



Industry Watch - Respirable Crystalline Silica

BY MATT GLOVER

Whether health, legal, or insurance requirements silica dust is on the radar and like past "hot button" alerts such as asbestos and hexavalent chromium, requirements to address this issue are now in effect. As of June 23, 2016, the Occupational Safety and Health Administration (OSHA) has begun to enforce a new standard that aims to significantly reduce worker exposure to crystalline silica dust.

Studies have reported that over two million workers per day in the United States are exposed to silica dust in their workplaces. Respirable crystalline silica is a known cause of fatal lung diseases such as silicosis, lung cancer, and kidney disease.



Permissible exposure levels to respirable crystalline silica are being significantly decreased according to OSHA's new regulations.

■ WHAT IS OSHA'S FINAL RULING?

The permissible exposure limit (PEL) has been reduced to 50 micrograms per meter cubed of air over an eight-hour work shift unless exposure levels are below the OSHA action level of 25 micrograms per meter cubed according to regulation 1926.1153. Through this new standard, employers are also required to use engineering controls such as ventilation to limit worker exposure to the PEL.

■ WHAT ARE SOME OF THE INDUSTRIES WITH POTENTIAL SILICA DUST ISSUES?

Industries watched include, but are not limited to:

- Abrasive blasting
- Mining and quarry operations
- Construction trades
- Cement, brick and mortar manufacturing
- Glass manufacturing
- Hydraulic Fracturing
- Foundries

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■ WHAT ARE THE STEPS TO COMPLY WITH THE OSHA RULING?

- Ventilate using proper industrial ventilation systems
- Use 1926.1153 OSHA Table 1 – Exposure Control Methods for Silica Dust, there may be a pre-determined solution for your application
- Use data supplied by a third party to ensure equipment will not create a concentration above the PEL
- Periodically test the air using personal monitors to ensure worker exposure concentrations are below the PEL

■ WHAT ARE THE PENALTIES FOR NON-COMPLIANCE?

Penalties, as issued by OSHA, are as follows:

Violation Type:	Maximum Penalty:
Serious	\$12,471 per violation
Failure to Abate	\$12,471 per day
Willful or Repeated	\$124,709 per violation

■ WHAT ARE THE APPLICABLE DATES TO COMPLY?

The construction industry must be fully compliant to OSHA's final ruling by June 23, 2017, whereas general industries and hydraulic fracturing need to comply by June 23, 2018.

■ WHAT INDUSTRIAL VENTILATION CONTROLS ARE AVAILABLE TO COMPLY WITH THE NEW OSHA REGULATIONS AND PROTECT YOUR WORKERS?

Acceptable measures we have used to capture silica dust are:

- Source capture dust collection specific to process equipment with hoods or extraction arms
- Downdraft tables and booths
- Walk-in dust enclosures
- Central vacuum systems
- Ventilation fans used in very limited and specific applications

Unacceptable means of control include sweeping the dust, compressed air blasting, and floor fans which result in fugitive dust and potentially higher exposure levels for workers.

The goal of decreasing silica dust particulate to an acceptable OSHA level of 50 micrograms per meter cubed of air is reachable with a properly implemented industrial ventilation design and the correct equipment.