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## **SAFETY AND HEALTH REPORT**

### **DUST CONTROL**

The ICE Dust Control Task Force was appointed by ICE President Eugene George to work with the International Union of Bricklayers and Allied Craftworkers (BAC) to examine and address the issues of dust control and silicosis. The task force has been examining ways to eliminate the risks of silica dust exposure without limiting the competitiveness of ICE contractors.

The BAC and other Building Trades Unions, through the Building Trades Safety and Health Committee, have presented a draft silica standard to OSHA. OSHA has not yet adopted a silica standard, but has a National Emphasis Program (NEP) for Crystalline Silica exposure to identify, reduce, and eliminate health hazards associated with occupational exposures.

When OSHA adopts a standard and the task force completes its work, it will issue a full report and recommendations. The report will contain guidelines for following the standard that OSHA adopts.

However, we recognize the health risk of silica exposure and realize that it will not wait while we study the silica content of the materials we use, investigate opportunities to develop silica-free materials, and survey the equipment market for saws that eliminate silica dust. It is also clear that OSHA will focus on silica in inspection before an official standard is adopted. Therefore, the task force and the ICE Board of Directors is strongly encouraging ICE members to establish dust control and respiratory protection programs immediately to protect their employees and their businesses.

The following report will outline the problem of silicosis, the business risks of not addressing the problem, and recommendations for how to address the existence of silica dust on construction sites and limit the exposure of your employees.

## THE PROBLEM

Silicosis is a disabling, nonreversible and sometimes fatal lung disease caused by inhaling respirable crystalline silica. Many concrete and masonry products contain silica and respirable crystalline silica is released during activities such as sawing, grinding, chipping, hammering, crushing, loading, hauling, dumping, drilling and abrasive blasting of the concrete and masonry materials that contain silica. The National Institute of Occupational Safety and Health contends that even materials containing small amounts of crystalline silica may be hazardous if they are used in ways that produce high dust concentrations.

When workers inhale crystalline silica, the lung tissue develops fibrotic nodules and scarring around the trapped silica particles. This condition is called silicosis. If the nodules grow too large, breathing becomes difficult, other chest symptoms such as cough develop, infectious complications may cause fever, weight loss, and night sweats, and death may eventually occur. Acute silicosis can develop within a few weeks after extremely high exposure, but chronic silicosis can take decades to develop. More than 14,000 workers have already died from silicosis and construction is one of the most frequently recorded industries on death certificates with mention of silicosis.<sup>1</sup>

The Occupational Safety and Health Administration (OSHA) has determined a permissible exposure limit (PEL) for respirable dust containing crystalline silica for the construction industry, which is measured by millions of particles per cubic foot and is calculated as follows:<sup>2</sup>

$$PEL^* = \frac{250 \text{ mppcf}}{\% \text{ silica}} + 5$$

\* 8-hour time-weighted average

The National Institute for Occupational Safety and Health (NIOSH) has established a recommended exposure limit at  $0.05 \text{ mg/m}^3$  as a time-weighted average for up to 10 hours/day during a 40-hour work week.<sup>3</sup>

## THE RISKS

Beyond the obvious moral obligation to protect your employees from health and safety hazards, there are other very real business risks to not addressing the issue of silicosis immediately.

First is the costs of work-related deaths and injuries. According to the National Safety Council, workplace deaths and injuries cost the U.S. \$121 billion in lost wages, productivity, health care and administrative costs. The average cost of one fatality was \$790,000 and the average cost of one injury was \$26,000. In Canada, the annual cost of work accidents is estimated at more than \$10 billion.

Second is the risk of OSHA inspection and fines. There are known cases where masonry contractors have been fined by OSHA for not having a written dust control and respiratory protection policy. As OSHA has established silicosis as one of their main foci

for construction, inspection activity and fines for ignoring respiratory protection are likely to increase in frequency.

But of greater potential cost are the long-term legal and class-action activities that are almost certain to result from the increased awareness of silicosis and its relationship with masonry materials and construction. Just a few decades ago, asbestosis lawsuits were never heard of. Now, millions of dollars have been awarded in such lawsuits. The potential for silicosis cases to become even more prevalent is very real.

## **RECOMMENDATIONS**

The ICE Dust Control Task Force and Board of Directors is strongly encouraging ICE members to establish dust control and respiratory protection programs immediately that employ engineering controls, respiratory protection, medical monitoring and training, limit dry cutting where possible, and promote safe work practices.

