



**S A F E T Y**

**S P E C I F I C A T I O N S**

**2.1.2018**

## **SAFETY IN CONSTRUCTION**

Safety in all Bachmann Construction Company, Inc., operations is not a corporate goal, it is a requirement! To this end, we have formulated this written policy to govern all the operations of Bachmann Construction Company, Inc.

It is a condition of employment at Bachmann Construction Company, Inc., that all employees must adhere faithfully to the requirements of this policy and the safety rules, instructions, and procedures issued in conjunction with it. Failure to do so will result in disciplinary action as outlined in the attached policy.

It is a condition of all subcontracts and purchase orders issued by Bachmann Construction Company, Inc., that this policy and the safety rules, instructions, and procedures issued in conjunction with this policy, as well as all applicable state, federal, and local codes and regulations, be adhered to. Failure to comply is a breach of contract terms!

All visitors to any of Bachmann Construction Company's operations, including but not limited to suppliers, owner's representatives, agents of the architect or engineer, regulatory authorities, and insurance company representatives, shall be required to follow all safety rules and regulations in effect during their visit.

Bachmann Construction Company, Inc., will make an effort to ensure that the operations of other contractors not under our control do not endanger the safety of our employees. To this end, all employees are required to report hazardous activities of other employers to the appropriate Bachmann Construction Company, Inc., official(s).

The safety director, general superintendent, job superintendents, and foremen have the full backing of management to enforce the provisions of this policy as it relates to responsibilities assigned to them.

NO PROJECT IS WORTH A PERSONS HEALTH

ANYONE CAN SAY NO

NO HEROIC ACTS OF CARPENTRY

IF YOU NEED IT TO BE SAFE, WE WILL GET IT

Ed Engler  
Safety Director

## BACHMANN CONSTRUCTION COMPANY, INC.

### GENERAL POLICY STATEMENT

It is the policy of Bachmann Construction Company, Inc., to provide a safe and healthful place of employment for ALL EMPLOYEES. It is the purpose of this policy to:

1. Abide by all federal, state, and local regulations as they pertain to construction.
2. Apply good sense and safe practices as dictated by locations, conditions, and circumstances to all jobs.
3. Exercise good judgment in the application of this policy.

#### Bachmann Construction Company's Management Shall .....

1. Establish rules and programs designed to promote safety.
2. Make known to all employees the rules established.
3. Require all subcontractors as a matter of contract to follow safety rules.
4. Encourage all prime contractors to work safely.
5. Record all instances of violations and investigate all accidents.
6. Discipline any employee willfully disregarding this policy.
7. Provide protective equipment for employees where required.
8. Inform employees of changes in safety rules.
9. Appoint a safety officer with full enforcement authority over safety matters.
10. Conduct safety inspections of all job sites and maintain records.
11. Provide all supervisors with copies of appropriate rules and regulations.

#### Bachmann Construction Company's Job Superintendents Shall .....

1. Be completely responsible for on-the-job safety and health.
2. Make sure proper safety materials and protective devices are available and used and all equipment is in safe working order.
3. Instruct foremen in safety requirements and make sure they pass on their instruction to their crews.
4. Take advantage of offered safety training and be aware of all safety rules.
5. Review all accidents, oversee correction of all unsafe practices, and file accident reports.
6. Conduct job site safety meetings.
7. Require conformance to safety standards from all subcontractors.
8. Notify office of all safety violations.
9. Provide all employees with proper instruction on safety requirements.
10. Keep an accurate daily log on forms provided by the company.
11. Conduct and Document all weekly tool box talks.
12. File out and submit a Job Safety Check List, and Job Site Hazard Assessment for each job.

Bachmann Construction Company's Foremen Shall .....

1. Carry out safety program at the work level.
2. Be aware of all safety requirements and safe working practices.
3. Report all injuries and safety violations.
4. Instruct new employees and existing employees performing new tasks in safe working practices.
5. Make sure protective equipment is available and used.
6. Secure prompt medical attention for any injured employees.
7. Make sure all work is performed in a safe manner and no unsafe conditions or equipment are present.
8. Provide their crew with proper instruction on safety requirements.

Bachmann Construction Company's Job Safety Coordinator Shall .....

1. Work with the general superintendent in corrective job site hazards.
2. Make periodic safety inspections and correct or initiate corrective procedures for problems discovered.
3. Follow all other safety requirements in the performance of other assigned duties.

Bachmann Construction Company's Workers Shall .....

1. Work safely.
2. Request help when unsure how to perform any task safely.
3. Report any unsafe acts to supervisor.
4. Work in such a manner as to ensure their safety as well as that of their co-workers.
5. Avail themselves of company and industry sponsored safety programs.
6. Use and maintain all safety devices provided to them.
7. Maintain and properly use all tools under their control.
8. Follow all safety rules.
9. Provide fellow employees help with safety requirements.
10. Report for work in clothing suitable for work and in such a manner that clothes and jewelry worn will not constitute a safety hazard.

Subcontractors and Suppliers of Bachmann Construction Company Shall .....

1. Abide by all safety rules of owner and other contractors
2. Notify all other contractors when actions or activities undertaken by them could affect health or safety of employees of other companies.
3. Check in with job site supervision before entering job site
4. Inform controlling contractor of all injuries to workers.
5. Report to controlling contractor any unsafe conditions that come to their attention.

Architects, Owners, and Visitors on Bachmann Construction Company's Projects Shall .....

1. Abide by all safety rules.
2. Check in with superintendent so protective equipment, such as hard hats, or eye and respirator protection, may be provided.
3. Refrain from entering construction areas without contacting employees working in those areas.

All Personnel Shall .....

1. Strive to make all operations safe.
2. Maintain mental and physical health conducive to working safely.
3. Keep all work areas clean and free of debris.
4. Assess result of their actions on the entire work place. Work will not be performed in ways that cause hazards for others.
5. Replace or repair safety precautions removed or altered before leaving work area. Unsafe conditions will not be left to imperil others.
6. Abide by the safety rules and regulations of owner on their sites.
7. Work in strict conformance with OSHA regulations.
8. Report promptly to supervision all accidents and injuries observed whether involving company personnel or others.

## **BACHMANN CONSTRUCTION COMPANY, INC.**

### **PROBLEM SOLVING PROCEDURE**

To have an effective safety program, we will communicate both down and up corporate structure.

When a safety problem arises, everyone, even the least senior and experienced employee, has a responsibility to co-workers and the company to report or correct any hazardous conditions found. Every employee's concerns will be heard, and each situation will be corrected or a valid explanation tendered.

The following is Bachmann Construction Company's procedure for solving safety problems.

### **SAFETY PROBLEM SOLVING**

It is the intent of Bachmann Construction Company, Inc., to provide a safe work place for all employees. Supervision personnel have been instructed to watch for and correct all unsafe conditions immediately. Construction sites are complex, and items are easily overlooked. It is important that all employees be on the lookout for unsafe conditions. If you observe a condition that is unsafe, the following actions are to be taken:

1. If possible, correct the condition immediately. Many safety hazards, like a piece of missing guardrail, are easy to correct.
2. If you are not able to take corrective action, report the condition to your immediate supervisor for correction.
3. All company employees with any supervisory responsibility have been instructed to take corrective action, or contact someone who can, when a safety concern is raised. In the event corrective action is not begun in a reasonable length of time, the employee is requested to contact Al Bachmann, at (608) 222-8869 or (608) 576-5901 (cell) or Ed Engler – Director of Safety, at (608) 222-8869 or (608) 576-5902 (cell).

**BACHMANN CONSTRUCTION COMPANY, INC.**

**DISCIPLINARY POLICY FOR SAFETY VIOLATIONS**

Employees are expected to use good judgment when doing their work and to follow established safety rules. We have established a disciplinary policy to provide appropriate consequences for failure to follow safety rules. This policy is designed not so much to punish as to bring unacceptable behavior to the employee’s attention in a way that the employee will be motivated to make corrections. The “Safety Concern Report” should be completed to record the infraction, document the employee/supervisor discussion, and identify proper future behavior.

The following consequences apply to a violation of the same rule or the same unacceptable behavior within one year:

First Instance:	Verbal warning, notation in employee file, and instruction on proper actions.
Second Instance:	1 day suspension, written reprimand, and instruction on proper actions.
Third Instance:	1 week suspension, written reprimand, and instruction on proper actions.
Fourth Instance:	Termination of employment.

Nothing in this policy prevents the immediate dismissal or removal from the job site of any employees or subcontractors whose conduct is a serious violation of the safety requirements and constitutes a grave danger to themselves, co-workers, property, equipment, or the employees of others.

**Enforcement of Disciplinary Action**

The jobsite Superintendent and Senior Project Managers typically have initial contact with employee(s) exhibiting unacceptable behavior. The Superintendents and Project Managers have the right to initiate disciplinary action including verbal warnings, written notification, and suspension and removal from the jobsite if warranted for Bachmann Employees, and Subcontractors performing work for Bachmann Construction, pending a review by Senior Staff.

Senior Staff members include The Director of Safety, Director of Human Resources, Office Manager, President, and CEO. Any Senior Staff Member may order the suspension of an employee or subcontractor for violation of Safety Rules. Termination typically will be handled by both the Director of Human Resources and the CEO with possible input from other staff members.

Senior Staff Members, Project Managers, Superintendents, are expected to visit job sites. If a Safety Violation is noted, the expectation is that the issue will be addressed at that point in time, corrective action taken, and a written incident report filed with the Director of Safety and Director of Human Resources.

