registration no.		
Person with most control of object/ equipment/ etc.		Person with most control - inflicting damage			
Job or activity at time of accident		Department			
Exact location		Date of occur.	Time am/pm	Date reported	
Describe clearly how the accident occurred (what happened?) For all motor vehicle accidents, draw a diagram on the other side					
The cause of the accident: what acts, failure to act, and / or conditions contributed most directly to this accident? Describe unsafe acts and/or unsafe conditions					
EXPLAIN SPECIFICALLY <u>WHY</u> THESE ACTS AND/OR CONDITIONS EXISTED?					
Loss severity potential			Probable recurrence rate		
<input type="checkbox"/> Minor <input type="checkbox"/> serious <input type="checkbox"/> minor			<input type="checkbox"/> frequent <input type="checkbox"/> occasional <input type="checkbox"/> rare		
What action has or will be taken to prevent recurrence? (list items, then place and "x" by items completed and date)					
Supervisor of injured person		Date	Reviewed by manager	Date	

COMPLETE ROOF SYSTEMS

6 HAZARD IDENTIFICATION & ASSESSMENT

COMPLETE ROOF SYSTEMS SAFETY INSPECTIONS/HAZARD CORRECTION PROCEDURES

6.1 PURPOSE

- To provide guidelines for identifying, assessing and controlling workplace hazards.
- To ensure the potential hazards of new processes and materials are identified before they are introduced into the workplace.
- To identify the jobs/tasks which require risk assessment.

6.2 KEY RESPONSIBILITIES

As specified within this program.

Complete Roof Systems must assess a work site and identify existing or potential hazards before work begins at the work site or prior to the construction of a new work site

6.3 HAZARD AND RISK IDENTIFICATION

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.

The Safety Manager shall conduct a baseline worksite hazard assessment which is a formal process in place to identify the various tasks that are to be performed and the accompanying identified potential hazards. The results are included in a report of the results of the hazard assessment and the methods used to control or eliminate the hazards identified. The hazard assessment report must be signed and have the date on it.

Inputs into the baseline hazard identification include, but are not limited to:

- Scope of work.
- Legal and other requirements.
- Previous incidents and non-conformances.
- Sources of energy, contaminants and other environmental conditions that can cause injury.
- Walk through of work environment.

Hazards identifications (as examples) are to include:

- Working Alone
- Thermal Exposure
- Isolation of Energy
- Hearing Protection
- Musculoskeletal Disorders
- Bloodborne Pathogens
- Confined Spaces
- Driving
- General Safety Precautions
- And any other established policy or procedure by Complete Roof Systems
- Any other site-specific work scope

Complete Roof Systems has a formal process for identifying potential hazards. Processes are in place to identify potential hazards by the use of JSA's, JHA's, facility wide or area specific analysis/inspections.

All identified hazards are assessed for risk and risk controls are assigned within the worksite hazard assessment for that specific hazard.

Employees and/or sub-contractors are actively involved in the hazard identification process. The Complete Roof Systems program provides processes to ensure employees and/or sub-contractors are actively involved in the hazard identification process and hazards are reviewed with all employees concerned.

Employees are trained in the hazard identification process. Employees will be trained in the hazard identification process including the use and care of proper PPE.

Unsafe hazards must be reported immediately and addressed by the supervisor. The supervisor discusses the worksite hazard assessment with employees at the respective work location during the employee's documented orientation.

6.4 REVIEW OF HAZARD ASSESSMENT

Existing worksite hazard identifications are formally reviewed annually or repeated at reasonably practicable intervals to prevent the development of unsafe and unhealthy working conditions and specifically updated when new tasks are to be performed that have not been risk assessed, when a work process or operation changes, before the construction of a new site or when significant additions or alterations to a job site are made.

The respective supervisor or project manager advises the Safety Manager when additional hazards are introduced into the work place in order to revise planning and assessment needs.

6.5 RISK ASSESSMENT

Hazards are classified and ranked based on severity. The program identifies hazards are classified/prioritized and addressed based on the risk associated with the task. (See the risk analysis matrix outlining severity and probability).

6.6 JOB SAFETY ANALYSIS (JSA)

For those jobs with the highest injury or illness rates, jobs that are new to our operation, jobs that have undergone major changes in processes and procedures or jobs complex enough to require written instructions will have a Job Safety Analysis performed. Completed JSAs are available from the Safety Manager.

6.7 SITE SPECIFIC HSE PLAN (SSSP)

Each work location has a site specific HSE plan. Each employee reporting to a location shall receive a documented orientation from a Complete Roof Systems supervisor that includes the SSSP for that site. The SSSP contains the Complete Roof Systems Health and Safety Policy, site specific safety requirements as well as a PPE matrix and a signed site specific worksite hazard assessment for that location, which the Complete Roof Systems has a responsibility to provide.

6.8 WORKSITE HAZARD ASSESSMENT FORM

CERTIFICATE OF HAZARD ASSESSMENT STATEMENT FOR form shall be signed SITE

I certify a worksite hazard assessment was performed for this facility on date by the Complete Roof Systems Safety Manager.
(Signature on File)

- **Task: Indicate Task Group** *(Additional Tasks shall be listed in each site specific HSE plan)*

TASKS	RISK LEVEL	HAZARDS	ENGINEERING OR ADMINISTRATIVE CONTROLS	PPE (Refer to PPE Matrix)
List individual task	Use Risk Matrix	Identify hazards associated with task	List procedures that apply List appropriate engineering controls List procedures or other administrative controls	List appropriate PPE
Example: Washing Parts	MED	Chemical Exposure (Skin, Eyes, Body)	Complete Roof Systems PPE Procedure No smoking;	Chemical gloves, splash proof goggles chemical apron



6.9 JOB SAFETY ANALYSIS FORM

Location / Dept:		Date:	New? <input type="checkbox"/>	Revision <input type="checkbox"/>	JSA NO:				
Task			Supervisor:						
			Analysis By:						
Team Members			Reviewed By:						
			Approved By:						
Specific rules and procedures to be followed (Safe Work Practice Number ____):									
Sequence of Basic Job Steps		Potential Injury or Hazards		Recommendations to Eliminate or Reduce Potential Hazards.					
CHECK ITEMS REQUIRED TO DO THIS JOB:									
Safety Glasses	<input type="checkbox"/>	Leather Gloves	<input type="checkbox"/>	Face Shield	<input type="checkbox"/>	Fire Extinguisher	<input type="checkbox"/>	Atmospheric Testing	<input type="checkbox"/>
Hard Hats	<input type="checkbox"/>	Work Vest	<input type="checkbox"/>	Goggles (type?)	<input type="checkbox"/>	Lockout/Tagout	<input type="checkbox"/>	Traffic Control	<input type="checkbox"/>
Safety Shoes	<input type="checkbox"/>	Fall Harness	<input type="checkbox"/>	Flame Resistant Clothing	<input type="checkbox"/>	Warning signs	<input type="checkbox"/>	Other	<input type="checkbox"/>

INSTRUCTIONS FOR COMPLETING THE JOB SAFETY ANALYSIS FORM

Select an employee to help you with the JSA: someone who is experienced in the job, willing to help and a good communicator. The employees play an important role in helping you identify job steps and hazards. In summary, to complete this form you should consider the purpose of the job, the activities it involves, and the hazards it presents. In addition, observing an employee performing the job, or “walking through” the operation step by step may give additional insight into potential hazards. Here’s how to do each of the three parts of a Job Safety Analysis:

SEQUENCE OF BASIC JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION OR PROCEDURE
<p>Examining a specific job by breaking it down into a series of steps or tasks, will enable you to discover potential hazards employees may encounter.</p> <p>Each job or operation will consist of a set of steps or tasks. For example, the job might be to move a box from a conveyor in the receiving area to a shelf in the storage area. To determine where a step begins or ends, look for a change of activity, change in direction or movement.</p> <p>Picking up the box from the conveyor and placing it on a hand truck is one step. The next step might be to push the loaded hand truck to the storage area (a change in activity). Moving the boxes from the truck and placing them on the shelf is another step. The final step might be returning the hand truck to the receiving area.</p> <p>Be sure to list all the steps needed to perform the job. Some steps may not be performed each time; an example could be checking the casters on the hand truck. However, if that step is generally part of the job it should be listed.</p>	<p>A hazard is a potential danger. The purpose of the Job Safety Analysis is to identify ALL hazards – both those produced by the environment or conditions and those connected with the job procedure. To identify hazards, ask yourself these questions about each step:</p> <p>Is there a danger of the employee striking against, being struck by, or otherwise making injurious contact with an object?</p> <p>Can the employee be caught in, by or between objects? Is there a potential for slipping, tripping, or falling?</p> <p>Could the employee suffer strains from pushing, pulling, lifting, bending, or twisting?</p> <p>Is the environment hazardous to safety and/or health (toxic gas, vapor, mist, fumes, dust, heat, or radiation)?</p> <p>Close observation and knowledge of the job is important. Examine each step carefully to find and identify hazards – the actions, conditions, and possibilities that could lead to an accident. Compiling an accurate and complete list of potential hazards will allow you to develop the recommended safe job procedures needed to prevent accidents.</p>	<p>Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the hazards that could lead to an accident, injury or occupational illness.</p> <p>Begin by trying to: (1) engineer the hazard out; (2) provide guards, safety devices, etc.; (3) provide personal protective equipment; (4) provide job instruction training; (5) maintain good housekeeping; (6) ensure good ergonomics (positioning the person in relation to the machine or other elements).</p> <p>List the required or recommended personal protective equipment necessary to perform each step of the job.</p> <p>Give a recommended action or procedure for each hazard.</p> <p>Serious hazards should be corrected immediately. The JSA should then be changed to reflect the new conditions.</p> <p>Finally, review your input on all three columns for accuracy and completeness with affected employees. Determine if the recommended actions or procedures have been put in place. Re-evaluate the job safety analysis as necessary.</p>

COMPLETE ROOF SYSTEMS
7 FIRST AID

COMPLETE ROOF SYSTEMS FIRST AID

7.1 PURPOSE

The purpose of this program is to establish the minimum first aid supplies, equipment and actions to properly respond to injuries.

7.2 SCOPE

This program is applicable to all Complete Roof Systems employees while engaged in work at Complete Roof Systems facilities and/or facilities operated by others.

7.3 RESPONSIBILITIES

- It is the responsibility of the site manager to ensure that first aid kits are provided and maintained.
- All employees are responsible for using first aid materials in a safe and responsible manner.

7.4 MEDICAL RESPONSE

All minor first aid is to be self-rendered. Because of the risks presented by certain Bloodborne pathogens, no one is allowed to tend the minor injuries of another.

Employees authorized to render first aid will always observe universal precautions. (Universal Precautions means that the aid giver treats all bodily fluids as if they were contaminated).

If 911 is not available refer to the list of posted phone numbers for prearranged medical response providers. All Complete Roof Systems authorized first responders shall have a cell phone as a means of communications; otherwise handheld radios or telephones shall be used as a means of communication.

COMPLETE ROOF SYSTEMS
8 FIRE PREVENTION

COMPLETE ROOF SYSTEMS FIRE PROTECTION

8.1 PURPOSE

The purpose of this program is to provide fire extinguisher procedures to ensure equipment is operable and employees have the knowledge to safely operate in case of a fire incident.

8.2 SCOPE

Applies to all Complete Roof Systems employees and all Complete Roof Systems locations.

8.3 RESPONSIBILITIES

The Safety Manager is responsible for developing procedures for the use and care of fire extinguishers and for developing a training program for the proper use of these devices. The Manager is responsible for implementing fire extinguisher training at his location. The shop foremen are responsible for enforcing the provisions of this section of the safety manual. All employees are responsible for following these provisions.

8.4 GENERAL REQUIREMENTS

- Portable fire extinguishers must be maintained in a fully charged and operable condition and kept in their designated places at all times when they are not being used.
- Portable extinguishers shall be visually inspected monthly and subjected to a maintenance check annually
- Extinguishers must be conspicuously located where they will be readily accessible and immediately available for use.
- The selection of fire extinguishers for a given situation will depend upon the characteristics of a potential fire, the construction and occupancy of the individual property, the vehicle or hazard to be protected, ambient-temperature conditions, and other factors.
- The number of extinguishers required must be determined by reference to the layout criteria included in this manual.
- Only UL or FM approved fire extinguishers are permitted.
- Only employees who have been trained in their proper use are permitted to use fire extinguishers.
- All fire extinguishers are to be kept at their designated locations. In case of fire, follow information on emergency reaction poster.
- Access to extinguishers, sprinkler risers, switch boxes, fire alarms, and exits are to be kept clear and unobstructed at all times.
- Any damaged or apparently used fire protection equipment must be promptly reported to the area supervisor.

8.5 PROCEDURE

Portable fire extinguishers shall be provided for employee use and selected and distributed based on the classes of anticipated workplace fires and on the size and degree of the hazard which would affect their use. Fire extinguishers used by this company are for four classes of fires:

- Class A Fire Extinguishers. Use on ordinary combustibles or fibrous material, such as wood, paper, cloth, rubber and some plastics. Travel distance for employees to any extinguisher is 75 feet (22.9 m) or less.
- Class B Fire Extinguishers. Use on flammable or combustible liquids such as gasoline, kerosene, paint, paint thinners and propane. Travel distance from the Class B hazard area to any extinguisher is 50 feet (15.2 m) or less.
- Class C Fire Extinguishers. Use on energized electrical equipment, such as appliances, switches, panel boxes and power tools. Travel distance from the Class C hazard area to any extinguishing agent is 50 feet (15.2 m) or less.
- Class D Fire Extinguishers. Use on combustible metals, such as magnesium, titanium, potassium and sodium. Travel distance from the combustible metal working area to any extinguishing agent is 75 feet (22.9 m) or less.

8.6 LABELING OF FIRE EXTINGUISHERS

Fire extinguishers are to be mounted in easily accessible locations that are indicated by a sign that reads "Fire Extinguisher". Fire extinguishers are to be located so that no employee will ever be more than 75 feet from an extinguisher. No equipment, boxes or product may be placed (even temporarily) in the way of a fire extinguisher. Each fire extinguisher will be assigned a unique number.

8.7 MAINTENANCE

All fire extinguishers shall be mounted no higher and no lower than four (4) feet from the floor. All fire extinguishers shall be maintained as follows:

- Numbered to identify their proper location
- Fully charged and in operable condition
- Clean and free of defects
- Readily accessible at all times
- At regular intervals, not less than annually, or when specifically indicated by an inspection, extinguishers must be thoroughly examined and/or recharged or repaired to ensure operability and safety or replaced as needed.
- Extinguishers removed from their locations to be recharged must be replaced by spare extinguishers during the period they are gone.
- Each extinguisher must have a durable tag securely attached to show the maintenance or recharge date and the initial or signature of the person who performs this service.
- Any fire extinguisher that shows a loss of pressure during the monthly inspection will be inspected and recharged by certified personnel.

8.8 INSPECTION, MAINTENANCE AND TESTING

All fire extinguishers are to be visually inspected by Complete Roof Systems employees monthly. All fire extinguishers are to receive an annual maintenance check by certified personnel from a fire extinguisher dealer. Fire extinguishers are to be inspected and re-charged by certified personnel after any use. Any fire extinguisher that shows a loss of pressure during the monthly inspection will be inspected and re-charged by certified personnel. Completed fire extinguisher inspection logs will be maintained in the safety files and become a part of the safety records. They are to be maintained for 5 years.

