

**INDUSTRIAL  
MECHANICAL  
CONTRACTORS, INC.**

**EMPLOYEE SAFETY PROGRAM**

REV. 9/2013

## **Industrial Mechanical Statement and Objectives**

It is the policy of the company to comply with safety and health measures required by law, and also to act positively to prevent injury, ill health, damage and loss arising from its operations. The promotion of the safety and health of employees at work is an essential part of the duties of all supervisors. Management commitment is communicated by safety and health orientation, safety meetings, planning, controlling, decision making, and organizing. The duties and responsibility of each employee, from the president of the company down to the hourly employee, must be clearly defined and communicated. Along with these duties and responsibility must come accountability and authority. A written management and employee responsibility statement has been developed, accompanied by safety and health orientation, and training. Employee disciplinary actions will be implemented, and will be documented.

Industrial Mechanical expects employees to recognize that they equally have a clear duty to exercise self-discipline and accept responsibility to prevent injury to themselves and others and loss to the company in every way they can.

In accordance with this policy, Industrial Mechanical will continue to:

- Employ and provide proper resources to ensure competence and advice on health matters.
- Develop and implement procedures and codes of safe working practices.
- Maintain systems for reporting and controlling safety performance and for monitoring and assessing health at work. Select the right employee for the job.
- Provide training in safe working methods and safety and health requirements for employees at all levels so as to ensure their effective participation and contribution as individuals.
- Maintain an appropriate framework on effective measures for promoting safety and health at work. Walk-through inspections will be made to determine the hazards, and controls necessary to delete or minimize them. Records will be kept on each audit and a detail of the findings and what measures of control were taken.
- An Accident Investigation Plan will be implemented including instructions on filling out the report.
- All required written safety plans including Personal Protective Equipment will be implemented.
- Ensure employee involvement safety meetings.

### **Modification on the Policy**

It is the company's policy to keep this Statement of Policy on safety and health under continuing review and to make whatever modifications to it as may be necessary by circumstances of the following nature:

- Review of safety and health experience statistics.
- New or revised industry codes of practice.
- New or revised statutory obligations and requirements.

The primary responsibility for the coordination, implementation, and maintenance of our workplace safety program has been assigned to:

Name: **Wayne Zielke, Jr.**

Title: **Safety Officer**

Telephone: **215-442-0900 x111 (p) 267-864-6291 (c)**

## **Industrial Mechanical Responsibilities**

It is the policy of Industrial Mechanical to prevent injury and loss arising from its operations and to define the areas of responsibility for the management of its safety program.

### **Company Responsibility**

The responsibility of the company to comply with all statutory requirements and to ensure the health, safety, and welfare at work of its employees includes the following:

- The equipment and systems of work.
- The arrangements for handling, storage, and transportation of materials.
- Information to employees and their instruction, training, and supervision.
- The place of work for both employees and others in sites under the company's control, including the facilities.

### **Employee Responsibility**

It is the responsibility of all employees:

- To comply with any statutory obligations imposed upon them and to carry out their work in accordance with company health and safety standards and procedures.
- To take care of the health and safety of themselves and others who may be affected by their acts and omissions.
- To be aware of information provided by the company on the safety and health hazards of equipment, materials and working procedures with which they are concerned.
- To bring to the immediate notice of their supervisors potential hazards to safety or health which come to their attention in the course of their work.



Wayne J. Zielke  
President and CEO

## **Safety and Health Orientation & Training**

Workplace safety and health orientation begins on the first day of initial employment or job transfer. Each employee has access to a copy of this safety manual, through his or her supervisor, for review and future reference, and will be given a personal copy of the safety rules, policies, and procedures pertaining to his or her job. Supervisors will ask questions of employees and answer employees' questions to ensure knowledge and understanding of safety rules, policies, and job-specific procedures described in our workplace safety program manual. All employees will be instructed by their supervisors that compliance with the safety rules described in the workplace safety manual is required.

### **Job-Specific Training**

- Supervisors will initially train employees on how to perform assigned job tasks safely.
- Supervisors will carefully review with each employee the specific safety rules, policies, and procedures that are applicable and that are described in the workplace safety manual.
- Supervisors will give employees verbal instructions and specific directions on how to do the work safely.
- Supervisors will observe employees performing the work. If necessary, the supervisor will provide a demonstration using safe work practices, or remedial instruction to correct training deficiencies before an employee is permitted to do the work without supervision.
- All employees will receive safe operating instructions on seldom-used or new equipment before using the equipment.
- Supervisors will review safe work practices with employees before permitting the performance of new, non-routine, or specialized procedures.

### **Periodic Retraining of Employees**

All employees will be retrained periodically on safety rules, policies and procedures, and when changes are made to the workplace safety manual.

Individual employees will be retrained after the occurrence of a work-related injury caused by an unsafe act or work practice, and when a supervisor observes employees displaying unsafe acts, practices or behaviors.

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**240 Tanner Avenue ■ Hatboro, PA 19040**

## **Employee Safety Orientation**

### **Purpose**

Governmental statistics show that new employees--those on the job one year or less--who are not familiar with their job duties or work environment, are many times more likely to be involved in an accident or a near miss than their more experienced fellow workers. Of utmost importance, all new employees of this company will be given the necessary job-specific safety orientation prior to their involvement with work duties. Our goal for this safety orientation program is for each new employee to become motivated to make safety their number one priority both on and off the job.

All initial training shall be documented. Supervisors or a member of management shall ensure that each new employee begins with documented training and this continues for purposes of certifications and continuing education.

If an employee changes job responsibilities, it will also be the duty of a supervisor or member of management to administer proper documented training to the transferred employee.

### **Employees Understand that:**

Employees are not expected to perform a task until he/she has received instructions on how to do it properly and safely and authorized to perform the task.

No employee should attempt to do a task that seems to be unsafe.

Machine guards shall always be kept in place.

Any unsafe work condition or work practice should be reported to a supervisor.

Any work-related injury or illness must be reported to management at once.

Personal protective equipment (PPE) must be properly maintained and used when and where required..

### **Job-Specific Training**

Supervisors or a member of management will initially train employees on how to perform the assigned task safely.

Supervisors or a member of management will review with each employee specific safety rules, policies, and procedures that are applicable and where they can be found in the safety manual.

Supervisors or a member of management will give employees verbal instructions and specific directions on how to do their job safely.

Upon satisfactory completion of orientation and job specific training, supervisors or a member of management will observe the new employee performing his/her job to ensure that safe working practices are followed.

If necessary, the supervisors or a member of management will demonstrate how the job is to be performed safely. While the employee is performing the work, if remedial instruction is needed, the supervisors or a member of management will correct any training deficiencies and observe the new employee performing the work safely before allowing him/her to work without direct supervision.

Supervisors or a member of management will demonstrate safe operating instructions on seldom-used or new equipment prior to any employee performing work on the equipment.

Supervisors or a member of management will review safe work practices with all employees before permitting the performance of new, non-routine, or specialized procedures.

### **Follow-up**

An Employee Mentoring program should be implemented by management in order to help identify and train new employees for their new job. New employees should be paired with a more experienced employee for a period of time determined by supervisors and management. One way to identify new employees is to require them to wear a different color shirt or hard hat than everyone else so that all co-workers can easily identify them. Mentors should report to their supervisor or management at the end of each shift to update the new employees' progress. Documented periodic refresher training should also be provided for both new and experienced employees.

# INDUSTRIAL MECHANICAL CONTRACTORS, INC.

Heating  
Air Conditioning  
Refrigeration  
Energy Management

240 Tanner Avenue ■ Hatboro, PA 19040

Employee Name: \_\_\_\_\_

Job Title: \_\_\_\_\_ Location/Department: \_\_\_\_\_

**To be completed by supervisor or member of management**

Instructions: Go down the checklist and complete each item. When all items on the checklist are completed, sign and date the checklist and forward a copy to your departmental training coordinator.

ITEM	YES	NO	N/A
<b>General Information</b>			
Review Job Description			
Review Safety Manual			
Review Safety Rules			
Housekeeping			
Accident Report/Investigation			
Violence in the Workplace			
Safe Use of Hand Tools			
Safe Use of Power Tools			
Smoking/Non Smoking Areas			
Location of Fire Extinguishers			
HAZCOM Right-to-Know Training			
Location of MSDS Sheets			
<b>PPE Use:</b>			
Head (hard hat)			
Eyes (safety glasses)			
Face (face shield)			
Hand/Arm (gloves, long sleeves, gauntlets)			
Foot/Leg (safety shoes, chaps)			
Torso (coveralls, jacket, aprons)			
Ears (ear plugs, muffs)			
Electrical (electrical clothing/gloves)			
Personal Fall Arrest			
Respiratory Protection			
<b>Medical/First Aid:</b>			
Location of First Aid Kit(s)			
Blood Borne Pathogen Training			
Review Emergency Response Plans			

ITEM	YES	NO	N/A
<b>Motor Vehicles</b>			
Motor Vehicle Use			
No Personal Use of Company Vehicles			
DOT Compliance			
3 Point Rule – Mount/Dismount			
Securing/Unsecuring Load			
Review Tarping Load			
<b>Machinery</b>			
Review Loose Clothing/Jewelry/Hair			
Review Lockout/Tagout Procedures			
Review Guarding all Machinery			
Review Maintenance/Clearing Jams			
<b>Falls</b>			
Review Ladder Safety			
Slips/Trips			
Review Elevated Platform Safety			
Review Roof Safety			
<b>Ergonomic Issues</b>			
Safe Lifting Procedures			
Repetitive Motion			
Correct Posture			
<b>Mobile Equipment Use</b>			
<b>Confined Spaces</b>			
<b>Electrical Current</b>			

Employee Name: \_\_\_\_\_ Supervisor Name: \_\_\_\_\_

Employee Signature: \_\_\_\_\_ Supervisor Signature: \_\_\_\_\_

Date Signed: \_\_\_\_\_ Date Signed: \_\_\_\_\_

# Industrial Mechanical

## Accident/Incident/Injury Investigation Procedures

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All injuries, no matter how slight, will be reported to the immediate supervisor. Should injury require first aid treatment, it will be given immediately; each crew member will become as familiar as possible with the principles of first aid.

All injuries which occur during the course of employment must be reported on the appropriate Incident/Injury form (copies attached). All sections of the form must be completed with correct and concise information.

### Incident Investigation Procedures

An incident investigation will be performed by the supervisor at the location where the incident occurred. All incidents should be reported and investigated, regardless of whether an injury resulted from the incident. The safety coordinator is responsible for seeing that the incident investigation reports are being filled out completely and that the recommendations are being addressed. Supervisors will investigate all incidents, injuries and occupational diseases using the following investigation procedures:

- Implement temporary control measures to prevent any further injuries to employees
- Review the equipment, operations and processes to gain an understanding of the incident
- Identify and interview each witness and any other person who might provide clues to the incident's causes
- Investigate causal conditions and unsafe acts; make conclusions based on existing facts
- Complete the incident investigation report
- Provide recommendations for corrective actions
- Indicate the need, when appropriate, for additional or remedial safety training
- Incident investigation reports must be submitted to the safety coordinator within 24 hours of the incident

## Instructions for Completing the Incident Investigation Report

An Incident Investigation is not designed to find fault or place blame, but is an analysis of the incident to determine causes that can be controlled or eliminated. All sections of the form are to be completed. If a section does not apply, indicate with "N/A".

**(Items 1-6) Identification:** This section is self-explanatory.

**(Item 7) Nature of Injury:** Describe the injury; e.g. strain, sprain, cut burn, fracture. **Injury type:** First aid - injury resulted in minor injury/treated on premises; Medical - injury treated off premises by physician; Lost time - injured missed more than one day of work; No Injury - no injury, near-miss type of incident.

**Part of the Body:** part of the body directly affected; e.g. foot, arm, and head.

**(Item 8) Describe the Incident:** Describe the incident, including exactly what happened and where and how it happened. Describe the equipment or materials involved.

**(Item 9) Cause of Incident:** Describe all conditions or acts which contributed to the incident; i.e.

- Unsafe conditions - spills, grease on the floor, poor housekeeping or other physical conditions.
- Unsafe acts - unsafe work practices such as failure to warn, failure to use required personal protective equipment, or violation of existing safety rules(s).

**(Item 10) Personal protective equipment:** Self-explanatory

**(Item 11) Witness(es):** List name(s), address(es), and phone number(s).

**(Item 12) Safety training provided:** Was any safety training provided to the injured related to the work activity being performed?

**(Item 13) Interim corrective action:** Measures taken by supervisor to prevent recurrence of incident; i.e. barricading incident area, posting warning signs, shutting down operations.

**(Item 14):** Self-explanatory

**(Item 15):** Self-explanatory

**(Item 16): Follow-up action:** Once the investigation is complete, the safety coordinator will review and follow up on the investigation to ensure that corrective actions recommended by the safety committee and approved by the employer are taken and that control measures have been implemented.



# Incident Investigation Report

Report # \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS: \_\_\_\_\_

Street

City

State

Zip Code

1. Name of Injured: \_\_\_\_\_ SSN: \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

2. Sex: { } M { } F Age: \_\_\_\_\_ Date of Incident \_\_\_\_\_

3. Time of Incident: \_\_\_\_\_ a.m. \_\_\_\_\_ p.m. Day of Incident: \_\_\_\_\_

4. Employee's job title \_\_\_\_\_

5. Length of experience of job: \_\_\_\_\_ Years \_\_\_\_\_ Months

6. Address of location where the incident occurred: \_\_\_\_\_

7. Nature of injury, injury type, and part of the body affected:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. Describe the Incident and how it occurred: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. Cause of Incident:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. Was personal protective equipment required? { } yes { } no  
Was it provided? { } yes { } no

Was it being used?  yes  no If "no" explain

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Was it being used properly as trained by supervisor or designed by trainer?  yes

no

If "no" explain

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11. Witness(es):

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12. Safety training provided to the injured?  yes  no If "no" explain

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13. Interim Corrective action to prevent recurrence:

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14. Permanent Corrective Action recommended preventing recurrence:

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15. Date of Report: \_\_\_\_\_ Prepared By: \_\_\_\_\_

Supervisor \_\_\_\_\_ Date: \_\_\_\_\_

Signature

16. Status and follow-up action taken by safety coordinator:

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Safety Coordinator \_\_\_\_\_ Date: \_\_\_\_\_  
Signature

**ADDITIONAL NOTES**

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# Industrial Mechanical Return-to-Work Program

## Purpose

The purpose of this Return-to-Work Program is to help enable health recovery and resumption of full capabilities by injured or ill employees whose injury or illness initially restricts their ability to perform their normal job duties. Employees are the company's most important asset, and the company strives to ensure the best possible safety, health, and performance for every employee.

