

OSHA RESPIRABLE CRYSTALLINE SILICA STANDARD

OSHA Respirable Crystalline Silica Standard (29 CFR 11926.1153)

As a leader in tile installation systems, CUSTOM® takes pride in continuing to provide its customers with timely information and solutions to keep projects moving forward in a fashion that addresses worker safety and OSHA Standards. This Technical Bulletin provides information and resources regarding OSHA's New Crystalline Silica Rule for Construction (29 CFR 11926.1153). However, this bulletin should not be construed as legal advice or as a compliance guide; employers in the construction industry are directed to the actual regulation and additional resources (see below for links) to develop their own compliance programs.

Having taken effect on July 23, 2017 with enforcement delayed until September 23, 2017, the new OSHA rule lowers the allowed exposure level for construction workers to Respirable Crystalline Silica. The entire regulation can be downloaded at:

https://www.ecfr.gov/cgi-bin/text-idx?SID=c9bc28b27293d4c372e307bdc64b5e1&mc=rue&node=se29.8.1926_11153&rgn=div8

A detailed Small Entity Compliance Guide is also available at:

<https://www.osha.gov/Publications/OSHA3902.pdf>

The regulation requires that the 8-hour exposure of a construction employee to respirable crystalline silica be less than 50 micrograms per cubic meter of air. That is the Permissible Exposure Limit – or “PEL”. The construction employer can meet the requirements of the regulation by 1) implementing specific exposure control methods as defined in Table 1 of the regulation, or 2) implementing alternative exposure control methods and documenting that the exposure is below the Action Level of 25 micrograms per cubic meter and the PEL. The details of each path to compliance, along with records requirements, can be found in the Small Entity Compliance Guide. In either case, there are steps the employer must take to achieve and document compliance with the regulation.

It is important to note that the standard covers all activities on a jobsite and the total exposure of the

employee. This regulation is not constrained to any specific construction product and is more focused on construction activities that produce a large amount of fine particles, such as sawing, drilling and grinding of concrete and masonry.

Respirable Crystalline Silica

OSHA describes respirable crystalline silica as follows:

“Respirable crystalline silica -- very small particles at least 100 times smaller than ordinary sand you might find on beaches and playgrounds – is created when cutting, sawing, grinding, drilling, and crushing stone, rock, concrete, brick, block, and mortar. Activities such as abrasive blasting with sand; sawing brick or concrete; sanding or drilling into concrete walls; grinding mortar; manufacturing brick, concrete blocks, stone countertops, or ceramic products; and cutting or crushing stone result in worker exposures to respirable crystalline silica dust.”

[\(https://www.osha.gov/dsg/topics/silicacrystalline/\)](https://www.osha.gov/dsg/topics/silicacrystalline/) accessed October 18, 2017)

Crystalline silica is inherent in many tile setting materials, mainly from sand and the small amount present in cement. Only a tiny fraction of the sand is small enough - less than 10 microns – to be considered respirable. Only a small portion of the respirable silica actually becomes airborne. Internal studies by CUSTOM® and other materials manufacturers have shown that the proper use of tile setting materials alone will not trigger the Action Limit of the OSHA regulation. However, this does not mean that other activities on the job site, *i.e.* cutting, grinding drilling, etc. (see Table 1 of the regulation), will not push exposure above the Action Level.

While respirable crystalline silica in tile setting materials can contribute to the total airborne exposure of an employee, OSHA has recognized that mixing of cement-based materials is not a primary concern on a job site:

“The construction standard does not



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apply where exposures will remain low under any foreseeable conditions; for example, when only performing tasks such as mixing mortar; pouring concrete footers, slab foundation and foundation walls; and removing concrete formwork."

(<https://www.osha.gov/Publications/OSHA3681.pdf>; accessed October 18, 2017)

Indeed, Table 1 of the regulation, which identifies significant job site sources of respirable crystalline silica, does not contain any entries for mixing or using cement-based powders (mortars, grouts, self-leveling underlayments, etc.) Significant job site sources, as detailed in Table 1 of the regulation, typically involve cutting, grinding, or drilling of concrete or masonry and similar activities.

Minimizing Respirable Crystalline Silica

Respirable Crystalline Silica on the job site can be reduced in many ways. When using powdered products such as mortars, grouts and self-leveling underlayments, best practices include:

- Mix materials outdoors or in well-ventilated areas
- Add product to water, not water to product
- Pour product slowly and as close to the water in the bucket as possible
- Use lower speeds for mixers
- Use engineering controls such as HEPA vacuums with dust containment systems



Certain tile setting products are inherently lower in silica since they contain little or no sand, or are provided in paste form. These include:

Mortars and Adhesives

- MegaLite® Ultimate Crack Prevention Large Format Tile Mortar
- MegaLite® RS Ultimate Rapid Setting Crack Prevention Large Format Tile Mortar
- ProLite® Premium Large Format Tile Mortar
- ProLite® RS Premium Rapid Setting Large Format Tile Mortar
- EBM-Lite™ Premium Epoxy Bonding Mortar – 100% Solids
- OmniGrip® Premium Lightweight Tile Adhesive
- AcrylPro® Professional Tile Adhesive
- ReliaBond® Professional Tile Adhesive

Grouts and Joint Fillers

- Fusion Pro® Single Component® Grout
- CEG- Lite™ 100% Solids Commercial Epoxy Grout
- Prism® Ultimate Performance Cement Grout
- PolyBlend® Non-Sanded Grout
- Commercial 100% Silicone Sealant
- PolyBlend® Ceramic Tile Caulk

For questions about the use of any of these products, contact CUSTOM Technical Services at 800.282.8786.



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CUSTOM hopes the information in this bulletin is helpful. The bulletin provides information about CUSTOM products and invites customers' attention to the OSHA regulation and compliance guide, which customers should use in their work. Those OSHA documents should provide the basis for a customer's compliance program. This bulletin is not itself a compliance guide. All CUSTOM warranties are set forth in the documents accompanying the sale of the product. This bulletin makes no additional warranties express or implied and provides no assurance regarding compliance with any third-party patents. CUSTOM assumes no legal obligation or liability in connection with this bulletin.