8.8.1 USE

In the event of a fire, one employee will get the nearest fire extinguisher and use it to attempt to put the fire out. All other employees in the immediate area will prepare to evacuate if needed. All other employees in the building need to be advised that a fire is in progress.

The employee attempting to extinguish the fire will break the safety seal on the handle and pull the pin. The person will then aim his extinguisher at the base of the fire and discharge it with a sweeping motion from side to side; continuing until the fire is out or the extinguisher is emptied.

Remember that a standard fire extinguisher will be emptied in about 10 to 15 seconds. If the fire is not out when the extinguisher has been completely discharged, the employees must evacuate the area.

8.9 FLAMMABLE AND COMBUSTIBLE LIQUID AND MATERIALS

- Flammable liquid containers must be clearly labeled and stored in a protected, separate area.
- Flammable liquids must be used only in small quantities and in approved (UL or FM), self-closing containers.
- Do NOT refuel a hot or running engine. Clean up spills before restarting.
- Never use gasoline as a cleaner or solvent. Anyone who may do so is subject to immediate discharge.
- Use only the proper transfer equipment when transferring a flammable liquid such as gasoline for refueling
- Never use an air hose for pressure to empty drums.

Lines or other containers holding gasoline, oil, grease and other flammable material must be thoroughly purged and tested for explosiveness by approved testing equipment before any burning or welding is done.

8.10 FIRE AND EXPLOSION HAZARDS

There are three (3) elements necessary for a fire:

- Fuel - Combustible material, i.e., wall coverings, paper products, furniture, etc. Flammable liquids, i.e., paints, thinners, lacquers, gasoline, and others.
- Heat - Sufficient to raise the material to its ignition temperature. Primary causes can be cigarette smoking, electrical fires, grease fires, and fires caused by explosions.
- Oxygen to sustain combustion. Oxygen is the one element that could be controlled by closing doors and isolating the fire as much as possible.

8.11 FIRE AND EXPLOSION PREVENTION

Each supervisor will be responsible for the following fire prevention activities:

- Make routine inspections of fire prevention and protection systems regularly and keep in good operating condition.
- Train key employees, if necessary, in the use of fire protection equipment (extinguishers, hose, etc.).
- Be familiar with known hazards that may affect your operations inside and outside any building.

8.12 SPECIFIC HAZARDS**8.12.1 SMOKING**

Smoking is permitted in designated areas only. Don't use ashtrays as wastepaper receptacles, or don't use waste paper receptacles as ashtrays.

8.12.2 ELECTRICAL

Make sure that all electrical cords are not frayed and that the connections with the receptacles and the machinery are intact. Do not overload wiring. If cords become warm, this is the first sign of a possible overload.

COMPLETE ROOF SYSTEMS
9 AERIAL LIFT SAFETY

COMPLETE ROOF SYSTEMS

AERIAL LIFT SAFETY

9.1 INTRODUCTION

Various aerial lifts are used by Complete Roof Systems, such as self-propelled elevating work platforms (e.g., scissor lifts), manually-propelled elevating aerial lifts (e.g., uprights), extensible and articulating boom-supported elevating work platforms (e.g., aerial man-lifts), and vehicle-mounted elevating and rotating aerial devices and work platforms (e.g., bucket trucks).

Many different codes and standards govern the use of this equipment at Complete Roof Systems to ensure the safety of operators and other workers. This Environment, Safety and Health (ES&H) Manual document is based on codes and standards adopted in the Work Smart Standard (WSSs) for aerial lifts, along with manufacturers' recommendations and other standards that apply for Complete Roof Systems activities.

All workers must comply with the requirements set forth in this document. Any deviation from these requirements will require approval by the appropriate management chain

- Aerial lifts may be “field modified” for uses other than those intended by the manufacturer provided the modification has been certified in writing by the manufacturer or by an equivalent entity.
- Lift controls shall be tested each day prior to use to determine that such controls are in safe working conditions. Tests shall be made at the beginning of each shift during which the equipment is to be used to determine that the brakes and operating systems are in proper working condition.
- Only authorized persons shall operate an aerial lift and boom and basket load limits specified by the manufacturer shall not be exceeded.
- Aerial lifts shall have a working back-up alarm audible above the surrounding noise level or the vehicle is backed up only when an observer (spotter) signals that it is safe to do so.
- The minimum clearance between electrical lines and any part of the equipment (i.e. crane or load) shall be 10 feet for lines rated 50 kV or below.
- Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.
- An approved fall restraint system shall be worn when working from an aerial lift. The fall restraint system must be attached to the boom or basket. An approved fall restraint system shall be attached to the boom or basket when working from an aerial lift and it is not permitted to be attached to adjacent poles or structures.
- All employees who operate an aerial lift device shall be trained in the safe operation of the specific device they will operate. Training must conform to all OSHA requirements.

9.2 HAZARDS

The following conditions occurring during aerial lift operations can result in property damage, personal injury, or death:

- A fall from an elevated level.
- Falling objects or items falling out of lifts.
- Exceeding the load capacity of the lift, which may result in tip-over or structural failure.
- Electrical hazards (e.g., overhead power lines, extension cords, bridge crane bus bars).
- Entanglement hazards (situations that may cause the lift to be caught on or snagged against other objects).
- Contact with stationary objects (e.g., walls, buildings, other vehicles, ceilings, floors, piping) that may result in an entrapment or crushing hazard.
- Uneven terrain that may cause the vehicle to tip, topple over or eject the operator. Some examples may include slopes, holes, drop-offs, bumps, debris, and utility vault covers.
- High winds or inclement weather such as rain, hail, snow, or lightning.

- Operation of an internal combustion engine vehicle indoors, which can cause asphyxiation or toxic exhaust-gas exposure.
- Unapproved use of equipment in unusual environments or the use of inadequate controls for operations or maintenance activities, which can cause a fire or explosion.

9.3 GENERAL DISCUSSION

The following sections provide requirements and best management practices for the various types of aerial lifts used at Complete Roof Systems. When in doubt, default to the manufacturer's instructions for the particular make and model of the lift for more detailed guidance.

The information in this document shall be supplemented by good judgment, safety control, and caution in evaluating each situation. Since the operator is in direct control of the aerial lift, conformance with good safety practices is the responsibility of the operator. The operator shall make decisions on the use and operation of the aerial lift with due consideration for the fact that his or her own safety as well as the safety of others is dependent on those decisions. All operators shall be trained before operating aerial lifts.

Operators are qualified to use lifts to the rated capacity of the equipment for which they are trained and evaluated. All operations shall be done safely and in accordance with accepted work practices. Directorates or facility points of contact may impose additional restrictions on their operations as necessary.

Frequent, annual and/or periodic (depending on activity, severity of service and environment) maintenance inspections shall be performed by the owner of the lift on a timely basis by qualified mechanics. Inspection items listed in the maintenance manuals shall be tested, evaluated and, if applicable, corrected by qualified personnel before the unit is returned to service. Lifts shall not be operated if they are out of compliance. Replacement parts shall be identical or equivalent to the original parts, or provide a greater level of safety. Markings on the aerial lift shall not be removed, defaced or altered. Missing or illegible markings shall be replaced promptly. Altering or disabling of safety devices, such as warning beepers, guards or interlocks is prohibited, and modifications shall be done only with the permission of the manufacturer.

9.4 OPERATIONS

This section discusses various phases of operation such as prestart inspections, workplace inspections, operating requirements, and post operation requirements.

Operators shall be trained before using any aerial lift. The training shall include familiarization with the specific group of lifts to be used and alerting the operators to their responsibilities with respect to the lifts. When an operator is directed to operate an unfamiliar aerial lift, the operator shall receive instructions regarding the location of the manufacturers' manuals, the purpose and function of all controls, and the safety devices and operating characteristics specific to the group of aerial lifts prior to operating. Operators shall also be afforded the opportunity to familiarize themselves with the operation of the lifts.

The safety team shall review and concur with all indoor work that involves lifts with internal combustion engines. Concurrence may be in the form of a specific IWS, Hazards Assessment Control Form (HAC), Pre-task Hazards Analysis (PHA), Safety Plan of Action (SPA), or other form of written communication, which will be attached to the paperwork completed for the specific job.

9.5 BEFORE OPERATION

Before operation, the operator shall:

- Perform a prestart inspection

- Practice with the aerial lift (if unfamiliar with the lift) until comfortable/proficient with its operation.
- Read and understand the manufacturers' manuals.
- Understand all labels, warnings and instructions on the lift.
- Ensure that all occupants of the platform wear appropriate personal safety equipment for the conditions under which the platform will be operated, per the applicable Integration Work Sheet/Safety Plan (IWS/SP) (e.g., fall protection, hard hats).
- Have been instructed by a qualified person in the intended purpose and function of each of the controls.
- Notify and communicate with the Facility Point of Contact (FPOC) at the site where the lift will be used.

9.6 WORKPLACE INSPECTIONS

- Operators will inspect the workplace to mitigate hazards before and during aerial lift use. Areas will be inspected for hazards such as:
 - Drop-offs, holes, or untamed earth fills.
 - Slope(s), ditches, bumps, and floor obstructions, debris.
 - Overhead obstructions and high voltage hazards.
 - Other hazardous locations and atmospheres.
 - Inadequate support (The working surface that the lift is sitting on cannot support the weight of the machine, men, etc. for the operation).
 - Wind and weather conditions.
 - Presence of unauthorized persons or other hazardous conditions.

The safety team member shall, with the operator's supervisor, determine if there are any unusual hazards in areas where lifts will be used.

9.7 PRESTART INSPECTION

- The aerial lift shall be inspected for defects prior to each shift's operation. The prestart inspection shall be performed and documented by the operator on each shift and will include items in accordance with manufacturer's recommendations for each specific aerial lift, such as:
 - Operating and emergency controls.
 - Safety devices.
 - Personal protective devices.
 - Hydraulic, air, pneumatic, fuel and electrical systems for wear, leakage, excessive dirt, moisture or any other condition which may impair the use of these systems.
 - Fiberglass and other insulating components for visible damage or contamination.
 - Missing or illegible placards, warnings, operational, instructional, and control markings.
 - Visual inspection of all mechanical fastenings.
 - Cables and wiring harnesses.
 - Loose or missing parts.
 - Wheels and tires.
 - Operating manual(s), and their placement in weatherproof containers on the lift, or in the cab of the truck.
 - Outriggers, stabilizers, and other structures.
 - Guardrail systems.
 - Other items specified by the manufacturer.

The aerial lift shall not be operated if the prestart inspection indicates that repair is necessary. See Appendices for sample inspection sheets.

9.8 OPERATION

The operator shall perform all prestart and workplace and operating. Aerial lifts are not normally insulated for use near electrically energized circuits such as power lines or exposed bus bars. In general, scissors lifts are not electrically insulated and will not provide protection from contact with or proximity to electrical current. Any aerial lift intended for use around electrically energized circuits shall meet the electrical requirements of American National Safety Institute/Scaffold Industry Association (ANSI/SIA) A92.2-2001, "Vehicle-Mounted Elevating and Rotating Aerial Devices." Refer to the manufacturer's owner's manual and identification plate affixed to the machine for the category of insulating aerial device (if applicable). Operators shall maintain safe distances from electrical power lines and apparatus in accordance with governmental regulations.

Aerial lifts are not normally designed for use in hazardous locations. Do not operate an aerial lift in hazardous locations or areas where potentially flammable or explosive gases or particles may be present. Refer to the manufacturer's owner's manual and identification plate affixed to the machine to determine whether it is permissible to operate the machine in hazardous locations (if applicable).

9.9 RESPONSIBILITIES

9.9.1 OPERATOR

Before operation, the operator shall:

- Ensure that their training is current.
- Read and understand the manufacturers' manuals.
- Understand all labels, warnings and instructions on the lift.
- Ensure all occupants of the platform wear appropriate personal safety equipment for the conditions under which the platform will be operated (e.g., fall protection, hard hats)
- Have been instructed by a qualified person in the intended purpose and function of each of the controls.
- Notify and communicate with the supervisor at the site where the lift will be used.
- Ensure that manufacturers' machine manuals, such as operations manuals, the maintenance manuals for each make and model of lift owned, and the manual of responsibilities (if it is a scissor lift) are in the weatherproof containers located on the lifts or in the mobile unit.
- Be retrained, if necessary, based on the owner's or user's observation and evaluation of the operator or every three years for aerial man-lifts or five years for scissor lifts or bucket trucks, whichever comes first.
- Perform written prestart inspections before use of the lift each day or shift, and perform a visual and functional test.
- Conduct workplace inspections before and during aerial lift use..
- Observe operator warnings and instructions to be used before and during each movement of the platform. See Appendix F for a list of these warnings and instructions.
- Shut down lift operations in case of any suspected malfunction, or if a hazard or potentially unsafe condition exists. Notify the work supervisor about any problems or malfunctions that affect the safety of operations. These problems or malfunctions shall be repaired prior to the use of the lift.

9.9.2 OWNER/USER

The Owner/User shall ensure that:

- Aerial lift safety programs are developed, documented and utilized as required.
- Manufacturers' manuals, such as the manual of responsibilities, operations, and maintenance manuals, are available and stored in the weatherproof containers on the lifts or in the mobile units.
- Frequent, annual and/or periodic maintenance inspections shall be performed on a timely basis (taking into account the severity of use and environment) by qualified mechanics trained for this purpose.
- Inspection items listed in the maintenance manuals shall be tested, evaluated and, if applicable, corrected by qualified personnel before the unit is returned to service.
- There is distribution of and compliance with all safety bulletins received from manufacturers.

- Assistance shall be rendered to operators who have questions concerning lifts.
- Modifications of the aerial lift equipment shall be made only by the manufacturer or with their prior written permission.
- That operators comply with all requirements as specified in operator responsibilities.

9.10 WORK SUPERVISORS

- Work supervisors (e.g., Direct Work Supervisor, Job Site Supervisor) shall:
- Ensure that the aerial lift is used only for intended applications as defined in the operating manual, and that recognized safety practices are followed.
- Select operators based on their experience and physical qualifications.
- Ensure that operators' training is current.
- Monitor the performance of lift operators to ensure that they comply with safety rules.
- Ensure that unauthorized persons do not operate the lifts.
- Monitor daily written prestart inspections.
- Ensure that lifts are equipped with required safety equipment (e.g., overrides, back-up beepers, anchorage points for personal fall arrest systems).
- Ensure that lifts are maintained and that qualified personnel perform frequent, annual, and periodic inspections.
- Ensure that lifts are not operated if they are out of compliance with their applicable maintenance schedules.

9.11 TRAINING

Only those workers who have received instructions regarding the inspection, application, and operation of an aerial lift, including recognition and avoidance of hazards, shall operate that aerial lift.

The operator shall be retrained if management notes any performance deficiencies, or every three years for aerial man-lifts or five years for scissor lifts or bucket trucks, whichever comes first.

9.12 WORK SMART STANDARDS

10 CFR 851, "Worker Safety and Health Program." A306

29 CFR 1910, Subpart F, "Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms," (1910.66 to 1910.68), (current version); specifically Standard 1910.67, Vehicle-mounted elevating and rotating work platforms (Bucket trucks and Aerial lifts). A338

29 CFR 1926, Subpart L, "Scaffolds," 1926.450 to 1926.454, January 1999; Standard 1926.453 addresses aerial lifts.

9.13 OTHER REQUIREMENTS

ANSI/SIA A92.2-2001, for Vehicle-Mounted Elevating and Rotating Aerial Devices (Bucket Trucks). After repair, insulating systems on units shall be dielectrically tested in accordance with Section 5.4.3 of ANSI/SIA A92.2-2001. Insulated replacement boom shall be tested to ensure conformance to Section 5.3.3. of ANSI/SIA A92.2-2001. For bucket trucks used in electrical work, see Part 4, ANSI C2-1997, NEC, as cited in ANSI-SIA A92.2-2001. Other rules and regulations may apply; see departments performing the work for more information.

