



**Master Builders' Association**  
Of Western Pennsylvania, Inc.

# Silica Awareness Training



# Training Objectives

**At the conclusion of this training program, participants shall be able to identify:**

- The health hazards associated with exposure to Silica
- Tasks in the workplace that could result in exposure to Silica
- Specific measures implemented, or you can do, to protect you from exposure to Silica
- The contents of the OSHA Respirable Crystalline Silica Construction Standard (29 CFR 1926.1153)
- The identity of your designated Competent Person(s)
- The purpose and a description of your company's Medical Surveillance Program

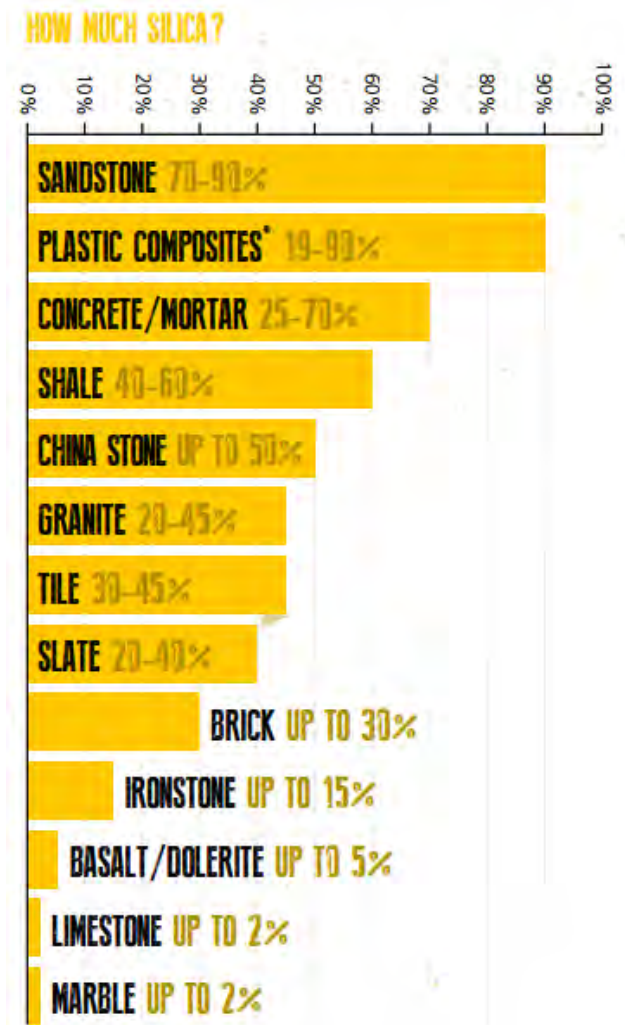
# Where is Silica Found?

## Naturally Occurring

Quartz – 2nd most common mineral in earth's crust

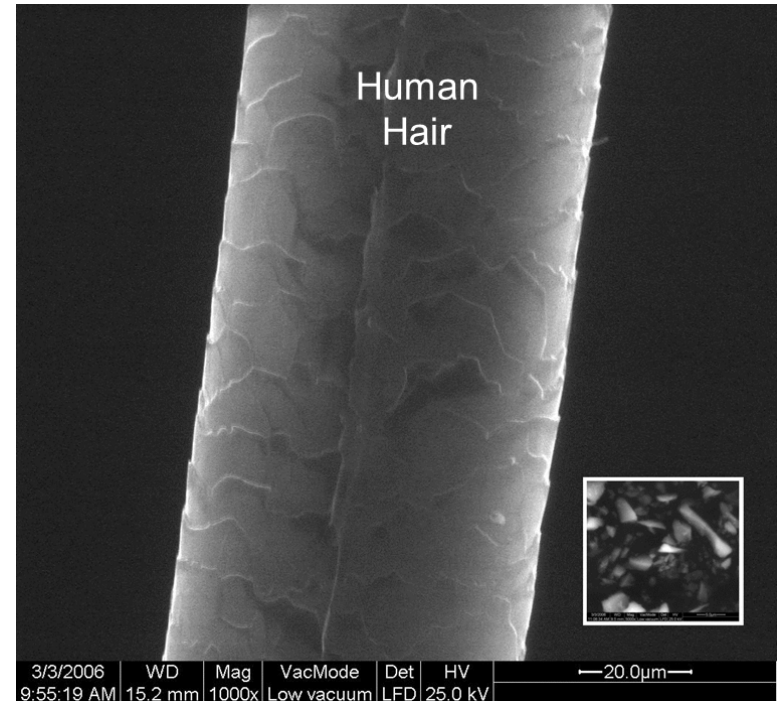
## Manufactured products:

