



# **Commonwealth of Massachusetts Executive Office of Labor and Workforce Development**



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# Silica in Construction

OSHA Roundtable Presentation

March 8, 2016

# Who we are

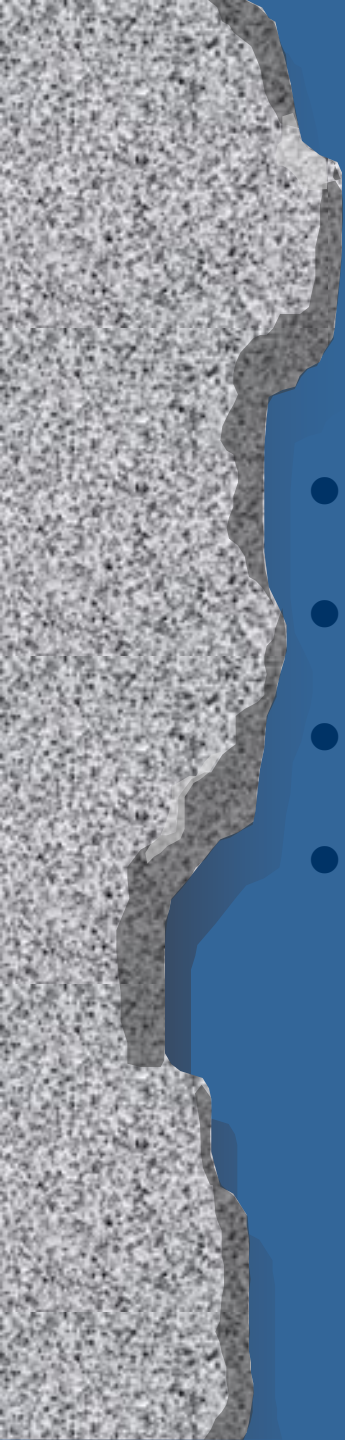
- OSHA Consultation Program
  - Free (including air sampling)
  - Independent and confidential from OSHA
  - All states
  - Trained by OSHA
  - Protect your employees
  - Protect your business – OSHA - WC
  - We tell you what you need to know, not what (sometimes) you want to hear.

# Sample programs on our website

[www.mass.gov/lwd/labor-standards/on-site-consultation-program/](http://www.mass.gov/lwd/labor-standards/on-site-consultation-program/)

- Blood borne Pathogens Exposure Control Plan
- Emergency Action Plan
- Fire Extinguishers
- Fire Prevention Plan
- Confined Space General Overview
- Model Confined Space Entry Policy and Procedure
- Hazard Communication
- Hearing Conservation Program
- Lockout /Tagout
- Respiratory Program
- Personal Protective Equipment Hazard Assessment
- Worksheet for Selecting PPE
- PPE - Selection Chart Generic





# Proposed silica standard 1926.1053

- Similar to the lead standard
- Lower standard and Action Level
- Exposure assessment
- Regulated area? Competent person?

# New PEL

- 50  $\mu\text{g}/\text{m}^3$
- Now it is a complicated formula which if 100% silica would be 100  $\mu\text{g}/\text{m}^3$
- Action level is  $\frac{1}{2}$  the PEL
- Where certain actions need to take place

# Competent Person

- A **competent person** is defined as one who:
  - Is capable of identifying existing and predictable hazards.
  - Has authorization to take prompt corrective measures to eliminate them.
  - What will this mean under the silica standard remains to be seen

# Regulated Area

- An area, demarcated by the employer, where an employee's exposure to airborne concentrations of respirable crystalline silica exceeds, or can reasonably be expected to exceed, the PEL.



# Exposure assessment

- Employer shall assess the exposure of employees who are or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level
  - 8 hour TWA
  - Representative sampling
  - Objective data
- Nothing exists unless it is documented!

# Regulated Areas

- If exposure over PEL is expected
- Establish and implement either a regulated area or and an access control plan
- Written access control plan includes how the competent person will determine the over exposure area
- Includes informing other contractors

# Methods of compliance

- Engineering and work practice controls to reduce exposure to below PEL
- If not sufficient, must still use them!
- Add respiratory protection

# Specific operations

- (8) *Specific operations.* (i) Where employees perform operations listed in **Table 1** in paragraph (f) of this section and the employer has fully implemented the engineering controls, work practices, and respiratory protection specified in Table 1 for that operation, the employer is not required to assess the exposure of employees performing such operations.