ANSI/SIA A92.3-1990, for Manually Propelled Elevating Aerial Platforms.

ANSI/SIA A92.5-1992, for Boom-Supported Elevating Work Platforms (Aerial Platform Manlifts).

ANSI/SIA A92.6-1999, for Self-Propelled Elevating Work Platforms (Scissor lifts), plus Manual of Responsibilities.

**COMPLETE ROOF SYSTEMS
10FALL PROTECTION PLAN**

COMPLETE ROOF SYSTEMS FALL PROTECTION PLAN

10.1 PURPOSE

The purpose of this program is to provide fall protection procedures to prevent injury to employees while performing work assignments at elevated levels.

10.2 SCOPE

Applies to all Complete Roof Systems employees who have work assignments at work levels that exceed 6 feet in height where guardrails or nets are not utilized. This includes work near and around excavations. Guardrails, safety nets, or personal fall arrest systems shall be used where feasible. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers Complete Roof Systems employees and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

10.3 DEFINITIONS

"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 considered to be 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 so as 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" means 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

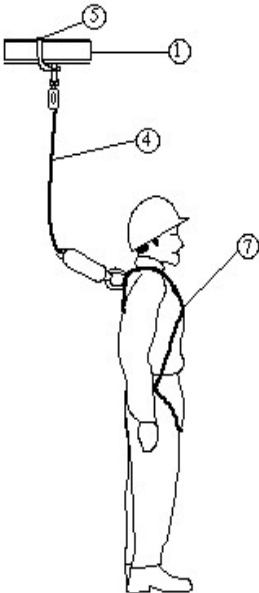


Figure A

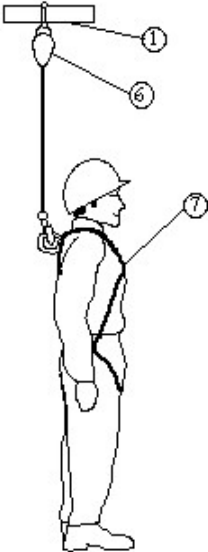


Figure B

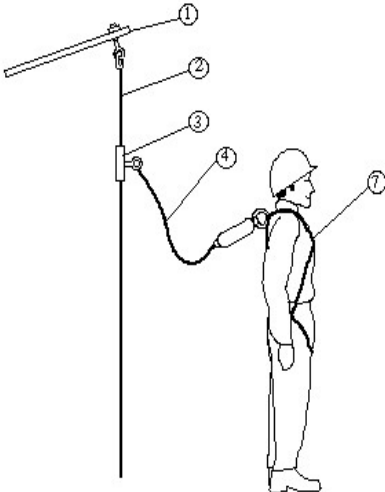


Figure C

- 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
- 9. Restraining

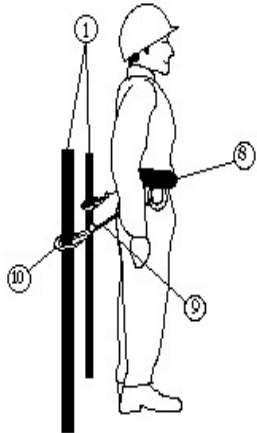


Figure D

10.4 RESPONSIBILITIES

10.4.1 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.

10.4.2 SUPERVISOR

The Supervisor shall ensure that all persons assigned to work at elevated levels, exceeding 6 feet in height or more 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.

10.4.3 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.

10.5 PROCEDURE

Fall protection is required whenever employees are potentially exposed to falls from heights of six feet or greater to lower levels. 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.

Fall protection equipment will meet the requirements of applicable ANSI, ASTM or OSHA requirements. When purchasing equipment and raw materials for use in fall protection systems all applicable ANSI and ASTM requirements should be met.

10.6 MINIMUM STANDARDS

Fall protection must be provided to employees working at heights that exceed applicable regulatory thresholds.

Fall protection is required whenever employees are potentially exposed to falls from heights that exceed applicable regulatory thresholds. Guard rails, safety nets or personal or fall arrest systems should be used. Some applicable regulatory thresholds may include:

- Construction Industry 1926.501(b)(1) - Unprotected sides and edges. Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet (1.8 m) or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.

The following are minimum standards for Complete Roof Systems employee personal fall protection systems:

- All D-rings must be a minimum of 2¼ inches (inside diameter).
- All snap hooks shall not allow pressure to be applied to the gate in the opening direction.
- No pelican hooks on lanyards should be used as a primary connection.
- 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 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 in excess of 310 pounds shall be modified to provide proper protection for such heavier loads.
- The attachment point of the body harness shall be located 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 are able to 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.
- If and 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.

10.7 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 a distance of 6 feet, or the free fall distance permitted by the system, whichever is less.

10.8 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.

10.9 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.

Prompt Rescue of an Employee in the Event of a Fall

Complete Roof Systems shall provide for prompt rescue of employees 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.

10.10 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.

10.11 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.

10.12 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.

10.13 INCIDENT INVESTIGATIONS

Complete Roof Systems shall conduct accident investigations in the event of a fall, near miss or other serious incident.

Accident investigations shall be conducted to evaluate the fall protection plan for potential updates to practices, procedures or training in order to prevent reoccurrence.

Changes to the fall protection program shall be implemented if deemed appropriate from incident corrective actions.

10.14 TRAINING

Employees receive training pertaining to the recognition and elimination of fall hazards. A training program shall be provided for each employee who might be exposed to fall hazards. Training shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to follow to minimize these hazards.

The employee will be trained in the use and operation of fall arrest systems, inspections and maintenance procedures.

**COMPLETE ROOF SYSTEMS
11 HAND AND PORTABLE POWER TOOLS**

COMPLETE ROOF SYSTEMS HAND AND PORTABLE POWER TOOLS

11.1 POLICY

The purpose of this program is to provide establish requirements for the safe operation of hand and power tools and other portable tools, including proper guarding. All hand and power tools shall be maintained in a safe condition.

Complete Roof Systems shall ensure that all hand tools are used properly, safely and in accordance with all manufacturer's guidelines.

11.2 AUTHORITY AND RESPONSIBILITY

11.2.1 ENVIRONMENTAL HEALTH AND SAFETY IS RESPONSIBLE FOR:

- Assisting supervisors in identifying hazardous conditions in regards to hand/power tools;
- Inspecting areas to ensure that this policy is being adhered to; and
- Providing safety awareness training, as needed.

11.2.2 DEPARTMENT SUPERVISORS ARE RESPONSIBLE FOR:

- Anticipating all work hazards;
- Ensuring that all safeguards are utilized;
- Working with Environmental Health and Safety to initiate any necessary administrative action required to enforce safe work practices;
- Replacing all damaged tools;
- Ensuring that tools are being properly maintained by instituting an inspection program;
- Ensuring employees are trained to use tools properly and in accordance with the manufacturer's instructions; and
- Taking the appropriate corrective action in accordance with the Complete Roof Systems's Personnel Policy for employees not complying with this policy.

11.2.3 EMPLOYEES ARE RESPONSIBLE FOR:

- Anticipating all work hazards;
- Ensuring that all safeguards are utilized;
- Conducting routine inspections to ensure that tools are properly maintained;
- Reporting to their supervisor any tool that needs to be replaced;
- Following all safety guidelines for the use of hand/power tools and according to manufacturer's instructions; and
- Participating in training provided by the department.

11.3 GENERAL SAFETY PRECAUTIONS

Employees who use hand and power tools and who are exposed to the hazards of falling, flying, abrasive and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases must be provided with the appropriate equipment needed, including Personal Protective Equipment, to protect them from the hazard. Refer to the Complete Roof Systems's Personal Protective Equipment policy.

Any tool which is not in compliance with any applicable requirement of this plan is prohibited and shall either be identified as unsafe by tagging or locking the controls to render them inoperable or shall be physically removed from its place of operation.

All hazards involved in the use of power tools can be prevented by following some basic safety rules:

- Keep all tools in good condition with regular maintenance;
- Use the right tool for the job;
- Examine each tool for damage before use;
- Operate according to the manufacturer's instructions;
- Utilize the proper protective equipment. Refer to the Complete Roof Systems's **Personal Protective Equipment Policy**; and
- Participate in safety training.

Employees and employers have a responsibility to work together to establish safe working procedures. If a hazardous situation is encountered, it shall be brought to the attention of the Department Supervisor and/or Environmental Health and Safety for evaluation and corrective action. Additionally, only Complete Roof Systems employees shall use Complete Roof Systems hand/portable power tools.

11.4 HAND TOOLS

Hand tools are non-powered. They include anything from axes to wrenches. The greatest hazards posed by hand tools result from misuse and improper maintenance.

Some examples of misuse include the following:

- Using a screwdriver as a chisel may cause the tip of the screwdriver to break and fly, hitting the user or other employees;
- Using a tool with a wooden handle (e.g., hammer) if the handle is loose, splintered, or cracked, the head of the tool may fly off and strike the user or another worker;
- Using a wrench if its jaws are sprung, because it might slip; and
- Using impact tools (e.g., chisels, wedges) if they have mushroomed heads, the heads might shatter on impact, sending sharp fragments flying.

Hand tool precautions including the following:

- Employers shall caution employees that saw blades, knives or other tools be directed away from aisle areas and other employees working in close proximity. Knives and scissors shall be sharp. Dull tools can be more hazardous than sharp ones;
- Floors shall be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand tools; and
- Around flammable substances, sparks produced by iron and steel hand tools can be a dangerous ignition source. Where this hazard exists, spark-resistant tools made from brass, plastic, aluminum or wood shall be used.

11.5 POWER TOOLS

Power tools can be hazardous when improperly used. There are several types of power tools, based on the power source they use: electric, pneumatic, liquid fuel, hydraulic, and powder-actuated.

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

- Never carry a tool by the cord or hose;
- Never remove prongs from any cords;
- Never stand in or near water when using tools;
- Always use a Ground Fault Circuit Interrupter (GFCI) with electrical tools if working in a wet environment;
- Never "yank" the cord or the hose to disconnect it from the receptacle;
- Keep cords and hoses away from heat, oil and sharp edges;
- Replace all frayed and/or damaged extension cords. Do not try to tape cords;
- Disconnect tools when not in use, before servicing and when changing accessories such as blades, bits and cutters;
- All observers shall be kept at a safe distance away from the work area;

- Secure work with clamps or a vise, freeing both hands to operate the tool;
- Avoid accidental starting. The worker shall not hold a finger on the switch button while carrying a plugged-in tool;
- Tools shall be maintained with care. They shall be kept sharp and clean for the best performance. Follow instructions in the user's manual for maintenance, lubricating and changing accessories;
- Maintain good footing and balance;
- Avoid loose fitting clothes, ties or jewelry such as bracelets, watches or rings, which can become caught in moving parts;
- Use tools that are either double-insulated or grounded (three-pronged);
- Keep work area well-lit when operating electric tools.
- Ensure that cords and hoses do not pose as a tripping hazard; and
- All portable electric tools that are damaged shall be removed from use and tagged "Do Not Use". This shall be done by supervisors and/or employees.

11.6 GUARDS

Guards shall be in place and operable at all times while the tool is in use. The guard may not be manipulated in such a way that will compromise its integrity or compromise the protection in which intended. Guarding shall meet the requirements set forth in ANSI B15.1.

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

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

- Nip points;
- Rotating parts;
- Flying chips; and
- Spark.

Safety guards shall never be removed when a tool is being used. For example, portable circular saws shall be equipped with guards. An upper guard shall cover the entire blade of the saw. A retractable lower guard shall cover the teeth of the saw, except when it makes contact with the work material. The lower guard shall automatically return to the covering position when the tool is withdrawn from the work. Refer to the Complete Roof Systems's Machine Guarding policy.

11.7 SAFETY SWITCHES

The following hand-held power tools shall be equipped with a momentary contact "on-off" control switch: drills, tappers, fastener drivers, horizontal, vertical and angle grinders with wheels larger than two inches in diameter, disc and belt sanders, reciprocating saws, saber saws and other similar tools. These tools also may be equipped with a lock-on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

The following hand-held powered tools may be equipped with only a positive "on-off" control switch: platen sanders, disc sanders with discs two inches or less in diameter; grinders with wheels two inches or less in diameter; routers, planers, laminate trimmers, nibblers, shears, scroll saws and jigsaws with blade shanks quarter inch wide or less.

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

11.8 ELECTRIC TOOLS

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

Among the chief hazards of electric-powered tools are burns and slight shocks which can lead to injuries or even heart failure.

To protect the user from shock, tools shall either have a three-wire cord with ground and be grounded, be double insulated, or be powered by a low-voltage isolation transformer. Anytime an adapter is used to accommodate a two-hole receptacle, the adapter wire shall be attached to a known ground. The third prong shall never be removed from the plug.

Tools shall be shut down before cleaning, repairing or oiling. Disconnect or use Lockout/Tagout Procedures. Refer to the Complete Roof Systems's Lockout/Tagout Program.

These general practices shall be followed when using electric tools:

- Electric tools shall be operated within their design limitations;
- Gloves, eye protection, and safety footwear are recommended during use of electric tools;
- When not in use, tools shall be stored in a dry place;
- Electric tools shall not be used in damp or wet locations; and
- Work areas shall be well lit, even if this means the operators has to augment the work surface illumination by other appropriate means

11.9 POWDER-ACTUATED TOOLS

Powder-actuated tools operate like a loaded gun and shall be treated with the same respect and precautions. The use of powder-actuated tools is prohibited until approved by Environmental Health and Safety.

Safety precautions to remember including the following:

- These tools shall not be used in an explosive or flammable atmosphere.
- Before using the tool, the worker shall inspect it to determine that it is clean, all moving parts operate freely, and the barrel is free from obstructions.
- Employees shall not modify tools.
- The tool shall never be pointed at anybody.
- The tool shall not be loaded unless it is to be used immediately. A loaded tool shall not be left unattended, especially where it could be available to unauthorized persons.
- Hands shall be kept clear of the barrel end.
- To prevent the tool from firing accidentally, two separate motions are required for firing: one to bring the tool into position and another to pull the trigger.
- The tools shall not be able to operate until they are pressed against the work surface with a force of at least five pounds greater than the total weight of the tool.
- If a powder-actuated tool misfires, the employee shall wait at least 30 seconds, then try firing it again.
- If it still will not fire, the user shall wait another 30 seconds so that the faulty cartridge is less likely to explode then carefully remove the load. The bad cartridge shall be put in water.
- Suitable eye and face protection are essential when using a powder-actuated tool.
- The muzzle end of the tool shall have a protective shield or guard centered perpendicularly on the barrel to confine any flying fragments or particles that might otherwise create a hazard when the tool is fired. The tool shall be designed so that it will not fire unless it has this kind of safety device.
- All powder-actuated tools shall be designed for varying powder charges so that the user can select a powder level necessary to do the work without excessive force; and
- If the tool develops a defect during use, it shall be tagged and taken out of service immediately until it is properly repaired.