- Concrete products
- Bricks and blocks
- Abrasive blasting materials



# What is Respirable Silica?

- Respirable crystalline silica (or any respirable dust) is barely visible to the naked eye as it is smaller than human hair!
- Takes a while to settle out of the air
- Can be trapped in lungs and cause health problems over long exposure periods



# Construction Tasks Leading to Silica Exposures

Some operations/tasks with silica exposure include:

- Stone, brick, and concrete block cutting, blasting, chipping, grinding, and sawing
- Cement/concrete mixing or cutting
- Jackhammer operations
- Milling and crushing operations
- Demolition activities
- **Others???** – Request input from students

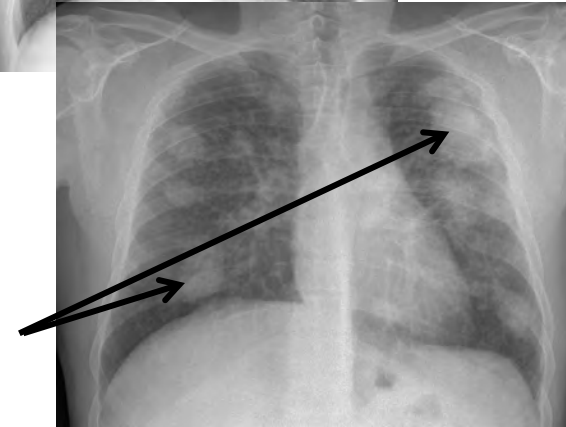


# Health Hazards - Silicosis

- **Acute silicosis (1-3 yrs.)**
- **Accelerated silicosis (3-10 yrs.)**
  - 36-yr old, sandblasted for 36 months, died 11 yrs. after exposure
  - 30-yr old, sandblasted for 48 months, died 10 yrs. after exposure
- **Chronic silicosis (7-25 yrs.)**



Healthy Lung



Scarred Lung

**Silicosis is a single disease w/single cause:  
Breathing crystalline silica dust**

# Health Hazards - Silicosis

## Symptoms

- Dry, non-productive cough
- Initial breathlessness during exercise, which progresses to shortness of breath during normal activity
- Progresses to lung scarring and failure



## Diagnosis

- Incurable
- Causes significant impairment or death

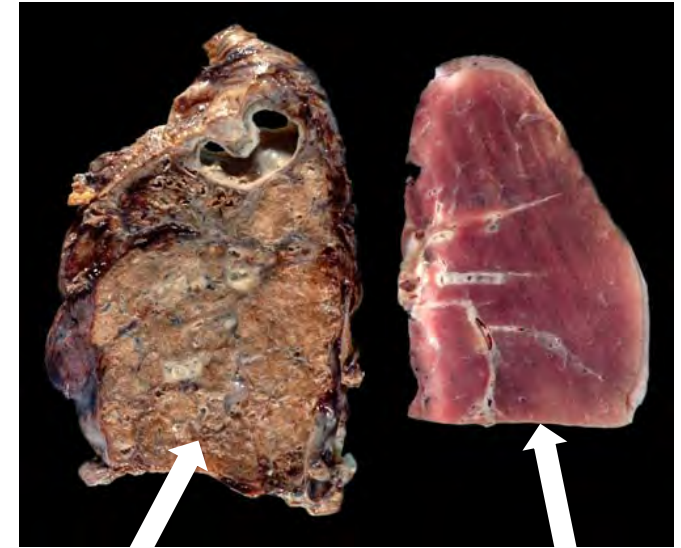


Miner's Lung w/ Silicosis

# Other Health Hazards of Silica

## Occupational Carcinogen

- IARC Group 1 for lung cancer
- “Known Human Carcinogen”
- Same as benzene, asbestos and vinyl chloride
- Some evidence of “synergy” w/ cigarette smoking similar to asbestos exposure



Lung with Silicosis  
and Tuberculosis

Healthy Lung

## Also linked with:

- Tuberculosis, emphysema, and pneumonia
- Stomach and other cancers
- Chronic renal disease



# OSHA Silica Standard

Similar in format to **Lead** and **Hexavalent Chromium** standards...