**JOB SITE REQUIREMENTS**

### Temporary Facilities

- GFCI's or assured grounding program
- Site/storage layout for placement of materials, shanties, equipment, etc.
- Communication system
- Water (including drinking water) and sanitary facilities
- Job site security equipment (fencing, lights, etc.)
- Temporary access and parking facilities

### Paper Work Requirements

- Copy of OSHA standards and poster
- Posting area for employee notices
- Emergency phone numbers
- OSHA 200's (during February)
- Copy of assured grounding program (if in use)
- Maintenance records for equipment (cranes, material hoists, etc.)
- Contractors safety program and rules
- Approvals (deep trenches, high scaffolds, demo surveys, shoring, etc.)
- Proof of training and safety instructions (lasers, power-actuated tools, first aid, etc.)
- Written respiratory protection program (if respirators are in use)
- Required signs (Hard Hats, No Trespassing, Danger, Caution, etc.)
- Required special permits (burning, welding, traffic, etc.)
- Worker's comp notice, EEO, minimum wage, U/E posters
- Accident and treatment report forms
- A copy of the MSDS for all chemicals used on the job site
- Proper labeling for all chemicals used on a job site
- Job Safety Check List and Job Site Hazard Assessment

### Emergency Needs

- First aid trained personnel
- First aid kit (checked at least weekly)
- Fire extinguishers (or water equivalent)
- Emergency evacuation plans

### Protective Equipment

- Hard hats
- Safety glasses
- Dust Masks and hearing protection as required
- Guarding material for perimeter scaffolds and floor holes
- Safety cans for flammable liquids
- Tagged alloy steel chains when used for rigging
- Safety harnesses, lifelines, and lanyards or nets where fall hazard exists
- Trench and excavation shoring materials when necessary
- Personal protective equipment for visitors



### General Safety Requirements

- Cleanup schedule and waste disposal facilities
- Safe access (stairs, ladders, etc.)
- Safety library – manufacturer’s instructions, safety handbooks, data sheets, etc.
- Flashers, signals, barricades, and reflective clothing for traffic controls

## **MASONRY OPERATIONS**

### Scaffolding

- All scaffolding set on adequate level bearing
- All required bracing installed
- All guardrails, mid-rails, and toeboards in place
- All scaffolds fully planked
- Proper tie-ins to prevent tipping
- No defective scaffolding units
- Ladders in place and high enough

### Equipment

- All guards in place – saws, mixers, others
- Forklift bells, horns, alarms, fully functional
- Fuel stored in safety cans
- GFCI’s in up-to-date assured grounding program in use
- All cords of 3-wire type and in good operating condition

### Personal Protective Equipment

- Hard hats worn by all
- Safety glasses worn at all times
- Dust masks available at saws
- Hearing protection available where required – At levels above 85db

### General

- First aid personnel and equipment available
- Emergency phone numbers and phone available
- Material neatly and properly stored
- Good housekeeping practiced
- Sufficient fire extinguishers
- Proper light levels in work areas
- All hand tools in good working condition
- All floor and wall openings properly guarded
- All temporary heaters properly installed, maintained, and vented

## IMPLEMENTATION

To implement fully the safety program, Bachmann Construction Company .....

1. Holds a supervisory meeting for all of its supervisors at least annually.
2. Prepares at least annually a detailed description of all accidents, including their causes and measures taken to prevent reoccurrence, for distribution to all supervisory personnel.
3. Uses the Standard Study to assign accident costs to projects as a graphic illustration of the high hidden costs of accidents and to serve as a supervisory training tool.
4. Requires weekly Tool Box Talk training sessions on all projects and documents the topics and attendance.
5. Actively participates in trade association sponsored safety programs.
6. Avails itself of the technical expertise available to it through the On-Site Consultation Service funded by OSHA.
7. Uses applicable resources and materials available to it through its insurance carrier.
8. Makes available to employees, free of charge, construction industry sponsored programs, including but not limited to First Aid, CPR, and Supervisory Training Programs.
9. Actively participates in safety programs available through membership in the AGC.
10. Uses the resources of its equipment and material suppliers to train its employees in the safe use of their equipment and materials.
11. Subscribes to safety periodicals to ensure up-to-date, state-of-the-art information on safety.
12. Collects where possible Material Safety Data Sheets on materials in use by the company.
13. Distributes copies of pertinent OSHA regulations and other standards to supervisory personnel.

## ACCIDENT INVESTIGATION

“Those who do not learn from the past are condemned to repeat it.” Each and every accident must be investigated. An accident is any unplanned occurrence that could have caused injury or damage, not just occurrences that did. If a sling breaks and drops a load, it is an accident whether anyone was hurt or not.

Accidents should be investigated by immediate supervision. Results should be reported completely on a standard company form. Completely is the key. In today’s world of litigation, an incomplete form is of no use three years down the road when the case comes to court.

The immediate supervisor’s report should be reviewed by the safety director. Appropriate steps to prevent reoccurrence should be taken.

Accident reports highlight problem areas. Patterns can be detected and resources directed toward preventing a reoccurrence. Accident reports make excellent training tools. The causes and effects of accidents can be reviewed at safety meetings.

A complete accident report contains as a minimum –

1. Employee Information – Name, address, social security number, sex, marital status, occupation, and birth date.
2. Worksite Information – Address of job site, employee occupation, environmental conditions.
3. Accident Data – Information on what employee was doing, how the accident happened, who was injured and where. Diagram should be included.
4. Eyewitnesses – Names of eyewitnesses and their independent statements.
5. Safety Rules – What safety rules were in effect, what safety rules were not that should have been, and what could have been done to prevent the accident.
6. Analysis – Primary, secondary, and contributory causes of the accident.
7. Corrective Action – Steps to be taken to prevent reoccurrence of this or similar incidents.

**BACHMANN CONSTRUCTION COMPANY, INC.**

## GENERAL WORK RULES

THIS IS NOT A COMPLETE LIST OF ALL APPLICABLE SAFETY RULES. IT IS INTENDED TO PROVIDE GENERAL GUIDANCE AND TO BE USED WHERE MORE SPECIFIC WORK PRACTICE GUIDES HAVE NOT BEEN ISSUED.

### Abrasive Grinding

Abrasive wheel bench or stand grinders must have safety guards strong enough to withstand bursting wheels. Adjust work rests on grinders to a clearance not to exceed 1/8 inch between rest and wheel surface. Inspect and ring test abrasive wheels before mounting. Always leave wheel in working condition for next user. Properly dress wheel before using or/and when finished. Eye protection **must** be worn during abrasive grinding procedures.

### Air Tools

Secure pneumatic tools to hose in a positive manner to prevent accidental disconnection. Install and maintain safety clips or retainers on pneumatic impact tools to prevent attachments from being accidentally expelled. All hoses exceeding ½ inch inside diameter require safety devices at source of supply to reduce pressure in case of hose failure. Eye protection **must** be worn at all times when using or energizing pneumatic tools.

### Asbestos

No work involving contact with asbestos-containing material (ACM) will be performed without first contacting the general superintendent and the Director of Safety for clearance to perform the work. All work will be performed in accordance with applicable OSHA, EPA, and local regulations. Asbestos containing materials with <1% (less than) asbestos are defined as having a TRACE level of asbestos. Removal of ACM at trace levels will be evaluated on a job by job basis to determine if Bachmann employees will be involved with the removal and how the removal will be performed, in order to protect the employee and the environment. ACM levels at 1% or greater will be performed by trained and certified contractors in accordance with OSHA, EPA, and local regulations. Workers suspecting that the operations of other contractors are releasing asbestos fibers into the work environment are requested to notify supervisory personnel of their suspicions.

### Alcohol and Controlled Substances

The use of alcohol or controlled substances during working hours on any Bachmann Construction Company, Inc., project or at any Bachmann Construction Company, Inc., facility shall be cause for immediate dismissal. Any individual who reports for work under the influence of alcohol or other controlled substances shall not be allowed to work.

### Belt Sanding Machines

Stationary belt sanders will not be used without guards in place. Eye protection **must** be worn during belt sanding procedures.

### Confined Spaces

Work shall not be performed in confined spaces unless the atmosphere has been properly tested and adequate ventilation is available. Bachmann Construction employees **shall not** undertake confined entry procedures.

### Compressed Air, Use of

Compressed air used for cleaning purposes may not exceed 30 psi and then only in conjunction with effective chip guarding the personal protective equipment. Exceptions to 30 psi are allowed only for concrete form, mill scale, and similar cleaning operations.

The use of compressed air to clean off yourself or other workers is not allowed.

### Compressed Gas Cylinders

Put valve protection caps in place before compressed gas cylinders are transported, moved, or stored. Cylinder valves will be closed when work is finished and when cylinders are empty or being moved.

Compressed gas cylinders will be secured in an upright position at all times. Keep cylinders a safe distance or shield from welding or cutting operations and placed where they cannot become part of an electrical circuit. Oxygen and acetylene must not be stored together.

Oxygen and fuel gas regulators must be in proper working order while in use.

### Concrete, Concrete Forms, and Shoring

Do not work above vertically protruding reinforcing steel unless it has been protected to eliminate the hazard of impalement.

Formwork and shoring will be designed and constructed to safely support all loads imposed during concrete placement. A qualified person shall review jack layout, formwork, shoring, working decks, and scaffolding systems.

### Cranes or Derricks

Rated load capacities, recommended operating speeds, and special hazard warnings or instructions must be conspicuously posted on all equipment. Instructions or warnings must be visible from the operator's station.

Accessible areas within swing radius of crane must be barricaded to prevent employees from being struck or crushed by the crane.

Except where electrical distribution and transmission lines have been de-energized and visibly grounded, or where insulating barriers not a part of or an attachment to the equipment or machinery have been erected to prevent physical contact with the lines, no part of a crane or its load shall be operated within 10 feet of a line rated to 50kv or below; 10 feet + 4 inches for each 1kv over 50kv for lines rated over 50kv, or twice the length of the line insulator, but never less than 10 feet. Cranes will be inspected before each use by the operator. Any defects must be corrected before use. Logs of crane inspections must be kept with the crane.

