Effective September 2008, Cal-OSHA imposed more stringent regulations on the generation of airborne dust created by the cutting of concrete and masonry materials. The primary purpose of this standard is to reduce the potential exposure to silica which is often found in cement or concrete based material. The standard can be found in the Cal-OSHA Construction Safety Orders in §1530.1, “Control of Employee Exposures from Dust-Generating Operations Conducted on Concrete or Masonry Materials” (http://www.dir.ca.gov/title8/1530_1.html).

The standard itself is rather simple. Broadly, it applies to “the use of powered tools or equipment to cut, grind, core, or drill, concrete or masonry materials.” However, there are seven exceptions. The exceptions include:

1. Stucco, plastering material, or other similar products.
2. Wall cladding, siding, or other similar products.
3. Downward drilling.
4. Jack-hammering or chipping when that work is incidental to the scope of work or planned operations of a plumbing or landscaping activity.
5. Work with powder-actuated tools.
6. Work incidental to the installation of concrete and masonry materials such as the drilling of holes for plumbing fixtures.
7. Tile backer board when cut with powered shears or a dust reduction blade having a dust containment device.

Do not make the mistake of believing that because your work is listed as an exception that you do not have to protect your employees from masonry dust. You still do. If you perform work that is not on the exception list, and if you are using powered tools or equipment to cut, grind, core, or drill, concrete or masonry materials, then a dust reduction system must be used to effectively reduce the exposure to airborne particulates. You must comply with the standard.

According to the standard, airborne dust control methods include: wet cutting, local exhaust ventilation systems, isolation of the process from the operator or other employees by means of distance, enclosure, or other method, as applicable. You need to know that a pouch, bag, plastic container, or similar attachment, which is intended to capture dust generated by a power tool, is not intended to be a dust reduction system. This is specifically stated in the standard. Instead, dust reduction systems are defined as “Technology that utilizes the application of water or local exhaust ventilation to reduce airborne dust generated by the use of powered tools or equipment. Local exhaust ventilation may include vacuum systems, dust collection systems, and dust exhaust systems.” You can use any of these methodologies to contain the dust exposure. It is anticipated that most employers will be using wet cutting on jobsites due to the relative simplicity of wet cutting systems in terms of set up and maintenance.

Obviously, the water used during wet cutting can create additional hazards. For this reason, a dust reduction system is not required for rooftop operations with roof tile, roofing pavers, or similar materials. However, you still must protect workers in the area from exposure through the use of personal protective equipment or other means. If the tools used during wet cutting are electrically powered, appropriate precautions need to be taken against electric shock.

There are two other situations where you may not need to comply with the standard even though your operations include various forms of cutting using power tools.

1. “A dust-reduction system is not required if the operation, without considering any protection provided by personal protective equipment, does not result in employee
exposure exceeding the Permissible Exposure Limits for applicable particulates listed in Section 5155 including, but not limited to, crystalline silica, as demonstrated reliably by air sampling data applicable to the specific operation being performed.” The challenge here is that you must have data from air sampling showing there is no over-exposure. Under actual jobsite conditions, obtaining reliable, consistent data will be very difficult and costly.

(2) “During the first 24 hours of an operation undertaken in response to an emergency, a dust reduction system is not required where it can reasonably be demonstrated or foreseen that use of a dust reduction system will materially impair the timely progress of the operation. For the purposes of this exception, “emergency” means an unexpected occurrence requiring immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services. “Emergency” includes, but is not limited to, a fire, flood, earthquake or other soil or geologic movement, structural collapse, damage to a subsurface installation, terrorist act, or sabotage.” Again, this does not mean that protection is not needed. It is. However, a dust reduction system is not needed. Personal protective equipment would be in order.

The standard also calls for two specific levels of training; one level for supervisors and one for production employees. Initial training needs to be done followed up by annual refreshers.

Training for supervisors must cover:

(1) The information required to be provided to employees in their training;
(2) The identification of tasks the employees will perform, which may result in employee exposure to concrete or masonry dust and,
(3) Procedures for implementation of the measures used by the employer to reduce the exposure to concrete or masonry dust.

Training for employees must cover:

(1) The potential health hazards of overexposure to airborne dust generated from concrete and masonry materials, including silicosis, lung cancer, chronic obstructive lung disease (COPD) and decreased lung function.
(2) Methods used by the employer to control employee exposures to airborne dust from concrete and masonry materials, including wet cutting, local exhaust ventilation systems, and isolation of the process from the operator or other employees by means of distance, enclosure, or other method, as applicable.

(3) Proper use and maintenance of dust reduction systems, including the safe handling and disposal of waste materials collected in connection with their use.
(4) The importance of good personal hygiene and housekeeping practices when working in proximity to dust from concrete and masonry materials including: Not smoking tobacco products; appropriate methods of cleaning up before eating, and appropriate methods of cleaning clothes. Avoiding, to the extent practical, activities that would contribute significantly to an employee’s exposure to airborne dusts.

This standard is devised to protect everyone on the jobsite. Unless there are physical barriers on all sides, airborne dust of any type knows no boundaries. Once released it can expose everyone on and off site to its harmful properties. It can blow into the neighborhood; it can be taken home in the workers clothes and expose family members.

Need help? Cal-OSHA has published a Silica Hazard Alert. It can be found at: http://www.dir.ca.gov/dosh/dosh_publications/P08-019V3.pdf

NIOSH has a more extensive document entitled Preventing Silicosis and Deaths in Construction Workers. This is found at: http://www.cdc.gov/niosh/consilic.html

QUESTIONS
If you have questions or concerns, please contact Bo Bradley, Safety & Health Director at (916) 371-2422 or bradleyb@agc-ca.org.