



## **Health and Safety Manual**

Revised: December 2017

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## **SAFETY POLICY**

FMG considers no phase of operations or administration of greater importance than the personal safety and health of our employees. The prevention of work related injury and illness is of such significance that it shall be given precedence over operating productivity. It shall be the policy of FMG to conduct all operations safely and thereby prevent injuries to persons and damage to property.

A safe workplace does not just happen; it is the result of planning, training and the proper attitude of all employees. The success of this program lies in the hands of each employee and subcontractor. From the start of work to the project completion, safety must be an integral part of every workday.

The objective of this policy is to establish that FMG, and on all of its construction sites, that all people and property are our most important asset and their safety will receive utmost support and participation from management.

To achieve this goal it shall be the policy of this company:

1. To comply fully with applicable state, federal and owner safety rules and regulations.
2. To create and implement a site-specific safety plan to incorporate our customer's rules and regulations.
3. To require all employees and subcontractors to comply with all safety rules and policies.
4. To conduct safety meetings and to provide education and training on safety and health matters.
5. To conduct daily safety inspections to identify and eliminate unsafe working conditions.
6. To thoroughly investigate every accident, to determine its cause and correct the situation as to avoid recurrence.
7. To penalize unsafe employees for continuing unsafe work habits.

This policy is maintained by the FMG Safety Department. Any questions, comments or suggestions should be directed to the following:

Arron Innes, Safety Coordinator  
3515 S. Old U.S. 23  
Brighton, MI 48114  
810-227-3650

## **SAFETY ORIENTATION & TRAINING**

1. All new employees will have a safety orientation. The orientation will consist of company rules and regulations and any special requirements for their job. They will be provided with all appropriate personal protective equipment. Employees reporting to a specific project will receive a project specific orientation.
2. TOOLBOX SAFETY MEETINGS - these meetings are designed to establish two-way communication lines between management and field personnel. Foremen or supervisors will conduct meetings on a weekly basis. The topics of these meetings will either be job specific or taken from "Weekly Safety Meeting" outlines, which will be distributed to all foremen. These meetings will be held at the beginning of the week, preferably first thing Monday morning. The meetings will be 5 to 10 minutes in length. After the meeting, make sure everyone signs the form and it is turned in with the weeks' time sheets.
3. M.U.S.T. Safety Modules will be provided to every employee in the State of Michigan
4. Additional training will be provided to meet all Federal, State, Local and Customer requirements.
5. Specialty job and trade specific training will be identified during the project planning phase. Training will be provided onsite to associated employees.

## **SUBSTANCE ABUSE AND TESTING**

FMG is dedicated to providing a Drug Free and Alcohol Free workplace. Employees will be drug tested under a 10 panel program at the initial hire date and annually thereafter. In addition, the following tests will also be used:

1. Post-Accident Tests
2. Reasonable Suspicion

If found to have a positive drug test for any unacceptable substance as verified by a Medical Review Officer (MRO), the following minimum penalties will be instituted:

1. 1st offence: removal from service for no less than 30 days.
2. 2nd offence: removal from service for no less than 90 days.
3. 3rd offence: removal from service for no less than 1 year.

Note: The penalties listed above are minimum guidelines and are in no way a guarantee of employment. Employees will be interviewed before returning to duty to make sure that they took necessary actions to remain drug free. In addition, the current workload levels will be looked at to identify the needs. Some employees will not be permitted to return to duty.

Some projects will have site specific drug testing procedures dictated by the project owner. FMG employees are expected to be in compliance with these owner programs while working on the project.

All employees are responsible for using good judgment and remaining drug free.

## INCIDENT INVESTIGATION & REPORTING

First and foremost, all employees are required to report incidents to their supervisor immediately after they occur. The supervisor will be sure that the injured employee is sent to an approved medical facility. The supervisor will then start the investigation procedures and contact FMG's Safety Department.

Incident investigation is conducted to determine the cause or causes of all incidents, so that appropriate actions can be taken to prevent reoccurrence and to protect our interests in case of litigation. All incidents must be investigated regardless of their severity, since severity is largely a matter of chance. Accidents will be investigated immediately after they occur, while facts are still clear in people's minds, and interest is high in instituting corrective measures. Incidents are rarely caused by only one factor, but rather by the coincidence of several conditions or events. Be sure to answer as many of the following questions as possible:

Training: Superintendent/Foreman are responsible for verifying that each employee has the necessary training required to complete an incident investigation and have the necessary equipment to complete the report (pen, paper, camera & marking flags). The forms found in the Section C-2 at the end of this manual will assist the employee in accurately investigating incidents. They should be completed entirely and forwarded to the Safety Department in a timely manner.

Reporting: Required incidents must be reported to OSHA within 8hrs and to the client facility within 24 hours.

### WHO

1. Who was injured; who is his employer?
2. Who saw the accident?
3. Who was working with the injured person?
4. Who had instructed/assigned the injured person?
5. Who else was involved?
6. Who else can help prevent recurrences?

### WHAT

7. What was the accident?
8. What was the injury?
9. What was the injured person doing?
10. What had they been told to do?
11. What tools were they using?
12. What machine was involved?
13. What operation were they performing?
14. What instructions had they been given?
15. What specific precautions were necessary?
16. What specific precautions were given?
17. What protective equipment were they using?
18. What protective equipment should have been used?
19. What had other persons done that contributed to the accident?
20. What problem or question did they encounter?
21. What did they or witnesses do when the accident occurred?
22. What extenuating circumstances were involved?
23. What did they or witnesses see?
24. What will be done to prevent reoccurrence?
25. What safety rules were violated, if any?
26. What new rules are needed, if any?
27. What were the weather conditions?

## **WHEN**

28. When did the accident occur?
29. When did the injured person start on the job?
30. When were they assigned to the particular task involved in the accident?
31. When were the hazards pointed out to them?
32. When had their supervisor last checked on job progress?

## **WHY**

33. Why was the injured person where they were when the accident occurred?
34. Why did they do what they did?

## **WHAT TO DO IN CASE OF A SEVERE ACCIDENT**

1. Don't panic; stay calm and take charge of the situation.
2. Get the injured medical treatment immediately. Call either 911 or other designated emergency number. Do not move the employee unless additional injury may occur as a result of their location.
3. Secure the accident scene and any equipment involved to prevent a repeat occurrence. Unauthorized people should not be allowed in the area.
4. Notify the designated safety coordinator for the project.
5. Notify Arron Innes (Safety Coordinator) or Frank Gobright 810-227-3650. (Owner)
6. A representative of FMG should remain with the injured at all times.
7. Do not allow any employee to talk to the media about the accident; only a member of senior management should make a statement.
8. Start investigation procedures; interview witnesses, take photos and make a written report.

## **Corrective Actions**

FMG's safety director and an officer of the company will review the investigation report and determine the best corrective action to take for each incident. Once the corrective action is determined a company wide report will be sent out to all employees and a safety meeting will be held with all employees to go over the incident and the corrective actions that will be required going forward.

## MEDICAL SERVICES & FIRST AID

In the unfortunate event that an accident does occur, prompt action must be taken. Depending on the seriousness of the injury, different levels of treatment may be required. The following are guidelines to assist in these procedures.

1. First Aid will be administered to every injured employee regardless of severity. FMG supervisors are required to maintain a First Aid certification that is equivalent to the American Heart.
2. If the injury is relatively minor, however requires treatment beyond First Aid, then the employee will be escorted to the nearest designated occupational clinic. Refer to the project specific safety information for the location of the clinic.
3. If the injury is severe, then the designated emergency medical service must be contacted. In most cases this will be accomplished by calling 911. Refer to the project specific safety information for the listings of emergency numbers, this will be completed by the site foreman prior to the start of any project. The project supervisor or foreman should post these numbers in conspicuous locations.
4. Every project is required to have First Aid supplies readily available to use in the event that an injury does occur. First Aid kits should be weather tight with the contents stored in individual packages. Below are the minimum required items and quantities that should be contained in each First Aid kit/cabinet:

1	Absorbent Compress 4" x 8" min
16	Adhesive Bandages 1" x 3"
5 yd	Adhesive Tape
10	Antiseptic Applications, 0.5g ea.
6	Burn Treatment Applications, 0.5g ea.
4	Sterile Pads, 3" x 3" min.
2 pair	Medical Exam Gloves
1	Triangular Bandage, 40" x 40" x 56" min.
1	CPR Mouth Barrier Device
1	Bottle of sterile eye wash
1	Biohazard Bag

5. First Aid kits/cabinets will be checked for compliance to the above list by a member of the Yard Supply Department prior to being sent out to the project. In addition, the project supervisor or foreman will inspect the kits/cabinets on a weekly basis.
6. Some operations such as working with harsh chemicals or flying particles may require a method for flushing the eyes and body in the event of exposure. Refer to the project job hazard analysis or chemical SDS for specific requirements. Suitable facilities or equipment for flushing out eyes will be readily available at the work area.



## **RETURN TO WORK**

Developing and following proper safety procedures for all operations is a critical part of any accident prevention program. A program that is carefully managed will help promote an efficient and productive work force.

In the event that an accident does occur, this initiative has been instituted to help an employee return to gainful employment for our company as soon as possible. We will work closely with the treating physician to determine a plan for modified duty or job transfer. Jobs will be identified that are suitable for a modified work position and a Return to Work Coordinator will be chosen to manage the development and implementation of this program.

Our goals in establishing this program are to speed rehabilitation of injured employees and restore them to full earning capacity.

For specific details, please view your project's site specific Return to Work Program.

## **COMPETENT PERSON**

A competent person is one who, because of training and experience:

1. Is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary or hazardous to the safety and health of the employee.
2. Has the authorization to take prompt corrective measures to eliminate safety hazards.

A designated competent person is responsible for complying with the required testing, repairs, machinery/equipment maintenance, and the maintenance of an incident prevention process which includes the following equipment and activities:

1. Hoisting and lifting equipment
2. Excavation
3. Scaffolds
4. Confined space entry
5. Electrical assured grounding
6. Ladders
7. Fire protection systems
8. Fall protection systems/controlled access zones

Each employee engaged in these operations will be able to identify who their competent person is.

## SAFE PROJECT PLANNING AND INSPECTION

Planning health and safety into every phase of the project is instrumental in achieving an injury free workplace. Company management and field supervision must plan safety into each work task in order to avoid preventable occupational injuries or illnesses. The following are the required safe project planning procedures.

1. Job Hazard Analysis (JHA) will be created for all high hazard projects prior to work starting. The JHA will address the hazards of all work operations on the project. In addition, subcontractors must complete a JHA for their scope of work and submit them to the FMG project team for approval. The JHA form is located in Section C-1 of this document. Employees are trained to identify the potential hazards on their job site and create a JHA that can mitigate the risk to themselves and others around them.

Listed Below from Highest to lowest severity are Hazards associated with concrete cutting:

- Suffocation or poisoning from hazardous fumes or gases emitted by petrol motors and other equipment or damaged gas supply services.
- Electrocution
- Hazardous dusts from dry cutting and drilling, such as silica dust, contributing to lung disease
- Falling concrete and masonry
- Inadequate scaffolding
- Out-of-control or free-running cutting machines
- Flying saw fragments
- Vibration damage to circulation, nerves and joints
- Saw kick-back, push-back or pull-in
- Slips, trips and falls
- Noise

2. Pre-Task Safety Analysis (PTSA) will be completed each day prior to the shift starting. The PTSA will address the hazards of all the tasks that are to be completed that shift. The project supervisor will share the PTSA with the crew at the beginning of the shift. The PTSA form is located in Section C-1 of this document.

Project safety inspections and audits are a valuable tool to make sure that the project is going according to the plans mentioned above. In addition, they are useful in identifying potential problems that the planning phase did not address. The following are the required project inspections that are to be completed.

Type:	Responsible Party:	Frequency:
General Inspection of Project	Project Superintendent	Daily
Equipment Inspections	Operator or Competent Person	Daily
Documented Safety Audit	Project Superintendent	Weekly
Detailed Safety Review Audit	Safety Department and Upper Management	Monthly
Project Specific Inspections	Various	Various

Documentation to assist in these inspections can be found in Section C-1 of this document. Completed inspection forms must be returned to the main office for filing in the project records.

## DISCIPLINARY PROCEDURES

The following is a guideline for the basic disciplinary procedures that will be utilized to address non-compliance with this document or any project specific procedures. It is important to know that any serious, life threatening violation can result in immediate discharge. Enforcing disciplinary procedures is the responsibility of the Safety Director Arron Innes and president Frank Gobright.

Disciplinary action will be enforced when an employee does not follow verbal or the written policies and guidelines outlined in the Health & Safety Policies of the FMG Health and Safety Manual.

It is the responsibility of the superintendents and foremen to do random site inspections to ensure FMG's policies are being followed by all employees and report their findings to the Safety Director daily.

**1st offense:** A documented verbal warning will be issued informing the employee of the violation and what must be done to correct it.

**2nd offense:** A formal written notice will be issued informing the employee of the violation and notifying that the next incident will result in discharge from the project. In addition the employee must be retrained in the topic of which the violation occurred. The training will be performed by the contractor for which the employee works.

**3rd offense:** A formal written notice will be issued informing the employee that he/she is no longer permitted to work on this project.

**Note:** Serious safety violations can result in disciplinary procedures up to and including immediate discharge from the project. These will be taken on a case-by-case basis and will be at the discretion of FMG Management.

- As a commitment to maintaining our safety goals it is the responsibility of the Vice President and the safety director to complete physical inspections to gauge the overall commitment to the companies safety goals

Some projects or locations will have a stricter policy. This document only serves as the minimum procedures that are to be utilized.

## RESPONSIBILITIES

### **Duties of the Superintendent/Foreman**

Preplanning: Superintendent/Foreman are responsible for conducting daily pre-task meetings with their crew. These meetings will be detailed on what operations are going to be completed for the day. The meetings will address the hazards associated with those work items and the actions that need to be taken to prevent injury due to those hazards. These meeting will be documented in the JHA & PTSA forms located in section C-1 of this document.

Training: Superintendent/Foreman are responsible for verifying that each employee has the necessary training required to perform the work they are given. In addition, they are required to complete a weekly job site meeting (toolbox talk) with their crew. Some projects may require a daily meeting. These meetings can be incorporated into the daily pre-task meetings or given at a different time. These meeting will be documented in the JHA & PTSA forms located in section C-1 of this document.

Monitoring: Superintendent/Foreman are responsible for the daily monitoring of the jobsite. They are required to tour the jobsite on a daily basis and identify unsafe acts and conditions. They are to make sure that equipment is inspected, Personal Protective Equipment is being worn and used properly and all other safety procedures are being followed. Superintendent/Foreman need to monitor employee behaviors and identify employees that are or could be problems.

Enforcement: Superintendent/Foreman are responsible for the enforcement of safety procedures. If a Superintendent/Foreman identifies an unsafe act or condition, then they have the responsibility for correcting it. If an employee commits an unsafe act or creates an unsafe condition knowingly, then it is up to the Superintendent/Foreman to report the offense to the Safety Director.

Investigation: Superintendent/Foreman are responsible for investigating issues on the project. If a problem occurs on the project the Superintendent/Foreman must fully investigate the problem and identify the root cause. Once the root cause is identified the Superintendent/Foreman must initiate corrective actions with the Company Safety Director & Vice President.

Reporting: Superintendent/Foreman are responsible for documenting and reporting on the daily activities of the job. Pre-task meetings, tool box talks, inspection forms and investigation forms are all documents that are required to be used. Once completed, these documents must be put into the job file for future reference.

### **Duties of the Project Manager/Engineer**

Preplanning: Project Manager/Engineer are responsible for the initial project planning. Project Manager/Engineer are required to initiate the Job Hazard Analysis process with the project Superintendent/Foreman and the Safety Department.

Communication: Project Manager/Engineer will act as the primary point of contact for communication for the project. Project Manager/Engineer will coordinate with subcontractors and communicate the safety requirements of the project to them.

Support: Project Manager/Engineer will assist and support the Superintendent/Foreman on the responsibilities listed above.

### **Duties of the Employee**

Comply: Employee will comply with all safety procedures applicable to their own conduct.

Report: Employee will report all near misses, accidents, incidents and unsafe conditions to the Superintendent/Foreman immediately regardless of severity.

### **Duties of Management**

Support: Management of FMG will support all of the above mentioned groups in their efforts to maintain an injury free workplace. Management will provide all resources necessary to achieve this.

Review: Management will review the entire Health and Safety Program at least annually. Management will identify any room for improvement and work to make the program best-in-class.

## ASBESTOS AWARENESS

Asbestos is a flexible, fibrous material that is non-combustible, non-conductive, and resistant to chemicals and is extremely lightweight. Due to these qualities, asbestos was used in many building materials such as insulation, tiling, fireproofing and even soundproofing. Unfortunately, asbestos poses a severe health hazard when exposed to humans. When inhaled, asbestos fibers accumulate in the lungs and can cause numerous severe diseases such as Asbestosis and Mesothelioma. Asbestosis is an irreversible lung disorder that inhibits the efficiency of the lungs to absorb Oxygen and can lead to heart failure. Mesothelioma is cancer of the inner chest tissue, and usually results in death.

FMG will provide the necessary training and PPE at no cost to the employee's.