## Initial Return-to-Work

It is the supervisor's responsibility to inform/notify the Safety Manager as soon as receiving information of initial assessment of an employee as restricted in ability to perform normal job functions due to injury or illness. At the time the Safety Manager is made aware of an employee's restricted status, the following steps shall be taken by the Safety Manager:

1. Request the diagnosing physician to submit in writing exact medical restrictions on the patient.
2. Upon receipt of that written restriction summary, send a copy to the insurance carrier and the employee's supervisor.
3. Request the employee's supervisor to determine an alternate duty assignment based on the written restrictions.
4. Contact the employee and inform him or her about the alternate duty assignment within his or her capability based on medical restrictions. Explain this Return-to-work Program to the employee and how he or she will benefit by participating in it. Use the Employee Handout Sheets to inform and educate as necessary.
  - In workers' compensation cases, inform the employee he or she is required to return to work and begin these alternate duties.
  - In the case of personal injury or illness unrelated to work, inform the employee of their option to return and assume these alternate duties at this time. (This is not an open-ended offer. If the employee in this case refuses initially, he or she may not be able to return on the same conditions later, because the offered duties may have been assumed by someone else.)
5. If workers' compensation case employee does not return as requested, repeat contact and reiterate request.

## Periodic Reassessments

1. Once the employee is situated in an alternate duty assignment, the diagnosing doctor

should make periodic written reassessments as to employee restrictions to be sent to the Safety Manager. These reassessments are to be done in periods no longer than a month apart.

2. As the reassessments indicate increased health, the supervisor should be informed that the employee should assume more and more duties of his or her original job at time of injury/illness.

### **Resumption of Original Job**

When written assessments indicate the employee is able to resume normal duties of original job at time of injury, the Safety Manager shall inform the supervisor and have the employee do so.

**Employee Handout Sheets**  
**Return-to-Work Program**  
**Industrial Mecahnical**

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When you are injured or ill, sometimes you are unable to perform your normal job. When that happens, the company wants to give you every opportunity to continue working, with alternate duties if necessary. Assignment to alternate duties is just one part of the company's return-to-work program, which has been put in place to support you through the process of recovery during and after an injury or illness.

We want you to know that we care and that we will be:

- Following the case medically to ensure the best possible care.
- Assisting in a safety investigation to provide accurate information to the insurance carrier.
- Checking with you regularly to see if you have any questions about the workers' compensation system or the return-to-work program.
- Available as an information resource to you at any time.
- Giving you names and numbers to call if you have questions related to Human Resources, Scheduling, Benefits, etc.
- Involving you in our early return-to-work program.

As an employee of Industrial Mechanical, your participation in the program is important. You have certain roles as well, including:

- Responsibility to provide timely information about your health status.
- Participation in alternate duty assignments if unable to perform your normal job functions.

Pieces of information you can get from the Return-to-Work Program administrator include:

- Who the workers' compensation carrier is; they may contact you.

- How workers' compensation works in this state.
- The usual claims process and the benefits under the law.

When injured, you may have the sense of being out of control and at the "mercy of the system." Education and responsibilities for return-to-work issues can put you back in control. We are determined to provide this information to help you, because you are an important part of the team.

Don't forget about the company's Employee Assistance Program (EAP). It is a resource you may want to utilize during this time period, since being off work may bring problems with it.

While you are off work, the supervisor will maintain regular contact with you, at least weekly. The purpose of such contact is to:

- Assure him/her that you are obtaining appropriate, quality, timely, and effective therapy.
- Assist you with any problems that have arisen concerning medical care, compensation, etc.
- Answer any questions relevant to return to work and facilitate an early return-to-work program.
- Facilitate continued communication between the company and the medical provider.

**Employee Sign-Off Sheet  
Return-to-Work Program  
Industrial Mechanical**

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I acknowledge I have been given a copy of the Return-to-Work Program, I have read and understood it, and I accept the program as a working document that I will support and follow in my daily work at Industrial Mechanical.

Employee's Signature \_\_\_\_\_ Date \_\_\_\_\_

Supervisor's Signature \_\_\_\_\_ Date \_\_\_\_\_

Safety Manager's Signature \_\_\_\_\_ Date \_\_\_\_\_

I acknowledge I have been trained on and been informed how to get access to a copy of the Return-to-Work Program, I have understood this training, and I will support and follow this program in my daily work at Industrial Mechanical.



Employee's Signature \_\_\_\_\_ Date \_\_\_\_\_

Supervisor's Signature \_\_\_\_\_ Date \_\_\_\_\_

# Industrial Mechanical Safety Meeting Report

Date: \_\_\_\_\_

Company: \_\_\_\_\_

Topic Discussed:

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Names of Employees Attending:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Conducted By: \_\_\_\_\_

Signed: \_\_\_\_\_

Comments/Recommendations: \_\_\_\_\_

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# Industrial Mechanical Personal Protective Equipment

This written program documents steps Industrial Mechanical has taken to minimize injury resulting from various occupational hazards present at our construction sites by protecting workers through the use of PPE when the hazards cannot be eliminated. Industrial Mechanical has developed a written PPE program to document and specify all information relative to our PPE needs. The safety and health manager is the program coordinator, acting as the representative of the company, who has overall responsibility for the program, and will designate appropriate plant supervisors to assist in training employees and monitoring their use of PPE. This written plan is kept in the office. The safety and health manager will review and update the program as necessary. Copies of this program may be obtained from the office.

## Purpose

We at Industrial Mechanical believe it is our obligation to provide a hazard free environment to our employees. Any employee encountering hazardous conditions must be protected against the potential hazards. The purpose of protective clothing and equipment (PPE) is to shield or isolate individuals from chemical, physical, biological, or other hazards that may be present in the workplace. Establishing an overall written PPE program detailing how employees use PPE makes it easier to ensure that they use PPE properly in the workplace and document or PPE efforts in the event of an OSHA inspection.

## Responsibility

Industrial Mechanical will maintain the Personal Equipment Program and update as necessary. Copies of the program may be obtained from the company, and copies of the program are available upon request in the office.

This PPE program covers:

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

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

The basic element of any PPE program is an in depth evaluation of the equipment needed to protect against the hazards at the workplace; this is the initial hazard assessment for which written documentation is required. Two basic objectives of any PPE program should be to protect the wearer from incorrect use and/or malfunctions of PPE. The purpose of this Personal Protective Equipment (PPE) Program is to document the hazard assessment, protective measures in place, and PPE in use at this company. PPE devices are not being relied on as the only means to provide protection against hazards, but are used in conjunction with guards, engineering controls, and sound manufacturing

practices. If possible, hazards will be abated first through engineering controls, with PPE to provide protection against hazards which cannot reasonably be abated otherwise.

### **Hazard Assessment**

In order to assess the need for PPE the following steps are taken:

The supervisor, with other appropriate employee, identifies job classifications where exposures occur or could occur. The job supervisor or designee examines the following records to identify and rank jobs according to exposure hazards:

- Injury/illness records
- First aid logs
- Worker's compensation records

The supervisor conducts a walk-through survey of workplace areas where hazards exist or may exist to identify sources of hazards to employees. They consider these basic hazard categories:

- Impact
- Heat
- Penetration
- Harmful dust
- Compression (roll over)
- Light (optical) radiation
- Chemical

During the walk-through survey, the supervisor records the following hazards along with PPE currently in use (type and purpose):

- Sources of motion; i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects.
- Sources of high temperatures that could result in burns, eye injury or ignition of protective equipment, etc.
- Types of chemical exposures
- Sources of harmful dust
- Sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.
- Sources of falling objects or potential for dropping objects
- Sources of sharp objects which might pierce the feet or cut the hand
- Sources of rolling or pinching objects which could crush the feet
- Layout of workplace and location of co-workers

Following the walk-through survey, the supervisor organizes the data and information to use in the assessment of hazards to analyze the hazards and enable proper selection of protective equipment.

An estimate of the potential for injuries is now made. Each of the basic hazards is reviewed and a

determination made as to the frequency, type, level of risk, and seriousness of potential injury from each of the hazards found. The existences of any situations where multiple exposures occur or could occur are considered.

The supervisor documents the hazard assessment via a written certification that identifies the workplace evaluated, the person certifying that the evaluation has been performed, the date(s) of the hazard assessment, and that the document is a certification of hazard assessment.

### **Selection Guidelines**

Once any hazards have been identified and evaluated through hazard assessment, the general procedure for selecting protective equipment is to:

- Become familiar with the potential hazards and the type of protective equipment (PPE) that are available, and what they can do.
- Compare types of equipment to the hazards associated with the environment.
- Select the PPE which ensures a level of protection greater than the minimum required to protect employees from the hazards.
- Fit the user with proper, comfortable, well fitting protection and instruct employees on care and use of the PPE. It is very important that the users are aware of all warning labels for and limitations for their PPE.

It is the responsibility of the supervisor to reassess the workplace hazard situation as necessary, to identify and evaluate new equipment and processes, to review accident records, and re-evaluate the suitability of previously selected PPE. This reassessment will take place as needed.

Elements which should be considered in the reassessment include:

- Adequacy of PPE program
- Accidents and illness experienced
- Levels of exposure (this implies appropriate exposure monitoring)
- Adequacy of equipment selection
- Number of man hours that workers wear various protective ensembles
- Adequacy of training/fitting of PPE
- Program costs
- The adequacy of program records
- Recommendation for program improvement and modification
- Coordination with overall safety and health program

### **Employee Training**

The supervisor provides training for each employee who is required to use personal protective equipment.

Training includes:

- When PPE is necessary

- What PPE is necessary
- How to wear assigned PPE
- Limitations of PPE
- The proper care, maintenance, useful life, and disposal of assigned PPE

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

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

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

The supervisor certifies in writing that the employee has received and understands the PPE training. Because failure to comply with company policy concerning PPE can result in OSHA citations and fines as well as employee injury, an employee who does not comply with this program will be disciplined for noncompliance according to the company policy.

### **Cleaning and Maintenance**

It is important that all PPE be kept clean and properly maintained by the employee to whom it is assigned. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. PPE is to be inspected, cleaned, and maintained by employees at regular intervals as part of their normal job duties so that the PPE provides the requisite protection. Supervisors are responsible for ensuring compliance with cleaning responsibilities by employees. If PPE is for general use, the job foreman has responsibility for cleaning and maintenance. If a piece of PPE is in need of repair or replacement, it is the responsibility of the employee to bring it to the immediate attention of his or her supervisor or the safety manager. It is against work rules to use PPE that is in disrepair or not able to perform its intended function. Contaminated PPE which cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

### **PPE Specific Information Eye and Face Protection**

It is the policy of the company that as a condition of employment, all regular full time, part time, and temporary employees working in designated work areas and/or job assignments are required to wear ANSI approved goggles/face shields to help prevent eye and face injuries, including those resulting from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or light radiation, for example. Employees in the following designated work areas are required to wear goggles/face shields:

- Employees working where flying particles are present on the job site and at all other required

areas so designated.

- All supervisors are responsible for ensuring employees under their charge are in compliance with this policy.
- All employees who work in designated work areas and/or job assignments are responsible for wearing company provided goggles/face shields/ safety glasses to comply with this policy. Failure to comply may result in disciplinary action.
- All employees required to wear safety glasses, goggles/face shields, must routinely inspect and properly care for their goggles/face shields/ safety glasses.

### **Head Protection**

- It is the policy of the company that as a condition of employment, all regular full time, part time, and temporary employees working in designated work areas and/or job assignments are required to wear ANSI approved hard hats to help prevent head injuries resulting from falling objects. Employees working where there is an overhead exposure are required to wear hard hats.
- All supervisors are responsible for ensuring employees under their charge are in compliance with this policy.
- All employees who work in designated work areas and/or job assignments are responsible for wearing hard hats to comply with this policy. Failure to comply may result in disciplinary action.
- All employees required to wear head protection must routinely inspect and properly care for their hard hats.

### **Foot Protection**

- It is the policy of the company that as a condition of employment, all regular full time, part time, and temporary employees working in designated work areas and/or job assignments are required to wear steel toed boots to help prevent injuries to the feet. All employees working in, and around the mill are required to wear steel toed boots.
- All supervisors are responsible for ensuring employees under their charge are in compliance with this policy.
- All employees who work in designated work areas and/or job assignments are responsible for wearing steel toed boots to comply with this policy. Failure to comply may result in disciplinary action.

### **Gloves**

- It is the policy of the company that as a condition of employment, all regular full time, part time, and temporary employees handling chipper- knives, and saws are required to wear cut resistant gloves to help prevent injuries to the hands, and fingers.
- All supervisors are responsible for ensuring employees under their charge are in compliance with this policy.
- All employees who work in designated work areas and/or job assignments are responsible for wearing cut resistant gloves to comply with this policy. Failure to comply may result in disciplinary action.

## Leg Protection

- It is the policy of the company that as a condition of employment, all regular full time, part time, and temporary employees working in designated work areas and/or job assignments are required to wear saw chaps to help prevent injuries resulting from chainsaw cuts. Employees working with chainsaws are required to wear saw chaps.
- All supervisors are responsible for ensuring employees under their charge are in compliance with this policy.
- All employees who work in designated work areas and/or job assignments are responsible for wearing saw chaps to comply with this policy. Failure to comply may result in disciplinary action.
- All employees required to wear leg protection must routinely inspect and properly care for their saw chaps.

## Seat Belts

- Seat Belts are to be worn by all personnel operating forklifts, or front-end loaders.
- All supervisors are responsible for ensuring employees under their charge are in compliance with this policy.
- All employees who work in designated work areas and/or job assignments are responsible for wearing seat belts to comply with this policy. Failure to comply may result in disciplinary action.

