

City of Urbandale

Respirable Crystalline Silica Exposure Control Policy



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Purpose

This policy is intended to protect employees from health hazards caused by exposure to respirable crystalline silica. Crystalline silica is found in materials such as sand, stone, concrete, brick, mortar, and asphalt. Activities that cut, grind, drill, crush, or disturb these materials can release silica dust into the air.

Breathing in silica dust can cause serious health problems, including silicosis, lung cancer, chronic obstructive pulmonary disease (COPD), and kidney disease. These conditions can be permanent and may develop after repeated exposure over time.

A copy of this policy is available to all employees. It can be found online at www.urbandale.org/Safety or by contacting the employee's supervisor, a department Safety Leadership team member, or the Director of Risk Management/Support Services.

Scope

This policy applies to all employees who may be exposed to respirable crystalline silica during their work activities. This includes employees who perform tasks such as cutting, grinding, drilling, demolition, excavation, or material handling involving silica-containing materials.

The program will address all required OSHA 1910.1053 Respirable Crystalline Silica compliance components. The program covers employees working in:

- Public Works
- Parks
- Facilities
- Water Utility

Policy Administration

The Director of Risk Management/Support Services is responsible for reviewing this policy annually and ensuring compliance with OSHA regulations.

Department supervisors are responsible for identifying silica hazards, implementing control measures, and ensuring employees follow safe work practices.

Employees are responsible for following this policy, using required controls and protective equipment, and reporting unsafe conditions.

Exposure Limits

OSHA's exposure limits for respirable crystalline silica are:

- **Permissible Exposure Limit (PEL):**
50 micrograms per cubic meter of air (50 $\mu\text{g}/\text{m}^3$) averaged over an 8-hour workday.
- **Action Level:**
25 micrograms per cubic meter of air (25 $\mu\text{g}/\text{m}^3$) averaged over an 8-hour workday.

Exposure Assessment

Employee assessment for exposure to respirable crystalline silica will be done by air monitoring, objective data, or OSHA-approved task-based methods.

Exposure monitoring will include:

- Initial monitoring and reassessment conducted in accordance with OSHA requirements when:
 - An exposure assessment determines there is an exposure risk above the Action Level
 - New equipment or materials are introduced
 - Employees may be exposed to higher silica levels
- Scheduled exposure monitoring will be conducted every six (6) months for tasks that fall above the Action Level and below the PEL.
- Scheduled exposure monitoring will be conducted every three (3) months for tasks that fall above the PEL.
- Scheduled exposure monitoring for specific employee tasks can be discontinued when exposure has dropped below the Action Level for two (2) consecutive monitoring measurements within a six (6) month period.
- All air monitoring samples will be collected and analyzed using approved OSHA or NIOSH methods.

Employees will be notified of exposure monitoring results within **15 working days** of receiving them.

Engineering and Administrative Controls

Engineering and administrative controls will be used to reduce silica exposure whenever feasible. These controls include, but are not limited to:

- Wet cutting or drilling methods
- Local exhaust ventilation systems
- Dust collection systems
- Enclosed or isolated work processes
- Limiting time spent performing high-exposure tasks

Respirators will be used only when engineering and administrative controls cannot reduce exposure below the PEL or while controls are being installed or repaired.

Respiratory Protection

When respirators are required, they will be provided at no cost to the employee.

Respirator use will comply with the City's Respiratory Protection Program (which can be found online at www.urbandale.org/Safety) and OSHA's Respiratory Protection Standard (29 CFR 1910.134).

Employees required to wear respirators must complete:

- Medical evaluation
- Respirator fit testing
- Training in proper use and care

Respiratory Protection Levels:

Respirator	Protection Factor	Typical Silica Activity
N95	Less than 50 µg/m ³	-Used on voluntary basis to control low exposures
Half-face with P100 filters	50-500 µg/m ³	-Housekeeping (wet method) --Power tools with dust collection
Full-face with P100 filters	500-5000 µg/m ³	-Mixing grout in bulk -Vacuum abrasive blasting
Supplied Air	Above 5000 µg/m ³	-Abrasive blasting

Housekeeping

Dry sweeping, dry brushing, and compressed air shall **not** be used to clean silica dust unless wet methods or HEPA-filtered vacuuming are not feasible.

Approved housekeeping methods include:

- Wet sweeping
- Wet mopping
- HEPA-filtered vacuum systems

Medical Surveillance

Medical surveillance will be provided at **no cost** to employees who are:

- Have exposure above the PEL.
- Have exposure at or above the Action Level for 30 or more days per year.
- Are required to wear a respirator for 30 or more days per year.
- Work with crystalline silica and develop signs/symptoms of excessive exposure.

Medical exams will include:

- Initial examination within 30 days of assignment
- Follow-up exams at least every three years
- OSHA-required tests and evaluations

Employees will receive a written medical opinion from the licensed healthcare provider.

Training and Communication

Employees exposed to respirable crystalline silica will receive training before beginning work and when new hazards are introduced.

Training will include:

- Health effects of silica exposure
- Tasks that may expose employees to silica
- Methods used to control exposure
- Proper use of respirators and protective equipment
- This written silica policy

Regulated Areas

Regulated areas will be established where employee exposure exceeds the PEL. See Appendix A.

Access to regulated areas will be limited to authorized personnel and warning signs will be posted to identify silica hazards.

Recordkeeping

Records will be maintained for:

- Exposure assessments
- Air monitoring results
- Medical surveillance
- Training records

Records will be retained in accordance with OSHA requirements and applicable state regulations.

Employee Rights

Employees have the right to:

- Access exposure and medical records
- Receive information about silica hazards
- Report on unsafe conditions without fear of retaliation

Policy Review

This policy will be reviewed annually and updated as needed to remain compliant with OSHA standards and best practices.

Appendix A: Task Specific Exposures & Controls

Task	Controls
Concrete cutting	Concrete wet saw or water
Concrete drilling	Dust collection system
Concrete jackhammering	Water application
Concrete grinding/milling	Water delivery system or application