

CONTROL OF SILICA DUST IN CONSTRUCTION

Rig-Mounted Core Saws or Drills

The use of rig-mounted core saws or drills to cut holes in concrete, masonry, or other silica-containing materials can generate *respirable crystalline silica* dust. When inhaled over time, the small particles of silica can irreversibly damage the lungs. This fact sheet describes methods to minimize the amount of airborne dust when using core saws or drills as listed in Table 1 of the Respirable Crystalline Silica Standard for Construction, [29 CFR 1926.1153](#).

Engineering Control Method: Water applied to cutting surface

Wet Methods

Wet cutting is an effective way to reduce the amount of silica dust when using a rig-mounted core saw or drill. Many types of core saws and drills come equipped with an integrated water delivery system that directs a continuous stream onto the blade/drill bit where it wets the material being drilled and reduces the amount of dust generated. Water flow rates must be sufficient to minimize the release of visible dust.

The rig-mounted core saw or drill must be operated and maintained in accordance with manufacturer's instructions to minimize dust emissions. Focus on the following areas:

- **Check and make sure** that hoses are securely connected and are not cracked or broken.
- **Adjust** nozzles so that water goes to the blade and wets the cutting area.
- **Inspect** the saw blade/drill bit to be sure it is in good condition and does not show excessive wear.

Clean up any slurry produced to prevent the slurry from drying and releasing silica dust into the air. Wet slurry can be cleaned up using, for example, shovels or a wet vacuum equipped with a HEPA filter.

Indoors or in Enclosed Areas

Using wet methods indoors or in an enclosed area may not reliably keep exposure low, so extra ventilation may be needed to reduce visible

airborne dust. Extra ventilation can be supplied by using:

- Exhaust trunks
- Portable exhaust fans
- Air ducts
- Other means of mechanical ventilation

Ensure air flow is not impeded by the movements of employees during work, or by the opening or closing of doors and windows. Position the ventilation to move contaminated air away from workers' breathing zones.

Respiratory Protection

When properly used, wet methods can effectively control exposure to silica dust. Therefore, Table 1 does not require use of respiratory protection when operating rig-mounted core saws and drills using wet methods.



Photo courtesy of Hilti

Example of a core saw with integrated water delivery system.

Electrical Safety. Where water is used to control dust, electrical safety is a particular concern. Use ground-fault circuit interrupters (GFCIs) and watertight, sealable electrical connectors for electric tools and equipment on construction sites.

Vacuum Dust Collection System (VDCS)

For situations in which wet methods are not feasible, some rig-mounted core saws or drills come equipped with a VDCS to capture the dust generated when sawing. When operated with a VDCS instead of wet methods, Table 1 does not apply and therefore the employer must conduct an exposure assessment and may need to take additional actions such as implementing a respiratory protection program.

When respirators are required, employers must put in place a respiratory protection program in accordance with OSHA's Respiratory Protection Standard, [29 CFR 1910.134](#).

Additional Information

For more information, visit www.osha.gov/silica and see the OSHA Fact Sheet on the [Crystalline Silica Rule for Construction](#), and the [Small Entity Compliance Guide for the Respirable Crystalline Silica Standard for Construction](#).

OSHA can provide compliance assistance through a variety of programs, including technical assistance about effective safety and health programs, workplace consultations, and training and education. OSHA's On-Site Consultation Program offers free, confidential occupational safety and health services to small and medium-sized businesses in all states and several territories across the country, with priority given to high-hazard worksites. On-Site consultation services are

separate from enforcement and do not result in penalties or citations. To locate the OSHA On-Site Consultation Program nearest you, visit www.osha.gov/consultation.

Workers' Rights

Workers have the right to:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the OSHA standards that apply to their workplace.
- Review records of work-related injuries and illnesses.
- File a complaint asking OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA's rules. OSHA will keep all identities confidential.
- Exercise their rights under the law without retaliation, including reporting an injury or raising health and safety concerns with their employer or OSHA. If a worker has been retaliated against for using their rights, they must file a complaint with OSHA as soon as possible, but no later than 30 days.

For additional information, see [OSHA's Workers page](#).

How to Contact OSHA

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to ensure these conditions for America's working men and women by setting and enforcing standards, and providing training, education and assistance. For more information, visit www.osha.gov or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.

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.



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