News

Metal Foundries Facing Compliance Deadline for OSHA Silica Rule

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American metal foundries face an impending deadline to comply with tougher federal worker safety regulations intended to protect employees from a potentially fatal lung disease—silicosis.

Foundries and other manufacturers were given until June 23, 2018, to meet the requirements after the Occupational Safety and Health Administration released the rule in March 2016. A federal appeals court upheld the tougher OSHA requirements on Dec. 22.

Whether foundries, often using hundreds of tons of silica-based sand to cast metal parts, will be able to meet the federal mandate remains to be seen.

“Foundries have been working on silica control for many years,” Thomas Slavin of the consulting firm Slavin OSH Group LLC in Chicago told Bloomberg Environment. “Now, they’ve got to really step up their game.”

At a recent forum organized by the American Foundry Society, Slavin said, about 85 percent of the people attending indicated they had taken initial steps to comply with the rule by measuring silica concentrations in their factories.

But some companies may have been slow getting ready for the new standards because they believed a lawsuit would overturn the rule, Trent Blake, director of health and safety services for the engineering consulting firm Keramida Inc. in Indianapolis, told Bloomberg Environment.

OSHA didn’t respond to a Bloomberg Environment question on whether the agency would delay the compliance deadline or not issue citations if employers had begun compliance efforts. In 2017, OSHA extended the construction industry’s silica compliance deadline by 90 days to Sept. 23.

50 Percent Reduction

There are about 1,935 foundries in the U.S., according to the foundry society, producing 10.7 million tons of castings used to mass produce metal parts. About 75 percent of the foundries employ fewer than 100 workers.

When the rule is fully implemented across all types of employers, OSHA in 2016 predicted, it will save 642 lives annually and prevent 918 moderate to severe cases of silicosis, a disease caused by silica scarring the lungs.

The OSHA rule (29 C.F.R. 1910.1053) sets a permissible exposure limit (PEL) for airborne crystalline silica of 50 micrograms per cubic meter of air (50 µg/m3), half the old general industry PEL of 100 µg/m3. The regulation also sets an action level at 25 µg/m3, meaning employers must regularly measure exposure if the amount of breathable silica exceeds that level.

To stay within the new federal requirements, those foundries will have to cut by 50 percent the amount of airborne silica workers would be exposed to daily.

Mike Wright, director of health and safety for the United Steelworkers, said the union hasn't done its own compliance survey of foundries. He also suspects employers have been slow to comply.

"I suppose some were hoping that the courts would bail them out, for which we have no sympathy," Wright said.

The construction industry has had to comply with the tougher limits since September 2017. Airborne silica is often produced when construction workers cut into cement or stones.

For builders, OSHA encouraged use of portable vacuums to suck up silica dust or water to prevent the dust from becoming airborne.

Not Going to Be Easy

But foundries and other manufacturers face a different challenge, Dan Oman, a senior associate for the engineering and environmental consulting firm Haley & Aldrich Inc. in Burlington, Mass., told Bloomberg Environment.

"This is not going to be easy," Oman said. "Foundries move tons of sand within the operation."

While making sure silica dust isn't allowed to gather on surfaces helps, that won't alone bring plants into compliance, Oman, who chairs the foundry society's environmental health and safety division, said.

Companies face having to make decisions about adding new technologies and equipment, renovating buildings, and looking for alternatives to using sand, such as ceramic pellets, Oman said.

Measured Moves

Blake tells clients to take a systematic approach to meeting the federal mandates.

The initial step is taking air samples throughout the factory to identify where silica levels exceed OSHA limits, Blake said. With that information in hand, companies can start determining the sources of silica and how to reduce the amounts of silica becoming airborne.

A company also may need to upgrade its ventilation system to continually filter silica out of the air, Blake said.

A large-scale change to a ventilation system, such as adding a new filters and an exhaust system, could trigger the need for a permit from the Environmental Protection Agency, which under the Clean Air Act regulates industrial discharges of silica, Blake said. Obtaining a permit could take several months.

Unique Challenges

After McWane Inc., headquartered in Birmingham, Ala., an operator of several iron foundries, learned the new silica limits were 50 percent lower, the company accelerated ongoing efforts to control silica, the company's senior vice president for environment, safety and health, Jeet Radia, told Bloomberg Environment.

"We've had to address each of our foundries individually based on local conditions," Radia said. "This has been, and continues to be, highly time- and resource-intensive."

Many of the successful process improvements and engineering controls are based on decades-old techniques such as evaluating exhaust systems and air flow patterns, Radia said.

While Radia wouldn't comment on how much McWane has spent to comply, he did say that "costs of compliance with the new silica rule at each individual foundry are far in excess of what OSHA estimated."

OSHA in 2016 estimated the average annual cost for an iron found to comply was $57,403 and the annual cost for all iron foundries was $23.4 million.

'Feasible' Question

One gray area in complying with the rule is the rule's "feasible" mandate, Blake and Slavin said.

The rule says companies should use engineering and operating procedures to keep exposure levels below the OSHA limit “unless the employer can demonstrate that such controls are not feasible.”

In areas where the controls aren’t feasible to meet the exposure limits, employers can provide personal protection equipment such as respirators to workers, the rule says.

What isn’t clear, the consultants said, is how OSHA will determine whether an employer met the feasible mandate. An employer who doesn’t satisfy the feasibility requirement could be cited.

To contact the reporter on this story: Bruce Rolfsen in Washington at brolfsen@bloombergenvironment.com

To contact the editor responsible for this story: Rachael Daigle at rdaigle@bloombergenvironment.com