### Asbestos

#### 1. Hazard Training and Communication:

- FMG will provide initial training prior to or at time of initial assignment. FMG will provide training that is understandable and ensure each employee can demonstrate knowledge of the health hazards associated with asbestos; location, manner of use, and release of asbestos in the workplace; engineering controls and work practice controls; purpose, proper selection, fitting, proper use and limitations of respirators and protective clothing; emergency procedures; measures employees can take to protect themselves from exposure; purpose and description of medical surveillance program; contents of the standard. FMG will make a copy readily available without cost to all affected employees. Training shall be documented.
- FMG will certify that the training has been conducted by preparing a record that includes
    - Identity of employee trained,
    - The signature of the person who conducted the training and
    - Date of the training.
    - Records shall be kept 1 year.
  - 2. If you come into contact or expect to come into contact with materials that you suspect may contain Asbestos, contact your supervisor immediately. In addition, the supervisor should contact the building owner and make them aware of the situation.
  - 3. If you must work near Asbestos containing materials, pay close attention not to disturb them. Control all chemicals and sources of impact and vibration. Employees engaged in this type of work must have an annual 2 hour Asbestos Awareness Class.
  - 4. Areas where the handling, clean up, storage and disposal of Asbestos Containing Materials (ACM) are being performed, necessary precautions must be taken. The area must be encapsulated. In addition, signs must be posted at every entrance. The signs must indicate the hazards and state that only authorized individuals are allowed in the area.
  - 5. People who enter the area for whatever reason are required to wear the necessary personal protective equipment. This equipment can include but is not limited to; a respirator, coveralls, work boots, gloves, and eye/face protection.
  - 6. Eating, drinking, smoking and applying cosmetics are strictly prohibited at or near Asbestos containing materials due to the enhanced risk of cancer by ingesting asbestos fibers.
  - 7. Asbestos containing materials should be stored in approved containers, labeled and disposed of in accordance with all applicable Federal, State, and Local requirements.

8. The air quality (safety) is to be determined from breathing zone air samples. The samples should be representative of the 8-hour TWA and 30-min. short-term exposure. Measurements are required for documentation. If the TWA or excursion limit is exceeded all work is stopped and additional control measures are implemented. These control measures can be engineering controls, work practice controls and the use of respiratory protection.
9. Engineering controls – At the time of assessment and throughout a project engineering controls and work procedures will be evaluated and adjusted to maintain exposure below the TWA. This can be accomplished by engineering controls such as exhaust systems for hand tools, wet methods, clean-up procedures & PPE.

### **Respiratory Protection.**

- Respirators will be used when engineering controls and work practices cannot reduce employee exposure, during work operations where engineering controls and work practices are not feasible, and emergencies. Respirators shall be provided in accordance with 1910.134.
- Where applicable, FMG will provide respirators at no cost to employees and ensure that they are used in compliance with the standard Powered air- purifying respirators shall be provided to employees who request them and where this respirator will provide adequate protection. FMG will ensure that employees use respirators in regulated areas and that respirators are properly fitted and used. Employees required to wear respirators must have medical exams prior to being assigned to an area where respiratory protection is required unless they have had a comparable exam within the preceding 12 months. Employees shall be allowed to leave a regulated area to readjust face pieces and to change filters or to wash their faces to avoid skin irritation.

### **Protective Work Clothing and Equipment.**

- PPE will be provided at no cost to the employee when there is a hazard from skin or eye contact. Gloves, aprons, coveralls, goggles, foot covers etc. Contaminated PPE will be removed at the end of the work shift.
- FMG will ensure that contaminated clothing and equipment are placed in closed containers in change rooms prior to cleaning, laundering, maintaining, or discarding. FMG will provide clean and dry personal protective clothing and equipment at least weekly, or more often, as necessary to maintain effectiveness. FMG will notify those who launder or clean these items of the potential hazards of asbestos exposure



## BLOOD BORNE PATHOGEN PREVENTION POLICY

### Scope and Application:

Blood borne pathogens are disease-causing organisms transmitted through contact with infected blood and other bodily fluids. Diseases such as the Human Immunodeficiency Virus (HIV) and Hepatitis B are among the most common forms of blood borne pathogens. Any exposure to an infected individual's body fluids may result in transmission of the blood borne pathogen, which could then lead to disease or even death.

FMG employees are not "reasonably anticipated" to come into contact with potentially infested bodily fluids, however in the unlikely event that exposure does occur, the following procedures will be used.

### Requirements:

1. See the attached exposure determination worksheet for a list of job classifications and their potential occupational exposure to blood borne pathogens. These determinations are made without regards to personal protective equipment.

<b>EXPOSURE DETERMINATION:</b>		
<b>Department:</b>	<b>Job Title:</b>	<b>Tasks/Procedures:</b>
Estimating	Estimator	
	Estimating Assistant	
Project Management	Project Manager	
	Project Engineer	
	Office Assistants	
Purchasing	Purchasing Manager	
Yard	Dispatch Coordinator	First Aid/CPR, Clean-up
	Yard Workers	Clean up after injury occurs
	Truck Drivers	
Safety	Safety Director	First Aid/CPR, Clean-up
	Safety Coordinator	First Aid/CPR, Clean-up
Field	General Superintendent	First Aid/CPR, Clean-up
	Foreman	First Aid/CPR, Clean-up
	Carpenters	
	Laborers	Clean up after injury occurs
	Operators	
	Cement Masons	

2. When dealing with blood or other bodily fluids, FMG employees are required to follow the Universal Precautions concept. According to this concept, all human blood and other human body fluids are treated as if known to be infectious with a blood borne pathogen.
3. Infectious or potentially infectious materials are not to be stored on company property. If this is not feasible then the infectious materials will be properly marked with appropriate "Biohazard" warning signs.
4. Any employee involved in first aid practices and could be exposed to blood or other bodily fluids are trained on the hazards and safe practices. Training occurs at the initial job placement and annually thereafter. Records of this training will be kept. Refer to the First Aid section of this document for additional information. All employees have access to a copy of FMG's Blood Borne pathogen control plan through the safety department.

5. All training and medical records are available upon request. These records included Dates and contents of training provided and the names and job titles of all persons attending these records are kept at our office for no less than 3 years. Release of medical records requires written consent from the employee prior to release. To request a record, contact a member of the Safety or Human Resource Departments.
6. Any employee involved in first aid or cleaning operations, which involve exposure to blood or other bodily fluids, are required to wear disposable latex gloves and eye protection. If rescue breathing or CPR is performed, then a resuscitation mask should be used for the protection of both the injured and the provider. Refer to the Personal Protective Equipment section of this document for additional information.
7. It is the area or job supervisor who is responsible for making sure that protective equipment is available in various sizes and is properly laundered and stored if required at no cost to the employees.
8. If your first aid kit is found to be deficient, then contact a member of the safety department. Annual inspections are performed on first aid kits and all PPE pertaining to Blood Borne pathogens and equipment is replaced as needed to maintain its effectiveness.
9. All blood or infectious material spills shall be immediately cleaned and decontaminated with an anti-viral solution, or by a solution of bleach and water.
10. Report all incidents that resulted in exposure to blood or other bodily fluids to your supervisor immediately.
11. Use washing facilities or antiseptic hand cleaner to wash the exposed area.
12. Any material saturated with blood must be considered Regulated Waste and placed in the appropriate "Biohazard" waste bags found in each first aid kit. These bags are leak proof and must be sealed before storage, disposal or transportation. This does not include Band-Aids or gauze containing small amounts of blood.
13. The Safety Department has the responsibility for the effectiveness of this program and updating it if "Occupational Exposure" develops. The safety department is also responsible for training and record keeping.
14. All employees are offered Hepatitis B vaccines at no cost to them

# CADMIUM AWARENESS

## Purpose

The purpose of the FMG's Cadmium Safety Program is to protect both our employees and the environment from Cadmium contamination from our facility operations. The intent of our program is to be in full, continuous compliance with OSHA Standard 29 CFR 1910.1026 and all other local, State and Federal requirements for our industry.

## Responsibilities

### Management will implement, maintain & monitor effectiveness of:

- Entire Cadmium safety program, including annual revisions and updates to reflect the current
- Status of the program
- Engineering & administrative controls for Cadmium exposure
- Employee training and awareness
- Medical surveillance program
- Respiratory protection program
- Cadmium disposal program
- Housekeeping program
- Protective clothing issue, storage and disposal

### Supervisors will:

- Provide effective and continuous control of all Cadmium operations
- Immediately inform management of any deficiencies in engineering or administrative controls
- Conduct routine assigned inspections and monitoring
- Immediately correct any deviation from operational safety requirements
- Provide immediate on-the-spot training for any employee who shows lack of knowledge or application of required operational Cadmium safety requirements
- All employees who have the potential exposure prior to the time of initial job assignment and annually shall be trained. The employees shall be informed of the specific nature of the operations which could result in exposure to Cadmium above the action level, the purpose, proper selection, fitting, use, and limitation of respirators, engineering controls, purpose & a description of the medical surveillance program & the medical removal program

### Employees will:

- Follow all operational and Cadmium safety procedures
- Seek immediate supervisor guidance to resolve questions
- Conduct operations in accordance with company provided training
- Immediately report to a supervisor any deficiency in engineering or administrative controls
- Properly use, store and dispose of issued and assigned personal protective clothing
- Maintain change and shower areas neat and orderly

## Cadmium

In its elemental form, cadmium is either a blue-white metal or a grayish-white powder found in lead, copper, and zinc sulfide ores, but most cadmium compounds are highly colored from brown to yellow and red. Cadmium's uses vary from an electrode component in alkaline batteries to a stabilizer in plastics.

### SCOPE AND APPLICATION

The final cadmium rule for the construction industry applies to all occupational exposure to cadmium and all cadmium compounds in all forms, including fumes and dusts, and in all construction work where an employee may be potentially exposed to cadmium. Such work involves construction, alterations, and repairs. The activities include, but are not limited to, wrecking, demolishing, and salvaging structures where cadmium or cadmium-containing materials are present; cutting, brazing, grinding, or welding on surfaces that are painted with cadmium-containing paints; and transporting, storing, and disposing of cadmium or cadmium-containing materials on the site or location where construction activities are performed.

This written program shall be reviewed and updated annually or more often to reflect significant changes in employer's compliance status.

### Health Hazard Information

#### ***Acute Effects:***

- Acute inhalation exposure to high levels of cadmium in humans may result in effects on the lung, such as bronchial and pulmonary irritation. A single acute exposure to high levels of cadmium can result in long-lasting impairment of lung function.
- Cadmium is considered to have high acute toxicity, based on short-term animal tests in rats.

#### ***Chronic Effects (Noncancer):***

- Chronic inhalation and oral exposure of humans to cadmium results in a build-up of cadmium in the kidneys that can cause kidney disease, including proteinuria, a decrease in glomerular filtration rate, and an increased frequency of kidney stone formation.
- Other effects noted in occupational settings from chronic exposure of humans to cadmium in air are effects on the lung, including bronchiolitis and emphysema.
- Chronic inhalation or oral exposure of animals to cadmium results in effects on the kidney, liver, lung, bone, immune system, blood, and nervous system.

## Exposure Monitoring

- FMG will ensure their employees are not exposed in excess of the permissible exposure level (PEL) of 5 micrograms per cubic meter of air as an 8- hour TWA.
- FMG will provide for monitoring or measuring of employee exposure.
- Periodic monitoring shall be conducted at least every 6 months if initial monitoring shows employee exposure. Air monitoring will be performed at the beginning of each job task. If exposure monitoring results indicate exposure is above the PEL, FMG will include in written program, and notification the corrective action being taken to reduce exposure to or below the PEL/Action level.

Significant exposure monitoring provisions of the cadmium standard for construction:

- Prior to performing any construction work where employees may be exposed to cadmium, FMG will determine through a designated competent person whether cadmium is present in the workplace, and whether there is a possibility that an employee may be exposed to cadmium at or above the action level;
- if the employee periodically performs tasks that may expose him or her to a higher concentration of airborne cadmium, the FMG will monitor the employee while performing those tasks;
- FMG will notify each affected employee, in writing, of the results and shall post the results in an appropriate location accessible to affected employees, no later than 5 working days after receiving the results of any monitoring that is performed.

## Regulated Areas

Regulated areas will be established when an employee's exposure is or is expected to be in excess of the PEL. Regulated areas shall be marked with warning signs to alert employees. Access is restricted to "authorized persons".

Regulated areas must:

Be set apart from the rest of the workplace in a way that establishes and alerts employees to the boundaries of the area;

Be entered ONLY by authorized persons;

Be entered ONLY by persons using proper respirators; and,

Be accessible to employees who refrain from eating, drinking, smoking, chewing tobacco or gum and applying cosmetics in such areas. Employees must not carry, store, or use products associated with such activities in these areas.

FMG will establish regulated areas whenever the following construction activities are conducted:

- Electrical grounding with cadmium welding;
- Cutting, brazing, burning, grinding, or welding on surfaces that are painted with cadmium-containing paints;
- Electrical work using cadmium-coated conduits;
- Using cadmium-containing paints;
- Cutting and welding cadmium-plated steel;
- Brazing or welding with cadmium alloys;
- Fusing of reinforced steel by cadmium welding;
- Maintaining or retrofitting cadmium-coated equipment; and
- Wrecking and demolishing where cadmium is present.

### **Written Compliance Program**

FMG will establish and implement a Written Compliance program that describes how the company will reduce employee exposure to the PEL or below by the use of engineering and work practice controls and by the use of respiratory protection where permitted.

The written compliance program will be reviewed and updated as often and as promptly as necessary to reflect any significant changes in the company's compliance status. A designated "competent person" will review the compliance program, initially and after each change, to ensure that the written program offers adequate employee protection from occupational exposure to cadmium.

Upon request, the written compliance program will be made available for examination and copying to the Assistant Secretary for OSHA, the Director of the National Institute for Occupational Safety and Health (NIOSH), and affected employees and their designated representatives

### **Respiratory Protection.**

- Respirators will be used when engineering controls and work practices cannot reduce employee exposure, during work operations where engineering controls and work practices are not feasible, and emergencies. Respirators shall be provided in accordance with 1910.134.
- Where applicable, FMG will provide respirators at no cost to employees and ensure that they are used in compliance with the standard. Powered air- purifying respirators shall be provided to employees who request them and where this respirator will provide adequate protection. FMG will ensure that employees use respirators in regulated areas and that respirators are properly fitted and used. Employees required to wear respirators must have medical exams prior to being assigned to an area where respiratory protection is required unless they have had a comparable exam within the preceding 12 months. Employees shall be allowed to leave a regulated area to readjust face pieces and to change filters or to wash their faces to avoid skin irritation.

### **Emergency Situations.**

FMG will develop and implement a written plan for emergency situations involving substantial releases of airborne cadmium.

### **Protective Work Clothing and Equipment.**

- PPE will be provided at no cost to the employee when there is a hazard from skin or eye contact. Gloves, aprons, coveralls, goggles, foot covers etc. Contaminated PPE will be removed at the end of the work shift.
- FMG will ensure that contaminated clothing and equipment are placed in closed containers in change rooms prior to cleaning, laundering, maintaining, or discarding. FMG will provide clean and dry personal protective clothing and equipment at least weekly, or more often, as necessary to maintain effectiveness. FMG will notify those who launder or clean these items of the potential hazards of cadmium exposure.

### **Housekeeping.**

- Surfaces will be maintained as free as practicable of accumulation of chromium. All spills and releases of chromium will be cleaned promptly. Methods of cleaning include HEPA filtered vacuums, dry or wet sweeping, shoveling or other methods to minimize exposure.
- FMG will ensure that waste, scrap, debris, bags, containers, equipment, and clothing contaminated with cadmium and consigned for disposal be collected and disposed of in sealed impermeable bags or other closed impermeable containers. These bags and containers shall be labeled according to the provisions of the rule, and disposed of according to applicable federal, state, and local regulations.

## Hygiene Facilities and Practices.

FMG will provide change rooms for decontamination and ensure facilities prevent cross-contamination. Washing facilities will be readily accessible for removing chromium from the skin. Workers must wash their hands and face or any other potentially exposed skin before eating, drinking or smoking.

Change rooms shall be equipped with separate storage facilities for street clothes and personal protective clothing/equipment and shall be designed to prevent dispersing cadmium and contaminating the employee's street clothes. Before entering the lunch area, employees must clean or remove their protective clothing by HEPA vacuuming or some other removal method that does not disperse cadmium into the air. Also, employees exposed to cadmium above the PEL must shower at the end of the work shift and must wash their hands and faces prior to eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics.

## Medical Surveillance:

- FMG will provide medical surveillance to employees who are exposed above action level or the PEL for 30 days or more per year or exposed in an emergency.
- Medical surveillance will be provided when an employee experiences signs or symptoms of the adverse health effects of Cadmium (dermatitis, asthma, bronchitis, etc). Medical evaluations will be provided at no cost to employees. Examinations will be performed by or under the supervision of a physician or other licensed health care professional.

## Hazard Training and Communication:

FMG will provide initial training prior to or at time of initial assignment. FMG will provide training that is understandable and ensure each employee can demonstrate knowledge of the health hazards associated with cadmium exposure; location, manner of use, and release of cadmium in the workplace; engineering controls and work practice controls; purpose, proper selection, fitting, proper use and limitations of respirators and protective clothing; emergency procedures; measures employees can take to protect themselves from exposure; purpose and description of medical surveillance program; contents of the standard. FMG will make a copy readily available without cost to all affected employees. Training shall be documented.

- FMG will certify that the training has been conducted by preparing a record that includes
  - Identity of employee trained,
  - The signature of the person who conducted the training and
  - Date of the training.
  - Records shall be kept 1 year.



