

# Education Connection

## OSHA's New Silica Regulation Deadlines Are Rapidly Approaching

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On June 23, 2016, the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) issued new rules to improve protections for more than 2 million workers exposed to respirable silica dust. These rules are expected to curb lung cancer, silicosis, chronic obstructive pulmonary disease and kidney disease in America's workers by limiting exposure to respirable crystalline silica. The new regulations are issued as two separate rules, one for construction and one for general industry.

### How Does This Affect Surface Fabrication Shops?

OSHA argues that for many shops, the current methods commonly used to limit silica exposure do not adequately protect worker health. Stone and quartz countertops contain high amounts of the natural mineral silica. The tasks involved in manufacturing, finishing and installing these products can release hazardous levels of very small crystalline silica dust particles into the air that workers breathe. Workers operating powered hand tools, such as saws, grinders and high-speed polishers, have some of the highest silica dust exposures. It is not only the workers performing these tasks that are at risk — anyone in the area where silica dust is present may also be exposed and face lifelong health consequences.

Installation and fabrication done at jobsites is covered under OSHA Construction standards. Most of the requirements for the new silica construction standard will be in effect on Sept. 23, 2017. Work that is performed in the shop is covered under OSHA General Industry Standards. Most of the requirements for the new Silica General Industry standard go into effect on June 23, 2018.

### What Do the New Regulations Require?

The final rules reduce the permissible exposure limits (PELs) and require employers to use engineering controls and safe work practices to reduce exposure to safe levels. When these methods are not enough to reduce exposure to safe levels, respiratory protection and a full respirator program must be implemented.

This program must meet the requirements of OSHA's Respiratory Protection Standard. It also requires employers to limit personnel access to high exposure areas, provide training, prepare written exposure control plans and offer medical examinations to highly exposed workers.

### Engineering Controls

NIOSH and OSHA have identified the following control options for stone/quartz and other silica-containing countertop manufacturing, finishing and installation operations:

- Use water spraying systems and remote-controlled tools at the impact site where a saw or grinder generates dust.
- Large bridge or gantry-like saws should use water sprays and can be remote-controlled for dust control and cooling.
- Hand-held angle grinders can be modified to deliver water to the point of contact with the stone.
- Wet-edge milling machines or stone routers can replace dry grinders in shops. They provide a clean edge profile using a diamond wheel.
- Use hand tools (e.g., drills, masonry saws, grinders) equipped with a shroud and a vacuum with a high efficiency particulate air (HEPA) filter when wet methods are not practical.
- Install local exhaust ventilation (LEV) systems at fixed locations to capture dust at its point of origin.
- Use a combination of both water and ventilation controls, if necessary.
- Wet methods for dust control may not be practical on or near finished cabinets, walls and floors, so other suppression methods (e.g., LEV) should be used during these operations.

### Safe Work Practices

- Use wet sweeping or HEPA-filtered vacuuming to clean up dust as soon as possible. Do not use compressed air or dry sweep.

- Replace water and air filters as needed to control dust.
- Adjust water flow as necessary to control dust, following manufacturers' recommendations for water flow rates.
- Pre-wash stone slabs before cutting.
- Implement regular and thorough housekeeping procedures for water slurry and settled dust. Note that care should be taken when disposing of water contaminated with silica dust. Once it dries, the residual dust poses risks all over again.
- Provide HEPA-filtered vacuums for cleaning worker clothes and water for hand, face and hair cleaning.
- Do as much work as possible under controlled shop conditions instead of on-site, or perform work outdoors or in well-ventilated areas to reduce respirable crystalline silica dust exposure.

### Identify and Isolate Remaining Dust-generating Operations

Where air monitoring identifies high exposure areas:

- Isolate the silica dust-producing operation(s) using enclosures or walls. Enclosures are more effective when used with LEV.
- Alternatively, enclose the person, if possible, by putting him or her in a protective control booth.
- In some cases it may be necessary to isolate certain tasks in separate areas. This may be needed more frequently for engineered stone because of its high silica content.

The new construction regulation provides a table of specified controls employers can follow that provide greater certainty and ease of compliance. These methods are equally valid for general industry. If employers follow these specifications, they can be sure they are providing their workers with the required level of protection. Employers may provide alternative methods of protection as long as they make sure their methods effectively reduce workers' exposure to silica dust. The following is a subset of this table that includes tasks that surface fabrication shops likely perform.

The following apply when implementing the control measures specified in **Table 1**:

- For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust;
- For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust;

