

1.0 Purpose

The purpose of this document is to establish and implement a written exposure control plan that identifies tasks involving silica exposure and methods used to protect employees. University colleges/departments are required to implement the components of this Plan to ensure compliance with the following applicable state and federal regulations. The following Occupational Safety and Health Administration (OSHA) standards are applicable for respirable crystalline silica.

- General Standard 29 CFR 1910.1053
- Construction Standard 29 CFR 1926.1153

2.0 Scope

The Respirable Crystalline Silica Exposure Control Plan applies to all CSUS University employees who are expected to be exposed to respirable crystalline silica as outlined in section 4; or through other means, which are determined by Environmental, Health & Safety (EHS) or their manager/supervisor.

3.0 Responsibilities

3.1 Deans, Directors, and Department Heads

- 3.1.1** Ensure supervisor(s) understand their responsibilities for the preparation and implementation of the Silica Exposure Control Plan within their college/department.
- 3.1.2** Actively support this Plan within their college/department.
- 3.1.3** Ensure an environment where all employees are required to follow this Plan.

3.2 Managers/Supervisors

- 3.2.1** Implement and ensure procedures are followed in accordance with this Plan.
- 3.2.2** Ensure that staff is aware of this Plan, instructed on the details of implementation, and provided with equipment, and methods of control (e.g. engineering controls, work practice controls and respirators).
- 3.2.3** Contact EHS to request technical assistance, and to evaluate health and safety concerns within their department.

3.3 Employees

- 3.3.1** Comply with this Plan and any further safety recommendations provided by managers, supervisors and/or EHS regarding the Silica Exposure Control Plan.
- 3.3.2** Contact the appropriate manager, supervisor or EHS to request technical assistance, and to evaluate health and safety concerns within their department.

4.0 Specific Exposure Control Methods

For each employee working with materials containing crystalline silica and engaged in a task using the equipment and machines listed below, the employer shall fully and properly implement the engineering controls, work practices, and respiratory protection as specified.

4.1 Stationary Masonry Saws

- **Engineering Control:** Water continuously fed to the blade
- **Respiratory Protection:** None Required

4.2 Drivable Saws

- **Engineering Control:** Water continuously fed to the blade
- **Respiratory Protection**
 - Enclosed Area: Cannot use saw in enclosed area
 - Outside Area: None Required

4.3 Handheld Power Saws

- **Engineering Control:** Water continuously fed to the blade
- **Respiratory Protection (less than 4 hours per shift):**
 - Enclosed Area: N95 Dust Mask
 - Outside Area: None Required
- **Respiratory Protection (more than 4 hours per shift):**
 - Enclosed Area: N95 Dust Mask
 - Outside Area: N95 Dust Mask

4.4 Walk-Behind Saws

- **Engineering Control:** Water continuously fed to the blade
- **Respiratory Protection (less than 4 hours per shift):**
 - Enclosed Area: N95 Dust Mask
 - Outside Area: None Required
- **Respiratory Protection (more than 4 hours per shift):**
 - Enclosed Area: N95 Dust Mask
 - Outside Area: None Required

4.5 Ring Mounted Core Saw or Drill

- **Engineering Control:** Water continuously fed to the blade
- **Respiratory Protection**
 - None Required

4.6 Handheld and Stand-Mounted Drills

- **Engineering Control:** Commercial shroud or cowling with dust collection system
- **Respiratory Protection:** None Required

4.7 Dow Drilling Rigs for Concrete

- **Engineering Control:** Commercial shroud or cowling with dust collection system
- **Respiratory Protection (less than 4 hours per shift):**
 - Enclosed Area: Cannot use drill in enclosed area
 - Outside Area: N95 Dust Mask
- **Respiratory Protection (more than 4 hours per shift):**
 - Enclosed Area: Cannot use drill in enclosed area
 - Outside Area: N95 Dust Mask

4.8 Vehicle-Mounted Drilling Rigs

- **Engineering Control:** Use dust collection system with close capture hood. – OR – Shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector. – OR – Operate from within an enclosed cab and use water for dust suppression on drill bit.
- **Respiratory Control:** None Required

4.9 Jackhammers and Handheld Power Chipping Tools

- **Engineering Control:** Water continuously fed to the point of impact – OR – Commercial shroud or cowling with dust collection system
- **Respiratory Protection (less than 4 hours per shift):**
 - Enclosed Area: N95 Dust Mask
 - Outside Area: None Required
- **Respiratory Protection (more than 4 hours per shift):**
 - Enclosed Area: N95 Dust Mask
 - Outside Area: N95 Dust Mask