### Crane Suspended Work Platforms

Work platforms suspended from cranes will be used only with the permission of the general superintendent or safety director and then only in accordance with current OSHA regulations regarding their use.

### Disposal Chutes

Use an enclosed chute whenever materials are dropped more than 20 feet to any exterior point of a building.

When debris is dropped through floor holes without a chute, the area where the material is dropped must be enclosed with barricades at least 42 inches high and not less than 6 feet back from projected edges of opening above. Post warning signs at each level.

### Electrical – General

All extension cords must be 3-wire type, protected from damage, and not fastened with staples, hung from nails, or suspended from wires. No cord or tool with a damaged ground plug may be used. Worn or frayed cables may not be used.

Except where bulbs are deeply recessed in reflector, bulbs on temporary lights will be equipped with guards. Temporary lights may not be suspended by their electric cords unless so designed.

Receptacles for attachment plugs will be of approved, concealed contact type. Where different voltages, frequencies, or types of current are applied, receptacles must be such that attachment plugs are not interchangeable.

Each disconnecting means for motors and appliances and each service feeder or branch circuit at point of origin must be legibly marked to indicate its purpose, unless located and arranged so purpose is evident.

Cable passing through work areas will be covered or elevated to protect from damage. Boxes with covers for disconnecting means must be securely and rigidly fastened to mounting surface.

No employee may work in proximity to any electric power circuit that may be contacted during course of work unless protected against electric shock by de-energizing circuit and grounding it

or by guarding with effective insulation. In work areas where exact location of underground electric power lines is unknown, workmen using jackhammers, bars, or other hand tools which may contact lines must wear insulated protective gloves.

### Electrical – Grounding

Fifteen-ampere and 20-ampere receptacle outlets on single-phase, 120-volt circuits for construction sites, which are not a part of permanent wiring of the building or structure, must be protected by either ground-fault circuit interrupters or an assured equipment grounding conductor program.

An assured equipment grounding conductor program covers all cord sets, receptacles which are not part of the permanent wiring of the building or structure, and equipment connected by cord and plug.

Inspect each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, before each day's use for external defects and possible internal damage. Remove from service or repair immediately any defective items.

Tests will be performed on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord and plug-connected equipment required to be grounded. Grounding conductors will be tested for continuity. Each receptacle and attachment cap or plug will be tested for correct attachment of the equipment grounding conductor.

Tests will be recorded. This test record must identify each receptacle, cord set, and cord and plug-connected equipment that passed the test, and will indicate the last date it was tested and the interval for which it was tested. No electrical tool or cord may be used unless it has been tested according to company's assured grounding program. The noncurrent-carrying metal parts of fixed, portable, and plug-connected equipment must be grounded except those protected by an approved system of double insulation. The path from circuits, equipment, structures, and conduit or enclosures to ground must be permanent and continuous and have ample current carrying capacity.

### Equipment Operation

No employee will operate electric, gas, or hand-powered tools or equipment unless familiar with the use of the item and safety precautions required. Supervision will provide necessary safety information for all tasks and equipment.

### Excavating and Trenching

Before opening any excavation, efforts, including utility company contact, must be made to determine if there are underground installations in the area. Underground facilities must be located and supported during excavation operations.

Walls and faces of trenches 5 feet or more in depth, and all excavations in which employees are exposed to danger from moving ground or cave-in, must be guarded by shoring or sloping.

Where employees may be required to enter excavations, excavated material must be stored at least 2 feet from excavation edge.

Make daily inspections of excavations. If evidence of possible cave-ins or slides is apparent, cease all work in excavation until precautions have been taken.

Trenches 4 feet deep or more require adequate means of exit such as ladders or steps, located so as to require no more than 25 feet of lateral travel.

### Eye and Face Protection

Eye protection will be provided and **must** be worn at all times on construction sites.

Face protection will be provided when machines or operations present potential face injury.

Employees exposed to laser beams must use suitable laser safety goggles which will protect for the specific wave length of the laser and be optical density (O.D.) adequate for the energy involved.

Goggles will be worn over any employee-owned prescription glasses that do not meet industrial safety standards.

### Fire Protection

Fire fighting equipment must be conspicuously located and readily accessible at all times, and periodically inspected and maintained in operating condition. Report any inoperative or missing equipment to supervision.

If the project includes automatic sprinkler protection, installation will closely follow construction and be placed in service, as soon as applicable laws permit, following completion of each story.

Fire extinguishers, rated not less than 2A, will be provided for each 3,000 square feet of building area (or major fraction). Travel distance from any point to the nearest fire extinguisher may not exceed 100 feet with at least one extinguisher per floor.

In multi-story buildings, at least one fire extinguisher must be located adjacent to stairway.

### Flagmen

When signs, signals, and barricades do not provide necessary protection on or adjacent to a highway or street, flagmen or other appropriate traffic controls may be used. Flagmen will wear a red or orange warning garment. Warning garments worn at night will be of reflectorized material.



## Flammable and Combustible Liquids

Only approved containers and portable tanks will be used for storage and handling of flammable and combustible liquids.

No more than 25 gallons of flammable or combustible liquids may be stored in a room outside of an approved storage cabinet.

No more than 60 gallons of flammable or 120 gallons of combustible liquids may be stored in any one storage cabinet.

No more than three storage cabinets may be located in a single storage area. Inside storage rooms for flammable and combustible liquids must be of fire-resistive construction, with self-closing fire doors, 4-inch sills or depressed floors, a ventilation system of at least six air changes per hour, and electrical wiring and equipment approved for Class 1, Division 1 locations.

Storage in containers outside buildings may not exceed 1,100 gallons in any one pile or area. Grade storage areas to divert possible spills away from building or other exposures, or surround with a curb or dike. Locate storage areas at least 20 feet from any building and keep free from weeds, debris, and other combustible materials.

Keep flammable liquids in closed containers when not in use.

Post conspicuous and legible signs prohibiting smoking in service and refueling areas.

## Floor Openings, Open Sides, Hatchways, Etc.

Guard openings with standard guardrails and toe boards or cover. Provide railing on all exposed sides, except at entrances to stairways.

Every open-sided floor or platform, 6 feet or more above adjacent floor or ground level, must be guarded by a standard railing, or equivalent, on all open sides except where there is entrance to a ramp, stairway, or fixed ladder.

Runways 4 feet or more high need standard railings on all open sides.

Guard ladder way floor openings or platforms with standard guardrails and standard toe boards on all exposed sides, except at entrance to opening, with passage through the railing provided by a swinging gate or offset so a person cannot walk directly into opening.

Temporary floor openings will have standard railings or effective covers.

Floor holes into which persons can accidentally walk will be guarded by either a standard railing with standard toe board on all exposed sides, or a standard floor hole cover.

While the cover is not in place, the floor hole will be protected by a standard railing.  
Gases, Vapors, Fumes, Dusts, and Mists

Exposure to toxic gases, vapors, fumes, dusts, and mists at a concentration above those specified in the “Threshold Limit Values of Airborne Contaminants” of the ACGIH should be avoided.

When engineering and administrative controls are not feasible to achieve full compliance, protective equipment or other protective measures will be used to keep the exposure of employees to air contaminants within the limits prescribed. Any equipment and technical measures used for this purpose must be reviewed for each particular use by a technically qualified person. Employees will wear all furnished equipment at all times.

### Hand & Power Tools

Company issued hand and power tools must be kept in a safe operating condition. All tools assigned to the jobsites are inspected by a member of the Expediting Team prior to delivery to the jobsite. Once on the jobsite, it is the obligation of Bachmann Employees to inspect and maintain the tools. If a tool is damaged, it must be taken out of service immediately and returned for repair or disposal. Tag the tool with your name, and the reason the tool has been taken out of service.

Equipment guarding will be in place at ALL Times! If guards are intentionally removed during tool use, disciplinary action will be taken, up to and including discharge. Tools returned to Expediting with guards missing or damaged will be reported to the Director of Safety, the Director of Human Resources, and the CEO.

PPE required for use with certain power tools include dust masks, eye protection including goggles and face shields, hearing protection, cut proof gloves, and leather gloves.

Gas powered equipment must be used in well ventilated areas only. Air monitoring may be required to verify safe air quality.

When using electrical tools, a GFCI must be in place for all tools, or assured equipment grounding in place. Do not carry electrical tools by the power cord. At the jobsite, make sure the power tools are stored in a secure and dry location.

Inspect Abrasive Grinding Wheels for cracks (ring test) and defects before energizing the grinding tool. Replace if wheels are damaged or cracked. Use proper PPE when using the grinder including hearing protection, eye protection and face shield, and cut proof gloves.

## Hard Hats

Hard hats **must** be worn at all times on construction sites.

Exceptions to the hard hat requirement may be granted on a case-by-case basis but must be in written form. Consult with corporate Safety Director.

## Hearing Protection

Hearing protection will be worn in areas where sound levels may exceed 85 decibels.

## Heating Devices, Temporary

Fresh air must be present in sufficient quantities to maintain safety of workers. Solid fuel salamanders are prohibited in buildings and on scaffolds.

## Hoists, Material and Personnel

Rated load capacities, recommended operating speeds, and special hazard warnings or instructions posted on cars and platforms may not be exceeded. Material hoist way entrances will be protected by substantial full width gates or bars. Hoist way door or gates of personnel hoists will be not less than 6 feet, 6 inches high, and be protected with mechanical locks which cannot be operated from the landing site and are accessible only to persons on the car. Provide overhead protective covering on the top of the hoist cage or platform.

