

## 12.0 MIA Safety Services - April 2012

### Executive Summary

For hundreds of years, silicosis has been a serious occupational health issue for workers in mining, quarrying, stone cutting, stone grinding and other occupations where crystalline silica dust is generated.

Silicosis [sil-i-koh-sis] is caused by exposure to respirable crystalline silica dust. Crystalline silica is a basic component of soil, sand, granite, and most other types of rock, and it is used as an abrasive blasting agent. Silicosis is a progressive, disabling, and often fatal lung disease. Tobacco smoking adds to the lung damage caused by silica.

There is no cure for silicosis. But with the proper equipment, training, vigilance and continual monitoring, you and your shop can be free of the dangers of the most common occupational lung disease in the world: Silicosis.

The objectives of this Toolbox Talk are to:

- Alert employers and employees to the hazards crystalline silica dust;
- Remind employers that the only treatment for silicosis is prevention, or avoiding exposure to silica dust altogether.

Two toolbox talks are enclosed: one reviewing an actual inspection from OSHA files and another reviewing General Safety Practices and Procedures. Also provided are a relevant safety checklist, standard employee meeting sign-in sheet, and a safety related "Product of the Month" feature.

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Enclosed in this issue of MIA Safety Talks are the following resources:

#### 12.1 TOOLBOX TALK - INSPECTION ANALYSIS

Overview  
Description of Inspection  
Prevention Recommendations  
Recap & Review

#### 12.2 TOOLBOX TALK - SAFETY - SILICOSIS

Overview  
Best Practices  
More Tips  
Discussion Questions  
Recap and review

#### 12.3 SAFETY SILICOSIS CHECKLIST

#### 12.4 SAFETY MEETING SIGN-IN SHEET

#### 12.5 SAFETY PRODUCT OF THE MONTH

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## 12.1 MIA Safety Services - OSHA Inspection Summary

Refer to sign-in sheet for attendees (note: a separate meeting should be held with all absent employees).

### Agenda

Inspection Type:	Complaint
SIC:	3281/ Cut Stone & Stone Products
Safety Monitor on Site:	No
Safety & Health Program:	No
Regular Worksite	
Inspections:	No
Training Provided:	No



### Brief Description of Inspection

Acting on an anonymous tip, OSHA investigated a stone fabrication shop regarding complaints of unhealthy and unsafe working conditions. Upon entering the shop, investigators observed dust-filled air and apparent excessive noise. No employees were wearing respiratory or ear protection. Investigators sampled air quality and noise levels and found both to exceed recommended Permissible Exposure Limits (PEL). Information about dust controls or hazardous material was not available.

### Inspection Results

OSHA issued citations and assessed fines in excess of \$4,000.00 for several serious violations including:

- The employer did not administer a continuing, effective hearing conservation program.
- The employer did not develop or implement a written respiratory protection program with required worksite-specific procedures and elements for required respirator use.
- Employer did not develop, implement, and maintain a written hazard communication program

### Accident Prevention Recommendations

The following procedures will minimize the potential hazards associated with hazardous communications in the work place:

- Provide engineering or administrative controls where feasible, such as local exhaust ventilation or wet grinding and cutting.
- Wear only a N95 NIOSH certified respirator, if respirator protection is required. Do not alter the respirator.
- Provide training, exposure monitoring, and health screening and surveillance programs to monitor any adverse health effects caused by crystalline silica exposures.

### Recap and Review

- What are the sources of silica dust in our shop?
- Where are we required to wear respirators

### Reminder: Safety is the responsibility of both management and employees!

The next safety meeting is scheduled for \_\_\_\_\_ and the topic will be\_\_\_\_\_.

*NOTE: The case here described was selected as being representative of injuries caused by improper work practices. No special emphasis or priority is implied nor is the case necessarily a recent occurrence. The legal aspects of the incident have been resolved, and the case is now closed.*

## 12.2 MIA Safety Services - Safety Best Practices

Refer to sign-in sheet for attendees (note: a separate meeting should be held with all absent employees).

### Agenda

**Overview:** Dust is all around us, it's in the very air we breathe. Most of us can stand small amounts but some are more at risk than others. The goal is to keep your exposure to a minimum. Most people will not experience medical problems if they stay below permissible exposure levels (PEL).

**2. What is Granite Dust?** There are many different types of dusts: flour, grain, wood, coal, metal and cotton. Some dusts can be poisonous and some are explosive. The focus of this meeting is the dust created from natural stones which are sold commercially as "granite." Granite typically contains:

- Quartz (Silicon Dioxide -  $\text{SiO}_2$ )
- Feldspar (various Aluminum Silicates)
- Mica (various Potassium Aluminum Silicate Hydroxide Fluorides)
- Hornblende (Magnesium Iron Aluminum Silicates)

**3. What is the problem?** All the processes used in the stone industry to change granite into a finished product produce small particles. There is a health hazard when these particles are small enough to inhale. Your body protects you against some dust. Not all the dust that you breathe in gets into your lungs. The larger particles are filtered out in your nose and the tubes leading to your lungs.

Only the finest dust particles reach your lungs. Usually these dusts are too fine for you to see them. These fine dust particles, which can enter deep into the lungs, are called 'respirable dust'.

