

# **MPM PAINTING LLC**

## **SAFETY MANUAL**

# **MANAGEMENT**

## **SECTION 1:**

### **SAFETY AND HEALTH POLICY STATEMENT**

#### **MPM PAINTING LLC Safety Policy**

MPM PAINTING LLC believes that all their employee and contractors are entitled to a safe work place. MPM PAINTING LLC management will strive to protect the safety and health of all workers, visitors and members of the general public while also assuring the protection of property, equipment and materials associated with our operation.

MPM PAINTING LLC management, supervisors, and employees are all charged with the responsibility of preventing all incidents, which could cause injury, illness, property damage, or disruption to lives. The ultimate success of our safety program depends fully upon the cooperation of MPM PAINTING LLC staff, contractors, agencies and the public.

In order to achieve our goal, MPM PAINTING LLC will provide the support, equipment, training and environment. It is expected that any employee or contractor will perform their job safely and will support any safety-related activity.

OSHA is in the process of moving from its long standing Employer – Employee relations to one that is based on contractual responsibility. This means that the controlling Contractor will have the ultimate responsibility in monitoring Project Site safety.

Therefore we must make every effort to closely monitor not only our Employee's actions, but also the actions of all Subcontractors Employees. The best way to accomplish this is to:

- Make regular Safety Inspections
- Conduct Weekly Tool Box Talks and monitor Subcontractors' Tool Box Talks
- Give notification, in writing, to an Subcontractor who we observe violates existing OSHA Regulations
- Notify Subcontractor's insurance company if problem persists
- Default Subcontractor if necessary

## **SECTION 2:**

# **SAFETY ORGANIZATION & RESPONSIBILITIES**

### **I. SCOPE**

The duties and responsibilities of the Project Manager, Superintendent, Foreman/Supervisor and Subcontractors.

### **II. GENERAL**

The success of the MPM PAINTING LLC Safety Program is dependent on employee cooperation and strict compliance with established safety rules, regulations, policies and the commitment to safety as a value. While management and employees share safety responsibilities, management must establish the policies by which safety offenders are disciplined. Those individuals who refuse to comply with the MPM PAINTING LLC Safety Program in providing a safe place of employment will be notified in writing and subject to removal from the project.

### **III. REQUIREMENTS**

#### **A. Project Manager**

The Project Manager is responsible for the overall administration and effectiveness of MPM PAINTING LLC'S Safety Program:

1. Plan and execute all work to comply with the stated objectives of the MPM PAINTING LLC Safety Program.
2. Authorize corrective action of unsafe acts and/or substandard safety conditions.
3. Provide personal protective equipment.
4. Provide training and personal protective equipment to employees for any hazardous conditions or material.
5. Enforce compliance with all applicable Federal, State, Client and MPM PAINTING LLC Safety and Health Standards.
6. Review all accidents and institute corrective action to prevent recurrence.

#### **B. Superintendent**

The Superintendent is responsible for the Safety Program on a daily basis:

1. Perform safety inspections of project and direct the employee or Subcontractor to take necessary corrective action to eliminate unsafe acts and/or conditions.
2. Explain the safety policy to subcontractors prior to their start on the project.
3. Attend Subcontractor safety meetings and evaluate effectiveness.
4. Advise Project Manager of project safety status.
5. Conduct safety meetings.
6. Determine the personal protective equipment needed by employees.
7. Report and record promptly the results of all accident or incident investigations.

### **C. Foreman / Supervisor For each subcontractor**

The Foreman/Supervisor of each subcontractor is responsible for the Safety Program at the employee level and is an integral part of an effective safety program. Efforts toward accident prevention determines the establishment of an injury free environment:

1. Educate the employee on safe work practices and methods at the time of the work assignment.
2. Ensure employees are trained for each job task that is assigned to them.
3. Provide the employee with the proper protective equipment and suitable tools for the job. Monitor the correct use of such equipment.
4. Monitor Daily site conditions and practices. Immediately report any unsafe conditions and/or practices to Superintendent or Project Manager.
5. Acquaint and enforce all applicable safety requirements with the employee.
6. Set a good example.
7. Make a complete investigation of all accidents to determine the facts.
8. Assist in the completion of required Accident Reports.
9. Oversee the administration of first aid to any injured employee.

### **D. Subcontractor**

Each Subcontractor shall be directly responsible for preventing their employees from working under conditions which are unsafe, unhealthy or unsanitary. Their compliance with the Occupational Safety and Health Act (OSHA), the Mine Safety and Health Act (MSHA) and the MPM PAINTING LLC Project Safety Program is mandatory. Disregard of accepted health, safety and environmental standards will not be tolerated. Subcontractors will:

1. Have a Drug and Alcohol Program at least as stringent as MPM PAINTING LLC's Drug and Alcohol Program.
2. Monitor and prohibit the use of unsafe machinery, tools, materials or equipment.
3. Permit only qualified employees to operate equipment and machinery.
4. Instruct their employees in all applicable regulations concerning their work environment, and in recognizing and avoiding all unsafe conditions.
5. Instruct their employees in the safe handling and use of flammable liquids, gases, toxic materials, poisons, caustics and other harmful substances. Employees shall be made aware of the potential hazards, the necessary personal hygiene and the personal protective equipment required.
6. Provide training for employees required to enter confined or enclosed spaces and of the nature of the hazards involved. They shall also advise on the necessary precautions to be taken, and in the proper use of any personal protective equipment and emergency equipment required.
7. Supply Material Safety Data Sheets (MSDS) on all materials brought on the project that require them and provide a copy to MPM PAINTING LLC Project Management.
8. Conduct weekly safety meetings and provide a copy of the meeting record to MPM PAINTING LLC Project Management.

## **IV. REFERENCES**

29CFR 1926.16



## **SECTION 3: PROJECT SAFETY REQUIREMENTS**

### **I. SCOPE**

Items that must be verified, posted, provided or on-hand when a construction project is started.

### **II. GENERAL**

The success of the MPM PAINTING LLC Safety Program is dependent on employee cooperation and strict compliance with established safety rules, regulations, policies and the commitment to safety as a value. This section shall include, the minimum safety requirements needed to start work on a MPM PAINTING LLC construction site.

### **III. REQUIREMENTS**

- A. Establish a means by which to receive emergency medical assistance.
- B. Establish a location and routing to the nearest emergency room, clinic or physician's office.
- C. Provide readily available transportation or a communication system to contact an ambulance for transporting injured or ill employees.
- D. Ensure that a medical facility is readily accessible or at least one employee with a valid certificate in first-aid training is at the job site.
- E. A first-aid kit in a weatherproof container shall be easily accessible at the job site.
- F. Emergency telephone numbers shall be posted near telephones.
- G. Setup a bulletin board accessible to employees. The following items shall be included:
  - 1. Occupational Safety and Health Poster
  - 2. Worker's compensation posting for appropriate state. Not required in Michigan.
  - 3. Emergency phone numbers, i.e., fire department, ambulance, and hospital
  - 4. Company Safety Policies
  - 5. Crane Hand Signal Chart
  - 6. Safety Posters
  - 7. Evacuation Plan

**NOTE:** *Bulletin boards will be located where they are readily accessible to employees and be constructed in such a manner to provide protection for the information placed on it.*

- H. The following items shall be on file, for use when required:
  - 1. An OSHA 200 Log.
  - 2. Worker's Compensation First Reports of Injury for the appropriate State.
  - 3. Safety Meeting Report Forms
  - 4. Supervisor's Accident Investigation Report Form.
  - 5. Request for Medical Services.
  - 6. Employee Safety Orientation.
  
- I. A supply of the following personal protective equipment shall be on hand:
  - 1. Hard hats for employees, visitors and suppliers.
  - 2. Safety glasses with side shields and clear lenses.
  - 3. Safety goggles with indirect venting, chemical goggles.
  - 4. Disposable foam ear plugs.
  - 5. Disposable respirators as appropriate.
  - 6. Metal toe guards for use with compactors or pavement breakers as appropriate.
  - 7. Face shield with hard hat attachments.
  - 8. Full body safety harness with shock absorbing lanyards
  
- J. Potable drinking water with disposable cups.
- K. One toilet per every fifteen (15) employees.
- L. Fire extinguishers.
- M. Containers for trash, scrap and waste.

#### **IV. REFERENCES**

29 CFR 1910 and 1926  
40 CFR  
49 CFR

## **SECTION 4: OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)**

## **I. SCOPE**

Procedures relevant to compliance with the Occupational Safety and Health Act (OSHA) or appropriate state regulations.

## **II. GENERAL**

The Company policy is to permit inspections by representatives of regulatory agencies, State and Federal Occupational Safety and Health Agencies and the Environmental Protection Agency (EPA).

## **III. REQUIREMENTS**

### **A. Regulatory Agency Inspection**

1. Upon arrival at the MPM PAINTING LLC work site, the Inspector will be directed to the project office.
2. All MPM PAINTING LLC supervision shall be informed of the Inspector's presence on site.
3. MPM PAINTING LLC will notify client when applicable.
4. The Inspector shall wait for the designated MPM PAINTING LLC representative.
5. If the MPM PAINTING LLC representative is not available within thirty (30) to sixty (60) minutes, the Inspector shall be informed of this fact. MPM PAINTING LLC Company policy requires the presence of the MPM PAINTING LLC representative during inspection and cannot proceed without the representative. Inform the Inspector that MPM PAINTING LLC does not require a warrant for OSHA inspections
6. Once the MPM PAINTING LLC representative is available, the Inspector will hold an opening meeting. At this time, the Inspector's credentials will be reviewed
7. If the Inspector has not mentioned the reason for the inspection the MPM PAINTING LLC representative should ask why it is being conducted. Learn the basis for the inspection, and limit the inspection to that reason. For example - if the Inspector wants to inspect a crane, limit the inspection to that crane.
8. Upon completion of the opening meeting, the Inspector will proceed with the inspection.



9. MPM PAINTING LLC representative shall accompany the inspector throughout the inspection. The only exception to this requirement is when the Inspector requests to talk to company employees in private.

**NOTE:** *Agencies are entitled to privacy when questioning employees unless the employee waives that right.*

10. Throughout the inspection, the MPM PAINTING LLC representative will be courteous to the Inspector, and respond to all questions.

**NOTE:** *Detailed explanations are not encouraged, as they tend to prolong the inspection.*

11. The MPM PAINTING LLC representative, or any other MPM PAINTING LLC employee, is not to speculate when responding to questions.
12. If MPM PAINTING LLC is currently conducting an investigation of an accident, and the investigation is not completed, defer all answers to questions asked until the investigation is complete.
13. With the exception of trade secrets, the Inspector is authorized to take photographs and samples during the inspection. If the Inspector performs these actions, the MPM PAINTING LLC representative should do the same.
14. MPM PAINTING LLC representative should:
  - a. Keep a detailed record of the scope of the inspection.
  - b. List the MPM PAINTING LLC employees questioned by the Inspector.
  - c. Note items of apparent interest to the Inspector.
  - d. Record comments made by the Inspector.
  - e. Record observations made during the inspection.
15. Upon completion of the inspection, the MPM PAINTING LLC representative shall request a closing meeting be held. More than one MPM PAINTING LLC representative should be present to ensure that the Company understands all statements made by the Inspector.
16. Following the closing meeting, the company representative should prepare a detailed report of the inspection incorporating any record, notes, samples, photographs, etc., made or taken during the inspection. This report should be forwarded to the MPM PAINTING LLC Corporate Safety Director.

## **B. Citations**

In the event an OSHA inspection is conducted on the project and the Inspector believes conditions found do not comply with the provisions of the laws, the nature of the alleged violation(s) will be described in a written citation with reference made to the applicable regulations of the law. These conditions must be corrected on or before the date shown on each written alleged violation. Copies of any citations must be faxed to the MPM PAINTING LLC Corporate Safety Director on the same day it is received.

## **C. Posting of Citation**

OSHA requires that a copy of all citations be prominently posted at or near each place a violation referred to in the citation(s) occurred: It must remain posted until all violations are corrected or for three (3) working days, whichever period is longer. Working days meaning Monday to Friday - not including weekends and Federal holidays. The Act provides penalties for violations of the posting requirements.

## **D. Approval**

After notification of proposed penalties, MPM PAINTING LLC has the right to contest any or all parts of the citation and the proposed penalties. If MPM PAINTING LLC fails to contest within the fifteen (15) day time period, the citation and the penalties proposed will be deemed to be a final order and not subject to review by any court or agency.

## **E. Abatement**

MPM PAINTING LLC may file notice (letter) to contest the reasonableness of the time stated in the citation for the abatement of alleged violations. Alleged violations that are not contested must be corrected within the specified period noted in the citation. Failure to comply within the abatement period will result in further proposed penalties for each day the alleged violation has not been corrected. Timely correction of an alleged violation does not affect the initial proposed penalty. The OSH Acts provide that whoever knowingly gives false information is subject to fines and/or imprisonment of both. MPM PAINTING LLC employees involved in Regulatory Agency inspections on MPM PAINTING LLC projects will act in a professional manner at all times during the inspection.

## **IV. REFERENCES**

OSHA 29CFR 1903.1-21  
STATE AGENCIES

## **SECTION 5: FIRST AID /MEDICAL SERVICES AND MEDICAL RECORDKEEPING /ACCIDENT REPORTS**

### **I. SCOPE**

Procedures relevant to first aid / medical services and the recordkeeping/ accident reports.

### **II. GENERAL**

MPM PAINTING LLC will provide first aid services and arrange emergency transportation of the employee who becomes injured or ill on the job. Project Management is responsible for safety related reports concerning work-related injury or illness.

### **III. REQUIREMENTS**

#### **A. First Aid/Medical Treatment**

1. First aid supplies will be available to all employees for the treatment of a work-related injury or illness.
2. Medical cases, which require treatment beyond first aid, will be referred to an off-site physician or hospital as determined by the severity of the injury or illness.

#### **B. Emergency Transportation**

1. The method of emergency transportation to the first aid facility or hospital will be prearranged.
2. The hospital emergency room will be notified. All available information regarding the nature and extent of the illness or injury shall be given to the medical staff.

#### **C. Non-Emergency Transportation**

Transportation shall be provided to a first aid facility. A vehicle will be available at all times by each respective subcontractor

#### D. Injury/Illness Reporting Procedures

Project Management is responsible for ensuring safety-related reports concerning a work related injury or illness are properly completed and maintained:

1. Request for Medical Services Form will be completed by a MPM PAINTING LLC representative and given to the employee prior to the employee being taken to a doctor or hospital for treatment. The use and function of this form is to be explained to the employee. It is important that each employee fully understand that the portion of the form (Doctor's Release) must be completed by the attending physician and returned to the Project by the employee before the individual can be allowed to return to work.
2. Supervisor's Report of Accident will be completed for all injuries sustained by the employee requiring a doctor's attention.
3. Employer's First Report of Injury will be used to advise the insurance company of a Worker' Compensation claim. This will be completed within twenty-four (24) hours of the injury or illness:
  - a. Additional State forms may be required.
  - b. Original copies of all medical paperwork must be forwarded to Area Offices for distribution to Corporate Office.
4. The physician is responsible for maintaining accurate records of all medical treatment provided to the employee and furnishing a copy to MPM PAINTING LLC.

*NOTE: All Medical Records are confidential and must be kept in a secured locked file.*

#### E. Return to Work

1. An employee who has sustained an on-the-job injury or illness may return to work provided that the attending physician has approved it in writing. The employee shall return to his or her normally assigned job if it is still available and he or she has met any physical restrictions or limitations.
2. Employees who are given restrictions to their work will not be permitted to return to work until a review of the case has been made by:
  - a. Project Management
  - b. Attending Physician
  - c. Safety Department

### IV. REFERENCES

29 CFR 1904.1-20  
29 CFR 1926.23, 50

## **SECTION 6: ACCIDENT INVESTIGATION AND REPORTING**

### **I. SCOPE**

Procedures for investigation and reporting of all injuries, illnesses, property related incidents, vehicle accidents, or any incident related to the project.

### **II. GENERAL**

The purpose of the investigation is to identify all possible contributing causes so that future incidents, which are similar in nature, can be prevented. Investigations are to determine all the facts. These may have a bearing on legal liability. In the event of a serious accident, OSHA must be notified. A complete investigation must be on file.

*NOTE: Investigations will be directed toward fact-finding, not fault finding*

### **III. REQUIREMENTS**

#### **A. Investigation**

The investigation shall begin as soon as possible after necessary notifications have been completed.

A written Accident Investigation Report shall be required:

1. When an employee reports an accident or injury, respond promptly to them in a positive manner.
2. Discuss and document the accident with the injured employee when possible.
3. Discuss and document the accident with witnesses and document.
4. Consider the following points for documentation:
  - a. What was the injured employee doing prior to, and at the time of the accident? Was this part of his or her regular duties?
  - b. Was the employee properly trained? Were procedures being followed?
  - c. Did any other employee contribute to this accident?
  - d. Was the equipment or machinery, which the injured employee was using in good working condition? Was it properly protected? Was it suited for the purpose for which it was being used?
  - e. Was the workspace sufficiently lighted?
  - f. Were proper housekeeping conditions maintained?
  - g. How is the same type of work being accomplished by other employees?
  - h. Is there a safer way in which this work could be accomplished?
  - i. Was the injured employee in good health when reporting for work on the day of the accident?

## B. Accident/Incident Reporting

All accidents and incidents including near misses will be reported. A Management Reporting System will be established to notify:

1. Jobsite Management Personnel
2. MPM PAINTING LLC Office
3. Client
4. Utility (if required)
5. OSHA (if required)

## C. Accident Response

1. Treat injured employee(s).
2. Notify on site medical services or call ambulance if necessary.
3. Control incident area.
4. Prevent further harm to personnel or equipment in the area.
5. Notify management personnel.
6. Identify and segregate witnesses.

**NOTE:** *At an appropriate time any affected family members or designated contacts should be contacted by the Project Manager or other designated person. When contacting family or designated contacts:*

- *Identify yourself*
- *Explain a problem has occurred and the person was injured.*
- *Indicate where the person was taken*
- *Give a general description of the incident (no details)*
- *Determine if special assistance is required*
- *Determine how to stay in touch with them*
- *Be calm and understanding*

#### **D. Witness Interview and Statements**

1. Witnesses should be immediately identified at the scene of the accident. Interview those involved in the accident, and those who witnessed it.
2. Interview witnesses individually, and prevent discussion of the incident between witnesses. Ask the witnesses to prepare statements of facts separately from one another while other witnesses are being interviewed.
3. The interviewer must be receptive, objective and listen carefully to each witness.
4. The more knowledgeable witnesses should be interviewed first.
5. The following questions should be asked:
  - a. Time and location of incident.
  - b. Environmental conditions: weather, lighting, temperature, noise, housekeeping, distractions, etc.
  - c. Position of people, equipment, materials and their relation to pre-contact, contact, and post contact events. Include the position of the witness being interviewed.
  - d. Other witnesses if known by name, and their position.
  - e. If anything was moved, repositioned, turned on or off, or taken from the scene (including injured) during pre-contact, contact or post-contact phases.
  - f. Response of emergency teams and supervisory personnel, and their actions at the scene.
  - g. What attracted the witnesses' attention to the incident?
6. A formal written statement should be obtained from each witness interviewed. The witness should be informed of the purpose and intended use of his/her statement and who will see it.

#### **E. Diagrams, Maps and Sketches**

To understand the relative position of people, equipment, and material, diagrams, maps and sketches are helpful, these should include:

1. The injured.
2. Machines, vehicles, equipment, materials.
3. Parts broken off or detached from equipment or materials.
4. Objects which were broken, damaged, or struck during the incident.
5. Gouges, scratches, dents, paint smears, skid marks, etc., on surfaces.
6. Tracks or similar traces of movement.
7. Defects or irregularities in surfaces.
8. Accumulation of stains from fluids, whether existing before the incident, or spilled as a result of the incident.
9. Spilled or contaminated materials.
10. Areas of debris.
11. Safety devices and equipment.

