CONSTRUCTION

CLEARING the AIR

California construction companies fought nine years ago to bring common-sense exemptions to OSHA’s dust regulations — now, federal updates are complicating compliance

BY Robin Epley PHOTOGRAPHY: Terence Duffy
I t starts with a cough that won't stop. You try to catch your breath, but your chest starts to seize, and the coughing only gets worse. Your eyes start to water. Blood rushes to your face. You can't even take a drink of water. After a minute, cyanosis — the deoxygenation of your bloodstream — will start to turn your lips blue. If you go without oxygen long enough, your eyesight will deteriorate, and then your brain function. But instead, your breathing calms. The coughing stops, but the scars that caused the fit remain on your lungs forever — it's only a matter of time before another attack.

This is life with silicosis: a lung disease caused by the repeated inhalation of tiny, carcinogenic silica crystals in the air, which scar the lungs and cause inebriate, possibly malignant diseases. It is debilitating and entirely preventable. And it’s at the center of a renewed, decades-long debate between the California construction industry and the federal Department of Labor’s Occupational Safety and Health Administration.

SAFETY IN NUMBERS

More than 2 million workers nationwide (1.5 percent of the American workforce) are exposed to silica dust on the job every year, according to OSHA, including those that work in construction, glass manufacturing, landscaping, maritime work, foundries and dental laboratories, to name a few of many. According to the Center for Construction Research and Training, between 3,600 to 7,300 new cases of silicosis occur annually in the U.S. The California Department of Public Health, Occupational Health Branch reports that in California, nearly 600 cases of hospitalization and approximately 45 deaths occurred in the years between 2006-2013 due to silicosis. Though, they warn these data points “probably underestimate silicosis cases because not all workers with the condition are hospitalized.”

Since 2008, California has led the way in worker safety and strict silica dust regulations. Cal/OSHA allowed only 100 micrometers of silica dust in the air per cubic meter (or 100 μg/m3) over the course of the work day, compared to the federal Permissible Exposure Limit of 250 μg/m3. Now, after decades of trying, federal OSHA has updated the nationwide limit to just 50 μg/m3. In other words: The amount of silica dust allowed in the air can exceed no more than 2.4 micrograms of silica for every 100 million micrograms of clean air. OSHA reports the new limits will prevent more than 900 new cases of silicosis every year.

Across the nation, construction companies must comply with a new, complex federal law by June 26 of this year — a year earlier than other affected industries. The question at hand is how to keep workers safe, and minimize noncompliance, which is often due to misunderstanding the complex laws, say employers. Local representative groups like the Sacramento Regional Builders Exchange are arguing that the rules Cal/OSHA enacted in 2008 are more than enough — and they’re asking for common-sense exemptions they already fought to put in place more than eight years ago. “It’s important because it’s a very far-reaching regulation that will affect most people working in construction,” says Tim Murphy, CEO of the Sacramento Regional Builders Exchange. Murphy says that the new rules impact not only how companies will operate, but also the amount of training they’ll need, how much equipment will cost and how much harder it will be to ensure compliance.

Marc Schenker, a distinguished professor and director of UC Davis’ Center for Occupational and Environmental Health, has studied environmental and occupational risk factors for respiratory disease and lung cancer for nearly 40 years. Silicosis is one of the oldest industrial diseases because “silica is ubiquitous,” Schenker says. “It’s in anything that comes out of the earth or soil.” Silicosis was first spotted as a serious disease during the Industrial Revolution some 150 years ago. Schenker, who has spent many years studying the topic, calls lung cancer and silicosis “twin diseases.”

According to OSHA, silica dust is “generated by high-energy operations like cutting, sawing, grinding, drilling and crushing stone, rock, concrete, brick, block and mortar; or when using industrial sand.” Activities that generate silica dust include abrasive blasting, sawing brick or concrete; sanding or drilling into concrete walls; grinding, manufacturing brick, concrete blocks or ceramic products; and cutting or crushing stone generates silica dust. Companies test the air as needed using respirable dust samplers that exclude dust particles larger than the respirable size.

The previous federal PELs had not been updated by OSHA since 1971. But since then, several governmental agencies have identified respirable crystalline silica as a human carcinogen. The federal government says that the previous construction PELs were based on an old method of measurement, and that those previous limits are "inconsistent, allowing permissible levels for construction and shipyards to be more than twice as high as levels in general industry."

Updating the PEL has been difficult, Schenker says. “There has been a long, drawn-out battle — years — to get this passed.” The lowest PEL possible is the safest for workers, Schenker argues, but what that level is exactly, is difficult to know with surety.

CALIFORNIA’S STRINGENT STANDARDS

“We've had our own stringent silica regulation since 2008 in California, and as far as we’re aware, it’s worked very well. Everybody understands it,” says Bruce Wick, director of risk management for the California Professional Association of Specialty Contractors.