## Horseplay

Horseplay and practical jokes are not allowed and can result in immediate disciplinary action.

## Housekeeping

Form and scrap lumber with protruding nails and all other debris will be kept clear from work areas. Remove combustible scrap and debris at regular intervals. Containers will be provided for collection and separation of all refuse. Covers are required on containers used for flammable or harmful substances.

Keep electrical cords to the side of traffic areas to prevent trip hazards and damage to electrical cords.

At the end of each portion of work, return all tools and excess material to proper storage. Clean up all debris before moving on to next phase.

Clean up and dispose of all debris at the end of each shift and secure the job site.

## Illumination

Construction areas should be lighted to not less than minimum illumination intensities listed while work is in progress.

### Foot-Candles: Area of Operation

- 5 General construction area lighting. General construction areas, concrete placement, active storage areas, loading platforms, refueling, and field maintenance areas and stairways.
- 5 Indoor: warehouse, corridors, hallways, and exit ways.
- 10 General construction plant and shops (e.g.; batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active storerooms, mess halls, indoor toilets, and workrooms).

## Jointer

Each hand-fed planer and jointer with a horizontal head must be equipped with a cylindrical cutting head. Keep opening in the table as small as possible. Each hand-fed jointer with a horizontal cutting head must have an automatic guard to cover the section of the head on working side of fence or cage. Guards may not be removed.

A proper jointer guard will automatically adjust itself to cover unused portion of the head, and will remain in contact with material at all times. Each hand-fed jointer with horizontal cutting head must have a guard which will cover the section of the head back of the cage or fence.

## Ladders

All ladders in service are rated for 300 lbs., and are clearly marked with Manufacturers label. All ladders are inspected by a member of the expediting team prior to being placed in service at a jobsite. Any broken or defective ladders are tagged and taken out of service. Once at the jobsite, all ladders should be inspected each day before use. Any broken or defective ladders must be taken out of service, tagged, and removed from the jobsite. Ladders will only be used for their intended purpose.

When in use, ladders must be placed on a stable, level surface. Ladders must only be used for the purpose for which they were designed. The use of a ladder for scaffolding platforms is expressly prohibited. Do not place ladders on boxes, crates, pallets, or equipment buckets, etc., under any circumstances. Extension ladders must extend 3 feet above the upper landing surface. The top of the ladder needs to be “tied off” to help secure the ladder. The angle of placement for

an extension ladder is 4 to 1 (Every 4 feet the ladder extends up, the base should be 1 foot from the wall).

When a ladder is in use, the top two rungs of an extension ladder, and the top step of a step ladder are not to be used. Employees must use two hands, facing the ladder with 3 points of contact when going up and down ladders. If materials or supplies need to be raised or lowered, a hand line must be used verses taking the materials up and down the ladder and potentially loose one's balance.

Portable metal ladders may not be used for electrical use or where they may contact electrical conductors.

Job made ladders will be constructed for their intended use and for specific jobsites. Cleats will be inset into side rails ½ inch, or filler blocks used. Cleats will be uniformly spaced 12 inches, top to top. Upon completion of the specific project, the job made ladder will be completely disassembled.

### Lasers

Only trained employees will be allowed to operate lasers. Employees will wear proper eye protection where there is a potential exposure to laser light greater than 0.005 watts(5 milliwatts).

Beam shutters or caps will be utilized, or laser turned off, when laser transmission is not actually required. When lasers are left unattended for a substantial period of time, turn them off.

### Liquefied Petroleum Gas

Each system will have containers, valves, connectors, manifold valve assemblies, and regulators of an approved type.

Every container and vaporizer must be provided with one or more approved safety relief valves or devices. Containers will be placed upright on firm foundations or otherwise firmly secured.

Portable heaters must be equipped with an approved automatic device to shut off the flow of gas in event of flame failure. Storage of LPG within buildings is prohibited. Storage locations must have at least one approved portable fire extinguisher, rated not less than 20-B.C.

### Medical Services and First Aid

When a medical facility is not reasonably accessible, a person trained to render first aid will be available at the worksite.

First aid supplies must be readily available. First Aid kits will be required on all jobsites and will be inspected and resupplied weekly. The first aid supplies will be stored in a weather proof container with individual sealed packages of each item.

The telephone numbers of physicians, hospitals, or ambulances must be conspicuously posted.

### Motor Vehicles and Mechanized Equipment

Check all vehicles in use at beginning of each shift to assure that all parts, equipment, and accessories affecting safe operation are in proper operating condition and free from defects. All defects shall be corrected before placing vehicle in service.

No employee shall use any motor vehicles, earthmoving, or compacting equipment having an obstructed view to the rear unless: vehicle has a reverse signal alarm distinguishable from surrounding noise level, or vehicle is backed up only when an observer signals it is safe to do so.

Heavy machinery, equipment, or parts thereof which are suspended or held aloft will be substantially blocked to prevent falling or shifting work under or between them.

No person shall operate a motor vehicle on a public highway without a valid driver's license.

If seat belts are installed on equipment, they must be used when the equipment is in operation.

### Personal Protective Equipment

The employee is responsible for wearing appropriate personal protective equipment in operations where there is exposure to hazardous conditions or where need is indicated to reduce hazards.

**Each employee will be trained in the use of the PPE as required for each specific job site. Retraining of the employee is required when the workplace changes, making the earlier training obsolete, the type of PPE changes or when the employee demonstrates lack of use, improper use, or insufficient skill or understanding. These training records will be maintained by the Director of Safety and or the Director of Human Resources. Annual refresher training is provided at the All Hands Meeting held once per year for all Bachmann Employees, as well as specific training and certification required by OSHA each three years. All training is provided at no cost to the employee.**

Lifelines, safety harnesses, and lanyards will be used for employee safeguards. Employees working over or near water, where danger of drowning exists, will wear U.S. Coast Guard approved life jackets or buoyant work vests.

### Power-Actuated Tools

Only trained employees will be allowed to operate power-actuated tools. All power-actuated tools will be tested daily before use, and all defects discovered before or during use will be corrected. Tools will not be loaded until immediately before use. Loaded tools will not be left unattended.

NEVER POINT A POWER ACTUATED TOOL AT ANYONE!

Always position the tool, then pull the trigger or activate firing mechanism. Do Not Hold Trigger Down Continuously using the Safety as the trigger. This can cause double strikes (flying nails), and can cause injury if you place device against yourself or others. Always wear eye protection when using Power Actuated Tools.

### Power Transmission, Mechanical

Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains, or other reciprocating, rotating, or moving parts of equipment must be guarded if such parts are exposed to contact by employees or otherwise constitute a hazard. No equipment may be used without guards in place.

### Railings

A standard railing will consist of top rail, intermediate rail, toe board, and posts, and have a vertical height of approximately 42 inches from upper surface of top rail to floor, platform, etc. The top rail of a railing will be smooth-surfaced, with a strength to withstand at least 200 pounds. The intermediate rail will be approximately halfway between top rail and floor.

A stair railing will be of construction similar to a standard railing, but the vertical height will not be more than 34 inches nor less than 30 inches from upper surface of top rail to surface of tread in line with face of riser at forward edge of tread.

### Respiratory Protection

In emergencies, or when feasible engineering or administrative controls are not effective in controlling toxic substances, approved respiratory protective equipment will be provided and used. Approved respiratory protection is limited to Dust Masks Only! If respiratory protection other than Dust Masks is required, Bachmann Construction employees will not be permitted to continue working. The jobsite superintendent, director of safety, and project manager will determine next steps.

Bachmann Construction employees are not permitted to use respirators other than Dust Masks, including the voluntary use of personnel respirators. This policy is in effect to satisfy OSHA Standard 1910.134 requiring a written respiratory program for respirator use other than Dust Masks.

### Rollover Protective Structures (ROPS)

Rollover protective structures (ROPS) standards apply to the following types of materials handling equipment: To all rubber-tired, self-propelled scrapers; rubber-tired, front-end loaders; rubber-tired dozers; wheel-type agricultural and industrial tractors; crawler tractors; crawler-type loaders; and motor graders, with or without attachments, that are used in construction work. This requirement does not apply to side boom pipe laying tractors.

Rollover protective structures will not be removed or modified.

## Safety Nets

Safety nets are required when workplaces are more than 25 feet above the surface and the use of ladders, scaffolds, catch platforms, temporary floors, safety lines, or safety harnesses is impractical.

## Safety Programs

The company makes available, free of charge, safety training programs covering construction hazards. All employees are requested to actively participate in these programs. Contact the Director of Safety for information on available safety programs. All safety training is provided free of charge to the employee and all records of training provided for each employee is kept on file with the Safety Director and the Human Resources Director.

## Saws

All portions of band saws blades will be enclosed or guarded, except for working portion of blade between bottom of guide rolls and table.

Portable, power-driven circular saws will be equipped with guards above and below the base plate or shoe.

The lower guard will cover the saw to depth of teeth, except for minimum arc required to allow proper retraction and contact with the work, and will automatically return to covering position when blade is removed from the work.

Radial saws will have an upper guard which completely encloses the upper half of the saw blade. The sides of lower exposed portion of blade will be guarded by a device that will automatically adjust to thickness of, and remain in contact with, material being cut. Radial saws used for ripping must have non-kickback fingers or dogs. Radial saws will be installed so the cutting head will return to starting position when released by operator.

All swing or sliding cut-off saws will be provided with a hood that will completely enclose upper half of saw. Limit stops will be provided to prevent swing or sliding type cut-off saws from extending beyond front or back edges of the table. Each swing or sliding cut-off saw will be provided with an effective device to return saw automatically to back of table when released at any point of its travel.