### **Engineering and Work Practices:**

- FMG will implement engineering and work practice controls to reduce and maintain worker exposure to cadmium at or below the PEL. Engineering controls might include installing equipment, (e. g., source point capture) or modifying a process, (e. g., enclosure) to control employee exposure levels. Work practice controls include practices such as not eating, drinking, or applying cosmetics in regulated areas.
- Some of the provisions that FMG will include, but are not limited to, not using high-speed abrasive disc saws and similar abrasive power equipment unless such equipment has the appropriate engineering controls to minimize emissions and to meet the PEL. Materials containing cadmium shall not be applied by spray methods, if exposures are above the PEL, unless employees are protected with certain specified respirators and measures are taken to limit overspray and prevent contamination of adjacent areas.
- FMG will develop and implement procedures to minimize employee exposure to cadmium when maintaining ventilation systems and changing of filters
- FMG will implement a program in which each operation where cadmium is omitted, machinery used, material processed, controls in place, crew size, employee job responsibilities and maintenance.
  - In this program a description of the specific means that will be employed to meet compliance including engineering plans.
  - A report of technology considered in meeting the PEL.
  - Air monitoring data.
  - A detailed schedule for implementation
  - A written plan for emergency situations.
  - Other relevant information.

### **Recordkeeping:**

- FMG will provide an examination, maintain and make available an accurate record of all employee exposure monitoring, medical surveillance and training record.

## **CHROMIUM (VI) AWARENESS**

Chromium is a natural metal used in a wide variety of industrial activities, including the manufacture of stainless steel and alloy metals, and surface coatings. Medical studies have suggested that elevated exposure to Hexavalent Chromium (Chromium VI) may cause irritation to the skin, nose and throat, as well as lung damage.

FMG employees are not expected to be exposed to Chromium VI during the course of employment. If a potential exposure develops, employee exposure to Chromium VI will be monitored and controlled to meet OSHA limits, which will be done (when feasible) through the use of engineering controls, work practices, or administrative controls. If those controls fail to reduce Chromium VI levels below the OSHA Permissible Exposure Limit (PEL) of 5 mg/m<sup>3</sup>, or when the use of such controls are not feasible, respirators and other personal protective equipment will be required. All control methods will comply with the current OSHA standards.

## CONCRETE CONSTRUCTION

This section applies to the reinforcing, pouring, stressing, lifting and floating of concrete. The following protective measures will help to ensure these operations are done in a safe manner:

### Protective Measures:

1. No construction loads will be placed on a concrete structure or portion of a concrete structure unless, based on information received from a qualified person, the structure or portion of the structure is capable of supporting the loads.
2. No employee (except those who are essential) shall be permitted behind the jack during tensioning operations. Signs and barricades shall be erected to limit employee's access to the post tensioning area during tensioning operations.
3. An employee who is placing and/or tying reinforced steel or installing formwork at heights greater than 6 feet should be protected from falling by use of either a personal fall arrest system or other approved fall protection system.
4. If employees are to work above reinforced steel, then it should be capped to prevent impalement hazards.
5. Power and rotating type concrete trowel 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 handles.
6. When using a bull float near energized electrical components, the handle should be made of a nonconductive material or should be insulated with a nonconductive sheath.
7. Positive safety latches or similar safety devices shall be installed on all hydraulic or pneumatic gates of concrete buckets to prevent premature or accidental dumping. Buckets will be suspended from shackles or approved safety-type hooks.
8. Employees are not permitted to ride or work under a suspended concrete bucket.
9. When discharging on a slope, the wheels of a ready mix truck should be chocked and the brakes set to prevent movement when applicable.
10. All employees are to wear head, hand, foot and eye protection while applying concrete.
11. Formwork and shoring should be erected, braced and maintained so that they will support all vertical and lateral loads imposed on them during the placement of concrete.
12. Formwork and shoring should not be removed until the concrete has obtained sufficient strength to support its own weight.
13. All shoring equipment will be inspected prior to erection to determine that it is specified in the shoring layout and that it is not defective. Defective or damaged shoring equipment must not be used for shoring under any circumstances. Erected shoring equipment will be inspected during and immediately before and after the placement of concrete. Damaged or weakened shoring equipment will be immediately reinforced or shored up.

14. All shoring will be laterally supported by attachment to the structure. Freestanding masonry walls will be braced and supported to provide lateral stability against wind or other forces.
15. A limited access area must be established and barricaded before precast concrete work begins. Only employees actively engaged in erecting the precast will be permitted to enter this area. Employees shall not be permitted under precast concrete members when they are being tilted or lifted.
16. The lifting attachment point of a precast or tilt-up operation should have a safety factor of not less than 5, meaning that it is certified to support 5 times the intended load.
17. When salamanders or other similar heating devices are used, then they must be properly vented and should be refueled only after they have been given sufficient time to cool.
18. All pipe supports of concrete pumping system will be designed to one hundred (100%) overload. Compressed air hoses will utilize only fail-safe joint connectors to prevent separation of sections when pressurized. Tremies, elephant trunks, etc., sections will be secured with fail-safe chain or wire rope in addition to regular couplings or connections.
19. Concrete buggies (Georgia buggy) handles will not extend beyond the wheels on either side of the buggy. Where there is a possibility of contact with energized electrical conductors, handles on bull floats will be constructed of non-conductive material or insulated with non-conductive sheath.
20. Blades of masonry saws must be covered with a semicircular enclosure to retain blade fragments. A method for retaining blade fragments shall be incorporated in the design of the semicircular enclosure.
21. A limited access zone must be established and barricaded whenever a masonry wall is being constructed. The limited access zone must be established prior to the start of construction of the wall must:
  - Be equal to the height of the wall to be constructed plus four(4) feet (1.2 meters);
  - Must run the entire length of the wall; and
  - Must be established on the side of the wall which will not contain scaffolding.
22. Only employees actively engaged in construction of the wall will be permitted to enter the barricaded limited access zone. The barricade will remain in place until the wall is adequately supported.
23. Masonry walls of over eight (8) feet (2.4 meters) must be adequately braced to prevent overturning and to prevent collapse. The bracing must remain in place until permanent supports are in place.

## CONFINED SPACE ENTRY

According to the National Institute of Occupational Safety and Health (NIOSH) the definition of a confined space is one, which by design has limited openings for entry and exit, and unfavorable natural ventilation, which could contain or produce dangerous air contaminants. Some examples of confined spaces include, manholes, vaults, tanks, pits, and depending on their configuration some excavations. There are three main hazards associated with working in a confined space. Under no circumstance will any employee enter a confined space with these or any other serious life threatening hazards.

### 1. Oxygen Deficient:

Normal air is 21% oxygen by volume. The acceptable range of oxygen for a working environment is between 19.5% and 23.5%. Working in an environment where the % oxygen is outside of this range is extremely hazardous and can even be fatal.

### 2. Combustible or Flammable Gases:

Many gases are heavier than air and can potentially collect in the bottom of confined spaces. When exposed to a source of ignition, these gases can catch fire or even explode. Therefore flammable gas concentrations should be less than 10% of the Lower Explosive Limit (LEL).

### 3. Toxic Substances:

There are numerous toxic substances that can be encountered within a confined space. Substances like Carbon Monoxide (CO) and Hydrogen Sulfide (HS), in certain amounts can be extremely hazardous to life and health. If the atmosphere in the confined space contains a substance over the OSHA Permissible Exposure Limit (PEL) then certain precautions must be taken prior to entering the confined space.

### Protective Measures:

1. All confined spaces will be labeled and if possible, locked to prevent unauthorized entry.
2. Atmospheric testing and monitoring equipment are required for any confined space operation. A competent person will calibrate gas-monitoring equipment prior to use.
3. Provide necessary Engineering, Administration or Personal Protective Equipment to control or eliminate the above hazards and maintain the specified acceptable entry conditions also mentioned above.
4. Roles and Responsibilities:
  - The attendant is the individual stationed outside the confined space who monitors the authorized entrants and who performs all the attendant duties outlined in the confined space permit.
  - The entrant is the authorized employee who enters the confined space and performs the necessary work activities required.
  - The entry supervisor is the individual responsible for determining if acceptable entry conditions are present by testing and monitoring the atmosphere. They are also responsible for authorizing, overseeing and terminating the entry and its permit.
5. Entrants, attendants, entry supervisors and rescuers will be trained prior to performing any duties associated with permit required confined space work. These affected employees will be trained at initial job placement and whenever there is a change to the process or a new hazard found.
6. All training will be documented and maintained. The training documentation will list the employee's name, date of training and the name of the instructor. Certification cards will be issued to each trained employee.

7. An attendant must be on duty at all times while entry procedures are being performed. Each confined space operation requires a dedicated attendant. Attendants are allowed to monitor only one confined space at a time.
8. All confined space openings will be guarded with a temporary barrier to protect workers from external hazards and pedestrians and vehicles from the confined space operations.
9. A confined space Competent Person will monitor the atmosphere prior to the start of work and determine the hazards and if a permit is required. Oxygen will be tested for first then combustible gases and vapors and then toxins. Constant monitoring will be provided while the confined space work is being performed. These results will be shared with the entire entry team. Employees have the right to observe monitoring and request that additional monitoring be done.
10. An entry permit must be filled out by the entry supervisor, outlining the test results, hazards and control methods. The permit will also identify which employees are authorized as entrants, attendants and an entry supervisor. The Entrants will be involved in the permit process. The permit will be canceled by the entry supervisor if conditions change, new hazards are present, an unauthorized entry has occurred, an injury or incident has occurred, and at the end of the work shift. The entry operations will be reviewed prior to issuing another permit or allowing entry. Refer to Section C-1 of this document for a copy of the permit.
11. Purging, inerting, flushing or ventilating the confined space may be required to control atmospheric hazards and maintain acceptable entry conditions. Ventilating equipment must be available for any confined space operation.
12. In the event of an emergency, effective means of communication between the Entrants and Attendant will be identified and implemented. Communication equipment will be provided at no cost to the employee.
13. Necessary lights will be provided to enable employees to see well enough to work safely and exit the confined space.
14. Ladders and other equipment required for safe entry and exit will be available at for all confined space operations.
15. Any mechanical, electrical, hydraulic, pneumatic or chemical equipment located within the confined space must be locked out if applicable, to prevent exposure.
16. Refer to the completed Job Hazard Analysis (section C-1) for identification of the available rescue team used for the project and their contact information. Outside rescue services must be given opportunity to view the space, practice rescue and decline service. Practice rescues must be done at least every 12 months
17. Rescue equipment consisting of a harness and tripod with a manual winch will be used at all times while working within a permit required confined space. The designated rescue team will be responsible for all rescue operations and first aid procedures. Only the authorized rescue team will perform rescue operations.
18. Employees must wear all necessary personal protective equipment; this may consist of:
  - Safety Glasses
  - Hard Hats
  - Ear Plugs
  - Coveralls or a protective suit

- Fall Protection
  - Gloves
  - Respirators
19. If another contractor must enter the same confined space that FMG employees are working in, then a coordination meeting must occur to discuss the potential problems that may arise. A Pre-Task plan must be developed and responsibilities must be awarded.
  20. All canceled entry permits must be forwarded to the safety department for retention of no less than 1 year. They will be used to review and update this program on an annual basis.

## **ELECTRICAL - GENERAL**

Use of electricity on the jobsite poses serious hazards, with employees potentially being exposed to such dangers as electric shock, electrocution, fires and explosions. Recognizing these hazards and the importance of electrical safety, the following protective measures will be instituted.

### **Protective Measures:**

1. Employees will receive training on their work practices and the electrical hazards associated with them. Training will occur at initial job placement and annually thereafter. Employees will not wear any jewelry or other conductive materials, unless they are covered or otherwise protected.
2. Only qualified electricians will be permitted to perform electrical work on or near exposed electrical equipment and parts. FMG employees are not deemed qualified. Any subcontractor with qualified electricians must comply with applicable standards.
3. Live parts of electrical equipment operating at 50 volt or more must be protected against accidental contact. In addition, any area containing exposed energized equipment must be properly illuminated.
4. Prior to working on or near electrical equipment, proper Lockout/Tag out procedures are required to be in place. Refer to the Lockout/Tag out section of this document for additional information.
5. When having to work near an overhead power line, the line must be de-energized or adequately protected against accidental contact. If these protective measures cannot be taken then all personnel and equipment must remain 10 feet from lines carrying 50kV or less. If the line carries 50kV or more then the distance increases by 4 inches for every 10kV over 50.
6. When handling long conductive materials or equipment (bull floats, ladders, piping, and duct work), employees must use caution and avoid coming into contact with electrical equipment. If possible, electrical equipment in the work area will be de-energized or somehow protected.
7. Subcontractors working on exposed, energized equipment must have proper illumination to perform their work safely. If the work is located in a confined area, then protective barriers will be used to prevent exposure.
8. Portable ladders must have non-conductive side rails if they are used where the employee or the ladder could contact exposed energized parts.
9. Extension cords must be approved three wire cords with the ground connector in place. Cords with the ground connector removed or damaged must not be used. In addition, extension cords with torn, frayed or burned insulation must be removed from service.
10. Extension cords are not be permitted in standing water.
11. All 110/120 volt receptacle outlets, which are not part of the permanent wiring of the structure and which are used by employees, must be protected with a Ground Fault Circuit Interrupter (GFCI).
12. Extension cords must be routed to avoid pedestrian and equipment traffic, or treed at a height of 7' or greater if routing is not possible.
13. When working in confined or enclosed spaces where electrical hazards are present, employees must use protective shields barriers or insulating material provided to protect them from electrical shock.

### **Grounding Conductor Program:**

1. A grounding terminal or grounding-type device on a receptacle, cord connector or attachment plug must not be used for purposes other than grounding.
2. The project supervisor, foreman or a member of the Safety Department is considered the competent person for this program. A copy of this program will be on every project. Project specific procedures will be outlined in the Job Hazard Analysis.
3. Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, must be inspected daily by a competent person for external defects. Deformed pins, missing pins and insulation damage will result in the equipment being removed from service and tagged, "DO NOT USE" until it is either repaired or replaced.
4. Each cord set, receptacle, plug or cap which are not part of the permanent wiring of the building or structure must be tested for continuity, for correct attachment of the grounding conductor and must be electrically continuous.
5. These tests must be performed:
  - Before each use;
  - Before equipment is returned to service following any repairs;
  - If the equipment was suspected of sustaining damage during an incident;
  - At intervals not to exceed 1 month
6. The equipment will be marked identifying that it passed inspection and testing procedures.
7. Refer to the above electrical program for additional requirements.
8. Employees will not be permitted to use any equipment that does not meet the requirements of these programs.



## ENVIRONMENTAL HEALTH

It is not uncommon to encounter environmental issues in the construction industry. These issues and the potential health effects associated with them are highly regulated, require extensive training and involve strict documentation. It is FMG's policy to fully comply with all Federal, State, Local and customer requirements as they pertain to environmental health. The following procedures will aid us in doing so:

### **Protective Measures:**

1. All employees, subcontractors and suppliers will become familiar with and comply with the specific methods for controlling environmental issues, preventing pollution, and preventing health hazards associated with a hazardous environment.
2. Erosion and sediment protection must be placed as required to ensure ground water run-off control.
3. All proper environmental permits must be obtained prior to the commencement of work.
4. Discharge of chemicals to drains is not allowed without prior approval from the project owner and prime contractor. All necessary spill prevention/protection equipment and procedures must be in place during all phases of the project. If a spill does occur, FMG's project management must be notified immediately.
5. FMG's Management must be notified of any abnormal condition. This includes; discolored soil, discernible odor, heavily stained concrete or any other condition that could have an associated environmental impact.
6. All wastes must be disposed of in a proper location and in accordance with applicable rules and regulations.
7. The storage, transportation and disposal of hazardous wastes must be conducted by trained personal only and it accordance to applicable rules and regulations.
8. An emergency plan must be established for all projects. The plan must include applicable phone numbers and steps to take during any type of emergency.

## ERGONOMICS

Ergonomics is defined as the science of fitting the worker to their workstation or position. It looks closely at the physical abilities and limitations of the worker and helps to define a proper way to perform their duties. Improper ergonomic practices can lead to numerous types of repetitive stress injuries. Risk factors include repetition, forceful exertion, awkward postures, mechanical stress, vibrations and cold temperatures. Warning signs include fatigue, tenderness, swelling, redness, numbness and tingling.

### **Protective Measures:**

1. Avoid unnatural arm, hand and wrist positions. Keep wrists in a neutral, straight position.
2. Avoid lowered or extended neck or head positions. Keep head upright as much as possible.
3. Avoid a slouching posture. Support your lower back.
4. Use mechanical means for material handling. In the absence of mechanical equipment, use team lifts for heavy materials. Employees are not permitted to lift more than 50 lbs. without the use of mechanical means.
5. Lift with your legs not your back.
6. When performing tasks that contain high amounts of exertion and/or vibration, take short, frequent breaks or rotate tasks with other employees.
7. When working in cold temperatures, be sure to dress accordingly.
8. Warming up and stretching the neck, shoulders, back, arms, wrists, hands and legs can greatly help to prevent a repetitive stress injury.

## FALL PROTECTION

Falls are the number one cause for worker fatalities in the construction industry. For this reason, FMG is committed to a strict fall protection policy when working at or above six feet. FMG has adopted a 100% fall protection policy. For projects with fall hazards, FMG's Safety Director will develop a Job Hazard Analysis to address the hazards. The safety director and the JHA will be identified in the Project Specific Safety Plan. All equipment and materials used to provide fall protection must be designed for this purpose. They must meet all applicable OSHA, ANSI, and ASTM requirements and must be used according to the manufacturer's guidelines.