## Ear Protection

It is the policy of the company that as a condition of employment, all regular full time, part time, and temporary employees working in designated work areas and/or job assignments are required to wear approved ear protection to help prevent hearing loss.. Employees in the following designated work areas are required to wear ear protection:

- Employees working where noise levels exceed 85 decibels
- All supervisors are responsible for ensuring employees under their charge are in compliance with this policy.
- All employees who work in designated work areas and/or job assignments are responsible for wearing company provided ear protection to comply with this policy. Failure to comply may result in disciplinary action.
- All employees required to wear ear protection must routinely inspect and properly care for their equipment.

**NOTE:** This part of the PPE program is not intended to meet OSHA requirements found in CFR 1910.95 of the Occupational Noise Exposure.

The employer will administer a continuing, effective hearing conservation program whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level of 85 decibels, or a dose of fifty percent.



# Industrial Mechanical Slips, Trips, and Falls Safety Plan

## **Purpose**

All facilities contracted to this company will be maintained in a safe and healthful manner. Certain environments within these facilities may contain a reasonable probability of injury that can be prevented by proper maintenance and supervision. Industrial Mechanical will do all possible to ensure the safety of our employees. No employee will knowingly be subjected to a hazardous condition without all possible protective measures first being implemented.

## **Responsibility**

Industrial Mechanical will be responsible for the wellbeing of their employees while performing their daily tasks. Slips and falls are one of the most frequent causes of accidents, both on and off the job. Each year in the United States, more than 300,000 people suffer disabling injuries from falls. Slips and falls can be fatal as well; they rank second only to automobile accidents, causing nearly 12,000 deaths a year.

## **Watch Your Step! Don't Slip & Fall**

To facilitate cleaning, every floor, working place, and passageway will be kept free from protruding nails, splinters, holes, or loose boards or other hindrances that would prevent efficient maintenance.

## **Sufficient Illumination**

Sufficient illumination will be provided in all areas at all times. Employees discovering lighting deficiencies will report them to the Safety Director for correction.

## **Watch Where You Walk**

Be aware of where you are walking. Look down continuously for flooring defects, spilled liquids and changing surface levels. Make sure the area is well lit or use a flashlight if lighting is poor.

## **Wear Proper Footwear**

Make sure your shoes are in good shape and correct for the job. Discard worn-out shoes with smooth soles and other defects. If conditions are wet and slippery, wear non-slip shoes or boots. Avoid footwear with leather soles which have poor traction--especially on smooth surfaces.

## **Be Careful on Stairs**

Do not run when going up or down stairs. Check to see that stair treads are in good shape, with no obstructions on the steps. Always use the hand railings that are provided. Avoid carrying large loads when going up or down stairs and ensure that the stairs are well lit.

## **Use Ladders Correctly**

Never use broken or defective ladders. Set the angle of the ladder at the proper four-to-one ratio (height to width angle). Make sure the ladder is on solid footing and will not move when you climb upon it.

When possible, tie your ladder to the structure to improve stability. Never stand on the two top steps of the ladder.

#### **Are Floor Care Maintenance Procedures Adequate?**

- Are floor care products matched to the type floor?
- Are floor care product instructions being followed?

#### **Are Housekeeping Procedures Adequate?**

- Are cleaning materials readily available?
- Are warning signs part of the cleanup procedure?
- Are warning signs properly placed and removed when no longer valid?

#### **Slip**

- Are shoes with the proper soles worn for the job?
- Are worn shoes replaced?
- Is extreme caution practiced when working on wet surfaces?

#### **Trip**

- Changes in elevation
- Change in Coefficient of Friction

#### **Prevention**

- Hazard ID/Abatement
- Training

#### **Post Event**

- Investigate
- Follow up
- Modify

#### **Recommendations**

- Wear proper footwear for the job. Sturdy non-slip soles intact that give support to the ankle will help reduce slip and falls.
- All shoes that provide for laces, must have laces present and be appropriately tied.
- Housekeeping needs to be addressed. Floors need to be clear of obstructions.
- Slip-resistant floor mats are needed, particularly in wet areas.
- Spills on the floors need to be cleaned up.
- Loads being carried are not to obstruct vision.
- Lighting needs to be improved to give more light to dimly lit areas.

- Employees are not allowed in restricted areas.
- Running and horseplay is not permitted in the work area.

### **Accident Investigation**

- Are all slip, trip, and fall accidents/incidents being reported, even minor or “no injury” type occurrences?
- Are all slip, trip, and fall events being investigated?
- Is the investigation complete?
- Is there a follow-up to accident events?

**Watch your step and don't trip yourself up!**

**Remember, Gravity always Wins!**

# **Industrial Mechanical Stairways and Ladder Safety Plan**

## **Purpose**

For the sole purpose of protecting our employees, Industrial Mechanical will ensure that all potential hazards regarding stairways and ladders on our work sites are evaluated. This standard practice instruction is intended to address comprehensively the issues of: evaluating and identifying potential deficiencies, evaluating the associated potential hazards, communicating information concerning these hazards, and establishing appropriate procedures and protective measures for employees. Industrial Mechanical will review and evaluate this standard practice instruction on an annual basis, or when changes occur to the governing regulatory statutes that prompt revision of this document, or when facility operational changes occur that require a revision of this document. Effective implementation requires a written program for job safety, health, that is endorsed and advocated by the highest level of management within this company and that outlines our goals and plans. This written program will be communicated to all required personnel. It is designed to establish clear goals and objectives.

## **General Requirements**

All facilities and equipment owned by Industrial Mechanical will be maintained in a safe and healthful manner. Certain environments within the construction projects may contain a reasonable probability of injury that can be prevented by proper maintenance and supervision. Industrial Mechanical shall do all possible to ensure the safety of our employees. No employee shall knowingly be subjected to a hazardous condition without all possible protective measures first being implemented. Measures for the control of toxic materials are considered to be outside the scope of this instruction.

## **Company Fixed Industrial Stairs Safety Policy**

All stairways shall be kept clean, orderly, and free of known hazards.

## **Cleaning Requirements**

To facilitate cleaning, all stairways shall be kept free from protruding nails, splinters, holes, or loose boards or other hindrances that would prevent efficient maintenance. Stairways leading to work stations shall be maintained in a clean and, so far as possible, a dry condition. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places will be provided where practicable. Stairways leading to emergency exit doors will be kept free of obstacles at all times. Any employee finding an emergency route blocked should immediately report the condition to the Safety Manager for correction. Exit lights and signs will also be maintained in proper condition at all times and immediately reported if deficient.

## **Illumination**

Sufficient illumination will be provided in all areas at all times especially where stairways and ladders are in use. Employees discovering lighting deficiencies will report them to the Safety Manager for correction.

## **Railings and Handrails**

Standard railings shall be provided on the open sides of all exposed stairways and stair platforms. Handrails shall be provided on at least one side of closed stairways preferably on the right side descending. Stair railings and handrails shall be installed in accordance with the provisions of 29 CFR 1910.23.

## **General Requirements**

- Ladders for which dimensions are specified should not be used by more than one man at a time nor with ladder jacks and scaffold planks where use by more than one man is anticipated. In such cases, specially designed ladders with larger dimensions of the parts should be procured.
- Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked upon, locked, or guarded.
- Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.
- 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.
- Short ladders shall not be spliced together to provide long sections.
- Ladders shall not be used as guys, braces, or skids, or for other than their intended purposes.

## **Portable Wooden Ladders (Stepladders)**

In order to insure safety under normal conditions of usage, this company will purchase and maintain portable wood ladders that conform the following minimum requirements for the construction, care, and use of common types of portable wood ladders.

## **General Requirements**

- **Materials.** All wood parts will be maintained free from sharp edges and splinters; sound and free from accepted visual inspection from shake, wane, compression failures, decay, or other irregularities. Low density wood shall not be used.
- **Step spacing.** A uniform step spacing shall be employed which shall be not more than 12 inches. Steps shall be parallel and level when the ladder is in position for use.
- **Side rail width.** The minimum width between side rails at the top, inside to inside, shall be not less than 11 1/2 inches. From top to bottom, the side rails shall spread at least 1 inch for each foot of length of a stepladder.
- **Tops of the ordinary types of stepladders shall not be used as steps.**
- **The length of a stepladder is measured by the length of the front rail. To be classified as a standard length ladder, the measured length shall be within plus or minus one-half inch of the specified length. Stepladders shall not exceed 20 feet in length.**
- **The bottoms of the four rails will be purchased with insulating non-slip material for the safety of the user.**
- **A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in the open position shall be a component of each stepladder. The spreader shall have all sharp points or edges covered or removed to protect the user.**

## **Types of Portable Stepladders**

Stepladders longer than 20 feet shall not be used. Stepladders of one of the following types specified shall be used:

- Type I--Industrial stepladder, 3 to 20 feet for heavy duty, such as utilities, contractors, and industrial use.
- Type II--Commercial stepladder, 3 to 12 feet for medium duty, such as painters, offices, and light industrial use.
- Type III--Household stepladder, 3 to 6 feet for light duty, such as light household use.

## **Portable Rung Ladders**

- Single ladder. Single ladders longer than 30 feet will not be used by this company.

## **Industrial Mechanical Metal Ladders Safety Policy**

To insure safety and serviceability the following precautions concerning the care and use of metal ladders shall be observed:

### **Care, Metal Ladders**

The following safety precautions shall be observed in connection with the care of metal ladders:

- Ladders must be maintained in good usable condition at all times.
- If a ladder is involved in any of the following, immediate inspection is necessary:
- If ladders tip over, inspect ladder for side rails dents or bends, or excessively dented rungs; check all rung-to-side-rail connections; check hardware connections; check rivets for shear.
- If ladders are exposed to oil and grease, equipment should be cleaned of oil, grease, or slippery materials. This can easily be done with a solvent or steam cleaning.
- Ladders having defects are to be marked and taken out of service until repaired by either maintenance department or the manufacturer.

### **Use, Metal Ladders**

The following safety precautions shall be observed in connection with the use care of metal ladders:

- A simple rule for setting up a ladder at the proper angle is to place the base a distance from the vertical wall equal to one-fourth the working length of the ladder.
- Portable ladders are designed as a one-man working ladder based on a 200- pound load.
- The ladder base section must be placed with a secure footing.
- The top of the ladder must be placed with the two rails supported, unless equipped with a single support attachment.
- When ascending or descending, the climber must face the ladder.
- Ladders must not be tied or fastened together to provide longer sections. They must be equipped with the hardware fittings necessary if the manufacturer endorses extended uses.
- Ladders should not be used as a brace, skid, guy or gin pole, gangway, or for other uses than that for which they were intended, unless specifically recommended for use by the manufacturer.

## **Portable Metal Ladders**

### **General Requirements**

This company will purchase only ladders without structural defects or potential accident hazards such as sharp edges, burrs, etc.

### **Rungs**

- The spacing of rungs or steps shall be on 12 inch centers.
- Rungs and steps shall be corrugated, knurled, dimpled, coated with skid-resistant material, or otherwise treated to minimize the possibility of slipping.

### **Straight Ladders**

- The minimum width between side rails shall be 12 inches.
- The length of single ladders or individual sections of ladders shall not exceed 30 feet.

### **Fixed Ladders**

Where fixed ladders are used within our facility the following design requirements will be adhered to:

- The minimum design live load shall be a single concentrated load of 200 pounds.
- The number and position of additional concentrated live-load units of 200 pounds each as determined from anticipated usage of the ladder shall be considered in the design.
- The live loads imposed by persons occupying the ladder shall be considered to be concentrated at such points as will cause the maximum stress in the structural member being considered.
- The weight of the ladder and attached appurtenances together with the live load shall be considered in the design of rails and fastenings.

### **Rungs and Cleats**

- All rungs shall have a minimum diameter of three-fourths inch for metal ladders, and a minimum diameter of 1 1/8 inches for wood ladders.
- The distance between rungs, cleats, and steps shall not exceed 12 inches and shall be uniform throughout the length of the ladder.
- The minimum clear length of rungs or cleats shall be 16 inches. Rungs, cleats, and steps shall be free of splinters, sharp edges, burrs, or projections which may be a hazard.
- The rungs of an individual-rung ladder shall be so designed that the foot cannot slide off the end. Side rails which might be used as a climbing aid shall be of such cross sections as to afford adequate gripping surface without sharp edges, splinters, or burrs. Fastenings shall be an integral part of fixed ladder design.

### **Splices**

All splices made by whatever means shall meet design requirements. All splices and connections shall have smooth transition with original members and with no sharp or extensive projections.

## **Electrolytic Action**

Adequate means shall be employed to protect dissimilar metals from electrolytic action when such metals are joined.

## **Welding**

All welding shall be in accordance with the "Code for Welding in Building Construction" (AWSD1.0-1966).

## **Protection from Deterioration**

- Metal ladders and appurtenances shall be painted or otherwise treated to resist corrosion and rusting when location demands. Ladders formed by individual metal rungs imbedded in concrete, which serve as access to pits and to other areas under floors, are frequently located in an atmosphere that causes corrosion and rusting. To increase rung life in such atmosphere, individual metal rungs shall have a minimum diameter of 1 inch or shall be painted or otherwise treated to resist corrosion and rusting.
- Wood ladders, when used under conditions where decay may occur, shall be treated with a nonirritating preservative, and the details shall be such as to prevent or minimize the accumulation of water on wood parts. When different types of materials are used in the construction of a ladder, the materials used shall be so treated as to have no deleterious effect one upon the other.

## **Climbing Side**

On fixed ladders, the perpendicular distance from the centerline of the rungs to the nearest permanent object on the climbing side of the ladder shall be 36 inches for a pitch of 76 degrees, and 30 inches for a pitch of 90 degrees, with minimum clearances for intermediate pitches varying between these two limits in proportion to the slope.

## **Ladders without Cages or Wells**

A clear width of at least 15 inches shall be provided each way from the centerline of the ladder in the climbing space, except when cages or wells are necessary.

## **Clearance in Back of Ladder**

The distance from the centerline of rungs, cleats, or steps to the nearest permanent object in back of the ladder shall be not less than 7 inches, except that when unavoidable obstructions are encountered, minimum clearances as shown in 29 CFR 1910.27, figure D-3 shall be provided.

## **Clearance in Back of Grab Bar**

The distance from the centerline of the grab bar to the nearest permanent object in back of the grab bars shall be not less than 4 inches. Grab bars shall not protrude on the climbing side beyond the rungs of the ladder which they serve.