- a) Scope/Application
- b) Definitions
- c) Specified Exposure Control Methods (Table 1)
- d) Alternative Exposure Controls Methods
- e) Respiratory Protection
- f) Housekeeping
- g) Written Exposure Control Plan
- h) Medical Surveillance
- i) Communication of silica hazards to employees
- j) Recordkeeping
- k) Dates – Must comply with this standard by June 23, 2017



# a) Scope/Application

## The standard applies to...

- “...all occupational exposures to respirable crystalline silica in construction work...”
- Std. does NOT apply if worker exposure < Action Level (AL) **“under any foreseeable conditions”**
- AL = 25  $\mu\text{g}/\text{m}^3$  as 8-hour Time-Weighted Average (TWA)
  - Laborer tuckpointing?
  - Laborer saw-cutting concrete?
  - Equipment Operator?
  - Superintendent?
  - **Others? Ask students for others**



## b) Definitions

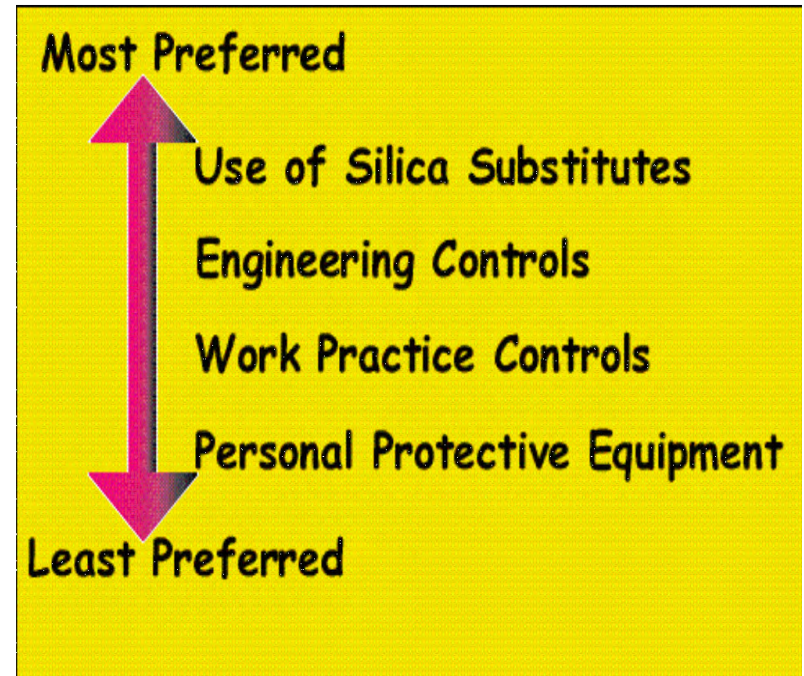
Many definitions, but one important one is...

- **Competent Person** – “an individual who is capable of identifying existing and foreseeable respirable crystalline silica hazards and who has authorization to take prompt corrective measures to eliminate or minimize them”



# c) Specified Exposure Control Methods

- OSHA established Table 1 (18 pieces of Equipment or Tasks)
- Table 1 based on “**Hierarchy of Controls**” to use Engineering and Work Practice controls first when feasible



# Table 1 Task 1

## Stationary Masonry Saw

**TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica**

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(i) Stationary masonry saws	<p>Use saw equipped with integrated water delivery system that continuously feeds water to the blade.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p>	None	None



**Without water control**





**With water control**

# Table 1 Task 2

## Handheld Power Saw

**TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica**

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(ii) Handheld power saws (any blade diameter)	<p>Use saw equipped with integrated water delivery system that continuously feeds water to the blade.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <ul style="list-style-type: none"> <li>When used outdoors.</li> <li>When used indoors or in an enclosed area.</li> </ul>	None <b>APF 10</b>	  (Half mask required) <b>APF 10</b> <b>APF 10</b>



**Without water control**



**With water control**

= Half Mask/Filtering Facepiece Required

# Table 1 Task 3 Handheld Power Saw (for cutting fiber-cement board)

TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica			
Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(iii) Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less)	<p>For tasks performed outdoors only:</p> <ul style="list-style-type: none"> <li>Use saw equipped with commercially available dust collection system.</li> <li>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</li> <li>Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency.</li> </ul>	None	None



Without LEV





With LEV

# Table 1 Task 4

## Walk Behind Saw

**TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica**

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(iv) Walk-behind saws	<p>Use saw equipped with integrated water delivery system that continuously feeds water to the blade.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <ul style="list-style-type: none"> <li>When used outdoors.</li> <li>When used indoors or in an enclosed area.</li> </ul>	 <p>(Half mask required)</p> <p>None APF 10</p>	 <p>(Half mask required)</p> <p>None APF 10</p>



