

Respirable Crystalline Silica Field Training

What is silica? Silica is a short name for “silicon dioxide”. Silica is one of the most abundant elements on earth. A common form of silica would be sand. Glass is even made by melting silica. We come in contact with silica at work because it is in our concrete, sand, and dirt.

What is respirable silica? This is nothing more than small particles of silica that can be picked up in the air and can enter your lungs through normal breathing such as dust. We create fine respirable crystalline silica when we cut concrete (the dust), sweep the roads (the dust), drill into concrete walls (the dust) or grind concrete (the dust). All of these create fine powder dust that contains silica.

What is a dangerous level? OSHA in 1926.1153 set the action level at 25 micrograms per cubic meter of air as an 8-hour time weighted average.

How do we know if our work is dangerous for silica? Our insurance company Travelers, supplies testing equipment that can check the levels of exposure. We have taken over 100 samples from our employees as they do their work over an 8-hour period. Those samples were sent to a licensed laboratory where the amount of silica was calculated. In every case we have been below the 8-hour time weighted average.

What if I get too much silica over a period of time? Respirable silica collects in the lungs and serious lung disease can be a result. That is why it is so important to control our dust.

How do I keep respirable silica from becoming a problem? OSHA put together examples of how to do work safely. Looking at our work the safest way is to use water to control the dust. An example would be using a walk behind concrete saw to create saw joints in a driveway. OSHA tells us to use a saw with an integrated water delivery system that continuously feeds water to the blade. They go on to say we should use it as the manufacturer recommends. As a requirement, we are told if it is used indoors, you must use a respirator.

If you see dust in the air – you see a possibility of silica. Almost everything we do that could create silica allows for it to be done wet. Water will keep respirable silica from becoming airborne.

Cutting asphalt or concrete with a quickie saw = USE WATER stop causing dust

Sweeping with a motorized broom = USE WATER stop causing dust

Jack Hammer work causes concrete dust = USE WATER stop causing dust

Equipment or vehicles causing lots of blowing dust = USE WATER stop the dust

As you can see water is the answer. Some tools can be purchased with vacuum systems built in that collect the dust caused from cutting, grinding, and drilling. These are great where water is

not available. Because our work is outdoors in the open air and water does not hurt our material, that seems to be the best for us.

Think “WATER TRUCK”

OSHA has put a table in 1926.1153 it is called “Table 1”. Every employer needs to look up the work they do in Table 1 and see if they are in compliance with OSHA silica regulations.

OSHA has trained their inspectors to look for dust in the air. How do you stop it? USE WATER

OSHA tells us, “The employer shall ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of 50 micrograms per cubic meter, calculated as an 8-hour time weighted average”.

As stated earlier we have taken hundreds of samples and the laboratory results have been good. At the time of this writing March 2022, we just completed taking 12 more samplings from our employees on jobsites. Operators, labor, foremen, supervisors, and such have all been tested.

We will keep doing our part by sampling and testing, but we ask you to help. Watch for dust causing operations and remind your supervisor that water is the answer to dust control.

If you’re running a mechanical broom, ask for the area to be wet. This is very serious, and we all need to do what we can to eliminate the silica dust.