## **F. Photographs**

Photographs should be taken to provide:

1. Orientation of the scene of incident.
2. Record of the detail of injury or damage, including the position of a large number of damaged fragments.
3. Evidence of improper assembly of equipment, materials and structures.
4. Detail of marks, spills, and signs.
5. Records of disassembly of parts for analysis by examination.
6. Evidence of deterioration, abuse and lack of proper maintenance.
7. Location of parts overlooked during early stages of investigation.
8. A photographic log should be maintained detailing the subject, lens size, and direction. Points of interest should be noted.

## **G. Parts, Preservation and Examination**

It is extremely important to preserve any equipment, parts or materials, necessary for evidence. Do not substitute any equipment, parts or materials. (The evaluation of those equipment parts or materials involved in the incident may lead to the possible cause of the incident.)

## **H. Important Evidence to Examine**

1. Components of equipment, materials, or structures that are fractured, distorted, scarred, or ruptured.
2. Parts suspected of internal failure.
3. Parts suspected of improper assembly or mating.
4. Parts suspected of deficient material in fabrication, heat treatment, or bonding.
5. Parts that appear faulty in workmanship or design.
6. Parts improperly mounted or inadequately supported.
7. Parts requiring lubrication.
8. Controls and position of operation indicators.
9. Parts that are power sources: engines, motors, and pumps.
10. Substitute or modified parts.
11. Foreign objects and parts that seem different in size, location, shape, color.
12. Fluid spills and stains as well as parts that show signs of leakage.

## **IV. REFERENCES**

29 CFR 1926.20-23

# **SAFE PRACTICES**



## **SECTION 7: PERMIT REQUIRED CONFINED SPACE ENTRY**

### **I. SCOPE**

Confined space entry requirements including, training, safety equipment, permitting, and standby personnel associated with confined space entry. For the purposes of this section, confined space means any space having a limited means of egress or which is subject to the accumulation of toxic or flammable contaminants or has an oxygen deficient atmosphere.

### **II. GENERAL**

Most confined spaces worked in by MPM PAINTING LLC personnel are non-permit-required spaces. If a hazard or potential hazard exist in the confined space, a permit will be required. A permit is written authorization specifying the location and type of work to be done, certifying that all existing hazards have been evaluated by the designated competent person, and that necessary protective measures have been taken to insure the safety of each employee. Project management is responsible for appointing the designated competent person.

### **III. REQUIREMENTS**

#### **A. Non-Permit Confined Space**

Non-permit confined space means a confined space that does not contain or have the potential to contain any hazard capable of causing serious harm. These spaces and others may be identified by project management, as a permit required confined space. In these instances, MPM PAINTING LLC will follow permit rules for the confined space.

#### **B. Permit Required Confined Space**

1. An Entry Permit shall:
  - a. Be completed as far as possible prior to sampling. The person responsible for the confined space entry permit shall know the proper operation and calibration of all equipment to be used.
  - b. Be for one shift.
  - c. Be updated for each shift with the same requirements.
  - d. Be updated with records of air sampling.

2. Compliance:
  - a. All MPM PAINTING LLC employees who enter confined spaces or work in support of a confined space entry shall be trained on all required procedures and ensure that all the requirements have been satisfied and are strictly enforced.
  - b. The supervisor responsible for the safe entry, as named on the entry permit, shall evaluate, plan and implement the procedures necessary to safeguard the employees assigned to the job.
  - c. The designated competent person responsible for safe entry shall be responsible for the issuance of all oxygen and gas detection equipment. Anyone noting a malfunction of any gas detector sampling device shall immediately evacuate all personnel, remove problem equipment from service and notify the designated person.
3. Training shall consist of:
  - a. Confined space hazard recognition.
  - b. Respirator training / Breathing apparatus.
  - c. Powered ventilation equipment use.
  - d. All rescue and support equipment use.
  - e. Emergency rescue procedures.
  - g. Air monitoring and gas detection equipment.
  - h. Personal protective clothing/equipment requirements.
4. Posting:

All confined space entrances are required to be posted. The posting shall include the following information:  
***"Danger! Confined Space, Enter by Permit Only."***  
When a specific work practice or specific safety equipment is required, a statement shall be added to the warning sign.
5. Safety Equipment:

To enter a confined space, the following shall be available:

  - a. Oxygen and gas detectors to test for flammable, oxygen deficient and toxic atmospheres.
  - b. Respiratory, hearing and face protection.
  - c. Powered ventilation equipment if required to work in the confined space. Ventilation equipment shall be compatible and approved for the work environment.
  - d. Body protection.
  - e. Additional safety equipment such as a safety line and full body harness. The standby person shall also wear a full body harness with a safety line attached.
  - f. A self-contained breathing apparatus (SCBA).
  - g. Radio communication.
6. Entering Confined Spaces:
  - a. **Isolation** - Before entering, isolation procedures shall be completed and verified by MPM PAINTING LLC's competent person.
  - a. **Testing** - Initial testing of the atmosphere shall be performed from outside of the confined space. When testing indicates the atmosphere is not acceptable for employee entrance, the confined space must be purged and /or ventilated.

- b. **Purging** - Purging is adjusting the atmosphere in a confined space to acceptable standard Permissible Exposure Limit (PEL), Lower Exposure Limits (LEL), etc. Purging is accomplished by displacing the atmosphere in the confined space with fluid or vapor (inert gases, water, steam) or by forced air ventilation.
  - f. **Ventilation** - Mechanical ventilation shall be provided to maintain the atmosphere at allowable levels. The ventilating equipment shall be located to prevent recirculation of exhausted air or introduction of contaminants from outside of the confined space. Strict control on ignition sources shall be implemented. If the atmosphere cannot be made safe and breathing apparatus must be worn, continuous ventilation will be maintained at all times in an effort to keep the concentration of contaminants as low as possible.
  - g. **Lighting** - All lighting equipment shall be grounded. Low voltage, battery powered or ground fault interrupter protected lighting systems shall be used.
7. Standby Rescue Personnel:
- a. Employees shall have no other assigned duties and meet the following training requirements:
    - 1) First-Aid/C PR Trained.
    - 2) Self-Contained Breathing Apparatus (SCBA) or Cascade System.
    - 3) Emergency Med-Evac Procedures.
    - 4) Monitoring equipment.
  - b. Personnel shall assure the following equipment is on location and in serviceable condition:
    - 1) Radio or Telephone communication.
    - 2) Gas/Oxygen detection equipment.
    - 3) Fire Extinguisher.
    - 4) First-Aid Kit/Stretcher.
    - 5) Required length of lifeline.
    - 6) Full Body Safety Harness.
    - 7) Flashlight.
    - 8) Self-Contained Breathing Apparatus (SCBA).
    - 9) Cascade System.
    - 10) Rescue Tripod.
  - c. In the event of an emergency situation, Standby employees will take the following actions:
    - 1) Call the emergency over the communications system provided.
    - 2) Attempt rescue from outside the confined space.
    - 3) Do not attempt rescue inside the space until assistance is provided.
    - 4) Administer First Aid.
  - d. In the event of a difference between MPM PAINTING LLC's and the Client's entry procedures, the stricter of the two shall apply.

#### IV. REFERENCES

29 CFR 1926.21

# **SECTION 8: FIRE PROTECTION**

## **I. SCOPE**

Fire protection and prevention during construction.

## **II. GENERAL**

Project management is responsible for the development of a Fire Protection Program to be followed throughout all phases of construction and demolition work to eliminate fire hazards. This program includes the management of waste materials.

## **III. REQUIREMENTS**

### **A. Protection Plan**

1. Site layout with alternative access/egress routes.
2. Emergency phone numbers for nearest fire department.
3. Access to, and location of, visible firefighting equipment.
4. Inspection and maintenance of firefighting equipment.
5. Employee training in relating to above.

### **B. Prevention Plan**

1. Regular cleanup of all scrap materials and other trash. Rags, waste and combustible/flammable materials must be placed in tightly closed metal containers for disposal.
2. No materials (waste or usable) shall block access ways, exits or stairs.
3. No smoking and open flame signs in storage, painting, or refueling and service areas.
4. Flammable and combustible liquid storage tanks to be in lined berms.
5. Paints and similar materials to be stored in closed containers until used and kept in a well-ventilated area away from excessive heat. If these materials are located within another building or structure, the structure shall be of either noncombustible construction or combustible construction having a fire resistance of no less than one (1) hour.
6. Open flames or spark producing operations shall not be permitted above or within ten (10) feet of visqueen covered structures.
7. Non-compatible materials, which may create a fire hazard, shall be segregated by a barrier having a fire resistance of at least one (1) hour.
8. Lights and heating units should be clear of combustible materials.

### C. Portable Fire Fighting Equipment

1. One fire extinguisher rated 2A per three thousand (3,000) square feet or less per floor. Maximum access distance one hundred (100) feet.
2. At least one fire extinguisher per floor located near stairs.
3. Combustible liquid storage see next subsection.

### D. Flammable and Combustible Liquids

1. Definitions and General Requirements:
  - a. **Flammable** liquids are those that ignite at a temperature of 1000 F or less. Examples are gasoline, lacquer thinners, and MEK. LPG has separate regulations.
  - b. **Flammable** liquids storage, handling and use:
    - 1). Quantities less than one gallon, use original containers or an approved metal safety can.
    - 2). Quantity greater than one (1) gallon, only use approved metal safety container.
    - 3). For bulk storage approved containers and approved portable tanks shall be used. See next sub section for more details.
  - c. Combustible liquids are those that ignite at temperatures greater than 1000 F. Examples are diesel, kerosene, lubricants, and most paints.
  - d. Combustible liquids storage handling and use:
    - 1) Original storage container may be used or a container labeled in accordance with hazcom standard.
    - 2) Bulk storage to be in approved containers or original containers. See next subsection for more details.
2. Indoor Storage of **Flammable** and Combustible Liquids:
  - a. No more than twenty-five (25) gallons of **flammable or combustible** liquids shall be stored in a room outside of an approved storage cabinet.
  - b. Quantities of **flammable** and **combustible** liquid in excess of twenty-five (25) gallons shall be stored in an approved cabinet.
  - c. No more than sixty (60) gallons of **flammable** or one hundred and twenty (120) gallons of combustible liquids shall be stored in any one storage cabinet. No more than three such
  - d. **Flammable** and combustible liquids that exceed the permitted quantities for inside storage rooms shall be stored outside.
3. Storage Outside Buildings:
  - a. Storage of containers (no more than sixty (60) gallons each) will not exceed one thousand one hundred (1,100) gallons in any one pile or area. Piles or groups of containers shall be separated by a five (5) foot clearance. Piles or groups of containers shall not be nearer than twenty (20) feet to a building.
  - b. Within two hundred (200) feet of each pile or group of containers there will be a minimum twelve (12)-foot wide access for fire fighting apparatus.
  - c. Outdoor portable tank storage:
    - 1) Portable tanks shall be a minimum of twenty (20) feet from any building. Two or more portable tanks grouped together having a combined capacity in excess of two thousand two hundred (2,200) gallons shall be separated by a five (5) foot clear area. Individual portable tanks exceeding one thousand one hundred (1,100) gallons will be separated by a five (5) foot clear area.
    - 2) Within two hundred (200) feet of each portable tank, there shall be a minimum twelve (12) foot wide access for fire fighting apparatus.

- 3) Signs prohibiting smoking open flame or spark-producing devices shall be posted on all **flammable and combustible** liquid storage tanks.
4. Fire Control for **Flammable or Combustible Liquid Storage**:
  - a. At least one portable fire extinguisher having a rating of no less than 20-B shall be located outside of, **but not more than ten (10) feet from the door opening into** any room used for storage of more than sixty (60) gallons of **flammable or combustible liquids**.
  - b. At least one portable fire extinguisher having a rating of no less than 20-B shall be located not less than twenty (25) feet no more than seventy-five (75) feet from **flammable** liquid storage areas located outside.
  - c. At least one portable fire extinguisher having a rating of no less than 20-BC shall be provided on all tank trucks or other vehicles used for transporting and/or dispensing **flammable or combustible** liquids.
5. Dispensing Liquids:
  - a. The transfer of **flammable** fuels from one container to another shall be done only when containers are interconnected (bonded) to prevent the discharge of static electricity.
  - b. The dispensing units shall be protected against collision or other damage.
  - c. Dispensing devices and nozzles for flammable liquids shall be of an approved type.
6. Handling Liquids at the Point of Use:
  - a. Flammable liquids shall be kept in closed containers when not in use.
  - b. Leakage or spillage of **flammable or combustible** liquids shall be cleaned up immediately and in a safe manner, in accordance to the environmental management system.
7. Service and Refueling Areas:
  - a. **Flammable** or combustible liquids shall be stored in approved closed containers.
  - b. The dispensing hose shall be an approved type.
  - c. The dispensing nozzle shall be an approved automatic-closing type without a latch-open device.
  - d. All dispensing devices shall have, in the event of emergency, clearly marked and easily accessible switch(es) provided at a location remote from dispensing devices to shut off all power.
  - e. There will be no smoking, open flames or spark producing devices allowed in the areas used for fueling, servicing fuel systems for internal combustion engines, receiving or dispensing of **flammable or combustible** liquids.
  - f. Signs prohibiting smoking and open flames shall be posted for flammables and **combustibles**.
  - g. All engines must be shut off during the fueling operation.
  - h. Each service or fueling area shall be provided with at least one fire extinguisher having a rating of no less than 20-BC located so that the extinguisher will be within seventy five (75) feet of each pump, dispenser, underground fill pipe opening or lubrication service area.

## E. Liquefied Petroleum Gas (LP Gas)

1. Dispensing:
  - a. Filling of fuel containers for equipment or motor vehicles from bulk storage containers shall be performed no less than ten (10) feet from the nearest masonry-walled building or no less than twenty five (25) feet from the nearest building or other construction and, no less than twenty five (25) feet from any building opening.
  - b. Filling of portable containers or containers mounted on skids from storage containers will be performed no less than fifty (50) feet from the nearest building.
2. Containers and regulating equipment installed outside of buildings or structures shall be upright upon firm foundations and firmly secured.
3. Containers and Equipment Used Inside of Buildings or Structures:
  - a. Systems utilizing containers having a water capacity greater than two and one half (2-1/2) pounds (nominal one (1) pound LP Gas capacity) shall be equipped with excess flow valves.
  - b. Regulators shall be either directly connected to the container valves or to manifolds connected to the container valves.
  - c. Valves on containers having water capacity greater than fifty (50) pounds (nominal twenty (20) pounds LP Gas capacity) shall be protected from damage while in use or storage.
  - d. Portable heaters, including salamanders, shall be equipped with an approved automatic device to shut off the flow of gas to the main burner and pilot in event of flame failure.
  - e. Containers having a water capacity greater than two and one half (2-1/2) pounds (nominal one (1) pound LP Gas capacity) connected for use shall stand on a firm level surface and shall be secured in an upright position.
  - f. The maximum water capacity of individual containers will be two hundred and forty five (245) pounds (nominal one hundred (100) pounds LP Gas capacity).
4. LPG container storage is prohibited within buildings.

## F. Temporary Heating Devices

1. Clearance and Mounting:
  - a. Temporary heating devices shall be installed to provide clearance around combustible material.
  - b. Heaters used in the vicinity of combustible tarpaulins, canvas plastic sheeting or similar coverings shall be located at least ten (10) feet from the coverings. The coverings shall be securely fastened to prevent ignition.
  - c. When in use, heaters shall be set horizontally level unless otherwise permitted by the manufacturer.
  - d. Solid fuel heaters are prohibited.
  - e. All boilers, stoves and other temporary heating apparatus shall be installed and operated in
  - f. When heaters are used in confined spaces, special care shall be taken to provide sufficient ventilation or heat must be ducted into the area..

2. Oil-Fired Heaters:
  - a. Flammable liquid-fire heaters shall be equipped with a primary safety control to stop the flow of fuel in the event of flame failure.
  - b. Heaters which are not designed for flue connection shall be equipped with integral tanks having a capacity of not more than two (2) gallons.
  - c. Heaters specifically designed and approved for use with separate supply tanks may be directly connected for gravity feed or an automatic pump from a supply tank.
  - d. Oil-fired salamanders are prohibited in buildings and on scaffolds.
3. LPG Heating Devices:
  - a. For temporary heating, heaters, (other than integral heater-container units) shall be located at least six (6) feet from any LP Gas container. This shall not prohibit the use of heaters specifically designed for attachment to the container or to a supporting standard provided that they are designed and installed to prevent direct or radiant heat application from the heater onto the containers.
  - b. If two or more heater-container units of either the integral or non-integral type are located in an unpartitioned area on the same floor, the container or containers of each unit shall be separated from the container or containers of any other unit by at least twenty (20) feet.
  - c. When heaters are connected to containers for use in an unpartitioned area on the same floor, the total-water capacity of containers manifolded together for connection to a heater or heaters shall not be greater than seven hundred and thirty-five (735) pounds (nominal three hundred (300) pounds LP Gas capacity). Such manifolds shall be separated by at least twenty (20) feet.

## **G. Firewatch**

1. General:
  - a. Firewatch is the person or persons assigned to watch for fires in the vicinity of welding, cutting, spark producing or similar hot work, where there is a potential for a fire.
  - b. The person assigned to this duty must be an employee who can remain calm during a crisis, and be aware of the surroundings while standing in one place for long periods of time.
  - c. The firewatch shall wear a hi-visibility vest for identification, when exposed to vehicular traffic.
2. Training:

This training shall cover the following subjects.

  - a. Fire Extinguishers
  - b. Fire Hose / Fog Nozzles
  - c. Covering / Openings
  - d. Hot Work Permits
  - e. Fire Hazard Recognition
  - f. Evacuation Procedures



3. Duties:
  - a. Assure the firefighting equipment is in serviceable condition.
  - b. If a fire extinguisher is to be used in the performance of their duty, it shall be in position near their person at all times.
  - c. Hoses, when used, shall be charged and held in hand.
  - d. Prior to the start of work the firewatch shall read the Hot Work Permit for any special instructions.
  - e. Assure that all sewers, drains or equipment where the potential for ignition, and fire from hot slag exists are covered with fire blankets and sandbags in accordance with MPM PAINTING LLC/client standard operation procedures.
  - f. Survey the work area and remove or have removed any flammable material not being used for the work operation. The firewatch has the authority to STOP WORK whenever a hazardous situation exists.
  - g. The firewatch shall not leave the work area unless relieved by their supervisor or designee.
  - h. In certain situations, or as noted on the Hot Work Permit, the firewatch shall remain in position for thirty (30) minutes after the suspension of work operations.
  - i. If a fire situation occurs, the firewatch must take immediate action by shouting a verbal alert, and attempt to extinguish or suppress the fire until help arrives. If attempts at extinguishing the fire fail, the firewatch shall evacuate the area.

#### **IV. REFERENCES**

29CFR 1926.150-155  
29CFR 1910.110  
NFPA

## **SECTION 9: HAZARD WARNING SYSTEMS**

### **II. SCOPE**

Hazard warning Systems which consists of signs, signals and barricades.

### **II. GENERAL**

Consistent means of identifying local or general hazards. A Hazard Warning System must be understandable by all employees, subcontractors and visitors.

