

WEEK 29 JULY • ~5 MIN READ • ONTARIO CONSTRUCTION

# Silica Dust: Cutting & Grinding

That grey cloud when you cut concrete isn't just dust — it's silica. You can't cough it out, and the damage builds quietly over years until your lungs give out. The worker beside the saw today won't feel a thing. That's exactly why it gets ignored, and why we plan for it before the blade ever touches the concrete.

## The hazard

Cutting, grinding, drilling, or chipping concrete, brick, block, mortar, and stone throws tiny silica particles into the air — far too small to see floating. Breathe them in day after day and they scar your lungs. This is **silicosis**, and there is no cure. The same dust causes **lung cancer**, **COPD**, and **kidney disease**. The cruel part: shortness of breath and a nagging cough often don't show up until years after the damage is done — so nothing about today tells you how today went.

## Control the dust

The respirator is the last line, not the first. Knock the dust down at the source:

- ▶ **Water first.** Wet cutting and grinding cuts the dust in the air dramatically. Keep the water feed running to the blade or wheel and the tank topped up — a dry stretch puts the dust straight back in the air.
- ▶ **Vacuum second.** Where water isn't usable, fit a HEPA-vacuum dust shroud right at the tool and keep the hose clear. Check the filter and empty it before it clogs.
- ▶ **Keep the dust contained.** Cut outside or in open air where you can, and keep everyone who doesn't need to be there out of the cloud — it drifts onto people who never picked up a saw.
- ▶ **The controls are what can remove the respirator from the job.** Where dust control is genuinely effective and the employer can show, on a continuing basis, that exposure stays below the occupational exposure limit, respirators may not be required at all. That's the prize for doing the controls properly — and it's a demonstration, not an opinion.

## The respirator comes from the assessment, not the truck

**This is the part that gets done wrong.** There is no single default respirator for silica work. Ontario classifies silica operations, and the required protection follows that classification for **this** task:

- ▶ Lower-classified work: a **half-mask particulate respirator** with an N-, R-, or P-series filter at 95, 99, or 100 percent efficiency.
- ▶ Higher-classified operations — which is where a lot of powered cutting, grinding, and drilling lands: a respirator with an **assigned protection factor of 50**. A disposable N95 does **not** meet that.
- ▶ Abrasive blasting: a **supplied-air** blasting respirator, operated in pressure-demand or positive-pressure mode. Never a cartridge.

So the question is never "have you got a mask?" — it's "**how is this operation classified, and what did that call for?**" If nobody on site can answer that, the work isn't ready to start.

## Respirators done right

A respirator that doesn't seal is just a mask. It only works inside your employer's respiratory program: the right selection for the classified task, medical clearance, training, fit testing for the exact make, model and size

you'll wear, and a defined schedule for changing filters. Be clean-shaven where it seals — a day's stubble breaks the seal. Do a seal check every time you put it on, and store it clean and dry.

## Watch out for

- ▶ A dusty area that looks "fine." The silica that scars your lungs is too small to see in the air.
- ▶ A dry blade with no water and no vacuum. Worst case, every single time.
- ▶ **Reaching for an N95 as the site default** — for a lot of powered work it is the wrong respirator, not merely the minimum one.
- ▶ Dry sweeping or blowing dust off with compressed air. Use a HEPA vacuum or wet methods.
- ▶ Stubble under a respirator, or grabbing whatever mask is in the truck without a fit test.

## Talk it over

- ▶ For the cutting we're doing today: how is the operation classified, and what respirator did that classification call for?
- ▶ Do we have water or a vacuum shroud set up and working on every tool that needs one?
- ▶ When we clean up, what are we using instead of a broom or the air hose?



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