5-MINUTE BRIEFING

1 WHAT IS SILICA?

Silica is a natural substance found in many common materials and products, including rock, stone, bricks, concrete, mortar, tiles and some plastic composites.

2 WHAT IS SILICA DUST?

We create silica dust – or 'respirable crystalline silica' – when we cut, drill, sand, crush, mill, carve or break down a material that contains silica.

3 WHY IS SILICA DUST DANGEROUS?

Silica dust particles are very fine, much smaller than a tiny grain of sand. Because they are so small, they can be breathed deep into our lungs, where our body's natural defence system can't get rid of them. They damage lung tissue, and can cause cancer, silicosis and chronic obstructive pulmonary disease.

4 WHAT DO WE DO TO CAUSE SILICA DUST?

Anything that disturbs a product or material that contains silica will create dangerous dust:

- breaking, crushing, grinding or milling materials like concrete, aggregate or mortar
- drilling, cutting or sanding things like bricks, slates or concrete
- dealing with cement
- excavating, mining, quarrying or tunnelling
- abrasive blasting or sandblasting
- laying, maintaining or replacing ballast
- handling, mixing or shovelling dry materials that include silica
- using silica, sand or products that contain silica when glass and other non-metallic mineral products are made
- using sand as a moulding medium in foundries
- using silica flour (finely ground crystalline silica)
- dry sweeping up after a task where silica dust has been created.

5 WHAT CAN WE DO TO CONTROL SILICA DUST?

1. **Consider activities that will involve working on materials that contain silica at the design stage or start of a new project.** That way, we can make sure that these activities are kept to a minimum. For example, if a new building is being designed, make sure that it includes pre-built recesses for plumbing, gas and electric wiring so there is less need to cut or drill masonry and concrete during the construction phase.
2. **Use a different product** that doesn't create a harmful dust. For example, substituting olivine for silica sand in abrasive blasting.
3. If you can't 'design out' exposure to silica dust, **monitor or assess the exposure** and identify the jobs and tasks that need better controls.
4. **Choose engineering solutions** – in a workshop or factory, use water suppression on fixed machinery, hoods or enclosures to contain the dust, and local exhaust ventilation to extract the contaminated air at the point it's produced. If people are working with hand-held power tools, use tool-mounted ventilation or water suppression.
5. **Train anyone who could be affected** by silica dust, making sure that they know the risks and understand how to use the controls set up to protect them.
6. In many cases, we won't be able to cut down dust enough using some of these measures, so if air sampling shows that there's still too much dust, the people exposed will also need to **wear personal respiratory protection**.

7,000 people a year in the EU are diagnosed with lung cancer after breathing in silica dust

15 people a week die in Britain from lung cancer caused by silica dust at work

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