

Reducing Silica Exposure Syllabus

Time: 8 hours

Maximum Class Size: 20

Prerequisites: None

Course Description:

This eight-hour LIUNA Reducing Silica Exposure course provides an overview of working with silica; its history and properties, its effect on the human body, regulations, determining the presence of silica on jobsites, and ways to minimize exposure to silica. This course addresses 29 CFR 1926.1153 OSHA Construction Standard for Silica that took effect on June 23, 2016.

Goals/Objectives/Student Learning Outcomes:

- Define silica.
- Identify natural and man-made construction materials that contain silica.
- Explain the difference between silica, silicon, silicone, and silicates.
- Explain the difference between crystalline and amorphous silica.
- Define respirable crystalline silica dust.
- List what types of construction activities create silica dust.
- Explain why silica dust is hazardous.
- Explain why construction workers are at a greater risk for silica exposure than workers in other industries.
- Identify the difference between inhalable dust and respirable dust.
- Describe the structure of the human respiratory system, and what parts are affected by silicosis.
- Explain how the body defends against inhaled foreign matter, and why silica dust can bypass those defenses.
- Define chronic, accelerated and acute silicosis.
- Explain what it means when a disease is progressive.
- List other diseases that are associated with silicosis and describe their symptoms.
- Describe the symptoms of silicosis.
- Explain the importance of a baseline medical examination.
- Explain how silicosis is diagnosed.
- Explain how silicosis is treated.
- List eight provisions of OSHA's Respirable Crystalline Silica rule that employers must follow.
- State the Permissible Exposure Limit (PEL) and Action Level (AL) to respirable crystalline silica.
- Explain what "Table 1" is and describe how it is used.

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Goals/Objectives/Student Learning Outcomes continued:

- Explain what 'alternative control methods' are and what an employer must do to be compliant when using these methods.
- Explain what requirements an employer must follow when respiratory protection is required.
- List three housekeeping methods not allowed by the respirable crystalline silica rule.
- Describe the four elements that must be included in the employers written exposure control plan and describe the responsibilities of the designated competent person for the plan.
- Describe what the medical surveillance requirements are under the standard.
- Explain what an employer's responsibilities are as it related to the communication of respirable crystalline silica hazards to employees.
- Describe the recordkeeping requirements under the respirable crystalline silica standard.
- Identify at least five types of construction materials that commonly contain silica.
- Explain requirements for product labels, warning signs and Safety Data Sheets.
- Describe how samples may be analyzed to identify the presence of silica.
- Explain the "hierarchy of controls."
- Identify at least three silica substitutes.
- Describe engineering controls for silica.
- Describe administrative controls for silica.
- Describe situations when respirator use is needed.

Standard Addressed:

OSHA Silica Standard: 29 CFR 1926.1153

Classroom Rules and Procedures

- All classes begin at 6:30 am and end at 3:00 pm
- Upon entering classroom, all participants must sign in and be seated by 6:30 am
- Class will consist of a combination of lecture, video, demonstration, coached group exercises, individual exercises and assessment.
- Students are required to report to class ready to work and maintain the provided PPE

Textbooks/Readings/Materials

- LIUNA: *Reducing Silica Exposure IG*
- LIUNA: *Reducing Silica Exposure PG*
- Reducing Silica Exposure Student Workbook
- LIUNA: *Reducing Silica Exposure PowerPoint*

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Tools/Equipment/Other Materials

- Computer
- LCD Projector
- Flipchart/markers
- Whiteboard/expo markers
- Highlighters

Personal Protective Equipment

- 20 pairs of gloves
- 20 pairs of safety glasses
- 20 pairs of ear plugs
- 20 hard hats

Course Requirements

To receive credit for the course, participants must:

- Be present for full eight hours
- Participate in all classroom exercises
- Pass a written exam

Course Policies

- Participants must be on-time and ready to work.
- Participants must return from breaks on-time.
- Participants must participate in each exercise and assignment

Assessment and Grading

Participants will be assessed on the following:

- All written exams must be passed with a score of 80% or above.
- All hands-on activities and exercises are graded on performance and participation. They are pass/fail and must be passed with a score of 80% or above.

Safety

Failure to maintain and use PPE may result in dismissal from the course.