

TOOLBOX TALK

Dust & Silica Exposure

WHY THIS MATTERS

2.3 million U.S. workers are exposed to crystalline silica at work (OSHA). Silica dust causes silicosis — an incurable, progressive lung disease that leads to disability and death. It also causes lung cancer, COPD, and kidney disease. There is no cure. Only prevention.

2.3M

U.S. workers exposed to silica dust (OSHA)

~100

Silicosis deaths per year in the U.S. (CDC)

100%

Silicosis is 100% preventable

5 Rules to Protect Yourself from Silica Dust

Silica particles are invisible — you can't see, smell, or taste them:

1

USE WATER TO SUPPRESS DUST

Wet cutting, wet drilling, and water sprays reduce airborne silica by up to 90%. Never dry cut or grind.

2

USE LOCAL EXHAUST VENTILATION

Dust collection systems and vacuum attachments at the source capture particles before you breathe them.

3

WEAR THE RIGHT RESPIRATOR

N95 minimum for low exposure. Half-face or full-face respirator for high exposure. Must be fit-tested.

4

NEVER USE COMPRESSED AIR TO CLEAN

Blowing dust with compressed air creates a massive exposure cloud. Use a HEPA vacuum or wet methods.

5

GET MEDICAL SURVEILLANCE

Workers exposed above the action level need baseline and periodic chest X-rays and lung function tests.

Dust Control Checklist

- Are dust suppression methods (water, vacuum) in use for all cutting/grinding?
- Are workers wearing properly fitted respirators in dusty areas?
- Is air monitoring being conducted to measure silica exposure levels?
- Are dust-generating tasks isolated from other workers when possible?
- Are all exposed workers enrolled in a medical surveillance program?

High-Risk Silica Tasks on Construction Sites

Concrete cutting/sawing

Generates extreme silica dust. Always use water. Wet saws reduce exposure by up to 90%.

Grinding/Tuckpointing

One of the highest-exposure tasks. Use shrouded grinders with vacuum attachment. Respirator mandatory.

Jackhammering

Breaking concrete releases large amounts of silica. Use water spray and respiratory protection.

Sandblasting

Historically the deadliest silica task. Use alternative abrasives when possible. Full enclosure needed.

Drilling into concrete

Use drill with dust collection system or water feed. Never dry drill into concrete or masonry.

Sweeping dry dust

NEVER dry sweep silica-containing dust. Use HEPA vacuum or wet sweeping methods only.

Common Mistakes That Cause Silicosis

- ✗ Dry cutting concrete without water — creates a lethal dust cloud you can't always see
- ✗ "It's just dust, it won't hurt me" — silica particles are 100x smaller than sand, invisible and deadly
- ✗ Using a bandana or surgical mask instead of a respirator — these provide zero silica protection
- ✗ Sweeping dust with a broom — puts settled silica back in the air for everyone to breathe
- ✗ Skipping the respirator because "it's uncomfortable" — silicosis is far more uncomfortable, and permanent

Safety Tips to Remember

- ✓ If you can see a dust cloud, exposure is already dangerously high — stop and add controls
- ✓ Silicosis has NO CURE — once your lungs are scarred, the damage is permanent and progressive
- ✓ Wet methods first, ventilation second, respirators third — follow the hierarchy of controls
- ✓ Clean up with HEPA vacuum or wet methods — never dry sweep, blow, or shake off dust
- ✓ Young workers can develop accelerated silicosis in as little as 5-10 years of unprotected exposure

Discussion Questions for Your Team

1. What tasks on our site today involve cutting, grinding, or drilling concrete or stone?
2. Are we using water or vacuum dust suppression for every silica-generating task?
3. Does everyone have a properly fitted respirator and know how to use it?
4. Have air monitoring results been shared with the crew?
5. What would you do if you saw a coworker dry cutting concrete without water?

TOOLBOX TALK SIGN-OFF

Date: _____ Supervisor: _____

Project: _____ Location: _____