### **III. REQUIREMENTS**

#### **A. Signs/Signals**

1. Signs when required shall be visible at all times when work is being performed, and shall be removed promptly when the purpose for them no longer exists.
2. Danger signs shall be used only where an immediate hazard exists and have red as the predominating color for the upper panel; black out line on the borders; and a white lower panel for additional sign wording.
3. Caution signs shall be used only to warn against potential hazards and have yellow as the predominate color; black upper panel and borders; yellow lettering of "caution" on the black panel; and the lower yellow panel for additional sign wording. Black lettering shall be used for additional wording.
4. Exit signs, when required, shall be lettered in legible red letters, not less than six (6) inches high, on a white field and the principal stroke of the letters shall be at least three-fourths inch in width.
5. Safety instruction signs shall be white with green upper panel with white letters to convey the principal message. Any additional wording on the sign shall be black letters on the white background.
6. Directional signs, other than automotive traffic signs, shall be white with a black panel and a white directional symbol. Any additional wording on the sign shall be black letters on the white background.
7. Construction areas shall be posted with legible traffic control signs at points of hazard.
8. All traffic control signs or signals shall be normal highway signs or signals.
9. Accident prevention tags shall be used as a temporary means of warning employees of an existing hazard, such as defective tools, equipment etc. They shall not be used in place of, or as a substitute for, accident prevention signs.

## **B. Barricades**

1. Barricades shall be visible at all times when work is being performed, and shall be removed promptly when the hazard no longer exists.
2. Barricade tape, when used, shall be a minimum of two (2) inches wide and be colored red and black for "danger" and yellow and black for "caution". If timber barricade is used it should be painted with the same colors as barricade tape or the appropriate tape should be affixed to it.
3. Red and black barricade tape shall be used to designate an area of danger. Only the individual(s) who establishes a "danger area" may allow employees to enter. All others shall go around.
4. Yellow and black barricade tape shall be used to designate an area of caution.
5. Employees shall be allowed to move through an area marked with the caution tape but only with knowledge of why the area is marked.
6. Signs should be placed with the barricade tape to identify the hazards

## **IV. REFERENCES**

OSHA 29CFR 1926.200  
ANSI D6.1-1971  
ANSI Z53.1-1967

# **SECTION 10: PERSONAL PROTECTION EQUIPMENT**

## **I. SCOPE**

Identify personal protective equipment designed to provide an effective barrier between a person and potential exposure to hazards.

## **II. GENERAL**

Personal protective equipment must be used in addition to proper clothing. Proper clothing consists of long pants and shirts with sleeves. Dragging, baggy pants, baggy shirts, torn or loose long sleeves, boots with bad or torn toes, soles or heels, will not be allowed. Supervisors will monitor/evaluate the use and effectiveness of all personal protective equipment and recommend improvements.

## **III. REQUIREMENTS**

### **A. Basic Equipment**

1. MPM PAINTING LLC shall ensure that the following personal protective equipment is available prior to the start of any construction activity:
  - a. A supply of hard hats (meeting ANSI Z.89.1 standards). (Color coding may be required by owner.)
  - b. A supply of safety glasses with side shields (meeting ANSI Z.87.1 standards) and side shields for prescription glasses.
2. The following will be available for project specific requirements:
  - a. Goggles.
  - b. Full body safety harness with shock absorbing lanyards. Lanyard selection should consider the appropriate hazards.
  - c. Respiratory protective equipment as dictated by hazard.
  - d. Hearing protection.
  - e. Foot guards when contract calls for compacting, jackhammering, etc.
  - f. Cutting goggles, shields, welding hoods, lens and welding gloves if welding and burning operations are anticipated.
  - g. Full face shields (for operations producing flying chips, particles or sparks).
  - h. Rubber boots, gloves, etc. (for corrosive conditions or materials).
3. Project Management shall ensure that an adequate stock of the required equipment is available.
  - a. Employees are required to provide their own sturdy work boots. ANSI approved steel toe protection or equivalent should be specified for some job sites.

## **B. Personal Protective Equipment**

1. Personal Protective Equipment must meet the following requirements:
  - a. Provide the maximum protection against the hazard to which the employee will be exposed.
  - b. Maximum comfort combined with minimum weight.
  - c. Minimum restrictions of essential body movement, vision, etc.
  - d. Durability and the ability to be maintained on the project.
  - e. Manufactured in accordance with the accepted standards for performance and materials, i.e., American National Standards Institute (ANSI), and National Institute for Occupational Safety and Health (NIOSH).
2. When the use of personal protective equipment is necessary, the use of such protection shall be mandatory. Failure to use protective equipment when necessary shall result in disciplinary action.
3. Contractors are expected to provide their employees with the appropriate personal protective equipment.

## **C. Head Protection**

1. Company approved hard hats must be worn at all times. Hard hats need not be worn in the field office.
2. Hard hats cannot be altered in any way.
3. MPM PAINTING LLC must approve hard hat decals
4. Hair must be contained by some means so as not to cause danger to an employee from fire or entanglement in machinery.
5. Hard hats shall be routinely worn with the bill forward, as the bill is designed to protect the face.

## **D. Hearing Protection**

1. Engineering controls shall be utilized to reduce noise to below occupational exposure limits whenever possible.
1. Employees exposed to noise in excess of the Occupational Exposure Limits shall have hearing protection provided by MPM PAINTING LLC.
2. Employees are to be informed of the hazards associated with exposure to noise and the purpose and limitations of protective hearing devices. The wearing of this equipment is mandatory in areas where noise is in excess of Occupational Exposure Limits.

## **E. Eye and Face Protection**

1. Approved safety glasses with side shields shall be worn by all employees and visitors during working hours in all areas outside the office.
2. Additional eye and/or face protection such as goggles, face shields, and welding shields are required at all times when engaged in operations such as welding, burning, grinding, chipping, handling chemicals, corrosive liquids, or molten materials, drilling, driving nails, and pouring concrete.

## **F. Hand Protection**

1. Suitable gloves shall be worn when handling materials and equipment.
2. Plastic or rubber-coated gloves are to be used for special types of work (e.g., solvents, chemically treated material, concrete).
3. Dielectric tested rubber gloves are to be used on all power line work and where there is possible contact with energized circuits (e.g., concrete breaking, drilling and excavating). Always inspect gloves before using.

## **G. Foot Protection**

1. Employees are required to wear sturdy work boots. Safety toe protection (steel toe or equivalent) may be required with some tasks.
2. Employees shall be required to wear approved foot guards when safety toe work boots do not provide sufficient protection.
3. Tennis shoes, running shoes, light canvas shoes, sandals, etc., are not authorized for wear in construction areas.

## **H. Full Body Safety Harness, Lanyards and Life Lines**

Employees whose work places them outside of any secured area otherwise protected by guardrails or where their work is to be performed on suspended scaffolds or any other working surface where they may be subject to a fall greater than six (6) feet shall wear and use, a full body safety harness with two (2) shock absorbing lanyards or equivalent.

## **I. Respiratory Protection**

1. Employees who are or may be exposed to hazardous concentration of gases, vapors, smoke, fumes, mist or dust shall be provided, and required to wear, respiratory protective equipment designed to protect the employee from such concentrations. A written work site-specific respiratory program shall be established and administered by a trained program administrator.
2. The written respiratory program shall identify and evaluate the respiratory hazard(s) in the work place and selection of appropriate respirator(s) shall be based on this evaluation.
3. A sufficient number of respirator models and sizes shall be provided so that the respirator is acceptable to and correctly fits the user.
4. A medical evaluation shall be provided to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the work place. The medical evaluation shall be provided by a physician or other licensed health care professional (PLHCP) using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire.
5. Fit testing must be performed prior to initial use, or whenever a different face piece (size, style, model or make) is used. The fit test method (qualitative or quantitative) shall be established and incorporated into the written respirator program
6. An area and equipment shall be established for the cleaning and disinfecting, storage, inspection and repair of respirators used by employees.
7. Training shall be provided to employees who are required to use respirators that will include proper use, limitation and maintenance. The training shall be comprehensive, understandable and recur annually, or more often if necessary.

8. Work place evaluations shall be conducted to ensure that the written respiratory protection program is being properly implemented. Written information regarding training, medical evaluations, and fit testing shall be kept on site. Medical records must be kept separate.

#### **IV. REFERENCES**

29 CFR 1926.52  
29 CFR 1926.100 - 105  
29 CFR 1910.132  
29 CFR 1910.134  
29 CFR 1910.138

# **SECTION 11: ENERGY SOURCE CONTROL**

## **I. SCOPE**

Procedures relevant to lockout/tagout, opening and blinding for the control of energy sources.

## **II. GENERAL**

Before work may be performed on, in or near equipment or circuits which could cause bodily injury by contact with electrically energized parts, by accidental starting up of machinery, by release of fluid pressure or by contact with acids, corrosives, flammables or other hazardous materials, electrical circuits will be de-energized, valves will be closed, blinds installed, pressures will be bled off and hazardous substances will be drained.

## **III. REQUIREMENTS**

### **A. General**

1. Equipment or circuits that are to be de-energized shall be made inoperable (either by physical removal of control capabilities or placement of a lockout mechanism). Tags shall be attached at all points where such equipment or circuits can be energized.
2. Controls that are to be de-activated during the course of work shall be tagged and locked out.
3. Tags shall be placed and labeled to identify the equipment or circuits being worked on. Information shall include name, date, time, contact number and contractor responsible for placement.
4. Once it has been determined that all equipment, circuits and systems have been rendered safe, tags and locks shall be placed on the associated electrical disconnects, valves and where ever else is required, to prevent the accidental start-up or discharge of equipment, circuits or systems being worked on.

### **B. Placing of Lockout Mechanisms**

If more than one employee or crew is required to work on a system, each must place a separate lock and tag on the lockout device before starting work:

1. The individual who places a lockout device on an electrical disconnect or valve is the only one permitted to remove it. Unauthorized removal of any tag or lockout device is not permitted. Violation of this rule shall result in disciplinary action.
2. If the employee who placed the lock and tag is absent, project management will assure no hazards exist prior to removal of lock and tag.



### C. Process System Opening and Blinding Procedures

1. Ensure adequate communications are established between the unit operator and MPM PAINTING LLC personnel prior to opening lines or blind installation.
2. Purpose and Scope:
  - a. The Client shall issue a permit when equipment containing Hazardous Materials is to be opened to the atmosphere. This includes the removal of spool pieces, covers, hatches, blinds, flanges and pulling header plugs.
  - b. Venting through a valve, disconnecting pneumatic or hydraulic lines, opening pressure taps, and normal changes are usually exempt.
  - c. While the client may not require blinding on all work, hot work and vessel entry shall require full rated blinds as close to the work as possible.
3. Permit Initiation | Pre-Job Inspection:
  - a. The responsible Plant Supervisor, or Engineer for the completion of work shall initiate a permit at the Facility Control Room. If required, the Operating Supervisor and/or the Unit Operator will prepare a standard blind list. This list will show the exact location of all blinds installed. The list shall be attached to the permit.
  - b. The responsible Unit Operator shall determine if the work can be accomplished in a safe manner prior to issuing a permit.
  - c. The Operator shall ensure that the line or vessel to be worked on or in is depressurized and in a safe state. If potentially hazardous gases exist, or if breathing apparatus is required, the operator shall call for assistance and monitoring.
  - d. Only trained employees will be allowed to use breathing apparatus as needed.
  - e. The Unit Operator assures the operation of the plant shall not be adversely affected by the proposed work activity. The Operator signs the permit authorizing the job to proceed after notifying the Operations Supervisor and receiving approval.
4. On Site Job Communications:
  - a. The Supervisor assigned to the work is required to read and understand the Process Opening/Blinding Permit prior to the start of work. The Supervisor will brief the work crew and will advise them of any special precautions, or conditions noted on the permit including required personal protective equipment.
  - b. The Unit Operator shall sign a permit when satisfied that the equipment to be worked on is ready, and the job can be done in a safe manner. A copy of the permit will be posted at the work location.
  - c. As blinds are installed, they shall be flagged/tagged as directed by the clients/MPM PAINTING LLC procedures.
  - d. The blind checklist shall be initialed by the Unit Operator after each blind is installed. After all blinds have been installed, and a visual check made by both the Unit Operator and the Supervisor, information from the blind checklist will be transposed onto the Master blind list in the Control Room. As blinds are removed, the Unit Operator is to initial the removal on the master list.
  - e. The Master list shall be retained until the system is returned to operation.

5. Blinding Requirements:
  - a. Blinds shall conform to client design specifications and/or be a pressure/temperature design rated flange.
  - b. A blind shall have a "T" handle attached, long enough to extend two (2) inches beyond the pipe flange. This shall serve as a visual aid for blinds or spacers.
  - c. All blinds shall have the proper pressure rating stamped on the handle.
  - d. All blinds, which are not rated for full pressure service, can be used as a vapor barrier only when there is no differential pressure across the blind.
  - a. All installed blinds and spacers shall have new gaskets installed, which conform to the clients design specifications for pressure and temperature.
  - b. All flange makeups shall have bolts tightened to the correct torque and torquing sequence per the client specifications.
  - c. No blind shall be installed or removed unless it can be done safely.
  - d. Lines which have been in hydrocarbon service or have contained potentially hazardous materials shall not be left open without the permission of the Operations Supervisor.
6. Duration of Permits:
  - a. Permits will be in effect until job completion, or as determined by the client.
  - b. If work extends beyond the shift, the on-coming Supervisor shall verify' that the system or process is still de-energized and/or depressurized and safe to work on. After locking out the system or process, the permit shall be signed.

#### **IV. REFERENCES**

29CFR 1926.64  
29 CFR 1926.417

# **SECTION 12: 100% FALL PROTECTION POLICY**

## **I. SCOPE**

Procedures to provide protection for employees exposed to falls above six (6) feet in elevation.

## **II. GENERAL**

Provide guidelines for maximum protection for employees against falls from elevations above six (6) feet. Guidelines include planning, fall prevention and fall protection. These provisions will apply to any ironworking (including connecting work). When working from scaffolding these provisions will apply above 10 foot elevations.

## **III. REQUIREMENTS**

### **A. Planning**

Individual project planning is necessary and should include at a minimum:

1. Schedules of project materials
2. Equipment, material and supplies needed for fall **prevention and protection**
3. Work sequence
4. Employee orientation
5. Training
6. Inspection
7. Maintenance
8. Rescue training

### **B. Fall Prevention**

All projects shall make maximum use of fall prevention systems such as scaffolds, aerial lifts, personnel hoists, ladders and stairways.

#### **1. Fall Prevention Systems:**

- a. These systems provide walking and working surfaces in elevated areas. Systems are free from floor openings, equipped with standard guardrail systems on all open sides and with closure apparatus for ladder openings or other points of access when required. These systems shall include; scaffolds, aerial lifts and other approved personnel hoisting apparatus.
- b. Standard guard rail systems consist of a top rail approximately forty-two (42) inches above the walking/working surface, a mid-rail at twenty-one (21) inches above the walking/working surface and a four (4) inch high toe board, and the entire system must be capable of supporting two hundred (200) pounds of force in any direction.
- c. Floor opening/hole covers are used to close openings and holes in floors, platforms and walkways. These covers must be capable of supporting the maximum potential load they may be subjected to. Covers are secured against displacement and identified as hole covers.

#### **2. Personnel Lifts/Hoisting Devices:**

- c. Employees riding in or working from lifts must secure their safety lanyard to

the manufacturer's attachment point at all times.

Lifting devices shall be placed on solid level surfaces so as to reduce the possibility of overturning.

3. Suspended scaffolds:
  - a. Employees riding in or working from these devices shall be provided an independent lifeline and rope grab to which their safety lanyard shall be secured.
  - b. Each lifeline shall be secured to an individual anchor point.
4. Crane Hoisted Personnel Baskets/Platforms  
Use of these devices shall comply with the safety procedures set forth in the MPM PAINTING LLC Safety Manual.

### C. Fall Protection

Employees in elevated areas six (6) feet or more above ground level or adjacent surfaces where a fall exposure exists shall secure their safety lanyard at all times to a structure, lifeline or approved fall arresting device capable of supporting five thousand four hundred (5400) pounds.

1. Fall protection equipment and systems:
  - a. Shall be inspected prior to each use for damage and/or deterioration. Defective equipment shall be immediately removed from service and be destroyed or repaired.
  - b. That has been subjected to a shock load shall be removed immediately from service.
  - c. Shall not be used for any other purpose other than employee guarding.
2. Full Body Safety Harness and Shock Absorbing Lanyards:
  - a. Shock absorbing lanyards shall be the double locking type and shall not exceed six (6) feet in length. A two (2) lanyard system shall be used when necessary
  - b. Full body safety harness and shock absorbing lanyards not furnished by MPM PAINTING LLC shall be inspected and approved by the project management prior to use.
3. Lifelines:
  - a. Lifelines shall be capable of supporting five thousand four hundred (5400) pounds.
  - b. Lifelines shall not be used for any purpose other than fall protection.
  - c. Anchor points for lifelines shall be capable of supporting five thousand four hundred (5400) pounds per lifeline.
  - d. Horizontal lifelines shall be 3/8 inch wire rope cable as a minimum and shall be secured on each end by at least two (2) cable clamps.
  - e. Horizontal lifelines should be placed to provide hook up points at least waist high for personnel.
  - f. Vertical lifelines shall be 5/8 inch synthetic rope.

- g. Vertical lifelines shall be used with approved rope grabs with three (3) foot lanyards designed for use with 5/8 inch rope.
  - h. Retractable lifelines shall be approved for use in fall protection.
  - i. Retractable lifelines shall be secured by means of shackles and/or wire rope slings or synthetic slings.
  - j. Retractable lifelines shall have a rope tag line attached for extending the line to lower elevations whenever necessary.
4. Temporary Work Platforms and Walkways:  
All temporary work platforms or walkways shall be provided with a safe means of access/egress which allows personnel to be secured at all times. Rope grabs or retractable lifelines shall be used to achieve fall protection while ascending or descending to temporary work platforms or walkways.
5. Safety Nets:  
Safety nets may be used in some situations as fall protection. The installation and use of safety nets shall be under the direction of the Safety Department.

#### **IV. REFERENCES**

29 CFR 1926.28  
29 CFR 1926.104  
29 CFR 1926.105  
29 CFR 1926.106  
29 CFR 1926.451  
29 CFR 1926.500  
29 CFR 1926.651

## **SECTION 13: MATERIAL HANDLING, STORAGE AND HOUSEKEEPING**

### **I. SCOPE**

Safe handling and storage of materials.

### **II. GENERAL**

Project management is required to establish a material-handling plan. This plan must take into account the weight and size of material, equipment and personnel required, distance of travel, and the stability of working and storage surfaces. Material storage and locations should be designated.

### **III. REQUIREMENTS**

#### **A. Material Handling - Manual**

1. Lift material with your legs, keeping your back straight; do not use your back muscles.
2. Gloves are to be worn when working with sharp, abrasive objects or when splinters are possible.
3. If weight or size is excessive or the object is awkward, **get help** or consult with your supervisor.

#### **B. Material Handling - Mechanical**

1. Only employees trained in rigging shall handle, calculate, and rig loads.
2. Capacity of device (crane, forklift, chain fall, come-a-long) must be known prior to use.
3. Taglines are to be used to control suspended loads and to keep employees away from lifts made by mechanical equipment. Keep hands off loads.
4. Trucks and hauling equipment must not be moved once the tie-downs have been released.