### **Step-across Distance**

The step-across distance from the nearest edge of ladder to the nearest edge of equipment or structure shall be not more than 12 inches, or less than 2 1/2 inches (29 CFR 1910.27, fig. D-4).

### **Cages or Wells**

Cages or wells (except on chimney ladders) shall be built, as shown on the applicable drawings, covered in detail in 29 CFR 1910.27, figures D-7, D-8, and D-9, or of equivalent construction. Cages or wells conforming to the dimensions shown in 29 CFR 1910.27, figures D-7, D-8, and D-9 shall be provided on ladders of more than 20 feet to a maximum unbroken length of 30 feet.

Cages shall extend down the ladder to a point not less than 7 feet nor more than 8 feet above the base of the ladder, with bottom flared not less than 4 inches, or portion of cage opposite ladder shall be carried to the base.

Cages shall not extend less than 27 nor more than 28 inches from the centerline of the rungs of the ladder. Cage shall not be less than 27 inches in width. The inside shall be clear of projections. Vertical bars shall be located at a maximum spacing of 40 degrees around the circumference of the cage; this will give a maximum spacing of approximately 9 1/2 inches, center to center.

Ladder wells shall have a clear width of at least 15 inches measured each way from the centerline of the ladder. Smooth-walled wells shall be a minimum of 27 inches from the centerline of rungs to the well wall on the climbing side of the ladder. Where other obstructions on the climbing side of the ladder exist, there shall be a minimum of 30 inches from the centerline of the rungs.

# Industrial Mechanical Lifting Safety Handbook

## Introduction

It has been estimated that eight out of every ten Americans will suffer a back injury sometime during their lifetime. Back injuries not only hurt the individual, they hurt the people around them. Back injuries affect families, friends and workers through lost hours from work and play. Protecting yourself from back injuries can be simple. PREVENTION IS THE KEY! Proper lifting techniques and hazard avoidance can help endure many hours of work and play without pain.

This booklet is designed to help provide the basics that are necessary to avoid back injuries while lifting objects. It is divided into two sections: Eight Steps to a Safe Lift and Back Safety Tips. By adopting the lifting techniques in this booklet and avoiding known hazards, some of which are detailed in this booklet you can prevent back injuries.

## How to Avoid Back Injuries

Back injuries can occur during varied forms of material handling within the industrial environment. Back injuries can not only occur during lifting, but also pushing, pulling, lowering and/or carrying.

Even with education of the worker in the proper material handling techniques, back injuries can and will occur. The best way to avoid the injury is to change or redesign the task so the worker does not have to directly handle the material to be moved.

## PREVENTION APPROACHES

There are three basic approaches to employ:

1. Select a suitable worker for the job or task.
2. Establish a training procedure for proper material handling.
3. Design the job to fit the worker.

Low back pain can occur to anybody, particularly workers in their 30's and 40's who engage in more heavy and repeated work tasks. The best person for a manual handling job is one who is in good physical condition and has been properly trained for the job. However, even this person is likely to be injured if the task remains difficult and strenuous.

## Safe Lifting Guidelines

Most back injuries are the result of improper lifting techniques. The worst lifting situations occur when the body is extended over the load. Keep the back straight to shift the weight of the load being lifted onto powerful leg muscles, thus reducing the lever effect caused when the body is extended over the load.

- Keep in good physical condition.

- Difficult lifting tasks should not be attempted if not accustomed to vigorous exercise.
- Think before lifting.
- Make certain there is adequate space and clear aisle ways. Also, plan for a place to set the load down.
- Maintain a good grip on the load by using the palms of the hands.
- Lift with the load close to the body. The closer the load is to the spine, the less force it exerts on the back. This is one of the most important rules in lifting.
- Test the load before handling it. If it appears to be too heavy or bulky, get help or some type of mechanical aid.
- Place the feet close to the load. The feet should be far enough apart for stability, have one foot slightly ahead of the other and pointed in the direction of movement.
- Tighten stomach muscles. Abdominal muscles support the spine when lifting, offsetting the force it exerts on the back.
- Lift with your legs. The stronger leg muscles are better suited for lifting than the weaker back muscles.
- Keep the back straight and head up whether lifting or putting down the load. Avoid twisting; it can cause injury.

#### **Eight Steps to a Safe Lift:**

1. Size up the load
2. Plan the job
3. Establish base of support
4. Bend your knees
5. Get a good grip
6. Keep the load close
7. Lift with your legs
8. Pivot; don't twist

1. **SIZE UP THE LOAD** Always assesses the object before lifting it. Make sure the load is stable and balanced. Carefully and slowly put force against the object to determine its weight. **IF IT IS TOO HEAVY, GET HELP!**

2. **PLAN THE JOB** Plan a route that is free of tripping and slipping hazards. Ensure that the planned route allows for easy travel. Know where the object will be unloaded and plan for rest stops if necessary. Think through the lift-lift the load in your mind. Face the object you are about to lift, and, if possible, face the direction you want to go. **DO NOT TWIST YOUR BODY.**

3. **ESTABLISH BASE OF SUPPORT** Make sure you have firm footing. Keep your feet at least shoulder width apart. A staggered stance, with one foot slightly behind the other, often helps provide a firm base of support.

4. **BEND YOUR KNEES** Bend at your knees, not at your waist. Bend down as far as necessary using your legs and not your back.

5. **GET A GOOD GRIP** Grip the load firmly, using your whole hand, not just your fingers.

6. **KEEP THE LOAD CLOSE** Keep the load close to your body. The closer it is to your spine, the less force it exerts on your back. Maintain the natural inward curve of your lower back. Keep your back upright. Whether you are lifting or putting down a load, do not add the weight of your body to the load. Grasp the object with your palms, not just your fingers. 10 pounds at arms length is like lifting 100 pounds.

7. **LIFT WITH YOUR LEGS** Lift with your legs to allow your body's powerful leg muscles to do the work. Flex your knees and hips, not your back. **AVOID BENDING AT THE WAIST!**

8. **PIVOT; DON'T TWIST** Don't twist your body when moving objects that have already been lifted. Pivot your feet and turn your entire body in the direction of movement.

#### **Back Safety Tips:**

- When possible, push an object instead of pulling it. Lean into the object and let your body weight and thigh muscles do the work. Pushing puts less strain on the back.
- Don't twist. Twisting is one of the most damaging movements for the back. When bending is added, the two multiply the risk of back injury substantially.
- Move the load in a smooth motion. Don't use jerky movement. Jerky movements not only increase the chance of a strain or sprain but also may throw you off balance. Walk using short steps with your feet far enough apart to maintain good balance. Break a large load into smaller loads whenever possible.
- Keep loads out of the danger zone by keeping the load between shoulder and knuckle height. Working in the danger zone increases the chance of injury. Danger zone: Above shoulders and below waist.
- Plan rest along your route. Muscle fatigue increases the risk of injury.
- Lower the load slowly, by bending at the knees and hips. After releasing the load, straighten up using your legs. Remember, you can injure yourself putting a load down as well as picking it up.
- Choose the safest and quickest route to your destination. Avoid stairs and other areas that provide poor footing.
- Don't reach over a surface to pick up an object. If you can't get closer to the object, slide it toward you.
- Tighten abdominal muscles (stomach) to give added support to the spine. This will help you offset the force of the load.
- Don't obstruct your view by stacking objects too high. This is one of the quickest routes to an injury.

- Use assistive devices: dollies, winches, pulleys, forklifts, etc.
- Keep the worksite clean in order to avoid slipping or tripping hazards. Good housekeeping eliminates a lot of unnecessary injuries.

## **Industrial Mechanical Hand & Powered Tools Safety**

### **Purpose**

Thousands of workers are injured every year due to improper use of hand and portable powered tools. Serious injury or death can be the result of electrocution, severed fingers, blindness, and a host of other types of injuries. Industrial Mechanical has implemented this plan in accordance with OSHA Regulation 29 CFR 1910.221-224 to aid in the prevention of accidents.

The company will ensure that tool hazards are evaluated. This plan is intended to address comprehensively the issues of: evaluating and identifying tool selection and use deficiencies, evaluating the associated potential hazards, communicating information concerning these hazards, and establishing appropriate procedures and protective measures for employees.

Responsibility Industrial Mechanical will be responsible for the safe condition of tools and equipment used by its employees, including tools and equipment which may be furnished by employees. The company will develop hand and powered tool operational procedures through the use of this plan. After tool selection and evaluation, tools will be used and maintained in a safe condition. Supervisors will ensure that the proper types of tools are utilized at each job site.

### **Tool Selection, Evaluation and Condition**

The greatest hazards posed by tools usually result from misuse and improper maintenance. Tool selection sometimes is not considered a priority when arrangements are made to begin work. All employees will consider the following when selecting tools:

- Is the tool correct for the type work to be performed?
- Are guards installed properly and in good condition?
- Are grounding methods sufficient when working in wet conditions?
- Does the tool create sparks or heat? Has this been considered when working around flammable substances?
- Do impact tools such as chisels, wedges, or drift pins have mushroomed heads? The heads can shatter on impact, sending sharp fragments flying!
- Are wooden handled tools loose or splintered? This can result in the heads flying off and striking the user/coworkers!
- Are cutting tools sharp? Dull tools are more hazardous than sharp ones.
- Is the tool used on the proper working surface? Tools used on dirty or wet working surfaces can create a multitude of hazards.
- Are tools stored properly when not being used? Saw blades, knives, and scissors and like sharp tools should be stored so that sharp edges are directed away from aisles and coworkers.
- Is there sufficient clearance for tools requiring swinging motions such as hammers, axes, picks, etc?

## **Power Tool Precautions**

Power tools can be hazardous when improperly used; this company uses several types. These types are based on the power source they use: electric, liquid fuel, hydraulic, pneumatic, and powder-actuated. The following precautions will be taken by employees of this company to prevent injury:

- Power tools will always be operated within their design limitations.
- Eye protection, gloves and safety footwear are recommended during operation.
- Store tools in an appropriate dry location when not in use.
- Work only in well illuminated locations.
- Tools will not be carried by the cord or hose.
- Cords or hoses will not be yanked to disconnect them from the receptacle.
- Cords and hoses will be kept away from heat, oils, sharp edges or any other source that could result in damage.
- Tools will be disconnected when not in use, before servicing, and when changing accessories such as blades, bits and cutters.
- Observers will be kept at a safe distance at all times from the work area.
- Work will be secured with clamps or a vice where possible to free both hands to operate tools.
- To prevent accidental starting, employees should be continually aware not to hold the start button while carrying a plugged in tool.
- Tools will be maintained in a clean manner, and properly maintained in accordance with the manufacturers' guidelines.
- Ensure that proper shoes are worn and that the work area is kept clean to maintain proper footing and good balance.
- Ensure that proper apparel is worn. Loose clothing, ties, or jewelry can become caught in moving parts.
- Tools that are damaged will be removed from service immediately and tagged "Do Not Use". They will be reported and turned over to the supervisor for repair or replacement.
- Cracked Saws. All cracked saws will be removed from service.
- Grounding. Portable electric powered tools will meet the electrical requirements of the company Electrical Safety-Related Work Practices Program, and 29 CFR 1910.331-335.
- Compressed air used for cleaning. Compressed air will not be used for cleaning purposes except where reduced to less than 30 p.s.i. and then only with effective chip guarding and personal protective equipment.

## **Methods of Guarding**

One or more methods of guarding will be provided where required to protect the operator and other employees in the area from hazards such as those created by point of operation, in running nip points, rotating parts, flying chips and sparks. Examples of guarding methods are: barrier guards, two-hand tripping devices, electronic safety devices, etc. The guard will be such that it does not offer an accident hazard in itself. Employees will:

- Inspect tools without guards for signs of guard removal. If it is evident that a guard is required, tag-out the tool and obtain a replacement. Tools will not be energized during inspection.
- Inspect tools having guards for proper operation and maintenance prior to use. Tools will not be energized during inspection.
- Never remove a guard during use.

### **Portable Circular Saws**

All portable, power-driven saws having a blade diameter greater than two (2) inches will be equipped with guards above and below the base plate or shoe. The upper guard will cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. (Does not apply to circular saws used in the meat industry for meat cutting purposes). For authorized use the following conditions must be met:

- An upper guard must cover the entire blade of the saw.
- A retractable lower guard must cover the teeth of the saw.
- Except when it makes contact with the work material, the lower guard must automatically return to the covering position when the tool is withdrawn from the work.

### **Powered Abrasive Wheel Tools**

Abrasive wheels shall be used only on tools/equipment provided with safety guards. Exceptions. These requirements do not apply to the following classes of wheels and conditions:

1. Wheels used for internal work while within the work being ground.
2. Mounted wheels used in portable operations two (2) inches and smaller in diameter.
3. Types 16, 17, 18, 18R, and 19 cones, plugs, and threaded hole pot balls where the work offers protection.
4. Guard covers. Employees will ensure that a safety guard covers the spindle end, nut, and flange projections. The safety guard shall be mounted so as to maintain proper alignment with the wheel and the strength of the fastenings shall exceed the strength of the guard.
  - a. Exception. Safety guards on all operations where the work provides a suitable measure of protection to the operator may be so constructed that the spindle end, nut, and outer flange are exposed. Where the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted.
  - b. Exception. The spindle end, nut, and outer flange may be exposed on portable machines designed for, and used with, type 6, 11, 27, and 28 abrasive wheels, cutting off wheels, and tuck pointing wheels.
5. Cup Wheels. Cup wheels (Types 6 and 11) shall be protected by:



a. Safety guards as specified.

b. Special “revolving cup guards” which mount behind the wheel and turn with wheel sides upward from the back for one-third of the wheel thickness. The mounting features shall conform to all regulations. It is necessary to maintain clearance between the wheel side and guard. The clearance shall not exceed one-sixteenth.

