

# CHAPTER 8 – CLEANING UP

## GENERAL COMMENTS FOR INSTRUCTORS:

Seasoned workers may dismiss the hazards associated with cleanup activities, may be more likely to assume they already know how to do something properly and see no need to change how they may have been working for years. New workers may not have the knowledge and awareness about the hazards of working where airborne respirable crystalline silica is present and underestimate the health risk. The lowered risk perception may be reinforced as they look at their coworkers and do not see any health issues.

The housekeeping requirements in the silica standard apply only where cleaning “could contribute to employee exposure to respirable crystalline silica”. The basic rule of thumb when it comes to housekeeping is to avoid any method that could cause dust to disperse into the air.

The housekeeping provision in the silica standard requires the use of wet methods, a HEPA vacuum, or another method which effectively minimizes dust exposure (e.g. Using sweeping compounds (e.g., non-grit, oil- or waxed-based) is an acceptable dust suppression housekeeping method). Use of compressed air for cleaning surfaces or clothing (unless it is used with ventilation to capture the dust), dry sweeping or dry brushing are NOT allowed unless the above methods are not feasible. ***The employer bears the burden of showing that wet methods, HEPA vacuum or other dust suppression methods are not feasible.***

This chapter should emphasize the importance of cleaning up the work areas and the importance of personal hygiene before eating, drinking, smoking, etc. to minimize secondary exposure. Workers should recognize that silica can be taken home on their work clothes, exposing their family to the hazards of respirable silica.

## AUDIO VISUAL AIDS:

- PowerPoint® Chapter 8

## APPENDICES:

- Appendix XVIII - MIOSHA Occupational Health Standard Part 474 - Sanitation

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### **IF YOU USE SILICA SAND AS AN ABRASIVE OR YOU PERFORM ABRASIVE BLASTING ON A SILICA-CONTAINING SUBSTRATE, AN EMPLOYER MUST:**

#### **Establish housekeeping practices (pertains to both General Industry and Construction).**

The housekeeping requirements in the silica standard apply only where cleaning “could contribute to employee exposure to respirable crystalline silica”. The basic rule of thumb when it comes to housekeeping is to avoid any method that could cause dust to disperse into the air.

The housekeeping provision in the silica standard requires the use of wet methods, a high-efficiency particulate air (HEPA) filter equipped vacuum, or another method which effectively minimizes dust exposure (e.g. Using sweeping compounds (e.g., non-grit, oil- or waxed-based) is an acceptable dust suppression housekeeping method).

Use of compressed air for cleaning surfaces or clothing (unless it is used with ventilation to capture the dust), dry sweeping or dry brushing are NOT allowed unless the above methods are not feasible. **The employer bears the burden of showing that wet methods, HEPA vacuum or other dust suppression methods are not feasible.**

See later in this section for some housekeeping implementation steps.

#### **Provide a sink, potable water, soap, and clean towels for washing your hands, arms and face and maintain these washing facilities in a sanitary condition.**

These are essential for you to get silica dusts off your hands, arms and face before eating, drinking, smoking or applying cosmetics or lip balm. It is good hygiene practice to provide small fingernail brushes too, for areas that are hard-to-clean. **Don't use shop rags or your work clothes to dry your hands.**

#### **Set up a separate eating/break area and keep it clean.**

Don't allow employees to eat, drink, smoke or apply cosmetics in areas where toxic materials, including silica, are used. Food or beverages is prohibited by MIOSHA Occupational Health Standard, Part 474 – Sanitation from being stored in toilet rooms or in an area exposed to a toxic material (like silica).

Additionally, waste disposal containers must be constructed of smooth, corrosion resistant, easily cleanable, or disposable materials. The number, size, and location of such receptacles must encourage their use and not result in overfilling. Waste receptacles must be emptied at least once each working day, unless unused, and must be maintained in a clean and sanitary condition. Receptacles shall be provided with a solid tight-fitting cover

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unless sanitary conditions can be maintained without use of a cover.

See later in this chapter for some implementation steps to minimize exposure during eating and taking breaks from work.

### **Provide respiratory protection.**

We recommend the use of a Type CE abrasive blasting respirator when performing cleanup operations.

### **IF YOU USE SILICA SAND OR BLAST ON A SILICA-CONTAINING SUBSTRATE, AN EMPLOYER COULD:**

#### **Make rules about eating, drinking, smoking and personal cleanliness.**

Instructions about keeping food and tobacco out of work areas and how to motivate coworkers to follow the safety rules is included later in this chapter.