11.10 HAND AND PORTABLE TOOL INFORMATION SHEET

Environmental Health and Safety General Safety Precautions

- Only Complete Roof Systems employees shall use Complete Roof Systems tools/portable powered tools.
- Every tool was designed to do a certain job. Use it for its intended purpose.
- Do not force tools beyond their capacity.
- Keep your tools in good condition: sharp, clean, oiled, dressed and not abused.
- Tools subject to impact (e.g., chisels, drills, punches) tend to "mushroom".
- Keep them sharpened to avoid flying chips. Use tool holders.
- Drill Bits shall be kept sharp, not dull, chipped, rounded or tapered.
- Worn tools are dangerous. For example, the teeth in a pipe wrench can slip if worn smooth, an adjustable wrench will slip if its jaws are sprung and hammer heads can fly off loose handles.
- Wrenches, if adjustable, shall work freely and adjust properly. Gripping teeth or smooth jaws shall not be worn. Always use the proper size wrench for the job. Never use a wrench as a hammer.
- Hammers shall not have broken claws or handles. Check for loose handles. Always use proper size and weight for the job.
- Screwdriver points shall not be badly worn and handles shall be in good condition. Use the proper size and type of screwdriver for the job.
- Cutting tools shall be kept sharp to ensure good smooth cutting. Always use proper handles.

Before Use

- Is the tool sized right for the job?
- Is it in the proper working condition?
- Whenever possible, ground all power tools.
- Always wear the proper personal protective equipment required for the job. Protect your eyes, hands, ears and other body parts.
- Do not remove or make ineffective any safeguards unless authorized. Guards removed for repairs shall be replaced promptly.
- Cords shall not be frayed or damaged.
- Tools shall be inspected regularly to ensure cleanliness and proper operation.
- There shall be a power shut off switch within reach of the operator of each tool.
- Tools shall be equipped with an emergency stop button that is colored red.

11.11 PERSONAL PROTECTIVE EQUIPMENT

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 shall be provided with the particular PPE necessary to protect them from the hazard.

COMPLETE ROOF SYSTEMS
12 HAZARD COMMUNICATION / GHS

COMPLETE ROOF SYSTEMS HAZARD COMMUNICATION

12.1 PURPOSE

The purpose of this program is to ensure the safe use of hazardous chemical substances and to comply with the requirements of OSHA HCS 2012.

12.2 INTRODUCTION

In 2012, OSHA revised the Hazard Communication Standard (HCS) to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). As a result, this Hazard Communication Program (HCP) has been revised to comply with the requirements of the OSHA HCS 2012.

It spells out how Complete Roof Systems will inventory chemicals stored and used, obtain and use Safety Data Sheets, maintain labels on chemical substances and train employees about the hazards of chemicals they are likely to encounter on the job.

Preparation of this program indicates our continuing commitment to safety among our employees in all of our locations.

- Each facility is expected to follow this program and maintain its work areas in accordance with these requirements.
- Employees, their designated representatives, and government officials must be provided copies of this program upon request.
- In addition to the program, other information required as part of our hazard communication effort is available to workers upon request.
- Asking to see this information is an employee's right.
- Using this information is part of our shared commitment to a safe, healthy workplace.

12.3 SCOPE

This program is applicable to all Complete Roof Systems employees who may be exposed to hazardous chemical substances. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers Complete Roof Systems employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

12.4 RESPONSIBILITIES

A written hazard communication program be developed, implemented and maintained at each workplace. A written hazard communication program shall be developed, implemented and maintained at each workplace that describes how labels and other forms of warning, Safety Data Sheets and employee information will be met.

12.4.1 SAFETY MANAGER OR DESIGNEE

The Safety Manager, or designee, is responsible for administering the hazard communication program. This person is also responsible for:

- Reviewing the potential hazards and safe use of chemicals.
- Maintaining a list of all hazardous chemicals and a master file of SDSs.
- Ensuring that all containers are labeled, tagged or marked properly.
- Providing new-hire and annual training for employees.
- Maintaining training records.
- Identifying hazardous chemicals used in nonroutine tasks and assessing their risks.

- Informing outside contractors who are performing work on Complete Roof Systems property about potential hazards.
- Reviewing the effectiveness of the hazard communication program and making sure that the program satisfies the requirements of all applicable federal, state or local hazard communication requirements.

12.4.2 EMPLOYEES

- Employees are responsible for following the requirements in the Hazard Communication Program.
- Any employee who transfers any material from one container to another is responsible for labeling the new container with all required information.
- All employees are responsible for learning the requirements of this section and for applying them to their daily work routine.
- Identifying hazards before starting a job.
- Reading container labels and SDSs.
- Notifying the supervisor of torn, damaged or illegible labels or of unlabeled containers.
- Using controls and/or personal protective equipment provided by the company to minimize exposure.
- Following company instructions and warnings pertaining to chemical handling and usage
- Properly caring for personal protective equipment, including proper use, routine care and cleaning, storage and replacement.
- Knowing and understanding the consequences associated with not following Complete Roof Systems policy concerning the safe handling and use of chemicals.
- Participating in Complete Roof Systems training.

12.5 PROCEDURE

12.5.1 LIST OF HAZARDOUS CHEMICALS

Complete Roof Systems shall maintain a list of hazardous chemicals on the job site. A list of the hazardous chemicals known to be present using an identity that is referenced on the appropriate Safety Data Sheet shall be maintained.

12.5.2 SAFETY DATA SHEETS (SDS)

SDSs must be obtained for each required chemical. Chemical manufacturers are responsible for developing SDSs. Complete Roof Systems shall have a SDS for each chemical used.

The purchasing of any potentially hazardous chemical products from any supplier that does not provide an appropriate Safety Data Sheet in a timely fashion is prohibited.

SDSs are to be maintained in a readily accessible location to employees. SDSs shall be maintained and readily accessible in each work area. SDSs 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.

The Safety Data Sheet must be kept in the SDS library for as long as the chemical is used by the facility.

Electronic access (telephone, fax, internet, etc.) may be used to acquire and maintain SDS libraries and archives.

The Manager is responsible for seeing that the Chemical Inventory List inventory is maintained, is current and is complete. He/she will review Chemical Inventory List at least annually. When a hazardous material has been permanently removed from the work place, its SDS is to be removed from the Chemical Inventory List.

SDS' for hazardous materials to which Complete Roof Systems employees have been exposed must be maintained after the employee leaves the employment of Complete Roof Systems.

12.5.3 METHODS TO BE USED TO INFORM EMPLOYEES OF THE HAZARDS OF NON-ROUTINE TASKS

The methods that Complete Roof Systems will use to inform employees of the hazards of non-routine tasks and the hazards associated with chemicals contained in unlabeled pipes in their work areas include:

- Conducting a Job Hazard Assessment (JSA).
- Employees will be advised of methods and special precautions, PPE and the hazards associated with chemicals and the hazards associated with chemicals contained in unlabeled pipes in their work areas.
- In the unlikely event that such tasks are required, the supervisor, or designee, will provide a SDS for the involved chemical.

12.5.4 THE USE AND CARE OF LABELS AND OTHER FORMS OF WARNING

Container labels should contain the following information:

- Product identifier
- Signal word
- Hazard statement
- Pictogram(s)
- Precautionary statement(s), and
- Name, address and telephone number of the chemical manufacturer, importer or other responsible party.

The Manager will ensure that all hazardous chemicals used or stored in the facility are properly labeled.

Damaged labels or labels with incomplete information shall be reported immediately.

Workplace labels or other forms of warning will be legible, in English and prominently displayed on the container or readily available in the work area throughout each work shift.

If employees speak languages other than English, the information in the other language(s) may be added to the material presented as long as the information is presented in English as well.



Complete Roof Systems will use the GHS labeling system for secondary containers.

Portable containers into which hazardous chemicals are transferred from labeled containers and that are intended for the immediate use of the employee who performs the transfer do not require a label.


If the portable container will be used by more than one employee or used over the course of more than one shift, the container must be labeled.

Received from vendors that are not properly labeled must be rejected.

12.6 PICTOGRAMS AND HAZARDS

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

12.7 LABEL

<p>HS85 Batch number: 85L6543</p>  <p>Warning Harmful if swallowed</p> <p>Wash hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Dispose of contents/container in accordance with local, state and federal regulations.</p> <p>First aid: If swallowed: Call a doctor if you feel unwell. Rinse mouth.</p> <p>GHS Example Company, 123 Global Circle, Anyville, NY 130XX Telephone (888) 888-8888</p>

12.8 MULTI-EMPLOYER JOB SITES AND/OR MULTI WORK SITE

The following specific methods for providing other employer information concerning hazardous chemicals at job sites, methods of providing SDS sheets, methods of precautionary measures to be taken and methods of providing information on labeling systems:

12.8.1 MULTI-WORK SITES

Where employees must travel between work places 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.

12.8.2 MULTI-EMPLOYER JOB SITES

A pre-job briefing shall be conducted with the contractor prior to the initiation of work on the site.

- During this pre-job briefing, contractors shall notify Complete Roof Systems and present current copies of Safety Data Sheets and label information for every hazardous chemical brought on-site.
- Complete Roof Systems shall notify and provide required SDS and label information for all hazardous chemicals the contractor may encounter on the job.
- The facilities labeling system and any precautionary measures to be taken by contractor during normal conditions and emergencies shall be addressed.
- By providing such information to other employers, Complete Roof Systems does not assume any obligations that other employers have for the safety of their employees.

12.9 TRAINING

Employees shall be provided with information and training. Employees shall be provided with effective information and training on hazardous chemicals in their work area at the time of their initial assignment and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and safety data sheets.

Additional training will be provided whenever a new chemical hazard is introduced into the work area. To reinforce the importance of handling chemicals properly when performing new or non-routine tasks supervisors will conduct supplementary training as needed.

Formal training will be conducted by facility employees or individuals who are knowledgeable in the Hazard Communication program.

The Hazard Communication Program documented training shall, as a minimum, include:

- Requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 (General Industry) or 29 CFR 1926.59 (Construction Industry).
- Operations in the work area where hazardous chemicals are present.
- Location and availability of the hazard communication program, chemical inventory list and SDSs.
- Methods and observations used to detect the presence or release of a hazardous chemical in the work area, such as monitoring devices, visual appearance or odor of hazardous chemicals when being released.
- Explanation of the labels received on shipped containers.
- Explanation of the workplace labeling system.
- Explanation of the SDS, including order of information and how employees can obtain and use the appropriate hazard information.

The Manager shall ensure records of employee training are maintained.

**COMPLETE ROOF SYSTEMS
13 HEAT STRESS/ILLNESS PREVENTION PLAN**

COMPLETE ROOF SYSTEMS HEAT STRESS AND RELATED DISORDERS PREVENTION PLAN

13.1 PURPOSE

This program is designed to reduce the risk of work-related heat illnesses and to establish a standard system for the prevention, notification and of accidents involving occupational injury or illness, related to heat stress. This standard applies to all work done outdoors at Complete Roof Systems.

13.2 OBJECTIVES

- Eliminate or control unsafe acts and conditions before they result in accidents or exposures that may produce injury and/or illness.
- Stimulate regular employee hazard detection and control activity.
- Provide a mechanism for employees to formally report hazards and to make safety recommendations.

13.3 DEFINITIONS

"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.

"Landscaping" means providing landscape care and maintenance services and/or installing trees, shrubs, plants, lawns, or gardens, or providing these services in conjunction with the design of landscape plans and/or the construction (i.e., installation) of walkways, retaining walls, decks, fences, ponds, and similar structures, except for employment by an employer who operates a fixed establishment where the work is to be performed and where drinking water is plumbed.

"Oil and gas extraction" means operating and/or developing oil and gas field properties, exploring for crude petroleum or natural gas, mining or extracting of oil or gas or recovering liquid hydrocarbons from oil or gas field gases.

"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 of time 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 the area of blocked sunlight. Shade is not adequate when heat in the area of 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.

"Temperature" means the dry bulb temperature in degrees Fahrenheit obtainable by using a thermometer to measure the outdoor temperature in an area where there is no shade. While the temperature measurement must be taken in an area with full sunlight, the bulb or sensor of the thermometer should be shielded while taking the measurement, e.g., with the hand or some other object, from direct contact by sunlight.

13.4 REQUIREMENTS

All managers and supervisors are responsible for implementing and maintaining the Heat Illness Program in their work areas.

13.5 PROVISION OF WATER

Employees shall have access to potable drinking water. Employees shall have access to potable drinking water. Where it is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift.

13.6 ACCESS TO SHADE

Employees will be provided with access to shade. 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. Such access to shade shall be permitted at all times. See definition of "Shade".

13.7 CONTROL MEASURES

Each work location involved in working in hot environments shall implement measures that must be in place to control the effects of environmental factors that can contribute to heat related illnesses. The most common environmental factors are air temperature, humidity, radiant heat sources and air circulation.

Physical factors that can contribute to heat related illness shall be taken into consideration before performing a task. The most common physical factors that can contribute to heat related illness are type of work, level of physical activity and duration, and clothing color, weight and breathability.

Supervisors must ensure personal factors that contribute to heat related illness are taken into consideration before assigning a task where there is the possibility of a heat-related illness occurring. The most common personal factors that can contribute to heat related illness are age, weight/fitness, drug/alcohol use, prior heat-related illness, etc.

Each work site shall develop site specific procedures but shall include the minimum:

- Bring at least 2 quarts per employee at the start of the shift and the supervisors/designated persons will monitor water containers every 30 minutes, and employees are encouraged to report to supervisor/designated person low levels or dirty water.
- Supervisors will provide frequent reminders to employees to drink frequently.
- Every morning there will be short tailgate meetings to remind workers about the importance of frequent consumption of water throughout the shift during hot weather.
- Place water containers as close as possible to the workers.
- When drinking water levels within a container drop below 50%, the water shall be replenished immediately or water levels should not fall below the point that will allow for adequate water during the time necessary to effect replenishment.
- Disposable/single use drinking cups will be provided to employees or provisions will be made to issue employees their own cups each day.
- Supervisors will set-up an adequate number of umbrellas, canopies or other portable devices at the start of the shift and will relocate them to be closer to the crew, as needed.
- Non-agricultural employers can use other cooling measures if they demonstrate that these methods are as effective as shade.

Working hours will be modified to work during the cooler hours of the day, when possible.

When a modified or shorter work-shift is not possible, more water and rest breaks will be provided.

Supervisors will continuously check all employees and stay alert to the presence of heat related symptoms.

Supervisors will carry cell phones or other means of communication, to ensure that emergency services can be called and check that these are functional at the worksite prior to each shift.

Every morning, workers will be reminded about address and directions to the worksite to inform medical responders and emergency procedures.

All newly hired workers will be assigned a buddy or experienced coworker to ensure that they understood the training and follow the company procedures.

13.8 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 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;
- Complete Roof Systems procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary;
- Complete Roof Systems 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;
- Complete Roof Systems 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.

Supervisors must receive training in the prevention of heat related illnesses prior to supervising employees working in heat. Supervisors will be trained in the Complete Roof Systems heat illness emergency response procedures to prevent heat illness and procedures to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

Communication for employees shall be in a form readily understandable by all affected employees.

13.9 OSHA QUICK CARD – PROTECT YOURSELF HEAT STRESS



When the body is unable to cool itself by sweating, several heat-induced illnesses such as heat stress or heat exhaustion and the more severe heat stroke can occur, and can result in death.

