

HETI Horizons

An Update On The OSHA Silica Rule

On June 23, 2018, new standards for silica exposure became effective for all operations in general industry as well as in maritime. The standards for the construction industry went into effect last year on September 23. So what does this mean for employers whose workplaces have exposure to crystalline silica?

A Brief History

Illness from exposure to silica is one of the oldest recognized workplace hazards. The health risks associated with exposure to dust containing silica have been studied and documented since 1790 by Dr. Bernardo Ramazzini, considered to be the founder of occupational medicine.

The U.S. Department of Labor has been studying silica dust and its relationship to worker deaths since the 1930s. In the late 1920s, the Hawks Nest Tunnel, near Gauley Bridge, West Virginia, was built as part of a hydroelectric project. Workers dug a three-mile tunnel through silica rock without any respiratory protection. While there were at least 109 documented deaths due to acute silicosis, reports ranged from 476 to more than 1,000 – making this one of the worst industrial disasters in American history.

Exposure to crystalline silica can cause silicosis (an aggressive scarring of lung tissue), cancer, kidney disease and chronic obstructive pulmonary disease (COPD).

The Silica Standard



The Occupational Safety & Health Administration (OSHA) silica standard covers an estimated 2.3 million workers in the United States in many industries. In construction as well as in general industry, workers are potentially exposed performing a range of tasks – both manually and using powered equipment – to pour Ready-Mix concrete; to crush, grind and drill rock and cement; in hydraulic fracturing for gas and oil extraction; in refractory products; and in dental labs.

Under the new standard, the Permissible Exposure Limit (PEL) reduced allowable worker exposure five-fold – from 250 to 50 micrograms per cubic meter of air averaged over an eight-hour day.

The standard permits employers the option to implement a control method based on the equipment used and the task performed; or they can independently measure worker exposure and decide which controls work best. Under either approach, the employer is required to assure that exposures are below the Action Limit of 25 micrograms per cubic meter of air under all foreseeable conditions.

The Cost of Non-Compliance

Each employer is also required to prepare a written Exposure Control Plan (ECP) that identifies the tasks that involve exposure to silica and the methods used to protect workers. These plans must include five minimum elements describing workplace tasks – engineering controls, work practices, respirators, housekeeping, and procedures to restrict access to work areas – in order to minimize the number of exposed workers. Other requirements of the standard are to name a “competent” person to implement the plan, offer medical exams, train workers, and maintain workplace recordkeeping.

Through April 2018, federal OSHA and individual state OSHA agencies have issued 117 violations of the silica standard to construction firms. Of these violations, nearly 80% were considered serious – meaning the employer knew or should have known that there was a chance of causing serious injury or death but did not make an effort to correct it. Inspectors must assess a penalty of \$12,675 for each serious violation but may reduce it for good faith efforts. For willful or repeat violations, OSHA may fine \$126,750.



A total of 35 violations cited a failure to conduct an exposure assessment. An additional 31 cited failure to adhere to the list of equipment and tasks in the standard along with OSHA's required control measures and protective equipment. Another 20 violations were written for lack of a written ECP. It is difficult to know how widespread the violations were, because OSHA did not release information on the number of inspections performed, how many firms were in compliance, or how compliance officers coded violations.

On June 25, 2018, OSHA issued a standard interpretation – which is the directive given to inspectors on how and when to issue citations for the silica standard. [See <https://www.osha.gov/laws-regs/standardinterpretations/2018-06-25>]

Employers that need to create an ECP can use an application created by the Silica Safe organization. After the employer selects the appropriate task and working conditions, the application generates an ECP that includes the OSHA-mandated controls. [See <https://plan.silica-safe.org>]

Finally, OSHA has developed a series of fact sheets for specific construction equipment and tasks that have the potential for silica exposure. These fact sheets – describing engineering control methods (such as vacuum dust collection), work practices (such as wetting), and the appropriate protective clothing and respirators needed to perform the tasks safely – are accessible from the OSHA silica standard site.

HETI...Silica Services

HETI's Certified Industrial Hygienists and Engineers are available to assist employers comply with the silica standard. Whether the need is for a written ECP, training, workplace exposure assessments, or simply addressing questions on compliance, we are here to help.

To find out more about this and other HETI industrial hygiene services, please contact us.

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