

PURPOSE

This manual was produced by Michigan State University's Department of Medicine, Occupational and Environmental Medicine Division, to deal with the hazards of silica and silicosis during abrasive blasting activities in Michigan. The manual was developed and written by Aaron Ells, Debra Chester and Ken Rosenman, M.D. Assistance and review were also made by Mary Jo Reilly at Michigan State University and Jason Lupcke of MIOSHA Consultation, Education and Training (CET).

Scientists have known for decades that prolonged and excessive exposure to crystalline silica dust causes silicosis, a noncancerous lung disease. This was most dramatically demonstrated by the significant increase in reported silicosis cases following the invention of the pneumatic hammer drill in 1897, the introduction of sand blasting in 1904, and the undertaking of a major tunneling project in the mid-1930s through a ridge of nearly pure quartz.

Silicosis is a lung disease which is associated with the inhalation of silica dust. It is a progressively debilitating disease that can develop after you breathe in microscopic, crystalline silica particles. There is no cure for silicosis. However, it is completely preventable.

Michigan has conducted active surveillance for silicosis since 1988. On average, 22 new cases per year are confirmed in Michigan. More than one-third of the silicosis cases identified in Michigan have done sandblasting as part of their job. Millions of U.S. workers are exposed to crystalline silica. In addition to silicosis, silica exposure has been associated with kidney disease, COPD, lung cancer, scleroderma and TB.

In 1950, Great Britain banned the use of silica in blasting operations and other European countries banned the use of silica sand as an abrasive media in 1966. Despite the number of silica-free abrasive medias, silica is still the most common abrasive used in sandblasting in the U.S.

This training manual has been developed for the purpose of training abrasive blasters on how to do abrasive blasting safely. By providing employees and employers with information regarding the hazards of silica and possible control measures, and with the knowledge necessary to implement protective measures, we believe this training can result in removing barriers to successful prevention of silicosis.

This worker's training manual may be reproduced and distributed for non-profit educational purposes. The format for this manual was modeled from the publication: Prevent Lead Poisoning Before it Poisons Your Business, produced by the California Occupational Health Program to deal with the hazards of lead in radiator shops.

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