6. General Safety precautions:

a. Before being mounted, it should be inspected closely and sound- or ring-tested to be sure that it is free from cracks or defects. To test, wheels should be tapped gently with a light non-metallic instrument. If they sound cracked or dead, they could fly apart in operation and so must not be used. A sound and undamaged wheel will give a clear metallic tone or ring.

b. Employees will not locate themselves directly in front of the wheel as it accelerates to full operating speed.

c. Employees will always use eye protection.

d. Power will be turned off when not in use.

e. Hand held grinders are never placed in vises.

f. Mounting and inspection of abrasive wheels.

i. Immediately before mounting, all wheels shall be closely inspected and sounded by the user using the ring test to make sure they have not been damaged in transit, storage, or otherwise. The spindle speed of the machine shall be checked before mounting of the wheel to be certain that it does not exceed the maximum operating speed marked on the wheel.

ii. Grinding wheels shall fit freely on the spindle and remain free under all grinding conditions. A control clearance between the wheel hole and machine spindle (or wheel sleeves or adaptors) is essential to avoid excessive pressure from mounting and spindle expansion. To accomplish this, the machine spindle shall be made to nominal (standard) size plus zero minus .002 inch, and the wheel hole shall be made suitably oversize to assure safety clearance under the conditions of operating heat and pressure.

iii. All contact surfaces of wheels, blotters, and flanges shall be flat and free of foreign matter. When a bushing is used in the wheel hole, it shall not exceed the width of the wheel and shall not contact the flanges.

Excluded machinery. Natural sandstone wheels and metal, wooden, cloth, or paper discs having a layer of abrasive on the surface are not covered by these requirements.

### **Vertical Portable Grinders**

Supervisors will ensure that all employees are thoroughly familiar with and use strict work practices in accordance with the manufacturer's instructions. Safety guards used on machines known as right angle head or vertical portable grinders shall have a maximum exposure angle of 180, and the guard shall be located so as to be between the operator and the wheel during use. Adjustment of the guard shall be such that pieces of an accidentally broken wheel will be deflected away from the operator. (See 29 CFR 1910.243, Figure P-4.)

- Other portable grinders. The maximum angular exposure of the grinding wheel periphery and sides for safety guards used on portable grinding machines shall not exceed 180, and the top half of the wheel shall be enclosed at all times.
- Bench grinders. The upper peripheral guard (tongue guard) will be adjusted downward to within 1/4 inch of the wheel, and the tool rest kept adjusted closely to the wheel with a maximum clearance of 1/8 inch (29 CFR 1910.215).

### **Portable Belt Sanding Machines**

Supervisors will ensure that all belt sanding machines used by their personnel be provided with guards at each nip point where the sanding belt runs onto a pulley. These guards will effectively prevent the hands or fingers of the operator from coming in contact with the nip points. The unused run of the sanding belt will be guarded against accidental contact.

### **Pneumatic Powered Tools and Hoses**

Supervisors will ensure all employees are thoroughly familiar with, and use strict work practices in accordance with the manufacturer's instructions. Prior to use the following requirements will be complied with.

- Tool retainer. A tool retainer will be installed on each piece of utilization equipment which, without such a retainer, may eject the tool.
- Air hoses. Hose and hose connections used for conducting compressed air to utilization equipment will be compatible with the pressure and service to which they are subjected.

### **Circular Saws, Chain Saws and Percussion Tools**

All hand-held powered circular saws having a blade diameter greater than two (2) inches; electric, hydraulic or pneumatic chain saws; and percussion tools without positive accessory holding means shall be equipped with a constant pressure switch or control that will shut off the power when the pressure is released. All hand-held gasoline powered chain saws shall be equipped with a constant pressure throttle control that will shut off the power to the saw chain when the pressure is released.

## **Powered Tools**

All hand-held powered drills, tappers, fastener drivers, horizontal, vertical, and angle grinders with wheels greater than two (2) inches in diameter; disc sanders with discs greater than two (2) inches in diameter; belt sanders, reciprocating saws, saber, scroll, and jig saws with blade shanks greater than a nominal one-fourth inch; and other similarly operating powered tools will be equipped with a constant pressure switch or control. And they may have a lock-on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

## **Other Hand-held Powered Tools**

- All other hand-held powered tools such as, but not limited to: platen sanders and grinders with wheels two (2) inches in diameter or less; disc sanders with discs two (2) inches in diameter or less; routers, planers, laminate trimmers, nibblers, shears, saber, scroll, and jig saws with blade shanks a nominal one-fourth of an inch wide or less will be equipped with either a positive "on-off" control, or other controls as described by paragraphs 7.1, and 7.2 of this SPI.
- Saber, scroll, and jig saws with nonstandard blade holders may use blades with shanks which are non-uniform in width, provided the narrowest portion of the blade shank is an integral part in mounting the blade.
- Blade shank width will be measured at the narrowest portion of the blade shank when saber, scroll, and jig saws have nonstandard blade holders. OSHA defines nominal in this subparagraph as  $\pm 0.05$  inch.
- Equipment used by this company will have the operating control on hand-held power tools located so as to minimize the possibility of its accidental operation, if such accidental operation would constitute a hazard to employees.
- Applicability. Section 14.3 of this SPI does not apply to concrete vibrators, concrete breakers, powered tampers, jack hammers, rock drills, garden appliances, household and kitchen appliances, personal care appliances, medical or dental equipment, or to fixed machinery.

## **Initial Training**

Training will be conducted prior to job assignment. This employer will provide training to ensure that the purpose, function, and proper use of tools to be used in the normal function of their jobs is understood by employees and that the knowledge and skills required for the safe application and usage is acquired by employees. This standard practice instruction will be provided to and read by all employees receiving training. The training will include, as a minimum, the following:

- Types of tools appropriate for use.
- Recognition of applicable hazards associated with the work to be completed.
- Tool determination and additional requirements.
- Procedures for removal of a tool from service.

- All other employees whose work operations are or may be in an area where tools which could present a hazard to other than the user will be instructed to awareness levels concerning hazards.
- Tools identification. Tools having identification numbers will be checked for legibility.
- Certification. This employer will certify that employee training has been accomplished and is being kept up to date. The certification will contain each employee's name and dates of training.
- Tool trainers. The following employees or position titles will receive training and, as required, serve as tool trainers. Company qualified trainers will consist of the following:

**TOOL TRAINERS**

Title	Member
Tool Trainer	Department Manager
Tool Trainer	Safety Officer
Tool Trainer	First Line Supervisors
Tool Trainer	_____
Tool Trainer	_____
Tool Trainer	_____
Tool Trainer	_____

**Refresher Training**

This standard practice instruction will be provided to and read by all employees receiving refresher training. The training content will be identical to initial training. Refresher training will be conducted on an annual basis or when the following conditions are met, whichever event occurs sooner.

- Retraining will be provided for all authorized and affected employees whenever (and prior to) there is a change in their job assignments, a change in the type of tools used, or when a known hazard is added to the work environment.
- Additional retraining will also be conducted whenever a periodic inspection reveals, or whenever this employer has reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of tools.
- The retraining will reestablish employee proficiency and introduce new or revised methods and procedures, as necessary.
- Certification. This employer will certify that employee training has been accomplished and is being kept up to date. The certification will contain each employee's name and dates of training.

# Industrial Mechanical Fall Protection

## Purpose

Industrial Mechanical is dedicated to the protection of its employees from on-the-job injuries. All employees of Industrial Mechanical have the responsibility to work safely on the job. The purpose of this plan is to:

- Supplement our standard safety policy by providing safety standards specifically designed to cover fall protection on this job.
- Ensure that each employee is trained and made aware of the safety provisions which are to be implemented by this plan prior to the start of erection.

This program informs interested persons, including employees that Industrial Mechanical is complying with OSHA's fall protection requirements, (29 CFR 1926.500 to.503).

This program applies to all employees who might be exposed to fall hazards, except when designated employees are inspecting, investigating, or assessing workplace conditions before the actual start of construction work or after all construction work has been completed.

All fall protection systems selected for each application will be installed before an employee is allowed to go to work in an area that necessitates the protection. The program coordinator/manager is responsible for its implementation. Copies of the written program may be obtained from the coordinator. Certain employees are authorized to inspect, investigate, or assess workplace conditions before construction work begins or after all construction work has been completed. These employees are exempt from the fall protection rule during the performance of these duties. They are:

- The superintendent and all job foremen

These authorized employees determine if all walking/working surfaces on which our employees work have the strength and structural integrity to support the employees. Our employees will not be allowed to work on these surfaces until they have the requisite strength and structural integrity.

All employees, or their designated representatives, can obtain further information about this written program and/or the fall protection standard from the Safety Manager.

## Our Duty to Provide Fall Protection

To prevent falls, the company has a duty to anticipate the need to work at heights and to plan our work activities accordingly. Careful planning and preparation lay the necessary groundwork for an accident-free job site.

Worksite Assessment and Fall Protection System Selection

This written plan is for all job sites. There are situations at this worksite that will require fall protection. This fall protection plan is intended to anticipate the particular fall hazards to which our employees may be exposed. Specifically, we:

- Inspect the area to determine what hazards exist or may arise during the work.
- Identify the hazards and select the appropriate measures and equipment.
- Give specific and appropriate instructions to workers to prevent exposure to unsafe conditions.
- Ensure employees follow procedures given and understand training provided.
- Apprise ourselves of the steps our specialty subcontractors have taken to meet their fall protection requirements.

Providing fall protection requires an assessment of each fall situation at a given jobsite. Our criteria for selecting a given fall protection system follow those established at 29 CFR 1926.502, fall protection systems criteria and practices. Each employee exposed to these situations must be trained as outlined later in this plan.

### **Unprotected Sides and Edges**

Our employees must be protected when they are exposed to falls from unprotected sides and edges of walking/working surfaces (horizontal and vertical surfaces) which are six (6) feet or more above lower levels. We know that OSHA has determined that there is no "safe" distance from an unprotected side or edge that would render fall protection unnecessary.

We have chosen the following fall protection for unprotected sides and edges at this worksite:

- Guardrails, Safety Nets, Personal Fall Arrests

We have chosen the following systems for each location where unprotected sides and edges exist:

- All job protection systems are used, depending on the situation We maintain the system(s) chosen until all work has been completed or until the permanent elements of the structure which will eliminate the exposure to falling hazards are in place.

### **Leading-Edge Work**

This construction site requires leading-edge work. Leading edges are defined as the edge of a floor, roof, or form work that changes location as additional floor, roof, or form work sections are placed, formed, or constructed. If work stops on a leading edge, it will be considered to be an "unprotected side or edge" and will be covered by the section of this plan on unprotected sides and edges.

We presume that it is feasible and will not create a greater hazard to implement at least one of the conventional fall protection systems for our leading-edge work.

We have chosen the following systems for each location where leading edges exist:

- Guardrails, Safety Nets, and Personal Fall Arrest System

Employees who are not constructing the leading edge, but who are on walking/working surfaces where leading edges are under construction, are also protected from a fall by guardrails.

### **Hoist Areas**

In all situations where equipment and material hoisting operations take place, we protect our employees from fall hazards. When we are involved in hoisting operations, we will use the following fall protection systems at these specific locations:

- Guardrails, Safety Nets, and Personal Fall Arrest Systems

When operations require the materials to be lifted by crane to a landing zone (and do not require an employee to lean through the access opening or out over the edge to receive or guide materials), we can select either personal fall-arrest equipment or a guardrail system.

When guardrails (or chains or gates) are removed to facilitate hoisting operations, and one of our employees must lean through the access opening or out over the edge to receive or guide materials, they will be protected by a personal fall-arrest system.

### **Holes**

The company protects employees from:

- Tripping in or stepping into or through holes (including skylights).
- Objects falling through holes (including skylights).

We use the following fall protection system to protect our employees working on walking/working surfaces with holes where they can fall six (6) feet or more to a lower surface:

- Guardrails

At this worksite, employees can trip or step into or through a hole (including skylights), or an object could fall through a hole and strike a worker. In these instances we use covers to prevent accidents.

We understand that OSHA does not intend that a guardrail be erected around holes while employees are working at the hole, passing materials, and so on. Therefore, if the cover is removed while work is in progress, guardrails are not required because they would interfere with the performance of work. When the work has been completed, we will be required to either replace the cover or erect guardrails around the hole.

## **Form Work and Reinforcing Steel**

This jobsite requires form work or reinforcing steel work six (6) feet or more above lower levels. We are involved in work where different systems fit different applications. Therefore, we have chosen the following fall protection systems at each listed location to protect our employees:

- Safety Nets, and Personal Fall Arrest System

## **Ramps, Runways, and Other Walkways**

We equip all ramps, runways, and other walkways with guardrails when employees are subject to falling six (6) feet or more to lower levels.

## **Wall Openings**

Employees who are exposed to the hazard of falling out or through wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is six (6) feet or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches above the walking/working surface must be protected from falling.

We protect our employees from falls out or through wall openings by the following methods:

- Guardrails

## **Walking/Working Surfaces Not Otherwise Addressed**

We realize there will be situations that are not covered by our written safety plan, for which we have the duty to provide fall protection. All employees exposed to falls of six (6) feet or more to lower levels must be protected by a guardrail system, safety net system, or personal fall arrest system except where specified otherwise in Part 1926.

## **Protection from Falling Objects**

When employees are exposed to falling objects, we ensure they wear hard hats and also implement one of the following measures:

- Erect toe boards, screens, or guardrail systems to prevent objects from falling from higher levels.
- Erect a canopy structure and keep potential fall objects far enough from the edge of the higher level so that those objects would not go over the edge if they were accidentally moved.
- Inspect the area to which objects could fall, prohibit employees from entering the area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally moved.
- Cover or guard holes six (6) feet or more above a lower level.



## **General Worksite Policy**

- If any one of the conditions described in the Workplace Assessment is not met for the area or piece of equipment posing a potential fall hazard, then do not perform that work until the condition is met. If you cannot remedy the condition immediately, notify a supervisor of the problem and utilize a different piece of equipment or work in a different area, according to the situation.
- If the situation calls for use of fall protection devices such as harnesses or lanyards and belts because the fall hazard cannot be reduced to a safe level, then the employee must wear such protective equipment before beginning the work and use it as intended throughout the duration of the work.
- Only employees trained in such work are expected to perform it.
- All places of employment, job sites shall be kept clean and orderly and in a sanitary condition.
- All walking/working surfaces must be kept in a clean and, so far as possible, dry condition. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places should be provided where practicable.

## **Training Program**

Under no circumstances shall employees work in areas where they might be exposed to fall hazards, do work requiring fall protection devices, or use fall protection devices until they have successfully completed Industrial Mechanical fall protection training program.