Inverted sliding cut-off saws will be provided with a hood that will cover the part of the saw that protrudes above top of the table or material being cut.

Circular table saws will have a hood over portion of saw above the table, so mounted that the hood will automatically adjust itself to thickness of, and remain in contact with, material being cut. Circular table saws will have a spreader aligned with the blade, spaced no more than ½ inch



behind largest blade mounted in saw. Circular table saws used for ripping will have non-kickback fingers or dogs. Feed rolls and blades of self-feed circular saws will be protected by a hood or guard to prevent hands of operator from coming in contact with in-running rolls at any time.

If protective guards have been intentionally removed, the equipment must not be used until the guards are properly reinstalled. Disciplinary action may be taken for intentionally removing guards and operating the equipment unless prior approval has been given for a specific saw cut. Upon completion of the specific saw cut approved, the guard will be replaced

### Scaffolds (General)

Scaffolds will be capable of supporting 4 times maximum intended load and erected on sound, rigid footing, capable of carrying the maximum intended load without settling or displacement.

Guardrails and toe boards will be installed on all open sides and ends of platforms more than 10 feet above ground or floor, except needle beam scaffolds and floats which require the use of safety harnesses. Scaffolds 4 feet to 10 feet in height, having a minimum dimension in either direction of less than 45 inches, will have standard guardrails installed on all open sides and ends.

There will be a screen with maximum ½ inch openings between toe board and guardrail where persons are required to work or pass under scaffolds. Planking will be Scaffold Grade or equivalent as recognized by approved grading rules for species of wood used. Overlap scaffold planking a minimum of 12 inches or secure from movement.

Scaffold planks will extend over end supports not less than 6 inches nor more than 12 inches. Scaffolding and accessories with defective parts will be immediately replaced or repaired. Wherever possible, scaffold planks will be cleated.

### Scaffolds (Mobile)

Platforms will be tightly planked for full width of scaffold except for necessary entrance opening. Platforms will be secured in place.

Guardrails made of lumber, not less than 2 x 4 inches (or equivalent) approximately 42 inches high, with a mid-rail of 1 x 6 inch lumber (or equivalent), and toe boards, will be installed at all open sides and ends on scaffolds more than 10 feet above ground or floor. Toe boards will be minimum 4 inches in height. Where persons are required to work or pass under scaffolds, install wire mesh between toe board and guardrail.

### Scaffolds (Swinging)

On suspension scaffolds designed for a working load of 500 pounds, no more than two men will be permitted to work at one time. On suspension scaffolds with a working load of 750 pounds, no more than three men may work at one time. Each employee will wear an approved safety

harness attached to a lifeline. The lifeline will be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend employee in case of a fall.

#### Scaffolds (Tubular Welded Frame)

Scaffolds will be properly braced by cross bracing or diagonal braces, or both, for securing vertical members together laterally. Cross braces will be of such length as will automatically square and align vertical members so the erected scaffold is plumb, square, and rigid. All brace connections will be made secure.

#### Stairs

Flights of stairs having four or more risers will be equipped with standard stair railings or handrails as specified below. On stairways less than 44 inches wide having one open side, at least one stair railing on the open side. On stairways less than 44 inches wide having both sides open, one stair railing on each side. On stairways more than 44 inches wide but less than 88 inches wide, one handrail in each enclosed side and one stair railing on each open side.

On all structures 20 feet or over in height, stairways, ladders, or ramps will be provided.

Rise height and tread width will be uniform throughout any flight of stairs.

#### Storage

All materials stored in tiers will be secured to prevent sliding, falling, or collapse.

Aisles and passageways will be kept clear and in good repair.

Stored materials will not obstruct exits. Materials will be sorted with due regard to fire characteristics.

#### Theft

Theft of any company-owned equipment or materials, or the unauthorized removal of equipment or materials from a job site, shall be cause for immediate dismissal.

#### Tire Cages

A safety tire rack, cage, or equivalent protection will be provided and used when inflating, mounting, or dismounting tires installed on split rims, or rims equipped with locking rings or similar devices.

#### Toilets

Toilets will be provided according to the following: 20 or fewer persons – one facility; 20 or more persons – one toilet seat and one urinal per 40 persons; 200 or more persons – one toilet seat and one urinal per 50 workers.

### Wall Openings

Wall openings, from which there is a drop of more than 4 feet, and the bottom of opening is less than 3 feet above working surface, will be guarded.

When the height and placement of the opening in relation to the working surface is such that a standard rail or intermediate rail will effectively reduce the danger of falling, one or both will be provided. The bottom of a wall opening, which is less than 4 inches above the working surface, will be protected by a standard toe board or an enclosing screen.

### Welding, Cutting, and Heating

Proper precautions (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention will be taken in areas where welding or other “hot work” is being done. No welding, cutting, or heating will be done where the application of flammable paints, or the presence of other flammable compounds or heavy dust concentrations creates a fire hazard. Equip torches with anti-flashback devices.

Arc welding and cutting operations will be shielded by noncombustible or flameproof shields to protect employees from direct arc rays.

When electrode holders are left unattached, electrodes will be removed, and holders will be placed or protected so they cannot make electrical contact. All arc welding and cutting cables will be completely insulated. There will be no repairs or splices within 10 feet of an electrode holder, except where splices are insulated equal to the insulation of the cable. Defective cable will be repaired or replaced.

Fuel gas and oxygen hoses must be easily distinguishable and not interchangeable. Inspect hoses at the beginning of each shift and repair or replace if defective.

General mechanical or local exhaust ventilation or air line respirators will be provided, as required, when welding, cutting, or heating hazardous materials or in confined spaces. Always wear approved tinted eye protection when welding or in areas where welding is being done.

When “Hot Work” is performed, an appropriately rated fire extinguisher will be in the hot work area and a fire watch will be in place for 30 minutes beyond the completion of the hot work. This includes breaks and the end of the shift.

### Wire Ropes, Chains, Ropes, Etc.

Wire ropes, chains, ropes, and other rigging equipment will be inspected prior to use and as necessary during use to assure their safety. Remove defective rigging equipment from service immediately.

Job or shop hooks and links, or makeshift fasteners, formed from bolts, rods, etc., or other such attachments, will not be used.

When U-bolts are used for eye splices, the U-bolt will be applied so the “U” section is in contact with dead end of rope.

#### Woodworking Machinery

All fixed power-driven woodworking tools will be provided with a disconnect switch that can be either locked or tagged in off position.

## **Silica Exposure Control Program**

## 1.0 Applicability and Scope

### 1.1 Applicability

This Written Exposure Control Plan (Plan) applies to **Bachmann Construction** personnel who are potentially exposed to airborne concentrations of respirable crystalline silica (silica) because of their work activities or proximity to the work locations where airborne silica is being emitted. This Plan also applies to **Bachmann Construction** superintendents, foremen, or safety personnel who may be responsible for overseeing a subcontractor's operations that have the potential to expose personnel to airborne concentrations of silica at or above regulatory and industry action levels and exposure limits.

### 1.2 Scope

This Plan describes the hazards associated with projects involving potential exposure to airborne concentrations of silica and the issues to be addressed during these projects. These projects include, but are not limited to:

- Use of stationary masonry saws used to cut concrete, tile, concrete masonry block, sheet rock, gypsum fiber roof board, or any other product containing quartz.
- Handheld power saws used to cut concrete, asphalt, concrete masonry block, sheet rock, gypsum fiber roof board, or any other product containing quartz.
- Walk-behind saws used to cut concrete or asphalt.
- Rig-mounted or free standing core saws or drills (including impact and rotary hammer drills) used to penetrate concrete, concrete masonry block, sheet rock, gypsum fiber roof board, or any other structural component or product containing quartz.
- Jackhammers and handheld powered chipping tools used to demolish or modify concrete, concrete masonry block, or any other structural component or product containing quartz.
- Vehicle mounted hammers or chipping tools used to demolish concrete, concrete masonry block, or any other structural component or product containing quartz.
- Handheld grinders or cut-off wheels used for mortar removal or cutting/grinding of concrete, concrete masonry block, sheet rock, gypsum fiber roof board, or any other structural component or product containing quartz.
- Walk-behind milling machines or bead blasters used for surfacing activities on concrete, concrete masonry block, asphalt, or any other product containing quartz.
- Installation or demolition of sheet rock, including mudding, taping, texturizing activities with quartz containing materials.
- Hand or power tool sanding of painted surfaces. Current latex paint products contain quartz and the painted substrate (sheet rock, concrete masonry block, concrete) contains quartz.
- Drivable asphalt milling machines used to mill asphalt roadways or walkways.
- Ball mills or crushing equipment used to size products containing quartz.
- All housekeeping operations associated with the activities described above.

**Bachmann Construction** employees who work in proximity to silica-related operations must be aware of safe work practices and take all necessary precautions associated with avoiding and minimizing airborne silica exposure.

## 2.0 Regulatory Review

Occupational Safety and Health Administration (OSHA) 29 CFR 1926.1153: Respirable Crystalline Silica (Construction Industry) and 29 CFR 1910.1053: Respirable Crystalline Silica (General Industry), contain regulatory requirements specific to respirable crystalline silica. This Written Exposure Control Plan is developed in accordance with the requirements in 29 CFR 1926.1153(g).