Factors Leading to Heat Stress

High temperature and humidity; direct sun or heat, limited air movement, physical exertion, poor physical condition, some medicines and inadequate tolerance for hot workplaces.

Symptoms of Heat Exhaustion

- Headaches, dizziness, lightheadedness or fainting.
- Weakness and moist skin.
- Mood changes such as irritability or confusion.
- Upset stomach or vomiting.

Symptoms of Heat Stroke

- Dry, hot skin with no sweating.
- Mental confusion or losing consciousness.
- Seizures or convulsions.
- Preventing Heat Stress

Know signs/symptoms of heat-related illnesses; monitor yourself and coworkers.

- Block out direct sun or other heat sources.
- Use cooling fans/air-conditioning; rest regularly.
- Drink lots of water; about 1 cup every 15 minutes.
- Wear lightweight, light colored, loose-fitting clothes.
- Avoid alcohol, caffeinated drinks, or heavy meals.

What to Do for Heat-Related Illness

- Call 911 (or local emergency number) at once.
- While waiting for help to arrive:
 - Move the worker to a cool, shaded area.
 - Loosen or remove heavy clothing.
 - Provide cool drinking water.
 - Fan and mist the person with water.



Protéjase del Estrés por calor

Cuando el cuerpo no puede bajar su temperatura mediante el sudor, pueden ocurrir varias enfermedades debido al calor, tales como estrés o agotamiento por calor e insolación o golpe de calor, las cuales pueden resultar en la muerte.

Factores que llevan al estrés por calor

Alta temperatura y humedad, calor o sol directo, movimiento limitado de aire, esfuerzo físico, pobre condición física, algunas medicinas y tolerancia inadecuada para lugares de trabajo calurosos.

Síntomas de agotamiento por calor

- Dolores de cabeza, mareos, vértigo o desmayo.
- Debilidad y piel húmeda.
- Cambios de humor como irritabilidad o confusión.
- Nauseas o vómitos.

Síntomas de insolación

- Piel seca y caliente sin sudor.
- Confusión mental o pérdida de conocimiento.
- Convulsiones o ataques.

Evita el estrés por calor

- Conozca las señales y los síntomas de las enfermedades relacionadas al calor; obsérvese a si mismo y a sus colegas.
- Bloquee el sol directo u otras fuentes de calor.
- Utilice ventiladores (abanicos) o aire acondicionado; descanse con regularidad.
- Beba mucha agua, como 1 taza cada 15 minutos.
- Vístase con ropa ligera, de colores claros y no ajustada.
- Evite el alcohol, bebidas con cafeína o comidas pesadas.

Qué hacer en caso de enfermedades relacionadas al calor

- Llame al 911 (u otro número local para emergencias) inmediatamente.

Mientras espera por ayuda:

- Mueva a la persona a un lugar fresco y sombreado.
- Suéltele o quitele la ropa pesada.
- Ofrézcale agua fresca para beber.
- Abanique y rocíe con agua a la persona.

**COMPLETE ROOF SYSTEMS
14JOB SAFETY ANALYSIS**

COMPLETE ROOF SYSTEMS JOB SAFETY ANALYSIS

14.1 GENERAL

Job Safety Analysis (JSA's) is a process of determining physical requirements, environmental conditions and safety factors relating to a specific job or task. JSA's are best used for stationary or repetitive production tasks or product movement, in which the job, equipment and work environment change very little.

Safe Operating Procedures (SOP's) are written step-by-step procedures for a specific non-repetitive task which may be hazardous or critical. The purpose of an SOP is to provide written guidance for a particular task such that any qualified person can successfully and safely complete the task. SOP's are best developed and used for highly skilled jobs and when the equipment and work environment change often. For example, an SOP with appropriate warnings and cautions, would best be developed and used for tasks such as confined space entry, maintenance tasks, lockout-tagout, welding operations, system startup and shutdown.

JSA's/SOP's provide

- PPE determination process
- Resource for supervisors to train new employees
- Control of job steps
- Identification and control of potential hazards
- Benchmark for accident investigation
- Review of employee performance

14.2 RESPONSIBILITIES

14.2.1 MANAGEMENT:

- ensure complete & effective JSA's are developed for all production tasks
- ensure JSA's are reviewed with new hires and annually thereafter
- utilize JSA's and SOP's in accident investigations and retraining
- ensure JSA's & SOP's are modified if a new step or process is added
- ensure SOP's are developed for non-routine tasks that have a high degree of safety risk

14.2.2 SUPERVISORS:

- use JSA's and SOP's to train all new employees
- use JSA's and SOP's when performing job performance evaluations
- develop and submit JSA's for all tasks in their area of responsibility
- review JSA's annually with all employees assigned to their department

The most important person in JSA process is the Supervisor, who is in constant contact with employees and should be familiar with the hazards in their Department. Supervisors are in a better position to recognize and correct unsafe acts and conditions as they occur.

14.2.3 SAFETY COORDINATOR:

- assist Management and Supervisors in developing JSAs and SOPs
- maintain a master file of all JSAs and SOPs
- ensure new JSAs or SOPs are developed for new equipment or processes
- ensure SOPs are posted for tasks that occur at fixed locations (i.e. Bench Grinders, Boiler Operations, etc.)

14.3 DOCUMENTS

Forms and documents available for developing SOPs and JSAs are:

Job Safety Analysis Form
Job Safety Analysis Task Steps
Task Hazard Assessment Worksheet
Task Hazard Prevention & Control Worksheet

14.4 A SAFE OPERATING PROCEDURE CONSISTS OF:

A written step by step procedure for a specific task
A description of possible hazards & cautions
Hazard Control steps
List of required personal protective equipment (PPE)
Qualifications required for the operation
SOP's may be permanently posted or consist of multi-page instructions that are to be reviewed prior to each time a qualified person performs the task.

14.4.1 SOP'S ARE DEVELOPED AND COMPLETED BY THE FOLLOWING STEPS:

1. Draft Development of SOPs
2. Review and approval of SOPs
3. Implementation of SOPs
4. Review and updating SOPs
5. Periodic Training using SOPs

14.5 JSA PROCESS

A Job Safety Analysis consist of:

1. Job Physical Requirements
2. Job Environmental Conditions
3. Personal Protective Equipment required
4. Sequence of Basic Job Steps
5. Potential Accident or Hazards associated with each step
6. Safe Job Practice for each step

Job Safety Analysis are completed through the following steps:

1. Development of JSA's
2. Review and approval of JSA's
3. Implementation of JSA's
4. Review and updating JSA's
5. Periodic Training using JSA's

14.6 SELECT THE JOB TO BE ANALYZED:

Some jobs are definitely more hazardous than others and have a worse accident history. Those jobs that are the most hazardous should have priority. Then the jobs involving less serious hazards can be dealt with. The following factors should be considered in selecting jobs to analyze, and in establishing the order of analysis:

14.7 CONDUCTING THE JOB SAFETY ANALYSIS

Before actually beginning the job safety analysis, take a look at the general conditions under which the job is performed and develop a checklist. Below are some sample questions you might ask.

- Are there materials on the floor that could trip a worker?
- Is lighting adequate?
- Are there any live electrical hazards at the jobsite?
- Are there any chemical, physical, biological, or radiation hazards associated with the job or likely to develop?
- Are tools including hand tools, machines, and equipment in need of repair?
- Is there excessive noise in the work area, hindering worker communication or causing hearing loss?
- Are job procedures known and are they followed or modified?
- Are emergency exits clearly marked?
- Are trucks or motorized vehicles properly equipped with brakes, overhead guards, backup signals, horns, steering gear, and identification, as necessary?
- Are all employees operating vehicles and equipment properly trained and authorized?
- Are employees wearing proper personal protective equipment for the jobs they are performing?
- Have any employees complained of headaches, breathing problems, dizziness, or strong odors?
- Is ventilation adequate, especially in confined or enclosed spaces?
- Have tests been made for oxygen deficiency and toxic fumes in confined spaces before entry?
- Are workstations and tools designed to prevent back and wrist injuries?
- Are employees trained in the event of a fire, explosion, or toxic gas release?

14.8 BREAKING DOWN THE JOB

Nearly every job can be broken down into job tasks or steps. In the first part of the job safety analysis, list each step of the job in order of occurrence as you watch the employee performing the job. Be sure to record enough information to describe each job action, but do not make the breakdown too detailed. Later, go over the job steps with the employee.

14.9 IDENTIFY HAZARDS

After you have recorded the job steps, next examine each step to determine the hazards that exist or that might occur. Ask yourself these kinds of questions.

- Are there hazards that would require the use of personal protective clothing and equipment that are appropriate for the job?
- Are work positions, machinery, pits or holes, and hazardous operations adequately guarded?
- Are lockout procedures used for machinery deactivation as required?
- Is the worker wearing clothing or jewelry, or have long hair that could get caught in the machinery or otherwise cause a hazard?
- Are there fixed objects that may cause injury, such as sharp edges?
- Is the flow of work organized (e.g., Is the worker required to make movements that are too rapid)?
- Can the worker get caught in or between moving parts?
- Can the worker be injured by reaching over moving machinery parts or materials?
- Is the worker at any time in an off-balance position?
- Is the worker positioned to the machine in a way that is potentially dangerous?
- Is the worker required to make movements that could lead to or cause hand or foot injuries, or strain from lifting the hazards of repetitive motions?
- Can the worker be struck by an object or lean against or strike a machine part or object?
- Can the worker fall from one level to another?
- Can the worker be injured from lifting or pulling objects, or from carrying heavy objects?

- Do environmental hazards (dust, chemicals, radiation, welding rays, heat, or excessive noise) result from the performance of the job?

Repeat the job observation as often as necessary until all hazards have been identified.

14.10 RECOMMENDING SAFE PROCEDURES AND PROTECTION

- After you have listed each hazard or potential hazard and have reviewed them with the employee performing the job, determine whether the job could be performed in another way to eliminate the hazards, such as combining steps or changing the sequence, or whether safety equipment and precautions are needed to control the hazards. An alternative or additional procedure is to videotape the worker performing his or her job and analyze the job procedures.
- If safer and better job steps can be used, list each new step, such as describing a new method for disposing of material. List exactly what the worker needs to know to perform the job using a new method. Do not make general statements about the procedure, such as Be Careful. Be as specific as you can in your recommendations.
- You may wish to set up a training program using the job safety analysis to retrain your employees in the new procedures, especially if they are working with highly toxic substances or in hazardous situations. (Some OSHA standards require that formal training programs be established for employees.)
- If no new procedure can be developed, determine whether any physical changes such as redesigning equipment, changing tools, adding machine guards, personal protective equipment, or ventilation will eliminate or reduce the danger.
- If hazards are still present, try to reduce the necessity for performing the job or the frequency of performing it.
- Go over the recommendations with all employees performing the job. Their ideas about the hazards and proposed recommendations may be valuable. Be sure that they understand what they are required to do and the reasons for the changes in the job procedures.

14.11 REVISING THE JOB SAFETY ANALYSIS

- A job safety analysis can do much toward reducing accidents and injuries in the workplace, but it is only effective if it is reviewed and updated periodically. Even if no changes have been made in a job, hazards that were missed in an earlier analysis could be detected.
- If an illness or injury occurs on a specific job, the job safety analysis should be reviewed immediately to determine whether changes are needed in the job procedure. In addition, if a close call or a near miss has resulted from an employee's failure to follow job procedures, this should be discussed with all employees performing the job.
- Any time a job hazard analysis is revised, training in the new job methods, procedures, or protective measures should be provided to all employees affected by the changes. A job safety analysis also can be used to train effectively new employees on the steps and job hazards.

JOB SAFETY ANALYSIS

(Example)

JOB NAME: Using- a fire extinguisher

DEPARTMENT: Safety

COMPLETED BY: COMPLETE ROOF SYSTEMS

SUPERVISOR: Joe Smith

DATE: 1/1/2022

JOB STEPS	HAZARDS	CONTROLS
1. Remove fire extinguisher from wall.	1. Weight of extinguisher.	1. Got a firm grip and good footing lift carefully the hanger, without overexerting yourself.
2. Carry to the fire in an upright position.	2. Weight of extinguisher, fall hazards.	2. Maintain firm grip and control.
3. Remove seal and pin.	3. Weight of extinguisher, sharp edges.	3. Maintain firm grip and control.
4. Hold extinguisher in one hand, hose in the other hand	4. Weight of extinguisher, contents of extinguisher.	4. Maintain firm grip, direct nozzle away from body.
5. Apply "agent to the base of the fire.	5. 'Flash back" of fire or agent.	5. Point at base of fire, with wind to your back.
6. Return extinguisher for refill.	6. Weight of extinguisher, fall hazard.	6. Maintain firm grip and control.



JOB SAFETY ANALYSIS

JOB NAME: _____

DEPARTMENT: _____

COMPLETED BY: _____

SUPERVISOR: _____

DATE: _____

JOB STEPS

HAZARDS

CONTROLS

JOB STEPS	HAZARDS	CONTROLS
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
5.	5.	5.
6.	6.	6.
7.	7.	7.

**COMPLETE ROOF SYSTEMS
15 LADDERS**

COMPLETE ROOF SYSTEMS LADDERS

15.1 GENERAL REQUIREMENTS

- A stairway or ladder must be provided at all worker points of access where there is a break in elevation of 19 inches (48 cm) or more and no ramp, runway, embankment, or personnel hoist is provided.
- When there is only one point of access between levels, it must be kept clear to permit free passage by workers. If free passage becomes restricted, a second point of access must be provided and used.
- Where there are more than two points of access between levels, at least one point of access must be kept clear.
- All stairway and ladder fall protection systems required by these rules must be installed and all duties required by the stairway and ladder rules must be performed before employees begin work that requires them to use stairways or ladders and their respective fall protection systems.

15.2 KEY RESPONSIBILITIES

15.2.1 MANAGERS AND SUPERVISORS

- Managers and supervisors are responsible for ensuring that all employees, and/or contractors have been trained in the use and inspection of ladders in accordance with the manufactures guidelines.
- Managers and supervisors are responsible for ensuring that all employees and contractors are aware that if an inspection discovers a defect, the ladder shall not be used and taken out of service.

15.2.2 EMPLOYEES

- Employees shall inspect ladders prior, during and at the completion of each use to ensure the condition of the ladder and the safety of its occupants.
- Employees are responsible for following this program and reporting any damage or repairs that may be needed to their supervisor.

15.3 INSPECTION, CARE AND SAFE WORK PRACTICES OF LADDERS

15.3.1 INSPECTION

Ladders shall be inspected by a competent person for visible defects on a periodic basis and after any occurrence that could affect their safe use.

- Ladder rungs must be uniformly spaced or meet OSHA/ANSI specifications. Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced, when the ladder is in position for use.
- Portable and fixed ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components, shall either be immediately marked in a manner that readily identifies them as defective, or be tagged with "Do Not Use" or similar language, and shall be withdrawn from service until repaired
- If a ladder is tipped over, it shall be inspected by a competent person for side rail dents or bends, or excessively dented rungs; check all rung to side rail connections; check hardware connections; check rivets for shears.
- Ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty equipment shall not be used; improvised repairs shall not be made.
- All wood parts shall be free from sharp edges and splinters; sound and not painted.

15.3.2 CARE

- Ladders shall be maintained in good condition at all times, the joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operate freely without binding or undue play.
- Metal bearings of locks, wheels, pulleys, etc., shall be frequently lubricated.
- Frayed or badly worn rope shall be replaced. Safety feet and other auxiliary equipment shall be kept in good condition to ensure proper performance.
- Rungs shall be kept free of grease and oil.
- Ladders shall be stored in a well-ventilated area in a manner to prevent sagging and warping.