## C. Rigging Components

1. Shock Loads:
  - a. Shock loads should be avoided.
  - b. Safety factors are based upon standard normal operations and do not allow for excessive shock loads.
  - c. It is the Operators responsibility to avoid shock loads.
2. Wire Rope and Synthetic Web Slings

The selection size of slings and chokers is the responsibility of the supervisor of the lifting operation:

  - a. Slings must be stored off the ground when not being used, preferably on a rack.
  - b. Wire rope slings should be kept lubricated to avoid rusting.
  - c. Synthetic web slings should be stored out of direct sun light.
  - d. Slings that are one and one half (1-1/2) inches in diameter and larger should be proof-tested to double the safe working load before the sling is accepted. This testing should be done by the supplier.
  - e. Use suitable softeners (wood or rubber) to prevent chokers from slipping where slings go around sharp corners.
  - f. When lifting two or more bundled pieces that are over twelve (12) feet long in a single lift use two (2) slings suitably separated.
  - g. Sling angles greater than sixty (60) from the vertical are not allowed.
  - h. Do not use synthetic web slings in areas of high temperatures or around chemicals that could compromise the integrity of the sling.
3. Turnbuckles:
  - a. Inspect for corrosion prior to use.
  - b. Do not bend around obstructions, use only in tension.
4. Shackles:
  - a. Use only forged alloy steel shackles with the safe working load stamped on their bales.
  - b. It is recommended that a shackle one size larger than the sling diameter be used.
  - c. Shackles rated at one hundred (100) tons or more must be magnetic-particle tested before each lift.
5. Cable Clips:
  - a. U-bolt cable clips must have the U-bolt section on the dead or short end of the rope and the saddle on the live or long end of the rope.
  - b. The number and spacing of the clips must be in accordance with a clip chart. These are found in rigging hand books and OSHA(see references). All clips must be drop forged steel.
  - c. The clip nuts must be re-tightened after newly installed rope has been in use for an hour and periodically rechecked for tightness.
6. Eye Bolts:

Manufactured eyebolts used for lifting will only be made from drop forged steel. Field fabricated eyebolts must be designed by a structural engineer.
7. Wedge Sockets:
  - a. Wedge sockets must have the live or running end in line with pin hole.
  - b. After pulling the wedge tight, at least one cable clip should be installed on the tail.

8. Lifting Lugs:  
Field fabricated lifting lugs must be designed by a structural engineer.
9. Spreader Bars:  
Field fabricated spreader bars must be designed by a structural engineer.

**D. Storage of Materials**

1. Store material on dunnage or pallets for ease of handling.
2. Material and equipment (pipe, drums, reels, trailers, etc.) must be chocked to prevent movement.
3. Lightweight materials with large surface areas must be secured.

**E. Housekeeping**

1. Keep work areas, passageways and stairs free from scrap material and other debris
2. Remove protruding nails from lumber
3. Collect and separate waste, garbage, etc into proper containers
4. Any containers for oily or solvent soaked rags/ towels should be provided with tight fitting covers
5. Empty containers regularly

**IV. REFERENCES**

29CFR 1926.250  
29CFR 1926.251  
29CFR 1926.25



## **SECTION 14: TOOLS**

### **I. SCOPE**

The safe use, care and maintenance of hand and power tools.

### **II. GENERAL**

All hand and power tools and similar equipment, whether furnished by MPM PAINTING LLC or the employee shall be maintained in a safe condition. All hand-held power tools shall be equipped with a constant pressure switch that will shut off the power when the pressure is released. This does not apply to bench mounted tools.

### **III. REQUIREMENTS**

#### **A. Hand Tools**

1. Wrenches, including adjustable, pipe, end, and socket wrenches shall not be used when jaws are sprung to the point that slippage occurs.
2. Impact tools, such as drift pins, wedges, and chisels, shall be kept free from mushroomed heads.
3. Wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.
4. Tools shall not be used beyond their capacity
5. Handmade extension handles (cheaters) are not to be used.

#### **B. Power Tools - Electric**

1. Electric power operated tools shall either be of the approved double insulated type or grounded.
2. The use of electric cords for hoisting or lowering tools shall not be permitted.
3. Floor and bench mounted grinders shall be provided with work rests which are rigidly supported and readily adjustable. Work rests shall be kept at a distance not to exceed one-eighth inch from the surface of the wheel.

#### **C. Fuel Powered Tools**

1. Fuel powered tools shall be stopped while being refueled, serviced, or maintained.
2. If using fuel powered tools in enclosed spaces the confined space standards will apply.

#### **D. Pneumatic Power Tools**

1. Use of Compressed Air:
  - a. Except where automatic shutoff valves are used, safety chains, clips, whip-checks or other suitable locking devices shall be used at hose to machines, hose to hose, and hose to tool connections of high-pressure hose lines.

At no time shall compressed air be directed toward a person. Compressed air shall not be used for cleaning purposes except where reduced to less than thirty (30) pounds per square inch (psi).
  - b. The manufacture's safe operating pressure for hoses, pipes, valves, filters, and other fittings shall not be exceeded.
2. The use of hoses for hoisting or lowering tools shall not be permitted.
3. Safety clips or retainers for tools shall be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally released.
4. Pneumatic hand tools shall be disconnected from the power source and pressure in hose lines shall be released before any adjustment or repair to the tools are made.

#### **E. Powder-actuated Tools**

1. Only employees who have been trained and certified in the operation of the particular tool in use shall be allowed to operate a powder-actuated tool. The powder actuated tool manufacturer representative will normally train employees.
2. The tool shall be tested each day before loading to see that safety devices are in proper working condition. The method of testing shall be in accordance with the manufacture's recommended procedure.
3. Any tool found not in proper working order, or that develops a defect during use, shall be immediately removed from service and not be used until properly repaired.
4. Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any employee.

#### **F. Abrasive Blasting**

1. A competent person will assess what type hazards exist from the surface coating of material to be blasted. From this assessment and additional testing if required, the composition and toxicity of the dust from those sources will be determined. From this determination the competent person will decide what respiratory equipment and blasting agents to use to minimize the hazards involved.
2. The concentration of the dust/fumes in the breathing area of the abrasive blasting operator, or any other worker shall be maintained below ten (10) milligrams per cubic meter or the OSHA Permissible Exposure Level.
3. Silica sand will not be used unless approved by the MPM PAINTING LLC corporate safety officer.

4. The abrasive blast area shall be barricaded for a distance of fifty (50) feet, with signs posted stating, "ABRASIVE BLASTING-DO NOT ENTER".
5. The blast nozzle shall be bonded to prevent build-up of static electricity.
6. Hose couplings shall be made of metal and secured to the outside of the hose to prevent erosion and weakening of the couplings. Nozzle fittings must be made of metal and fit onto the hose externally. A dead man control must be provided either to cut off the airflow, or to signal the pot tender to cut it off. The pot tender shall be available to respond at all times.
7. The blast operator shall be provided with a supplied air hood respirator providing a steady flow of class "D" or better breathing air. Other compressed air may be used if a trap and carbon filter are installed and regularly maintained. A valve shall be installed to reduce the pressure down to requirements of the respirator in use.
8. Blast operators shall be equipped with heavy canvas or leather gloves and aprons, or equivalent protection.
9. Project management may determine that abrasive blasting operations be conducted after normal hours when a minimum number of employees are present in the work area.
10. Aisles and walkways should be kept clear of shot or similar abrasives.
11. All MPM PAINTING LLC employees involved in abrasive blasting operations shall receive respirator training in compliance with current regulations. Those selected to use the abrasive blasting equipment and material will receive training in its use, maintenance, and hazards involved.

#### **IV. REFERENCES**

29 CFR 1910.94  
29 CFR 1910.134

## **SECTION 15: WELDING AND CUTTING**

### **I. SCOPE**

Safe use and handling of gas and arc welding and cutting equipment.

### **II. GENERAL**

Employees whose work involves the use of welding and cutting equipment are to be made aware of the hazards: fire damage (property damage), explosive mixtures, asphyxiants, burns (personal injury), and toxic fumes are all potential hazards. Training to include the safe handling, storing and usage of the equipment.

### **III. REQUIREMENTS**

#### **A. Welding and Cutting - Gas**

##### **1. Storage Requirements:**

- a. Cylinders shall be kept away from all sources of heat.
- b. Inside of buildings, cylinders shall be stored in a well ventilated, well protected, dry location at least twenty (20) feet from highly combustible materials. Cylinders should be stored in specifically assigned places away from elevators, stairs, gangways, and emergency exits. Assigned storage spaces shall be located where cylinders can not be knocked over or damaged by passing or falling objects or subject to tampering by unauthorized personnel.
- c. Empty cylinders shall have their valves closed, capped and stored separate from full cylinders.
- d. Cylinders shall be stored with the valve end up and secured.
- e. Valve protection caps shall always be in place, hand tight except when cylinders are connected for use.
- f. Compressed gas cylinders shall be secured in an upright position at all times except, if necessary, for short periods of time while cylinders are actually being hoisted or carried.
- g. A fire extinguisher shall be no closer than twenty-five (25) feet but not further than fifty (50) feet from fuel gas storage places.
- h. If storage area is at dock height, appropriate guard railing and safe access shall be provided.
- i. When cylinders are raised or lowered to another elevation by cranes, a purpose made rack shall be used.

- j. Fuel Gas Cylinder Storage Requirements (propane, acetylene, natural gas):
  - 1). Warning signs shall be in place and shall read, "Danger - No Smoking, Matches, Open Lights or Flames".
  - 2). Inside a building, cylinders, except those in actual use or attached for use, shall be limited to a total gas capacity of two thousand (2,000) cubic feet. Liquefied Petroleum Gas storage is prohibited within buildings.
- 2. Oxygen Storage Requirements:
  - a. Storage of oxygen cylinders shall be separated from fuel or gas cylinders or combustible materials (especially oil or grease), a minimum of twenty (20) feet or by a noncombustible barrier at least five (5) feet high having a fire-resistant rating of at least half (1/2) hour.
  - b. Warning signs shall be in place and shall read, "Danger - No Smoking, Matches, Open Lights, or Flames".
- 3. Fuel Gas and Oxygen Usage:
  - a. Before connecting regulators to cylinders, the valve must be carefully cracked open to blow out any foreign particles. Then the regulator (in the closed position) may be connected to the cylinder. Stand to one side of the gauge and open the cylinder valve slowly.
  - b. Regulator valves on fuel gas cylinders should be opened a quarter turn only. Regulator valves on oxygen cylinders must be opened all the way.
  - c. Valve wrenches must be kept in place during use.
  - d. Fifteen (15) psi should not be exceeded on the torch side of the gauge when using acetylene.
  - e. When lighting a torch, open the fuel gas valve on the torch before opening the oxygen valve.
  - f. Use an approved spark lighter. Do not use matches or cigarettes to light a torch.
  - g. All compressed gas cylinders should be kept in bottle carts or racks when transported or in use.
  - h. All cutting torch sets must be broken down at the end of the shift with regulators removed and protective caps screwed on hand tight.
  - i. Compressed gas cylinders must be tied off vertically to an adequate support while in storage, transit or use.
  - j. Oil and grease must be kept away from oxygen regulators, hose and fittings.
  - k. Compressed gases shall not be used to clean off clothing, blow out anchor holes, or to clean work areas.
  - l. All hoses, gauges and torches must be inspected prior to use.
  - m. Cylinders, regulators and hoses are to be placed where they are not exposed to sparks and slag.
  - n. Anti-flash back arresters must be installed on all regulators or built into the regulator.
  - o. Compressed gas cylinders shall not be taken into confined spaces.
  - p. Torches, hoses and regulators shall not be left in a confined space when not in use.
  - q. A fire extinguisher will be in close proximity to all welding and cutting operations.
  - r. Ventilation will be provided for welding and cutting operations in enclosed spaces.

## B. Welding and Cutting - Arc

1. Only manual electrode holders, which are specifically designed for arc welding and cutting, and are of a capacity capable of safely handling the maximum rated current required by the electrodes, shall be used.
2. All ground connections for electric welding shall be inspected to be mechanically strong and electrically effective.
3. When electrode holders are left unattended, the electrode must be removed.
4. Spent welding rods shall be placed in a suitable container.
5. Cable in poor repair shall not be used.
6. When it becomes necessary to connect or splice lengths of cable to one another, substantial insulated connectors of a capacity at least equivalent to that of the cable shall be used. Any exposed metal parts shall be insulated.
7. The frames of all arc welding and cutting machines shall be grounded either through a third wire in the cable containing the circuit conductor or through a separate wire which is grounded at the source of the current.
8. Pipelines containing gases or flammable liquids, or conduits containing electrical circuits, shall not be used as a ground return.
9. When the operator has occasion to stop or leave the work for any appreciable length of time, or when the machine is to be moved, the power supply shall be turned off.
10. Prior to arc welding and cutting, the work area must be inspected to ensure that sparks or molten metal will not fall on combustible materials or other employees.
11. Suitable fire extinguishing equipment shall be immediately available at all welding and cutting locations.
12. Employees engaged in arc welding and cutting shall wear an approved hood with hard hat, proper protective gloves and long sleeves or welders sleeves.
13. In poorly ventilated areas, adequate ventilation or approved respiratory equipment must be used.
14. Safety shields or barricades shall be placed around welding and cutting where needed to protect others from direct rays of the electric arc.
15. A welder, unless working behind a shield or barricade, shall not strike an arc until nearby workers are given ample warning.

#### **IV. REFERENCES**

OSHA  
29 CFR 1926.350  
29 CFR 1926.351

## **SECTION 16: ELECTRICAL**

### **I. SCOPE**

The requirements to protect employees from hazards associated with electric shock, electrical generated explosions, fire, and heat.

## II. GENERAL

The protection of employees in electrical operations including grounding, bonding, battery charging rooms, assured grounding program, cadwelding, temporary lighting, inspection and maintenance requirements.

## III. REQUIREMENTS

### A. Protection of Employees

1. Employees shall not be permitted to work in proximity of any part of an electrical circuit that may cause electrical shock when contacted. Employees shall be protected against electric shock. by de-energizing the circuit and grounding it or by guarding it with an effective means of insulation or other protection.
2. Whenever possible equipment will be locked and tagged out of service before any work is to be performed on any circuit. It is recognized that, it may be necessary to make tests on energized equipment or wiring.  
Prior to beginning work:
  - a. Identify the circuit to be worked on or tested.
  - b. Use test leads and equipment listed for the voltages used.
  - c. Voltages of six hundred (600) or less require the employee to:
    - 1) Use leather gloves or wiremen rubber gloves rated at one thousand (1000) volts, while testing.
    - 2) Use of a buddy, as a safety person is encouraged.
  - d. Voltages in excess of six hundred (600) volts nominal between phases:
    - 1) Employee shall use equipment listed and rated for the voltages involved.
    - 2) Rubber gloves tested for at least twenty thousand (20,000) volts shall be worn while making measurements. Use of the rubber glove without the leather protector is forbidden.
    - 3) All testing procedures must be approved by the Electrical Superintendent or other responsible supervisor. The procedures must be understood by all those concerned before work proceeds.
    - 4) The buddy system is to be used at all times while working with high voltages.

- 5) "HOT" line tools are to be used by employees who have been trained in the proper use of them.
  - 6) Wear approved face shield in addition to safety glasses.
  - 7) Shall not wear rings, watches or other jewelry while testing
3. **Workspace Around Equipment:**  
Sufficient space shall be provided and maintained in the area of electrical equipment to permit safe operation and maintenance of such equipment.
4. **Lockout and Tagging of Circuits:**
- a. Equipment or circuits that are de-energized shall be rendered inoperative and have tags and locks/lockout devices attached at all points where such equipment or circuits can be energized.
  - b. During the start-up phase, controls that are to be deactivated during the course of work on energized or de-energized equipment or circuits shall be tagged.
5. **Ground Fault Circuit Interrupter (GFCI):**
- a. All one hundred and twenty five (125) volt, single phase, fifteen (15), twenty (20) and thirty (30) AMP receptacle outlets used by employees shall have GFCI protection during construction.
  - b. GFCI's shall be inspected, tested and the results recorded monthly.
6. **Construction Site:**  
Every precaution shall be taken to make any necessary open wiring inaccessible to unauthorized personnel.

## **B. Grounding and Bonding**

1. **Portable and/or Cord and Plug Connected Equipment:**
  - a. The noncurrent-carrying metal parts of portable and/or plug-connected equipment shall be grounded.
  - b. Portable tools and appliances protected by an approved system of double insulation or its equivalent need not be grounded. Where such an approved system is used, the equipment shall be marked accordingly.
2. **Fixed Equipment:**  
Exposed noncurrent-carrying metal parts of fixed electrical equipment including motors, generators, frames and tracks of electrically operated cranes, electrically driven machinery, etc., shall be grounded.
3. **Extension Cords:**  
Extension cords used with portable electric tools and appliances shall be of three-wire type and shall be maintained in good condition in accordance with the Assured Grounding Program.
4. **Bonding:**
  - a. Conductors used for bonding and grounding stationary and moveable equipment shall be of ample size to carry the anticipated current.
  - b. A secure and positive metal-to-metal contact shall be made when attaching bonding and grounding clamps or clips.
  - c. Tags shall be plainly labeled to identify the equipment or circuits being worked on.
5. **Temporary Wiring:**  
All temporary wiring shall be effectively grounded.



### **C. Temporary Lighting**

1. Temporary lights shall be equipped with guards to prevent accidental contact with the bulb. Guards are not required when the construction of the reflector is such that the bulb is deeply recessed.
2. Temporary lights shall be equipped with heavy-duty electric cords with connection and insulation maintained in safe condition. Temporary lights shall not be suspended by their electric cords unless cords and lights are designed for this type of suspension. Splices shall have insulation equal to, or greater than that of the cable. Cords shall be kept clear of working spaces and walkways or other locations in which they are readily exposed to damage.
3. Portable electric lighting used in moist and/or other hazardous locations, for example; drums, tanks and vessels shall be operated at a maximum of twelve (12) volts.

### **D. Equipment Installation and Maintenance**

1. Flexible Cable and Cords:
  - a. Cable passing through work areas shall be covered or elevated seven (7) feet to protect it from damage which would create a hazard to personnel.
  - b. Worn or frayed electric cables shall be removed from service.
  - c. Extension cords shall be protected against accidental damage caused by traffic, sharp corners or projections and pinching in doors or elsewhere.
  - d. Extension cords shall not be fastened with metal staples, hung from nails or suspended by wire or any other conductive material. Insulated staples or plastic ties from nails are acceptable.
  - e. Cables passing through or into junction boxes, switch gear, etc., shall be protected against physical damage by grommets, box connectors, etc.
2. Switches, Circuit Breakers and Disconnecting Means:
  - a. All switches, circuit breakers, disconnecting means, feederlines and branch circuits shall be legibly marked to indicate their purpose and voltage unless located and arranged so the purpose is evident.
  - b. Boxes and disconnecting means installed in a damp or wet location shall be waterproof to the extent that water cannot enter or accumulate.

### **E. Battery Rooms and Battery Charging**

1. General Requirements:
  - e. Batteries of the non-sealed type shall be located in enclosures with outside vents or in well ventilated rooms so arranged as to prevent the escape of fumes, gases or electrolyte spray into other areas.
  - f. Ventilation shall be provided to ensure diffusion of the gases from the battery to prevent the accumulation of an explosive mixture.
  - g. Proper personal protective equipment (PPE) is required; face shields, aprons and rubber gloves shall be provided for workers handling acid or batteries.
  - h. Facilities for quick drenching of the eyes and body (safety showers and eye washes) shall be provided within twenty-five (25) feet of the work area for emergency use.

2. Charging:
  - a. Battery charging installations shall be located in areas designated for that purpose.
  - b. When charging batteries, the vent caps shall be kept in place to avoid electrolyte spray. Care shall be taken to assure that vent caps are functioning.

#### **F. Assured Grounding Program**

In addition to the GFCI protection the following Assured Equipment Grounding Conductor Program shall be established on all projects.