The training program includes classroom instruction and operational training on recognition and avoidance of unsafe conditions and the regulations applicable to their work environment for each specific fall hazard the employee may encounter. The training program must cover the following areas:

- The nature of fall hazards in the work area.
- Selection and use of personal fall arrest systems, including application limits, proper anchoring and tie-off techniques, estimation of free-fall distance (including determination of deceleration distance and total fall distance to prevent striking a lower level), methods of use, and inspection and storage of the system.
- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
- The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used.
- The role of each employee in the safety monitoring system when this is used.
- The limitations on the use of mechanical equipment during the performance of roofing work on low sloped roofs.

- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.
- The role of employees in fall protection plans.
- The standards contained in Subpart M of the construction regulations.

The company will identify all current and new employees who require training and schedule the classroom instruction for those employees. Training on the above components will occur both in the classroom and on the job site, as appropriate. Classroom training will cover written policy/procedures on fall protection and include a training video on the subject. Job site instruction will include demonstration of and practice in wearing fall protection equipment and any instruction necessary for a specific job.

The superintendent has overall responsibility for the safety of employees and will verify compliance with 1926.503(a), training programs, for each employee required to be trained.

The superintendent has the responsibility of determining when an employee who has already been trained does not have the understanding and skill required by the training program (1926.503(a)).

A written certificate of training is required which must include:

- The name or other identity of the employee trained.
- The date(s) of training.
- The signature of the competent person who conducted the training or the signature of the employer.

Retraining is required when an employee cannot demonstrate the ability to recognize the hazards of falling and the procedures to be followed to minimize fall hazards.

### **Enforcement**

Constant awareness of and respect for fall hazards and compliance with all safety rules are considered conditions of employment. The jobsite superintendent, as well as individuals in the Safety and Personnel Department, reserves the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this program.

### **Incident Investigation**

All accidents that result in injury to workers, regardless of their nature, are investigated and reported. It is an integral part of any safety program that documentation takes place as soon as possible so that the cause and means of prevention can be identified to prevent a recurrence.

In the event that an employee falls, or there is some other related, serious incident (e.g., a near miss) occurs; this plan will be reviewed to determine if additional practices, procedures, or training needs to be implemented to prevent similar types of falls or incidents from occurring.

## **Changes to Plan**

Any changes to the plan will be approved by the safety manager. This plan is reviewed by a qualified person as the job progresses to determine if additional practices, procedures or training needs to be implemented by the competent person to improve or provide additional fall protection. Workers are notified and trained, if necessary, in the new procedures. A copy of this plan and all approved changes is maintained at the jobsite.

# Industrial Mechanical Lockout / Tagout Safety Manual

## Purpose

This procedure establishes this company's requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment, in accordance with the requirements of OSHA's 1910.147. It is used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected start-up of the machine or equipment or release of stored energy could cause injury.

Responsibility Industrial Mechanical and the supervisors have overall responsibility for the Lockout/Tagout Program. They will review and update the program, as necessary. Copies of the written program may be obtained at the company office.

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

## Hazards - Improper or failure to use

### Lockout/Tagout procedures may result in:

- Electrical shock
- Chemical exposure
- Skin burns
- Lacerations & amputation
- Fires & explosions
- Chemical releases
- Eye injury
- Death
- Only authorized and trained employees may engage in tasks that require use of lockout-tagout procedures
- All equipment has single sources of electrical power
- Lockout procedures have been developed for all equipment and processes
- Restoration from Lockout is a controlled operation

## Hazard Controls

### Definitions

Authorized (Qualified) Employees are the only ones certified to lock and tag out equipment or machinery. Whether an employee is considered to be qualified will depend upon various circumstances in the workplace. It is likely for an individual to be considered "qualified" with regard to certain equipment in the workplace, but "unqualified" as to other equipment. An employee who is undergoing on-the-job training and who, in the course of such training, has demonstrated an ability to perform duties safely at his or her level of training and who is under the direct supervision of a qualified person, is considered to be "qualified" for the performance of those duties.

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

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

## **Training**

### **Authorized Employees Training**

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

1. Review of General Procedures
2. Review of Specific Procedures for Machinery, Equipment and Processes
3. Location and use of Specific Procedures
4. Procedures when Questions Arise

### **Affected Employee Training**

1. Only trained and authorized employees will repair, replace or adjust machinery, equipment or processes
2. Affected employees may not remove locks, locking devices or tags from machinery, equipment or circuits.
3. Purpose and use of the lockout procedures.

### **Other Employee Training**

1. Only trained and authorized employees will repair, replace or adjust machinery or equipment
2. Other employees may not remove locks, locking devices or tags from machinery, equipment or circuits

### **Preparation for Lockout and Tagout Procedures**

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

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

### **Routine Maintenance and Machine Adjustments**

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

### **Locks, Hasps and Tags**

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

### **SOP: General Lockout and Tagout Procedures**

Before working on, repairing, adjusting or replacing machinery and equipment, the following procedures will be utilized to place the machinery and equipment in a neutral or zero mechanical state.

**Preparation for Shutdown** - Before authorized or affected employees turn off a machine or piece of equipment, the authorized employee will have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the means to control the energy.

**Notify all affected Employees that the machinery, equipment or process will be out of service.**

**Machine or Equipment Shutdown** -The machine or equipment will be turned or shut down using the specific procedures for that specific machine. An orderly shutdown will be utilized to avoid any additional or increased hazards to employees as a result of equipment de-energization.

If the machinery, equipment or process is in operation, follow normal stopping procedures (depress stop button, open toggle switch, etc.).

Move switch or panel arms to "Off" or "Open" positions and close all valves or other energy isolating devices so that the energy source(s) is disconnected or isolated from the machinery or equipment.

## **Machine or Equipment Isolation**

All energy control devices that are needed to control the energy to the machine or equipment will be physically located and operated in such a manner as to isolate the machine or equipment from the energy source.

### **Lockout or Tagout Device Application**

Lockout or tagout devices will be affixed to energy isolating devices by authorized employees. Lockout devices will be affixed in a manner that will hold the energy isolating devices from the "safe" or "off" position.

Where tagout devices are used, they will be affixed in such a manner that will clearly state that the operation or the movement of energy isolating devices from the "safe" or "off" positions is prohibited.

The tagout devices will be attached to the same point a lock would be attached. If the tag cannot be affixed at that point, the tag will be located as close as possible to the device in a position that will be immediately obvious to anyone attempting to operate the device.

Lock out and tag out all energy devices by use of hasps, chains and valve covers with an assigned individual locks.

## **Stored Energy**

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

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

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

## **Verification of Isolation**

Prior to starting work on machines or equipment that have been locked or tagged out, the authorized employees will verify that isolation or de-energization of the machine or equipment have been accomplished.

After assuring that no employee will be placed in danger, test all lock outs and tag outs by following the normal start up procedures (depress start button, etc.).

Caution: After Test, place controls in neutral position.

## **Extended Lockout/ Tagout**

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

### **SOP: Release from LOCKOUT/TAGOUT**

Before lockout or tagout devices are removed and the energy restored to the machine or equipment, the following actions will be taken:

1. The work area will be thoroughly inspected to ensure that nonessential items have been removed and that machine or equipment components are operational.
2. The work area will be checked to ensure that all employees have been safely positioned or removed. Before the lockout or tagout devices are removed, the affected employees will be notified that the lockout or tagout devices are being removed.
3. Each lockout or tagout device will be removed from each energy isolating device by the employee who applied the device.

### **SOP: LOTO Procedure for Electrical Plug-Type Equipment**

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

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

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



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

**SOP: LOTO Procedures Involving More Than One Employee**

In the preceding SOPs, if more than one Employee is assigned to a task requiring a lock and tag out, each must also place his or her own lock and tag on the energy isolating device(s).

**SOP: Management's Removal of Lock and Tag Out**

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

**Contractors**

Contractors, working on company property and equipment must use this Lockout/Tagout procedure while servicing or maintaining equipment, machinery or processes.

# Industrial Mechanical Vehicle Safety Plan

## Purpose

A recent report released by the U.S. Bureau of Labor Statistics concluded that automobile crashes are the leading cause of death and injury in the workplace. The report said almost 40% of all on-the-job fatalities and injuries occurred when employees were involved in work-related auto accidents (trucks, light-utility and passenger vehicles). Industrial Mechanical has implemented this plan to aid in the reduction of the on-the-job death and injuries resulting from auto crashes. These accidents are higher than the next two highest causes, falls and heart attacks, put together.

## Responsibility

Industrial Mechanical will be responsible for maintaining, and updating this program as necessary. Copies of the program may be obtained in the company office.

## Defensive Driving

The intent behind this safety message and procedures is to help keep you aware of safe driving habits and to continuously remember what types of situations could lead you to have a motor vehicle accident and ways to avoid them. Unfortunately, there are drivers out there who choose not to follow safe driving habits--placing us at risk. Keeping this in mind, always **drive defensively** from the time you start your truck in the morning until you call it a day. Some basic defensive driving strategies to follow include:

- Stay a safe distance from the vehicle in front of you--one vehicle length for each 10 mph. Start stopping sooner. Apply your brakes the instant you see a hazard developing, but apply them gradually so you don't go into a spin or grind to a stop so quickly that you risk a rear-end collision. Maintaining at least two or three car distances between you and the driver in front of you. If someone is tailgating you, pull over to the right lane if you are in the left or "fast lane". If the road is a single-lane road and someone is right on your bumper, put your right turn signal on and pull over to let them go in front of you. Only do this if there is a safe place to pull over.
- **Don't Tailgate!** There is nothing more frustrating and dangerous than a tailgater!
- Always come to a complete stop at a stop sign or traffic signal. Don't try to beat a yellow light you know is just about to turn red. Some traffic lights stay yellow longer than others so don't take chances. Always look in all directions as you pull out. Don't assume that a green light means it is clear.
- Drive with your head lights on when it is raining in order to be more visible. In some states, this is the law.
- Remember your blind spot as you pass into another lane. How many times have you had someone move into your lane in front of you, cutting you off or almost hitting you?

This is usually because your vehicle was in their blind spot and they did not see you. The key point to remember about defensive driving is that you need to be both **proactive** about following safe driving habits and to also be **reactive** to what other drivers around you are doing! Always be alert to your surroundings.

## **Some Additional Tips to Remember.....**

Wear your seat belt **always**.....even if you are only going a very short distance. Wearing your seat belt could save you from serious injury or even death if you are involved in an accident.

Always look in all directions as you pull out, especially in congested areas such as gas stations or parking lots.

In addition, to be a good driver you should respect all traffic laws and be courteous to others. Don't be in a big hurry. You're just asking for trouble. When bad weather affects driving conditions, you must adjust your driving time and habits. Driving on wet or slippery roads is not the same as driving on dry surfaces. The number of traffic accidents and cars running off the road during rainy weather could be reduced if drivers would anticipate the slippery road conditions and adjust their driving habits.

Don't drive above the posted speed limit. If it is raining or snowing, slow down! Don't drive in icy conditions.

Keep your vehicle well-maintained. Check tire condition and pressure regularly. Keep a spare at all times and if you get a flat tire pull over to a safe place where you are well away from oncoming traffic. People get killed changing tires alongside a road when they are too close to passing traffic. Drive with a flat to get to a safe place! (Don't forget to use your hazard lights).

Know where you are going as looking at maps while driving takes your eyes from the road.

Obey posted speed limits in construction and school zones. Speeding fines are expensive and police are likely to be monitoring for speeders in these areas.

Every time you get into your vehicle, make sure side- and rear-view mirrors are adjusted to allow a clear view of behind and both sides of the vehicle.

Remember to always use your turn signals when passing, turning or exiting. Let other drivers know what you are doing.

Inform your supervisor of any illness, injury or physical condition or uses of medication that may impair or affect your ability to drive.

**Remember!** Your commitment to following safe driving habits is needed and appreciated.

A safe driver is not merely someone who has been lucky enough to avoid accidents, but is one who drives defensively and looks out for others. But today's driving standards demand more skill, knowledge and decision. When you're at the controls of any vehicle, it is important to remember that defensive driving is a full-time job. The most dangerous mile you have to drive is the one directly ahead of you. Anyone can drive perfectly for 10 feet or 100 feet or even one mile, but it takes a real professional to drive perfectly for 100,000 miles or more. To be a professional driver, there are many things you must observe and practice.

Drivers who are safety conscious have developed good habits and practice them daily. Every time they get behind the wheel, their driving record is on the line. They must drive like a professional and be prepared mentally and physically.

If you are a driver who has a safe attitude about your driving, you will be able to drive with a sense of security in inclement weather, on difficult roads and through heavy traffic.

Defensive driving is driving to prevent accidents, in spite of the incorrect actions of others or adverse weather conditions. **Anticipate** driving hazards and know how to protect yourself from them. Be alert while driving by keeping your mind free of distractions and your attention focused on driving; alertness involves watching and recognizing instantly factors that cause accidents. The professional driver has foresight, the ability to size up traffic situations as far ahead as possible. The driver must **anticipate** traffic problems that are likely to develop and decide whether these developments could be dangerous.

Many drivers fail to understand why they were given a "preventable" for an accident when they were not legally at fault. A "preventable accident" is one in which you fail to do everything you reasonably could have done to prevent it. Even though the driver cited with a "preventable accident" did not violate any traffic laws, the professional driver should have seen or anticipated the incorrect actions of the other driver in time to take actions to prevent the accident from happening. However, you may also learn the valuable lessons that near-misses offer and make the necessary adjustments in your driving habits.

As a defensive driver, you must operate your vehicle in a manner to avoid contributing to an accident or being involved in a preventable accident.

Awareness of the vehicle's limitations is essential; pre-trip checklists and inspections of your vehicle point out things that might need attention.

### **Driving in Extreme Conditions**

Even for the most experienced drivers, extreme conditions present a challenge. The key elements for a safe trip during these conditions are **awareness** and **being prepared**. Follow these simple, basic rules and you will always arrive at your destination safely.

#### **General Rules:**

- Reduce speed
- Increase following distance.
- Signal well in advance.
- Avoid abrupt steering, braking and accelerating.
- Check the weather *before* your trip.
- Give yourself plenty of time.
- Check tires, wipers, washers, mirrors, lights and first aid kit.

