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UTILITY & TRANSPORTATION CONTRACTORS ASSOCIATION
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RISKINSIGHTS

SAFETY SOLUTIONS FOR YOUR BUSINESS

OSHA'S CRYSTALLINE SILICA RULE

About 2 million construction workers are exposed to respirable crystalline silica in over 600,000 workplaces. OSHA estimates that more than 840,000 of these workers are exposed to silica levels that exceed the new permissible exposure limit (PEL).

Exposure to respirable crystalline silica can cause kidney disease, silicosis, lung cancer and other respiratory diseases. Here is some common construction equipment that can expose workers to dangerous levels of silica:

- Masonry saws
- Grinders
- Drills
- Jackhammers
- Handheld powered chipping tools
- Vehicle-mounted drilling rigs
- Milling equipment
- Crushing machines
- Heavy demolition equipment

The construction standard does not apply in situations where exposures will remain low under any foreseeable conditions. This includes tasks such as mixing mortar, pouring concrete foundation walls and removing concrete formwork.

WHAT DOES THE STANDARD REQUIRE?

The standard requires that employers limit worker exposure to respirable crystalline silica and take other steps to protect workers.

The standard provides flexible alternatives, especially useful for small employers. Employers can either use a control method laid out in Table 1 of the construction standard, or they can measure worker exposure to silica and independently decide which dust controls work best to limit exposures to the PEL in their workplaces.

Regardless of which exposure control method is used, all construction employers covered by the standard are required to do the following:

- Establish and implement a written exposure control plan that identifies tasks that involve exposure and methods used to protect workers, including procedures to restrict access to work areas where high exposures may occur
- Designate a competent person to implement the written exposure control plan
- Restrict housekeeping practices that expose workers to silica where feasible alternatives are available
- Offer medical exams—including chest X-rays and lung function tests—every three years for workers who are required by the standard to wear a respirator for 30 or more days per year
- Train workers on work operations that result in silica exposure as well as on ways to limit exposure
- Keep records of workers' silica exposure and medical exams

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TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica			
Equipment/Task	**Engineering and Work Practice Control Methods**	**Required Respiratory Protection and Minimum Assigned Protection Factor (APF)**	
		≤ 4 hours/shift	> 4 hours/shift
Handheld power saws (any blade diameter)	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • When used outdoors • When used indoors or in an enclosed area	None APF 10	APF 10 APF 10

WHAT IS TABLE 1?

Table 1 matches common construction tasks with dust control methods, so employers know exactly what they need to do to limit worker exposure to silica. The dust control measures listed in the table include methods known to be effective, such as using water to keep dust from getting into the air or using ventilation to capture dust. In some operations, respirators may also be needed.

Employers who correctly follow Table 1 are not required to measure worker exposure to silica and are not subject to the PEL.

TABLE 1 EXAMPLE
Handheld Power Saws

If workers are sawing silica-containing materials, they can use a saw with a built-in system that applies water to the saw blade. The water limits the amount of respirable crystalline silica that gets into the air.

In this example, if a worker uses the saw outdoors for four hours or less per day, no respirator would be needed. If a worker uses the saw for more than four hours per day or for any amount of time indoors, he or she would need to use a respirator with an assigned protection factor (APF) of at least 10. In this case, a NIOSH-certified filtering facepiece respirator that covers the nose and mouth (sometimes referred to as a dust mask) could be used. If a worker needs to use a respirator for 30 or more days a year, he or she would need to be offered a medical exam.

ALTERNATE EXPOSURE CONTROL METHODS

Employers who do not use control methods on Table 1 must do the following:

- Measure the amount of silica that workers are exposed to if it may be at or above an action level of 25 micrograms of silica per cubic meter (µg/m3) of air, averaged over an eight-hour day
- Protect workers from respirable crystalline silica exposures above the PEL of 50 µg/m3, averaged over an eight-hour day
- Use dust control methods to protect workers from silica exposures above the PEL
- Provide respirators to workers when dust controls cannot limit exposures to the PEL

WHEN ARE EMPLOYERS REQUIRED TO COMPLY WITH THE STANDARD?

Construction employers must comply with all requirements of the standard by September 23, 2017, except the requirements for laboratory evaluation of exposure samples, which begin on June 23, 2018.

For additional information on OSHA's silica rule, go to www.osha.gov/silica.

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