1. General:
  - a. The employee assigned to carry out this program will be the electrical superintendent, electrical foreman, or their designated competent person.
  - b. This program is required on all MPM PAINTING LLC projects regardless of client requirements.
  - c. This program and the monthly inspection log must remain on the project and be available during inspections.
2. Responsibility:
  - a. Each employee (tool room and equipment user) shall be trained to visually check daily for external damage to, or defects of; each piece of electrical equipment before it is used. Training may be included as part of the weekly site safety meeting. Training must be documented.
  - b. The trained employee shall check male and female plug ends to make sure there is a tight connection with no exposed wires, no breaks in the insulation, and that the grounding connection of the plug is operable.
  - c. The designated competent person shall test each piece of portable electric equipment, tool, and extension cord for proper grounding, electrical continuity, and polarity, at the beginning of each month.
3. Assured Grounding Program Log

An assured grounding log shall be kept on each project (Form SF-170). The log will list all equipment, tools and cords that must be inspected along with the results of the inspection.
4. Color Coding

If the electrical equipment, tool or cord passes the required inspection, colored tape shall be attached to the power cord in accordance with the MPM PAINTING LLC Assured Grounding Program and the Color Code (Form SF- 170).

## G. Cadwelding

Only competent persons approved by project management will perform cadwelding. The competent person shall review this procedure prior to conducting a cadweld. A hot work permit may be required on some projects. In addition to the standard personal protective equipment, a face shield and leather gloves are required. Flame retardant clothing is recommended.

Procedure:

1. Dry the connection and the mold with a torch.
2. Clean dried end with a brush to remove all dirt and oxides.
3. When welding to a steel surface use a rasp, or an approved grinding wheel to remove paint, rust and mill scale from area to be welded ensuring that bright metal is showing.
4. Position mold over connector with conductor ends under center of the tap hole, gap distance, if required, as noted on mold tabs.
5. Lock mold handles.
6. Insert round metal disk in bottom of crucible (ensure it covers tap hole).
7. Dump in weld material, ensuring proper amount of shot is used and mold is sealed properly.
8. Sprinkle starting material on mold lip and over weld material.
9. Close cover.
10. Prior to igniting the powder in the mold, the competent person will clear the area of all nonessential personnel to prevent inhalation of toxic fumes. Ensure the surplus powder is removed from the immediate area.
11. Ignite with a flint igniter (Do not use matches, cigarettes or torch).
12. Wait ten (10) to fifteen (15) seconds after burn is completed, then open mold and remove from finished connection.
13. Remove slag and dust with a clean rag, mold-cleaning tool, or bristle brush. Do not use a wire brush.
14. Discard mold if excessive leakage occurs around the mold or if mold disk seat is worn or chipped.

## IV. REFERENCES

29 CFR 1926-402 - 408  
29 CER 1926-402 - 416  
29 CFR 1926-402 - 417  
29 CFR 1926-402 - 441

# SECTION 17: SCAFFOLDING

## I. SCOPE

To provide safe access to elevations with the use of scaffolds.

## II. GENERAL

Basic information for scaffolding including System Scaffolds and Two Point Suspended Scaffolds. For complete details on these and other type scaffolds, see references at the end of this section.

## III. REQUIREMENTS

### A. General

1. Scaffolding and components shall be able to support at least four (4) times the intended load.
2. Guardrails and toeboards shall be installed on all open sides and ends of platforms more than six (6) feet above ground.
3. Screens should be considered between toeboards and midrail when persons are required to pass underneath.
4. Damaged or weakened scaffold components shall be immediately repaired or replaced.
5. An access ladder or other approved safe access shall be provided.
6. Overhead protection shall be provided for employees exposed to overhead hazards.
7. Professional Engineers are required to design scaffolds over one hundred twenty five (125) feet in height.
8. Training:
  - a. The Subcontractor will provide training for employees involved in scaffold erection, disassembly, moving, operating, repairing, maintenance and inspection. The training will be performed by a competent person who recognizes hazards associated with the work and shall include the following topics:
    - 1) The nature of scaffold hazards
    - 2) Design criteria
    - 3) Maximum intended load carrying capacity
    - 4) Intended use of the scaffold
    - 5) Any other pertinent requirements

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

- b. The Subcontractor will provide training for employees assigned to use (work on) scaffolds. The training will be performed by a **qualified person** in the subject matter, can recognize hazards, and understands procedures to control or minimize the hazards. The training will include:

- 1) Electrical, fall, and falling object hazards.
- 2) Erecting, maintaining, disassembling of fall protection and falling object protection systems.
- 3) Proper use and handling of material.
- 4) Maximum intended load and load-carrying capacities.
- 5) Any other pertinent requirements.

**NOTE: Qualified Person** means one who, by possession of a recognized degree, certificate, or professional **standing**, or who by extensive knowledge, training and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

- c. The Subcontractor will provide retraining:
  - 1) When employee demonstrates lack of skill or understanding.
  - 2) To regain the requisite proficiency.
  - 3) When changes at the project presents a hazard about which the employee has not been trained.
  - 4) Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment presents a hazard for which the employee has not been trained.
  - 5) When the employee's actions indicate a need for retraining.

## **B. System Scaffolds (Including Tubular Welded Frame and Tube/Coupler)**

1. General:
  - a. Inspect all components before erecting.
  - b. Do no intermix components by different manufacturers.
2. Legs and Footings:
  - a. Legs shall be set on adjustable bases, plain bases or other foundations adequate to support the maximum load rating. Legs shall not be set directly upon loose ground or material.
  - b. The footing of the scaffold must be level, sound and rigid, capable of supporting the necessary weight. Unstable objects such as bricks or blocks will not be used as support.
  - c. Adjustable bases shall not be extended to a length that will cause instability.
  - d. Rolling scaffold shall not be used on sloped surfaces.
  - e. The legs shall be plumb and rigidly braced to prevent swaying.

3. Bracing and Securing:
  - a. Vertical diagonal braces shall be of the proper length.
  - b. Horizontal diagonal braces shall be used to square the scaffold and to provide tie-point rigidity.
  - c. Scaffolding shall be secured to the building or structure at intervals not to exceed thirty (30) feet horizontally and twenty six (26) feet vertically.
4. Platforms and Walkways:
  - a. Platforms are to be fully decked between uprights and guardrails with not more than one (1) inch between planks or between planks and uprights, except where the design does not allow it. Where this can be demonstrated, the platform shall be decked as tightly as possible with no more than a nine and one half (9 ½) inch space between the platform and the uprights.
  - b. Each platform and walkway shall be at least eighteen (18) inches wide except in areas that won't allow for this minimum width. In areas that, by design, will not allow the minimum of eighteen (18) inches the platform shall be as wide as possible and fall protection will be provided.
  - c. The front edge of the platform shall be no more than fourteen (14) inches from the face of the work unless fall protection is provided.
  - d. Each end of the platform must extend at least six (6) inches over the support (bearer) and secured from movement.
  - e. Maximum overhang for ten (10) foot planks or less is twelve (12) inches, and for planks greater than ten (10) feet, the maximum overhang is eighteen (18) inches, except when the planks are secured so that workers will be supported without tipping or a guardrail prevents workers from stepping on the overhang.
5. Guardrail Systems:
  - a. Guardrail systems shall be built on all open sides and ends of platforms before employees use the platform.
  - b. Toprail must be located between thirty eight (38) inches and forty five (45) inches above the platform and a midrail halfway in between.

#### **C. Swinging Scaffolds - Two Point Suspension**

1. Scaffold platform shall be no less than twenty (20) inches wide and no more than thirty six (36) inches wide overall, and be securely fastened to the hangers.
2. The hangers shall be capable of sustaining four (4) times the maximum load.
3. Wire, synthetic, or fiber ropes used to suspend the scaffold shall be capable of supporting at least six (6) times the rated load.
4. Each employee working from a swinging scaffold shall be protected by a full body safety harness with shock absorbing lanyard attached to an independent lifeline. The lifeline shall be securely attached to a substantial member of the structure at a point independent of the scaffold.

## **IV. References**

29 CFR 1926.450-454  
ANSI A10.8-1988

# **SECTION 18: CRANE AND PERSONNEL HOISTING**

## I. SCOPE

The safe operation and maintenance of cranes and personnel hoisting.

## II. GENERAL

Employees shall comply with the manufacturer's specifications and limitations applicable to the operation of any and all cranes. The use of crane personnel platforms shall be permitted when their use is necessary because conventional means to reach the work area, such as ladders, stairways, aerial lifts, elevating work platforms or scaffolds are either more hazardous or are not possible because of structural design or project conditions.

## III. REQUIREMENTS

### A. Cranes

#### 1. Load Ratings:

- a. The load ratings for a crane with a specified boom length and working radius are found in the crane manufacturer's capacity chart. This chart is the guide for that particular crane because it dictates the limits for which the crane and its components were designed.
- b. Load ratings should be down-rated by two percent (2%) for each degree of temperature less than 0°F until minus -30 degrees F is attained. Lifting is not recommended at temperatures less than -30 degrees F.

#### 2. WireRope:

All hoisting wire ropes must be recommended by the manufacturer for that service. Non-rotating rope is not acceptable for boom hoist reeving and is not recommended for multiple-part reeving. The replacement rope for cranes must be the same size, grade and construction as recommended by crane manufacturer.

- a. Ropes shall be replaced when any of the following conditions are detected:
  - 1) Six or more randomly distributed broken wires in any one lay or when there are three or more broken wires in any one strand of any one lay.
  - 2) Two or more broken wires in any one lay in those sections beyond the end connections or when there are one or more broken wires at the end connection.
  - 3) Wear of one third the original diameter of outside individual wires. Kinking, crushing, birdcaging or any other damage or distortion of the wire rope structure.
  - 4) Evidence of heat damage.
  - 5) The rope's diameter is reduced by more than 3/64-inch in a rope with a diameter up to and including 3/4-inch, 1/16-inch in a rope with a diameter from 7/8 to 1-1/8-inch, 3/32-inch in a rope with a diameter from 1-1/4 to 1-1/2-inch.
- b. Don't allow wire rope to become fouled or jammed, either on the drum or by jumping off a sheave.

#### 3. Operations:

- a. Before each lift, the Superintendent in charge of the lifting operation must determine the weight of the load to within  $\pm 5\%$ . When determining the weight of the load, the weight of all handling devices such as slings, spreader beam and load block shall be considered as being part of the load.

- b. The lifting capacity shall not be increased by tying off equipment to the crane's gantry or upperworks.
- c. Every time the weight of a load is at or near the crane's rated capacity, the crane operator will test the crane's brakes by raising the load a few inches and applying the brakes.
- d. The operator shall exercise special care when using a long boom in a high position. Crane booms shall not be used to drag loads sideways.
- e. A load rating chart must be attached to each crane. The operator must be able to read this chart from his normal operating position.
- e. The Supervisor in charge of the lifting operation shall assign a competent worker to signal the crane operator. The crane operator shall take signals only from the assigned signaler.
- f. The operator shall not raise, lower or swing the boom or load or travel with the load while anyone is on the load or on the hook. The operator shall not swing loads over people.
- g. Tag lines shall be used at all times unless they are impractical.
- h. When the whip line is being used or when the crane is traveling, the main load hook shall be tied back to the crane's upper works.
- i. The operator shall ensure that the house swing is locked when the crane is unattended even if only for a short period of time. At the end of each shift, the operator shall ensure that the main hook or headache ball is tied off to a secure anchor. When high winds are likely, the crane shall be boomed down and rested on a suitable support for the night.
- j. Check operating area for hazards: ensure proper distance from power lines is maintained.
- k. Ensure the swing radius of the crane is barricaded.
- l. Never operate with other than the manufacturers recommended counter-weight.
- m. Mount crane carefully using grab irons and hand holds provided.
- n. At any time the operator feels that materials are not rigged properly, or a hazard exists, the operator will cross his/her arms to alert riggers that he/she will not operate the crane.



#### 4. Maintenance:

The crane and its equipment must be inspected regularly; written, signed and dated records of these inspections shall be readily available. These records should include dated and detailed records of the crane's service and maintenance.

- a. Inspect daily:
  - 1) All safety devices.
  - 2) Air and hydraulic systems for deterioration or leaks.
- b. Inspect weekly:
  - 1) Crane hooks and blocks for signs of damage or excessive wear.
  - 2) Ropes, pendants and end fittings.
  - 3) Boom chords and lattices.
  - 4) Drums and sheaves.
  - 5) Pins, gears, rollers and locking devices.
- c. Inspect monthly:
  - 1) Brake and clutch systems parts, linings, pawls and ratchets.
  - 2) Load, boom angle and other indicators.
  - 3) Chain drive sprockets.
  - 4) Travel steering, braking and locking devices.
- d. Inspect annually:

Outside agency or manufacture representative will perform.

#### 5. Inspection Forms:

- a. Inspection report forms shall be used to note the general appearance and condition of the cranes before they are accepted for use.
- b. Inspection must be made before a piece of equipment is released.
- c. An inspection shall be done before every lift considered critical.

#### 6. Critical Lifts:

All lifts more than eighty five percent (85%) of the crane's capacity and lifts requiring more than one crane shall comply with the following:

- a. Checklist:
  - 1) Can the crane get to the area of the lift?
    - Any road/bridge limitations enroute?
    - Will the crane's length, width and height permit it access to the lift area?
    - Any traffic control problems in the lift area?
  - 2) Are there any tire/outrigger support considerations in the lift area?
    - Underground utilities?
    - Steep Slopes?
    - Newly backfilled areas?
    - Uncompacted stone?
    - Ice/snow/frozen ground?
    - Soft ground conditions?
- b. Procedures:
  - 1) Evaluate any obstructions in the working area (power lines, poles, trees, buildings, traffic, fences, pedestrians, etc.).
  - 2) Check reeving and determine number of parts needed and if you have adequate wire rope.
  - 3) Determine radius of load.
  - 4) Select rigging method.
  - 5) Determine boom length needed.
  - 6) Make all required deductions from the load chart for the crane configuration used.
  - 7) Determine lifting area in relation to crane, i.e., over rear, side, or front,

and use the appropriate chart.

- 8) When using a jib at the radius of the load you must compare the jib rating to the main boom and/or attachment rating and use the lower figure.
- 9) If the lift is close to the machines capacity, in the structural limited area of the load chart, make a test lift in a safe area first.
- 10) Before the pick is made, ensure that you are complying with all the notes, cautions, and warnings that are on the load chart and range diagram.
- 11) When the lift is made, the crane operator must take into consideration additional factors such as wind direction and speed, use of tag lines to control the load, dynamic loading, etc., and make any necessary changes to keep the lift within the cranes capacity.

## **B. Truck Cranes - Operating Limitations**

The following instructions shall be strictly enforced.

1. The crane must be level to within 1/8 inch in twenty-four (24) inches.
2. All outriggers must be out to full spread, and to ensure that the outriggers have equal loads, all carrier wheels must be lifted until they just clear the ground.
3. When the ground condition is not ideal, timbers that are longer than the dimensions of the outrigger pad must be used under all outrigger pads.
4. The front bumper counterweight shall be used only to raise long booms as recommended by the manufacturer of the crane. The front bumper counterweight shall not be used to increase the crane's lifting capacity.
5. Signal bells or horns must be used to warn people when the machine is backing up.

## **C. Crawler Cranes - Operating Limitations**

The following instructions shall be strictly enforced:

1. The crane must be level to within 1/8" in 24".
2. Turns should be made on hard level ground only.
3. Use timber mats when ground conditions are less than ideal. These mats should be placed crosswise to the tracks and the mat's length should be greater than the outside width of the pair of tracks.
4. Reduce rated loads by twenty percent (20%) when traveling with load over side of crawler or when traveling and swinging is done simultaneously.

## D. Hydraulic Cranes - Operating Limitations

The following instructions shall be strictly enforced.

1. On Rubber
  - a. When traveling with loads that approach the crane's capacity (on rubber rating), the mechanical swing lock must be engaged and travel speed reduced to creep speed.
  - b. Loads carried must be tied to the front of the hydraulic crane.
  - c. Signal bells or horns must be used to warn people when the machine is backing up.
2. On Outriggers
  - a. All outriggers must be out to full spread, and to ensure that the outriggers have equal loads, all carrier wheels must be lifted until they just clear the ground.
  - b. When the ground condition is not ideal, timbers that are longer than the dimensions of the outrigger pad must be used under all outrigger pads.

## E. Personnel Hoisting

1. The following requirements apply when cranes are used to hoist personnel:
  - a. Lifting and lowering speed shall not exceed one hundred (100) feet per minute.
  - b. Load lines shall be capable of supporting without failure, at least seven (7) times the maximum intended load, except where rotation resistant rope is used, the lines shall be capable of supporting without failure, at least ten (10) times the maximum intended load.
  - c. Load and boom hoist drum brakes, swing brakes and locking devices such as pawls or dogs, as equipped, shall be engaged when the occupied personnel platform is in a stationary working position.
  - d. The load line hoist drum shall have controlled load lowering. Free fall is prohibited.
  - e. The crane must be level to within 1/8" in 24" (this is more stringent than the OSHA standard of one percent of level grade) and located on firm footing. Cranes with outriggers shall have them all fully deployed.
  - f. The total weight of the loaded personnel platform and related rigging shall not exceed 50% of the rated capacity of the crane, at any radius.
  - g. The use of cranes having live booms is prohibited.
  - h. A boom angle indicator must be in use.
  - i. Telescoping booms shall be equipped with a device to indicate the boom's extended length.
  - j. A positive anti-two-block device or two-block damage prevention feature.
  - k. At least two brakes, one of which should be on the boom hoist drum. A worm gear or load-locking hydraulic valve in the drum is considered a braking feature.
  - l. Hydraulic cranes must have flow restrictors or check valves in the hydraulic system to prevent uncontrolled descent of the boom.

2. Personnel Platform
  - a. Design Criteria:
    - 1) The personnel platform and suspension system shall be designed by a qualified person competent in structural design.
    - 2) The suspension system shall be designed to minimize tipping of the platform due to movement of personnel.
    - 3) The platform shall be capable of supporting at least five (5) times the maximum intended load.
    - 4) All welding of the platform shall be performed by a qualified welder.
    - 5) Each platform shall be provided with perimeter protection from the floor to 42 inches above the floor which shall consist of either solid construction or expanded metal having openings no greater than  $\frac{1}{4}$  inch.
    - 6) The access gate shall swing inward and be equipped with a locking mechanism.
    - 7) The platform shall be posted with a plate or other permanent marking indicating the weight and load capacity of the platform.
    - 8) A grab rail shall be installed inside the entire perimeter of the platform.
    - 9) Headroom shall be provided which allows personnel to stand upright in the platform.
  - b. Personnel Platform Loading:
    - 1) The rated load capacity of the personnel platform shall not be exceeded.
    - 2) The platform shall not be used as a material hoist.
  - c. Rigging:
    - 1) When a wire rope bridle is used to connect the personnel platform to the load line, the bridle legs shall be connected to a single ring or shackle.
    - 2) Wire rope, shackles, rings and other rigging hardware shall have a minimum safety factor of five (5).
    - 3) All eyes in wire rope slings shall be fabricated with thimbles.
3. Inspection and Testing:
  - a. Cranes used to hoist personnel platforms shall be inspected prior to hoisting personnel to verify that all systems, controls and safety devices are activated and functioning properly.
  - b. A full-cycle operational test lift at one hundred and twenty five percent (125%) of the intended load of the platform shall be made prior to the hoisting of personnel for the first time at each new set-up location.
  - c. After the trial lift the platform shall be hoisted a few inches and inspected to assure that it is secure and properly balanced. The following conditions must exist:
    - 1) Hoist ropes shall be free of kinks.
    - 2) Multiple part lines shall not be twisted around each other.
    - 3) The primary attachment shall be centered over the platform.

