

TOOLBOX SAFETY MEETING

General Safety Discussion

Safety and Health Instruction Provided

Company

Supervisor's Name

Project Name

Date

SILICA EXPOSURES IN CONSTRUCTION

That cloud of dust we see when drilling, cutting or grinding on concrete, brick, or stone is not harmless dust. It contains crystalline silica that can cause a serious illness known as silicosis. It also can cause lung cancer, loss of lung function, chronic obstructive lung disease, and tuberculosis. These are disabling and irreversible diseases. Hundreds of workers become disabled from silicosis and more than one hundred perish from the disease each year. At first, there can be no symptoms of disease, and then shortness of breath, fatigue, and severe cough and chest pain can develop later. There is no treatment for silicosis so preventing exposure is very important.

Crystalline silica is a naturally occurring mineral. Sand is almost all crystalline silica. Many rocks have a crystalline silica component. Common construction materials contain crystalline silica including: asphalt, brick, cement, concrete, concrete block, drywall, fiber cement products, grout, shotcrete, mortar, paints, plaster, rock, roof tile, sand, soil, stone like granite or limestone, stucco and EIFS products, terrazzo and clay tile.

Operations that may result in exposure to silica dust include drilling, sawing, chipping, jack hammering, polishing, clean up, grinding, demolition, and handling gravel or sand. The dust is a hazard to both the workers generating the dust, and to others in the area. This means that any dust generated from work on the substances will generate silica containing dust.

Regulations have changed. We must work clean using wet or vacuum techniques to the greatest extent feasible. These are listed in Cal/OSHA regulations. There is a very useful reference for us that details good protective measures. Some examples include: Stationary masonry, or walk behind saws - Use a saw equipped with built-in water delivery system with a continuous water feed; Drills – use drills that are equipped with a shroud or cowling with dust collection systems; Grinding – Use a machine equipped with built in water delivery system which continuously feeds water to the cutting surface; Jack hammering or chipping – use water mist or spray.

Reference table 1 in Cal/OSHA Title 8 §1532.3 for a list of work activities and their specific exposure control methods.

Cal/OSHA regulations require employers to control silica containing dust and determine if worker exposures are at or below the safe level. The safe level is expressed as a Permissible Exposure Limit (PEL). The PEL for the most common form is crystalline silica (quartz) is now 50 micrograms per cubic meter of air. This may be expressed as 50 µg/m³. 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 (50 µg/m³), calculated as an 8-hour Time Weighted Average (TWA).

Action Level means a concentration of airborne respirable crystalline silica of 25 micrograms per cubic meter (25 µg/m³), calculated as an 8-Hour TWA. If at any point during operations the action level is reached, then it is necessary to implement safety measures found in the Respiratory Protection Program. This is to prevent exposure at or above 50 micrograms per cubic meter.

If you are exposed to significant levels of silica dust, and other protective measures are not feasible, you will need to wear a respirator as specified in the Respiratory Protection Program. Air monitoring will be performed by an industrial hygienist to measure silica levels so they can be compared to the PEL.

Crystalline Silica is also listed as a Proposition 65 Hazardous substance in the state of California requiring notice to personnel. Notice is also part of hazard communication programming.

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SILICA EXPOSURES IN CONSTRUCTION (CONTINUED)

Silica Exposure Controls

The key to preventing silicosis is minimizing the amount of dust in the air. Dust controls include water sprays directed at the work area, local exhaust ventilation with dust collectors (e.g., a vacuum hose attached directly to a saw or grinder), general ventilation, and isolation of the process from the operator or other employees. It is also important to routinely maintain dust control systems and keep them in working order.

It is best to use equipment that provides water to the blade or grinder when drilling, sawing or grinding masonry or concrete. Use only saws, grinders, tools, blades and abrasive wheels that are rated for safe use with water. For some types of work, we may need to use vacuum attachments and exhaust the air through a high efficiency particulate filter (HEPA) filter. During clean up always minimize the generation of dust. Remove dust from equipment or work surfaces with a water spray, wet-wiping or a vacuum equipped with a high efficiency particulate filter (HEPA) filter.

Do not use compressed air, dry sweeping or brushing. Do not use compressed air for cleanup of yourself, equipment or your work area. These are listed as prohibited activities in Title 8 §1532.3.

Keep in mind that dust levels can remain high for some time after cutting, grinding, or sweeping has stopped. In planning work, recognize that silica dust may be generated and take steps to eliminate or control the dust at its source before you start the task.

Work in well ventilated areas. The highest exposure can occur in enclosed spaces with little air movement. For some jobs, we may isolate work areas to confine the risk of dust exposure and protect others.

It is important to maintain good personal hygiene and housekeeping practices. Do not use tobacco products during work activities involving silica exposures. Wash up before going on breaks, to lunch or home.

Where crystalline silica dust is generated, requirements to protect us include:

1. Each project must designate a silica controls competent person.
2. The competent person is to prepare a silica control plan that identifies tasks which will create silica dust. For each such task, the plan is to list:
 - Engineering controls to be used,
 - Work practice requirements,
 - Respiratory protection to be used,
 - Housekeeping practices.

This is to eliminate or reduce exposures.

3. They are to also determine if anyone will be required to wear respirators for more than 30 days in a calendar year and if medical surveillance is necessary.
4. The competent person is to make sure that all personnel are instructed and trained on:
 - Health hazards of crystalline silica,
 - The contents of the control plan,
 - Specific required practices and measures for control and protection,
 - The name of the job sites' competent person,
 - What a medical surveillance program for crystalline silica is,
 - How to easily access regulations and any monitoring information on the job site.

SILICA EXPOSURES IN CONSTRUCTION (CONTINUED)

Medical surveillance programming and practices for those wearing a respirator more than 30 days a year include:

- Services are free
- Employer information is to be provided to the physician or licensed health care provider.
- A baseline initial examination that includes:
 - Work and medical history; past present and planned exposure to respirable crystalline silica, dust or other agents.
 - Any history of respiratory problems, tuberculosis and smoking status and history.
- A physical examination with emphasis on your respiratory system.
- Chest X-ray reviewed by certified reader.
- Pulmonary function test is to be administered by a certified technician.
- Testing for latent Tuberculosis.
- Added evaluation and testing as the licensed health care professional determines is needed or appropriate.
- Tuberculosis test is to be repeated every 3 years.

Silica is hazardous. We can easily protect ourselves and others by being aware of the hazards, the way to eliminate or control risks, and respiratory protection program and practices. We must know when, how to get, use and maintain protective practices and equipment.

SUPERVISOR'S COMMENTS OR INSTRUCTIONS

CRAFTSMEN'S COMMENTS

EMPLOYEES' NAME AND INITIALS OF THOSE IN ATTENDANCE

Supervisors Signature: _____ Superintendent Review _____

When completed, return to your General Foreman or Superintendent. After review file on site.