**4. Respirable dust hazards:**

- Your lungs' defenses can be overwhelmed by too much dust entering your lungs.
- Silica dust causes permanent scarring of the lungs.

**5. Control Measures:**

- Use safe machinery utilizing wet processes.
- Use dust collection systems.
- Use safe procedures such as water clean up instead of sweeping.
- Use proper personal protection equipment. When needed, make sure respirators are in good condition and fit properly.

**6. Discussion:**

- How is dust controlled in your facility? On the jobsite?
- What protection methods are available to you?

**7. RECAP/REVIEW:**

- Should you use compressed air to clean off equipment or clothes?
- What component of granite dust are we primarily concerned about?

**8. Reminder:** Safety is the responsibility of management and employees!

**9. The Next Safety Meeting** is scheduled for \_\_\_\_\_ and the topic will be \_\_\_\_\_.

## 12.3 MIA Safety Services - Checklist

Exposure to fine particles of silica has been shown to cause silicosis, a serious and sometimes fatal lung disease. Employees who inhale fine particles of silica may be at risk of developing this disease. There is no cure for silicosis. The only treatment for silicosis is prevention, or avoiding exposure to silica dust.

The natural stone industry and its vendors have made great strides in this effort to eliminate unseen crystalline silica dust, but there is still a long way to go. One of the best methods to reduce the silica dust is through wet cutting and grinding.

### Safety Precautions for Workers

In shops that are dry or partially wet, or where only sections of the facility are covered with dust collection systems, these precautions should be taken to minimize exposure to crystalline silica:

#### Do:

- Be aware of the hazards of inhaling silica dust.
- Use an air monitoring system to ensure the PEL is not exceeded.
- Always wear a respirator when the need for one is indicated.
- Be sure your respirator fits properly and has been maintained properly.
- Use water or wet vacs to clean up dust—never compressed air.
- Wear washable or disposable work clothes.
- Wash hands and face before eating, drinking or smoking outside of dusty areas.
- Always shower, if possible, and change to street clothes before leaving the work area.
- Park cars where they will not be contaminated with silica and other substances.
- Always report any symptoms of silicosis.
- Limit your exposure to the workplace. When you take silica dust home, you contaminate your house and your car. You will be exposing your family to crystalline silica dust as well.

#### Don't

- Ignore silica warning signs.
- Work without a respirator when silica exceeds PELs.
- Eat, drink, smoke, or apply cosmetics in areas that contain crystalline silica.
- Eat, drink, smoke, or apply cosmetics after silica exposure until you have washed your face and hands.
- Smoke if you are exposed to crystalline silica on the job.

*It cannot be said too often, or with too much emphasis: Protecting the workplace and employees from respirable crystalline silica - and eventually silicosis - should be one of the most important objectives of every company in the natural stone industry.*



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## 12.4 Safety Meeting Sign-In Sheet

TOPIC:

FACILITATOR:

DATE:

Name (print)

(signature)

Department

Name (print)	(signature)	Department

(Make additional copies as needed)

NOTES:

## 12.5 MIA Safety Product of the Month - April 2012

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### Silicosis:

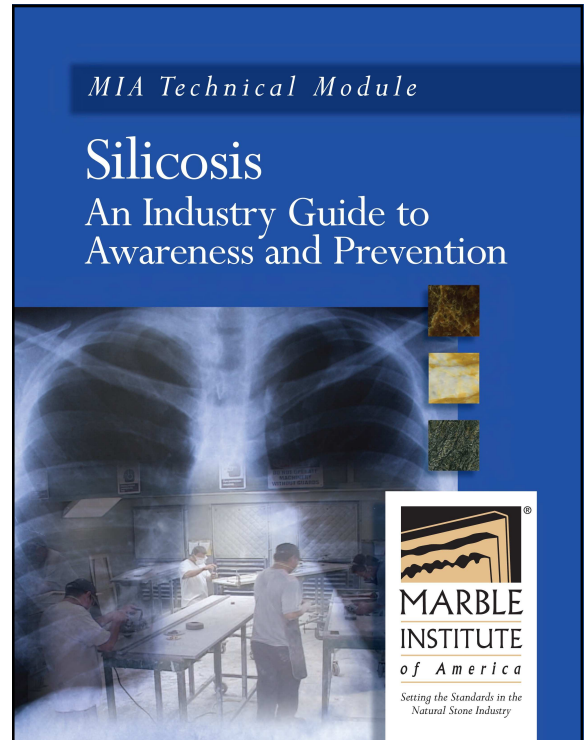
#### An Industry Guide to Awareness and Prevention

*This technical module is devoted to the subject of silicosis. It illustrates how you and your employees can eliminate the threat of silicosis in the workplace. It covers the particulars of prevention, including the equipment and procedures required to eliminate silicosis as a threat. It includes sections on wet cutting and grinding, and water treatment systems.*

**Item #10720: From MIA, 2008, 12 pp / technical module**

**Member Price:** \$12 US (1-4), \$10 US (5-20), \$8.50 US (21-50), \$6 US (51+)

**Retail Price:** \$17 US (1-4), \$15 US (5-20), \$13.50 US (21-50), \$11 US (51+)



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