



SILICA—A SLEEPING GIANT:

Crystalline silica can be encountered by construction workers when using rock containing silica or concrete and masonry products that contain silica sand when performing such tasks as chipping, hammering, drilling, crushing, or hauling rocks; performing abrasive blasting; and sawing, hammering, drilling, and sweeping concrete or masonry. Even small amounts of crystalline silica may be hazardous if they are used in ways that produce high dust concentration.

Presently, OSHA has a General Industry Standard (1910.1000) covering silica exposure and is proposing a specific 1926 construction standard, based on a study which should be completed by the end of 2003. Present hazard communication standards for construction also address silica exposure.

The present Threshold Limit Value (TLV) in the General Industry Standard is 10 micrograms per cubic meter of air space. The proposed TLV for construction is 5 mg/m³, which is the same as the TLV stated by the American Conference of Governmental Industrial Hygienists.

Construction grinding and cutting can generate 20 to 30 times more silica than the current permissible level.

Exposure to crystalline silica dust can cause silicosis, a serious and potentially fatal respiratory disease. However, employers and employees can take practical steps to reduce the risks, including the following:

---Recognize when silica dust may be generated and plan ahead to eliminate or control the dust at the source. Awareness and planning are keys to the prevention of silicosis;

---Substitute less hazardous materials than crystalline silica for blasting, when possible. Try to use automatic blast cleaning machines or cabinets that allow operating the machines from outside using gloved armholes. For sandblasting, use type CE positive pressure abrasive blasting respirators;

---Use engineering controls and containment methods such as blasting cleaning machines and cabinets, wet drilling, or wet sawing of silica-containing material to control the hazard and protect adjacent workers from exposure. Examples of controls include exhaust ventilation and dust collection systems, water sprays, wet drilling, enclosed cabs, and drill platform skirts. Preventative maintenance of systems is necessary because of the extreme abrasiveness of the silica dust that can damage the systems installed;

---Supply vacuums with high efficiency particulate air (HEPA) filters, and advise employees to vacuum, hose down, or wet sweep work areas, instead of dry-sweeping;

---Practice good personal hygiene to avoid unnecessary exposure to other worksite contaminants such as lead. Change into disposable or washable work clothes, where available; and change into clean clothing before leaving the worksite. Avoid eating, drinking, or using tobacco products in work areas where there is dust or other toxic materials. Wash hands and face before eating or drinking;



---Conduct air monitoring to measure worker exposures and ensure that controls are providing adequate protection for workers;

---Establish a written respiratory protection program. Outfit employees with appropriately selected, properly fitted, approved respirators when engineering controls alone are insufficient to keep exposures within safe limits. Be sure respirators are kept clean and properly maintained and that employees are trained in their use;

---Provide periodic medical examinations for all workers who may be exposed to respirable crystalline silica. Have X-rays read by a specialist in dust diseases and develop a plan for reducing exposures of employees whose X-rays show changes consistent with silicosis;

---Post warning signs to identify work areas where respirable silica is present.