## 3.0 Project Planning

### 3.1 Training Requirements

**Bachmann Construction** employees who anticipate working on projects where they could be exposed to airborne silica will be provided training in silica hazards in accordance the **Bachmann Construction** program established to comply with the hazard communication standard (29 CFR 1910.1200). Each employee will have access to labels on containers of crystalline silica and safety data sheets, and be provided information on the health hazards of silica including cancer, lung effects, immune system effects, and kidney effects. In addition, **Bachmann Construction** employees will be provided training and information regarding specific activities identified in this Plan that could result in airborne silica exposure, and the specific engineering controls, work practices and respiratory protection requirements to mitigate the potential airborne silica exposures. This training will provide a discussion of silica hazards, initial exposure determination either by complying with 29 CFR 1926.1153 Table 1 requirements or air monitoring, specific engineering and work practice control measures, personal protective equipment (PPE), and medical surveillance requirements. The training will also identify the **Bachmann Construction** competent person for silica exposure identification and determination of control requirements. All **Bachmann Construction** employees will be provided with access to a copy of 29 CFR 1910.1153 and be trained on the contents of 29 CFR 1926.1153.

### 3.2 Medical Surveillance Requirements

**Bachmann Construction** shall institute medical surveillance for any employees required by this Plan to wear a respirator 30 or more days per year. Initial medical surveillance consists of medical and work history with emphasis on: past, present, and anticipated exposure to silica, dust and other agents affecting the respiratory system; any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing); history of tuberculosis; and smoking status and history; a physical examination with emphasis on the respiratory system; chest X-ray (a single postero-anterior radiographic projection or radiograph of the chest at full inspiration recorded on either film (no less than 14 x 17 inches and no more than 16 x 17 inches) or digital radiography systems), interpreted and classified according to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconiosis by a NIOSH-certified B Reader; a pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) and FEV1/FVC ratio, administered by a spirometry technician with a current certificate from a NIOSH approved spirometry course; testing for latent tuberculosis infection; and any other tests deemed appropriate by the Occupational Medicine Provider. Subcontractors are responsible for implementing a medical surveillance program for their employees.

### 3.3 Competent Person Requirements

**Bachmann Construction** shall identify a competent person to inspect and oversee all activities with potential airborne silica exposure. Subcontractors working on projects within the scope of this Program shall appoint a competent person capable of executing the duties described herein. The competent person must have training in the inspection of work areas and equipment and in the determination of safe working conditions. This person shall have a working knowledge of the 1926.1153 standards, shall be capable of identifying airborne silica hazards, shall determine the need for initial and additional exposure monitoring, shall recommend and implement engineering and work practice controls, shall establish levels of PPE, and shall have the authority to take action to eliminate hazards and correct incidences of noncompliance.

### 3.4 Planning Activities

Projects where anticipated activities involve concrete cutting, grinding, sandblasting, drilling, coring, or other abrasive operations are treated as potential sources for airborne silica exposure. Additionally, existing structures and materials such as sheetrock, any painted surfaces with low volatile organic compounds, tile, brick, or some insulation products may contain silica. Likewise, new material installation may involve silica-containing mortar, paints, or insulation. Where process knowledge indicates the presence of silica, **Bachmann Construction** will either implement all controls required by 1926.1153 Table 1- Exposure Control Methods for Selected Construction Operations or conduct an initial determination in accordance with 29 CFR 1926.1153(d)(2).

## 4.0 Project Execution

### 4.1 Safe Work Practices

The requirements of this section are to be followed by **Bachmann Construction** employees, who may be exposed to airborne concentrations of silica at or above the regulatory limits.

#### 4.1.1 Exposure Assessment

**Bachmann Construction** will either comply with and implement all controls required by 1926.1153 Table 1- Exposure Control Methods for Selected Construction Operations or conduct an initial determination in accordance with 29 CFR 1926.1153(d)(2).

<b>Table 1. Exposure Control Methods for Selected Construction Operations</b>			
<b>Operation</b>	<b>Engineering and Work Practice Control Methods</b>	<b>Required Air-Purifying Respirator (Minimum Assigned Protection Factor)</b>	
		<b>≤ 4 hr/day</b>	<b>&gt; 4 hr/day</b>
Using Stationary Masonry Saws	<p>Use saw equipped with integrated water delivery system.</p> <p>NOTE: Additional specifications:</p> <ul style="list-style-type: none"> <li>• Change water frequently to avoid silt build-up in water.</li> <li>• Prevent wet slurry from accumulating and drying.</li> <li>• Operate equipment such that no visible dust is emitted from the process.</li> <li>• When working indoors, provide sufficient ventilation to prevent build-up of visible airborne dust.</li> <li>• Ensure saw blade is not excessively worn.</li> </ul>	None	Half-Mask (10)
Using Hand-Operated Grinders	Use water-fed grinder that continuously feeds water to the cutting surface.	None	Half-Mask (10)
	<p>OR</p> <p>Use grinder equipped with commercially available shroud and dust collection system, operated and maintained to minimize dust emissions. Collector must be equipped with a HEPA filter and must operate at 25 cubic feet per minute</p>	Half-Mask (10)	Half-Mask (10)



**Table 1. Exposure Control Methods for Selected Construction Operations**

Operation	Engineering and Work Practice Control Methods	Required Air-Purifying Respirator (Minimum Assigned Protection Factor)	
		≤ 4 hr/day	> 4 hr/day
	(cfm) or greater airflow per inch of blade diameter.  NOTE: Additional specifications (wherever applicable): <ul style="list-style-type: none"> <li>• Prevent wet slurry from accumulating and drying.</li> <li>• Operate equipment such that no visible dust is emitted from the process.</li> <li>• When working indoors, provide sufficient ventilation to prevent build-up of visible airborne dust.</li> </ul>		
Tuckpointing	Use grinder equipped with commercially available shroud and dust collection system. Grinder must be operated flush against the working surface and work must be performed against the natural rotation of the blade ( <i>i.e.</i> , mortar debris must be directed into the exhaust). Use vacuums that provide at least 80 cfm airflow through the shroud and include filters at least 99 percent efficient.  NOTE: Additional specifications: <ul style="list-style-type: none"> <li>• Operate equipment such that no visible dust is emitted from the process.</li> <li>• When working in enclosed spaces, provide sufficient ventilation to prevent build-up of visible airborne dust.</li> </ul>	Powered air-purifying respirator (PAPR) with loose-fitting helmet or negative pressure full facepiece (25)	Powered air-purifying respirator (PAPR) with loose-fitting helmet or negative pressure full facepiece (25)
Using Jackhammers and Other Impact Drillers	Apply a continuous stream or spray of water at the point of impact.  OR  Use tool-mounted shroud and HEPA-filtered dust collection system.  NOTE: Additional specifications: <ul style="list-style-type: none"> <li>• Operate equipment such that no visible dust is emitted from the process.</li> <li>• When working indoors, provide sufficient ventilation to prevent build-up of visible airborne dust.</li> </ul>	None  None	Half-Mask (10)  Half-Mask (10)
Using Rotary Hammers or Drills (except overhead)	Use drill equipped with hood or cowl and HEPA-filtered dust collector. Eliminate blowing or dry sweeping drilling debris from working surface.  NOTE: Additional specifications:	None	None

**Table 1. Exposure Control Methods for Selected Construction Operations**

Operation	Engineering and Work Practice Control Methods	Required Air-Purifying Respirator (Minimum Assigned Protection Factor)	
		≤ 4 hr/day	> 4 hr/day
	<ul style="list-style-type: none"> <li>Operate equipment such that no visible dust is emitted from the process.</li> <li>When working indoors, provide sufficient ventilation to prevent build-up of visible airborne dust.</li> <li>Use dust collector in accordance with manufacturer specifications.</li> </ul>		
Operating Vehicle-Mounted Drilling Rigs for Rock	Use dust collection system around drill bit and provide a low-flow water spray to wet the dust discharged from the dust collector.  NOTE: Additional specifications: <ul style="list-style-type: none"> <li>Operate equipment such that no visible dust is emitted from the process.</li> <li>Half-mask respirator is to be used when working under the shroud.</li> <li>Use dust collector in accordance with manufacturer specifications.</li> </ul>	None	None
	For equipment operator working within an enclosed cab having the following characteristics: <ul style="list-style-type: none"> <li>Cab is air conditioned and positive pressure is maintained.</li> <li>Incoming air is filtered through a prefilter and HEPA filter.</li> <li>Cab is maintained as free as practicable from settled dust.</li> <li>Door seals and closing mechanisms are working properly.</li> </ul>	None	None
Operating Vehicle-Mounted Drilling Rigs for Concrete	Use dust collection system around drill bit and provide a low-flow water spray to wet the dust discharged from the dust collector.  NOTE: Additional specifications: <ul style="list-style-type: none"> <li>Use smooth ducts and maintain duct transport velocity at 4,000 feet per minute.</li> <li>Provide duct clean-out points.</li> <li>Install pressure gauges across dust collection filters.</li> <li>Activate LEV before drilling begins and deactivate after drill bit stops rotating.</li> <li>Operate equipment such that no visible dust is emitted from the process.</li> <li>Use dust collector in accordance with manufacturer specifications.</li> </ul>	None	Half-Mask (10)

