New OSHA Silica Exposure Standard and the Ready Mixed Concrete Industry

Background: On September 12th, the U.S. Department of Labor’s Occupational Safety and Health Administration (OSHA) published in the Federal Register, a proposal to overhaul the current permissible exposure limits (PELs) for “respirable” crystalline silica (silica). OSHA’s proposed rule is broken into two separate rules, one for general industry and maritime (which the ready mixed concrete industry falls under) and another for the construction industry.

Ready mixed concrete industry position: While supporting the necessity for a silica standard to protect workers’ safety and health, the ready mixed concrete industry disagrees with the need to change the current silica standard. The current silica regulations in place have worked extremely well at protecting workers, while simultaneously nearly eradicating silicosis in the U.S. work environment. The continued compliance with and enforcement of current silica regulations, engineering controls, and proper protective equipment (PPE) use properly and effectively limit worker silica exposure and result in downward trends of U.S. silicosis rates.

Proposed changes:
- Reducing the PEL from 100 micrograms per cubic meter of air (μg/m³), as an 8-hour time-weighted average (TWA), down to just 50 μg/m³, 8-hour TWA;
- Required measuring of silica that workers can be exposed to if it is at or above 25 μg/m³, 8-hour TWA;
- Limiting worker access to areas where the PEL is above 50 μg/m³, 8-hour TWA;
- Required dust controls to reduce worker exposure to limits above the new PEL;
- Employers will be required to provide respirators to workers when dust controls cannot reduce worker exposure to limits above the new PEL;
- Medical exams every three years for workers who are exposed to limits for 30 or more days a year above the new PEL;
- New worker training; and
- New recordkeeping requirements.

How it affects the ready mixed concrete industry: OSHA suggests the new proposed standard will save 688 lives and prevent 1,585 new cases of silicosis. According to OSHA, the ready mixed concrete industry has 43,920 workers currently exposed to respirable crystalline silica, 32,110 of which are exposed to levels above the new proposed PEL. Industry exposure according to OSHA:
- Drivers: 100% at >250 μg/m³
- Material handlers: 75% at <25 μg/m³, and 25% at 50-100 μg/m³
- Batch operator: 100% at <25 μg/m³
- Maintenance operators: 60% at <25 μg/m³, 20% at 25-50 μg/m³, and 20% at 50-100 μg/m³
- Quality control technician: 100% at <25 μg/m³
- Chipping out mixer drums: ≤10,000 μg/m³

OSHA’s is basing the necessity for and science behind the proposal on studies, reports, essays, etc. done from the late 1990s up through 2011. Many of these reports attempt to draw a correlation between silica
exposures in certain industries (ie coal mining, gold mining, granite crushing, etc.) with a necessity for silica standards changes for all industries. Absent inspection reports or data from reputable sources instead OSHA relies on risk model estimates. OSHA’s benefits claims are called into question by data from the Centers for Disease Control (CDC) noting that in 2007 deaths due to silicosis (combined underlying and contributing; 73 and 50 respectively) were 123, far less than the 688 deaths OSHA claims it will prevent each year. As well, combined CDC data for 2011 and 2012 put deaths from harmful substance inhalation, such as silica dust, totaling 97. Silica of course is only a portion of the 97. As well, the CDC data details the U.S. silicosis mortality rate declining by 93% between 1968 and 2002, virtually eliminating silicosis existence in the U.S., and validating the effectiveness of the current silica standard and industry safeguards.

According to the 2013 NRMCA industry data survey, 85% of ready mixed concrete companies hire contractors to chip out mixer drums. This data tells us that only about 15% of mixer drivers actually do any drum chipping, which contradicts OSHA’s data suggesting that 100% of mixer drivers are exposed to >250 μg/m3 of respirable silica. Further contradicting OSHA’s claims, there are roughly 68,000 mixer drivers in the U.S., although OSHA claims that just over 29,000 ready mixed concrete industry workers are exposed to >250 μg/m3 of respirable silica. This blatantly wrong and contradictory OSHA information continues to challenge OSHA’s “preliminary economic analysis” (PEA) which forms the foundation for the rule’s justification.

Under the new standard, drivers would be required to abide by a construction contractor’s regulated area, access control plan, and/or PPE in order to deliver concrete at a construction site where the driver would/could be directly exposed to silica (multi-employer provision). This poses a number of concerns regarding cost, logistics, training, PPE, etc.

OSHA estimates the rule to cost $637 million annually over 10 years, all industries combined. This includes a cost of about $1,242 for the average workplace and a cost to companies with less than 20 employees of about $550. OSHA calculates the ready mixed concrete industry cost annually at $16,511,080 (this is the highest compliance amount for any industry in the general industry sector). OSHA estimates that the rule could result in a 1% cost increase in domestic products which would result in a 0.085% reduction in ready mixed concrete production. OSHA estimates average net benefits of about $2.8 to $4.7 billion annually over the next 60 years.

Common sense tells us it will cost dramatically more for compliance than OSHA estimates. While OSHA suggests the rule will only cost $637 million/year over all industries, preliminarily, the fracking industry calculated the proposed rule to cost, in part, roughly “.35 percent of its annual industry revenue of $8.2 billion”. This cost estimate drastically tips OSHA’s cost estimation on its head. OSHA’s $637 million/year is a big difference from just one industry’s $2.87 billion cost.

**Proposed effective and compliance dates:** Final rule would become effective 60 days after publication in the *Federal Register*. Employer compliance with most provisions of the final rule would be required by 180 days after the effective date (amounts to 240 days after effective date). One year after the effective date engineering controls need to be in place. Two years after the effective date laboratories that would perform the silica testing would need to be in compliance with accreditation and round robin testing.

**Public comment information:** Following a 47-day comment period extension granted on October 25th, the comment period now lasts until January 27th, 2014 (OSHA is asking for comments on 87 specific questions, many of which are related to the issues/concerns of the ready mixed concrete industry). As well, there will be a public hearing on March 18th, 2014 in Washington, D.C. The proposed rule, factsheets, frequently asked questions (FAQs) and can be found at: https://www.osha.gov/silica/.