**Without water control**



**With water control**



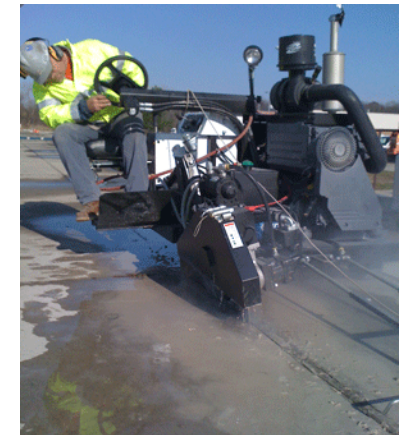
# Table 1 Task 5 Drivable Saw

**TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica**

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(v) Drivable saws	<p>For tasks performed outdoors only:</p> <ul style="list-style-type: none"> <li>Use saw equipped with integrated water delivery system that continuously feeds water to the blade.</li> <li>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</li> </ul>	None	None



**Without water control**



**With water control**

# Table 1 Task 6

## Rig-Mounted Core Saws or Drills

**TABLE 1:** Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(vi) Rig-mounted core saws or drills	<ul style="list-style-type: none"> <li>Use tool equipped with integrated water delivery system that supplies water to cutting surface.</li> <li>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</li> </ul>	None	None



**With water control**

# Table 1 Task 7

## Handheld and Stand-Mounted Drills

TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica			
Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(vii) Handheld and stand-mounted drills (including impact and rotary hammer drills)	<ul style="list-style-type: none"> <li>Use drill equipped with commercially available shroud or cowling with dust collection system.</li> <li>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</li> <li>Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism.</li> <li>Use a HEPA-filtered vacuum when cleaning holes.</li> </ul>	None	None







With LEV

# Table 1 Task 8

## Dowel Drilling Rigs

**TABLE 1:** Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(viii) Dowel drilling rigs for concrete	<p>For tasks performed outdoors only:</p> <ul style="list-style-type: none"> <li>Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter-cleaning mechanism.</li> <li>Use a HEPA-filtered vacuum when cleaning holes.</li> </ul>	<p>APF 10</p>   <p>(Half mask required)</p>	<p>APF 10</p>   <p>(Half mask required)</p>



**Without LEV**



**With LEV**

# Table 1 Task 9





## Vehicle-Mounted Drilling Rigs

TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica			
Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(ix) Vehicle-mounted drilling rigs for rock and concrete	Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector.	None	None
	OR Operate from within an enclosed cab and use water for dust suppression on drill bit.	None	None



# Table 1 Task 10 Jackhammers and Handheld Powered Chipping Tools

**TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica**

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(x) Jackhammers and handheld powered chipping tools	<p>Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact.</p> <ul style="list-style-type: none"> <li>When used outdoors.</li> <li>When used indoors or in an enclosed area.</li> </ul> <p style="text-align: center;">OR</p> <p>Use tool equipped with commercially available shroud and dust collection system.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism.</p>	<p>None APF 10</p>   <p>(Half mask required)</p>	<p>APF 10 APF 10</p>   <p>(Half mask required)</p>
	<ul style="list-style-type: none"> <li>When used outdoors.</li> <li>When used indoors or in an enclosed area.</li> </ul>	<p>None APF 10</p>	<p>APF 10 APF 10</p>







**Without water control**



**With water control**

# Table 1 Task 11 Handheld Grinders for Mortar Removal (i.e., Tuckpointing)

**TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica**

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(xi) Handheld grinders for mortar removal (i.e., tuckpointing)	<p>Use grinder equipped with commercially available shroud and dust collection system.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism.</p>	<p>APF 10</p>   <p>(Half mask required)</p>	<p>APF 25</p>  



**Without LEV**



**With LEV**

# Table 1 Task 12 Handheld Grinders for Uses Other than Mortar Removal

TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica			
Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(xii) Handheld grinders for uses other than mortar removal	<p>For tasks performed outdoors only:</p> <p>Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p style="text-align: center;">OR</p> <p>Use grinder equipped with commercially available shroud and dust collection system.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism.</p> <ul style="list-style-type: none"> <li>When used outdoors.</li> <li>When used indoors or in an enclosed area.</li> </ul>	None	None
	<ul style="list-style-type: none"> <li>When used outdoors.</li> <li>When used indoors or in an enclosed area.</li> </ul>	None	None APF 10



