



JOB AID

**HEALTHY
BUILDINGS CRYSTALLINE
SILICA AWARENESS**

Healthy Buildings: Crystalline Silica Awareness

Construction and demolition activities on your property can negatively affect air quality, especially when the work generates crystalline silica dust. There are actions you can take to make sure personnel, tenants and visitors remain healthy.

Sources

Silica is an abundant mineral that makes up the Earth's crust. Crystalline silica is a basic component of soil, sand, granite, quartz and many other minerals. Crystalline silica is in building materials such as asphalt, brick, cement, clay, concrete, drywall, grout, mortar, stone, sand and tile. When crystalline silica is crushed into small particles, it can become airborne. Once airborne, crystalline silica dust can remain suspended in the air for prolonged periods of time. You can breathe it in, or it can get in your eyes.

Activities in or near your building that may generate airborne crystalline silica dust include: •

Crushing and moving rocks

- Abrasive blasting activities
- Breaking, penetrating or cutting into rock, concrete or masonry
- Breaking down concrete and masonry structures
- Sweeping or blowing pressurized air on concrete, rock or sand
- Sanding and polishing (including sanding/leveling drywall compounds) •

Installing sheetrock

These activities often happen when your building is undergoing construction, demolition, remodeling or maintenance.

Health Effects

Check the regulations for your location to learn about the exposure limits for crystalline silica. Most countries have a threshold of 25-100 µg/m³. To picture this, a limit of 50 µg/m³ is the equivalent of about 50 individual sugar packets worth of crystalline silica dispersed in a 100- story building.

Getting crystalline silica in your eyes can cause irritation.

Crystalline silica that you can breathe in is called respirable crystalline silica. Inhaling unsafe levels of respirable crystalline silica can cause kidney disease, chronic obstructive pulmonary disease (COPD), lung cancer and silicosis, which can lead to death.

Silicosis is a respiratory disease caused by inhaling silica dust. It is important to use controls to prevent people from getting silicosis because there is no treatment or cure for it, and it CAN kill people. People with silicosis and an asymptomatic latent tuberculosis infection (LTBI) are at an elevated risk for developing symptomatic tuberculosis (TB) disease, which can be fatal without treatment.

Symptoms of silicosis are shortness of breath, fever, fatigue, loss of appetite, chest pain, and dry and unproductive coughing. If you believe you have been exposed to unsafe levels of crystalline silica and notice any of these symptoms, report them to your employer and seek medical attention immediately.

Controls

Choose building products that do not have crystalline silica in them. Keep non-essential workers, tenants and visitors away from potential exposure areas. When possible, schedule work when others will not be present.

Isolate the work area and heating, ventilation and air conditioning (HVAC) to reduce the spread of dust that contains silica. Erect barriers, such as plastic sheeting.

Do everything you can to prevent crystalline silica dust from becoming airborne. Workers may apply water when sawing, drilling and sweeping materials that contain crystalline silica if the tools are designed for wet work and the area is free of electrical hazards.

Do not use compressed air on materials that contain crystalline silica. Use equipment that has integrated dust collection and containment systems. Frequently clean work areas by using vacuums with high efficiency particulate air (HEPA) filters. The vacuum and its parts should be cleaned afterward, per manufacturer instructions. If you see people generating dust or dust that is built up on surfaces, please report the issue to the people who are managing the project or crew.

Follow applicable regulations regarding occupational exposure limits, monitoring levels of airborne dust that contains crystalline silica and medical surveillance for overexposure.

Workers should wear safety goggles, and if necessary, respirators to supplement other control measures. Respirators should NOT be the primary method of protection. Some respirators may require a medical evaluation of the user and fit testing prior to use.

Encourage workers to clean up without generating airborne dust, such as by avoiding patting or brushing contaminated clothing. Encourage them to put on clean clothes before leaving work to avoid carrying crystalline silica to their homes.

Make sure signs clearly indicate where crystalline silica dust may be present, the danger the dust poses and what protective measures are required.

For more information about crystalline silica, consult reputable public health organizations like the World Health Organization (WHO) and various national centers for public health and disease control and prevention.