

Workplace Exposure to **CRYSTALLINE SILICA**

Health effects

The purpose of the Occupational Safety and Health Administration's (OSHA) silica standard is to protect workers from the many health effects that result from respirable crystalline silica (RCS) exposure such as:

- Silicosis.
- Lung cancer.
- Chronic obstructive pulmonary disorder.
- Kidney disease.

Silicosis is the progressive scarring of lung tissue. There is no cure for it, and the disease continues to worsen even after exposure to RCS stops. Therefore, a focus on prevention is critical.

OSHA limits

OSHA recently instituted new limits for all employers.

- The permissible exposure limit (PEL) is now **50 ug/m³**.
- The action level (AL) is now **25 ug/m³**.

To put this in perspective, a sugar packet full of respirable silica evenly dispersed in a facility as large as a football stadium with a 13-foot ceiling would be near the OSHA PEL.

Engineering controls

Employers must use engineering controls to decrease workers' exposure to silica dust. Engineering controls are preferential to any other control method, even if implementation of the engineering method alone will not lower the exposure below the OSHA PEL or AL. Common engineering controls include:

- Applying water to the point of dust generation (e.g., saw blades).
- High-efficiency vacuums to remove dust in operations (e.g., foundry shakeout).
- Enclosed cabs with filter systems for ride-on demolition equipment.



Common exposure sources



Brick/block



Concrete



Drywall



Plaster



Administrative controls

Common administrative controls the OSHA standard requires include:

- o Training on the hazards of silica.
- o Implementing an exposure control plan.
- o Restricting access to areas where exposures to RCS can occur.



Medical surveillance

The OSHA standard requires employers to offer paid in-depth medical exams upon hire and at least every three years to general industry workers exposed over the AL for 30+ days a year as well as construction employees who wear a respirator for 30+ days a year. The exams must include:

- o Chest X-ray.
- o Tuberculosis testing.
- o Pulmonary function test.

Health-care providers share test results exclusively with the employee unless he or she chooses to inform the employer of the results. Otherwise, the employer only receives notice of the employee's ability to wear a respirator and documentation that the exam met the requirements of the standard.

Monitoring

Initial determinations must be completed to determine the risk of exposure to silica. If over the PEL, routine monitoring must be completed every three months; if over the AL, monitoring must be completed every six months.

Respirator use

Employers can only use respirators as a last resort to protect employees from RCS, and only after fully implementing all engineering and administrative controls. Employers must have a full respirator program in place when workers use respirators.

BWC can help

We have resources to assist employers in lowering the risk of silica exposure in their workplace, including:

- o On-site consultation;
- o Training courses;
- o Library resources (including video loans).

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Visit www.bwc.ohio.gov,
or call 1-800-644-6292 for details.