#### **Fog:**

- Ability to judge distance is severely reduced. **CAUTION** is the rule when visibility is poor.
- If you can see six vehicle lengths ahead of you, 20-30 mph should be your maximum speed.
- If you can see two vehicle lengths ahead of you, 10-15 mph should be your maximum speed.
- Use your *low* beam head lights. Tail lights help drivers behind you keep track of your location.
- Use your wipers to clear the fine mist from fog.

- Allow extra time.

**Rain:**

- Most common reduced traction situations are: rain mixed with dirt, oil, and grease.
- Drive the wipes (existing tire paths) to get maximum traction.
- Paths of light driving: makes use of reflections that occur when roads are wet.
- Hydroplaning is the loss of traction that occurs due to excessive speed, under inflated or worn tires while driving on wet roads. Traction is only present when your tires are in contact with the road. *Slow down* and keep your tires in good condition.

**Snow:**

- Snowy conditions will cause reduced visibility and traction. Allow for increased stopping distances and use snow chains if possible.
- Accelerating, braking, and steering should be done carefully and smoothly to minimize the chance for skids.
- Pack a winter survival kit: extra clothes, food, first aid supplies, a small shovel and a blanket.

**Ice:**

- Improper braking can lock up your wheels, causing loss of control.
- Improper steering can throw you out of control.
- Over accelerating can start your drive wheels spinning.
- Don't tailgate! Increase vehicle braking distance four to ten times from what is needed on a dry pavement.
- Driving too fast for conditions causes accidents. **Slow down and get home safely.**

**Winter Driving Tips**

During winter months, the northern part of the country can experience frequent and sudden winter storms; and the southern states are not immune to such storms. The Federal Emergency Management Agency (F.E.M.A.) reports that during such storms the leading causes of death are transportation accidents. Proper vehicle preparation and knowing what to do when stranded or lost during such an event can save your life. With this concern in mind, we would like to share the following tips for winter driving safety which were developed by the Platte County Missouri Sheriff's Department. We hope they will make your winter driving experience a safe one.

**Vehicle Preparation**

Vehicle preparation is without a doubt the key to winter driving safety. The following is a list of the items we recommend you have checked by qualified auto service personnel for reliability to insure your winter driving safety.

- |                    |                                      |                    |
|--------------------|--------------------------------------|--------------------|
| 1. Vehicle Battery | 5. Thermostats                       | 8. Exhaust systems |
| 2. Brakes          | 6. Lights                            | 9. Defroster       |
| 3. Heater          | 7. Windshield wipers and wiper fluid | 10. Hazard lights  |
| 4. Antifreeze      |                                      | 11. Oil level      |

- 12. Ignition system
- 13. Tire Condition

When driving in isolated areas the items you have in your vehicle can be as important as those on your vehicle. The following is a recommended inventory of cold weather driving gear you should carry in your vehicle during the winter months. Proper preparation is the key to safety.

- |   |                                |   |
|---|--------------------------------|---|
| 1. Flashlights with extra batteries             | for winter storm conditions)   | 12. Necessary medications                     |
| 2. Extra blankets                               | 7. Jumper cables               | 13. First aid kit                             |
| 3. Small shovel                                 | 8. Matches or lighter          | 14. Small bag of sand for traction            |
| 4. Drinking water                               | 9. Extra cold weather clothing | 15. A highly visible Help or Call Police sign |
| 5. Windshield scraper and small broom           | 10. Small tool kit             | 16. Cellular phone if possible                |
| 6. Tire chains (required in some jurisdictions) | 11. Non-perishable food items  |   |

**What If I Become Stranded in My Vehicle During a Winter Storm?**

Becoming stranded in a vehicle during a winter storm can quickly develop into an extremely dangerous situation. Proper action in this event is the key to safety. The following should be of assistance if you encounter such a situation and immediate assistance is not likely.

- Stay in your car unless visible assistance is within a short distance. Disorientation from extreme winter conditions can result very quickly, causing you to become lost.
- Display a highly visible Help or Call Police sign.
- Only run your vehicle engine 10-15 minutes an hour. Since carbon monoxide poisoning and death can result very quickly, it is imperative that you make sure your vehicle's exhaust is not blocked by drifting snow.
- Dress warmly.
- Do minor exercises to maintain good circulation.
- Watch for signs of hypothermia or frostbite. Do not give coffee or alcohol to a person suffering from either of these conditions as this can result in an acceleration of both conditions. Immediate medical attention should be sought in both cases.
- Beware of dehydration.
- Although the best course of action in a winter storm is to not drive at all, should it become necessary, we hope this information will make your winter driving experience safer.

# Industrial Mechanical Material Hoists Safety Plan

## Purpose

Company Name has developed a standard program designating the basic components of a sound Material Hoists plan, and specifies general requirements required by OSHA 1926.552, 553, 554. Minimum activities are expected within each, and for the safety and wellbeing of our employees, less than these minimums will be considered unacceptable by the company.

## Responsibility

Superintendents, general foremen and others in supervisory management will be responsible for operations involving hoists. These managers will be directly involved in the enforcement of safe operating procedures described in the Material Hoists safety plan.

## General Requirements

Company Name will comply with the manufacturer's specifications and limitations applicable to the operation of all hoists and elevators. Where manufacturer's specifications are not available, the limitations assigned to the equipment will be based on the determinations of a professional engineer competent in the field.

Rated load capacities, recommended operating speeds, and special hazard warnings or instructions will be posted on cars and platforms.

Wire rope will be removed from service when any of the following conditions exists:

- In hoisting ropes, six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay.
- Abrasion, scrubbing, flattening, or peeling, causing loss of more than one-third of the original diameter of the outside wires;
- Evidence of any heat damage resulting from a torch or any damage caused by contact with electrical wires;
- Reduction from nominal diameters of more than three sixty-fourths inch for diameters up to and including three-fourths inches; one-sixteenth inch for diameters seven eighths to 1 1/8 inches; and three thirty-seconds inches for diameters 1 1/4 to 1 2 inch.

Hoisting ropes will be installed in accordance with the wire rope manufacturer's recommendations.

The installation of live booms on hoists is prohibited.

The use of endless belt-type man lifts on construction will be prohibited.

## Material Hoists

Operating rules will be established and posted at the operator's station of the hoist. Such rules will include signal system and allowable line speed for various loads. Rules and notices will be posted on the car frame or crosshead in a conspicuous location, including the statement "No Riders Allowed".

- No person will be allowed to ride on material hoists except for the purposes of inspection and maintenance.

All entrances of the hoistways will be protected by substantial gates or bars which will guard the full width of the landing entrance. All hoistway entrance bars and gates will be painted with diagonal contrasting colors, such as black and yellow stripes.

- Bars will be not less than 2-by 4-inch wooden bars or the equivalent, located 2 feet from the hoistway line. Bars will be located not less than 36 inches nor more than 42 inches above the floor.
- Gates or bars protecting the entrances to hoistways will be equipped with a latching device.

Overhead protective covering of 2-inch planking, 3/4-inch plywood, or other solid material of equivalent strength, will be provided on the top of every material hoist cage or platform.

The operator's station of a hoisting machine will be provided with overhead protection equivalent to tight planking but less than 2 inches thick. The support for the overhead protection will be of equal strength.

Hoist towers may be used with or without an enclosure on all sides. However, whichever alternative is chosen, the following applicable conditions will be met:

- When a hoist tower is enclosed, it will be enclosed on all sides for its entire height with a screen enclosure of 1/2-inch mesh, No.18 U.S. gauge wire or equivalent, except for landing access.
- When a hoist tower is not enclosed, the hoist platform or car will be totally enclosed (caged) on all sides for the full height between the floor and the overhead protective covering with 1/2-inch mesh of No.14 U.S. gauge wire or equivalent. The hoist platform enclosure will include the required gates for loading and unloading. A 6-foot high enclosure will be provided on the unused sides of the hoist tower at ground level.
- Car arresting devices will be installed to function in case of rope failure.

All material hoist towers will be designed by a licensed professional engineer.

All material hoists will conform to the requirements of ANSI A10.5-1969, Safety Requirements for Material Hoists.



## **Base-Mounted Drum Hoists**

### **General Requirements**

Exposed moving parts--such as gears, projecting screws, setscrews, chains, cables, chain sprockets, and reciprocating or rotating parts--that constitute a hazard will be guarded. All controls used during the normal operation cycle will be located within easy reach of the operator's station. Electric motor operated hoists will be provided with:

- A device to disconnect all motors from the line upon power failure and not permit any motor to be restarted until the controller handle is brought to the "off" position.
- Where applicable, an over speed preventive device;
- A means whereby remotely operated hoists stop when any control is ineffective.

All base-mounted drum hoists in use will meet the applicable requirements for design, construction, installation, testing, inspection, maintenance, and operations, as prescribed by the manufacturer. (b) Specific Requirements. [Reserved]

## **Overhead Hoists**

### **General Requirements**

The safe working load of the overhead hoist, as determined by the manufacturer, will be indicated on the hoist; this safe working load will not be exceeded.

The supporting structure to which the hoist is attached will have a safe working load equal to that of the hoist.

The support will be arranged so as to provide for free movement of the hoist and will not restrict the hoist from lining itself up with the load.

The hoist will be installed only in locations that will permit the operator to stand clear of the load at all times.

Air hoists will be connected to an air supply of sufficient capacity and pressure to safely operate the hoist. All air hoses supplying air will be positively connected to prevent their becoming disconnected during use.

All overhead hoists in use will meet the applicable requirements for construction, design, installation, testing, inspection, maintenance, and operation, as prescribed by the manufacturer.

(b) Specific Requirements.

# **Industrial Mechanical Tube and Coupler Scaffolds Safety Plan**

## **Purpose**

Scaffolds will be furnished and erected in accordance with this safety plan for persons engaged in work that cannot be done safely from the ground or from solid construction, to comply with DFR 1910.28, and to protect our workers from fall related injuries.

## **Responsibility**

Industrial Mechanical will be responsible for implementing this plan; supervisors with the commitment from management will enforce and have all employees adhere to the rules described in the Tube and Scaffolds Safety Plan.

## **General Requirements**

The footing or anchorage for scaffolds will be sound, rigid, and capable of carrying the maximum intended load without sitting or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks will not be used to support scaffolds or planks.

Scaffolds and their components will be capable of supporting without failure at least four times the maximum intended load.

Scaffolds and other devices mentioned or described in this section will be maintained in safe condition. Scaffolds will not be altered or moved horizontally while they are in use or occupied.

Any scaffold damaged or weakened from any cause will be immediately repaired and will not be used until repairs have been completed.

Scaffolds will not be loaded in excess of the working load for which they are intended.

All load-carrying timber members of scaffold framing will be a minimum of 1,500 f. (Stress Grade) construction grade lumber. All dimensions are normal sizes as provided in the American Lumber Standards, except that where rough sizes are noted, only rough and undressed lumber or the size specified will satisfy minimum requirements.

All planking will be Scaffold Grade as recognized by grading rules for the species of wood used. The maximum permissible spans for 2- X 9-inch or wider planks are shown in the following table:

	Material				
	Full thickness undressed lumber			Nominal thickness lumber	
Working load (p.s.f.).....	25	50	75	25	50
Permissible span (ft.).....	10	8	6	8	9

The maximum permissible span for 1 1/4 x 9-inch or wider plank of full thickness is 4 feet with medium loading of 50 p.s.f. Nails or bolts used in the construction of scaffolds will be of adequate size and in sufficient numbers at each connection to develop the designed strength of the scaffold. Nails will not be subjected to a straight pull and will be driven full length.

All planking or platforms will be overlapped (minimum 12 inches) or secured from movement.

An access ladder or equivalent safe access will be provided.

Scaffold plans will extend over their end supports not less than 6 inches or more than 18 inches.

The poles, legs, or uprights of scaffolds will be plumb, and securely and rigidly braced to prevent swaying and displacement.

Materials being hoisted onto a scaffold will have a tag line.

Overhead protection will be provided for men on a scaffold exposed to overhead hazards.

Scaffolds will be provided with a screen between the toe board and the guardrail, extending along the entire opening, consisting of No. 18 gauge U.S. Standard Wire one-half-inch mesh or the equivalent, where persons are required to work or pass under the scaffolds.

Employees will not work on scaffolds during storms or high winds.

Employees will not work on scaffolds which are covered with ice or snow, unless all ice or snow is removed and planking sanded to prevent slipping.

Tools, materials, and debris will not be allowed to accumulate in quantities to cause a hazard.

Only treated or protected fiber rope will be used for or near any work involving the use of corrosive substances or chemicals.

Wire or fiber rope used for scaffold suspension will be capable of supporting at least six times the intended load.

When acid solutions are used for cleaning buildings more than 50 feet in height, wire rope supported scaffolds will be used.

The use of shore scaffolds or lean-to scaffolds is prohibited.

Lumber sizes, when used in this section, refer to nominal sizes except where otherwise stated.

Scaffolds will be secured to permanent structures, through use of anchor bolts, reveal bolts, or other equivalent means. Window cleaners' anchor bolts will not be used.

Special precautions will be taken to protect scaffold member, including any wire or fiber ropes, when using a heat-producing process.

### **Tube and Coupler Scaffolds**

A light-duty tube and coupler scaffold will have all posts, bearers, runners, and bracing of nominal 2-inch O.D. steel tubing. The posts will be spaced no more than 6 feet apart by 10 feet along the length of the scaffold. Other structural materials when used must be designed to carry any equivalent load.

A medium-duty tube and coupler scaffold will have all posts, runners, and bracing of nominal 2-inch O.D. steel tubing. Posts spaced not more than 6 feet apart by 8 feet along the length of the scaffold will have bearers of nominal 2 1/2-inch O.D. steel tubing. Posts spaced not more than 5 feet apart by 8 feet along the length of the scaffold will have bearers of nominal 2-inch O.D. steel tubing. Other structural metals when used must be designed to carry an equivalent load. A heavy-duty tube and coupler scaffold will have all posts, runners and bracing of nominal 2-inch O.D. steel tubing, with the posts spaced not more than 6 feet apart by 6 feet 6 inches along the length of the scaffold. Other structural metals when used must be designed to carry an equivalent load.

Tube and coupler scaffolds will be limited in heights and working levels to those permitted in tables D-13, 14, and 15, of DFR 1910.28. Drawings and specification of all tube and coupler scaffolds above the limitations in tables D-13, 14, and 15 of CFR 1910.28 will be designed by a registered professional engineer and copies made available to the employer and for inspection purposes.