- 4.10 Walk Behind Milling Machines and Floor Grinders**
- **Engineering Controls:** Water continuously fed to the point of impact – OR – Commercial shroud or cowl with dust collection system
 - **Respiratory Protection:** None Required
- 4.11 Small Drivable Milling Machines (Less than Half-Lane)**
- **Engineering Controls:** Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant.
 - **Respiratory Protection:** None Required
- 4.12 Large Drivable Milling Machines (Half-Lane and Larger)**
- **Engineering Controls:** Use a machine equipped with exhaust ventilation on drum enclosure and supplemental water spray designed to suppress dust. – OR – Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant.
 - **Respiratory Protection:** None Required
- 4.13 Crushing Machines**
- **Engineering Controls:** Use equipment designed to deliver water spray or mist at crusher and other points where dust is generated. – AND – Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station.
 - **Respiratory Protection:** None Required
- 4.14 Heavy Equipment (Hoe-Ramming, Rock Ripping, and Demolition)**
- **Engineering Control:** Operate equipment from within an enclosed cab. – AND – When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions.
 - **Respiratory Protection:** None Required
- 4.15 Heavy Equipment (Grading and Excavating)**
- **Engineering Control:** Apply water and/or dust suppressants as necessary to minimized dust emissions. – OR – When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab.
 - **Respiratory Protection:** None Required

4.16 Handheld Grinders for Mortar Removal

- **Engineering Control:** Commercial shroud or cowl with dust collection system
- **Respiratory Protection (less than 4 hours per shift):**
 - Enclosed Area: N95 Dust Mask
 - Outside Area: N95 Dust Mask
- **Respiratory Protection (more than 4 hours per shift):**
 - Enclosed Area: Full Face Air Purifying Respirator
 - Outside Area: Full Face Air Purifying Respirator

4.17 Handheld Grinders for Uses Other Than Mortar Removal

- **Engineering Control:** Water continuously fed to the grinding surface – OR – Commercial shroud or cowl with dust collection system
- **Respiratory Protection (less than 4 hours per shift):**
 - Enclosed Area: Non Required
 - Outside Area: None Required
- **Respiratory Protection (more than 4 hours per shift):**
 - Enclosed Area: N95 Dust Mask
 - Outside Area: None Required

4.18 Housekeeping

- The employer shall not allow dry sweeping or dry brushing where such activity could contribute to employee exposure to respirable crystalline silica
 - Use wet sweeping methods
 - Use HEPA-Filtering vacuuming
- The employer shall not allow compressed air to be used to clean clothing or surfaces where activities could contribute to employee exposure to respirable crystalline silica.

4.19 Additional Exposure Assessment

- If you are exposed to respirable crystalline silica and engaged in a task using equipment and machines not identified in the list above, contact EHS for an exposure assessment to determine the engineering controls, work practices, and respiratory protection requirements to safely do your job.

5.0 Safe Work Practices

The primary means of protecting employees will be through the use of less toxic materials, enclosed systems, local exhaust ventilation, wet methods, and good work practices.

5.1 Reducing exposure to crystalline silica in the workplace

- 5.1.1** Wet down the dust at the point of generation.
- 5.1.2** Install local exhaust ventilation to prevent dust from being released into the air.
- 5.1.3** During rock drilling, flow water through the drill stem.
- 5.1.4** Install dust collection systems onto machines or equipment that generated dust.
- 5.1.5** Use concrete/masonry saws that provide water to the blade.
- 5.1.6** Silica sand or other substances containing more than 1% crystalline silica will not be used for abrasive blasting.
- 5.1.7** Good personal hygiene will be practiced to avoid unnecessary exposure. Eating, drinking, use of tobacco products or applying cosmetics will not be done in areas where there is dust containing crystalline silica.
- 5.1.8** If possible, employees will shower and change into clean clothes before leaving the worksite to prevent contamination of cars, homes, and other work areas.

6.0 Housekeeping Program

Exposed surfaces must be maintained free of accumulation of silica dust. To minimize the hazard of accumulated dust containing silica dust, the area must be cleaned properly.

6.1 Cleaning areas contaminated with dust containing crystalline silica

- 6.1.1** Clean floors daily with a wet mop, wet pickup vacuum, or a HEPA filtered vacuum cleaner. The most effective method is with a HEPA vacuum cleaner.
- 6.1.2** Never sweep, dry mop, use compressed air, or use a regular vacuum cleaner. Regular vacuum cleaners are not suitable because they filter out heavy particles, allowing the finer more hazardous particles to pass into the air.
- 6.1.3** Clean shelves with a damp sponge or a HEPA vacuum cleaner.
- 6.1.4** Used filters should be carefully placed in a double plastic bag and disposed in the regular trash.
- 6.1.5** Wear the proper respirator when changing HEPA filters.

7.0 Training

Workers who may be exposed to silica will receive safety training to include the following:

- 7.1** Information about the potential health effects of exposure to respirable crystalline silica.
- 7.2** Material safety data sheets/Safety data sheets for silica, masonry products, alternative abrasives, and other hazardous materials.
- 7.3** Discussion about the importance of substitution, engineering controls, work practices, and personal hygiene in reducing crystalline silica exposure.
- 7.4** Instruction about the use and care of appropriate personal protective equipment (including protective clothing and respiratory protection).
- 7.5** Training will be conducted by the EHS Dept. Training records will be kept in the EHS Dept. office for 3 years.