**Without LEV**



**With LEV**



(Half mask required)



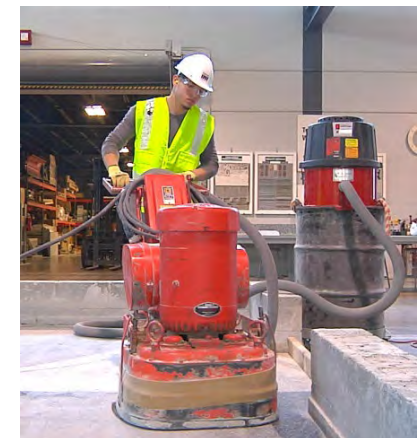
# Table 1 Task 13

## Walk Behind Milling Machines

TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica			
Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(xiii) Walk-behind milling machines and floor grinders	Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface.  Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
	OR  Use machine equipped with dust collection system recommended by the manufacturer.  Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.  Dust collector must provide the air flow recommended by the manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism.  When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes.	None	None



Without LEV



With LEV

# Table 1 Task 14 Small Drivable Milling Machines (<1/2 lane)



**TABLE 1:** Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(xiv) Small drivable milling machines (less than half-lane)	<p>Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant.</p> <p>Operate and maintain machine to minimize dust emissions.</p>	None	None

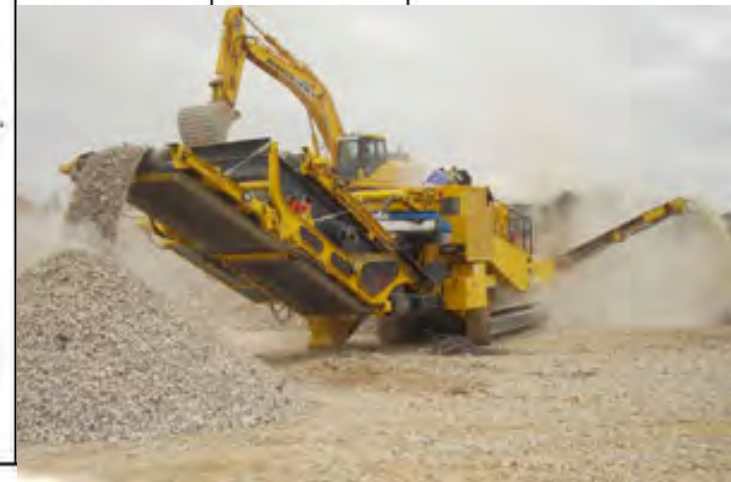
# Table 1 Task 15 Large Drivable Milling Machines (>½ lane)

TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica			
Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(xv) Large drivable milling machines (half-lane and larger)	<p>For cuts of any depth on asphalt only:</p> <p>Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.</p> <p>Operate and maintain machine to minimize dust emissions.</p>	None	None
	<p>For cuts of four inches in depth or less on any substrate:</p> <p>Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.</p> <p>Operate and maintain machine to minimize dust emissions.</p> <p style="text-align: center;">OR</p> <p>Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant.</p> <p>Operate and maintain machine to minimize dust emissions.</p>	None	None

# Table 1 Task 16

## Crushing Machines

TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica			
Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(xvi) Crushing machines	<p>Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points).</p> <p>Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station.</p>	None	None



# Table 1 Task 17 Abrading or Fracturing Silica-Containing Materials

**TABLE 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica**

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(xvii) Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (e.g., hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials	Operate equipment from within an enclosed cab.	None	None
	When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions.	None	None



**NOTE:** When the operator exits the enclosed cab and is no longer actively performing the task, the operator is considered to have stopped the task. However, if other abrading, fracturing, or demolition work is performed by other heavy equipment and utility vehicles in the area while an operator is outside the cab, that operator is considered to be an employee “engaged in the task” and must be protected by the application of water and/or dust suppressants.

