The National Institute for Occupational Safety and Health (NIOSH)

Centers for Disease Control and Prevention

Promoting productive workplaces through safety and health research NIOSH

NIOSH Warns of Silicosis Risks in Construction, Suggests Measures to Reduce Exposure

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UPDATE

- Exposure to respirable crystalline silica dust during construction activities can cause serious or fatal respiratory disease.
- Employers and workers can take several steps to reduce exposures and lower risks.

Exposure to respirable crystalline silica dust during construction activities can cause silicosis — a serious and potentially fatal respiratory disease — but employers and workers can take practical steps to reduce risks, according to an Alert released by the National Institute for Occupational Safety and Health (NIOSH).

The NIOSH Alert, “Request for Assistance in Preventing Silicosis and Death in Construction Workers,” details the hazards related to silica exposure among construction workers, provides prevention recommendations, and contains cases reports of construction workers who have died or are suffering from silicosis.

Silicosis, a scarring and hardening of lung tissue, can result when particles of crystalline silica are inhaled and become embedded in the lung. The disease can be progressively debilitating and fatal. In construction, workers can be easily exposed to silica when using rock containing silica or concrete and masonry products that contain silica sand when preforming such tasks as chipping, hammering, drilling, crushing, or hauling rock; preforming abrasive blasting; and sawing, hammering, drilling, and sweeping concrete or masonry. Even materials containing small amounts of crystalline silica may be hazardous if they are used in ways that produce high dust concentrations.

“The human and economic costs of silicosis are unacceptable,” said NIOSH

Director Linda Rosenstock, M.D., M.P.H. “It is vital that government, industry, labor, and the public health community work together to help employers and workers recognize these risks and take action to avoid them.”

The following page contains recommendations for reducing workplace exposure to silica and preventing silicosis. Among some in the construction industry there is a lack of awareness about the sources of silica exposure, the nature of silicosis, and the causes of the disease. Construction workers, managers, and equipment manufacturers urgently need information about the hazards of breathing respirable crystalline silica. NIOSH requests your assistance in disseminating this information to those at risk and to those who can effect prevention.

NIOSH recommends the following measures to reduce exposures to respirable crystalline silica in the workplace and to prevent silicosis and deaths in construction workers:

- 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 prevention of silicosis.
- Do not use silica sand or other substances containing more than 1% crystalline silica as abrasive blasting materials. Substitute less hazardous materials.
- Use engineering controls and containment methods such as blast cleaning machines and cabinets, wet drilling, or wet sawing of silica containing materials to control the hazard and protect adjacent workers from exposure.
- Routinely maintain dust control systems to keep them in good working order.
- Practice good personal hygiene to avoid unnecessary exposure to other worksite contaminants such as lead.
- Wear disposable or washable protective clothes at the worksite.
- Shower (if possible) and change into clean clothes before leaving the worksite to prevent contamination of cars, homes, and other work areas.
- Conduct air monitoring to measure worker exposures and ensure that controls are providing adequate protection for workers.
- Use adequate respiratory protection when source controls cannot keep silica exposures below the NIOSH REL.
- Provide periodic medical examinations for all workers who may be exposed to respirable crystalline silica.
- Post warning signs to mark the boundaries of work areas contaminated with respirable crystalline silica.
- Provide workers with training that includes information about health effects, work practices, and protective equipment for respirable crystalline silica.
- Report all cases of silicosis to State health departments and OSHA.

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