4. Safe Work Practices:
  - a. Personnel shall stay completely inside the platform during raising, lowering and positioning.
  - b. If the platform is not landed, it shall be secured to the structure before personnel exit or enter the platform.
  - c. Tag lines shall be used when practical.
  - d. Hoisting of personnel while the crane is traveling is prohibited.
  - e. The crane operator shall remain at the controls at all times.
  - f. Personnel being hoisted shall remain in continuous sight of and/or communication with the operator or signal person.
  - g. Personnel occupying the personnel platform shall wear a full body safety harness with lanyard attached.
  - h. Hardware used for attaching the platform to the hoist line shall not be used for any other service.
  - i. A pre-lift meeting attended by the crane operator, signal person, personnel to be lifted and their supervisor shall be held to discuss the procedures to be followed. Form SF200 shall be completed and maintained on file.

#### **IV. REFERENCES**

29CFR 1910.180  
29CFR 1926.952  
29CFR 1926.550

## **SECTION 19: MOTOR VEHICLES AND MOBILE EQUIPMENT**

## **I. SCOPE**

Safe operation of motor vehicles and mobile equipment.

## **II. GENERAL**

Employees assigned to operate motor vehicles and mobile equipment shall be trained and qualified for the equipment they are to operate. This section does not include cranes. See Section 23 for cranes and personnel hoisting.

## **III. REQUIREMENTS**

### **A. General**

1. Read the manufacturers manual prior to operating.
2. Any reported leak or mechanical problem is cause to immediately shut the vehicle or equipment down.
3. Operators shall keep their vehicles or equipment clean, including windows and light lenses.
4. All operators shall wear required protective items such as hard hats, safety glasses, and safety boots or equipment as called for by job conditions.
5. Employees shall wear seat belts where provided.
6. Operators shall not at anytime leave the cab while engine is running.
7. All engines shall be shut down during refueling.
8. Park out of traffic flow and have reflectors or warning lights showing.
9. Wheels shall be chocked when parked on an incline.
10. Employees taking over the counter or prescription drugs shall report to their Supervisor, who will determine if it is safe for the employee to continue operating.

### **B. Motor Vehicles**

1. Operators shall have a current driver's license applicable to the vehicle he/she is operating.
2. Company owned vehicles shall have a fire extinguisher, first aid kit, and dash plaque stating "Fasten Seat Belts Before Vehicle Moves". Personal passenger vehicles may be exempt.
3. A current registration and insurance certificate must be kept in the vehicle at all times.
4. Maintained in safe operating condition (road worthy).
5. Report any damages to vehicle to your immediate supervisor.
6. Operators shall abide by all applicable state and local laws and company policies.

### **C. Mobile Equipment**

1. General:
  - a. Operators in addition to a pre-employment drug screen should receive a basic employment physical examination including an eye test. Periodic drug screens may be administered to operators in accordance with company, client or DOT requirements.
  - b. Operators shall be tested by a Competent Person (CP) prior to assignment. The tester will ensure the operator fully understands how to read a load

- chart, run the equipment in a smooth manner. Complete form, and issue a wallet size card noting what model and type equipment the employee is authorized to operate.
- c. Assigned Mobile Equipment shall be inspected on a daily basis. The operator shall fill out and submit the appropriate form. Operator shall ensure that all required load-rating capacities, recommended operating speeds, and any special warning signs are posted; the backup alarm is working and a fire extinguisher is on the equipment.
  - d. Operators shall not drink, eat, or read while operating equipment.
  - e. Operators must know hand signals, and only take signals from one person. But the operator shall obey a "Stop" signal from anyone. A signal person must be used if the operator can't see the placement point.
  - f. Prior to entering work area equipment operators shall check for overhead power lines, and other obstructions or hazards, which could impede their movement or work operations.
2. Forklifts:
- a. Check operating area for hazards; ensure proper distance from power lines.
  - b. Operators shall know the capacity and operating characteristics of the forklift they are operating.
  - c. Keep other employees clear of your operation.
  - d. Refer to any available load chart prior to picking up material.
  - e. Always travel with forks a minimum safe distance from the ground.
  - f. Never leave the operators seat without first lowering the forks to the ground, setting the parking brake and placing the controls in neutral.
  - g. Never let anyone touch, lean on, or reach through the mast, boom, or lift mechanism, or climb on the mast, boom, or lift mechanism.
  - h. Never lift a load over anyone's head.
  - i. If placing a load at a higher elevation use a signal person to guide you.
3. Aerial Lift Platform:
- a. Operator shall test controls each day when making his inspection.
  - b. Employees in the basket shall wear personal fall protection and have their lanyard tied off to the railing provided. They will not tie off to the structure.
  - c. Aerial lifts shall not be used near electric power lines unless they are de-energized.
  - d. Ground controls shall not be operated on ground level unless permission is granted by workers on the platform or an emergency exists.
  - e. If lift is provided with outriggers ensure they are completely extended and cribbing used under pads on soft surfaces.
  - f. Do not operate if winds are in excess of thirty (30) mph.
  - g. Do not let people work below the platform. Barricade the area.
  - h. An outside agency shall inspect Mobile Equipment requiring annual certification.
4. Back-Hoe:
- a. Check operating area for hazards; stay proper distance from power lines.
  - b. When performing maintenance beware of pinch points and do not use outriggers to elevate equipment; always use cribbing to block it up.
  - c. When excavating, operator shall not allow other workers in his area of operation.
  - d. Be cautious when excavating where known underground utilities exist. A signal person should be used to notify the operator when close to utilities.
  - e. Avoid side hill travel when working on slopes. Operate up and down the slope.

- f. Allow no one to ride on equipment.
  - g. Park on level ground ensures bucket is down and brakes are set.
5. Front End Loader/Skid Loader:
- a. When performing maintenance or not in use loader buckets shall be lowered to ground or blocked; the controls in neutral position with the motors stopped and brakes set.
  - b. Pinch points shall be guarded.
  - c. Skid Loader operators are to remain in seat when raising bucket.
  - d. Avoid side hill travel when working on slopes. Operate up and down the slope.
  - e. Mount loaders carefully using ladders, grab irons or hand holds provided. Always dismount ladders facing the machine.
  - f. Allow no one to ride on your equipment.
  - g. Do not swing loads over dump truck cabs.
  - h. Always look to the rear when reversing travel and ensure audible alarm is working.
  - i. Be alert for hazards that may interfere with your equipment or be a danger to other workers.

#### **D. Training**

All training of operators shall be conducted by a competent person who shall ensure the operator has a current state driver's license, is qualified to perform basic maintenance and daily inspections, operate in a safe and smooth manner, and understand the potential hazards involved in operating the equipment assigned.

## **IV. REFERENCES**

29 CFR 1910.67  
29 CFR 1926.556, 400, 600, b601 and 602



## **SECTION 20: TRENCHING AND EXCAVATIONS**

### **I. SCOPE**

Minimizing and eliminating the potential hazards of trenching and excavations.

### **II. GENERAL**

Prior to trenching or excavating four (4) feet or greater in depth, a competent person shall determine the soil classification. Based on this classification a safe method to proceed will be determined.

### **III. REQUIREMENTS**

#### **A. General**

Supervisors will insure that excavation activities are coordinated, communicated, and conducted in accordance with the provisions of this section and all regulatory requirements.

1. Prior to excavating in the location of any underground installations:
  - a. Call the participating **One-Call** center for the area (e.g.; Miss Dig)
  - b. All surface encumbrances that create a hazard to employees will be removed or supported, as
2. All excavations over twenty (20) feet in depth will be designed by a professional engineer registered in the state where the work is to be performed.
3. Excavations that are left open will be barricaded in a manner that is appropriate considering location. When next to vehicular traffic local highway department requirements for warnings and barricades will be followed.
4. Employees in an excavation will be protected from cave-in by an adequate protective system(s). Exceptions to this are:
  - a. Excavations are made entirely in stable rock.
  - b. Excavations are less than five (5) feet in depth and examination of the excavation by the Competent Person provides no indication of a potential cave-in or other hazardous condition.
5. Spoils will be stored a minimum of two (2) feet from the sides of the excavations and will not block the means of exit.
6. A stairway, ladder, ramp or other safe means of exit will be located in excavations that are four (4) feet or more in depth. Access to the means of egress must be within twenty-five (25) feet of the employees. Methods used by employees as a means of access or egress from excavations will be approved by the Competent Person.
7. Employees working in excavations shall be protected against the hazards posed by water accumulation.

## B. Competent Person Responsibilities

Competent Person means one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions, which are unsanitary, hazardous, or dangerous to employees.

The Competent Person has authorization to take prompt corrective measure.

Minimum duties of the

Competent Person include:

1. Conducts at least two tests for soil classification, one manual test and one visual test.
2. Understands safety standards and any data provided.
3. Determines proper sloping/shoring system, if required.
4. Recognizes and reclassifies soil after conditions have changed.
5. Determines that shoring/shielding equipment/system is adequate for employee protection.
6. Conducts air test to monitor for hazardous atmosphere.
7. Approves design of structural ramps.
8. Assures location of underground installations/utilities.
9. Conducts inspections of excavations and adjacent areas.

## C. Soil Type Identification

1. The Simplified Soil Classification System, consists of four categories: Stable rock, Type A, Type B and Type C. Stability is greatest in stable rock and decreases through Type A and B to Type C, which is the least stable:
  - a. Stable rock is defined as natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.
  - b. Type A is defined as:
    - 1) Cohesive soils with an unconfined compressive strength of 1.5 tons per square foot (TSF) or greater.
    - 2) Examples of cohesive soils are: clay, silty clay, sandy clay, and clay loam.
    - 3) Cemented soils such as caliche and hardpan are also considered Type A.
    - 4) No soil is Type A if:
      - \* It is fissured.
      - \* The soil is subject to vibration from heavy traffic, pile driving or similar effects.
      - \* The soil has been previously disturbed.
  - c. Type B is defined as:
    - 1) Cohesive soil with an unconfined compressive strength greater than .5 TSF, but less than 1.5 TSF.
    - 2) Granular cohesionless soils including: angular gravel, silt, silt loam, and sand loam.
    - 3) Previously disturbed soil except those that would be classified as Type C soil.

- d. Type C is defined as:
  - 1) Cohesive soil with an unconfined compressive strength of .5 TSF or less.
  - 2) Granular soil including gravel, sand and loamy sand.
  - 3) Submerged soil or soil from which water is freely seeping.
  - 4) Submerged rock that is not stable.
2. The Competent Person will classify the soil type in accordance with the definitions in Appendix A to the OSHA Standard, on the basis of at least one (1) visual and one (1) manual analysis. These tests are designed to determine stability based on a number of criteria.
3. An examination of the job site will determine sources of vibration or evidence of a prior excavation, such as existing underground utilities. Observation of the excavation will determine the presence and amount of moisture as well as layering, faulting and fracturing.
4. When making a field determination, the Competent Person must answer three (3) questions: is the sample granular or cohesive, is it fissured or non-fissured, and what is the unconfined compressive strength.
5. If the excavated soil stays in clumps, it is cohesive. If it breaks up easily and does not stay in clumps, it is granular. If an observation of the soil determines that the material is mostly fine grained, it is cohesive; if primarily coarse, it is granular. This estimation can be difficult. One method of simplifying the process is to disperse a sample in water in a clear glass cylinder. The coarse-grained material will settle to the bottom, the fine will layer out on top. Relative percentages can then be easily determined with the use of a ruler and simple arithmetic.
6. Fissured soil will exhibit open cracks. Observation of the excavation and sample will show this, particularly as it dries. Clay tends to shrink and crack as it dries.
7. The unconfined compressive strength will help classify the soil type. There are several methods of testing for it. A device called a pocket penetrometer is often used. This instrument is most accurate when the soil is nearly saturated. It should be used to support other tests and not be relied on exclusively. The thumb penetration test is equally useful and easy to perform. If the sample can be dented, but penetrated only with great effort, it is Type A. If it can be penetrated several inches and molded by light pressure, it is Type C. Type B can be penetrated one half (1/2) inch to three quarter (3/4) inch with effort and molded.
8. The Competent Person shall perform multiple checks of the excavation to generate consistent, supporting data along its depth and length. The soil type is likely to change many times along a right of way and the moisture content will vary with the weather and job conditions. All these factors must be taken into consideration during the course of the work.

#### D. Sloping

Sloping means that the sides of an excavation are laid back to a "maximum allowable slope" from which they will not collapse. If the excavation is to be sloped, there are four (4) options:

1. Slope to the angle required for type C soil.
2. Use the tables provided in the standard to determine the maximum allowable angle (after determining the correct soil type).
3. Use tabulated data prepared by a registered professional engineer.
4. Have a registered professional engineer design a sloping plan specifically for the job

#### E. Shoring

1. Shoring uses a framework of vertical members called uprights, horizontal member called wales, and cross braces to support the sides of the excavation to prevent cave-in.
2. When the soil conditions are particularly hazardous, or if the excavation is more than ten (10) feet deep, 'close sheeting' is added behind the wales for even greater support.

#### F. Trench Shield or Trench Box

1. Although the shield does not prevent a cave-in, it is designed to withstand the soil forces caused by a cave-in, protecting the workers within the structure.
2. No one will be allowed within the shield when it is being installed or removed. The height of the shield must be greater than the depth of the excavation. The shield must extend a minimum of eighteen (18) inches above the point where the excavation wall is properly sloped.

### IV. REFERENCES

29CFR 926.650  
29CFR 1926.65 I  
29CFR 926.652

# **SECTION 21: CONCRETE AND MASONRY**

## **I. SCOPE**

Safe forming of concrete, the placement of rebar and wire mesh, the placement and finishing of concrete and masonry work.

## **II. GENERAL**

Prior to concrete and masonry work a competent person will review and set forth requirements to protect employees.

## **III. REQUIREMENTS**

### **A. Forms and Shoring**

1. Form work shall be designed, fabricated, erected, supported, braced and maintained so that it will be capable of supporting all loads that may reasonably be anticipated.
2. Shoring equipment shall be inspected prior to erection to determine that the equipment meets the requirements specified in the formwork drawings. Shoring equipment found to be damaged such that its strength is reduced shall not be used for shoring.
3. Erected shoring equipment shall be inspected immediately prior to, during and immediately after concrete placement. Shoring equipment that is found to be damaged or weakened after erection shall be immediately reinforced or replaced.
4. The sills for shoring shall be sound, rigid, and capable of carrying the maximum intended load.
5. All base plates, shore heads, extension devices and adjustment screws shall be in firm contact, and secured when necessary, with the foundation and the form.
6. Forms and shores (except those used for slabs on grade and slip forms) shall not be removed until it has been determined that the concrete has gained sufficient strength to support its weight and superimposed loads.

### **B. Reinforcing Steel (Rebar) and Wire Mesh**

1. Reinforcing steel for walls, piers, columns and similar vertical structures shall be adequately supported to prevent overturning and to prevent collapse.
2. Measures shall be taken to prevent unrolled wire mesh from recoiling.
3. All protruding reinforcing steel, onto and into which employees could fall, shall be guarded to eliminate the hazard of impalement.

### **C. Placing and Finishing**

1. No employee shall be permitted to ride concrete buckets or to work under concrete buckets while buckets are being raised or lowered into position.
2. Elevated concrete buckets shall be routed so that no employee, or the fewest number of employees, are exposed to the hazards associated with concrete falling from buckets.
3. Proper personal protective equipment such as faceshields, gloves and boots shall be used by employees working with wet cement and grout, this includes employees assigned to tend the hose of concrete pumps.
4. Concrete buggy handles shall not extend beyond the wheels on either side of the buggy.
5. Powered and rotating type concrete troweling machines that are manually guided shall be equipped with a control switch that will automatically shut off the power whenever the hands of the operator are removed from the equipment handle.
6. Bull float handles used where they might contact energized electrical conductors, including low voltage and DC currents, shall be constructed of non-conductive material or insulated with a non-conductive sheath.

### **D. Masonry**

1. A limited access zone shall be established whenever a masonry wall is being constructed. The limited access zone shall:
  - a. Be established prior to the start of construction of the wall.
  - b. Be equal to the height of the wall plus four (4) feet, and run the entire length of the wall.
  - c. Be established on the side of the wall, which will be unscaffolded.
  - d. Be restricted to entry by employees actively engaged in constructing the wall.
  - e. Remain in place until the wall is adequately supported to prevent overturning.
2. Masonry walls over eight (8) feet in height shall have the supports in place until permanent supporting elements of the structure are in place.
3. Proper personal protective equipment such as faceshields and gloves shall be used by employees, working with grout.

## **IV. REFERENCES**

OSHA 29 CFR 1926.700 - 706

## **SECTION 22: STEEL ERECTION AND PLACEMENT**

## **I. SCOPE**

Safe handling, erection and bolt-up of structural steel including access to the steel.

## **II. GENERAL**

A layout plan for steel erection and placement will be provided so that an erection plan may be established for safe steel erection.

## **III. REQUIREMENTS**

### **A. Survey of the Work Place**

1. Prior to the start of work, supervision shall make a survey of the site conditions to determine the hazards and the type and number of safeguards that need to be installed. The survey shall include, the following:
  - a. Employees shall have clear and safe access to all work areas; walkways, runways and passageways; ladders, stairways and elevators; protection for floor and roof openings; adequate illumination of all work areas.
  - b. Location of utilities and service shall be determined. High voltage lines shall be identified, de-energized or barriers erected.
  - c. All pressurized pipelines shall be located.
  - d. All temporary extension cords, welding leads, compressed air, etc., shall be raised and supported above all working surfaces, walkways, stairways and passageways in such a way as to prevent accidental tripping hazards, and damage to the cords, leads and lines when possible.
2. Following the survey, work will be planned in advance to minimize the exposure of employees to hazards.

### **B. Safety Equipment and Work Procedures**

Temporary flooring, safety nets, perimeter guarding, ladders, stairways and scaffolding shall be provided where required.

### **C. Personal Fall Protection**

1. Full body safety harness with two (2) attached shock absorbing lanyards (or equivalent) shall be worn by employees whose work exposes them to falls in excess of six (6) feet.
2. Safety lines (lanyards) shall be secured to a part of the structure or to static lines that will support fifty four hundred (5400) lbs. or more.

## D. Skeleton Steel Construction

1. Temporary Flooring:
  - a. The working floor of every building shall be solidly decked over its entire surface except for access openings.
  - b. On buildings or structures not adaptable to temporary floors and where scaffolds are not used, safety nets shall be installed and maintained whenever the potential fall distance exceeds or twenty-five (25) feet.
  - c. Floor perimeter safety railing of one half (1/2) inch wire rope or equal shall be installed approximately forty-two (42) inches around the perimeter of all temporary planked or temporary metal-decked floors of tier buildings and other multi-storied structures during structural steel assembly. Safety railing shall be tightened to have a maximum three (3) inch deflection.
  - d. Where skeleton steel is being erected, a substantial tightly planked floor shall be maintained within two (2) stories or thirty (30) feet, whichever is less, and directly under any work being performed.
  - e. When gathering and stacking temporary floor planks, the personnel assigned to such tasks shall be protected with personal fall protection equipment.
2. Permanent Flooring:
  - a. The permanent flooring shall be installed as the erection of structural member's progresses. There shall not be more than eight (8) stories or one hundred twenty (120) feet whichever is less, between the permanent flooring and the uppermost structural members.
  - b. At no time shall there be more than four (4) floors or forty-eight (48) feet, whichever is less, of unfinished bolting or welding above the foundation or uppermost permanently secured floor.

