

Don't Let Silica Dust You!

California's Rules Show a Different Route to Stop Hazards

It pays to be ahead of the crowd. That's one lesson from California's approach to silica dust. The state's unique regulation focuses on work practices and controls, making it easier for many employers to reduce silica levels, and for Cal/OSHA inspectors to cite them if they don't.

These days, a construction worker working around silica dust is more likely to develop chronic obstructive pulmonary disease (COPD), rather than silicosis. This contrasts with the acute silicosis deaths of about 1,500 workers who worked on the Hawk's Nest Tunnel at Gauley Bridge, West Virginia in the early 1930s.

Over the years, studies, reports, recommendations, and investigations have documented both silica's hazards and prevention practices.

So it's hard to believe that silica still is dismissed as "just dust." It's hard to believe that workers still get lung diseases and die because of working around silica. And it's hard to believe that workplace practices still do little to reduce or prevent workers breathing the dust or taking it home to their families on work clothes.

Silica was a big issue when the Occupational Safety and Health Act and the mining health and safety law were passed in the early 1970s. Forty-some years later, the White House has sat on a federal OSHA proposal

WHAT'S SILICA?

Silica usually is found in concrete and masonry products (e.g., brick, block, mortar, natural or manufactured stone, tile, and terra cotta). The crystal-shaped type is most dangerous. The dust comes from cutting, grinding, pulverizing, and mixing these kinds of materials. Nearby workers and the public can breathe it, too. "Take home" dust can harm family members.

for a more modern silica regulation put forward more than two years ago. In 2012, health and safety advocates, unions, and their allies organized petitions and letters to the White House, wrote reports about the need for new rules, and put pressure on OSHA, Congress, and others to get the proposed standard out the door.

California didn't wait for the federal law to change. After lots of pressure from unions and public health advocates, it passed a regulation in 2008 that focuses on better work practices and controls. Usually, regulations about toxic substances lower Permissible Exposure limits (PELs)—limits for how much of it can be in the air that workers breathe.

The dust control regulation (Section 1530.1 in the state's health and safety regulations) took a more direct route. Performance-based rather than prescriptive, it simply states that in operations where powered tools or equipment cut, grind, core, or drill concrete or masonry materials, there must be a system to effectively reduce dust getting in the air.

The only way around this is for the employer to do air measurements that show the task does not result in workers breathing more than the PEL. However, the worst kept secret is that, in general, employer-conducted air sampling is on the decline and

WHAT DOES SILICA DUST CAUSE?

Breathing in the dust leads to health problems, mostly in the respiratory system. Inhaling crystalline silica can cause lung diseases such as silicosis (a scarring of the lungs), pulmonary tuberculosis, and chronic obstructive pulmonary disease (COPD). It also causes cancer and, in uranium mines, may increase the odds of getting cancer.

very little of it is done in construction. With budget constraints (and the 2013 sequestration), Cal/OSHA doesn't have the staff to do the eight-hour sampling required to be able to determine if the PEL has been exceeded.

Many of the state's contractor industry leaders, unions, and tool manufacturers embraced the change to treat silica dust seriously. They worked to identify methods, tools, and equipment that trap the dust and/or wet it down before workers can breathe it or get it on their clothes. They have held trainings and seminars to educate their members or workers.

The pictures show the results. Silica dust controls do work.



WHO WORKS WITH SILICA?

Construction workers are most likely to work with silica. When they use power tools to cut, grind, core, or drill concrete or masonry, they are likely to be surrounded by clouds of silica dust. Dry cleaning methods (e.g., regular sweeping) can stir up the dust. Industrial painters and people cleaning brick buildings deal with silica in abrasive sandblasting. Outside construction, other industries/tasks where workers are exposed to silica include:

- ▶ mining or tunneling;
- ▶ quarrying (e.g., drilling, crushing stone, chipping, or grinding);
- ▶ grinding or polishing pottery;
- ▶ foundry work and blast furnaces;
- ▶ cement and glass manufacturing;
- ▶ cutting or manufacturing heat-resistant bricks; and
- ▶ dental laboratory technicians (it's in dentures and other devices).

Fracking, or hydraulic fracturing is becoming more common across the United States, including California. It uses silica sand in drilling for natural gas. This major new hazard to workers and communities led to a 2012 hazard alert from the federal Occupational Safety and Health Administration (OSHA) and the National Institute of Occupational Safety and Health (NIOSH).



Based on a 2011 survey of construction industry stakeholders, recommendations made included:

- ▶ **Pre-construction planning that includes dust control.** Dust controls will be used more often, and with greater ease, when pre-construction project planning requires use of the dust reduction tools and equipment, or less toxic substances. Property owners and those project designers/planners can influence this.
- ▶ **Education focused on smaller and medium-size contractors.** More targeted education will help smaller contractors. It can come from dust control tool makers' sales representatives, contractors' organizations, workers' compensation staff, Cal/OSHA, the California Department of Public Health, and construction unions.
- ▶ **More Cal/OSHA enforcement, especially for small and medium-size contractors.** Citations set the tone about expectations and can force change. Selective enforcement will motivate the reluctant small and medium-size (SME) contractors to use dust controls. SME contractors need special attention in both education and enforcement.

- ▶ **Better tool design and flexibility.** Users say the tools to reduce dust can be poorly designed. Some block workers' line of sight, so they can't use the dust control systems properly and see what they're cutting. Dust attachment systems also are difficult to maneuver. Tool manufacturers need to involve trades workers when they modify tools and design dust controls.

Some great new resources can help contractors, unions, and workers find solutions for better silica dust control practices. Check out the Center for Construction Research and Training (CPWR) website about silica dust control solutions at <http://www.silica-safe.org>. Federal OSHA has new tool-specific dust control fact sheets in English and Spanish at <http://www.osha.gov/dsg/topics/silicacrystalline/construction.html>. Finally, good research studies about controlling silica dust exposure also are available (<http://www.silica-safe.org/whats-new/research>).

These photos courtesy of the NJ Department of Health and Senior Services' NIOSH-funded Silicosis Surveillance Project and CPWR: Center for Construction Research and Training.