15.3.3 LADDER SAFE WORK PRACTICES

- Ladders shall be used only for the intended purpose for which they were designed.
- The ladder shall be secured at the top or held by another person at the base.
- The footing of the ladder shall be placed on a stable and level surface.
- Extension ladders shall be placed at a 4:1 ratio. Ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support).
- When ladders are not able to be extended then the ladder shall be secured at its top to a rigid support that will not deflect.
- Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.
- Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.
- Ladders shall not be used by more than one man at a time.
- Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded.
- If a ladder is used in a high traffic area, barricades shall be placed to avoid accidental displacement due to collisions.
- Do not stand on the top two rungs or top of step ladders.

On two-section extension ladders the minimum overlap for the two sections in use shall be as follows:

Size of Ladder (feet)	Overlap (feet)
Up to and including 36'	3
Over 36 up to and including 48'	4
Over 48 up to and including 60'	5

- Ladders shall extend a minimum of 3 feet above top of upper landing surface. The ladder side rails shall extend at least 3 feet (.9m) above the upper landing surface. When ladders are not able to be extended then the ladder shall be secured at its top to a rigid support that will not deflect.
- The employee shall maintain a three (3)-point grip on the ladder at all times and carry tools/equipment on a belt or hoist up. Do not carry anything in the hands that could cause injury in case of fall.
- The employee shall face the ladder while ascending or descending.
- The bracing on the back legs of stepladders is designed solely for increasing stability and not for climbing.
- The ladder shall not be moved while occupied.

15.4 STAIRWAYS

The following general requirements apply to all stairways used during the process of construction, as indicated:

- Stairways that will not be a permanent part of the structure on which construction work is performed must have landings at least 30 inches deep and 22 inches wide (76 x 56 cm) at every 12 feet (3.7 m) or less of vertical rise.
- Stairways must be installed at least 30 degrees—and no more than 50 degrees—from the horizontal.
- Variations in riser height or stair tread depth must not exceed 1/4 inch in any stairway system, including any foundation structure used as one or more treads of the stairs.
- Where doors or gates open directly onto a stairway, a platform must be provided that extends at least 20 inches (51 cm) beyond the swing of the door.
- Metal pan landings and metal pan treads must be secured in place before filling.
- All stairway parts must be free of dangerous projections such as protruding nails.
- Slippery conditions on stairways must be corrected.
- Workers may not use spiral stairways that will not be a permanent part of the structure.

The following requirements apply to stairs in temporary service during construction:

- Except during construction of the actual stairway, stairways with metal pan landings and treads must not be used where the treads and/or landings have not been filled in with concrete or other materials, unless the pans of the stairs and/or landings are temporarily filled in with wood or other materials. All treads and landings must be replaced when worn below the top edge of the pan.
- Except during construction of the actual stairway, skeleton metal frame structures and steps must not be used (where treads and/or landings will be installed later) unless the stairs are fitted with secured temporary treads and landings.
- Temporary treads must be made of wood or other solid material and installed the full width and depth of the stair.

15.5 STAIRRAILS AND HANDRAILS

The following general requirements apply to all stair rails and handrails:

- Stairways having four or more risers or rising more than 30 inches (76 cm) in height—whichever is less—must have at least one handrail. A stair rail also must be installed along each unprotected side or edge. When the top edge of a stair rail system also serves as a handrail, the height of the top edge must be no more than 37 inches (94 cm) nor less than 36 inches (91.5 cm) from the upper surface of the stair rail to the surface of the tread.
- Winding or spiral stairways must have a handrail to prevent using areas where the tread width is less than 6 inches (15 cm).
- Stair rails installed after March 15, 1991, must be not less than 36 inches (91.5 cm) in height.
- Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members must be provided between the top rail and stairway steps to the stair rail system.
- Midrails, when used, must be located midway between the top of the stair rail system and the stairway steps.
- Screens or mesh, when used, must extend from the top rail to the stairway step and along the opening between top rail supports.
- Intermediate vertical members, such as balusters, when used, must not be more than 19 inches (48 cm) apart.
- Other intermediate structural members, when used, must be installed so that there are no openings of more than 19 inches (48 cm) wide.

- Handrails and the top rails of the stair rail systems must be able to withstand, without failure, at least 200 pounds (890 n) of weight applied within 2 inches (5 cm) of the top edge in any downward or outward direction, at any point along the top edge.
- The height of handrails must not be more than 37 inches (94 cm) nor less than 30 inches (76 cm) from the upper surface of the handrail to the surface of the tread.
- Stair rail systems and handrails must be surfaced to prevent injuries such as punctures or lacerations and to keep clothing from snagging.
- Handrails must provide an adequate handhold for employees to grasp to prevent falls.
- The ends of stair rail systems and handrails must be built to prevent dangerous projections, such as rails protruding beyond the end posts of the system.
- Temporary handrails must have a minimum clearance of 3 inches (8 cm) between the handrail and walls, stair rail systems, and other objects.
- Unprotected sides and edges of stairway landings must be provided with standard 42-inch (1.1 m) guardrail systems.

15.6 LADDERS

The following general requirements apply to all ladders, including job-made ladders:

- A double-cleated ladder or two or more ladders must be provided when ladders are the only way to enter or exit a work area having 25 or more employees, or when a ladder serves simultaneous two-way traffic.
- Ladder rungs, cleats, and steps must be parallel, level, and uniformly spaced when the ladder is in position for use.
- Rungs, cleats, and steps of portable and fixed ladders (except as provided below) must not be spaced less than 10 inches (25 cm) apart, nor more than 14 inches (36 cm) apart, along the ladder's side rails.
- Rungs, cleats, and steps of step stools must not be less than 8 inches (20 cm) apart, nor more than 12 inches (31 cm) apart, between center lines of the rungs, cleats, and steps.
- Rungs, cleats, and steps at the base section of extension trestle ladders must not be less than 8 inches (20 cm) nor more than 18 inches (46 cm) apart, between center lines of the rungs, cleats, and steps. The rung spacing on the extension section must not be less than 6 inches (15 cm) nor more than 12 inches (31 cm).
- Ladders must not be tied or fastened together to create longer sections unless they are specifically designed for such use.
- A metal spreader or locking device must be provided on each stepladder to hold the front and back sections in an open position when the ladder is being used.
- Two or more separate ladders used to reach an elevated work area must be offset with a platform or landing between the ladders, except when portable ladders are used to gain access to fixed ladders.
- Ladder components must be surfaced to prevent injury from punctures or lacerations. and prevent snagging of clothing.
- Wood ladders must not be coated with any opaque covering, except for identification or warning labels which may be placed only on one face of a side rail.

15.7 PORTABLE LADDERS

- Non-self-supporting and self-supporting portable ladders must support at least four times the maximum intended load; extra heavy-duty type 1A metal or plastic ladders must sustain 3.3 times the maximum intended load. The ability of a self-supporting ladder to sustain loads must be determined by applying the load to the ladder in a downward vertical direction. The ability of a non-self-supporting ladder to sustain loads must be determined by applying the load in a downward vertical direction when the ladder is placed at a horizontal angle of 75.5 degrees.
- The minimum clear distance between side rails for all portable ladders must be 11.5 inches (29 cm).
- The rungs and steps of portable metal ladders must be corrugated, knurled, dimpled, coated with skid-resistant material, or treated to minimize slipping.

15.8 FIXED LADDERS

- A fixed ladder must be able to support at least two loads of 250 pounds (114 kg) each, concentrated between any two consecutive attachments. Fixed ladders also must support added anticipated loads caused by ice buildup, winds, rigging, and impact loads resulting from using ladder safety devices.
- Individual rung/step ladders must extend at least 42 inches (1.1 m) above an access level or landing platform either by the continuation of the rung spacings as horizontal grab bars or by providing vertical grab bars that must have the same lateral spacing as the vertical legs of the ladder rails.
- Each step or rung of a fixed ladder must be able to support a load of at least 250 pounds (114 kg) applied in the middle of the step or rung.
- The minimum clear distance between the sides of individual rung/step ladders and between the side rails of other fixed ladders must be 16 inches (41 cm).
- The rungs of individual rung/step ladders must be shaped to prevent slipping off the end of the rungs.
- The rungs and steps of fixed metal ladders manufactured after March 15, 1991, must be corrugated, knurled, dimpled, coated with skid-resistant material, or treated to minimize slipping.
- The minimum perpendicular clearance between fixed ladder rungs, cleats, and steps and any obstruction behind the ladder must be 7 inches (18 cm), except that the clearance for an elevator pit ladder must be 4.5 inches (11 cm).
- The minimum perpendicular clearance between the centerline of fixed ladder rungs, cleats, and steps, and any obstruction on the climbing side of the ladder must be 30 inches (76 cm). If obstructions are unavoidable, clearance may be reduced to 24 inches (61 cm), provided a deflection device is installed to guide workers around the obstruction.
- The step-across distance between the center of the steps or rungs of fixed ladders and the nearest edge of a landing area must be no less than 7 inches (18 cm) and no more than 12 inches (30 cm). A landing platform must be provided if the step-across distance exceeds 12 inches (30 cm).
- Fixed ladders without cages or wells must have at least a 15-inch (38 cm) clear width to the nearest permanent object on each side of the centerline of the ladder.
- Fixed ladders must be provided with cages, wells, ladder safety devices, or self-retracting lifelines where the length of climb is less than 24 feet (7.3 m) but the top of the ladder is at a distance greater than 24 feet (7.3 m) above lower levels.
- If the total length of the climb on a fixed ladder equals or exceeds 24 feet (7.3 m), the following requirements must be met: fixed ladders must be equipped with either (a) ladder safety devices; (b) self-retracting lifelines and rest platforms at intervals not to exceed 150 feet (45.7 m); or (c) a cage or well, and multiple ladder sections, each ladder section not to exceed 50 feet (15.2 m) in length. These ladder sections must be offset from adjacent sections, and landing platforms must be provided at maximum intervals of 50 feet (15.2 m).
- The side rails of through or side-step fixed ladders must extend 42 inches (1.1 m) above the top level or landing platform served by the ladder. Parapet ladders must have an access level at the roof if the parapet is cut to permit passage through it; if the parapet is continuous, the access level is the top of the parapet.
- Steps or rungs for through-fixed-ladder extensions must be omitted from the extension; and the extension of side rails must be flared to provide between 24 inches (61 cm) and 30 inches (76 cm) clearance between side rails.

- When safety devices are provided, the maximum clearance distance between side rail extensions must not exceed 36 inches (91 cm).

15.9 CAGES FOR FIXED LADDERS

- Horizontal bands must be fastened to the side rails of rail ladders or directly to the structure, building, or equipment for individual-rung ladders.
- Vertical bars must be on the inside of the horizontal bands and must be fastened to them.
- Cages must not extend less than 27 inches (68 cm), or more than 30 inches (76 cm) from the centerline of the step or rung and must not be less than 27 inches (68 cm) wide.
- The inside of the cage must be clear of projections.
- Horizontal bands must be spaced at intervals not more than 4 feet (1.2 m) apart measured from centerline to centerline.
- Vertical bars must be spaced at intervals not more than 9.5 inches (24 cm), measured centerline to centerline.
- The bottom of the cage must be between 7 feet (2.1 m) and 8 feet (2.4 m) above the point of access to the bottom of the ladder, The bottom of the cage must be flared not less than 4 inches (10 cm) between the bottom horizontal band and the next higher band.
- The top of the cage must be a minimum of 42 inches (1.1 m) above the top of the platform or the point of access at the top of the ladder. Provisions must be made for access to the platform or other point of access.

15.10 WELLS FOR FIXED LADDERS

- Wells must completely encircle the ladder.
- Wells must be free of projections.
- The inside face of the well on the climbing side of the ladder must extend between 27 inches (68 cm) and 30 inches (76 cm) from the centerline of the step or rung.
- The inside width of the well must be at least 30 inches (76 cm).
- The bottom of the well above the point of access to the bottom of the ladder must be between 7 feet (2.1 m) and 8 feet (2.4 m).

15.11 SAFETY DEVICES AND RELATED SUPPORT SYSTEMS FOR FIXED LADDERS

- All safety devices must be able to withstand, without failure, a drop test consisting of a 500-pound weight (226 kg) dropping 18 inches (41 cm).
- All safety devices must permit the worker to ascend or descend without continually having to hold, push, or pull any part of the device, leaving both hands free for climbing.
- All safety devices must be activated within 2 feet (.61 m) after a fall occurs and limit the descending velocity of an employee to 7 feet/second (2.1 m/sec) or less.
- The connection between the carrier or lifeline and the point of attachment to the body belt or harness must not exceed 9 inches (23 cm) in length.

15.12 MOUNTING LADDER SAFETY DEVICES FOR FIXED LADDERS

- Mountings for rigid carriers must be attached at each end of the carrier, with intermediate mountings, spaced along the entire length of the carrier, to provide the necessary strength to stop workers' falls.
- Mountings for flexible carriers must be attached at each end of the carrier. Cable guides for flexible carriers must be installed with a spacing between 25 feet (7.6 m) and 40 feet (12.2 m) along the entire length of the carrier, to prevent wind damage to the system.
- The design and installation of mountings and cable guides must not reduce the strength of the ladder.
- Side rails and steps or rungs for side-step fixed ladders must be continuous in extension.

15.13 USE OF ALL LADDERS

When portable ladders are used for access to an upper landing surface, the side rails must extend at least 3 feet (.9 m) above the upper landing surface. When such an extension is not possible, the ladder must be secured, and a grasping device such as a grab rail must be provided to assist workers in mounting and dismounting the ladder. A ladder extension must not deflect under a load that would cause the ladder to slip off its supports.

- Ladders must be maintained free of oil, grease, and other slipping hazards.
- Ladders must not be loaded beyond the maximum intended load for which they were built nor beyond their manufacturer's rated capacity.
- Ladders must be used only for the purpose for which they were designed.
- Non-self-supporting ladders must be used at an angle where the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder. Wood job-made ladders with spliced side rails must be used at an angle where the horizontal distance is one-eighth the working length of the ladder.
- Fixed ladders must be used at a pitch no greater than 90 degrees from the horizontal, measured from the back side of the ladder.
- Ladders must be used only on stable and level surfaces unless secured to prevent accidental movement.
- Ladders must not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental movement. Slip-resistant feet must not be used as a substitute for the care in placing, lashing, or holding a ladder upon slippery surfaces.
- Ladders placed in areas such as passageways, doorways, or driveways, or where they can be displaced by workplace activities or traffic must be secured to prevent accidental movement or a barricade must be used to keep traffic or activities away from the ladder.
- The area around the top and bottom of the ladders must be kept clear.
- The top of a non-self-supporting ladder must be placed with two rails supported equally unless it is equipped with a single support attachment.
- Ladders must not be moved, shifted, or extended while in use.
- Ladders must have nonconductive side rails if they are used where the worker or the ladder could contact exposed energized electrical equipment.
- The top or top step of a stepladder must not be used as a step.
- Cross bracing on the rear section of stepladders must not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.
- Ladders must be inspected by a competent person for visible defects on a periodic basis and after any incident that could affect their safe use.
- Single-rail ladders must not be used.
- When ascending or descending a ladder, the worker must face the ladder.
- Each worker must use at least one hand to grasp the ladder when climbing.
- A worker on a ladder must not carry any object or load that could cause him/her to lose balance and fall.