# Table 1 Task 18 Grading and Excavating Silica-Containing Materials

**TABLE 1:** Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	> 4 hours/shift
(xviii) Heavy equipment and utility vehicles for tasks such as grading and excavating but not including demolishing, abrading, or fracturing silica-containing materials	Apply water and/or dust suppressants as necessary to minimize dust emissions.	None	None
	OR When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab.	None	None



Must use water and/or dust suppressants as necessary to minimize dust emissions when:

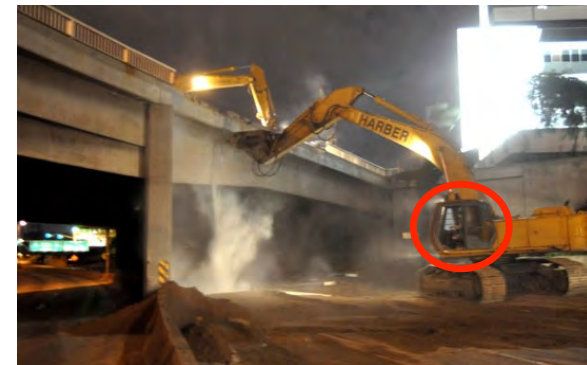
- Equipment is not equipped with enclosed, pressurized cabs, or
- Employees other than the operator are engaged in the task.



# c) Specified Exposure Control Methods



- When following Table 1...
  - “for tasks performed indoors/enclosed areas, provide a means of exhaust to min. accumulation of **visible dust**”
  - “for wet methods apply water at flow rates to minimize **visible dust**”
- If enclosed booth or cab is used...
  - Free as practical of settled dust
  - Doors seals/closing mechanisms work
  - Gaskets and seals in good condition
  - Under positive pressure via delivered air
  - Intake air filtered and heated/AC



## d) Alternative Exposure Controls Methods

- “For tasks **not** listed in Table 1...” or if Table 1 cannot be met
- Exposure Assessment (i.e., employee monitoring) required where employees may “reasonably be expected to be exposed above the AL”
- New Permissible Exposure Limit (as an 8-hour TWA) applies





# Specific Controls Methods

**At this company/project we will use the following control methods**

- List all silica controls utilized at the company/project (including pictures if possible)**

# d) New 8-Hour Permissible Exposure Limit (PEL)

- **FORMER** OSHA PELs:

- *Approx. 0.10 mg/m<sup>3</sup> for general industry*
- *Approx. 0.25 mg/m<sup>3</sup> for construction and maritime*
- *Derived from a formula*
- *Adopted in 1971*

- **NEW** OSHA PEL: 0.05 mg/m<sup>3</sup> (or 50 µg/m<sup>3</sup>)

- *One limit for all industries and all forms of crystalline silica*
- *50% reduction of the general industry PEL*
- *80% reduction for construction and shipyards*

# e) Respiratory Protection

## Respirator use...

- When following Table 1
- If not following Table 1, when worker monitoring indicates need
- Consistent w/1910.134
  - Written Respiratory Protection Program
  - Fit-testing
  - Medical Evaluation
  - Training



### Air-purifying respirators

Air-purifying respirators, which remove contaminants from the air.



Half mask Filtering Facepiece  
Dust mask  
APF=10  
*Needs to be fit tested*



Half mask Elastomeric Respirator  
APF=10  
*Needs to be fit tested*



Full Facepiece Elastomeric Respirator  
APF=50  
*Needs to be fit tested*

Original illustrations created by Atrill & Associates

# f) Housekeeping

- Dry sweeping NOT permitted...unless no other options
- Use of compressed air NOT permitted unless...
  - ✓ Used w/LEV
  - ✓ No other method available



# g) Written Exposure Control Plan

## Exposure Control Plan (ECP) includes...

- Descriptions of tasks w/exposure and controls used
- Description of housekeeping used
- Procedures for restricting access
- Provisions for **Competent Person** to “make frequent and regular inspections...”. **At our company/job the Competent Person is \_\_\_**. To be added
- Reviewed annually

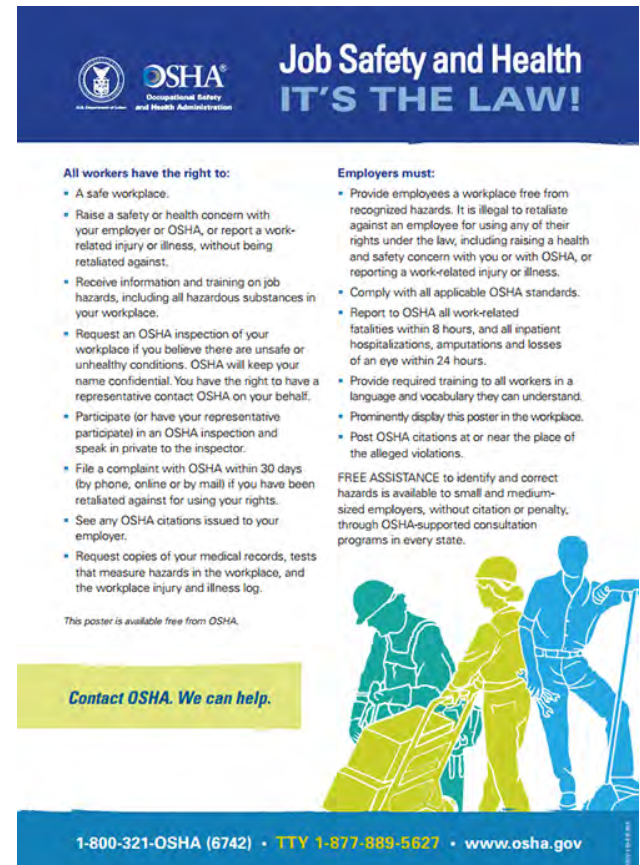
### Sample Written Exposure Control Plan

