OSHA's New Crystalline Silica Rule Taking Effect

The standards in the Occupational Safety and Health Administration's ("OSHA") final rule to protect workers from exposure to respirable crystalline silica (the "Silica Rule") take effect June 23, 2016 and will impact 2 million construction workers and 295,000 general industry workers who are exposed to respirable crystalline silica in the 676,000 workplaces in which they are employed.[1]

Crystalline silica is a mineral and, as a common component of sand, stone, rock, concrete, brick, block and mortar, is found in building and road construction materials and in manufacturing operations using sand products.[2] Because it is such a pervasive substance, numerous operations generate exposure to crystalline silica dust, including those involving cutting, sawing, drilling, and crushing concrete, brick, block, rock, and stone and in glass manufacturing, foundries, sand blasting, and hydraulic fracturing.[3] In addition to construction, industries that will be affected by the Silica Rule include, but are not limited to:

- Foundries
- Glass manufacturing
- Abrasive blasting
- Concrete products
- Refractory products
- Paintings and coatings
- Oil and gas operations
- Ready-mix concrete
- Railroad transportation
- Cut stone and stone products
- Refractory furnace installation and repair[4]

Exposure to respirable silica can cause silicosis, lung cancer, and respiratory and kidney diseases.[5] Though the current exposure limits for silica have been in

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place for more than four decades, they do not adequately protect worker health; currently, allowable exposure levels cause lung cancer and kidney disease.[6] Moreover, the new permissible exposure limit ("PEL") for general industry, maritime, and construction is 50 micrograms of silica per cubic meter of air ($\mu g/m^3$) averaged over an 8-hour day.[7] This level is approximately 50% of the previous PEL for general industry and 20% of the previous PEL for construction and shipyards, and it was established because the previous PELs resulted in a significant risk of developing or dying from silicosis, lung cancer, other lung diseases, or kidney disease.[8] Although a significant risk still remains at the new PEL, OSHA considers 50 $\mu g/m^3$ to be the lowest level that can reasonably be achieved through use of engineering controls and work practices in most affected operations.[9] More than 100,000 general industry and maritime workers are exposed to silica at levels that exceed the new PEL.[10]

Engineering controls (such as wetting down work operations, using local exhaust, or process isolation) and work practices (such as wetting down dust before sweeping it up) are the primary ways to keep exposures at or below the PEL.[11] Respirators are allowed only if engineering and work practice controls are not effective; however, because respirators are not as protective as engineering controls, they may not be practical.[12]

The almost 300,000 general industry and maritime workers who are exposed to respirable silica are employed in over 75,000 workplaces.[13] The general industry standard requires employers to:

- Measure the amount of silica exposure if it may be at or above an action level of 25 $\mu g/m^3$ averaged over an 8 hour day.
- Protect workers from respirable crystalline silica exposures above the PEL.
- Limit workers' access to areas where they could be exposed above the PEL.
- Use dust controls to protect workers from silica exposures above the PEL.
- Provide respirators to workers when dust controls cannot limit exposures to the PEL.
- Restrict housekeeping practices that expose workers to silica (where feasible alternatives are available).
- Establish and implement a written exposure control plan.

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- Offer medical exams every 3 years for workers exposed at or above the action level for 30 or more days per year.
- Train workers on operations that result in silica exposure and ways to limit exposure.
- Retain exposure and medical exam records.
- Offer medical surveillance to employees who will be exposed at or above the action level for 30 or more days per year, starting June 23, 2020.
- Offer medical surveillance to employees who will be exposed above the PEL for 30 or more days per year, starting June 23, 2018.[14]

Construction worksites are also subject to the Silica Rule, but the construction standard does not apply if exposures will be low under any foreseeable condition, such as mixing mortar, pouring concrete footers and foundations, or removing concrete formwork.[15] If not, employers must limit workers' exposures to respirable crystalline silica by employing flexible alternatives. The first option requires instituting a specified dust control method for a listed construction task: employers that correctly follow the listed method are not required to measure exposures and are not subject to the PEL. Alternatively, employers that do not use a listed control method must: measure silica exposure; protect workers from exposures above the action level of 25 $\mu g/m^3$; use dust controls to protect against exposures above the PEL; and provide respirators when dust controls cannot limit exposure.[16] In addition to using an exposure control method, all construction employers must:

- Designate a competent person to implement a written exposure control plan that identifies protections and restricts access.
- Where feasible alternatives exist, restrict housekeeping practices that expose workers to silica.
- Offer medical exams every 3 years to workers who wear a respirator for 30 or more days per year.
- Train workers.
- Keep exposure and medical records.[17]

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The Silica Rule's June 23, 2016 effective date triggers industry-specific compliance deadlines including, but not limited to:

- June 23, 2017 - Construction (except Laboratory Evaluation of Exposure Samples)
- June 23, 2018 - Construction - Laboratory Evaluation of Exposure Samples
- June 23, 2018 - General Industry and Maritime (except certain medical examinations)
- June 23, 2020 - General Industry - certain medical examinations
- June 23, 2018 - Hydraulic Fracturing (except Engineering Controls)
- June 23, 2021 - Hydraulic Fracturing - Engineering Controls[18]

Once their provisions take full effect, the standards are expected to save over 600 lives each year and prevent more than 900 new cases of silicosis each year.[19]

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[1] *OSHA's Final Rule to Protect Workers from Exposure to Respirable Crystalline Silica,* https://www.osha.gov/silica/index.html; OSHA Fact Sheet, *OSHA's Crystalline Silica Rule: General Industry and Maritime* (Mar. 2016), https://www.osha.gov/Publications/OSHA3682.pdf; OSHA, *Frequently Asked Questions: Respirable Crystalline Silica Rule,* https://www.osha.gov/silica/Silica_FAQs_2016-3-22.pdf.

[2] OSHA Fact Sheet, *Workers' Exposure to Respirable Crystalline Silica: Final Rule Overview* (Mar. 2016), https://www.osha.gov/Publications/OSHA3683.pdf.

[3] *Id.*

[4] *Id.*

[5] OSHA Fact Sheet, *OSHA's Crystalline Silica Rule: General Industry and Maritime, supra* note 1.

[6] *Id.*

[7] OSHA, *Frequently Asked Questions: Respirable Crystalline Silica Rule, supra* note 1.

[8] *Id.*

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[9] *Id.*

[10] OSHA Fact Sheet, *OSHA's Crystalline Silica Rule: General Industry and Maritime, supra.*

[11] OSHA, *Frequently Asked Questions: Respirable Crystalline Silica Rule, supra.*

[12] *Id.*

[13] OSHA Fact Sheet, *OSHA's Crystalline Silica Rule: General Industry and Maritime, supra.*

[14] *Id.*

[15] OSHA Fact Sheet, *Crystalline Silica Rule: Construction* (Mar. 2016), https://www.osha.gov/Publications/OSHA3681.pdf.

[16] *Id.*

[17] *Id.*

[18] *OSHA's Final Rule to Protect Workers from Exposure to Respirable Crystalline Silica*; OSHA Fact Sheet, *Workers' Exposure to Respirable Crystalline Silica: Final Rule Overview*; OSHA, *Frequently Asked Questions: Respirable Crystalline Silica Rule, supra*.

[19] *OSHA's Final Rule to Protect Workers from Exposure to Respirable Crystalline Silica, supra.*

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