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“Coming together is a beginning; keeping together is progress; working together is success.”

- Henry Ford

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WEARING A HARD HAT IS ABOUT MORE THAN Safety first

“Every job site is unique,” Husmann says. “People just think of the guys in the hard hats, but one of the most important people on a job site is the safety supervisor to make sure everyone goes home safe at the end of the day.”

At the 13th annual SRBX Statewide Safety Expo this April, more than 800 attendees will gather at Cosumnes River College to earn safety certifications, take general safety classes and learn about industry safety management. Murphy says one of their most popular classes is the 10-hour OSHA-certified training, known as OSHA 10. SRBX has teamed up with the local OSHA office out of the Bay Area to offer these classes.

Other safety offerings in the Capital Region include the services of the Cal/OSHA consultation division. John Husmann, the area manager in Sacramento for safety consultation services, says that many employers don’t even know Cal/OSHA offers site visits and will assist with regulations and safe practice codes, as well as review company safety manuals.

“Every job site is unique,” Husmann says. Making sure your Injury and Illness Prevention Programs, also known as IIPPs, is essential. An IIPP can cover heat stress, injury prevention and codes of safe practice. Murphy says one of the most important things is to have a personalized fit and can cause heatstroke or other heat-related illnesses during the summer months; additionally, not all workers are agreeable to wearing a heavy and uncomfortable respirator all day.

Damon Conklin, director of government affairs at the Sacramento Regional Builders Exchange, says that the real argument is not about what the PEL is set at; it’s about improving monitoring and compliance. Conklin wrote in a letter to the Cal/OSHA Standards Board last year that the regulatory group needs to put “a greater emphasis on compliance” rather than on enforcing the actual numbers of a PEL, and that “the proposed rule is virtually impossible to accurately measure or protect against using existing technology.” The new regulations as proposed, he argued, “would require prescribed control methods that contradict existing safety practices, while mandating burdensome recordkeeping and new and extensive training requirements.”

According to Wick, Cal/OSHA’s assumption has been that if a company is using the proper tools — wet working or vacuum — there is no need to measure the PEL. “If Cal/OSHA was on-site and they saw a cloud of dust ... it’s gonna be real easy for them [to judge compliance]. Because if you had a wet system or a vacuum system that was functioning, there would be no cloud of dust,” he says.

If you were using tools that were known to reduce silica dust in the air, you were given the benefit of the doubt, no testing needed, Wick says. But the new law doesn’t account for vacuum technologies or emergency exceptions like the calibration of Specialty Contractors. According to the current Cal/OSHA regulations, the PELs for silica are 180, 50 and 50 micrograms per cubic meter of air for respirable quartz, cristobalite and tridymite — all various forms of crystalline silica. The new federal law will bring all these levels to an even 50 micrograms.

What has made California a leader in silica safety standards has been its focus on the tools used to enforce those standards. There are two main tools used in California to keep silica dust out of the air: wet working tools, in which a small but steady stream of water is used at the point of the dust creation, or a vacuum system, which sucks dust from the point of creation with a hose and away from the worker. In places where the PEL is breached and cannot be reduced by either of these tools, a respirator can be worn by the employees on-site. But these respirators must be constantly maintained, have a personalized fit and can cause heatstroke or other heat-related illnesses during the summer months; additionally, not all workers are agreeable to wearing a heavy and uncomfortable respirator all day.

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old California-specific regulations did, and that’s just where the problems begin.

THE RIGHT TOOLS FOR THE JOB

It takes effort and expense to monitor a PEL correctly. But even with regular monitoring, the same outdoor construction site is going to have a very different PEL with and without a moderate breeze. It’s simply impossible to tell what the PEL is from day to day unless you’re constantly measuring it, Wick says. Under California’s policy, “There was no need to go through all the measuring and all that sort of thing,” he says. “[Compliance was] just a very easy thing to do.”

That’s no longer the case. While federal OSHA says that the wet working tools are universally acceptable, using a vacuum system isn’t necessarily compliant anymore. Within the 606-page federal document, it’s hard to clearly know whether your work is included or exempt: “[The California regulations were] in a three-page, very simple, very straightforward document,” Wick says. “You knew those work practices that had low-exposure that were excluded, so you didn’t waste a lot of time wondering who was included or not.” As Wick puts it: “You knew if you were in the reg or out.”

So the concerned members of the California construction industry, who have been working for the last eight years under the state’s easily-understood regulations, started the process of dissent right away, with the hope that federal OSHA would soon nationally recognize and enforce the regulations that have kept California air safe of carcinogens for years.

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Robin Epley is the special sections editor for Comstock’s magazine. She is also the founder of Millennials in Media, a Sacramento-based program for young journalists. Find her on Twitter @robin_epley.