# Table 1 Lists some specific operations:

- Stationary masonry saws
- Hand-operated grinders
- Tuckpointing
- Jackhammers and other impact drillers
- Rotary hammers or drills (except overhead)
- Vehicle mounted drilling rigs – rock
- Vehicle mounted drilling rigs – concrete
- Milling
- Hand masonry saws
- Walk behind masonry saws
- Rock crushing
- Drywall finishing
- Earth moving equipment

# Table 1

- Tells you how to control the dust through engineering and work practices
- Then divides into:
  - $\leq 4$  hr / day
  - $> 4$  hr / day
- Whether you are required to use an air-purifying respirator, and
- What kind of respirator is needed

# Example Table 1

Operation	Engineering and work practice control methods	≤ 4 hr /day	> 4 hr /day
Using Hand-Operated Grinders	Use water-fed grinder that continuously feeds water to the cutting surface OR	None	Half-Mask (10).
	Use grinder equipped with commercially available shroud and dust collection system, operated and maintained to minimize dust emissions. Collector must be equipped with a HEPA filter and must operate at 25 cubic feet per minute (cfm) or greater airflow per inch of blade diameter	Half-Mask (10)	Half-Mask (10).
	Note: Additional specifications (wherever applicable): • Prevent wet slurry from accumulating and drying. • Operate equipment such that no visible dust is emitted from the process. • When working indoors, provide sufficient ventilation to prevent build-up of visible airborne dust.		



# Example: drywall finishing

- Use pole sander or hand sander equipped with a dust collection system. Use dust collector in accordance with manufacturer specifications OR
- Use wet methods to smooth or sand the drywall seam
- No respirator required



- BUT!!!
- Maintain the controls!
- Visible dust is the warning sign



# Engineering controls

- Water feed - to the point of dust generation
- OR
- Integrated dust collector – collects at the point of dust generation (local exhaust ventilation, LEV)
  - Remember: having them and using them are two different things! Must be used.

# Cleaning methods

- Ensure that accumulations of RCS are cleaned by HEPA-filter vacuuming or wet methods [where disturbance could increase employee exposure]
- NO compressed air, dry sweeping or dry brushing of contaminated surfaces [where disturbance could increase employee exposure]

# Other provisions

- Cannot comply by using employee rotation.
- Medical surveillance
  - for employees exposed over the PEL for 30 or more days per year – “make available.. at no cost to the employee”





# Respiratory Protection

- When a respirator is required, you must have a Respiratory Protection Program in place! [1910.134]
- We can help you here.
- Medical evaluation on record
- Fit-testing
- Training

# Respiratory Protection

Photo 1



Covering your face with a cloth such as a bandana or T-shirt WILL NOT protect you.

Photo 2



These are filtering facepiece respirators.

- Disposable
- N-95 Type or higher
- Provide minimal protection

Photo 3



Model Advantage 200  
Photo courtesy of MSA.

Half-face mask air-purifying respirator with replaceable N-95 (or higher) filters.

Photo 4



Model Advantage 1000  
Photo courtesy of MSA.

Full-face mask air-purifying respirator with replaceable N-95 (or higher) filters.

Photo 5



Model MM2K  
Photo courtesy of MSA.

Powered air purifying respirator (PAPR) equipped with:

- Full facepiece
- High efficiency particulate filters

NOTE: Uses battery-powered motor to filter the air.

Photo 6



Supplied-air respirator (SAR) equipped with:

- Full facepiece
- Pressure-demand or other positive pressure mode.

Photo 7



Type CE abrasive-blasting respirator (SAR), operated in a pressure demand or other positive pressure mode.

NOTE: A tight-fitting mask is worn under the blasting hood.

This is the only respirator that can be used for abrasive blasting.

No Protection ..... Least Protection ..... More Protection ..... Most Protection

# Common Respirators



- Dust mask is a respirator



- Air purifying respirator is “tight-fitting”



# Hazard Communication

- Must communicate hazard to employees
- Include silica in the Haz Comm program
- So is your Haz Comm program up to it?



# Key parts of Haz Comm

- Labeling
  - Know what is in the container
- Inventory
  - Know what is in the facility
- Safety Data Sheets
  - Know what is hazardous and how to protect employees (and yourself!)
- Training
  - Communicate that knowledge

# We Can Help...

Commonwealth of Massachusetts  
Department of Labor Standards

OSHA Consultation Program

[www.mass.gov/dols/consult](http://www.mass.gov/dols/consult)

## Sample Written Hazard Communication Program (29CFR 1910.1200)

**Note:** The following model written program is provided as a guideline only.  
Employers must develop written programs that are specific to their companies' needs.

### General Information

In order to comply with OSHA 1910.1200, Hazard Communication Standard, the following written Hazard Communication Program has been established for \_\_\_\_\_ (company name) \_\_\_\_\_. The written program will be available at \_\_\_\_\_ (location) \_\_\_\_\_ for review by any interested employee.