15.14 STRUCTURAL DEFECTS

- Portable ladders with structural defects—such as broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components—must immediately be marked defective, or tagged with “Do Not Use” or similar language and withdrawn from service until repaired.
- Fixed ladders with structural defects—such as broken or missing rungs, cleats, or steps, broken or split rails, or corroded components—must be withdrawn from service until repaired.
- Defective fixed ladders are considered withdrawn from use when they are (a) immediately tagged with “Do Not Use” or similar language; (b) marked in a manner that identifies them as defective; or (c) blocked—such as with a plywood attachment that spans several rungs.
- Ladder repairs must restore the ladder to a condition meeting its original design criteria before the ladder is returned to use.

15.15 GLOSSARY

- **Cleat** – A ladder crosspiece of rectangular cross section placed on edge upon which a person may step while ascending or descending a ladder.
- **Double-Cleat Ladder** – A ladder with a center rail to allow simultaneous two-way traffic for employees ascending or descending.
- **Failure** – Load refusal, breakage, or separation of components.
- **Fixed Ladder** – A ladder that cannot be readily moved or carried because it is an integral part of a building or structure.
- **Handrail** – A rail used to provide employees with a handhold for support.
- **Job-Made Ladder** – A ladder that is fabricated by employees, typically at the construction site; non-commercially manufactured.
- **Load Refusal** – The point where the structural members lose their ability to carry the load.
- **Point of Access** – All areas used by employees for work-related passage from one area or level to another.
- **Portable Ladder** – A ladder that can be readily moved or carried.
- **Riser Height** – The vertical distance from the top of a tread or platform/landing to the top of the next higher tread or platform/landing.
- **Rolling Ladders** – A rolling ladder may only 2 ½ times the least (shortest) base in height
- **Side-Step Fixed Ladder** – A fixed ladder that requires a person to get off at the top to step to the side of the ladder side rails to reach the landing.
- **Single-Cleat Ladder** – A ladder consisting of a pair of side rails connected together by cleats, rungs, or steps.
- **Stair rail System** – A vertical barrier erected along the unprotected sides and edges of a stairway to prevent employees from falling to lower levels.
- **Temporary Service Stairway** – A stairway where permanent treads and/or landings are to be filled in at a later date.
- **Through Fixed Ladder** – A fixed ladder that requires a person getting off at the top to step between the side rails of the ladder to reach the landing.
- **Tread Depth** – The horizontal distance from front to back of a tread, excluding nosing, if any.

**COMPLETE ROOF SYSTEMS
16 OVERHEAD CRANES**

COMPLETE ROOF SYSTEMS OVERHEAD CRANES

16.1 TRAINING

Training of all operators should include, but not be limited to, the following:

- Company rules, regulations and procedures.
- Capacities of equipment and attachments.
- Purpose, use and limitation of controls.
- How to make daily checks.
- The energizing sequences, including pneumatic, hydraulic, and electrical sequences.
- Start-up and shutdown procedures.
- Emergency shutdown procedures.
- General operating procedures.
- All basic signaling procedures, including verbal, hand and radio signals, where required.
- Knowledge of accepted guidelines as published by the EOT (Electric Overhead
- Traveling) crane industry governing bodies as well as local, state and Federal rules and regulations.
- Practice in operating the assigned equipment through the mechanical functions necessary to perform the required task.
- Maximum rated capacity of the crane.
- Best practice and accepted operating procedures.
- Basic safety guidelines of operating an overhead crane.
- Dos and Don'ts of operating an overhead crane.
- How to avoid an accident when operating an overhead crane.
- What to do should an accident occur.
- Training of all riggers should include the following:
 - Company rules, regulations and procedures.
 - The requirements of the Code of Federal Regulation; Title 29, Part 1910.179, Overhead and Gantry Cranes
 - The requirements of the Code of Federal Regulation; Title 29, Part 1910.184, Slings.
 - Knowledge of accepted guidelines as published by the EOT (Electric Overhead
 - Traveling) crane industry governing bodies as well as local, state and Federal rules and regulations.
 - Maximum capacity of the crane.
 - Best practice and accepted rigging procedures.
 - Basic safety guidelines for rigging a load.
 - Dos and Don'ts for rigging a load.
 - How to avoid an accident when for rigging a load.
 - What to do should an accident occur.

16.2 PERSONAL PROTECTIVE EQUIPMENT

When the employer conducts a personal protective equipment hazard assessment, they should include overhead cranes in their review.

An operator and any employee directing a lift must use the appropriate safety equipment recommended for use in this area. If the top of the load is lifted to a height greater than 5 feet, then the load is considered an overhead hazard and head protection (hard hat) should be worn.

When an employee is performing maintenance on an overhead or gantry crane, either from a man lift or platform, the employee should wear an approved safety harness and lanyard, and/or a fall arrest device.

All crane operators and maintenance personnel shall be trained in a detailed LOCK OUT / TAG OUT procedure and supplied with a key operated lock that bears their name and company ID number. When a crane operator believes that the safe operating condition of a crane is in doubt or when maintenance personnel are actively inspecting, service or repairing a crane, it shall be locked out at the mainline disconnect switch by these individuals and no one other than the owner of the lock shall be permitted to remove the lock.

16.3 GENERAL CONDUCT OF OPERATORS

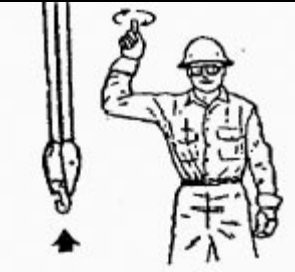
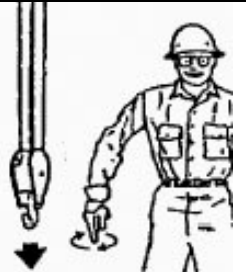
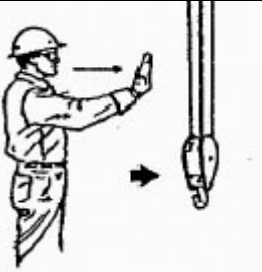

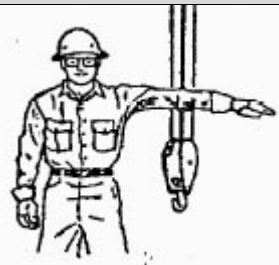
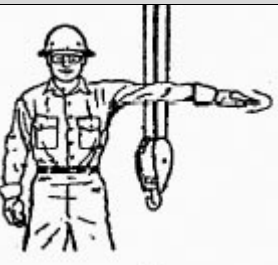
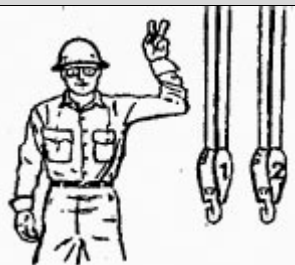


At the beginning of each shift during which a crane is to be used, a visual inspection should be made in accordance with Table 1 below. A visual inspection is limited to that which can be made from a catwalk or other safe observation point. Any defects must be reported to a supervisor for correction or repair.

Inspection Item	Description of Inspection Check Points
Tagged Crane or Hoist	Check that crane or hoist is not tagged with an out-of-order sign.
Control Devices	Test run that all motions agree with control device markings.
Brakes	Check that all motions do not have excessive drift and that stopping distances are normal.
Hook	Check for damage, cracks, nicks, gouges, deformations of the throat opening, wear on saddle or load bearing point, and twist. Refer to the manual furnished by the original manufacturer of the crane.
Hook Latch	If a hook latch is required, check for proper operation.
Wire Rope	Check for broken wires, broken strands, kinks, and any deformation or damage to the rope structure.
Reeving	Check that the wire rope is properly reeved and that rope parts are not twisted about each other.
Limit Switches	Check that the upper limit device stops lifting motion of the hoist load block before striking any part of the hoist or crane.
Oil Leakage	Check for any sign of oil leakage on the crane and on the floor area beneath the crane.
Unusual Sounds	Check for any unusual sounds from the crane or hoist mechanism while operating the crane or hoist.
Warning & Safety Labels	Check that warning and other safety labels are not missing and that they are legible.
Housekeeping & Lighting	Check area for accumulation of material, trip or slip hazards, and poor lighting.

An operator shall only respond to signals from the designated person directing the lift. The one and only exception to this rule is an emergency stop signal, which must be obeyed when given by any employee or other person in the area. The signals given to an operator should conform to table 2 below.

Table 2

Standard Hand Signals for Controlling Overhead and Gantry Cranes

		
<p>HOIST. With forearm vertical, forefinger pointing up, move hand in small horizontal circle</p>	<p>LOWER. With arm extended downward, forefinger pointing down, move hand in small horizontal circle.</p>	<p>BRIDGE TRAVEL. Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.</p>
		
<p>TROLLEY TRAVEL. Palm up, fingers closed, thumb pointing in direction of motion, jerk hand horizontally.</p>	<p>STOP. Arm extended, palm down, hold position rigidly.</p>	<p>EMERGENCY STOP. Arm extended, palm down, move hand rapidly right and left.</p>
		
<p>MULTIPLE TROLLEYS. Hold up one finger for block marked "1" and two fingers for block marked "2". Regular signals follow.</p>	<p>MOVE SLOWLY. Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal. (Hoist Slowly shown as an example.)</p>	<p>MAGNET IS DISCONNECTED. Crane operator spreads both hands apart – palms up.</p>

16.4 DOS AND DON'TS

An operator shall not carry a load over another person.

A crane shall not be used to make a side pull (except where it has been specifically authorized by a qualified person after making specific determinations).

Compressed gases shall only be lifted by a cradle or enclosed platform.

An employee shall not ride a hoisting device, such as a magnet, hook, ball, or load.

When rigging or moving a load, the crane operator and load rigger shall be certain of all of the following:

- The hoisting rope or chain is free of kinks or twist and not wrapped around the load.
- The load is attached to the load block hook by means of a sling or other approved device.
- The sling and load will clear all obstacles or obstructions.
- The load is balanced and secured before lifting the load more than a few inches.
- Multiple lines are not twisted around each other.
- The hook is brought over the load in a manner to prevent swinging.
- There is no sudden acceleration or deceleration of the moving load.

A hoisting limit switch on a crane or hoisting device shall not be used as an operational control, unless the hoist is also equipped with a backup limit switch.

A load shall not be lowered below a point where less than 2 full wraps of wire rope remain on the hoisting drum. If there is any doubt concerning the safety of a crane or hoisting component or system, the operator shall immediately stop the crane, and report the condition creating the doubt to their supervisor.

In the event of power failure, the operator shall place all controllers in the “off” position.

When an operator leaves a crane unattended for an extended period of time, he or she shall place any attached load on the floor or other surface that relieves the hoist of the lifted load, depress the on/off switch on the controller (push button pendant station or radio remote transmitter) and place the system mainline disconnect switch in the “off” position. The system mainline disconnect switch does not need to be placed in the “off” position nor does the on/off switch on the controller (push button pendant station or radio remote transmitter) if the crane is left unattended for short periods.

16.4.1 INSPECTIONS

The inspection procedure for cranes in regular service is divided into 4 general classifications:

1. Pre-shift inspections; which should be performed prior to each shift of operation (as outlined in Table 1).
2. Frequent inspections; which can be performed monthly to quarterly, or at intervals of approximately 100 hours of use, depending on the severity of the crane usage.
3. Periodic inspections; which can be performed at intervals of 100 to 500 hours of use, depending on the severity of the crane usage.
4. Annual inspections; which shall be performed at a minimum of once every 12 months as specified by OSHA, regardless of the severity of the crane usage.

These inspections will yield a written report that shall detail the condition of, deficiencies or damage to, the crane that need to be corrected or repaired on a scale of importance that is called out in the body of the report. It is the responsibility of the owner or end user to have the items resolved in a timely manner.

16.4.2 MAINTENANCE

The employer shall maintain a crane and its accessories in a condition that will not unduly endanger an operator, employee or other person in the operating area of the crane.

A preventative maintenance program should establish and be based on the manufacturer's recommendations and for the application as reviewed by a qualified person.

Before adjustments or repairs are made on a crane, all of the following precautions should be taken:

- The crane will be moved to a location where it will cause the least interference with other moving equipment on the track or rails and operations in the area.
- The crane shall be tagged out with warning sign placed on the operator control station.
- Controllers will be placed in the "off" position.
- The mainline disconnect switch will be placed in the "off" position and locked out using a precise LOCK OUT / TAG OUT procedure, except where power is necessary to adjust or service the crane.
- Adequate lighting will be provided while maintenance is performed on the crane.

If any other crane uses the same runway, then a protective device should be used to prevent interference with the idle crane undergoing repairs. If a protective device is impracticable, then a signal person shall be placed at a visual vantage point to warn the operator of the active crane when it reaches the limit of safe distance from the idle crane.

A crane that has been serviced, inspected or repaired shall not be returned to normal operation until all guards have been replaced, locks removed by those who installed them, safety devices reactivated and the maintenance personnel and their access equipment and tools removed from the crane itself and the area under and around the crane travel.

**COMPLETE ROOF SYSTEMS
17 PERSONAL PROTECTIVE EQUIPMENT**

COMPLETE ROOF SYSTEMS PERSONAL PROTECTIVE EQUIPMENT

17.1 PURPOSE

The purpose of the Personal Protective Equipment section is to set forth the procedures for the use, care, and maintenance of personal protective equipment required to be used by employees for the prevention of injuries.

17.2 SCOPE

Applies to all Complete Roof Systems employees. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers Complete Roof Systems employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

17.3 KEY RESPONSIBILITIES

17.3.1 MANAGER

- Assists in the selection of appropriate PPE. If a task exposes an employee to hazards which cannot be eliminated through engineering or administrative controls, the HSE Manager assists the supervisor and project manager to identify and select PPE suitable for the specific task performed, conditions present, and frequency and duration of exposure. Employees need to give feedback to the supervisor about the fit, comfort, and suitability of the PPE being selected. Employees are provided reasons for selection of PPE.
- Assists supervisor and site managers in assuring all PPE obtained meets regulatory and this procedure's requirements.
- Performs Worksite Hazard Assessments - The hazard assessment must indicate a determination if hazards are present or are likely to be present, which necessitate the use of PPE. Sources of hazards include but are not limited to: hazards from impact/motion, high/low temperatures, chemicals, materials, radiation, falling objects, sharp objects, rolling or pinching objects, electrical hazards, and workplace layout. Certifies in writing the tasks evaluated, hazards found and PPE required to protect employees against hazards and ensures exposed employees are made aware of hazards and required PPE before they are assigned to the hazardous task. Certificate shall include certifier's name, signature, dates and identification of assessment documents.

17.3.2 MANAGERS AND SUPERVISORS

- Supervisors and managers shall regularly monitor employees for correct use and care of PPE and obtain follow-up training if required to ensure each employee has adequate skill, knowledge, and ability to use PPE.
- Supervisors and managers shall enforce PPE safety rules following the guidance of the Complete Roof Systems progressive disciplinary procedures and ensure Required PPE Poster is posted properly.

17.3.3 EMPLOYEES

- Complying with the correct use and care of PPE.
- Reporting changes in exposure to hazardous conditions that might require a follow-up assessment of the task for PPE.
- Reporting and replacing defective or damaged PPE, which shall not be used.
- Wearing of required PPE is a condition of employment.

