

ABRASIVE BLASTING CONTROL PLAN

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Purpose

The Sandblasting Control Plan establishes mandatory guidelines to protect the safety and health of all Steingass Mechanical Contracting, Inc. employees where the potential exposure to harmful concentrations may exist. Specifically, this plan establishes safe work practices, personal hygiene, engineering and administrative controls, and medical monitoring to ensure that employee exposure is reduced below the “Threshold Limit Values of Airborne Contaminants of 1970” of the American Conference of Governmental Industrial Hygienists.

Scope

This plan applies to all occupational exposure, in any amount and form (metallic, inorganic, and organic). The requirement of this procedure shall apply to all Steingass Mechanical Contracting, Inc. personnel and Steingass Mechanical Contracting, Inc. subcontractor personnel who may potentially be exposed.

Symptoms of Silicosis

Silicosis is characterized by shortness of breath, fever and bluish skin. It could be diagnosed as pulmonary edema (fluid in lungs), pneumonia or tuberculosis. Silica dust causes severe fungal infections to develop. This condition could be fatal.

Types of Silicosis

There are three types of silicosis.

- 1. Chronic:** 10 years exposure to low concentrations
- 2. Accelerated** – Exposure to high concentrations & develops 5-10 years initial exposure.
- 3. Acute**-Exposure to extremely high concentrations & symptoms develop within a few weeks to a few weeks.

Competent Person

The designated competent person responsible for administrating this Abrasive Blasting Control Plan is Steingass Mechanical Contracting, Inc. Jobsite Superintendent.

The competent person designated is capable of identifying existing and potential silica hazards in the workplace and the proper methods to control them in order to protect workers, and has the authority necessary to take prompt corrective measures to eliminate or control such hazards.

The specific duties of the competent person include at least the following:

- Determine prior to the performance of work the toxicity of dust formed from materials, shattered and pulverized during the blasting operation, the dust formed, particle size, composition and toxicity and potential health hazards.
- Establishing, where necessary, regulated areas and assuring that access to and from these areas is limited to authorized employees.
- Assuring the adequacy of employee exposure monitoring.
- Assuring that all employees exposed to airborne silica concentrations above permissible exposure limits wear appropriate personal protective equipment and are trained in the use and limitations of appropriate methods of exposure control.
- Assuring that proper hygiene facilities are provided and that workers are trained to use those facilities.
- Assuring that feasible engineering controls are implemented, maintained in proper operating condition, and functioning properly.
- Assuring that all required medical surveillance, including pre- and post-job physical examinations are performed and documented as required.
- Ensure that air for abrasive-blasting respirators is free from harmful quantities of dusts, mists or noxious gases.

Permissible Exposure Limit (PEL)

OSHA Exposure Limits for Silica Dust Exposure

The current OSHA permissible exposure limit (PEL) for respirable crystalline silica (quartz) is 100 $\mu\text{g}/\text{m}^3$ as an 8-hour time-weighted average (TWA) [29 CFR** 1910.1000]. The NIOSH recommended exposure limit (REL) for respirable crystalline silica is 50 $\mu\text{g}/\text{m}^3$ as a TWA for up to 10 hours/day during a 40-hour workweek [NIOSH 1974b]. This REL is intended to prevent silicosis. However, evidence indicates that crystalline silica is a potential occupational carcinogen [NIOSH 1988a; IARC 1987; DHHS 1991], and NIOSH is reviewing the data on carcinogenicity.

Respiratory Protection

See Steingass Mechanical Contracting, Inc. Respiratory Program which establishes policy, worksite procedures and protocols. whenever it is necessary to use respiratory protective equipment. Or Steingass Mechanical Contracting, Inc. blasting hood/helmets are required to protect the health of personnel.

Exposure Assessment & Determination

Steingass Mechanical Contracting, Inc. will perform all required and necessary monitoring to evaluate employee exposures to silica. Steingass Mechanical Contracting, Inc. will retain monitoring records. Final assessments shall become part of the work plan/written program. Final exposure assessments shall be completed through a coordinated effort of Steingass Mechanical Contracting, Inc. safety director, safety and medical staff.

Engineering and Work Practice Controls

Engineering and work practice controls will continually be evaluated and incorporated into a written work plan.

Medical Surveillance & Medical Removal Programs

These programs will be administered based on industrial hygiene monitoring and exposure assessments and coordinated through medical, human resources and facility management.

Such examinations shall occur before job placement & at least every 3 years there after. More frequent examinations may be necessary for employees at risk or acute or accelerated silicosis.

Examinations will include the following:

1. A medical & occupational history to collect data on Steingass Mechanical Contracting, Inc. employee exposure.
2. Chest X-rays
3. Pulmonary function testing
4. Annual evaluation for tuberculosis.

Employee Information & Training

Steingass Mechanical Contracting, Inc. employees shall receive training [29 CFR 1926.21] that includes the following:

- Information about the potential adverse health effects of silica exposure
- Material safety data sheets for silica, alternative abrasives, or other hazardous materials [29 CFR 1926.59]
- Instruction about obeying signs that mark the boundaries of work areas containing crystalline silica
- Information about safe handling, labeling, and storage of toxic materials [30 CFR 56.20012, 56.16004, 57.20012, 77.208]
- Discussion about the importance of engineering controls, personal hygiene, and work practices in reducing crystalline silica exposure
- Instruction about the use and care of appropriate protective equipment (including protective clothing and respiratory protection)

Methods of Engineering Controls

- **Use of alternate blasting media**
- **Containment methods such as blast cleaning machines and cabinets, blasting rooms or portable equipment.**
- **The blast nozzle and/or object shall be bonded and grounded to prevent the buildup of static charges.**
- **Blast cleaning nozzles shall be equipped with an operating valve which must be held open manually. A support shall be provided on which the nozzle may be mounted when not in use.**

Air Monitoring

Air monitoring should be performed to measure worker exposure to airborne crystalline silica and to provide a basis for selecting and to provide a basis for selecting engineering controls.

Recordkeeping

Exposure assessment records, medical surveillance and removal records and objective data records must be maintained. Steingass Mechanical Contracting, Inc. shall make available those reports to employees upon request. Employees shall also have the opportunity to observe exposure monitoring.

Personal Hygiene

- ✓ All Steingass Mechanical Contracting, Inc. employees who are performing sandblasting operations shall wash their hands & faces before eating, drinking or smoking.
- ✓ No eating, drinking or tobacco products shall be allowed in the blasting area.
- ✓ Workers shall shower before leaving the jobsite.
- ✓ Vehicles shall not be parked in contaminated areas.
- ✓ Compressed air shall not be used for cleaning purposes except where the pressure is reduced to less than 30 psi.

Personal Protective Clothing

Equipment and clothing will be provided for the protection of the eyes, face, and body to all personnel working or in the vicinity of blasting operations.

Steingass Mechanical Contracting, Inc. employees shall change into disposable or clean work clothes at the prior to leaving the jobsite.

Warning Signs

Warning Signs shall be posted to warn workers about the hazard and specify any protective equipment required (for example, respirators). The sample sign contains the information needed for a silica work area where respirators are required.