All tube and coupler scaffolds will be erected by competent and experienced personnel.

Posts will be accurately spaced, erected on suitable bases, and maintained plumb.

## **Runners**

Runners will be erected along the length of the scaffold located on both the inside and the outside posts at even height. Runners will be interlocked to form continuous lengths and coupled to each post. The bottom runners will be located as close to the base as possible. Runners will be placed not more than 6 feet 6 inches on centers.

## **Bearers**

Bearers will be installed transversely between posts and will be securely coupled to the posts bearing on the runner coupler. When coupled directly to the runners, the coupler must be depth as close to the posts as possible.

## **Bracing**

Cross bracing will be installed across the width of the scaffold at least every third set of posts horizontally and every fourth runner vertically. Such bracing will extend diagonally from the inner and outer runners upward to the next outer and inner runners.

Longitudinal diagonal bracing will be installed at approximately a 45-degree angle from near the base of the first outer post upward to the extreme top of the scaffold. Where the longitudinal length of the scaffold permits, such bracing will be duplicated beginning at every fifth post. In a similar manner longitudinal diagonal bracing will also be installed from the last post extending back and upward toward the first post. Where conditions preclude the attachment of the posts, it may be attached to the runners.

The entire scaffold will be tied to and securely braced against the building at intervals not to exceed 30 feet horizontally and 26 feet vertically.

## **Guardrails**

Guardrails not less than 2 x 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1 x 4-inch lumber or equivalent, and toe boards, will be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toe boards will be a minimum of 4 inches in height. Wire mesh will be installed.

# Industrial Mechanical Forklift & Motorized Pallet Jack Safety

## Purpose

Material handling is a significant safety concern. During the movement of products and materials, there are numerous opportunities for personal injury and property damage if proper procedures and caution are not used. This chapter applies to all powered industrial trucks, hoists and lifting gear. The information in this chapter shall be used to train prospective industrial truck operators and provide the basis for refresher and annual retraining. OSHA reference for Powered Industrial Trucks is 1910.178.

## Responsibilities

### Management

- Provide adequate training in safe operation of all equipment used to move or access materials
- Provide equipment that is safe to operate.
- Implement an "Out of Service" program for damaged equipment
- Not allow modification to equipment except those authorized in writing by the equipment manufacturer
- Establish safe operating rules and procedures.

### Supervisors

- Monitor safe operations of material handling equipment
- Ensure all equipment is safety checked daily
- Tag "Out of Service" any damaged equipment

### Employees

- Operate only that equipment for which they have been specifically trained and authorized
- Conduct required daily pre-use inspections
- Report any equipment damage or missing safety gear
- Follow all safety rules and operating procedures

### Hazards

- Falling loads
- Overloading of equipment
- Impact with equipment
- Piercing of containers
- Loading dock roll off
- Chemical contact - battery acid

- Fires during refueling

#### **Hazard Controls**

- Control of equipment keys
- Authorized fueling and recharge areas
- Proper palletizing of material
- Marked travel lanes
- Equipment warning lights
- Seat belts
- Mounted fire extinguishers

#### **Pre-Qualification**

All candidates for Powered Industrial Truck (PIT) operators must meet the following basic requirements prior to starting initial or annual refresher training:

- Must have no adverse vision problems that cannot be corrected by glasses or contacts
- No adverse hearing loss that cannot be corrected with hearing aids
- No physical impairments that would impair safe operation of the PIT
- No neurological disorders that affect balance or consciousness
- Not taking any medication that affects perception, vision, or physical abilities

#### **Training**

Training for Powered Industrial Truck (PIT) Operators shall be conducted by an experienced operator, selected by Management. All operational training shall be conducted under close supervision. All training and evaluation must be completed before an operator is permitted to use a Powered Industrial Truck (forklift, etc) without continual and close supervision. Training consists of:

#### **Trainees may operate a powered industrial truck only:**

- Under the direct supervision of persons, selected by management, who have the knowledge, training, and experience to train operators and evaluate their competence; and
- Where such operation does not endanger the trainee or other employees.

#### **Training Content**

Training consists of a combination of formal instruction, practical training (demonstrations performed by the trainer and practical exercises performed by the trainee), and evaluation of the operator's performance in the workplace.

**Initial Training:** Powered industrial truck operators shall receive initial training in the following topics:

#### **Truck-related training topics:**

- Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate

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

**Workplace-related topics:**

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

Refresher training and evaluation: refresher training, including an evaluation of the effectiveness of that training, shall be conducted to ensure that the operator has the knowledge and skills needed to operate the powered industrial truck safely. Refresher training in relevant topics shall be provided to the operator when:

- The operator has been observed to operate the vehicle in an unsafe manner
- The operator has been involved in an accident or near-miss incident
- The operator has received an evaluation that reveals that the operator is not operating the truck safely
- The operator is assigned to drive a different type of truck
- A condition in the workplace changes in a manner that could affect safe operation of the truck
- Once every three (3) years an evaluation will be conducted of each powered industrial truck operator's performance.



## Safe Operating Procedures (SOP) & Rules

- Only authorized and trained personnel will operate PITs.
- All PITs will be equipped with a headache rack, fire extinguisher, rotating beacon, backup alarm and seat belts. Seat belts will be worn at all times by the operator.
- The operator will perform daily pre- and post-trip inspections.
- Any safety defects (such as hydraulic fluid leaks; defective brakes, steering, lights, or horn; and/or missing fire extinguisher, lights, seat belt, or back-up alarm) will be reported for immediate repair or have the PIT taken "Out of Service".
- Operators will follow the proper recharging or refueling safety procedures.
- Loads will be tilted back and carried no more than six (6) inches from the ground. Loads that restrict the operator's vision will be transported backwards.
- PITs will travel no faster than five (5) mph or faster than a normal walk.
- Hard hats will be worn by PIT operators in high lift areas.
- Operator will sound horn and use extreme caution when meeting pedestrians, making turns and cornering.
- Passengers may not ride on any portion of a PIT. Only the operator will ride PITs. "NO PASSENGERS" decals will be affixed on all PITs.
- If PITs are used as a man lift, an appropriate man-lift platform (cage with standard rails and toe boards) will be used.
- Aisles will be maintained free from obstructions, marked and wide enough (six foot minimum) for vehicle operation.
- Lift capacity will be marked on all PITs. Operator will assure load does not exceed rated weight limits.
- When unattended, PITs will be turned off, forks lowered to the ground and parking brake applied.
- All PITs (with exception of pallet jacks) will be equipped with a multi-purpose dry chemical fire extinguisher. (Minimum rating; 2A:10B:C)
- Operators are instructed to report all accidents, regardless of fault and severity, to Management. Management will conduct an accident investigation.
- When loading rail cars and trailers, dock plates will be used. Operators will assure dock plates are in good condition and will store on edge when not in use.
- Rail cars and trailers will be parked squarely to the loading area and have wheels chocked in place. Operators will follow established Docking/Un-Docking Procedures.

## Changing and Charging Storage Batteries

- Battery-charging installations shall be located in areas designated for that purpose.
- Facilities shall be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting charging apparatus from damage by trucks, and for adequate ventilation for dispersal of fumes from gassing batteries.

- A conveyor, overhead hoist, or equivalent material handling equipment shall be provided for handling batteries.
- Reinstalled batteries shall be properly positioned and secured in the truck.
- A carboy tilter or siphon shall be provided for handling electrolyte.
- When charging batteries, acid shall be poured into water; water shall not be poured into acid.
- Trucks shall be properly positioned and brake applied before attempting to change or charge batteries.
- Care shall be taken to assure that vent caps are functioning. The battery (or compartment) cover(s) shall be open to dissipate heat.
- Smoking is prohibited in the charging area.
- Precautions shall be taken to prevent open flames, sparks, or electric arcs in battery charging areas.
- Tools and other metallic objects shall be kept away from the top of uncovered batteries.

### **Trucks and Railroad Cars**

- The flooring of trucks, trailers, and railroad cars shall be checked for breaks and weakness before they are driven onto.
- The brakes of highway trucks shall be set and wheel chocks placed under the rear wheels to prevent the trucks from rolling while they are boarded with powered industrial trucks.
- Wheel stops or other recognized positive protection shall be provided to prevent railroad cars from moving during loading or unloading operations.
- Fixed jacks may be necessary to support a semi-trailer and prevent upending during the loading or unloading when the trailer is not coupled to a tractor.
- Positive protection shall be provided to prevent railroad cars from being moved while dock boards or bridge plates are in position.

### **Operations**

- If at any time a powered industrial truck is found to be in need of repair, defective, or in any way unsafe, the truck shall be taken out of service until it has been restored to safe operating condition.
- Trucks shall not be driven up to anyone standing in front of a bench or other fixed object.
- No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
- Unauthorized personnel shall not be permitted to ride on powered industrial trucks.
- Arms and/or legs shall not be placed between the uprights of the mast or outside the running lines of the truck.
- When a powered industrial truck is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set. Wheels shall be blocked if the truck is parked on an incline.

- A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, or platform or freight car. Trucks shall not be used for opening or closing freight doors.
- There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.
- An overhead guard shall be used as protection against falling objects. It should be noted that an overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application, but not to withstand the impact of a falling capacity load.
- A load backrest extension shall be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.
- Trucks shall not be parked so as to block fire aisles, access to stairways, or fire equipment.

### **Traveling**

- All traffic regulations shall be observed, including authorized speed limits. A safe distance shall be maintained approximately three truck lengths from the truck ahead, and the truck shall be kept under control at all times.
- The right of way shall be yielded to ambulances, fire trucks, or other vehicles in emergency situations.
- Other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations shall not be passed.
- The driver shall be required to slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.
- Railroad tracks shall be crossed diagonally wherever possible. Parking closer than eight (8) feet from the center of railroad tracks is prohibited.
- The driver shall be required to look in the direction of – and keep a clear view of – the path of travel.
- Grades shall be ascended or descended slowly. When ascending or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade. On all grades the load and load engaging means shall be tilted back if applicable, and raised only as far as necessary to clear the road surface.
- Under all travel conditions the truck shall be operated at a speed that will permit it to be brought to a stop in a safe manner.
- Stunt driving and horseplay shall not be permitted.
- The driver shall be required to slow down for wet and slippery floors.
- Dock board or bridge plates shall be properly secured before they are driven over. Dock board or bridge plates shall be driven over carefully and slowly, and their rated capacity never exceeded.
- Running over loose objects on the roadway surface shall be avoided.

- While negotiating turns, speed shall be reduced to a safe level by means of turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel shall be turned at a moderate, even rate.

### **Loading**

- Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-center loads which cannot be centered.
- Only loads within the rated capacity of the truck shall be handled.
- The long or high (including multiple-tiered) loads which may affect capacity shall be adjusted.
- Trucks equipped with attachments shall be operated as partially loaded trucks when not handling a load.
- A load engaging means shall be placed under the load as far as possible; the mast shall be carefully tilted backward to stabilize the load.
- Extreme care shall be used when tilting the load forward or backward, particularly when high tiering. Tilting forward with load engaging means elevated forks shall be prohibited except to pick up a load. An elevated load shall not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or tiering, only enough backward tilt to stabilize the load shall be used.

### **Fueling Safety**

- Fuel tanks shall not be filled while the engine is running. Spillage shall be avoided.
- Spillage of oil or fuel shall be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine.
- No truck shall be operated with a leak in the fuel system until the leak has been corrected.
- Open flames shall not be used for checking electrolyte level in storage batteries or gasoline level in fuel tanks.

### **Maintenance of Powered Industrial Trucks**

- Any power-operated industrial truck not in safe operating condition shall be removed from service. All repairs shall be made by authorized personnel.
- Those repairs to the fuel and ignition systems of industrial trucks which involve fire hazards shall be conducted only in locations designated for such repairs.
- Trucks in need of repairs to the electrical system shall have the battery disconnected prior to such repairs.
- All parts of any such industrial truck requiring replacement shall be replaced only by parts equivalent as to safety with those used in the original design.
- Industrial trucks shall not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer, nor shall they be altered either by the addition of extra parts not provided by the manufacturer or by

the elimination of any parts. Additional counter-weighting of fork trucks shall not be done unless approved by the truck manufacturer.

- Industrial trucks shall be examined before being placed in service, and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination shall be made at least daily. Where industrial trucks are used on a round-the-clock basis, they shall be examined prior to use each shift. Defects when found shall be immediately reported and corrected.
- When the temperature of any part of any truck is found to be in excess of its normal operating temperature, thus creating a hazardous condition, the vehicle shall be removed from service and not returned to service until the cause for such overheating has been eliminated.
- Industrial trucks shall be kept in a clean condition, free of lint, excess oil, and grease. Noncombustible agents should be used for cleaning trucks. Low flash point (below 100 deg. F.) solvents shall not be used. High flash point (at or above 100 deg. F.) solvents may be used.

#### **Safe Operation Procedure for Charging LPG Tank**

- No Smoking.
- Move LPG PIT outside for refueling.
- Turn off PIT.
- LPG tanks will be removed in the following order: -shut off service valve -disconnect tank from hose -unbuckle and remove tank from bracket
- LPG tanks will be replaced in to following order: -place tank in bracket and re-buckle -reconnect hose to tank and tighten firmly -open valve slowly and assure proper seal

**NOTE:** Federal Law Prohibits dispensing an improper fuel type into any vehicle or into a non-approved fuel container.

#### **In Case of LPG Leaks or Tank Rupture**

- DO NOT start or move the PIT.
- If fuel hose is leaking, close valve immediately and place PIT "Out of Service" until repaired.
- If tank ruptures, warn others, immediately leave the area (at least 50 feet) and notify Management. Do not re-enter the area until cleared by Management.

***Powered Industrial Truck Pre-Use Checklist A check of the following items (as applicable) is to be conducted by the operator prior to use each shift:***

- Lights
- Horn
- Brakes
- Leaks
- Warning Beacon
- Backup Warning Alarm
- Fire Extinguisher

If any deficiencies are noted, the unit is to be placed OUT OF SERVICE until the problem has been corrected. Additionally, it is the operator's responsibility to notify the immediate supervisor and fill out a maintenance request.