## E. Structural Steel Assembly

1. Connecting:
  - a. When connectors are working together, only one person will give the signals. That person should make sure that the partner or others working on the job are in the clear.
  - b. When connectors are working in pairs, one end of the piece should be bolted before going out to connect the other end. Only one connector shall go out to bolt the other end.
  - c. Employees shall straddle the beam instead of walking along the top. Each employee shall be equipped with and use a full body safety harness and two-(2) shock absorbing lanyards or equivalent.
  - d. A beam shall be connected with a minimum of two (2) bolts at each end.
  - e. Tag lines shall be used for controlling all loads.
  - f. **At no time shall personnel be allowed to ride the headache ball, hook or load.**



2. Bolting, Fitting-Up, Drilling and Reaming and Plumbing-Up:
  - a. Suitable eye protection, in addition to safety glasses, shall be provided for reaming, drilling, welding, cutting and the driving of wedges, shims or pins.
  - b. Containers shall be provided for storing or carrying bolts, drift pins and other loose objects and shall be secured against accidental displacement when aloft.
  - c. Pneumatic hand tools shall be disconnected from the power source and pressure in hose lines shall be released before any adjustment or repair to the tools are made.
  - d. Airline hose sections shall be tied together by safety cords, wire, etc., except when quick disconnect couplers are used to join sections.
  - e. Air hoses located on roadways shall be bridged or protected to prevent damage.
  - f. Impact wrenches shall be provided with a locking device for retaining the socket.
  - g. When bolts or drift pins are being knocked out, a means shall be provided to keep the bolts or drift pins from falling.
  - h. Bolts, nuts, washers and pins shall not be thrown. They shall be placed in bolt baskets or other approved containers and raised or lowered by using a line.

#### **IV. REFERENCES**

29 CFR 1926~750  
29 CFR 1926.751  
29 CFR 1926.752

## **SECTION 23: PROCESS SAFETY MANAGEMENT**

## **I. SCOPE**

Safe working practices to minimize or prevent catastrophic results inherent from hazardous environments associated with process plants.

## **II. GENERAL**

All employees are to be trained in the safety requirements that are necessary to perform work in a facility that operates under the Federal process safety management standard. In addition records shall be kept and available for inspection to document this training, level of competency and basic craft training for each employee.

## **III. REQUIREMENTS**

MPM PAINTING LLC will ensure that employees assigned to work on process facilities are qualified in their crafts and are trained in the applicable aspects of safety. Implementation of MPM PAINTING LLC's "Process Safety Management Program" will begin by requiring the client to submit all pertinent information required by the standard to conduct work safely.

### **A. Responsibilities**

1. Client:
  - a. Provide MPM PAINTING LLC with all data pertaining to any and all technological processes where work is to be performed. Information shall include, flow diagrams, block flow diagrams, toxicity information, corrosive data, chemical stability and hazards involved.
  - b. Provide information on all equipment used in the process, a Process Hazard Analysis (PHA) if appropriate, all temporary changes to the process system and an emergency action plan for the facility. In cases where this information is secret, MPM PAINTING LLC management shall sign the appropriate confidentiality agreement prior to the receipt of this information.
2. MPM PAINTING LLC Project Management:
  - a. General:
    - 1) Receive and study all information provided by the client in order to have a complete understanding of the highly hazardous chemicals used in the process system.
    - 2) Obtain all Material Safety Data Sheets regarding chemicals, and other materials used on the project.
    - 3) Analyze all information provided, noting all existing potential hazards, have all safety and personal protective equipment available and provide orientation/training classes.
  - a. Skill Level Identification:
    - 1) Responsible for testing all employees to find their level of training and experience for each craft. If a Supervisor has the knowledge of an employee's experience in a process unit and feels confident that they fully understand the procedures, he may, in lieu of training certify in writing that the individual has the knowledge and skills to safely carry out the work in accordance with the established procedures.
    - 2) Assign helpers to experienced foreman/craftsmen to enhance the helpers knowledge and gain experience in their craft and ensure they follow safe work practices.
    - 3) Not allow an employee to work in a facility for which he/she has no

knowledge.

- b. Training and documentation:
  - 1) Train employees assigned to new work areas in a facility to assure they have all the knowledge and skills to conduct their work safely. Upon completion, the training shall be logged on the job safety assignment form that notes the process system, type of work to be performed, date/time of training and signature of trainer. Copies of this form shall be placed in the individual's personnel file.
  - 2) Copy of any test results or written certification to the employee's file on the project. Original copy of all test results shall be sent to the area office and placed in their personnel file.
  - 3) Employees not passing an individual craft test shall not be considered competent to work as a craftsman but may be utilized as a helper.
  - 4) Applicants failing to obtain a passing grade may continue to work as a helper shall be allowed to be retested after a period of time (normally three (3) months), or at the discretion of the Superintendent.

## **B. Process Management Program**

1. Employee training: Employees shall be provided a safety orientation from Project Management, including the following subjects:
  - a. Plant Emergency signals
  - b. Plant Emergency telephone numbers
  - c. Evacuation routes and assembly areas
  - d. Smoking rules
  - e. Traffic rules
  - f. Environment concerns
  - g. Reporting hazards
  - h. Hazardous work permits
  - i. Highly hazardous chemicals/gases/materials
2. When work requires additional training, selected employees shall receive the following:
  - a. Firewatch training
  - b. Cascade System/Self Contained breathing apparatus (SCBA) Supplied Air Training
  - c. Rescue
  - d. Competent Person (Trenching & Excavating)
  - e. HAZWOPER
  - f. Shielding of welding operations
3. Only employees that have completed the initial safety orientation and the training for highly hazardous chemicals/gases/materials will be allowed to access the work area. A list of trained employees shall be submitted to the client.
4. Project Management shall maintain a master list of all personnel that have received training including the date it was conducted. A list of trained personnel shall be on file on specific subjects that require retraining by Federal of State Regulations such as the Hazardous Communication (Right to Know) Program.
5. Employees who are new to the craft shall be given additional training.

## **C. Permits**

Permits shall document the protection requirements, such as, barricades and firewatch, indicate the authorized date(s), identify the process and unit to be

worked on, and the need (if any) for Personal Protective Equipment (PPE).

#### **D. Mechanical Integrity/Quality Assurance**

MPM PAINTING LLC shall assure all fabrications, equipment and procedures used are suitable for process applications, and are consistent with design specifications. All testing and inspections shall be documented by QA/QC representative or the project management designee.

#### **E. Safety Audits**

MPM PAINTING LLC Management shall assure that all requirements of the MPM PAINTING LLC Safety Program are in compliance, including the following records:

1. Training records on all assigned employees
2. Respirator training records
3. Hazard Communications Program (MSDS)
4. Air monitoring logs
5. Crane inspection forms
6. Rigging inspection forms
7. First aid logs
8. OSHA 200 and accident reports
9. Weekly safety meetings reports
10. All monthly inspection reports
11. Master list of all training conducted
12. All required records specified in this manual

## **IV. REFERENCES**

29 CFR 1926.64

## **SECTION 24: LADDERS**

### **I. SCOPE**

Safe use and storage of portable ladders.

### **II. GENERAL**

All employees shall have proper training prior to working with a ladder that will include inspection, selection and use.

### **III. REQUIREMENTS**

Ladders shall be inspected by a competent person on a monthly basis.

#### **A. Portable Ladder Safety Rules**

1. Portable ladders can be used for safe access to elevations not provided with permanent stairways, ladders or ramps.
2. Faulty ladders (broken, split or missing rungs, side rails, or other defects) shall be immediately removed from service.
3. Portable ladders shall be placed on a substantial base, with the area around the top and bottom of ladder kept clear.
4. Unless protected by barricades or guards, ladders must not be placed in passageways, doorways, driveways, or any location where they could be accidentally displaced.
5. All portable ladders shall be tied, blocked, or secured to prevent unplanned movement.
6. Metal ladders shall not be used where possible electrical contact can be made.
7. All company ladders shall be marked "**MPM PAINTING LLC**" for identification.
8. All ladders will be stored when not in use.

#### **B. Extension Ladders**

1. Portable ladders must be placed so that the horizontal projection is not greater than 1/4 of the vertical projection. (Four foot up, one foot out {4 to 1 ratio}).
2. Side rails of extension ladders must extend thirty six (36) inches above landings. If this is not possible, grab rails shall be provided.
3. Double-cleat ladders shall not exceed twenty four (24) feet in length. Single cleat ladders shall not exceed thirty (30) feet (based on top landing). If additional length is required, two (2) or more separate ladders shall be used and offset with a platform between each ladder. Guardrails and toe-boards shall be erected on the exposed side of the platform.

### **C. Step Ladders**

1. Planks shall not be placed on the top step of step ladders.
2. No one shall be permitted to stand and work on the top two (2) steps of a step-ladder.

### **D. Project Made Ladders**

1. Job-made ladders shall be constructed for intended use. If a ladder is to provide the only means of access or exit from a working area for twenty five (25) or more employees, or simultaneous two-way traffic is expected, a double-cleat ladder shall be installed.
2. Side rails of job-made ladders shall be continuous, and two (2) inch x four (4) inch lumber shall be used for single-cleat ladders up to 16 feet long, 3 inch x 6 inch lumber for single-cleat ladders from sixteen (16) feet to thirty (30) feet long; two (2) inch x four (4) inch lumber shall be used for double-cleat ladders from twelve (12) feet to twenty four (24) feet long. Cleats shall be inset into the edges of side rails one half (1/2) inch, or filler block shall be used on the rails between the cleats. The cleats shall be secured to each rail with three (3) No.10 d common wire nails or other fasteners of equivalent strength. Cleats shall be uniformly spaced twelve (12) inch, on center, top to bottom.

## **IV. REFERENCES**

29 CFR 1926.1050  
29 CFR 1926.1053  
29 CFR 1926.1060

## SECTION 25: HAZWOPER

### I. SCOPE

To provide information necessary to manage health risks associated with hazardous waste operations.

### II. INTRODUCTION

This standard covers workers involved in cleanup operations at hazardous waste sites including uncontrolled waste sites, treatment storage and disposal facilities, or hazardous material emergencies. The standard requires a formal safety and health program be implemented for each site or facility where a hazardous waste incident can be anticipated.

### III. REQUIREMENTS

A written safety and health program must be developed, periodically updated, and made available to all affected workers and subcontractors at a site where hazardous waste cleanup is being performed.. This also requires that information regarding known safety or health hazards before contractors enter the worksite. The components of the program are discussed in the following paragraphs. If the hazardous waste exposure is expected to be limited to spill response, the discussion of Information and Training Program is important.

- A. **Work plan** should describe the safety and health program including references to the other safety and health procedures. This should also include a chain of command and assignment of responsibilities.

The work plan should also define the tasks and objectives of the operation, as well as the logistics/resources required to fulfill the tasks.

- B. **Site Evaluation and Control** requires a trained person conduct a preliminary evaluation of the site to identify conditions that are immediately dangerous to life and health or that may cause serious harm to employees. Re-evaluations should be conducted as conditions or operations change.

Tools which may be helpful in implementing a site control program include site map, site work zones, site communication, safe work practices and appropriate emergency information.

- C. **Site- Specific Safety and Health Plan** includes all the basic safety and health requirements with particular attention to characteristics specific to the site. The plan must anticipate hazards of each phase and briefings must be conducted prior to entry so workers can be educated about the safety and health plan.

- D. Information and Training Program** should be developed to inform workers of the level and degree of hazards and their controls. An emergency response team should also be trained to handle any foreseeable chemical emergency.

Training should consider hazard recognition, respirator use and care, personal protective equipment, emergency response, decontamination procedures, and any appropriate work practices or engineering controls.

Workers should be trained to the level required by their job function and responsibility. Emergency responders must get annual refresher training or otherwise demonstrate their competency.

Training should be verified by issuing a certificate upon successful completion of training. A certificate from one site may not be adequate for another site.

- E. Personal Protective Equipment** must be provided when engineering controls are not feasible to maintain exposures at or below the permissible exposure levels. PPE must be appropriate to the requirements and limitations of the site, the task specific conditions, and the site hazards.

- F. Monitoring** (air) is required to determine if air contaminants exist above permissible limits or if oxygen deficient atmospheres exist. Monitoring will be useful in the following:

- selecting personal protective equipment
- delineating areas where protection and controls are needed
- assessing the potential health effects of exposure
- determining the need for specific medical monitoring

If employees are likely to be exposed to higher exposures, periodic monitoring should be done to determine if exposures are in excess of permissible limits or if conditions are immediately dangerous to life and health existence.

- G. Medical Surveillance** program helps to assess and monitor the health and fitness of employees working with hazardous substances. This is a requirement when:

- employees are exposed or potentially exposed to health hazards above permissible exposure limits (or published exposure levels if no PEL is established) for more than 30 days per year.
- workers who wear approved respirators for 30 days or more per year.
- workers exposed to unexpected or emergency releases of hazardous substances (without appropriate PPE) above exposure limits or who show symptoms of exposure to hazardous substances.



Examination will be performed under the supervision of a licensed physician without cost to the worker. Exams will be given:

- prior to job assignment and annually thereafter (or two years if a physician determines it is sufficient).
- at termination of employment if no exam has been performed within the last 6 months
- before re-assignment to a job where exams are not required.
- according to physician requirements
- immediately after worker becomes injured or ill from exposure (acute or chronic) to hazardous substances.

The employer should provide the physician a copy of the standard (29CFR 1926.65 or equivalent), a description of the employee's duties, anticipated exposure information, personal protective and respiratory equipment to be used, and appropriate medical information.

The physician should provide a written opinion with the results, any detected medical conditions that might increase risks, recommended limitations on the employee or upon the use of PPE, and a statement the employee has been informed of the exam results. No information unrelated to employment is to be provided.

**H. Decontamination Procedures** must be developed, communicated and implemented before workers enter a hazardous waste site. As necessary, the site safety and health officer must require and monitor decontamination of the employee, decontamination or disposal of the clothing and equipment, as well as solvents used for decontamination before the employee leaves the site.

If there is gross contamination of the employee, non-impermeable clothing must be removed immediately and the employee must take a shower. Impermeable clothing must be decontaminated before being removed.

If protective clothing is to be laundered or cleaned, the person who performs this service must be informed of the potentially harmful effects.

If showers and change rooms are to be provided, they should meet requirements of 29CFR 1910.141. Employers shall not remove protective clothing or equipment from change rooms unless authorized.

- I. **Emergency Response** - Hazwoper regulations require a written emergency plan be developed and implemented before performing hazardous waste operations.

At an uncontrolled hazardous waste site and at treatment, storage, and disposal facilities, the following elements must be included:

- pre-emergency planning
- emergency recognition and prevention
- emergency medical and first aid treatment
- methods or procedures for alerting site workers
- safe distances and places of refuge
- site security and control
- decontamination procedures
- critique of response and follow-up
- personal protective and emergency equipment
- evacuation routes and procedures

In addition, site topography, layout and prevailing weather conditions; and procedures for reporting incidents should be addressed.

The emergency plan should be coordinated with the nearest local, state, or federal emergency response organization. The plan may use the local or state plan to avoid duplication.

The plan should be rehearsed periodically and should be reviewed and updated as necessary to keep current with changing conditions or information.

- J. **Other Provisions** - MPM PAINTING LLC will institute control methods and work practices appropriate to specific site characteristics. These may include the following controls/practices:

**1. Engineering Controls & Work Practices**

In order to maintain employee exposures below permissible exposure limits, suitable and feasible engineering controls may include:

- use of pressurized cabs or control booths
- remotely operated equipment

Work Practices examples include:

- removing non-essential employees from hazardous work areas
- wetting down dusty operations
- placing employees upwind of hazards

## **2. Handling and Labeling Drums and Containers**

Drums and containers must be properly inspected and labeled. Damaged drums must properly be emptied and discarded. Employees should be provided with salvage drums or containers, absorbent material, and suitable emergency equipment to deal with spills or leaks.

Employees must be informed of appropriate hazard warnings of labeled drums, dangers of handling unlabeled drums and removal of contaminated soils, etc.

Movement of drums should be minimized and controls be implemented to minimize hazards associated with transferring hazardous substances into drums or containers. An approved EPA ground penetrating device must be used to find improperly discarded drums/containers.

Bulging or swelling drums or those with crystalline materials on the outside must not be moved until appropriate contaminant procedures are implemented. All drums or containers must be properly labeled and packaged before being shipped to a licensed disposal facility. Staging areas should be minimized and equipped with adequate egress/access.

## **3. Sanitation of Temporary Work places**

Each worksite should have a supply of clearly labeled portable water with a tight fitting top and provided with a tap. Disposable cups and waste receptacles should also be provided.

Any water outlets not suitable for drinking should be labeled as unsafe.

## **4. Recordkeeping**

Exposure records (e.g. air monitoring data) should be maintained 30 years and medical records should be maintained for the duration of employment, plus 30 years. Records of employees who have worked less than one year need not be returned, but these records must be provided to the employee upon termination. First aid records of one time treatment do not have to be returned.

Employees must be informed about the existence, location and availability of these records.

Medical records must include the following minimum information:

- employee name and social security number
- physician's written opinions
- employee's medical complaints related to exposure
- information provided to the treating physician

# OCCUPATIONAL HEALTH

## SECTION 26: HAZARD COMMUNICATION PROGRAM

### I. SCOPE

Procedures provided to employees to assure exposure to hazardous chemicals and materials are eliminated or held to a minimum.

### II. GENERAL

Information necessary for the safe use, handling and storage of hazardous chemicals and materials will be made available to employees, and includes guidelines on identification of chemical hazards and the preparation and proper use of container labels, placards and other types of warnings. This program may also be referred to as the "Right to Know" law.

### III. REQUIREMENTS

#### A. Chemical Inventory

1. MPM PAINTING LLC will maintain an inventory of all known chemicals we use on our projects. A chemical inventory list shall be available from project management.
2. Hazardous chemicals brought onto the project by MPM PAINTING LLC shall be included on the same chemical inventory list.
3. Any subcontractor working on our site will maintain their own chemical inventory.

#### B. Container Labeling

1. Chemicals shall be stored in their original, or approved smaller containers with proper labeling attached.
2. Employees may dispense small quantities of chemicals into other than the original containers when intended for immediate use. All unused chemical left after work is completed must be returned to the original storage container.
3. No unmarked containers of any size are to be on the project.
4. MPM PAINTING LLC shall rely on manufacturer applied labels whenever possible, and shall ensure labels are maintained, complete with any appropriate hazard warning.
5. Any missing or damaged labeling should be replaced with labels conveying appropriate hazard warnings and protection measures.

### **C. Material Safety Data Sheets (MSDS)**

1. Employees working with hazardous chemicals may request a copy of the material safety data sheet (MSDS). Requests for MSDS should be made to the project management.
2. MSDS shall be available on the project to provide immediate reference to chemical safety information.

### **D. Employee Training**

Employees shall be trained to work safely with hazardous chemicals during their safety orientation

and annually thereafter. Employee training shall include:

1. Methods used to detect a release of a hazardous chemical(s) in the work place.
2. Physical and health hazards associated with chemicals being used.
3. Protective measures to be taken.
4. Safe work practices, emergency responses and the use of personal protective equipment.
5. Information on hazard communication standard including:
  - a. Labeling and warning systems.
  - b. An explanation of Material Safety Data Sheets.

### **E. Personal Protective Equipment (PPE)**

The required PPE is available on all projects. An employee working with hazardous chemicals without the provided PPE is subject to disciplinary actions.

### **F. Emergency Response**

1. Any incident of exposure or spill of a hazardous chemical/substance must be reported to project management at once.
2. Project management shall be responsible for insuring that proper emergency response actions are taken in leak/spill situations.

### **G. Hazards of Non-Routine Tasks**

1. Project management shall inform employees of any special tasks that may involve possible exposure to hazardous chemicals during work assignment.
2. Review of safe work procedures and use of required PPE shall be conducted prior to the start of such tasks. Where necessary, areas shall be posted to indicate the nature of the hazard involved.

