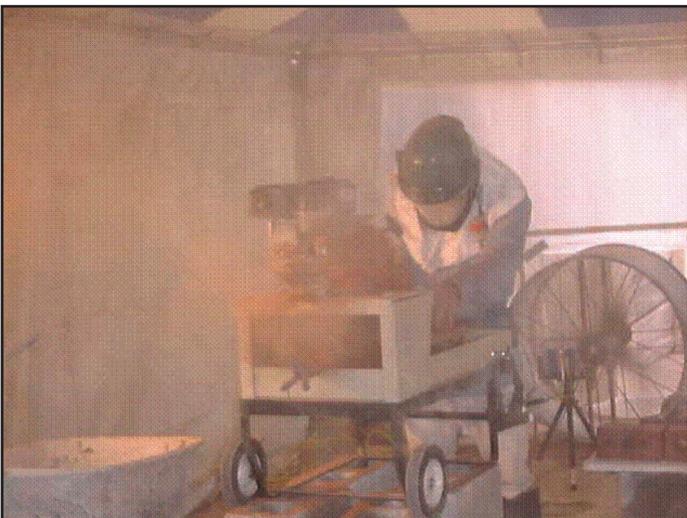


## Controlling Silica Exposures in Construction While Operating Stationary Masonry Saws

Silica is a mineral that is found in stone, soil and sand. It is a component of concrete, brick, mortar and other construction materials. Breathing in silica dust can cause silicosis, a serious lung disease. Using a stationary masonry saw to cut bricks, concrete blocks and similar materials can expose workers to hazardous levels of airborne silica. The small particles easily become suspended in the air and, when inhaled, penetrate deep into workers' lungs. This fact sheet describes ways to reduce workers' exposures to silica when using stationary masonry saws.



Stationary saws operated with no dust controls create large amounts of silica dust. (Photo courtesy of the University of Washington).

### Silica Dust Control Methods

There are two main methods used to control silica dust while operating a stationary saw:

- **Wet cutting**, and
- **Vacuum dust collection systems**.

#### Wet Cutting

Wet cutting is the best way to reduce the amount of silica dust that becomes airborne during sawing because it controls exposure at its source. Many stationary saws come with a water basin attached that holds several gallons of water for wet cutting and a pump for recycling the water.

Keep equipment in good working order to minimize dust.

- **Check** that hoses are securely connected and are not cracked or broken.
- **Adjust** nozzles so that water goes to the cutting area but still cools the blade.
- **Rinse or replace** water filters often.
- **Replace** basin water when it gets gritty or begins to silt up with dust.

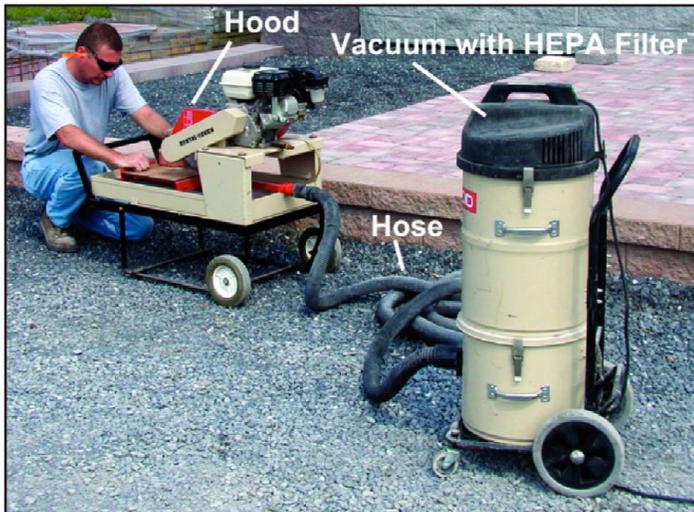
#### Electrical Safety

Use ground-fault circuit interrupters (GFCIs) and watertight, sealable electrical connectors for electric tools and equipment on construction sites. These features are particularly important in wet or damp areas, such as where water is used to control dust.

#### Vacuum Dust Collection Systems

When wet methods cannot be used, vacuum dust collection systems (VDCSs) are a good, but somewhat less effective choice for reducing exposures. VDCSs should include a dust collection device (hood), vacuum, hose, and filter(s).

- Use a shroud or hood that is the right size for the saw.
- Use a vacuum with enough suction to capture dust at the cutting point.
- Use a high-efficiency particulate air (HEPA) filter in the vacuum exhaust.
- Use a 1½- to 2-inch diameter vacuum exhaust hose or a hose size that is recommended by the tool manufacturer.



An operator cuts a paver with a masonry saw attached to a VDCS. (Photo courtesy of EDCO, Inc. The equipment shown in this picture is for illustrative purposes only and is not intended as an endorsement by OSHA of this company, its products or services).

VDCSs work best when workers are properly trained and use good work practices. For best results:

- **Keep** the vacuum hose clear and free of debris, kinks and tight bends.
- **Turn** the vacuum off and on regularly to reduce dust buildup on the filter, if it is not self-cleaning.
- **Change** vacuum-collection bags as needed.
- **Set up** a regular schedule for filter cleaning and maintenance. For example, clean the filter after each break.
- **Avoid** exposure to dust when changing vacuum bags and cleaning or replacing air filters.

### Compressed Air

Do not use compressed air to clean surfaces, clothing, or filters because it can increase your exposure to silica. Clean only with a HEPA-filtered vacuum or by wet methods.

### Respiratory Protection

Most wet cutting with stationary masonry saws will not require the use of respirators. When VDCSs and wet cutting do not reduce silica exposures to OSHA's permissible exposure limit, workers need respiratory protection. Where respirators are required, employers have to put in place a written respiratory protection program in accord with [OSHA's Respiratory Protection standard](#). It must include the following:

- How to select a respirator;
- Fit testing;
- Directions on proper use, maintenance, cleaning and disinfecting;
- Medical evaluations of workers; and
- Training.

For more information on how to determine proper respiratory protection, visit OSHA's web site at [www.osha.gov](http://www.osha.gov).

For more detailed information on controlling silica exposures when using stationary masonry saws, refer to OSHA Publication 3362, [Controlling Silica Exposures in Construction](#).

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.



U.S. Department of Labor  
[www.osha.gov](http://www.osha.gov) (800) 321-OSHA (6742)