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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