#### **Provide a shower room.**

Taking a shower and changing into clean clothes before leaving the worksite can prevent contamination of other work areas, cars, and your home. Consider incorporating MIOSHA Part 474 requirements when designing a shower area:

- One shower shall be provided for each 10 employees of each sex, or numerical fraction thereof, who are required to shower during the same shift
- Provide body soap or other appropriate cleansing agents and individual clean towels convenient to the showers
- Provide both hot and cold water feeding to a common discharge line.

#### **Provide a change room.**

Changing into disposable or washable work clothes at the worksite is an effective way to minimize bringing work dust home on your clothes. If your employer decides to provide a change room, the employer should consider providing the area with storage facilities for street clothes and separate storage facilities for the protective clothing.

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### **Provide clean work clothing.**

The easiest way is to use an industrial laundry provider. Tell the provider beforehand that the clothing may be contaminated with crystalline silica dusts. Clothing that has been contaminated with silica dust should be washed separately from other clothing. An employee **should not** take contaminated work clothes home to be washed.

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**REMEMBER: SILICA ON YOUR WORK CLOTHES AND BODY  
BECOMES SILICA IN YOUR VEHICLE AND THEN SILICA  
EXPOSURE FOR YOUR FAMILY.**

**CLEAN UP BEFORE LEAVING WORK!**

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<u>HOUSEKEEPING PRACTICES</u>	<u>WHAT TO DO</u>
1. Decide which cleanup method(s) your shop will use.	Use silica exposure plan task determinations and decide whether vacuuming with HEPA, wet shoveling or dust suppression methods are appropriate. Other methods such as dry sweeping put too much silica dust into the air.
2. Purchase and use the correct equipment for the job.	<p>Dry: A vacuum with a HEPA (high efficiency particulate air) filter is the best choice. Ordinary shop vacuums blow silica dusts back into the area you're cleaning.</p> <p>Wet: Slurry generated by wet methods should be cleaned up before it dries using a wet vacuum</p> <p><b>Abrasive blasting respirators should be worn during cleanup operations.</b></p>
3. Train anyone assigned to the cleanup crew about silica dusts, their hazards, and how to clean safely.	You must be careful to remove silica dusts rather than dry sweeping them around. Tell the cleanup crew about all the personal protective equipment they should use and wear.
4. If you use a HEPA vacuum, follow the manufacturer's instructions for removing the dust and changing filters.	The vacuum needs normal, routine preventive maintenance to work properly. If the maintenance is done incorrectly or not often, someone could end up with exposures to silica dust.
5. The dusts you collect are sometimes hazardous materials. Test the material and dispose of it properly.	<p>Dry: Check with your local or state regulators regarding environmental rules for hazardous waste disposal.</p> <p>Wet: When emptying the wet vacuum, the slurry should be transferred into a plastic bag and placed inside a container for disposal. The container should be sealed to prevent the release of dust back into the work space. Check with your local or state regulators regarding environmental rules for this type of waste stream.</p>

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<u>LUNCH/BREAK AREA</u>	<u>WHAT TO DO</u>
1. Prohibit eating, drinking, smoking, and food preparation in all the work areas where silica is used.	Make sure your workers understand how important it is to keep food, drink and tobacco dust-free to minimize secondary exposure to silica dusts.
2. Physically separate lunch and/or employee break areas from work areas.	Just shutting down activity does not mean there is no respirable silica in the air. Vehicles should not be used as a lunch/break area unless workers utilize a shower/change rooms. Going directly from a work area to a vehicle transfers silica dust to the vehicle and then home.
3. Make sure you clean your hands, face, and remove PPE, including coveralls/disposable clothing and respirators before entering the break/lunch area.	Provide washing facilities so workers can cleanup before entering the lunch/break area. Provide HEPA vacuum so work clothes can be vacuumed before entering the lunch/break area.  Inspect, clean and appropriately store your respirator! The health benefits gained from washing your hands, arms, and face before eating, eating in a place away from the blasting area, etc., are minimized when you then put on a respirator that is contaminated with silica.
4. Keep the lunch/break area clean.	Put someone in charge of cleaning it daily.
5. Let your workers know the rules.	Demonstrate ongoing commitment and care about health and safety: have safety meetings, train employees, post signs, send informational fliers, etc. Routine safety meetings reinforces training!
6. Motivate employees to follow the rules.	Show management commitment: Set a good example by following the rules yourself. If you eat, drink, or smoke while you work, you will have a hard time convincing your workers to not do the same!  Use positive reinforcement: Recognize and reward (does not have to involve money) employees who practice good safety and health hygiene by following the company's stated work practices.

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### **REFERENCES:**

*Appendix XVIII- MIOSHA Occupational Health Standard Part 474 - Sanitation*

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## Notes