### Protective Measures:

1. Employees who have the potential of being exposed to a fall hazards will be trained on the hazard and control methods listed in this section. Training will occur during initial job placement and annually thereafter. In addition, training will occur when there is a deficiency noted or when equipment and/or procedures have changed. Training records will include the name of the employee, date of training, instructor name and date FMG deemed the training adequate. Training will be conducted by a competent person qualified in the following areas, 1. Nature of fall hazards, 2. Correct Procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used 3. The use of operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used 4. The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs 5. The handling, storage of equipment and materials and the erecting of overhead protection 6. The role of employees in fall protection plans 7. The standards contained in this subpart.
2. Employers must determine whether walking/working surfaces are structurally capable of supporting workers safely.
3. Workers on walking/working surfaces with unprotected sides or edges six feet or higher above a lower level must be protected from falling by the use of guardrails, nets or fall arrest systems.
4. Workers constructing or working near leading edges at six feet or higher above a lower level must be protected from falls by guardrails, nets or fall arrest systems.
5. Workers must be protected from falling more than six feet through holes (including skylights) by hole covers, guardrails or personal fall arrest systems.
6. Workers on the face of formwork or reinforcing steel must be protected from falling six feet or more by personal fall arrest systems, nets or positioning devices.
7. Workers on the edge of excavations deeper than six feet must be protected from falling by guardrails, fences or barricades when excavations are not easily visible.
8. Workers above dangerous equipment must be protected from falling into or onto the equipment by guardrails or equipment guards.
9. Roofers working on low-slope roofs with unprotected sides and edges six feet or more above lower levels must be protected from falls by guardrails, nets, or personal fall arrest systems.
10. Roofers on steep roofs with unprotected sides and edges six feet or higher above lower levels must be protected from falling by guardrail systems with toe boards, nets or personal fall arrest systems.
11. Workers near wall openings six feet or higher above lower levels and less than 39 inches above the walking/working surface must be protected from falling by guardrails, nets or personal fall arrest systems.
12. The top edge of guardrails must be between 39 inches and 45 inches high.

13. Mid rails, screen, mesh or intermediate vertical members must be installed between the top edge of the guardrail and the walking/working surface when there is no wall or parapet wall at least 21 inches high
14. Guardrails must be capable of withstanding a force of at least 200 pounds applied within two inches of the top edge in any outward or downward direction.
15. With 200 pounds of downward force, the top edge of the guardrail must not deflect to below the 39 inch minimum height.
16. Mid rails, screens, mesh and intermediate vertical members must be capable of withstanding a force of at least 150 pounds applied in any downward or outward direction at any point along the mid rail or other member.
17. Guardrail must be surfaced in a way that will prevent punctures, lacerations and snags.
18. When guardrails are used in hoisting areas, a chain, gate or removable guardrail section must be placed across opening when hoisting operations are not taking place.
19. Steel Erectors and metal deck installers shall comply with the six foot fall protection policy.
20. FMG Employees are not permitted to work in "Controlled Access Zones" or under a "Safety Monitor System". We have adopted a 100% fall protection policy and the use of personal fall protection, guardrails, and safety nets are all that are permitted.
21. All fall related accidents will be investigated and this policy will be updated as necessary



## **FIRE PREVENTION & PROTECTION**

Due to the presence of combustible materials, poor control of heat sources and often times a lack of fire-fighting facilities, fires pose a severe risk on the construction industry. In addition, the use of electrical tools, oxygen, acetylene, flammable gases, welding equipment, and gasoline are prevalent. Because of these factors certain precautions should be taken on every job site.

### **Protective Measures:**

1. Employees will receive training on fire prevention and protection and proper use of portable fire extinguishers. Training will occur at initial job placement and annually thereafter. Training will consist of proper use of fire extinguishers and identifying what type of extinguisher to use for specific types of fires. Training will also instruct employees on general principals of firefighting.
2. Proper emergency and evacuation procedures must be established for every job. The procedures will outline what to do in a fire emergency and the phone numbers of emergency crews.
3. Fire extinguishers must be available on every job site. The extinguishers must be appropriate for the fire hazards present:
  - Class A: fires involving the burning of ordinary combustible materials such as, paper, wood, plastic, and other rubbish.
  - Class B: fires involving the burning of flammable liquids such as, gasoline, oil and grease.
  - Class C: fires involving the burning of or near electrical equipment
4. Welding and torch cutting crews must have extra fire extinguishers and/or water cans. In addition the extinguishers must be located as close to the operation as possible without interfering.
5. Welding and cutting crews must use fire resistant blankets whenever working above flammable materials. In addition, a fire watch must be used. The fire watch must observe the area for a minimum of 30 minutes after the welding and cutting has been completed. In addition, the fire watch will take breaks and lunches at different time interval than the welding and cutting crew, to watch the area for hazards.
6. Temporary heating devices must be kept clear of flammable/combustible materials. In addition, an ABC fire extinguisher must be located within 50 feet.
7. "NO SMOKING" signs will be placed near all flammable storage and equipment refueling areas. In addition, employees involved in welding and cutting operations must refrain from smoking.
8. Proper housekeeping procedures must be used at all times to prevent the gathering of flammable/combustible materials. All flammable and combustible materials must be removed from the area or protected from exposure to hot work.
  
9. FMG will ensure that portable fire extinguishers are subjected to a monthly visual inspection and an annual maintenance check. FMG will record the annual maintenance date and keep these records at our office for at least 1 year after the last entry of life of the shell.

## HAND & POWER TOOLS

### Protective Measures:

1. Loose clothing, long hair that is not secured, gloves, rings, and other jewelry must not be worn around rotating equipment. Sleeves must be kept buttoned or rolled up. In addition, all necessary Personal Protective Equipment must be worn.
2. If possible, materials must be secured when power tools are applied to it.
3. Each hand and power tool must be examined before use, for damaged parts, loose fittings, and frayed or cut electrical cords. Defective tools must be tagged and taken out of service.
4. Portable electrical equipment and tools must be grounded unless “double insulated.”
5. A Ground Fault Circuit Interrupter (G.F.C.I.) must be used for working outside or in a damp area or as otherwise required.
6. Before adjustment servicing, or repair of electric or pneumatic tools, electric cords, must be unplugged and airlines deactivated and bled. In some cases, this may require a Lockout to prevent accidental starting.
7. Any pneumatic hose exceeding ½ inch ID must have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.
8. Machines must be shut off and brought to a complete stop before removal of waste.
9. Interlocking devices must be in working order and must never be bypassed.
10. All fuel-powered tools used inside buildings or enclosures require special considerations regarding ventilation, noise generation, refueling, etc. Approval must be obtained from the Supervisor prior to their use.
11. All tools must be used with the correct shield, guard, or attachment recommended by the manufacturer.
12. The use of Powder Actuated Tools requires the user to be certified by a qualified instructor.
13. All personal tools must be in good condition and inspected prior to use. Permission by the job site superintendent is required.
14. Hand protection must be worn at all times while using hand and power tools.

## HAZARD COMMUNICATION

Hazard Communication standards require that all employers with employees exposed to hazardous chemicals at their workplace establish a Hazard Communication Program. This program must provide information to employees, of the hazardous chemicals that they are, or may be exposed to while performing their job duties. Container labels, Safety Data Sheets (SDS) and training, best accomplish this.

### Protective Measures:

1. Employees will receive training on the hazardous chemicals in their work place at initial job placement and when conditions change or new chemicals are introduced.
2. Training will incorporate:
  - The requirements of this program
  - Where hazardous chemicals are present
  - Location of written hazard communication program.
  - Where to find the chemical list and Safety Data Sheets (SDS)
  - How to read and understand all information contained within the SDS
  - Methods and observations that may be used to detect the presence or release of hazardous chemicals
  - Physical and health hazards associated with the chemicals
  - Protection and control measures to be used to prevent exposure and proper PPE and emergency procedures to be used
  - Details of this program, explanation of the labeling system and SDS and how employees can obtain and use appropriate hazard information.
3. Review the project specific Hazardous Chemical Listing.
4. This written Hazard Communication Program must be implemented and maintained at each project. The project supervisor, foreman or a member of the safety department will be responsible for implementing and maintaining the program.
5. Prior to starting work on hazardous non-routine tasks; every affected employee will be given information by their supervisor about the hazardous chemicals to which they may be exposed. Such information will include, but not be limited to specific hazards associated with the chemicals, protective measures and emergency procedures.
6. The project superintendent will have copies of the Hazardous Chemical List and Safety Data Sheets for the chemicals used or stored on the project. In addition, the superintendent must collect the Safety Data Sheets from their subcontractors working onsite. A meeting will be conducted to allow contractors to communicate potential Hazardous Chemicals and to share SDS Sheets, labels and procedures.
7. When employees are required to travel during the work shift to multiple projects, then a master program will be kept in the FMG Concrete Cutting office.
8. Safety Data Sheets must contain the following information:
  - Identification of the product



- Known acute and chronic health effects
  - Permissible Exposure Limits (PEL) and Threshold Limit Values (TLV)
  - If the product is a suspected Carcinogen (cancer causing)
  - Personal Protective Equipment to be used
  - Emergency and First Aid procedures
  - Identification of the party responsible for the SDS
9. Safety Data Sheets must be made readily available for any employee, their designated representatives and other requesting parties who wish to review them.
10. The superintendent, foreman and/or site safety coordinator will verify that all containers are labeled with the following information:
- Clearly labeled as to content.
  - Appropriate warnings noted.
  - Name and address of the manufacturer.
11. Container labels may be in writing, pictures, numerical system or any combination of the above. Labels are provided by chemical manufacturers and distributors. Do not deface or remove labels. If chemicals are transferred to other containers, then the new container must have a label that is consistent with the manufacturer's label. Extra labels must be ordered from the manufacturer.
12. Training and information must be provided to non-English speaking employees in the language that they understand best.

#### Hazardous Material List

- Gasoline
- Motor Oil
- Diesel Fuel
- Hydraulic Oil
- Break Away

## LADDER SAFETY

### Protective Measures:

1. Lean a ladder at about a 75% angle. The distance from the wall should be  $\frac{1}{4}$  the working length of the ladder. Ladder rungs are one foot apart on standard ladders. Divide the number of rungs in the working length by 4 to determine the feet of horizontal distance. For example, if 16 rungs are counted, the horizontal distance should be 4 feet.
2. Brace a ladder in one of these ways:
  1. Tie off the rungs to the wall.
  2. Nail a board to brace the feet.
  3. Put a brace between the ladder and the facing wall.
  4. Have someone brace the ladder with his or her feet, but only if under ten feet.
3. A ladder must reach 3 feet past the upper level. The side rails of a ladder should reach at least 3 feet past the level you are climbing to. The ladder must be tied off, and there must be a grab rail of some kind.
4. Put up a barricade to protect the ladder if there is traffic in the area.
5. If the ladder is on a slippery surface, it must have slip-resistant feet. It may also need to be braced and tied off.
6. Carry a stepladder vertically in close spaces. Grab one of the steps below the middle of the ladder. Cradle the ladder against your shoulder and chest. It has to be raised only a couple of inches off the ground and you have complete control of the ladder. Watch out for overhead obstacles.
7. Always face the ladders when you climb up or down.
8. Do not try to climb carrying heavy tools. Use a rope to haul them up or down.
9. Do not stand on the top two steps of a stepladder.
10. Do not use a metal ladder if working around exposed electrical components.
11. Only one person can be on a ladder at any one time.
12. Ladders must be visually inspected before each use.
13. Do not use a ladder that is damaged or is in poor condition.

## LEAD PROTECTION

Lead, like asbestos can be found on almost any job as it was used in many products and materials, prior to being strictly regulated. Lead can be very dangerous, and can enter the body in numerous ways. Fumes containing Lead are typically produced when hot work is performed on a surface that contains Lead (i.e. painted steel). These fumes are then inhaled by nearby workers and then there is hazardous exposure. Because of its hazardous nature, Lead is given an Action Level of 30 ug/m<sup>3</sup> and an exposure limit of 50 ug/m<sup>3</sup>.

1. **Allowable Airborne Exposure Levels.** Employees must not be exposed to airborne lead concentrations greater than 50 micrograms per cubic meter of air (50 ug/m<sup>3</sup>) averaged over an 8-hour workday. If an employee is exposed to lead for more than 8 hours in any workday, the allowable exposure level shall be reduced for that day as follows: allowable exposure level in ug/m<sup>3</sup> equals 400 divided by the hours worked that day. For example, a 10-hour shift would have an allowable exposure of 400/10 = 40 ug/m<sup>3</sup>. These levels are established regardless of whether an employee is wearing a respirator.

Air monitoring of breathing zones will be done to determine employee exposure. If exposure is above allowable limit, action must be taken to ensure worker safety.

OSHA has established 50 ug/m<sup>3</sup> as the permissible exposure limit (PEL) and 30 ug/m<sup>3</sup> as the action level (AL). Exposures at or above the PEL mandates additional precautions to be taken to protect the worker. Exposures at or above the AL but below the PEL requires the supervisor to take measures to avoid reaching the PEL. If a project/job will create airborne lead levels exceeding 50 ug/m<sup>3</sup>, the work will be contracted out to a firm experienced in removing lead based paint.

2 **Exposure Monitoring.** Supervisors will identify jobs that will create airborne lead levels and contact the general contractor to arrange air monitoring for the purpose of determining initial exposure and developing future criteria for this written program. Monitoring will include documentation of the job, weather conditions, temperature, air movement and note as much information as possible regarding engineering controls, work practices, type of coating, and removal process. Data will be collected until an adequate amount of data is acquired to make a determination of the type of exposure, if any, which is occurring with specific jobs. Employees involved in the monitoring will be required to comply with these guidelines. Results from the monitoring will be shared with the involved employees.

If a job is found to exceed the Permissible Exposure Level (PEL), that job type will be suspended until controls (engineering and/or administrative) have been put into place to reduce the exposure level below the PEL.

Post-job dust sampling may be completed to assure adequate cleaning of area or to determine potential hazards. These results will determine if additional monitoring is necessary.

3. **Engineering Controls.** In all cases, engineering controls will be viewed as the preferred method of controlling the potential hazard. The work environment will be separated from the rest of the building environment when necessary. This will vary from project to project and may include protections such as shutting off ventilation systems, creating barriers to separate the work area or working during shifts when the building is not normally occupied.

Engineering controls will also be considered in terms of how to minimize the exposure to workers to a level as low as possible and preferably below the action level. This will be accomplished by analyzing each task to determine available feasible controls and notifying the general contractor of those controls that could be incorporated.

4. **Work Practices.** Each job should be evaluated to determine the method which will create the least amount of potential exposure. Standard operating procedures will be prepared by the safety department or supervisor that describe work practices to minimize airborne dust for the specific hazard. Certain practices may be prohibited when air monitoring suggests the PEL will be exceeded.

5. **Respiratory Protection.** Respirators will be used when a potential for lead exposure exists. Prior to issuance of a respirator the employee must be entered in to an approved Respiratory Protection program. In almost all cases, half-mask, air-purifying respirators with high efficiency filters will be issued. Qualitative fit tests will be performed at the time of initial fitting and annually thereafter.

All employees using respirators will have gone through an approved respiratory training program and will follow FMG's written Respirator Protection Program.

6. **Protective Clothing.** Protective clothing will be provided by FMG for employees with the potential for lead exposure at or above the AL, or where a possibility for eye or skin irritation exist. Protective clothing shall include, coveralls or equivalent, and may include gloves, hats and disposable shoe coverlets as well as any other necessary protective clothing to perform the necessary job. Workers must remove contaminated clothing prior to leaving the worksite.

Disposable clothing will be disposed of as frequently as necessary but used for no period greater than one week. Non-disposable clothing shall be laundered by FMG on a basis no greater than weekly. Contaminated clothing will be put in plastic bags to be stored in a closed container 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.**

Notification that the clothing was potentially contaminated with lead will be made to the person or company responsible for the laundry when non-disposable clothing is used. This notification will be done by the person arranging for the laundry. Copies of the notification must be kept on file for review. Employees will be instructed to remove contaminated clothing before leaving the worksite. Disposable clothing shall be disposed of properly.

7. **Housekeeping.** In jobs creating dust, such as paint removal by sanding, workers will be required to clean the workspace once the work is completed. This will include a minimum of vacuuming surfaces with a HEPA vac to the point where no visible dust remains. HEPA filters will be replaced according to standard operating procedures that minimize the creation of airborne dust. Damp mopping shall also be used to minimize dust.

8. **Hygiene Practices.** Food and tobacco products will not be allowed to be present or consumed in the lead work areas. Cosmetics may not be applied in the lead work area. Employees must wash their hands after working on a lead exposure project and shower if necessary.

9. **Medical Surveillance.** FMG will institute a medical surveillance program for all employees who are or may have been exposed to lead at or above 30 ug/m<sup>3</sup> (the OSHA Action Level) for more than 30 days per year. Medical surveillance will include offering the above employees biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin at least every 6 months; medical consultations for employees whose blood lead tests exceed 40 ug/100g, and employees who seek advise on reproduction concerns. Employees whose blood lead levels exceed 40 ug/100g will be offered more frequent testing.