**Table 1. Exposure Control Methods for Selected Construction Operations**

Operation	Engineering and Work Practice Control Methods	Required Air-Purifying Respirator (Minimum Assigned Protection Factor)	
		≤ 4 hr/day	> 4 hr/day
	<p>For equipment operator working within an enclosed cab having the following characteristics:</p> <ul style="list-style-type: none"> <li>• Cab is air conditioned and positive pressure is maintained.</li> <li>• Incoming air is filtered through a prefilter and HEPA filter.</li> <li>• Cab is maintained as free as practicable from settled dust.</li> <li>• Door seals and closing mechanisms are working properly.</li> </ul>	None	None
Milling	<p>For drivable milling machines:</p> <p>Use water-fed system that delivers water continuously at the cut point to suppress dust.</p> <p>NOTE: Additional specifications:</p> <ul style="list-style-type: none"> <li>• Operate equipment such that no visible dust is emitted from the drum box and conveyor areas.</li> </ul> <p>For walk-behind milling tools:</p> <p>Use water-fed equipment that continuously feeds water to the cutting surface.</p> <p>OR</p> <p>Use tool equipped with commercially available shroud and dust collection system. Collector must be equipped with a HEPA filter and must operate at an adequate airflow to minimize airborne visible dust.</p> <p>NOTE: Additional specifications:</p> <ul style="list-style-type: none"> <li>• Use dust collector in accordance with manufacturer specifications including airflow rate.</li> </ul>	None	Half-Mask (10)
	<p>Use water-fed system that delivers water continuously at the cut point.</p> <p>Used outdoors.</p> <p>Used indoors or within partially sheltered area.</p> <p>OR</p>	None	Half-Mask (10)
Using Handheld Masonry Saws	<p>Used outdoors.</p> <p>Used indoors or within partially sheltered area.</p> <p>OR</p>	Half-Mask (10)	Half-Mask (10)

**Table 1. Exposure Control Methods for Selected Construction Operations**

Operation	Engineering and Work Practice Control Methods	Required Air-Purifying Respirator (Minimum Assigned Protection Factor)	
		≤ 4 hr/day	> 4 hr/day
	<p>Use saw equipped with local exhaust dust collection system.</p> <p>Used outdoors.</p> <p>Used indoors or within partially sheltered area.</p> <p>NOTE: Additional specifications:</p> <ul style="list-style-type: none"> <li>• Prevent wet slurry from accumulating and drying.</li> <li>• Operate equipment such that no visible dust is emitted from the process.</li> <li>• When working indoors, provide sufficient ventilation to prevent build-up of visible airborne dust.</li> <li>• Use dust collector in accordance with manufacturer specifications.</li> </ul>	<p>Half-Mask (10)</p> <p>Full Facepiece (50)</p>	<p>Half-Mask (10)</p> <p>Full Facepiece (50)</p>
Using Portable Walk-Behind or Drivable Masonry Saws	<p>Use water-fed system that delivers water continuously at the cut point.</p> <p>Used outdoors.</p> <p>Used indoors or within partially sheltered area.</p> <p>NOTE: Additional specifications:</p> <ul style="list-style-type: none"> <li>• Prevent wet slurry from accumulating and drying.</li> <li>• Operate equipment such that no visible dust is emitted from the process.</li> <li>• When working indoors, provide sufficient ventilation to prevent build-up of visible airborne dust.</li> </ul>	<p>None</p> <p>Half-Mask (10)</p>	<p>None</p> <p>Half-Mask (10)</p>
Rock Crushing	<p>Use wet methods or dust suppressants.</p> <p>OR</p> <p>Use local exhaust ventilation systems at feed hoppers and along conveyor belts.</p> <p>NOTE: Additional specifications:</p> <ul style="list-style-type: none"> <li>• Operate equipment such that no visible dust is emitted from the process.</li> </ul> <p>For equipment operator working within an enclosed cab having the following characteristics:</p> <ul style="list-style-type: none"> <li>• Cab is air conditioned and positive pressure is maintained;</li> </ul>	<p>Half-Mask (10)</p> <p>Half-Mask (10)</p> <p>None</p>	<p>Half-Mask (10)</p> <p>Half-Mask (10)</p> <p>None</p>

<b>Table 1. Exposure Control Methods for Selected Construction Operations</b>			
<b>Operation</b>	<b>Engineering and Work Practice Control Methods</b>	<b>Required Air-Purifying Respirator (Minimum Assigned Protection Factor)</b>	
		<b>≤ 4 hr/day</b>	<b>&gt; 4 hr/day</b>
	<ul style="list-style-type: none"> <li>Incoming air is filtered through a prefilter and HEPA filter;</li> <li>Cab is maintained as free as practicable from settled dust; and</li> <li>Door seals and closing mechanisms are working properly.</li> </ul>		
Drywall Finishing (with silica-containing material)	Use pole sander or hand sander equipped with a dust collection system. Use dust collector in accordance with manufacturer specifications.	None	None
	OR Use wet methods to smooth or sand the drywall seam.	None	None
Use of Heavy Equipment During Earthmoving	Operate equipment from within an enclosed cab having the following characteristics: <ul style="list-style-type: none"> <li>Cab is air conditioned and positive pressure is maintained;</li> <li>Incoming air is filtered through a prefilter and HEPA filter;</li> <li>Cab is maintained as free as practicable from settled dust; and</li> <li>Door seals and closing mechanisms are working properly.</li> </ul>	None	None

Note 1: For the purposes of complying with all other requirements of this section, the employer must presume that each employee performing an operation listed in Table 1 that requires a respirator is exposed above the PEL.

Note 2: Where an employee performs more than one operation during the course of a day, and the total duration of all operations combined is > 4 hr/day, the required air-purifying respirator for each operation is the respirator specified for > 4 hr/day. If the total duration of all operations combined is ≤ 4 hr/day, the required air-purifying respirator for each operation is the respirator specified for ≤ 4 hr/day.

- An exposure assessment is required when employees may be exposed to airborne silica at or above the action level in order to determine the extent to which employees are exposed and the appropriate exposure controls required.
- An initial determination of exposure shall be made at the beginning of operations. The determination shall consist of the collection of personal air samples representative of a full shift

including at least one sample for each job classification in each work area, either for each shift, or for the shift with the highest exposure level.

- During the initial determination, until such time that actual airborne concentrations are determined, personnel shall be protected by respiratory protection based on task- specific anticipated airborne concentrations of silica as illustrated in Table 2 below:
- During the initial determination, and in addition to the levels of respiratory protection required, personnel shall be provided with protective clothing and equipment, hygiene facilities, and training.
- Whenever a change in equipment, process, controls, or personnel occurs, or a new task has been initiated, an additional exposure assessment is required.
- When an assessment determines that exposure has occurred above the action level but below the PEL, additional monitoring shall be required at least every 6 months. Additional monitoring shall continue until such time that the monitoring results fall below the action level on two separate occasions at least 7 days apart.
- When monitoring yields results above the PEL, then quarterly monitoring is required. In addition, the quarterly monitoring may be suspended when additional monitoring results fall below the action level on two separate occasions at least 7 days apart.
- Where the competent person can clearly demonstrate, in the absence of air monitoring data, that a work activity will not create airborne silica concentrations in excess of the action level, then air monitoring may be unwarranted. Where a negative initial determination is reached without air monitoring, the competent person must develop a written explanation as to why exposures are not expected to exceed the action level.

#### **4.1.2 Communication of Hazards**

- Each employee shall be provided training and demonstrate knowledge and understanding of the following:
  - Health hazards associated with exposure to respirable crystalline silica
  - Specific tasks that could result in exposure to respirable crystalline silica
  - Specific measures that are required to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and required use of respiratory protection
  - The contents of the 29 CFR 1926.1153
  - The identity of the competent person
  - Purpose and description of the medical surveillance program
- A written compliance program shall be made available to all affected employees.
- In addition, notification to owners, contractors, and other personnel working in the area shall be made.

#### 4.1.3 Control Methods

- Engineering and work practice controls, including administrative controls, shall be implemented to reduce and maintain employee exposure to silica at or below the PEL, to the extent that such controls are feasible.
- Where all feasible engineering and work practice controls that can be instituted are not sufficient to reduce employee exposure to or below the PEL, such controls shall be used, nonetheless, to reduce employee exposure to the lowest feasible level (and in conjunction with respiratory protection).
- Respiratory protection shall be selected based on guidance in 1926.1153 Table 1 or based on a Certified Industrial Hygienist's or competent person's assessment of the potential airborne exposure that may be created by the means and methods of work (high energy operations with high airborne dust generation or low energy operations with low dust generation).
- When using mechanical ventilation to control exposure, regularly evaluate the system's ability to effectively control exposure.
- If administrative controls are used to limit exposure, establish and implement a job rotation schedule that includes employee identification as well as the duration and exposure levels at each job or work station where each affected employee is located.
- A written compliance program shall be established and implemented prior to the start of operations within the scope of this Written Compliance Plan. The written program shall outline the plans for maintaining employee exposure below the PEL.
- Maintain all surfaces as free as possible from accumulations of silica. Select methods for cleaning surfaces and floors that minimize the likelihood of silica becoming airborne (such as using a HEPA vacuum).
- If vacuuming is the method selected, specialized vacuums with HEPA filtration are required. Methods to use and empty vacuums in a manner that minimizes the reentry of silica into the workplace shall be described and used. Use of household vacuums with HEPA filters are not allowed at any time for the collection of dust or debris that contains silica.
- Never use compressed air to remove silica from any surface unless it is used in conjunction with a ventilation system designed to capture the airborne dust created while using the compressed air.
- Employees shall not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in any areas where exposure to silica is above the PEL (in other words, regulated areas).
- Do not allow employees to leave the workplace wearing any protective clothing or equipment that is required to be worn during their work shift without HEPA vacuum removal of dust.
- Where feasible, install shower facilities and require employees who work in regulated areas to shower at the end of their work shift. Also provide an adequate supply of cleaning agents and clean towels.
- Provide hand washing facilities for use by employees working in regulated areas. Furthermore, require employees to wash their hands and face at the end of the work shift and prior to eating or entering eating facilities, drinking, smoking, or applying cosmetics.
- Eating facilities or areas shall be provided for employees working in regulated areas. These facilities shall be maintained free of silica contamination and shall be readily accessible to those employees.