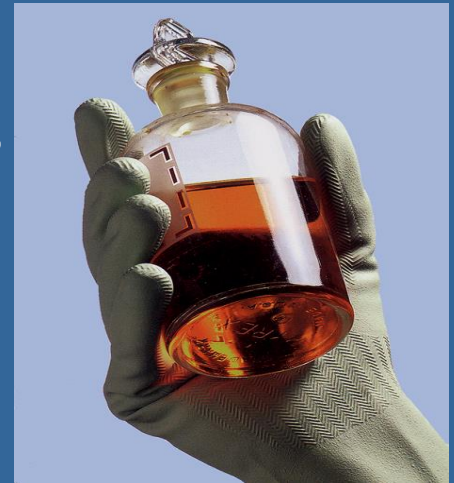
### Container Labeling

\_\_\_\_\_ (Responsible Person) \_\_\_\_\_ shall verify that all in-coming containers received for use are clearly \_\_\_\_\_ labeled with:

# How must chemicals be labeled?

Each container of hazardous chemicals entering the workplace must be labeled or marked with:

- Identity of the chemical
- Appropriate hazard warnings
- Name and address of the responsible party



# Inventory

- Control of what comes into the facility or used by your field crews – what's in that truck?
- Are you in control?
- Obtain (Material) Safety Data Sheets from your supplier
- Are you buying more than you need?
- Where is it stored?



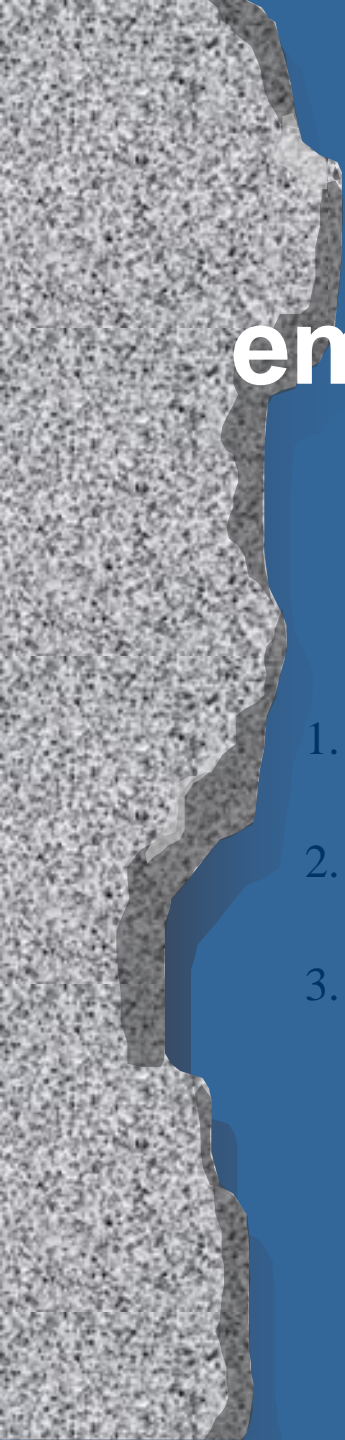
# Readily Accessible SDSs

- How are SDSs used?
  - Employee information on the job
  - Emergencies
  - To choose less hazardous materials
- Are they “accessible”?
  - Paper copies
  - Electronic copies
  - Hard to find



# What training is needed to protect workers?

- Explanation of the HazCom program, including information on labels, MSDSs, and how to obtain and use available hazard information
- Hazards of chemicals
- Protective measures such as engineering controls, work practices, and the use of PPE
- How to detect the presence or release of a hazardous chemical (using monitoring devices, observation, or smell)



# Three questions trained employees should be able to answer:

1. What are you using?
2. What are the hazards?
3. How should you protect yourself?

# More of 1926.1053

- Recordkeeping
  - Air monitoring data
  - Objective data
  - Medical surveillance records

# Ways to Reduce Exposure

- Substitute materials that have no crystalline silica
- Locate employees as far as possible from dust-generation source
- Isolate employees OR the source
  - Control rooms
  - Enclosures
  - Barriers

# Moving Employees Farther from Point of Exposure



- Lots of equipment available now if you ask for it
- [www.cpwr.com](http://www.cpwr.com)
- [www.cdc.gov/niosh](http://www.cdc.gov/niosh)

Source: NIOSH Publication No. 1999-113: Control of Drywall Sanding Dust Exposures





- There's always something new!



# For more information:

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[www.mass.gov/lwd/labor-standards/on-site-consultation-program/](http://www.mass.gov/lwd/labor-standards/on-site-consultation-program/)

To request a consultation: 508-616-0461