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## Silica Rule

June 23, 2017 is a date that is on everyone's mind. This is the date that the Occupation Health and Safety Administration's (OSHA) new rule on silica will become enforceable. But what is silica and why does it matter?

Silica is found naturally in sand, soils, granites, minerals, and quartz. It is commonly used as a major component in many construction materials such as cement, concrete, and mortar. Silica is also used in the production process for other products including ceramics, glass, and sandcasting. Cutting, drilling, grinding, chipping, or otherwise disturbing these silica-containing materials can create silica dust.

Silica dust is a small particle that is about the same size as many bacteria, tobacco smoke, and cat dander. Not surprisingly, this means silica dust is the right size to become lodged deep in the lungs when inhaled. Once silica is inhaled, it becomes trapped in the lung tissue making it difficult to breathe. Initial symptoms of breathing in this dust include shortness of breath, severe coughing, and general weakness. Over time, repeated exposure to this particulate allows larger and larger hard nodules to form in the lungs, causing breathing to become more difficult and can even lead to death. Other long-term complications may develop after exposure over the course of 5 to 10 years and longer, depending on an individual's overall exposure. Conditions may include potentially fatal illnesses like silicosis, lung cancer, tuberculosis (in those with existing silicosis), and chronic obstructive pulmonary disease (COPD).

The construction materials most likely to contain silica include asphalt, concrete, mortar, stone, marble, granite, terrazzo, stucco, plaster, drywall, greenboard, joint compound/texture, brick, tile, and cement roof tile. It is easy to see how nearly every trade and project will be impacted by this rule. The previous OSHA rule allowed exposure of up to 250 micrograms of silica per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ) over an 8 hour shift. The new rule lowers that permissible exposure limit to only 50  $\mu\text{g}/\text{m}^3$ . Employers must protect their workers from silica exposures over this limit with new engineering and work practice control methods, as specified by OSHA, or monitor the amount of silica that workers are exposed to if it may be at or above an action level of 25  $\mu\text{g}/\text{m}^3$ , over an eight hour day. Recent studies have indicated that typical current silica exposures experienced in the commercial construction industry are at 83  $\mu\text{g}/\text{m}^3$  and residential construction exposures are at 126  $\mu\text{g}/\text{m}^3$ .

How will contractors comply? Workers and their specific tasks will need to be studied and monitored to see whether the action level of 25  $\mu\text{g}/\text{m}^3$  is breached. Work practices, standard operating procedures, and job hazard analyses will need to be revised. Aggressive engineering controls such as airflow control, dust suppression, equipment wash racks, and dustless tools, will need to be put in place. Administrative controls such as increased training, limiting access to affected areas, and an exposure control plan will need major revisions. Pre-project planning and work preparation will be more important than ever. Of course, these all will include a large increase of cost to the contractor

Another potential consequence may be increased lawsuits from one trade to another, or against the general contractor for exposures on a common jobsite. Exposure assessments, air monitoring throughout the project, and an updated health and safety plan will be useful tools to protect your team and avoid litigation.

June will be here before we know it, so now is the time to prepare. Additional useful information for compliance can also be found at [silica-safe.org](http://silica-safe.org).

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