



PRECAST PRODUCERS READY FOR **Another New Silica Rule**

OSHA has already levied fines since the first rule went into effect last year

— Joshua Ruedin and Drew Page

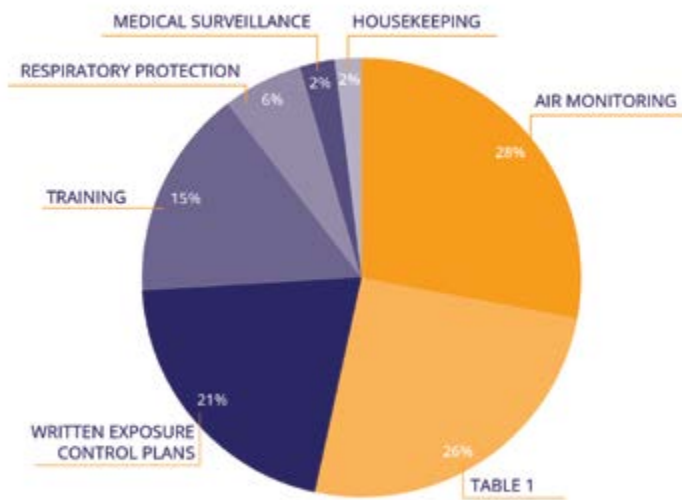


Regulations from the Occupational Safety and Health Administration (OSHA) ensure the safety and well-being of people, from plant workers creating and finishing precast concrete products to the tradespeople who transform drawings and blueprints to stunning reality. Regulations also impact project plans and budgets. Consider the impact of OSHA's new Respirable Crystalline Silica Standard for Construction (29 CFR §1926.1153). Project plans must include controls for respirable crystalline silica exposures on jobsites, including additional equipment, services, and contractors, or there is risk of violations and penalties from OSHA. The regulations also affect the production and finishing of precast concrete products, ultimately impacting design decisions. While general contractors and erectors have been forced to comply with the construction version of OSHA's new standard since September 23, 2017, precast concrete manufacturers are preparing to comply with the Respirable Crystalline Silica Standard for General Industry (29 CFR §1910.1053), which OSHA was to begin enforcing on June 23, 2018.

PENALTY PHASE

OSHA's enforcement of the construction silica standard from September 2017 through April 2018 provides a glimpse of what to expect when the general industry silica standards become enforceable. In the first seven months of enforcement, OSHA issued more than \$400,000 in initial penalties, according to Department of Labor data. OSHA wasted no time issuing violations and penalties; the first citations were issued at the end of September 2017 to four separate Virginia companies. Three of the companies were cited for work performed on the same project: two were "creating" contractors (masons), and the third was the "controlling" contractor for the project. These citations reinforce the "multi-employer citation policy" discussed in the article, "How OSHA's New Silica Rule Impacts Architects, Construction Managers, and General Contractors," by Optimum Safety Management's CEO Steve Yates, in the Winter 2018 issue of *Ascent*.

SILICA VIOLATIONS BY CATEGORY



Of the violations issued to date, more than half were issued to companies who failed to properly control exposure by using Table 1 or alternative exposure control methods supported by air monitoring. Twenty-one percent of the violations were because written exposure control plans were not established or implemented; the remaining violations were for training, respiratory protection, medical surveillance, and housekeeping-related issues.

Expect similar actions when OSHA begins enforcing the Respirable Crystalline Silica Standard for General Industry in June. Unlike the construction standard, general industry regulations do not have a table of predefined exposure controls. Plants will need to evaluate exposures through air monitoring and implement controls specific to their operations. These controls must reduce employee exposures found to be above the permissible exposure limit (PEL) of $50 \mu\text{g}/\text{m}^3$, calculated as an eight-hour time-weighted average, possibly resulting in additional operating costs.

One area that is likely to be impacted by the new regulations is architectural finishes. Air sampling data for dry sandblasting show that it creates exposures up to 25 times the permissible level. Because regulations require employers to use all feasible engineering and work practice controls to reduce respirable crystalline silica exposures below the PEL, or to the lowest feasible level, industry may be forced to consider new architectural finishing techniques.

Each abrasive blasting operation is unique, as are the approaches taken by the precast concrete manufacturers in their facilities. The use of isolation, containment, engineering controls, and respiratory protection are already common practice at many plants that provide sandblast finishes. Because we have yet to see controls implemented that reduce exposure from dry sandblasting to acceptable levels, we anticipate alternative solutions will be developed.

BLASTING CHANGES

Below are alternatives that Optimum Safety Management has observed to be effective at reducing respirable crystalline silica exposures, presented in order of efficacy.

- Eliminating exposures by using alternative finishes such as acid etching, preventing respirable crystalline silica from being generated.
- Substituting sand for a blasting medium with less silica content, such as plastic or glass beads, crushed walnuts, crushed glass, garnet, staurolite, or coal slag. In test data, we have observed exposures reduced by 84%, to four times the PEL, by substituting sand with garnet, crushed glass, or coal slag.
- Implementing engineering controls to incorporate wet or vapor blasting instead of dry blasting. There are various systems that must be evaluated depending on the use case. We have observed exposures lowered to five times the PEL when using sand, by adding wet nozzle systems to existing equipment.
- In some cases, combining different media and vapor nozzles can lower exposures to slightly above the PEL to just below the PEL.

Regardless of the technique used, the finish on the product may be impacted by the new silica standard. Consult with your local precast concrete producers to select finishes that maintain both the architectural beauty of the product and the safety and health of the men and women who produce it. Whether you are the owner, architect, producer, or construction manager, your commitment to embrace and support these changes will have a positive impact on the industry.

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