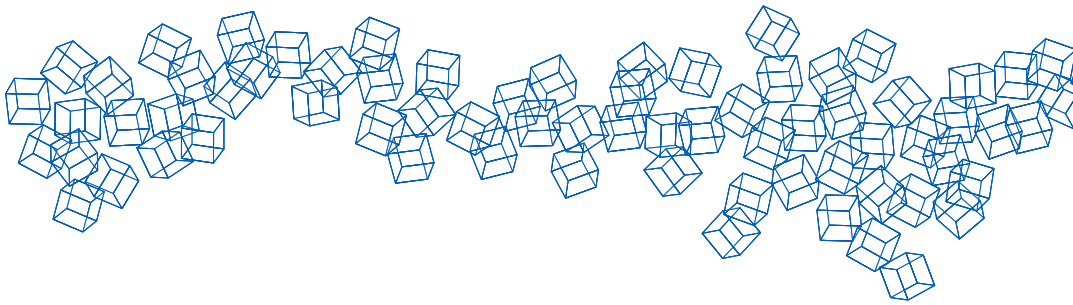


How MAPEI complies with OSHA's respirable crystalline silica standard

According to the Occupational Safety and Health Administration's Website at https://www.osha.gov/dsg/topics/silicacrystalline/, **OSHA began enforcement of the respirable crystalline silica standard for construction on September 23, 2017, while offering compliance assistance to employers making good faith efforts to comply during the first 30 days.** Refer to the OSHA website for official information about the standard.

MAPEI's cement-based, powdered products, as with any cement-based product on the market, can be one potential source of respirable crystalline silica in a work environment when they are poured and as mixing with water begins. Regarding other sources, according to the OSHA website: **occupational exposure to respirable crystalline silica occurs when cutting, sawing, drilling, and crushing of concrete, brick, ceramic tiles, rock and stone products.** Sweeping, grinding and transportation can also contribute. All construction-site activities must be taken into account when determining an employee's potential exposure to respirable crystalline silica. No one product, in itself, can guarantee compliance with the OSHA workplace requirement.

MAPEI is also required to monitor our employees for silica exposure under OSHA 29 CFR 1910.1053 with a third-party, independent engineering company. We extensively monitor our manufacturing facilities and test the respirable crystalline silica level per the OSHA requirement while producing a representative cross-section of our products (including adhesive mortars, self-levelers, grouts, repair mortars, patches, shotcrete mortars, etc.) and have done so for years. Based on testing conducted in closed, non-ventilated, manufacturing workplace conditions, exposure to employees is below the permissible exposure limit (PEL) of 50 micrograms per cubic meter.

MAPEI's internal results (for illustrative purposes only) are as follows:

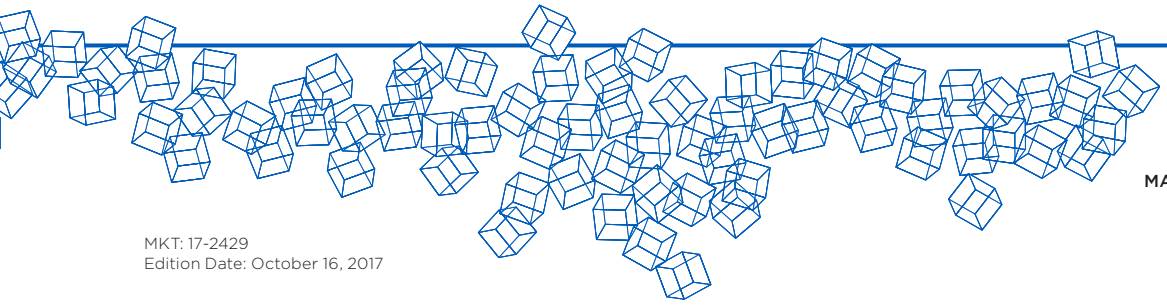
- Logan Township, NJ – All tests < 50 micrograms per cubic meter PEL
- Garland, TX – All tests < 50 micrograms per cubic meter PEL
- Ft. Lauderdale, FL – All tests < 50 micrograms per cubic meter PEL
- San Bernardino, CA – All tests < 50 micrograms per cubic meter PEL
- Tempe, AZ – All tests < 50 micrograms per cubic meter PEL

Recently, companies have started to publish lists of their powdered products that include an amount of respirable crystalline silica emitted based on controlled pilot studies with product being poured into a bucket in an enclosed laboratory environment. Typically the lists indicate that these products are "OSHA compliant" or "in conformance with the new OSHA standards." These lists imply that if an installer uses the products listed, they will not need to conduct testing on their employees to determine their exposure levels. Alternatively, the companies are suggesting that the list is a requirement of OSHA. It is not. In fact, there are dangers to this approach:

- **There are no "standard" controlled studies for respirable crystalline silica exposure determination:** The lists being published are based on tests developed and conducted by a consulting company, and bear little similarity to actual jobsite exposures.
- **It is unknown if OSHA would accept the numbers:** OSHA requires "the data must reflect workplace conditions closely resembling or with a higher exposure potential than the processes, types of material, control methods, work practices and environmental conditions in the employer's current operations." There has been no ruling by OSHA stating that a 3-hour laboratory test meets this requirement when compared with an 8-hour shift on a particular jobsite. Each OSHA inspector can decide whether they will accept the documentation.
- **OSHA does not require having specific product emissions data on file at the jobsite:** The OSHA requirements are for contractors to understand and minimize the respirable crystalline silica from all sources to less than the PEL for their employees. The regulation does not require manufacturer disclosure of a quantity of respirable crystalline silica generated by specific products or for general contractors to have this information on file.
- **Respirable crystalline silica exposure comes from multiple sources:** OSHA requires companies involved in construction activities to monitor the exposure of their employees from all sources. No one product, in itself, can guarantee conformance to OSHA's overall workplace requirements.

Another useful resource is the OSHA Fact Sheet: **"OSHA's Crystalline Silica Rule: Construction,"** which can be downloaded at the following link: https://www.osha.gov/Publications/OSHA3681.pdf.

MAPEI believes it is important for contractors and employers to understand the OSHA crystalline silica standard while implementing good housekeeping practices and workplace controls, in order to limit potential crystalline silica exposure. It is not sufficient in MAPEI's view to demonstrate compliance with the OSHA standard by simply stating that a certain product may give rise to potential exposures below the OSHA threshold based on controlled pilot studies.



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