Employees will be notified of biological monitoring results within five working days after the receipt of the results. Those employees with blood lead levels exceeding 40 ug/dL, require medical removal with medical removal protection benefits.

Employees hired into positions which will require potential exposure to airborne lead for 30 days per year or more, will be offered a medical examination prior to their initial assignment.

11. **Employee Training.** Employees with potential exposure to airborne lead will be informed of the contents of Appendices A & B of the regulation. It shall be the responsibility of the individual supervisors to notify FMG Safety dept. of employment of a new employee or the new task for an existing employee that will require training and/or medical monitoring. It shall be the responsibility of FMG Safety dept. to train or delegate the training of the new employee.

Annual retraining is required for those employees subject to exposures at or above the action level or for whom the possibility of skin or eye irritation exists.

12. **Signs.** Signs will be posted on the exterior of worksites where workers may create a potential airborne lead exposure. Worksites which will not exceed the PEL will have signs posted stating "**AUTHORIZED PERSONNEL ONLY**" at the entry to the worksite. Authorized personnel for this purpose will mean workers who are working the actual project, or workers who are not working on the project and have a need to be at the location and have been trained on Appendices A & B of the OSHA lead code and are following FMG's. In worksites where it is anticipated that the PEL will be exceeded, a sign reading "**WARNING, LEAD WORK AREA, POISON, NO SMOKING OR EATING**" shall be posted.

13. **Recordkeeping.** FMG will maintain all records related to lead exposures. These forms will include the date, number duration and location of each sample as well as a description of the sampling procedure. They will also include the type of respirator worn, the name, social security number and the job classification of the employee monitored. Any environmental variables that could affect the results will also be noted on these forms. These records will be maintained 40 years or for the duration of employment plus 20 years, whichever is longer.

Medical surveillance records will include the employee's name and a description of the employee's duties. Any written opinions from the physician will be included as will any air monitoring results which were requested by or furnished to the physician. In addition, employee medical complaints will be included.

## LOCK OUT/TAG OUT

Control of hazardous energy is the purpose of this program. This program establishes the requirements for isolation of both kinetic and potential electrical, chemical, thermal, hydraulic, pneumatic and gravitational energy prior to repair, adjustment and removal.

1. Lockout/tag out training must be provided to all employees who are to be authorized to apply lockout/tag out procedures. Training will occur at initial job placement and annually thereafter. Training must include:
  - Recognition of hazardous energy sources
  - Type and magnitude of energy available
  - Means and methods for energy isolation and control
2. Training for affected employees and other employees that may be in the area during lockout/tag out procedures must also be provided. This training will address the purpose and use of energy control devices and procedures.
3. Retraining must be provided when there is a change in job assignments, equipment, energy control procedures or when a new hazard is introduced.
4. All training will be documented, signed and certified.
5. FMG does not have equipment that requires application of lockout/tag out procedures; however they may need to be used on our projects. A Job Hazard Analysis must be conducted for each project that lockout/tag out procedures will be used. This survey will identify equipment and their energy sources. Listed below are typical examples of equipment that may need application of lock out/tag out procedures:
  - Robots and other automated equipment.
  - Conveyors
  - Boilers
  - Interior and exterior power lines and equipment
  - Any other piece of powered equipment that employees must work on or near as to prevent injury.
6. FMG requires a lock to be used for all lockout/tag out operations. A tag by itself is not acceptable.
7. The lock must be a separately keyed lock for use only with the lockout system.
8. The lock out/tag out device must be labeled with the name of the company, employee name and contact number.
9. There must be one lock for each contractor exposed to the system. In some circumstances, one lock for each person exposed to the system may be required. A hasp or group lock box can be used for these purposes. The project supervisor is responsible for coordinating and enforcing this program. When there is a shift change, both supervisors must conduct a meeting to coordinated procedures between the two shifts.
10. Only authorized, trained employees can attach lockout/tag out devices. Refer to the Job Hazard Analysis for identification of employees authorized to apply LOTO devices.
11. Only the person who applied the lock will remove it.

12. The following steps must be followed in sequence during lock out/tag out procedures:
- Preparing for shutdown: Before equipment shutdown, authorized and affected employees must have training and knowledge of the types of energy and the protective measures that FMG will provide.
  - Equipment Shutdown: The equipment will be powered down by using the energy disconnects, switches or valves provided by the equipment manufacture or installer.
  - Equipment Isolation: All energy isolating devices will be located and set into the open position, including disconnects for electrical and valves for pneumatic and hydraulic.
  - Applying LOTO devices: See above for additional procedures.
    - ✓ Lockout devices will be affixed to each energy isolating device by authorized employees.
    - ✓ Lockout devices, where used, will be affixed in a manner to that will hold the energy isolating devices in a "safe" or "off" position.
    - ✓ Tag out used by itself is not acceptable.
  - Release of stored energy: After LOTO devices have been applied the crew supervisor will use whatever means possible to release any stored energy. This will include attempting to power up the equipment and bleed/drain any pneumatic or hydraulic lines. If there is any possibility of re-accumulation of stored energy, verification of isolation will continue until work is complete.
  - Verification: prior to entering the area, authorized employees will verify that isolation and de-energizing of equipment have been accomplished.
  - Performing work: After the above steps have been completed, the crew will enter the area to perform their duties. During which they will use extreme caution to avoid coming into contact or damaging equipment.
  - Removal of LOTO devices: At the end of each shift or when LOTO devices must be removed temporarily, the following procedures must be taken by the authorized employees.
    - ✓ Nonessential items are removed from area (this includes tools)
    - ✓ Equipment components are intact
    - ✓ All employees are removed from area
    - ✓ Double check to be sure employees are removed
    - ✓ Authorized employee removes LOTO device
    - ✓ Once devices are removed all affected employees will be notified prior to startup.
    - ✓ Energize and test equipment.
    - ✓ If additional work must be conducted, then LOTO procedures must be reapplied following the entire procedure.
13. The project supervisor, foreman or a member of the safety department are the individuals responsible for verifying and enforcing proper lockout/tag out procedures.

## PERSONAL PROTECTIVE EQUIPMENT

In the construction industry, employees are exposed to flying particles, falling objects, sharp edges, heat, cold, light and other potentially hazardous situations, which require special personal protective equipment. Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact. FMG will provide all personal protective equipment except prescription safety glasses, boots and work clothing.

### Required Protective Equipment:

1. Employees will be trained prior to wearing personal protective equipment. Training will occur at initial job placement and when there are changes to the work or equipment or when employee demonstrates improper use or understanding. Training documentation must include the employees name, date of training & certification of subject. Training will include the following topics:
  - When PPE is necessary
  - What PPE is necessary
  - How to don, doff, adjust and wear PPE
  - The limitations of PPE
  - The proper care, maintenance, useful life and disposal of PPE
2. Refer to the project Job Hazard Analysis for specific project hazards and the PPE selected to be used. The Job site safety officer will determine what PPE must be used based on their hazard assessment and communicated to all affected employees. All PPE must be properly fitted to each affected employee to allow for proper donning, doffing, cleaning and maintenance.
3. All FMG projects are considered construction sites, therefore a hard hat must be worn by all employees, subcontractors and visitors. The hard hat must be in good condition with the suspension system intact.
4. All employees, subcontractors and visitors must wear safety glasses that conform to the ANSI Z87.1 standard. Prescription glasses must be equipped with hard side shields, which also conform to the ANSI Z87.1 standard. Additional types of eye protection will be worn while performing the following tasks.
  - Welding, burning or cutting with a torch will require a welding shield or shaded burning glasses.
  - Using abrasive wheels and portable grinders will require a full-face shield with safety glasses.
  - Working with splashing chemicals will require a full-face shield with safety glasses.
5. Hearing protection must be worn by employees, subcontractors and visitors who are exposed to a sound level of greater than 85 decibels. Supervisors must be aware of what operations produce this sound level.
6. Protective gloves must be worn at all times to protect against hazards such as chemicals, sharp materials/tools and cold weather, unless the gloves cause additional hazards.
7. All employees, subcontractors and visitors must wear sturdy work boots/shoes while on the project. Soft-shoes or sneakers will not be permitted.
8. All employees, subcontractors and visitors must wear long pants and a shirt with at least 4" of sleeve. Cut-off pants/shirts or tank tops will not be permitted.



9. All employees, subcontractors and visitors must wear clothing necessary to protect against the current weather conditions.
10. All personal protective equipment will be kept as clean as possible and will be replaced when there is a defect present. Defective equipment must not be used.
11. All employee-owned equipment must be approved for use by the project supervisor, foreman or a member of the safety department and must conform to the same standards as company issued equipment.

## RESPIRATORY PROTECTION

### **Purpose:**

Occupational Health Standards require that a Respiratory Program must be established whenever respirators are used in an occupational setting. This program is a guideline to prevent employee over-exposure to contaminants, which are potentially harmful to health at FMG. The chief route of exposure of air-borne contaminants is inhalation. Respirators are a safety device covering at least the nose and mouth that protects the respiratory system of the wearer against hazardous atmospheres containing particulate/dusts (e.g., asbestos); vapors and gases (e.g., carbon monoxide); atmospheres that are Immediately Dangerous to Life or Health (IDLH) (e.g., oxygen deficiency); physical agents (e.g., radioactive particles); or biological agents (e.g., mold spores).

### **Scope:**

This Respiratory Protection Program applies to all FMG employees required to wear respiratory protection due to being exposed to airborne contaminants. All Medical exams, training and respirators will be provided at no cost to all employees.

### **Application:**

Occupational diseases caused by breathing contaminated air ideally should be controlled by preventing excessive atmospheric contamination through the use of engineering controls. Respiratory protection shall be used only when use of engineering controls is not feasible, while engineering controls are being instituted, or during any emergency situations.

### **Responsibilities:**

#### **Program Administrator**

The Program Administrator is responsible for administering the respiratory protection program. Duties of the program administrator include:

1. Identifying work areas, processes or tasks that require workers to wear respirators, and evaluating hazards.
2. Selection of respiratory protection options.
3. Monitoring respirator use to ensure that respirators are used in accordance with their certifications.
4. Arranging for and/or conducting training.
5. Ensuring proper storage and maintenance of respiratory protection equipment.
6. Administering the fit testing and medical surveillance programs.
7. Maintaining records required by the program.
8. Evaluating the program.
9. Updating written program, as needed.

The Program Administrator for FMG is Arron Innes.

#### **Supervisors**

Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge. Duties of the supervisor include:

1. Ensuring that employees under their supervision have received appropriate training, fit testing, and a medical evaluation.
2. Ensuring the availability of appropriate respirators and accessories.
3. Being aware of tasks requiring the use of respiratory protection.
4. Enforcing the proper use of respiratory protection when necessary.
5. Ensuring that respirators are properly cleaned, maintained, and stored according to the respiratory protection plan.
6. Ensuring that respirators fit well and do not cause discomfort.
7. Continually monitoring work areas and operations to identify respiratory hazards.
8. Coordinating with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.

### **Employees**

Each employee has the responsibility to wear his or her respirator when and where required and in the manner in which they were trained. Employees must also:

1. Care for and maintain their respirators as instructed, and store them in a clean sanitary location.
2. Inform their supervisor if the respirator no longer fits well, and request a new one that fits properly.
3. Inform their supervisor or the Program Administrator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding the program.

### **Program Elements:**

#### **Selection Procedures**

The program administrator will select respirators to be used on site, based on the hazards to which workers are exposed and in accordance with all OSHA standards. The Program Administrator will conduct a hazard evaluation for the work areas where airborne contaminants may be present during operations. The hazard evaluation will include:

1. Identification of hazardous substances used in the workplace.
2. Review of work area to determine where potential exposures to these hazardous substances may occur. This review will be conducted by surveying the workplace and talking with employees and supervisors.
3. Exposure monitoring to quantify potential hazardous exposure. Monitoring will be completed by the owners or contracted out.
4. When a IDLH atmosphere is present there must be an outside person trained in rescue and communication procedures. Rescue equipment will be selected on a per job basis but must always include SCBA with auxiliary air supply the air must be Grade D or better. Compressor located in a "clean" atmosphere, with in-line purification and tagged to indicate date or change out. Carbon monoxide monitor in place & set to alarm at 10 PPM or monitored frequently. Fittings are incompatible for non-respirable gases and containers.

### **Voluntary Use**

FMG will provide dust masks at no charge to the employees to voluntarily use. The Program Administrator shall authorize the use of dust masks when requested.

### **Medical Evaluation**

Employees who are required to wear respirators must pass a medical exam before being permitted to wear a respirator on the job. Employees are not permitted to wear a respirator until a physician has

determined that they are medically able to do so. Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use.

A licensed physician at a medical clinic will provide the medical evaluations. The following are the procedures for the medical evaluation:

The medical evaluation will be conducted using the questionnaire provided in Appendix C of the respiratory protection standard. To the extent feasible, the company will assist employees who are unable to read the questionnaire, by providing help reading the questionnaire. When this is not possible, the employee will be sent directly to the physician for medical evaluation.

Follow-up medical exams will be granted to employees as required by the standard, and/or as deemed necessary by a medical physician. The follow-up exam usually consists of a pulmonary function test.

All employees will be granted the opportunity to speak with the physician about their medical evaluation, if they so request.

The Program Administrator will notify the medical clinic of the proposed respirator type, asbestos hazards involved and additional protective clothing involved.

Any employee required for medical reasons to wear a positive pressure air-purifying respirator will be provided with a powered air-purifying respirator.

All examinations and questionnaires are to remain confidential between the employee and the physician.

Testing will occur during normal business hours, convenient and understandable. Each employee will be given a chance to discuss the results of the medical exam with doctor who performed the test.

### **Fit Testing**

Employees who are required to wear tight fitting face piece air purifying respirators will be fit tested:

1. Prior to being allowed to wear any respirator with a tight-fitting face piece.
2. Tested annually thereafter or when a change has occurred
3. When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc.).
4. Employees will be fit tested when they receive their medical exams. They will be fit tested with the make, model, and size respirator that they will actually wear. They must take the respirator, along with the HEPA filters with them.
5. Pass a qualitative or quantitative fit test by an approved testing facility.

### **General Use Procedures**

Employees will use their respirators under conditions specified by this program, and in accordance with the training they receive on the use of each particular model. In addition, the respirator shall not be used in a manner for which it is not certified by NIOSH or by its manufacturer.

All employees shall conduct user seal checks each time they wear their respirator. Employees shall use both the positive and negative pressure checks, which will be demonstrated in the respirator training.

All employees shall be permitted to leave the work area, to maintain their respirator for the following reasons: to clean their respirator if the respirator is impeding on their ability to work, change filters, replace parts, or to inspect respirator if it stops functioning as intended. Employees shall notify their supervisor before leaving the area.

Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, facial hair, or missing dentures, that prevents them from achieving a good seal. Employees are not permitted to wear headphones, jewelry, or other articles that may interfere with the seal of the respirator.

### **Cleaning**

Respirators are to be regularly cleaned and disinfected. Respirators issued to the employee, for the exclusive use of that employee, shall be cleaned as often as necessary.

The following procedure is to be used when cleaning and disinfecting respirators:

1. Disassemble respirator, removing any filters.
2. Wash the face piece and associated parts in mild detergent with warm water. Do not use organic solvents.
3. Rinse completely in warm water.
4. Wipe the respirator with disinfectant wipe to kill germs.
5. Air-dry in clean area.
6. Reassemble the respirator and replace any defective parts.
7. Place in clean, dry plastic bag (make sure respirator is completely dry before placing in bag).

### **Maintenance**

Respirators are to be properly maintained at all times in order to ensure proper function and adequate protection to the employee. This involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced in accordance to the manufacturer's specifications prior to use.

The following checklist will be used when inspecting respirators:

1. Face piece: cracks, tears, or holes, face mask distortion
2. Head straps: breaks or tears, broken buckles
3. Valves: residue or dirt, cracks or tears in valve material
4. Filters: approval designation, gaskets, cracks or dents in housing

### **Change Schedules**

Employees wearing respirators will comply with the recommendations of the manufacturer's specifications or instructions.

### **Storage**

Respirators must be stored in a clean, dry area, in accordance with the manufacturer's recommendations.

### **Training**

An independent company will provide training to respirator users and their supervisors on the contents of the FMG Respiratory Protection Program and their responsibilities under it, and on the OSHA Respiratory Protection standard. Employees will be trained prior to using a respirator in the workplace and annually thereafter. Supervisors will also be trained prior to using a respirator in the workplace or prior to supervising employees that must wear respirators.

The training course will cover the following topics:

- The OSHA Respiratory Protection Standard
- Respiratory hazards encountered at the site
- Proper selection and use of respirators
- Limitations of respirators
- Respirator donning and user seal checks
- Fit testing
- Inspection, maintenance, and storage

### **Program Evaluation**

The Program Administrator and/or Supervisor will conduct periodic evaluations of the workplace to ensure that the provisions of this program are being implemented. The evaluations will include regular consultations with employees who use respirators and their supervisors, site inspections, and a review of all records (including air-monitoring records). Problems identified will be noted in an inspection log and addressed by the Program Administrator. These deficiencies will be addressed and corrected.

**Documentation and Recordkeeping**

A written copy of this program and the OSHA standard will be kept in the Main office for FMG. This will be available for all employees to review. Contact Arron Innes to see records

Along with the written respiratory program will be included copies of all respirator training, fit testing and medical records. These records will be updated as needed.

The completed medical questionnaire and the physician's documented findings are confidential and will remain at the medical clinic.





