



Workplace
Safety and Health



silicosis

Working with Cement Roofing Tiles: a silica hazard



DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL INSTITUTE FOR
OCCUPATIONAL SAFETY AND HEALTH



The Facts

- Cement tiles are used on roofs across the United States but are more common in the Southern states
- Cement tiles can contain silica. The silica content of cement tiles should be listed by the tile manufacturer on a material safety data sheet.
- Cutting, crushing, drilling, or blasting the tiles creates silica-containing dust, which workers breathe in.
- Overexposure to silica can cause silicosis.
- Over 1,000,000 U.S. workers are at risk for developing silicosis each year.
- Each year more than 200 U.S. workers die from silicosis and hundreds more become disabled.

What is Silicosis?

Silicosis is a lung disease caused by breathing dust that has silica in it. The term “respirable silica” is used for silica particles that are small enough to be inhaled and deposited in the deepest parts of the lung. If workers inhale too much respirable silica dust, it causes scar tissue to develop in the lungs, resulting in silicosis. Lung damage may be permanent and disabling and may lead to death. There is no cure for silicosis, but it can be prevented.



Using Respirators

Until respirable silica exposures can be eliminated or reduced below current guidelines, a respirator program should be established.

Steps for implementing a respirator program include:

- Regular air monitoring
- Training for workers using respirators
- Use of proper NIOSH approved respirators
- A medical examination of the worker's ability to work while using a respirator
- Testing to make sure respirators fit
- Maintenance, inspection, cleaning, and storage of respirators

For more information about respirator programs, including what respirators have received NIOSH approval as a safe and effective, please visit the NIOSH website at: <http://www.cdc.gov/niosh> and click on the respirator link.



How Roofers are at Risk

Although respirable silica is a recognized health hazard in the construction industry, only recently has this exposure been documented in roofers. NIOSH has measured respirable silica levels up to four times the recommended exposure limit around roofers cutting cement products such as when roofing tiles are cut during the installation process. This cutting generates clouds of silica-containing dust. Respirable silica exposure may also occur when blowers or dry sweeping methods are used to clean the roof. This practice can produce large silica-containing dust clouds. NIOSH does not recommend this practice. Anyone who inhales dust generated by cutting cement

Symptoms of Silicosis

Symptoms of silicosis may include

- **Shortness of breath**
- **Fatigue**
- **Severe cough**
- **Chest pain**

These symptoms can become worse over time. It is important to see a doctor if you have these symptoms. Be sure to tell your doctor about your job and any silica exposures, so he or she can consider silicosis as a possible cause of your symptoms.

Taking Steps to Protect Workers

Controlling exposure to silica dust at the source should be the primary means for protecting workers from silicosis. The National Institute for Occupational Safety and Health (NIOSH) is working with employers and employees in the roofing industry to

- **better understand which tasks in tile roofing may expose roofers to silica dust, and**
- **identify practical and effective ways to reduce exposures to silica**

NIOSH is working with roofers, roofing contractors, tile manufacturers, and other interested parties to identify and evaluate the effectiveness of engineering controls for cutting concrete roofing tiles such as:

- **Wet cutting methods (water spray or mist)**
- **Local exhaust/vacuum system**
- **Cutting station on the ground to reduce exposure of coworkers**

NIOSH

Hazard Evaluation and Technical Assistance Branch

4676 Columbia Parkway, MS R-10

Cincinnati, OH 45226

(p): 513-841-4386

(f): 513-458-7105

*The National Institute
for Occupational Safety
and Health (NIOSH)
works to assure safe
and healthy conditions
for workers through
research, education and
training in occupational
safety and health.*

For more information about silica
health effects and prevention
methods contact us at:

NIOSH

**Hazard Evaluation and
Technical Assistance Branch
4676 Columbia Parkway, MS R-10
Cincinnati, OH 45226-1998**

<http://www.cdc.gov/niosh>
1-800-35-NIOSH (1-800-356-4674)
Fax: 513-533-8573
E-mail: pubstaft@cdc.gov