## H. Informing Other Employers

1. Employers are required to adhere to the provisions of Hazard Communication Standard.
2. Information on hazardous chemicals known to be present shall be exchanged with other employers in the same area of the jobsite. Employers shall be responsible for providing necessary information to their employees.
3. All on site employers shall have access to a copy of MPM PAINTING LLC hazard communication program.

## I. Posting

Information shall be posted on the project bulletin board as required under the Hazard Communication Standard as follows:

1. Inventory List of Chemicals (see Section 1 IA).
2. Copy of this section.

## IV. REFERENCES

29 CFR 1926.59

## **SECTION 27: BLOODBORNE PATHOGENS**

### **I. SCOPE**

The required procedures to reduce the exposure to recognized health and environmental hazards.

### **II. GENERAL**

These guidelines are to provide maximum protection for all employees against known health hazards and to establish procedures for a minimum environmental impact on all projects.

### **III. REQUIREMENTS**

#### **A. Bloodborne Pathogens - Exposure Control Plan**

It is recognized that there is a potential for occupational exposure to employees who are required to render first aid and/or CPR at a project and who may come in contact with bloodborne pathogens. This plan outlines the required procedures to reduce the exposure to infection with bloodborne pathogens:

1. Bloodborne Pathogens are defined as pathogenic microorganisms that are present in human blood or body fluids and cause disease in persons who are exposed to blood or body fluids containing these pathogens. The two most recognized pathogens are the Hepatitis-B Virus (HBV) and the Human Immunodeficiency Virus (HIV) which results in the disease commonly known as AIDS.
2. "Universal Precautions" is an approach to infection control. Using "Universal Precautions" all human blood and certain human body fluids are treated as if they contain HIV, HBV, and other bloodborne pathogens.
3. All MPM PAINTING LLC employees that may reasonably anticipate contact with blood or other potentially infectious materials with their skin, eye, mucous membrane, or through parenteral contact shall adhere to this exposure control plan. (Mucous membranes are the internal lining of the nose and parental contact is contact through openings in the skin such as needle sticks, human bites, cuts and abrasions).
4. In circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.
5. When there is occupational exposure, employees will be provided and shall use personal protective equipment such as gloves, goggles, face shields, one way air valves, aprons or other appropriate equipment.
6. Personal protective equipment shall be replaced as soon as possible when contaminated.

7. All personal protective equipment and contaminated material shall be removed immediately upon leaving the work area and placed in a designated container for disposal.
8. Containers used for contaminated items shall be marked "Bio-Hazard".
9. Training:
  - a. All employees that are identified as having occupational exposure will participate in a training program.
  - b. Employees will be trained at the time of initial assignment to tasks where occupational exposure may occur and at least annually thereafter.
  - c. Additional training may occur when changes such as modification of tasks or procedures or when new tasks or procedures may affect employees exposure.
  - d. At a minimum the training for employees with occupation exposure will include:
    - 1) The location of an accessible copy of OSHA's Bloodborne Pathogen Standard 1910.1030.
    - 2) A general explanation of the epidemiology and symptoms of bloodborne disease.
    - 3) An explanation of the modes of transmission of bloodborne disease.
    - 4) An explanation of this exposure plan and where a copy will be kept.
    - 5) An explanation of methods employees may use to recognize tasks that may involve occupational exposure.
    - 6) An explanation of the methods and their limitations that will prevent or reduce occupational exposure.
    - 7) Information on the selection, limitations, locations, decontamination, and proper disposal of contaminated personal protective equipment and materials.
    - 8) Information on Hepatitis-B Vaccine, including it's effectiveness, safety, method of administration, benefits of vaccination, and that vaccine will be administered without cost to the employee.
    - 9) Information on proper procedures in the event of exposure to blood or body fluids, and post exposure follow-up.

#### **IV. REFERENCES**

**Bloodborne Pathogens**  
OSHA  
29 CFR Part 1910.20  
29 CFR Part 1910.1030

## **SECTION 28: NOISE/HEARING CONSERVATION**



## **I. SCOPE**

Employees must be protected from excessive noise and possible hearing loss.

## **II. GENERAL**

Exposure to high noise levels, even for a short time, can result in hearing loss and create physical and psychological stress. Although high noise levels are common to the construction industry, certain control measures should be used to minimize any harmful effects.

## **III. REQUIREMENTS**

### **A. Noise Level Determination**

1. Noise level monitoring or measuring should be conducted on an as needed basis. Meters should be properly calibrated and used by a trained person.
2. Whenever normal conversation is difficult, noise levels are excessive and certain control measures should be implemented.
3. If employees are required to be in high noise levels (100 to 200 decibels) for long periods of time (over 4 hours or shorter periods on a regular basis) the MPM PAINTING LLC corporate safety director shall be contacted to determine the proper measures to be taken.
4. If noise levels will exceed 120 decibels a formal hearing conservation program will be developed to provide employee protection.

### **B. Engineering Controls**

Noise levels can be reduced by some of the following methods:

1. Placing noisy machinery away from the majority of workers.
2. Placing machinery on rubber mountings
3. Use of sound absorption materials on floors, walls and ceilings.
4. Place employees in a separate area (e.g. crane cab)
5. Build a barrier near the employees

### **C. Administrative Controls**

Where noise levels cannot be sufficiently reduced, administrative controls should be utilized. These will include:

1. Scheduling noisy work for off shift hours.
2. Limiting the amount of time an employee can be exposed to excessive noise.
3. Training employees to recognize high noise hazards and problems associated with huge exposures.
4. Establishing a job rotation schedule for employees.
5. Post signs in high noise areas.

**D. Personal Protective Equipment**

The use of hearing protection is most commonly seen as the use of earplugs or earmuffs.

1. Foam earplugs or similar device may be inserted into the ear. 2 types should be available and employees must be trained in the proper use and limitation of these plugs.
2. Ear muffs/caps may be used to provide hearing protection. Usually, these are used in conjunction with earplugs.

- E. Any full time MPM PAINTING LLC employee exposed to noise levels in excess of 85 dba (TWA) over a six month period will be put into a hearing conservation program to include baseline audiometric exam, annual audiometric exams and training.**

## **SECTION 29: RADIATION HAZARDS**

### **I. SCOPE**

To provide the information necessary to protect against harmful radiation.

### **II. GENERAL**

There are many sources of radiation on a jobsite including welding flash, sunlight, x-rays and lasers. Ionizing radiation is more dangerous and as associated with x-rays and power plants. Non-ionizing radiation is more common but generally not as dangerous.

Employees should be aware of any radiation hazards and take appropriate measures to protect themselves.

### **III. REQUIREMENTS**

#### **A. Ionizing Radiation**

1. MPM PAINTING LLC employees should not be operating any equipment using ionizing radiation.
2. Any operations using ionizing radiation should be performed by a licensed person.
3. Any radiation areas on the jobsite must be conspicuously posted or barricaded.
4. MPM PAINTING LLC employees should avoid areas where ionizing radiation is being used except when necessary.

#### **B. Non-Ionizing Radiation**

The primary services of non-ionizing radiation are lasers and microwaves. The following controls should be practiced.

1. Only qualified and trained employees shall be assigned to install, adjust, and operate laser equipment and shall have proof of qualification in their possession when operating the equipment.
2. Employees shall wear anti-laser eye protection when potentially exposed to direct or reflected laser light greater than 5 milliwatts.
3. Areas where laser light is being used shall be posted with standard laser warning signs.
4. Beam shutters or caps shall be utilized or the laser turned off, when the laser transmission is not utilized. An unauthorized laser shall not be left on.
5. Laser beams will not be directed at employees.
6. Laser equipment shall bear a label to indicate maximum output.
7. Laser units should be set up above the heads of employees when possible.
8. In rain, snow, dusty or foggy conditions, the laser operation shall cease or employees shall be kept out of range of the area of source and target until conditions change.

## **SECTION 30: ASBESTOS**

## **I. SCOPE**

This section discusses the different controls and practices used to limit the serious health exposures associated with asbestos.

## **II. GENERAL**

Most new construction material does not contain asbestos and there are few occasions when MPM PAINTING LLC employees will be exposed to asbestos. However, on those occasions where asbestos related activities would occur the project management must take the appropriate measures to protect workers at the jobsite.

It is not the intent of MPM PAINTING LLC to perform asbestos abatement activities but it may be expected to encounter asbestos during repair or maintenance of existing facilities or custodial activities involving asbestos containing materials.

## **III. REQUIREMENTS**

### **A. Exposure Assessment**

1. A competent person must assess the potential for asbestos exposure before a job begins. If there is an exposure potential, air monitoring must be performed.
2. Negative exposure assessments must be documented by the competent person.
3. Positive exposure assessments require that work not proceed until provisions can be made to abate the source of asbestos or work scheduled to avoid asbestos containing material.

### **B. Medical Surveillance**

1. Any employee working a combined total of 30 days per year will enter a medical surveillance program complying with provisions of 29 CFR 1926.1101

### **C. Recordkeeping**

1. Monitoring data should be maintained for 30 years and medical surveillance data should be kept for the duration of employment plus 30 years.

### **D. Training**

1. Employees exposed to asbestos must be trained prior to initial exposure and annually thereafter.

### **E. Signs**

1. Signs must be posted in regulated areas.
2. MPM PAINTING LLC employees are not to enter posted areas unless authorized to enter and then only with the proper training and PPE.

## **F. Methods of Compliance**

1. Work practices and engineering controls outlined in 29 CFR 1926 will be referenced when any asbestos reported workers performed
2. Respiratory protection will be required in most asbestos related work. Any employees working with asbestos related work should be qualified to wear a respirator.
3. Protective clothing such as coveralls, head coverings, gloves and foot coverings will be necessary for:
  - Employees exposed in excess of the P.E.L. or S.T.E.L.
  - Work without a negative exposure assessment.
4. Hygiene facilities
  - Decontamination facilities must be established according to the type of asbestos related work being done.
  - No smoking will be allowed in a work area where any asbestos related work is being done.
5. Housekeeping

All asbestos waste, containers, and contaminated clothing to be disposed must be collected and disposed of in sealed, labeled and impermeable containers. HEPA filtered vacuums or wet sweeping methods must be used to clean up the work area.

# SECTION 31: LEAD AND TOXIC METALS

## I. SCOPE

This program is established to outline and implement practices to protect workers exposed to lead and other heavy (toxic) metals and control releases into the environment.

## II. GENERAL

These procedures apply to all projects involving lead and other heavy metals such as chromium and arsenic. These procedures will also apply to any subcontractors working under MPM PAINTING LLC.

## III. REQUIREMENTS

### A. Competent Person

A competent person familiar with the OSHA and EPA regulations pertaining to heavy metals shall be designated for any projects where lead or heavy metals are encountered.

### B. Worker Protection Plan

1. **Monitoring** - The exposure level for the various tasks being performed should be determined by monitoring airborne exposures and comparing results to published legal limits. (Action levels and permissible exposure limits).

Tasks may include abrasive blasting, sanding, torch cutting, rivet basting, spray painting, welding, clean-up, water jetting, etc.

Employees must be notified of monitoring results.

2. **Personal Hygiene Practices** - Whenever there is potential exposure to toxic heavy metals, MPM PAINTING LLC will provide appropriate handwashing and hygiene facilities in the vicinity of the exposure area. Exposed employees must wash before eating, drinking, or smoking and at the end of each shift.

3. **OSHA Action Levels** - If air monitoring indicates the Action Level for any heavy metal contaminant is met or exceeded, the following additional controls will be implemented:
- Employees will be trained on hazards and controls for the contaminant.
  - Additional exposure monitoring will be scheduled for exposed employees at least every six months.
  - Initiate a Medical Surveillance Program for those employees to be performing the exposing tasks. Typically, this is a blood level monitoring program.
  - Post appropriate warning signs and mark the work areas as regulated areas or zones. (This exceeds existing OSHA requirements.)  
*{Action levels for the various toxic metals vary and are subject to change.}*
4. **Permissible Exposure Limits** - If monitoring indicates the Permissible Exposure Limit (P.E.L.) for any potential contaminant is met or exceeded, the following measures will be implemented (in addition to those required for the Action Level)
- Engineer Controls and Work Practices - controls will be implemented
  - No eating, smoking, drinking - or tobacco chewing will be permitted in the affected work area.
  - Housekeeping procedures - must be established, communicated and practiced. These shall include:
    - Prohibiting removal of contaminated dust from clothing by shaking, blowing, or any method which disperses the contaminant into the air.
    - Providing a HEPA equipped vacuum cleaner for cleaning heavy dust accumulations (including designated change areas.)
    - Using "wet clean" methods in change areas and eating areas where HEPA cleaners may not be effective or available.
    - Compressed air clean-up is strictly prohibited unless in a work area where used in conjunction with a ventilation system.
    - Clean change areas - Shall be provided and shall include storage facilities for street clothing and a separate area for the removal and storage of lead contaminated clothing and equipment. The area shall be arranged and used so as to eliminate contamination of street clothing. Ventilation shall be arranged to maintain airborne contamination below the appropriate Action Level.
    - Showers - Shall be provided when feasible and shall be equipped with hot and cold running water. Employees shall shower at the end of their shift.
    - Protective clothing - Shall be worn in the contaminated areas. Clean work clothing shall be provided at least weekly.
    - Reusable clothing - Is collected at the end of each shift in closed bags or containers. Contaminated clothing must be cleaned according to applicable laws pertaining to safety and environmental issues. If clothing is to be cleaned offsite, it must be labeled as follows:  
***CAUTION: Clothing Contaminated with (Lead). Do not remove dust by blowing or shaking. Dispose of lead contaminated wash water in accordance with applicable local, state or federal regulations.***

- Respiratory Protection - Respirators must be worn by workers exposed above the P.E.L. The type of respirator is dependent upon the concentration of contaminant and workplace characteristics. Employees must qualify for respirator use under Respiratory Program Requirements.
- Offsite Contamination - No heavy metal contaminated clothing, shoes, hard hats, gloves, etc. may go home with the employee at the end of the work day. No contaminated items may leave the site. HEPA vacuums or wet methods may be used to clean any personal items leaving the site.
- Medical Surveillance Program - Initial medical surveillance consisting of blood sampling and analysis for the appropriate contaminant. After initial monitoring, any employee exposed one day above the Action Level or more than 30 days per year must be monitored every six month.
- Additional Air Monitoring - must be scheduled at least every three months until the exposure is established below the P.E.L. Blood test results must be communicated to workers within five days of receiving results. Any employee exceeding established limits must be removed from the exposing job and may be assigned other duties where there is no exposure to the contaminant above the Action Level.

**5. Training** - Any workers exposed at or above the contaminant Action Level on any single day must be provided information and training on the hazards and measures for controlling the hazards. The training must be provided before their work begins and must be repeated annually.

The content of the training should address:

- An overview of the appropriate OSHA (or equivalent) standard and the health effects of the contaminant
- Specific hazardous tasks
- Respiratory Protection Program elements
- Medical Surveillance/Medical Removal
- Engineering and Work Practice Controls
- Written Compliance Programs
- Use of chelating agents
- Employee's right of access to records

Training in site specific issues including operations above Action Levels; operations above Permissible Exposure Limits; Decontamination Procedures, PPE, etc.

Training records of all employees are to be maintained on file for the length of employment, plus 30 years.

#### **IV. REFERENCES**

29 CFR 1926.62  
 29 CFR 1926.1118  
 29 CFR 1926.1127  
 29 CFR 1926.103

## **SECTION 32: AIRBORNE CONTAMINANTS**



## **I. SCOPE**

These measures are necessary to assess and control various gases, fumes, vapors, dusts or mists in the work environment.

## **II. GENERAL**

Special consideration shall be given to those operations where air contaminants may exist or be generated by construction activities. Air contaminants may be inhaled, ingested, or absorbed by workers causing irritation or health effects.

Proper controls must be taken to minimize worker exposure above the OSHA published Permissible Exposure Levels.

## **III. REQUIREMENTS**

### **A. Introduction:**

Whenever an airborne contaminant exists on a jobsite, it is important to quantify the amount of contamination through air monitoring so that:

- areas of protection can be delineated
- health effects can be assessed
- proper personal protective equipment can be selected
- the need for specific medical monitoring can be determined

### **B. Initial Monitoring:**

Air testing shall be conducted immediately after the start of any operation which could result in airborne contamination. Any employees working in the area being monitored should be protected as though the OSHA Permissible Exposure Level (P.E.L.) were exceeded. Only after it is determined the P.E.L. is not exceeded or proper engineering or work practice controls are established to reduce contamination below the P.E.L., can workers work without the necessary personal protective equipment.

### **C. Testing Criteria:**

Air monitoring should be done by trained personnel using appropriate equipment calibrated and maintained according to the manufacturer's requirements. If necessary, an outside consultant should perform this task and evaluate the results.

**D. Changes in the Environment:**

Supervisors, superintendents and project managers must also recognize changing conditions and may require additional monitoring. Closing in a workspace may eliminate ventilation and increase the concentration of the contaminant, or an excavation or trench may contain toxic vapors which are heavier than air. As another example, a forklift, generator, or heater may give off carbon monoxide.

**E. Control Measures:**

Control measures may include establishing a ventilation system, substituting a different material, providing dust collection, distancing workers from the source of contamination, performing work after hours or providing personal protective equipment.

Each situation should be evaluated independently.

Changes in the environment may dictate a change in control measures.

**F. Permissible Exposure Limits:**

Permissible Exposure Limits are published in 29 CFR 1926.55.

## **IV. REFERENCES**

29 CFR 1926.55  
29 CFR 1926.28  
29CFR 1926.103

# SECTION 33: RESPIRATORS

## I. SCOPE

To identify the proper measures to be utilized when selecting, using and maintaining respiratory protective equipment so that worker health exposure, toxic or otherwise dangerous environments as properly controlled.

## II. GENERAL

Respirators are commonly used in situations where a worker may be temporarily exposed to some airborne hazard (dust, mist, vapor, gas or fume) or low oxygen condition. In many cases, engineering or work practice controls are so effective that they eliminate the need for respirators.

Whenever respirators are necessary it is important to know the type of respirator required, the ability of the worker to wear a respirator, the employee has been trained, and the respirator maintained in good condition.

## III. REQUIREMENTS

The respirator must be selected according to the hazards to which the worker will be exposed. This may require air monitoring be performed to evaluate the type and level of containment. If the degree of hazard is not known, the employee should be provided with a respirator appropriate to the known hazard.

Any air monitoring should be done by a competent person familiar with the test equipment and capable of identifying potential airborne hazards.

### 1. Any employee required to wear a respirator shall:

- a. Be approved to use a respirator by a licensed health care provider.
- b. Be trained in the proper selection, use and maintenance of a respirator.

Training shall cover:

- Nature of the respiratory hazard and the potential results of improper use.
- Engineering and administrative controls in use.
- Reasons for selecting a particular respirator and its limitations.
- How to don and test a respirator
- Proper inspection, maintenance and storage of a respirator
- Emergency procedures.

A worker's fitness to wear a respirator is determined by several factors, which may be subject to change.

Conditions which may disqualify an employee from wearing a respirator, even temporarily include:

- a beard or excessive facial hair (because a protective seal is not possible)
- A facial abnormality prevents a good seal (swelling from dental work, missing dentures, etc.)
- Other equipment interferes with the ability to use a respirator (glasses, etc.)

## **2. Care and Storage**

- a. Respirators shall be inspected before and after each use. Emergency and self-contained breathing apparatus respirators should be checked at least monthly. Records of inspections should be maintained.
- b. Routinely used respirators should be cleaned and disinfected as frequently as necessary.
- c. Repairs should be made only by experienced persons using manufacturers' recommended parts.
- d. Respirators should be stored where they will not be exposed to environmental conditions, which may affect performance.