Silica—Cutting and grinding concrete

Explain dangers

You wouldn't breathe in carbon monoxide. So, why would you breathe in the cloud of dust that's created when you cut or grind concrete, brick, or stone? That cloud contains very tiny particles of silica.

Your lungs have a tough time removing these particles. Over time, scars develop on your lungs. At first you may have no symptoms, but eventually you may develop shortness of breath, a severe cough, wheezing, and tightness of the chest. This can often be fatal.

Cutting and grinding silica without protection can lead to disastrous outcomes.

- You can develop silicosis after only a few weeks or months of exposure.
- The disease can become worse even after you've stopped working with silica.
- More and more studies are finding that silica exposure also causes lung cancer.

Most concrete and masonry products contain high amounts of silica. When you cut or grind these products, you are being exposed to silica if measures are not taken.

Although most diseases associated with silica exposure are not curable, they are preventable.

Identify controls

Here are some measures you can take to reduce the amount of silica in the air when cutting or grinding.

PLAN BEFORE CUTTING OR GRINDING

- Notify workers that you will be generating silica dust. Tell them to keep at least 10 m (3 ft) away. Post warning signs.
- Do the work in an area away from other workers or do it when no workers are around.
- If you can't prevent the spread of dust to nearby workers who are not protected, set up an enclosure around the cutting or grinding operation.
- Use a respirator. An N95 filtering facepiece respirator (i.e., dust mask) may be appropriate when doing short-duration tasks, when local exhaust ventilation is available on tools, or when working outside. Otherwise, a more protective respirator is required. Minimum protection is a half-facepiece air-purifying respirator with an N95 filter.
- Before starting work, make sure you have all required PPE in place such as safety goggles, safety boots, a hard hat, and hearing protection. Gloves are also recommended.
- If your saw or grinder is equipped with local exhaust ventilation (vacuum attachment) or a water attachment, inspect the device to ensure it is operating properly.
- In outdoor environments, set up your work area so that the wind blows from behind you and carries the dust cloud away from your breathing area.

DURING CUTTING OR GRINDING

- If safe to do so, continuously and thoroughly wet the area that you will be cutting or grinding.
- If excessive dust is generated, stop the work. Determine if the tools or equipment require adjustment or replacement.

AFTER CUTTING OR GRINDING

- Remove dust from your tools with a damp cloth or HEPA vacuum.
- Clean the work area to prevent the buildup of silica. Wet sweep or use a HEPA vacuum but NEVER use compressed air to blow the dust.
- Wash your hands with soap and water after you finish.
- Shower and change out of your work clothes before going home to prevent exposure to family and friends.

Demonstrate

With your crew, identify parts of the dust collector, show the function of each, and demonstrate how to attach and clean it.

Show how to put on a respirator and demonstrate how to perform a seal check.