17.4 PROCEDURE

17.4.1 GENERAL

Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

Employee-owned equipment is NOT permitted, except for safety toe footwear and prescription safety glasses. Complete Roof Systems is still responsible for the assurance of its adequacy, maintenance and sanitation of those two items.

All PPE issued shall be at no cost to the employee. All employees will know and follow the procedures outlined in this Program.

17.5 EYE PROTECTION

Employees must use appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids or chemical gases or vapors. Eye and Face PPE must comply with ANSI Standard Z87.1-2003 (Z87+), *Occupational and Educational Personal Eye and Face Protective Devices*.

17.5.1 SAFETY GLASSES

Safety glasses, with side shields, that meet ANSI Z-87.1-2003 standards with “high Impact lenses” are required to be worn by all employees, subcontractors, and visitors while on Complete Roof Systems property, at all times, as described below:

- At field locations, in shops and warehouses, except in approved, designated, striped safety zones.
- In all yard work zones or by everyone when in the vicinity of loading or unloading equipment, performing mechanic or maintenance work, test stand operations, operating equipment such as forklifts, welding, or any type of work which has the potential to inflict an eye injury.
- In any office, restroom, or any other building while performing any type of work where a potential eye injury may be present.
- Visitors will be provided with visitor glasses. In the absence of approved prescription safety glasses, “Over the glass” type safety glasses or goggles, must be worn over the non-safety glasses until approved prescription safety glasses are obtained.
- Workers assisting welders must wear absorbent safety glasses that protect the wearer from ultra-violet (UV) and/or infrared rays (IR).
- Dark shaded lens (sunglasses) darker than a # 1 shade is prohibited to be worn indoors unless welding or assisting a welder.
- A doctor must support “exceptions for medical reasons” in writing to exempt safety eyewear requirements.
- Safety glasses are not required:
 - Inside offices.
 - Parking lots when traveling from vehicles to and from office buildings by way of main doors that do not pass through shops.

17.5.2 GOGGLES

- Chemical splash proof goggles shall be worn when handling or mixing liquid chemicals, solvents, paints, etc., and/or as recommended on the Safety Data Sheet of the material being handled.
- Dust proof goggles shall be worn when blowing equipment down with air or while performing other jobs where safety glasses are not adequate to prevent airborne particles from entering the openings around the lenses and side shields.

17.6 FACE SHIELDS

- Full face shields shall be worn over safety glasses when operating handheld or stationery grinders with abrasive or wire wheels, while chipping paint or concrete or, performing jobs where there is the potential for flying objects striking the face and safety glasses or goggles would not provide adequate protection.

17.7 HEAD PROTECTION

Employees must wear protective helmets when working in areas where there is a potential for injury to the head from employee-initiated impact or impact from falling or other moving objects. Helmets must comply with ANSI Standard Z89.1-1997 Class E, *American National Standard for Industrial Head Protection* for Type II head protection or be equally effective.

- Employees must wear protective helmets when working in areas where there is a potential for injury to the head from falling objects.
- Hardhats are to be worn at all field, shop and warehouse locations, or where deemed necessary as per each location's PPE Hazard Assessment.
- Hardhats will not be altered in any way.
- Do not paint or apply unauthorized stickers, name plates, etc.
- Do not drill, cut, bend, or apply heat.
- Do not alter the suspension system.
- Hardhats will be inspected by the employee regularly for cracks, chips, scratches, signs of heat exposure (sun cracks), etc.
- Defective hardhats will be replaced immediately.
- Hardhats shall not be placed in rear windows of vehicles where they will be exposed to the sun or become projectiles during an accident.
- A supply of hardhats must be made available to visitors.
- Complete Roof Systems shall provide hardhats.
- Employees will be trained in the use, care and maintenance of head protection equipment.

17.8 HEARING PROTECTION

Hearing protection is required to be worn by all employees, subcontractors, and visitors while in posted "High Noise" areas. Refer to the Complete Roof Systems Hearing Conservation Program for more information.

Warning signs will be posted in areas known or suspected to have noise levels exceeding 85 dBA either constantly or intermittently.

When signs are not posted, employees shall wear hearing protection when noise caused by machinery, tools, etc., prevents normal conversations to be heard clearly.

Rule of thumb: If you have to yell to be heard, hearing protection is required

17.8.1 TYPES

- Molded Inserts (ear plugs)
- Canal Caps (head band type)
- Muff, either headband or hard hat mounted Earmuffs and earplugs shall be provided to the employee in sizes and configurations that will be comfortable to the employee.

17.8.2 CARE AND MAINTENANCE

- Inspect hearing protection prior to each use.
- Hearing protection must be kept clean to prevent ear infections.
- Most earplugs used today are disposable and must be discarded when they become dirty, greasy, or cracked.
- Earmuffs that have deteriorated foam inserts, cracked seals or are defective must be replaced.

17.8.3 FIT

- Due to individual differences, not everyone can wear the same type of hearing protection. A variety of styles may have to be tried before one is found to be comfortable and provide adequate protection.
- Employees shall be instructed how to obtain the proper fit.

17.9 HAND PROTECTION

17.9.1 GLOVES

- Gloves are required to be worn when performing work, which may expose the hands to extreme temperatures, cuts and abrasions, or exposure to chemicals.
- Welding: Welding gloves made of leather or other heat resistant materials shall be worn when performing arc welding or oxy/gas cutting.
- Chemical: Impervious (chemical resistant) gloves shall be worn when handling chemicals that specify gloves as personal protection equipment when handling.
- Refer to the specific chemical's Safety Data Sheet for the correct glove type.
- Persons assigned to working with chemicals, i.e., solvent vats, shall be issued their own individual gloves for hygiene purposes.
- Leather: Leather gloves should be worn when working with sharp materials or when handling rigging equipment.
- Cloth: Cloth gloves should be worn when handling objects or materials, which could cause blisters, splinters, cuts, etc.
- Heat Resistant: Heat resistant gloves shall be worn when handling hot bearings, races, or other materials or objects that have been heated beyond ambient temperatures.
- Insulated: Insulated gloves shall be worn to prevent frostbite in extreme cold climates.
- Glove Inspections
 - Gloves shall be inspected before each use for holes, tears, and worn areas.
 - Chemical gloves shall be periodically air tested for pinholes by twisting the cuff tightly, apply low air pressure to expand the glove, and then submersing in water to check for bubbles.
 - Defective gloves shall be discarded immediately. Exception: machinists are exempted from wearing gloves while working with rotating machinery.

17.10 FOOT PROTECTION

Safety footwear shall be worn by all employees with regularly assigned duties at field locations, in shops and warehouses.

- Office workers and visitors who enter these areas on an infrequent basis will not be required to wear foot protection provided they stay clear of the work being performed.
- If required to be in the close proximity of the work, the work will be stopped while visiting the area or safety footwear will be worn.
- Shops, Field Locations, Warehouses and Parts Departments: Leather or equivalent boots, either lace up or pull up, shall be worn.
- The boot must provide ankle protection and have soles designed to protect from punctures with defined heels for climbing ladders.
- Metatarsal guards will be worn when duties present a hazard of equipment or material crushing the foot.
- All safety footwear must meet ANSI Z41-1999 standards.
- Client locations may require safety footwear to be worn by everyone; check with the local supervisor for client requirements before visiting field locations.

17.11 FALL PROTECTION

Personal fall protection is required when performing certain elevated jobs in excess of six feet. Consult the Complete Roof Systems Fall Protection Program.

17.12 ELECTRICAL PROTECTION

Consult the Complete Roof Systems Electrical Safety Program.

17.13 WORKSITE HAZARD ASSESSMENT

A written hazard assessment shall be performed. During the hazard assessment a determination if hazards are present or are likely to be present, this necessitates the use of PPE. The following sample hazard sources will be identified:

- High or low temperatures; Chemical exposures (use SDS for guidance)
- Flying particles, molten metal or other eye, face, or skin hazards
- Falling objects or potential for dropping objects; employee falling from a height of 6' or more
- Sharp objects; Rolling or pinching that could crush the hands or feet.
- Electrical hazards

Where these hazards could cause injury to employees, personal protective equipment must be selected to substantially eliminate the injury potential. Employees will be notified for the selection and reason.

The results of this assessment shall be communicated to each affected employee and kept at the local office.

Selected/identified PPE shall be fitted to each affected employee. Fitting, including proper donning, doffing, clean and maintenance of PPE is addressed in the Training section. Exemptions for use of PPE must be supported by the PPE hazard assessment.

17.14 MONITORING

Supervisors and site managers monitor worksite tasks for changes in, or the introduction of new hazards. If new hazards are discovered, they advise the HSE Manager who then conducts a hazard assessment for appropriate PPE. The HSE Manager monitors the effectiveness of the PPE Procedure and makes recommendations to management to improve the procedure.

17.15 TRAINING

Employees who require or may need to wear PPE shall be properly trained and PPE must be fitted to each affected employee. Training shall include:

- When PPE is necessary.
- What PPE is necessary.
- How to properly don, doff, adjust and wear PPE.
- The limitations of PPE.
- Useful life and disposal of PPE.
- How to clean and maintain PPE in a sanitary and reliable condition.
- Reporting and replacing defective or damaged PPE, which shall NOT be used.

**COMPLETE ROOF SYSTEMS
18 SLIPS, TRIPS & FALLS**

**COMPLETE ROOF SYSTEMS
SLIPS, TRIPS & FALL**

18.1.1 SLIP, TRIP, & FALL HAZARDS

Common slip, trip and fall hazards result from:

- Wet or contaminated floors (e.g. grease, liquids, ice, oil, dust fine powders, etc.).

Containment	Source
Rainwater	Transmitted internally from open external doors or from the feet, coats or umbrellas of pedestrians. Building leaks
Water, other fluids	From spills, plumbing leaks, cleaning, ice machines
Floor cleaning products	Resulting from failure to follow appropriate protocol
Body fluids	Blood, vomit
Condensation	Variations in temperature
Dusts	Natural or from stored materials
Debris	Bags, paper, food residues, soil, cardboard boxes

- Uneven walking surfaces, holes, changes in level, broken or loose floor tiles, defective or wrinkled carpet or uneven steps/thresholds.
- Mats or rugs not lying flat on the floor.
- Obstructions and accumulation of objects in walkways (e.g. hoses, cords, cables, debris, etc.).
- Unguarded platforms, walkways, and work areas 30 inches above ground.
- Inadequate illumination (refer to Appendix B for specific requirements).

18.2 HIGHER RISK AREAS

For purposes of this Manual, an area where slip, trip, or fall hazards may likely arise during a typical work shift, is considered a “higher risk area”. Examples of higher risk areas include:

- Break rooms – wet floor
- Locker rooms – wet floor
- Loading docks – elevated locations

18.3 INSPECTIONS

Inspections to identify slip, trip and fall hazards are recommended at least annually, ideally prior to the wet season. For higher risk areas, a formal inspection is recommended at least on a quarterly basis; more frequently depending on the likelihood for changing conditions. For building common areas, recommend the building manager conduct inspections.

Recommended inspections should minimally include evaluation of the following:

- Condition of floors, carpets, and steps
- Floor maintenance protocol
- Housekeeping practices
- Lighting levels
- Presence and condition of guardrails/ handrails at elevated work surfaces. Refer to Appendix B for specific requirements.

18.4 HAZARD CONTROL MEASURES

18.4.1 GENERAL HOUSEKEEPING PROCEDURES / SAFE WORK PRACTICES

The following housekeeping procedures and safe work practices must be followed to prevent accidents associated with slip, trip and fall hazards:

18.4.2 GENERAL SAFETY

- Avoid running or walking too fast, especially in higher risk areas.
- Avoid carrying items that will obstruct one's view of their walking pathway.
- Avoid walking through potential slip, trip and fall hazards.
- Use extra caution when traveling both outdoors and indoors during/ following wet weather.

18.4.3 GENERAL HOUSEKEEPING PROCEDURES

- Clean up spills immediately. For greasy liquids, use suitable cleaning agent.
- Do not leave floors wet after cleaning – clean them to a completely dry finish if possible. If "clean-to-dry" is not possible, then use barriers and "wet floor" warning signs to keep people off the wet area.
- Use cleaning methods that do not spread the problem. Small spills are often better dealt with using a paper towel instead of a mop that wets a larger area of floor.
- Do not use cardboard to soak up spills.

18.4.4 SLIP HAZARDS

- Floors, platforms, and walkways **shall** be maintained in good repair, and reasonably free of oil, grease, or water. Mats, grates, or other methods that provide equivalent protection **shall** be used on areas where operation requires walking on slippery surfaces.
- Slip-resistant floor coatings should be used in areas that are likely to get wet or subject to frequent spills.
- Slip hazards must be identified and removed promptly.
- Warning signs or other equally effective means (barricades) should be used as a warning system in areas where a slip hazard is present.

18.4.5 TRIP HAZARDS

- Platforms and walkways shall be free of obstructions & dangerous projections (e.g. extension cords, power cables, hoses, carts, boxes, debris).
- Position equipment to avoid cables crossing pedestrian routes; use cable covers securely fix to surfaces or consider use of cordless tools.
- Surfaces in poor repair (i.e. holes, surface upheaval, and broken tiles) shall be repaired or guarded by readily visible barricades, rails or other equally effective means.
- Ensure floor mats and rugs are securely fixed and do not have curling edges.

18.4.6 FALL HAZARDS

- Elevated Locations
- Guardrails shall be provided on all open sides of unenclosed elevated locations.
- Example of elevated locations includes; balconies, runway ramps, or working surfaces that are more than 30 inches above the floor, ground, or other working areas of a building.
- For Roofs: Guardrails shall be provided at locations where there is routine need for an employee to approach within 6 feet of the edge of the roof. Where such
- roof access is needed no more than 4 times a year, safety belts, lanyards, or an approved fall protection system may be used in lieu of guardrails.

18.4.7 LADDER USE:

- When a ladder is used, the employee **shall** follow safe ladder practices. Ladder safety training is available from EH&S for Complete Roof Systems employees.
- Elevating Work Platforms & Aerial Devices (e.g. vertical tower, scissor lift, mast-climbing work platform):

Only employees who have been trained and approved by the supervisor **shall** operate elevating work platforms and aerial devices. NOTE: Aerial device and elevating work platforms are vehicle-mounted or self-propelled device designed to elevate a platform/ individual in a substantially vertical axis.

18.5 SLIP-RESISTANT FOOTWEAR

Employees who work in potentially slippery higher risk areas must wear slip-resistant footwear. When selecting slip-resistant footwear, the following should be considered:

- Level of slip-resistance (i.e. Polyurethane and microcellular urethane soles are more slip-resistant compared to nitrite and styrene rubber).
- Tread design, tread hardness, and shape of sole and heel. (i.e. High elastic soles with raised-tread and cross-hatch patterns are more slip-resistant compared to rough and flat soles. Tread patterns should cover the whole sole and heel area.)
- Proper support and comfort.

NOTE: The use of slip-resistant footwear alone is not adequate in preventing slip-related accidents. General housekeeping procedures, safe work practices, and matting/ floor treatments (as necessary) must be used.

18.6 TRAINING

For employees working in higher risk areas, training **shall** be provided to ensure employees are in compliance with safe work practices.

18.7 GENERAL HOUSEKEEPING / SAFE WORK PRACTICES

All employees who may be required to work in a higher risk area shall be trained on the following:

- Recognition of potential hazards associated with working in a higher risk area.
- The use of control measures to prevent slip, trip and fall related accidents.

The frequency of training provided to the employees is to be determined by the supervisor, building manager, and EH&S.