### Hazard Avoidance

Some masonry materials contain more crystalline silica than others. ICE is encouraging materials manufacturers to produce low-silica or silica-free masonry units, as well as more shapes and specials that eliminate the need for cutting. ICE members should, whenever possible, replace materials with high crystalline silica content with materials with low or no crystalline silica.

### Engineering Controls

The most effective method of limiting silica dust is by using water. All table masonry saws, some hand-held saws, and many masonry drills make use of water to eliminate silica dust. When wet sawing or drilling is not possible, use available dust collection systems for dust generating equipment. Use local exhaust ventilation to remove dust from the work area and prevent it from being released into the air. Use abrasives containing less than 1% crystalline silica during abrasive blasting to help prevent harmful quartz dust from being released in the air.

### Respiratory Protection

Respirators should not be the primary method of protection and should be used only if controls cannot keep dust levels below the NIOSH REL. When respirators are used, the employer must establish a comprehensive respiratory protection program, as outlined in the NIOSH Guide to Industrial Respiratory Protection<sup>4</sup> and as required in the OSHA respiratory protection standard<sup>5</sup>, including:

- periodic environmental monitoring to ensure that dust levels in the air are below the NIOSH REL,

- regular training of personnel,
- selection of proper NIOSH-approved respirators,
- an evaluation of the worker's ability to perform the work while wearing a respirator,
- respirator fit testing, and
- maintenance, inspection, cleaning, and storage of respiratory protection equipment.

### Medical Monitoring

Medical examinations should be available to all employees who may be exposed to respirable silica. Medical examinations should include a medical and occupational history, a chest X-ray, pulmonary function testing (spirometry), and an annual evaluation for tuberculosis.

### Training

Workers should receive safety training to educate them on the potential health effects of exposure to respirable crystalline silica and the engineering controls and work practices that can protect them from those risks. BAC Regional Directors and Craft Representatives all have a complete training program including a video that you may be able to coordinate the use of. ICE also has a copy of the training program and video that it will loan to its member contractors on a limited basis. If you wish to purchase the training program on your own, they can be purchased from the Construction Safety Council by calling 708-449-0550 and requesting the Silica Instructor Set. Your employees should also be trained on your company's specific policies and procedures regarding dust control and the care and use of your company's protective equipment.

### Safe Work Practices

Safe work practices are not only important to protect the worker causing the respirable crystalline silica to be released into the air, but also other workers on the project, their families, and innocent bystanders. Safe work practices range from recognition of times when silica dust may be generated and planning ahead to eliminate or control dust at the source to showering and changing clothes before leaving the worksite. In addition, they include:

- posting signs to inform other workers on the project of areas that may be contaminated by silica,
- wearing disposable or washable protective clothing at worksite,
- avoiding smoking, eating and drinking in dusty areas,
- washing hands and face before eating, drinking, or smoking,
- removing dust from equipment with water hose rather than forced air, vacuums with HEPA filters, or wet sweeping, and
- parking cars away from dusty areas

We hope the work of the ICE Dust Control Task Force will develop means of protecting our workforce while ensuring the competitiveness of the union masonry contractor. We will continue to work with the BAC and the International Masonry Institute to examine the silica content of the materials we use, identify silica free materials, identify more engineering controls, and survey the equipment market for saws and other equipment that will help eliminate the existence of respirable crystalline silica on jobsites. We will also be working with our labor partners and other associations to influence the manufacturers of our materials to develop silica free materials and the saw manufacturers to develop more saws that not only make use of water, but also employ dust collection systems to eliminate the dust they cause. However, we urge you to take immediate action to protect yourselves and your employees.



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1. *Work-Related Lung Disease Surveillance Report 1996. Cincinnati, OH: National Institute for Occupational Safety and Health, 1994; DHHS NIOSH Publication No. 96-134.*
2. *29 CFR 1926.55. Code of Federal Regulations. Washington, DC: US Government Printing Office, Office of the Federal Register.*
3. *NIOSH [1974]. Criteria for a recommended standard: occupational exposure to crystalline silica. Cincinnati, OH: U.S. Department of Health, Education, and Welfare, Public Health Service, Center for Disease Control, National Institute of Occupational Safety and Health, HEW Publication No. (NIOSH) 75-120, pp. 54-55, 60-61.*
4. *NIOSH [1987]. Guide to industrial respiratory protection. Cincinnati, OH: U.S. Department of Health, Education, and Welfare, Public Health Service, Center for Disease Control, National Institute of Occupational Safety and Health, DHHS (NIOSH) Publication No. 87-116.*
5. *29 CFR 1910.134 and 1926.103. Code of Federal Regulations. Washington, DC: US Government Printing Office, Office of the Federal Register.*