## SCAFFOLDS & AERIAL WORK PLATFORMS

### Scaffold Requirements:

1. All scaffolds must be erected or dismantled under the supervision of a competent person in accordance to OSHA 29 CFR 1926.450.
2. All workers using a scaffold must have training that covers hazards ie.(falls, electrical, falling objects, use and load capacity. Retraining will occur annually or when inadequacies are found. Training will be conducted by a qualified person selected by FMG and at no cost to the employees
3. Rolling scaffolds must have the wheels locked while employees are using them. Employees are not permitted to be on the scaffold during movement.
4. Employees working on a scaffold greater than 6 feet must be protected by falling, as outlined in section C-9 of this document.
5. Properly secured ladder access must be provided for all scaffolds.
6. Cross bracing cannot take the place of a guardrail.
7. Scaffold must be constructed on a firm level base and secured to be capable of carrying the maximum intended load without displacement.
8. Base plates must be used for all non-mobile scaffolds.
9. A scaffold must be tied off or stabilized with outriggers, when the height is more than three times the smaller dimension of its base.
10. The scaffold must be constructed out of proper materials and be inspected prior to each use. A damaged scaffold is not be permitted to be used and must be tagged and repaired/replaced immediately.
11. Any damaged part of the scaffold must be repaired or replace prior to the scaffold being used again. Modifications to scaffolding is only permitted by qualified personnel if a non-qualified person makes changes to scaffolding this will result in disciplinary actions.
12. All scaffold planking must be free of knots and cracks and must completely cover the work platform.
13. Scaffold planks will be laid tight cleated at both ends or overlapped a minimum of 12 inches (300 mm) and nailed or bolted to prevent movement, with overlaps occurring directly above scaffold supports.
14. All scaffolds must be inspected and tagged before each shift.

### Aerial Work Platform Requirements:

1. Prior to employees working from an aerial work platform, training on the specific type of equipment must be provided. Employees will be issued operator's card, which states the equipment that they are trained for.
2. Fall protection must be worn while operating any type of aerial work platform.
3. Employees must tie off to approve anchorage points.
4. Employees must pay close attention to the load ratings and abide by them at all times.
5. A ground person will be utilized whenever possible. This person must pay attention to the movement of the equipment and warn people to stay clear.
6. If the aerial work occurs in a pedestrian area, warning signs must be posted or the area cordoned off.
7. Aerial work platforms should be used on firm, level surfaces. If this is not possible, an aerial work platform specially designed for unlevelled surfaces (off-road type) should be used.

8. All aerial work platforms must be inspected prior to each use. Refer to Section C-1 for the inspection form.
9. Employees must not modify the equipment unless written authorization by the manufacturer is given.
10. Employees are to keep their feet planted on the basket floor at all times. The use of the mid-rail to gain additional height should not be permitted.
11. When loading and unloading lifts trailer chocks, supports or dock plates must be used to ensure safety.

Sample Certificate

<div style="text-align: center; border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <h3 style="margin: 0;">FMG Concrete Cutting Inc.</h3> </div> <p style="text-align: center; font-size: small;">This is an official company training record. For questions, please contact management at: (810)227-3650</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>Employee Name:</b> Christian Spencley  <b>Date of Employment:</b> 07/2000  <b>Supervisor:</b> Arron Innes  <b>Employee Signature:</b></p> </div> <div style="font-size: x-small; margin-top: 10px;"> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">This employee has completed all training listed on this card. They are familiar with all regulatory requirements and competent to perform the related work.</p> </div>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #d9ead3;"> <th style="padding: 5px;">Training Subject</th> <th style="padding: 5px;">Date</th> <th style="padding: 5px;">Instructor Signature</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 5px;">Aerial lifts</td> <td style="text-align: center; padding: 5px;">06/02/11</td> <td style="padding: 5px;"></td> </tr> <tr><td style="padding: 5px;"></td><td style="padding: 5px;"></td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;"></td><td style="padding: 5px;"></td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;"></td><td style="padding: 5px;"></td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;"></td><td style="padding: 5px;"></td><td style="padding: 5px;"></td></tr> <tr><td style="padding: 5px;"></td><td style="padding: 5px;"></td><td style="padding: 5px;"></td></tr> </tbody> </table>	Training Subject	Date	Instructor Signature	Aerial lifts	06/02/11																
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**Front**

**Back**

Scaffolding Defect Tag

## SILICA DUST PROTECTION

Silica is a primary component found in sand, quartz, granite and concrete. Operations such as chipping, drilling, blasting, cutting or grinding of surfaces made of these materials can cause significant amounts of airborne silica dust. Silica dust can cause Silicosis, which is a serious and often times fatal respiratory disease.

### Protective Measures:

1. In order to determine if a particular product contains silica; check the Material Data Safety Sheet.
2. If possible, use materials with less than 1-% crystalline silica in it to prevent over exposure.
3. Surfaces should be wet down before chipping, cutting, grinding, or sanding on them.
4. When using water while cutting materials that contain silica, clean up the slurry before it dries.
5. Power tools and vacuums with built in HEPA filters can be used to remove the dust before it is airborne.
6. If there is a potential that an employee may be over exposed to airborne silica dust, then engineering controls should be in place. If the employee still has a potential of being over exposed, then the employee should wear at least a half-mask respirator. See section B-18 of this document for further details on respirator usage.
7. Never dry sweep or use compressed air to clean dust that may contain silica.
8. If your work produces silica dust, nearby workers should be warned of the hazard or signs should be posted.
9. Wash hands and face before smoking, eating and drinking and also before going home.
10. Never smoke, eat, drink or apply cosmetics in an area that may contain silica dust.
11. It is possible that silica dust can accumulate on work clothes. Caution should be used when handling potentially contaminated clothing.

## TRENCHING & EXCAVATION POLICY

### Scope and Application:

Trenching and Excavation statistically remains one of construction's most dangerous activities. This policy provides guidelines to ensure the safety of all workers who are required to work in or around an excavation. In addition, it offers guidelines for locating existing underground utilities. The competent person in charge of excavation work ensures that:

1. All pre-task planning has been accomplished before excavation begins.
2. Trenching and excavation work is performed within the guidelines of this policy and any other federal, state, local or project owner policies.
3. Soil Classification test are performed by a competent person before employees are allowed entry into the excavation.
4. Necessary protective methods must be taken when excavations are deeper than 5 feet. This can be accomplished by sloping, shoring, or shielding. Protective structures should be designed by a qualified person.

### Soil Classification:

1. Type A Soil
  - Cohesive soil with an unconfined compressive strength of at least 1.5 tons per square foot. Hard clay, sandy clay, clay loam and hardpan are typically classified as type A soil. If the soil is fissured, subjected to large amounts of vibration or was previously disturbed, then it can not be classified as type A.
  - Excavations in type A soil must have an angle of repose of at most ½:1 or 63 degrees or be shored or sheeted.
2. Type B Soil
  - Cohesive soil with an unconfined compressive strength greater than 0.5 but less than 1.5 tons per square foot. Gravel, silt, sandy loam, and some clay are often classified as type B soil.
  - Excavations in type B soil must have an angle of repose of at most 1:1 or 45 degrees or be shored or sheeted.
3. Type C Soil
  - Soil with an unconfined compressive strength of 0.5 tons per square foot or less. Sand, loose gravel or saturated soils are typically classified as type C.
  - Excavations in type C soil must have an angle of repose of at most 1 ½:1 or 34 degrees or be shored or sheeted.

**Underground Installations:**

1. The estimated location of underground utilities such as water, sewer, telephone, fuel, and electric that are expected to be encountered during the project shall be determined prior to excavation activities. Contact the utility companies or state run program such as MISSDIG (in Michigan) within 24 hours to mark the locations of underground utilities.
2. While the excavation is open, underground utilities will be protected, supported or removed to safeguard workers.

**Other Requirements:**

1. The competent person must be onsite at all times while excavation work is being done. The competent person must perform daily inspections of the excavation work and if problems are found, workers must be removed from the excavation. The project supervisor, foreman or member of the safety department can act as the competent person and has been trained to perform soil tests and determine what type of sloping, shoring or trench boxes will be used.
2. A registered engineer must design excavations over 20 feet and their protective measures.
3. Excavated materials must be piled at a minimum distance of 2 feet from the edge of the open excavation.
4. Excavations deeper than 4 feet must have means of access and egress within 25 feet of the workers in the excavation. This can be accomplished with ladders, stairs, ramps or a combination.
5. Water shall not be allowed to accumulate within the excavation. If this is not possible then workers must be protected by shields and water must be pumped out of the excavation.
6. Excavations deeper than 5 feet should have the atmosphere tested for potential air contaminants. An air monitor capable of detecting %O<sub>2</sub>, CO, H<sub>2</sub>S and flammable gases should be used. Proper ventilation should be provided.
7. Stability of adjacent structures must be evaluated before starting an excavation and daily thereafter.
8. The excavation must be protected by barricades as to prevent people or machinery from accidentally falling in. Walkways or crossings will be protected with railings to protect against falls.
9. Workers should not be permitted to work under digging equipment.
10. When workers are required to work within 6 feet of the leading edge of the excavation then some form of approved fall protection must be provided. Fall protection should also be provided when employees are required to use crossings or walkways that could expose them to a fall.
11. When working near vehicular traffic, reflective vest signs and barricades should be utilized to increase worker visibility.

## POWERED INDUSTRIAL TRUCKS

### Protective Measures:

1. Only trained and authorized drivers are permitted to operate a powered industrial truck. Operators will receive training at initial job placement and refresher training every 3 years. In the event of operator deficiencies, a near miss or an accident, additional training will be required. A combination of formal and practical training will be used and operators will be evaluated in the work place. Employees are only permitted to operate the types of trucks that they have received training on. Training will be performed by the Operators Union, FMG Safety Department or other competent organization. All training and evaluations will be documented and maintained. The training program will contain the following at a minimum:
  - Operating instructions, warnings and precautions for the authorized types of trucks
  - Differences between the truck and an automobile
  - Truck controls and instrumentation
  - Engine or motor operation
  - Steering and maneuvering
  - Visibility
  - Fork and attachment adaptation, operation and use limitations
  - Vehicle capacity
  - Vehicle stability
  - Inspection and maintenance programs
  - Refueling and/or recharging procedures
  - Operating limitations
  - Any other procedures listed in the manufacturer's manual
  - Surface conditions
  - Composition of loads
  - Load manipulation, stacking and un-stacking
  - Pedestrian traffic
  - Narrow aisles and other restricted areas
  - Classified hazardous locations
  - Ramps and other sloped surfaces
  - Closed environments and other locations where insufficient ventilation could cause a buildup of carbon monoxide
  - Other unique or potentially hazardous conditions in the workplace
  - The requirements of local, state and federal standards
2. Operators must carry their certification cards and present them to requesting parties.
3. Never load any truck in excess of its rated capacity.
4. The load center of gravity must be centered between the forks.
5. Secure the load before moving the vehicle.
6. Never move the vehicle until all personnel are out of the path of travel.

7. Stunt driving and horseplay are strictly prohibited.
8. No one except for the operator is allowed to ride on a powered industrial truck.
9. No one is allowed to ride stand or be lifted by the forks.
10. No one is allowed to pass or work under an elevated portion of the truck, loaded or empty, unless it is blocked to prevent falling.
11. Drivers must inspect the truck at least once per shift to ensure proper working condition. These inspections should be documented on the attached form.
12. If the vehicle is found to be unsafe, remove the keys, report it to your supervisor and have the equipment removed from service or repaired by a qualified person.
13. Comply with all project specific requirements relating to speed, path usage and traffic signs.
14. Use extra caution around intersections, blind spots or other hazardous locations. Sound your horn at all intersections and blind spots.
15. If the load obstructs view, travel with the load trailing.
16. Descend grades slowly. The load should always be up hill on grades.
17. When the truck is unattended, shut the power off, set the brakes, bring the mast to the vertical position and lower the forks.
18. When the truck is left on an incline, block the wheels on the downhill side. Trailers must be chocked and secured prior to loading and unloading
19. Do not operate the truck on a floor, hatch or platform that is not capable of supporting the loaded vehicle.
20. Do not drive into a trailer unless the wheels are securely blocked and the brakes are set.
21. Watch for overhead obstructions.

Sample permit

<p style="text-align: center;">INDUSTRIAL TRUCK OPERATOR PERMIT  <b>FMG Concrete Cutting</b>  OPERATOR'S NAME:  OPERATOR'S NUMBER:  IS AUTHORIZED TO OPERATE:  <i>(insert type of truck(s) authorized)</i>  RESTRICTIONS: <i>(explanation of restrictions)</i>  DATE ISSUED: <i>(month - day- year)</i>  DATE EXPIRING: <i>(month - day- year)</i> BY ISSUING  AUTHORITY: _____ TITLE</p>
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## WELDING & CUTTING

### Training:

1. Any employee engaging in welding and cutting operations will be trained on the safe operation of their equipment and safe work practices. Training will occur at initial job placement and annually thereafter.
2. Assigned fire watchers must be trained on the hazards of a fire, how to use available fire extinguishers and how to signal the area fire alarm if an uncontrollable fire occurs. Training will occur at initial job placement and annually thereafter.

### Protective Measures:

1. Prior to engaging in welding and cutting operations, all fire hazards must be removed from the work area. This includes all flammables and combustibles. If the fire hazard cannot be removed then a form of guard or protective structure (shield, fire blanket) will be provided to protect the fire hazard from sparks and slag. If fire hazards in the area cannot be removed or protected then welding and cutting operations will not occur in that area.
2. A fire watch must be provided when one or more of the following conditions exists:
  - Areas where a potential major fire could develop
  - Combustible materials are closer than 35 feet
  - Combustibles are farther than 35 feet, but are easily ignitable
  - Wall or floor openings within 35 feet
  - Combustible materials are adjacent to the opposite side of metal
  - When project specific policies call for it
3. The fire watch must remain at the location for a minimum of one half hour after welding and cutting operations are finished to check for possible fire hazards. This includes waiting during breaks and lunches.
4. Fire extinguishers suitable for the fire hazards present must be located near welding and cutting operations at all times.
5. An inspection of the welding and cutting area will be performed by the project supervisor, foreman or a member of the safety department. Once the area is approved for welding and cutting operations to occur, then a written hot work permit must be obtained from the project owner, General Contractor or local security force.
6. Hot work performed within a confined space requires additional precautions. Ventilation, securing cylinders, lifelines, electrode removal must be addressed. Gas cylinders must be shut off and warning signs must be in place prior to entering a confined space. Refer to the Confined Space Entry program in section B-5 of this document for specific entry requirements.
7. Any welding or cutting of lead, zinc, cadmium, mercury, or beryllium based metals or painted surfaces must have proper ventilation or respiratory protection to remove fumes from the workers breathing zone.
8. First Aid personnel and equipment must be available at all times. Refer to the First Aid program for additional information.
9. Employees in charge of oxygen or fuel-gas supply equipment must be trained as outlined above and be competent for such work.

10. Compressed gas cylinders must be stored and transported upright and must be secured at all times. Cylinders must be stored 20 feet from combustible materials. Oxygen and acetylene must be separated in storage by 20 feet.
11. Cylinder caps must be in place when the cylinder is not in use.
12. Regulators and flash back arrestors must be used at all times.
13. Employees involved in gas shielded arc welding, must be trained with the American Welding Society Standard A6-1-1966. Training will occur at initial job placement and annually thereafter.
14. Employees engaged in welding and cutting operations will report any equipment defects or safety hazards. This equipment must be removed from service, tagged and repaired or replaced by a qualified person.

## BENZENE AWARENESS

### General:

Of all the hydrocarbons, Benzene poses the most serious long-term threat. Exposure over time, to even low levels of Benzene can cause leukemia, blood changes and anemia.

### Characteristics:

Benzene is a colorless to light-yellow liquid with a pleasant sweet odor. Benzene is a flammable liquid that can accumulate static electricity. Benzene vapors are heavier than air and may travel to a source of ignition and flash back. The vapors are readily dispersed by wind movement and/or air currents. Liquid benzene tends to float on water and may travel to a source of ignition and spread fire. Benzene is highly reactive with no oxidizing materials.

### Uses:

1. Benzene is a component of gasoline, both in the manufacturing process and found naturally in crude oil; Benzene is also used as a feed stock for chemical manufacturing.

### Health Effects:

1. Benzene is a cancer-causing agent in humans. All contact should be reduced to the lowest possible level. The exposure limits are for air levels only. Skin contact may also cause overexposure.
2. Benzene is one of the most hazardous of all petroleum products because of its adverse health hazards and high flammability.
3. The following adverse health effects are important to remember where there may be a potential exposure to Benzene:
  - **Acute:** At high concentrations (1000 PPM) Benzene has an acute effect on the central nervous systems causing headaches, dizziness, drowsiness, unconsciousness, and possible death. Acute exposure can also cause breathlessness, irritability, and giddiness.
  - **Chronic:** Benzene has the chronic exposure effect on bone marrow (aplastic anemia leukemia). Chronic exposure can also cause convulsions, liver damage, heart damage, blood diseases (aplastic anemia), and cancer (leukemia). These symptoms can take months or years to surface and can develop without physical or visible indications.
  - Repeated skin contact leads to irritant contact dermatitis (rash); as with any petroleum solvent (which Benzene is also classified as), it will leach the natural oils out of the skin. Direct contact with the skin can cause erythema and/or blistering.
  - Benzene is irritating to eyes and mucous membranes.
  - Flammable/dangerous fire risk: benzene has a very low flash point making it dangerous to have any open flame, spark or source of ignition when vapors are present.
  - Explosive limits in air 1.5 to 8% by volume: benzene is highly flammable at low levels of vapor quantity in air.