#### **4.2.5 Personal Protective Equipment (PPE)**

Respiratory protection must be used for the following conditions:

- During periods when employee exposure to airborne silica exceeds the PEL
- For work operations where engineering and work-practice controls are not sufficient to reduce employee exposure to or below the PEL
- During periods when an employee requests a respirator
- During periods when respirators are required to provide interim protection while conducting initial exposure assessments
- Powered air-purifying respirators (PAPR) shall be provided to employees who request such a respirator to use where it will provide adequate protection.
- Employees shall be provided, at no cost, protective work clothing and equipment including cotton coveralls or similar full-body clothing, gloves, hats, shoes or disposable shoe coverlets, face shields, vented goggles, or other appropriate PPE.



## **RESPIRATORY PROTECTION PROGRAM**

The purpose of this program is to protect the health of all employees by preventing their exposure to harmful levels of airborne contaminants by the proper use of respiratory protection. Where feasible, exposure to airborne contaminants will be eliminated through the application of engineering controls, such as enclosure of the operation, ventilation or substitution of less toxic materials. In situations where engineering controls are not feasible, protection will be accomplished by the use of personal respiratory protection equipment where OSHA Permissible Exposure Limits (PEL's), or in their absence, ACHIH Threshold Limit Values (TLV's) are or could potentially be exceeded.

### **USE OF RESPIRATORS IN TOXIC OR OXYGEN-DEFICIENT ATMOSPHERES:**

**Under no circumstance will BCCI employees enter confined spaces, or areas where the respirator user, due to failure of the respirator, could be overcome by a toxic or oxygen deficient atmosphere.**

### **RESPONSIBILITY FOR COMPLIANCE:**

The development and administration of this respiratory protection program will be the responsibility of Management and will provide the designated position/person the necessary training and technical support to properly carry out his/her responsibilities.

Project managers, superintendents and foremen are responsible for ensuring that all personnel under their control are knowledgeable of the respiratory requirements for the areas in which they work and comply with all facets of this respiratory program.

Employees are responsible for maintaining an awareness of the respiratory protection requirements for their work. In addition, employees are responsible for wearing the appropriate respiratory equipment in accordance with the instructions and training they received. Employees are also responsible for maintaining respiratory equipment in a clean and usable condition and reporting any malfunction of the respirator to their supervisor.

Expediting will maintain a current Respirator Issuance Log provided by the Respiratory Protection manager in order to support field operations.

## **AIRBORNE RESPIRATOR HAZARDS**

There are five major types of airborne hazards.

1. Gases are substances that are airborne at room temperature and are often invisible, such as carbon monoxide and methane.
2. Dusts are tiny suspended particles resulting from a mechanical process such as grinding or cutting, or can be generated from sweeping of various materials.
3. Mists are aerosols composed of liquid particles created by spraying, machining or mixing operations.
4. Fumes are small particles formed by a condensing gas or vapor, such as in welding operations.
5. Vapors are gaseous forms of a liquid or solid material that evaporate at room temperature, such as solvents paint thinner and gasoline.

## **SELECTION AND USE OF RESPIRATORY PROTECTION EQUIPMENT:**

The selection of the proper respirator for any given situation will be based upon consideration of the following factors:

1. Nature, extent and potentially harmful effects of the hazard(s).
2. The activity of the worker in the hazardous area.
3. The period of time for which the respirator may be worn.
4. The location of the hazardous area with respect to a safe area having respirable air.
5. Characteristics, limitations and the protection factor of available respirators.

All respiratory protection will be provided at no cost to employees and be of a type approved by the National Institute for Occupational Safety and Health (NIOSH) for the known hazards.

Respirators will be selected, fitted and used according to the guidelines published by the American National Standard Institute (ANSI) Practices to Respirator Protection Z88.2 1922.

Air purifying Half-Mask or Dust/Mist/Fume Filter Mask (DMF) are approved to be worn by employees.

During certain activities, employees may voluntarily request the use of their own respirator. If supervision has deemed that the respirator will not create a greater hazard, its use may be authorized. Employees will be provided with information pertaining to the voluntary use of respirators.

All respirators will be assigned to employees on an individual basis.

Respirators will only be issued to adequately instructed personnel.

The disposable filter mask supplied will be similar or equal to the 3M - 8210 with double-rubber or flexible attachment straps and an adjustable nose piece. Facial hair must be trimmed to accommodate the mask. If a project requires additional protection, the project superintendent will discuss this with the Safety Director and additional and appropriate equipment and training will be supplied.

### **EMPLOYEE FIT TESTING:**

All employees who are required to wear a negative pressure respirator must be fit tested prior to the use of the respirator in an approved test atmosphere using an accepted qualitative fit testing method. The results of the fit test and the date when the respirator was issued will be recorded on a Respirator Issuance Log.

Where respirator use is regulated by one of the substance specific ILHR/OSHA Standards that contain fit test requirements, those specific requirements must be followed.

All employees required to use a respirator must be clean shaven to ensure a tight seal. A mustache or goatee is permitted as long as it does not interfere with the seal. Sideburns may also have to be shaved if an adequate seal cannot be obtained.

Respirators are not to be worn when the temples for eye glasses or the use of dentures prevent a good face seal.

### **TYPES OF AUTHORIZED RESPIRATORS:**

#### Air-Purifying Respirators

1. Single or Multiple-Use Disposable Respirators may be used in situations requiring protection against low (below the OSHA Permissible Exposure Limit) concentrations of dust, mists, vapors or fumes.
2. Half Mask Reusable Respirators equipped with the proper disposable cartridges, may be used for protection against fumes, mists, vapors or gases. A filter can be attached to the cartridge to provide added protection from atmospheres that contain particulate dust, mists, fumes and/or fibers.

### **LIMITATIONS OF AIR-PURIFYING RESPIRATORS (APR'S):**

There are specific limitations for the use of APR's. Conditions that exclude the use of APR's include the following:

1. APR's must never be worn in atmospheres containing less than 19.5% oxygen by volume.
2. APR's must not be used for sandblasting or if the chemical lacks adequate warning properties (i.e. odor, taste or irritation) unless use of a specific respirator is permitted by applicable NIOSH standards. These warning properties are necessary to alert the user

that the sorbent is saturated and that the contaminant is passing through the cartridge or canister into the respiratory tract.

3. APR's must not be used in an atmosphere immediately dangerous to life or health (IDLH).
4. APR's are intended for use only for specific gases or vapors for which they were tested and approved. They cannot be worn to protect against other gases or vapors or unknown contaminants. Unknown refers to both the substance and concentration of the contaminant.

### **PROTECTION FACTOR:**

1. The level of protection that can be provided by a respirator is indicated by the respirator's protection factor. This number, which is determined experimentally by measuring face piece seal and exhalation valve leakage, indicates the relative difference in concentrations of substances outside and inside the face piece that can be maintained by the respirator.
2. In areas where the identity and concentration of the air contaminant is known, a respirator will be selected with a protection factor that is sufficiently high to ensure that the wearer will not be exposed to the contaminant(s) above the applicable OSHA/ACGIH exposure limit.

### **LEAK TESTING FIT CHECK OF NEGATIVE PRESSURE RESPIRATORS:**

Leak testing fit checks shall be performed by each user of a negative pressure respirator before exposure occurs to a potentially hazardous atmosphere by one or both of the following methods:

1. Positive pressure test – the user should close the exhalation valve and exhale gently into the face piece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the piece without any evidence of outward leakage of air at the seal.
2. Negative pressure test – the user should block off the inlet opening of the canister or cartridge by covering it with the palm of the hand and inhale gently so that the face piece collapses slightly. The user then should hold his/her breath for approximately 10 seconds. If the face piece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is satisfactory.

### **INSPECTION FOR DEFECTS:**

1. All respirators shall be inspected routinely before and after use by the wearer. A respirator that is not routinely used but is kept ready for emergency use must be inspected after each use and at least monthly to assure that it is in satisfactory working condition. A written record or log must be kept of inspection dates and findings for respirators maintained for emergency use.
2. Any respirator or part found defective must be replaced or repaired. Repair or replacement of defective parts shall be performed only by qualified persons with parts designed and approved for the particular respirator.

## **CLEANING AND DISINFECTING:**

Routinely used respirators must be cleaned and disinfected by the wearer as frequently as necessary to ensure that proper protection is provided. Respirators maintained for emergency use must be cleaned and disinfected after each use.

## **STORAGE:**

1. After use, respirators should be stored in a plastic bag to protect against dust, excessive moisture or damaging chemicals. Respirators should not be stored by hanging it by its straps or in such places as lockers or tool boxes unless they are in carrying cases or in a plastic bag. Respirators must not be stored areas where they are exposed to direct sunlight, extreme heat or cold, moisture and/or damaging chemicals.
2. Respirators must be packaged or stored so that the face piece and exhalation valve will rest in a normal position to prevent warping.

## **MEDICAL ASPECTS OF RESPIRATORY EQUIPMENT USAGE:**

Employees will not be assigned to any task requiring the use of respirators unless it has been determined that they are physically and psychologically able to safely perform the work using the respiratory protection equipment. This determination must be made by a physician. These requirements are necessary because the use of any type of respirator may impose some physiological stress on the user. To enable the examining physician to render a proper opinion regarding whether an employee can safely use a respirator, the following information will be provided:

*OSHA Technical Note – 14, March 15, 1979, states that an employee has the right to refuse this medical examination. The employer is responsible for making the examination available and for providing and ensuring the use of respirators where they are necessary. An employee who waives the exam must wear a respirator if the job requires its use.*

The medical status of each employee required to use respiratory protection will be reviewed periodically.

## **TRAINING OF RESPIRATOR USERS:**

To ensure the safe and proper use of any respirator, every user will properly be instructed in its selection, use, limitations and maintenance on an as needed basis. Working in an IDLH atmosphere is not allowed.

## **EVALUATION:**

Periodically, the respiratory program will be evaluated by the safety manager.