<b>Company:</b> John Doe Renovators	<b>Person Completing the Plan, Title:</b> John Doe, Owner
<b>Description of Task:</b> Demolishing concrete and tile floors inside homes or public buildings using a jackhammer.	
<b>Control Description</b>	
<b>Controls:</b>	
<ul style="list-style-type: none"><li>• Use jackhammer equipped with the appropriate, commercially available shroud and a vacuum dust collection system with the flow rate recommended by the jackhammer manufacturer, a filter that is at least 99 percent efficient, and a filter cleaning mechanism.</li><li>• Use a portable fan to exhaust air and prevent the buildup of dust.</li></ul>	
<b>Work practices:</b>	
<ul style="list-style-type: none"><li>• Check shrouds and hoses to make sure they are not damaged before starting work.</li><li>• Make sure the hoses do not become kinked or bent while working.</li><li>• Use switch on vacuum to activate filter cleaning at the frequency recommended by the manufacturer.</li><li>• Replace vacuum bags as needed to prevent overfilling.</li><li>• Use the jackhammer and vacuum controls according to manufacturer's instructions for reducing the release of visible dust.</li><li>• If visible dust increases, check controls and adjust as needed.</li></ul>	
<b>Respiratory protection:</b>	
<ul style="list-style-type: none"><li>• Use respirator with APF of 10 the entire time the task is being performed.</li><li>• See the written respiratory protection program for information on selection, training and fit testing requirements, in addition to proper use instructions for respirators (for example, being clean shaven when using a respirator that seals against the face).</li></ul>	
<b>Housekeeping:</b>	
<ul style="list-style-type: none"><li>• Dust containing silica on work surfaces and equipment must be cleaned up using wet methods or a HEPA-filtered vacuum.</li><li>• Do not use compressed air or dry sweeping for removing dust and debris containing silica from work surfaces.</li><li>• Dispose of used vacuum bags in a container and keep the container sealed.</li></ul>	
<b>Procedures Used to Restrict Access to Work Areas:</b>	
Schedule the work so that only employees who are engaged in the task (the jackhammer operator and employees helping the operator) are in the area.	



# h) Medical Surveillance

- Required if respirator needed 30+ days/yr.
- Baseline required within 30 days
- Only results provided to employer are whether employee can/cannot wear a respirator
- You will/will not get an exam



**Job Safety and Health**  
**IT'S THE LAW!**

**All workers have the right to:**

- A safe workplace.
- Raise a safety or health concern with your employer or OSHA, or report a work-related injury or illness, without being retaliated against.
- Receive information and training on job hazards, including all hazardous substances in your workplace.
- Request an OSHA inspection of your workplace if you believe there are unsafe or unhealthy conditions. OSHA will keep your name confidential. You have the right to have a representative contact OSHA on your behalf.
- Participate (or have your representative participate) in an OSHA inspection and speak in private to the inspector.
- File a complaint with OSHA within 30 days (by phone, online or by mail) if you have been retaliated against for using your rights.
- See any OSHA citations issued to your employer.
- Request copies of your medical records, tests that measure hazards in the workplace, and the workplace injury and illness log.


*This poster is available free from OSHA.*

**Contact OSHA. We can help.**

**Employers must:**

- Provide employees a workplace free from recognized hazards. It is illegal to retaliate against an employee for using any of their rights under the law, including raising a health and safety concern with you or with OSHA, or reporting a work-related injury or illness.
- Comply with all applicable OSHA standards.
- Report to OSHA all work-related fatalities within 8 hours, and all inpatient hospitalizations, amputations and losses of an eye within 24 hours.
- Provide required training to all workers in a language and vocabulary they can understand.
- Prominently display this poster in the workplace.
- Post OSHA citations at or near the place of the alleged violations.