### Personal Protective Measures:

FMG employees are not permitted to work in areas where there may be a potential for Benzene exposure. It is the responsibility of the Project Manager and the on-site supervisor/foreman to see that any jobsite that may expose employees to Benzene is not manned with personnel until it is proven that it is safe to work within the acceptable OSHA limits without personal protective equipment.

### Training:

All employees will be provided awareness training in this program in order to be familiar with the potential hazards and proper safe work procedures to follow if exposed to this health hazard.

## HYDROGEN SULFIDE AWARENESS

### General:

Hydrogen sulfide is ever present in all refineries. In addition it is generated in many industrial processes as a by-product and also during the decomposition of organic matter containing sulfur.

Hydrogen sulfide (H<sub>2</sub>S) is a colorless gas that at low concentrations has the odor of rotten eggs. At high concentrations, it kills your sense of smell.

H<sub>2</sub>S is a highly flammable and extremely toxic gas that can form an explosive mixture with air over a wide area.

### Health Effects:

10 PPM (0.001% H<sub>2</sub>S)

- Obvious and unpleasant odor.
- Burning eye irritation.
- Permissible exposure limit is eight hours.

200 PPM (0.02% H<sub>2</sub>S)

- Kills smell quickly.
- Stings eyes and throat.
- Respiratory irritation.
- Death after one to two hours of exposure.

500 PPM (0.05% H<sub>2</sub>S)

- Dizziness. Breathing ceases within a few minutes.
- Requires prompt artificial respiration.
- Loss of muscle control, making self-rescue impossible.

1000 PPM (0.10% H<sub>2</sub>S)

- Unconsciousness at once, followed by death within minutes.

### Personal Protective Equipment:

FMG Employees are not permitted to work in areas that contain over 10 PPM of Hydrogen Sulfide, however the following is a guideline for PPE

1. Wear chemical goggles or a face shield when eye contact with this material is possible.
2. Avoid skin contact. Wear proper clothing such as impervious gloves, long sleeves, apron, and boots.

### Ventilation (Indoor):

Use adequate general and local exhaust ventilation to keep atmospheric vapor concentrations below the occupational exposure limits.

### Training:

All employees will be provided awareness training in this program in order to be familiar with the potential hazards and proper safe work procedures to follow if exposed to this health hazard. The training will be provided prior to working in any job with potential exposure to H<sub>2</sub>S operations.

The purpose of hydrogen sulfide training is to familiarize employees with the governmental regulations affecting H<sub>2</sub>S operations. Employees will learn the necessary skills to recognize, detect, and use the proper safety equipment in the event of an H<sub>2</sub>S incident.

## OCCUPATIONAL NOISE EXPOSURE

Noise, or unwanted sound, is one of the most pervasive occupational health problems. It is a by-product of many industrial processes. Exposure to high levels of noise may cause hearing loss and may cause other harmful health effects as well. The extent of damage depends primarily on the intensity of the noise and the duration of the exposure. Noise-induced hearing loss can be temporary or permanent. OSHA's hearing conservation program is designed to protect workers with significant occupational noise exposures from suffering hearing impairment even if they are subject to such noise exposures over their entire working lifetimes.

### Protective Measures:

1. **Monitoring:** The hearing conservation program requires employers to monitor noise exposure levels in a manner that will accurately identify employees who are exposed to noise at or above 85 decibels (dB) averaged over 8 working hours, or an 8-hour time-weighted average (TWA). The exposure measurement must include all continuous, intermittent, and impulsive noise within an 80 dB to 130 dB range and must be taken during a typical work situation. Monitoring will be repeated when changes in production, process, or controls increase noise exposure. Under this program, employees are entitled to observe monitoring procedures and must be notified of the results of exposure monitoring. Instruments used for monitoring employee exposures must be carefully checked or calibrated to ensure that the measurements are accurate.
2. Employees exposed to an 8-hour TWA at or above 85 dB will take part in audiometric testing. Important elements of an audiometric testing program include baseline audiograms, annual audiograms, training and follow-up procedures. Audiometric testing will be made available at no cost to all employees. Audiometric tests must be conducted by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation, or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining and checking calibration and proper functioning of the audiometers being used.
3. Baseline audiograms will be conducted within 6 months of the initial exposure and prior to; the employee will receive at least a 14 hour period without exposure to workplace noise and will be instructed to avoid loud noise outside of work.
4. Annual audiograms will be performed and compared to the baseline to see if a threshold shift has occurred. Employees must be notified in writing within 21 days if any differences are found. If a standard threshold shift occurs, control methods must be evaluated for effectiveness. Employee may be required to have a medical evaluation.
5. Employees who are exposed to an 8-hour TWA at or above 85 dB will be provided with hearing protection. The hearing protection must be effective in lowering the TWA below 85 dB. Multiple types of hearing protection may be required to accomplish this. An evaluation of the workplace will occur to assist in proper selection of the type of hearing protection to be used. Refer to the Personal Protective Equipment section of this document for additional information.
6. Employees who are exposed to an 8-hour TWA at or above 85 dB must be trained at initial job placement and annually thereafter in the effects of noise; the purpose, advantages, and disadvantages of various types of hearing protectors; the selection, fit, and care of protectors; and the purpose and procedures of audiometric testing.
7. Training will also occur when there are changes to the type of PPE provided and when there are changes to the process.

8. Copies of this program are available at every project location.
9. Noise exposure measurement records should be kept for 2 years.
10. Records of audiometric test results will be maintained for the duration of employment of the affected employee at FMG's office. Audiometric test records include the name and job classification of the employee, the date, the examiner's name, the date of the last acoustic or exhaustive calibration, measurements of the background sound pressure levels in audiometric test rooms, and the employee's most recent noise exposure measurement.

## PROCESS SAFETY MANAGEMENT OVERVIEW

The Process Safety Management (PSM) of Highly Hazardous Chemicals (HHC's) is intended to prevent or minimize the consequences of a catastrophic release of toxic, reactive, flammable or explosive HHCs from a process. A process is any activity or combination of activities including use, storage, manufacturing, handling or the on-site movement of HHCs. OSHA's Process Safety Management Standards applies to processes which contain a threshold quantity or greater amount of a toxic or reactive HHC. Also, it applies to 10,000 pounds or greater amounts of flammable liquids and gases. FMG does not maintain these quantities and is therefore typically exempt from these requirements; however some projects may require FMG to comply with the following requirements.

1. Training will be provided to each FMG employee and subcontractor employee on the work practices necessary to perform his/her job. A detail of the known hazards (fire, explosion, toxic release) and applicable emergency plans will be included in the training program. A record of this training will be documented and maintained. These records will include employee name, date that training occurred and the means to verify that training was understood. These records will be kept at FMG's Safety director's office
2. Each employee must be aware of the known potential fire, explosion or toxic release hazards related to their work practices and procedures. In addition, each employee must be aware of the applicable project emergency action plans.
3. Safety Data Sheets (SDS) and chemical labels will be used to identify which chemicals are toxic, reactive, flammable or explosive. Refer to the Hazard Communication section of this document for additional information.
4. FMG will develop and implement safe work practices to provide for the control of hazards during operations such as lockout/tag out; confined space entry; opening process equipment or piping; and control over entrance into a facility by maintenance, contractor, laboratory, or other support personnel. Refer to the applicable section of this document for additional information.
5. Subcontractors are required to report any work practice that will present a unique hazard that may be covered under the OSHA Process Safety Management Standard. Any changes to the process must be communicated and additional training may be required.
6. Hot work permits will be obtained prior to engaging in any hot work practices. The project specific hot work permit program must be used. Refer to the project hazard analysis for the contact information to obtain the permit.
7. Employees are required to immediately report all accidents, incidence and near misses to their supervisor. An accident/incident investigation must be performed within 24 hours of the accident/incident. The project supervisor, foreman or a member of the safety department are responsible for conducting the investigations. These reports and their corrective actions will be kept for a minimum of 5 years.
8. FMG and its subcontractors will respect the confidentiality of trade secret information when the process safety information is released to them.
9. Employees and subcontractors will be evaluated on their compliance with the sites PSM program. Violations will be dealt with according to either this program's disciplinary actions or the sites disciplinary actions; whichever is more stringent.
10. Employees and subcontractors must be aware of the sites Emergency Action Plan

# Job Hazard Analysis

Company: \_\_\_\_\_ Date: \_\_\_\_\_ Location: \_\_\_\_\_

Supervision: \_\_\_\_\_ Duration of Work: \_\_\_\_\_

Project Steps	Potential Hazards	Hazard Solutions




**Approved by Safety Department:** \_\_\_\_\_

**Approved By Project Management:** \_\_\_\_\_

**Approved By Field Supervisor:** \_\_\_\_\_

**Daily Pre-Task Safety Analysis**

Project: \_\_\_\_\_

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

Task Description: \_\_\_\_\_

Emergency Communications: \_\_\_\_\_

**Employee(s)**

*By signing, you agree that you reported any injuries to your Foreman when you last worked and that you intend to work safety today:*

Print: \_\_\_\_\_

Sign: \_\_\_\_\_

Are any employees new to the crew?    Y    N

Name: \_\_\_\_\_ Experienced Partner: \_\_\_\_\_

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

**Task Preparations**

- Have all employees been orientated?      Yes    No
- All work permits in place?                Yes    No
- Has equipment been inspected?            Yes    No
- SDS Sheets reviewed                        Yes    No
- Proper communications established?        Yes    No
- Weather conditions accounted for?        Yes    No
- Should the Safety Department be involved? Yes    No
- Has a PPE assessment been performed?    Yes    No

**Task Steps**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_
- 9. \_\_\_\_\_
- 10. \_\_\_\_\_

**Task Hazards**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_
- 9. \_\_\_\_\_
- 10. \_\_\_\_\_

**Hazard Elimination**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_
- 9. \_\_\_\_\_
- 10. \_\_\_\_\_

**Post-Task Assessment**

Did any injuries or incidents occur today?      Yes    No  
If yes, was a report filed?                        Yes    No

What problems were encountered? \_\_\_\_\_

What can we do to improve this task? \_\_\_\_\_

Completed and reviewed by:

Foreman: \_\_\_\_\_

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

**Notes:**

Lined writing area with three columns for notes.

## Confined Space Entry Permit

Site Location and Description: \_\_\_\_\_ Date: \_\_\_\_\_

Purpose of Entry: \_\_\_\_\_

Supervisor(s) in charge of crew: \_\_\_\_\_ Type of Crew: \_\_\_\_\_ Phone #: \_\_\_\_\_



\_\_\_\_\_

\_\_\_\_\_

**Requirements Completed:**

	<b><u>Date:</u></b>	<b><u>Time:</u></b>
Lock Out/De-energize/Try-out	_____	_____
Line(s) Broken-Capped-Blanked	_____	_____
Purge-Flush and Vent	_____	_____
Ventilation	_____	_____
Secure Area (Post and Flag)	_____	_____
Breathing Apparatus	_____	_____
Resuscitator-Inhalator	_____	_____
Standby Safety Personnel	_____	_____

- Full Body Harness w/"D" ring
- Emergency Escape Retrieval Equipment
- Lifelines
- Fire Extinguishers
- Lighting (Explosive Proof)
- Protective Clothing
- Respirator(s) (Air Purifying)
- Burning Welding Permit

**Date:** **Time:**

	<b><u>Date:</u></b>	<b><u>Time:</u></b>
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____

**Air Monitoring:**

	<b><u>Permissible Levels:</u></b>	<b><u>Start:</u></b>	<b><u>1hr:</u></b>	<b><u>2hrs:</u></b>	<b><u>3hrs:</u></b>	<b><u>4hrs:</u></b>	<b><u>5hrs:</u></b>	<b><u>6hrs:</u></b>	<b><u>7hrs:</u></b>
Percent of Oxygen (O <sub>2</sub> )	19.5% to 23.5%	_____	_____	_____	_____	_____	_____	_____	_____
Lower Explosive Limit (LEL)	Under 10%	_____	_____	_____	_____	_____	_____	_____	_____
Carbon Monoxide (CO)	35 PPM	_____	_____	_____	_____	_____	_____	_____	_____
Hydrogen Sulfide (H <sub>2</sub> S)	10 PPM	_____	_____	_____	_____	_____	_____	_____	_____

Gas tester name: \_\_\_\_\_ Instrument used: \_\_\_\_\_ Model &/or type: \_\_\_\_\_ Serial &/or unit #: \_\_\_\_\_

Attendant/Stand By Person(s): \_\_\_\_\_

Entrant Person(s): \_\_\_\_\_  
\_\_\_\_\_

Supervisor authorizing entry: \_\_\_\_\_

Authorizing Signature: \_\_\_\_\_

Permit Cancellation Signature: \_\_\_\_\_

**Emergency Procedures:**

Phone Number: \_\_\_\_\_

Rescue Procedures: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## Daily Fork Truck/Loader Pre-use Safety Inspection Checklist

Before using this equipment, on each work shift this equipment shall be given a complete visual inspection by a responsible person for any equipment defects. Also to be inspected are the areas of planned usage and the location of hazards that could affect the equipment's safe operation and use.

<u>Equipment Type:</u>	<u>Model:</u>	<u>Project:</u>
<u>Manufacturer:</u>	<u>Serial/ID#:</u>	<u>Contractor:</u>

<b>SHIFT:</b>	<b>Equipment Check: Responsible party to enter S/U in the appropriate box</b> <b>Grades: S = Satisfactory U=Unsatisfactory N/A=not applicable</b>	SUN	MON	TUE	WED	THU	FRI	SAT
		Grade	Grade	Grade	Grade	Grade	Grade	Grade
1.	External lights functional (if applicable)							
2.	Data name plate in place and legible							
3.	Access ladder/grab rails/steps in good condition							
4.	Windows/windshield free of damage/cracks							
5.	Windshield wipers are functional							
6.	Doors/restraints are intact and functional							
7.	Mirrors in good condition and clear							
8.	Fire extinguisher in place and charged/inspected							
9.	Seat belts are in good condition and free of damage							
10.	Parking brake is operational							
11.	Tire air pressure is acceptable for terrain							
12.	Instruments/gauges and controls are functional							
13.	Horn is functional							
14.	Backup alarm is functional							
15.	Operators manual is in cab							
16.	Annual inspection record is in cab							
17.	Load charts (if applicable) are in place and legible							
18.	Roll over protection installed and in good condition							
19.	Proper PPE is available for operator and other nearby workers							
20.								
21.								
22.								
23.								
24.								
25.								
26.								
27.								
28.								
INITIALS OF PERSON PERFORMING CHECKLIST								

Contact \_\_\_\_\_ to report any UNSATISFACTORY conditions.

WEEK ENDING: \_\_\_\_\_

## Daily Man-Lift Equipment Pre-use Safety Inspection Checklist

Before using this equipment, on each work shift this equipment shall be given a complete visual inspection by a responsible person for any equipment defects. Also to be inspected are the areas of planned usage and the location of hazards that could affect the equipment's safe operation and use.

<u>Equipment Type:</u>	<u>Model:</u>	<u>Project:</u>
<u>Manufacturer:</u>	<u>Serial/ID#:</u>	<u>Contractor:</u>

<b>SHIFT:</b>	<b>Equipment Check: Responsible party to enter S/U in the appropriate box</b> Grades: <b>S = Satisfactory</b> <b>U=Unsatisfactory</b> <b>N/A=not applicable</b>	SUN	MON	TUE	WED	THU	FRI	SAT
		Grade	Grade	Grade	Grade	Grade	Grade	Grade
1.	Work platform operator controls work as designed							
2.	Ground level controls work as designed							
3.	Warning and control decals/placards are present and legible							
4.	Safety devices work as designed (brakes, horns, lights, etc.)							
5.	Tie-off points are all in proper working order							
6.	Fuel, hydraulic and battery levels at proper levels							
7.	Air, fuel and hydraulic hoses are free of damages							
8.	Cables and wiring harnesses are free of damages							
9.	Associated equipment parts and assemblies are free of damages							
10.	Tires are at proper inflation levels and satisfactory treads							
11.	Equipment molds (check for cracks)							
12.	Structural members not bent, broken or loose							
13.	Outriggers, stabilizers, extendible sections, axels and other structural members in tact and free of damages							
14.	Guardrail system, safety gates and chairs are free of damages							
15.	Platform is in good working order and free of spills or tripping hazards							
16.	Operating and Safety Manuals are on the equipment (or readily available)							
17.	Operating keys are tethered to the equipment at the Ground Operator Control Console							
18.	Personal Protective Equipment (PPE) is available for Lift Operator							
19.	Ground Watch Person is trained on the proper operation of the ground controls							
20.	Ground Watch Person is wearing highly visible reflective vest							
21.	Overhead work area identified by cones, tape and signs							
22.	Ditches, trenches, Drop-offs, slopes, extreme elevation changes, holes or loose soil present							
23.	Bumps, floor obstructions or protrusions							
24.	Interferences (power lines, lighting, conveyors, stock, etc.)							
25.	Winds or inclement weather							
26.	Other equipment and or personnel in the immediate area							
27.	Sufficient clearances for maneuvering							
28.	Surface is capable of supporting the equipment in all operating configurations							
INITIALS OF PERSON PERFORMING CHECKLIST								

Contact \_\_\_\_\_ to report any UNSATISFACTORY conditions.

