

Crystalline Silica Exposure Prevention

Refer to sign-in sheet for attendees (note: a separate meeting should be held with all absent employees).

1. Overview:

Exposure to crystalline silica often occurs as part of common workplace operations involving cutting, sawing, drilling, grinding/sanding and crushing of natural and engineered stone products such as granite and slate and also in the quarrying of these materials. Over-exposure can lead to serious, sometimes fatal illnesses including silicosis, lung cancer, tuberculosis (in those with silicosis) and chronic obstructive pulmonary disease (COPD). The best method to prevent a crystalline silica exposure related disease is to minimize exposure to crystalline silica.

2. What is Silicosis?

Silicosis is a serious lung disease caused by over-exposure to minute, typically invisible crystalline silica particles. Over-exposure may be in the form of short duration – high concentration exposures or long-term –lower concentration exposures. These minute, typically invisible particles cause permanent scarring in the lung tissues which progresses over time.

There are three (3) types of silicosis:

1. Chronic: usually develops after ten (10) or more years of low level exposures
2. Accelerated: typically develops five (5) to ten (10) years after high level exposures
3. Acute: typically develops within a few months to five (5) years after high level exposures

The symptoms of silicosis may include intense cough, shortness of breath, or weakness. Other possible symptoms are chest pain, fever, night sweats, weight loss, and respiratory fever.

3. Crystalline Silica Exposure Control Measures:

- Use of wet machining, grinding/sanding, cutting and drilling processes which use water to suppress and collect particles.
- Use dust collection systems when wet operations are not available.
- When work practices or available systems do not achieve exposures below the permissible exposure limit, wear the appropriate personal protection equipment (PPE) provided and recommended by the employer. This may include but is not limited to a uniform or protective clothing. Safety eye ware and a respiratory protection.

Note: Further information on the respiratory protection program requirements and other PPE use is provided in separate communications.

- Use of HEPA filter vacuums, or wet cleanup methods in-place of dry sweeping.
- Never use compressed air or other practices which cause particles to become airborne for cleanup, including cleaning your body.
- Always ensure both dry and wet particle collection equipment and systems, for example hoods, shrouds, dust collectors and machine water supply and treatment systems are maintained and in good working order. Immediately report equipment deficiencies to your supervisor.
- To minimize the transfer of crystalline silica outside the workplace, follow the employer's personal hygiene procedures for washing and handling of clothing that may contain crystalline silica.
- Follow the employer's personal hygiene procedures for cleanup prior to eating, drinking or smoking.
- No eating, drinking or smoking within areas where crystalline silica may be present.
- Follow the employers work instructions for operating equipment.

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4. Discussion:

- How are crystalline silica exposures controlled in your facility? On the jobsite?
- What protection methods are available to you?

5. RECAP/REVIEW:

- Should you use compressed air to clean off equipment or clothes?
- What component of stone are we primarily concerned about?

6. Reminder:

- Safety is the responsibility of both management and employees!

Next Safety Meeting is scheduled for _____ and the topic will be _____.

Take Exam / Review Results

Exam – Crystalline Silica Exposure Prevention

True (T) or False (F)

1. T F Over-exposure to crystalline silica can lead to serious, sometimes fatal illnesses including silicosis, lung cancer, tuberculosis (in those with silicosis) and chronic obstructive pulmonary disease (COPD).
2. T F The best method to prevent a crystalline silica exposure related disease is to minimize exposure to crystalline silica.
3. T F Silicosis is the scarring of the lung tissues caused by the presence of large particles of crystalline silica in the lungs.
4. T F It is acceptable to use compressed air for cleanup.
5. T F You should report machine/equipment deficiencies to your supervisor at the end of your shift.
6. T F Use of personal hygiene measures and PPE can minimize the off-site transfer of crystalline silica on your clothing and the exposure of other individuals to crystalline silica.
7. T F Maintaining your machines and particle collection equipment in good working order is a means to minimize exposure to crystalline silica.

(Select the best answer)

8. Crystalline silica exposure prevention methods include:

(Select all that apply)

- A. Use of wet machining processes
- B. HEPA vacuum systems for cleanup
- C. Personal hygiene measures prior to eating, drinking or smoking
- D. All of the above

9. Symptoms of silicosis include:

- A. Intense cough and/or shortness of breath
- B. Weakness
- C. Weight loss
- D. All of the above

10. The primary pathway for crystalline silica exposure is:

- A. Ingestion (by mouth)
- B. Dermal (skin)
- C. Respiration (breathing)
- D. All of the above