

CSDA Best Practice for Sawing and Drilling Operations

Title: Reducing Silica Exposure
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Concrete cutting, coring, drilling, quarrying and brick/block can create an airborne silica exposure and potentially cause silicosis. Cutting wet or using engineering controls such as ventilation are the most effective methods of reducing employee exposure to silica dust. Cutting wet is the preferred method. The following silica fact sheet provides the best practices for employers and employees of concrete cutting companies.

Employers

Educate concrete cutting employees.

1. Train workers about the health effects of inhaling silica dust and train them in good work practices.
2. Train workers to recognize when and how silica dust may be generated and provide training on how to eliminate or control the dust at the source.
3. Train workers on how to use and maintain engineering controls to reduce silica dust.
4. Establish a respiratory protection program and train workers on when, where and how to use and take care of respirators.
5. To determine if respirators are necessary, use company task-specific air monitoring data, historical data relevant to the tasks and OSHA/NIOSH data to determine the need and type of respirator required.

Respirators are recommended for any dry cutting and also when cutting inside an enclosed or limited work area.

Employees

Practice preventative measures when cutting:

1. Always use the dust control systems provided with the machinery and keep them in good operating condition.

2. When sawing or drilling concrete, use equipment that provides water to the blade or bit. Use vacuums or wet sweeping to clean up slurry (water and dust debris).
3. Wear washable clothing. Periodically and at the end of the day, vacuum any dust off clothing.
4. Do not eat, drink or use tobacco products while working or smoking outside of the work area.
5. Wash hands and face before eating or drinking.
6. When required, always wear the appropriate respirator.

Note: "With any type of vacuum system, worker protection from respirable dust is only as good as the filter in the vacuum. For the maximum control, use high efficiency particulate air (HEPA) filters, which are 99.97 percent efficient when tested with fine dust (0.3 μm).

Respirator Training

OSHA standard 1910.34 requires that where respirators are necessary to protect the health of the employee, the employer shall implement a respiratory protection program. This program must include training employees in the proper use of respirators, including instructions for putting them on and removing them as well as providing information about capabilities and limitations.

1. Each respirator shall be selected on the basis of the hazards posed to the worker.
2. No worker is allowed to use a respirator without having been through the company training on respirator protection. This training will be conducted annually, outlining the selection, use and maintenance of each respirator.
3. Only workers who have passed a medical evaluation, a pulmonary function test and a fit test for all respirators used are approved to wear a respirator. These tests and evaluations are required on an annual basis. Changes in body weight, cosmetic surgery or dentistry requires updated fit test to ensure protection.
4. Documentation of each medical evaluation will remain on file in the company's main office.
5. Each respirator shall be selected from those approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration, under 30 CFR part 11.
6. Each employee required to wear a respirator will be shown how it should be worn, adjusted and how to determine that it fits properly.
7. All respirators shall be cleaned after each use. Any respirator being shared by more than one worker shall be disinfected prior to use by any other person.
8. After use, respirators should be stored in a dry, clean location.
9. All respirator equipment shall be maintained properly. All respirators should be inspected for any defects prior to use and during cleaning.
10. All damaged or defective respirators shall be returned immediately to the company for repair or replacement.
11. If breathing becomes difficult during the use of a respirator, employees should replace the cartridges or ask for a new respirator. If using disposable respirators, replacement guidelines should be followed.