FREE ASSISTANCE to identify and correct hazards is available to small and medium-sized employers, without citation or penalty, through OSHA-supported consultation programs in every state.



1-800-321-OSHA (6742) • TTY 1-877-889-5627 • [www.osha.gov](http://www.osha.gov)

# i) Communication of Hazards

- Training provided under Company's Hazard Communication Program (OSHA Hazcom Standard 29 CFR 1910.1200)
- Labels on containers of Crystalline Silica and respective Safety Data Sheets (SDS's) will be provide. Read them!

<b>Health Hazard</b>  <ul style="list-style-type: none"><li>• Carcinogen</li><li>• Mutagenicity</li><li>• Reproductive Toxicity</li><li>• Respiratory Sensitizer</li><li>• Target Organ Toxicity</li><li>• Aspiration Toxicity</li></ul>	<b>Flame</b>  <ul style="list-style-type: none"><li>• Flammables</li><li>• Pyrophorics</li><li>• Self-Heating</li><li>• Emits Flammable Gas</li><li>• Self-Reactives</li><li>• Organic Peroxides</li></ul>	<b>Exclamation Mark</b>  <ul style="list-style-type: none"><li>• Irritant (skin and eye)</li><li>• Skin Sensitizer</li><li>• Acute Toxicity (harmful)</li><li>• Narcotic Effects</li><li>• Respiratory Tract Irritant</li><li>• Hazardous to Ozone Layer (Non-Mandatory)</li></ul>
<b>Gas Cylinder</b>  <ul style="list-style-type: none"><li>• Gases Under Pressure</li></ul>	<b>Corrosion</b>  <ul style="list-style-type: none"><li>• Skin Corrosion/ Burns</li><li>• Eye Damage</li><li>• Corrosive to Metals</li></ul>	<b>Exploding Bomb</b>  <ul style="list-style-type: none"><li>• Explosives</li><li>• Self-Reactives</li><li>• Organic Peroxides</li></ul>
<b>Flame Over Circle</b>  <ul style="list-style-type: none"><li>• Oxidizers</li></ul>	<b>Environment (Non-Mandatory)</b>  <ul style="list-style-type: none"><li>• Aquatic Toxicity</li></ul>	<b>Skull and Crossbones</b>  <ul style="list-style-type: none"><li>• Acute Toxicity (fatal or toxic)</li></ul>

**This class is your training**

# i) Communication of Hazards

**Hazards of Silica involve this Pictogram**

<b>Health Hazard</b>  <ul style="list-style-type: none"><li>• Carcinogen</li><li>• Mutagenicity</li><li>• Reproductive Toxicity</li><li>• Respiratory Sensitizer</li><li>• Target Organ Toxicity</li><li>• Aspiration Toxicity</li></ul>	<b>Flame</b>  <ul style="list-style-type: none"><li>• Flammables</li><li>• Pyrophorics</li><li>• Self-Heating</li><li>• Emits Flammable Gas</li><li>• Self-Reactives</li><li>• Organic Peroxides</li></ul>	<b>Exclamation Mark</b>  <ul style="list-style-type: none"><li>• Irritant (skin and eye)</li><li>• Skin Sensitizer</li><li>• Acute Toxicity (harmful)</li><li>• Narcotic Effects</li><li>• Respiratory Tract Irritant</li><li>• Hazardous to Ozone Layer (Non-Mandatory)</li></ul>
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<b>Flame Over Circle</b>  <ul style="list-style-type: none"><li>• Oxidizers</li></ul>	<b>Environment (Non-Mandatory)</b>  <ul style="list-style-type: none"><li>• Aquatic Toxicity</li></ul>	<b>Skull and Crossbones</b>  <ul style="list-style-type: none"><li>• Acute Toxicity (fatal or toxic)</li></ul>



# Training Summary

## You now are able to identify:

- The health hazards associated with exposure to Silica
- Workplace Tasks that could result in exposure to Silica
- Specific measures your company has implemented to protect you from exposure to Silica, including engineering controls, work practices, and respirators use
- The contents of the OSHA Respirable Crystalline Silica Construction Standard (29 CFR 1926.1153)
- The identity of your designated Competent Person(s)
- The purpose and a description of your company's Medical Surveillance Program
- Questions???

# Training program developed by:

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