WEEK ENDING: \_\_\_\_\_

# JOBSITE SAFETY AND ENVIRONMENTAL CHECKLIST

Project:

Jobsite Management/Supervision:

Auditor:

Date and Time:

Item	Yes	No	N/A	Comments/Corrective Actions
<b>HAZCOM AND FIRST AID</b>				
SDS and Safety Manual onsite				
Trained First Aid personnel available				
Emergency procedures in place				
First aid kits available				
Hazardous waste spill kits available				
<b>PERSONAL PROTECTIVE EQUIPMENT</b>				
Hard hats				
Eye and face protection				
Hearing protection				
Respirators				
Foot and hand protection				
<b>HOUSEKEEPING</b>				
Storage areas, aisles and walkways clear				
Materials neatly piled and stacked				
Nails removed from lumber				
Refuse piles removed				
Hazardous materials contained/protected				
Containers are properly labeled				
Spills cleaned up				
<b>FIRE PROTECTION</b>				
Fuels in properly labeled containers				
"No Smoking" rules observed				
Fire extinguishers provided				
Liquids properly stored and labeled				
<b>MATERIAL HANDLING AND DISPOSAL</b>				
Materials stored in proper locations				
Proper lifting/handling techniques practiced				
<b>LADDERS AND SCAFFOLDING</b>				
Damaged ladders are removed and tagged				
Access ladders extend 3 ft. above landing				
Access ladders are secured				
Scaffolds on sound, rigid footing				
Scaffolds not overloaded				
Guard rails installed as required				
Planking's are scaffold grade				
Access ladders provided for scaffolding				
Fall protection worn when required				
<b>CONCRETE AND MASONRY</b>				
Reinforced steel is capped				
Masonry walls braced as required				
<b>FALL PROTECTION</b>				
Guardrails installed and properly set				
Perimeter cables installed and flagged				
Fall arrest systems are being worn				
Holes are properly covered				
Wall opening are properly protected				



<b>ELECTRICAL</b> Lighting is sufficient for work Extension cords are grounded Damaged cords are removed and tagged Exposed electrical components are guarded GFCI are used when possible				
<b>TOOLS</b> Pneumatic lines are secure Training for Powder Actuated Tools Damaged tools removed and tagged Electrical tools are grounded Guards on tools in place when required				
<b>WELDING AND CUTTING</b> Cylinders are stored upright, with caps Cylinders away from electrical contact Hot work Permit obtained when required Regulators installed and functional Fire watches in place when required				
<b>HOISTING AND LOWERING, MACHINERY</b> Cranes are properly inspected Rigging equipment inspected before use Backup alarms functional Clearance to overhead power lines				
<b>EXCAVATION AND TRENCHING</b> Underground utility installations are located Excavations are protected from cave-ins Spoil piles and materials 2 ft from edge Permit filled out when required Means of access, egress available				
<b>CONFINED SPACE</b> Permit completely filled out when required Air monitoring conducted Rescue equipment provided Employees trained				
<b>AERIAL WORK PLATFORMS</b> Equipment inspected before use Employees trained Ground person stationed when required Employees wearing fall protection Lift is appropriate for terrain				
<b>GENERAL JOBSITE CONDITIONS</b> All employees orientated All employees drug tested Drinking water available Bathrooms available Tool Box Talks conducted weekly All accidents/incidents/near misses reported				
<b>ENVIRONMENTAL HEALTH</b> Jobsite regulatory compliance Required permits posted Erosion controls in place Containers free of leaks and labeled Secondary containment free of leaks Dust control measures taken Storm Water Management				

	Yes	No	N/A	Comments/Corrective Actions
Other Observations/ Concerns				

## Incident Investigation Report

### A. INCIDENT

<u>Employee Name</u>	<u>Trade</u>	<u>Report Date &amp; Time</u>	<u>Incident Date &amp; Time</u>	<u>FMG Job #</u>
<u>Supervisor Name</u>	<u>Witness Name</u>	<u>Site Conditions</u>		

### B. EVENT

<u>Property Damage?</u>	<u>Near Miss?</u>	<u>Injury or Illness?</u>	<u>Auto Accident?</u>	<u>Environmental Impact?</u>
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### C. DESCRIPTION

*Describe the incident in detail here:*

### D. ANALYSIS

*Identify the behaviors or conditions that caused the incident here:*

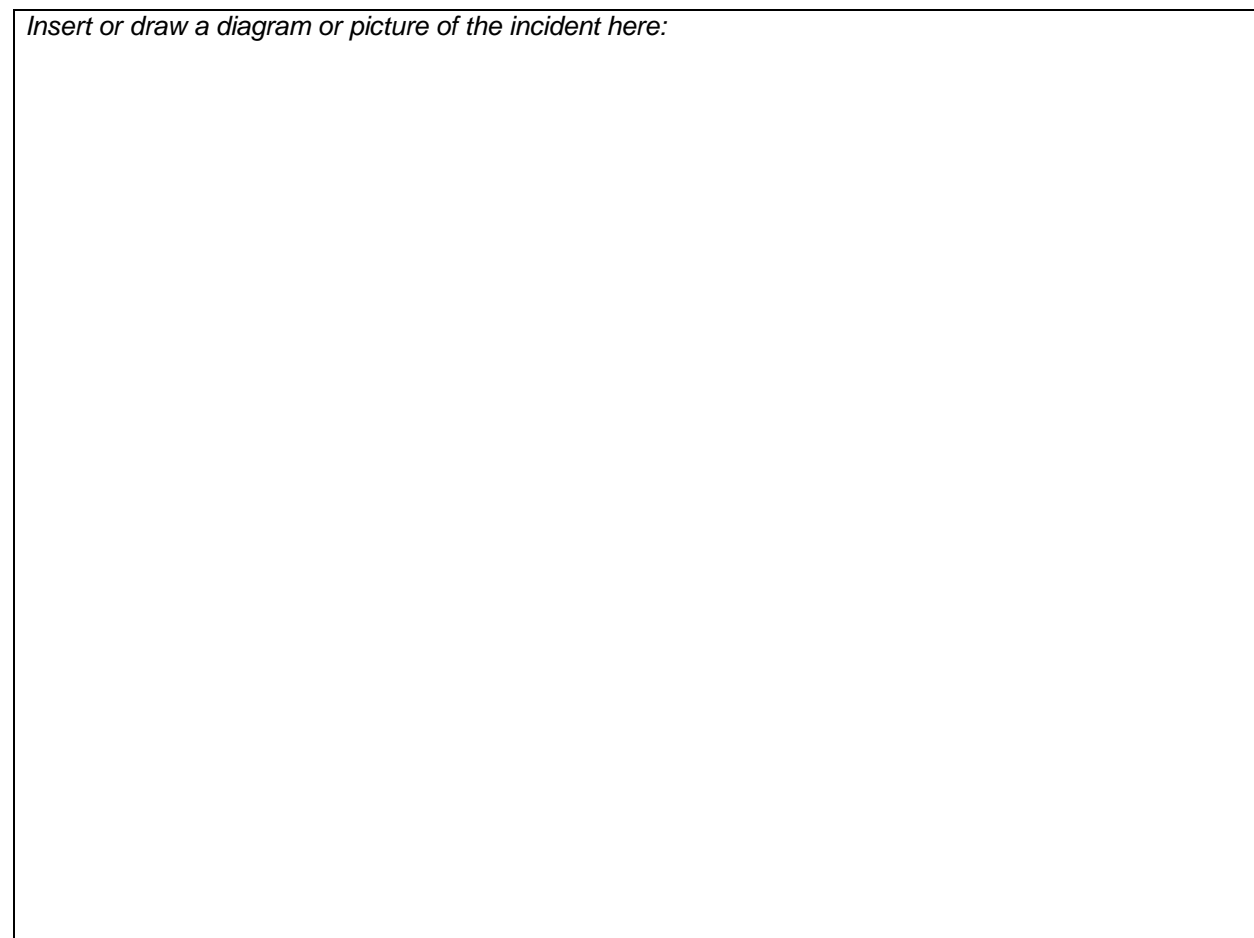
### E. CORRECTION / PREVENTION

*Identify what actions have been done to correct or prevent the incident here:*

ACTION:	RESPONSIBLE PARTY:	COMPLETION DATE:

**F. INCIDENT PICTURE / DIAGRAM**

*Insert or draw a diagram or picture of the incident here:*



**REPORT PREPARED BY:**

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

**REPORT REVIEWED BY:**

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

**G. WITNESS STATEMENT**

DATE: \_\_\_\_\_

NAME: \_\_\_\_\_

AGE: \_\_\_\_\_

ADDRESS \_\_\_\_\_

PHONE: \_\_\_\_\_

TRADE: \_\_\_\_\_

STATEMENT:

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

SUPERVISOR'S SIGNATURE \_\_\_\_\_

## Silica Control Program

### A. Company Policy:

The purpose of this program is to inform employees that FMG has established a Silica Control Program that includes all employees exposed to respirable crystalline silica at or above the OSHA Action Level. The program will include air monitoring to assess employee exposures, engineering and work practice controls to reduce silica exposures, medical examinations (with emphasis on the lungs) to check on employees' health, providing appropriate respiratory protection, and employee training. The purpose of this program is to prevent occupational disease, primarily silicosis, from silica exposures in the workplace. The program applies to employees that are performing these work tasks in our company:

- Saw cutting/coring of concrete (Table 1)
- Drilling of concrete (Table 1)
- Grinding concrete surfaces (Table 1)

Arron Innes is the program coordinator and will review and update the program, as necessary. Copies of the written program may be obtained from Arron Innes in the main office. Under this program, employees will be informed of the possible effects of silica exposure on your health; the control measures implemented to reduce exposures; the purpose and selection of respiratory protection and instructions on fitting, use and care; and the purpose of medical monitoring. Compliance with our company's safety and health requirements, including the Silica Control Program is required by all employees.

#### **Definitions:**

**Action Level** means a concentration of airborne respirable crystalline silica of 25 micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ) or 0.025 milligrams per cubic meter of air ( $\text{mg}/\text{m}^3$ ).

**Employee Exposure** means the exposure to airborne respirable crystalline silica that would occur if the employee were not using a respirator.

**Respirable Crystalline silica** means Quartz, Cristobalite and/or Tridymite contained in airborne particles that are determined to be respirable by a sampling device designed to meet the characteristics for respirable-particle-size-selective samplers specified in the International Organization for Standardization (ISO) 7708:1995: Air Quality - Particle Size Fraction Definitions for Health Related sampling.

**Permissible Exposure Limit (PEL)** means a concentration of airborne respirable crystalline silica of  $50 \mu\text{g}/\text{m}^3$  or  $0.05 \text{mg}/\text{m}^3$ , calculated as an 8-hour Time Weighted Average (TWA).

## **B. Specified Exposure Control Methods:**

For each employee engaged in a task identified in Table 1 of the OSHA Respirable Crystalline Silica standard for Construction, FMG will fully and properly implement the engineering controls, work practices, and respiratory protection specified for the task in Table 1 (see attached). In implementing these control measures, we will:

- For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust;
- For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust;
- For measures implemented that include an enclosed cab or booth, ensure that the enclosed cab or booth;
  - Is maintained as free as practicable from settled dust;
  - Has door seals and closing mechanisms that work properly;
  - Has gaskets and seals that are in good condition and working properly;
  - Is under positive pressure maintained through the continuous delivery of fresh air;
  - Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10 µm range (e.g., MERV-16 or better); and,
  - Has heating and cooling capabilities.
- Where an employee performs more than one task in Table 1 during the course of the shift, and the total duration of all tasks combined is more than four hours, the required respiratory protection for each task will be the respiratory protection specified for more than four hours per shift. If the total duration of all tasks in Table 1 combined is less than four hours, the required respiratory protection for each task will be the respiratory protection specified for less than four hours.

For tasks not listed in Table 1, or where engineering controls, work practices, and respiratory protection are not fully implemented, alternative control measures will be implemented as discussed below.

## **C. Exposure Control for Tasks Not Listed on Table 1**

### **1. Air Monitoring:**

Air monitoring surveys are used to evaluate personal, breathing zone, employee exposure levels for each process and operation. Air sampling is conducted on representative employees in each department/job category on each shift to evaluate 8-hour time-weighted average exposures to respirable crystalline silica. The monitoring results are used to:

- Determine which employees should be included in the Silica Control Program.
- Identify which equipment, employee locations, and areas are candidates for installation of engineering control measures; and
- Select appropriate respirators to reduce employee exposures.

Air sampling will be conducted by a Certified Industrial Hygienist (CIH) through our insurance provider and/or an outside Consulting Firm. Monitoring will be conducted using high flow sample pumps and cyclones, or other recognized size selective devices, and analyzed by an AIHA accredited

laboratory. The air sampling pumps are to be calibrated before and after the survey to ensure validity of the measurements and results.

Initial surveys are conducted to evaluate representative employees' exposures during operations at this facility/job site. If initial monitoring indicates that employee exposures are at or above the OSHA Action Level, but below the OSHA PEL, monitoring will be repeated within six months of the most recent monitoring. Where initial or subsequent exposure monitoring reveals that employee exposures are above the OSHA PEL, monitoring will be repeated within three months of the most recent monitoring. Monitoring will continue at the required frequency until at least two consecutive measurements, taken at least seven days apart, are below the Action Level.

Employees will be informed of air sampling results within 5 working days after completion of an exposure assessment. Affected employees will be notified of the air sampling results either individually in writing, or by the posting of the results in an appropriate location that is accessible to all affected employees. Where exposure monitoring shows employee exposures are at or above the OSHA PEL, the notification will inform the employee of the actions that will be taken to reduce employee exposures to or below the PEL.

Additional monitoring will be conducted if changes in production, equipment or controls are implemented to determine the effect of those changes on employee respirable crystalline silica exposures. Any employee wishing to obtain further information or the monitoring results should contact Onsite safety or site superintendent.

## **2. Engineering and Work Practice Controls:**

If silica exposures exceed the OSHA PEL, feasible engineering and/or work practice controls will be implemented to reduce employee exposures to nonhazardous levels. The ultimate goal is to eliminate hazardous employee exposures to silica levels (i.e., above the OSHA PEL). However, where this is not feasible, measures to **reduce** employee exposures to respirable silica will be implemented. For example, the following controls have been implemented to date:



## **D. Other Exposure Control Items**

### **1. Labels and Other Warnings**

Materials, mixtures and other products containing more than 0.1% crystalline silica will have required specific labels, and Safety Data Sheets are on file and available to employees. The purpose of warning signs and labeling is to inform and alert workers of the presence and type of hazard associated with the area or product so that appropriate precautions may be taken.

### **2. Regulated Areas**

Regulated areas must be established wherever airborne concentrations of respirable silica are, or can reasonably be expected to be, in excess of the PEL. For all regulated areas, the area must be barricaded and warning signs must be posted.

DANGER  
Respirable Crystalline Silica  
May Cause Cancer  
Authorized Personnel Only

### **3. Housekeeping**

The following housekeeping control measures have been established to reduce airborne dust exposures. Each department supervisor is responsible for housekeeping in their area.

- Cleaning with compressed air and dry sweeping silica are prohibited.
- HEPA- filtered vacuuming and washing down with water are used in place of dust-producing methods.
- Emphasis has been placed on maintaining surfaces free of accumulation of silica dust and on prompt spill cleanup to help reduce the potential for material to become airborne.

### **4. Hygiene Procedures**

The following hygiene procedures have been implemented to reduce employee exposures at the site and the potential for contamination of the employees' vehicle and home. Each department manager is responsible for enforcing hygiene procedures.

- Smoking, eating and drinking are prohibited in areas with potential silica exposure.
- Employees' work clothing must be HEPA-filtered vacuumed before entering the lunch and break area and before removal at the end of the shift.
- Cleaning of work clothing by shaking or blowing with compressed air is prohibited.

## **5. Employee Training**

As part of our Hazard Communication Program, employees will be informed of silica health hazards; the specific operations that could result in exposure to respirable crystalline silica above the OSHA PEL; the specific procedures implemented to protect employees from exposure to respirable crystalline silica including work practices and the use of personal protective equipment (e.g., respirators and protective clothing); the contents of the OSHA Silica Standard; the purpose and description of the medical surveillance program.

## **6. Medical Surveillance Program**

Any employee who are required to wear respiratory protection for silica exposure control for more than 30 days per year will be included in the FMG Medical Surveillance Program. FMG has contracted with Michigan Urgent Care to perform baseline and periodic medical examinations, evaluate chest x-rays and advise any action needed as a result of the evaluation. The medical examination is performed by a licensed or certified physician. Problem chest x-rays are reviewed to determine if further evaluation is needed. Medical records will be maintained for at least 30 years following the employee's termination of employment, unless the employee is employed for less than one year and the records are provided to the employee upon termination.

## **6. Respiratory Protection**

All employees exposed to crystalline silica above the OSHA Action Level will be included in the respiratory protection program. Appropriate respirators are selected based on the employee exposure levels. Employees will be fit tested to ensure an adequate fit. Employees are then trained in the use and care of respiratory protection as part of the training program.

## **7. Recordkeeping**

Records are maintained, and made available to employees upon request, for all medical examinations, air sampling surveys and training sessions. Employees' requests for records should be directed to the Safety Department.

- Survey information includes sampling and analytical methods; type of personal protective equipment, if any, in use at the time of sampling; and the monitoring results.
- Records will be maintained for at least 30 years following termination of a worker's employment.
- Each employee is able to obtain information on his/her exposure and medical examinations.