OSHA’s Continuing Mission

- Every year more than 4,500 Americans die from workplace injuries.
- Perhaps as many as 50,000 workers die from illnesses in which workplace exposures were a contributing factor.
- Millions of workers suffer a serious nonfatal injury or illness annually.
Rate of fatal workplace injuries

- 1974-2001 data were estimated from BLS Survey of Employers
- 2002-2015 data were gathered from BLS Census of Fatal Injuries
- In 2006, BLS switched from employment-based calculations to hourly calculations
OSHA data for New York City (5 boroughs) by Calendar Year (January 1st to December 31st)

NYC Fatalities 2008-2016

- 2008: 22 Construction, 12 Total
- 2009: 8 Construction, 5 Total
- 2010: 8 Construction, 9 Total
- 2011: 11 Construction, 14 Total
- 2012: 16 Construction, 9 Total
- 2013: 8 Construction, 17 Total
- 2014: 14 Construction, 11 Total
- 2015: 17 Construction, 7 Total
- 2016: 13 Construction, 8 Total

OSHA data for New York City (5 boroughs) by Calendar Year (January 1st to December 31st)
Top Ten Violations

Most frequently cited OSHA regulations during inspections

1. Fall Protection
2. Hazard Communication
3. Scaffolding
4. Respiratory Protection
5. Lockout/Tagout
6. Powered Industrial Trucks
7. Ladders
8. Machine Guarding
9. Electrical – Wiring Methods
10. Electrical – General Requirements
Report a fatality or severe injury

- All employers are required to notify OSHA when an employee is killed on the job or suffers a work-related hospitalization, amputation, or loss of an eye.
- A fatality must be reported within 8 hours.
- An in-patient hospitalization, amputation, or eye loss must be reported within 24 hours.
10,388 severe injuries reported, including 2,644 amputations and 7,636 hospitalizations

This is an average of 30 worker injuries every day of the year

1,500 amputations reported so far this calendar year

- Average of 7 amputations per day for both 2015 and 2016

Most reported injuries (62%) were addressed by employer investigation, not OSHA inspection
NEW RESOURCE

Preventing Cuts and Amputations from food slicers and meat grinders

In 2013, 4,000+ incidents involving meat slicers resulted in lost workdays.

Fact sheet was developed based on information gathered as a result of OSHA’s new reporting requirements.
Incident Investigations: A Guide for Employers

Incident Investigations help employers:

- prevent injuries and illnesses
- save lives
- save money
- demonstrate commitment to safety and health
- promote positive workplace morale

Incident Investigation Guide:

- provides a systems approach to help identify and control the root causes of all incidents and prevent their recurrence
OSHA Penalty Adjustment

- First time OSHA’s penalties were adjusted since 1990
- OSHA will adjust its civil monetary penalties annually to account for inflation
## Penalty Changes

<table>
<thead>
<tr>
<th>Level</th>
<th>Previous Maximum Penalty</th>
<th>Current Maximum Penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Than Serious</td>
<td>$7,000 per violation</td>
<td>$12,471 per violation</td>
</tr>
<tr>
<td>Serious</td>
<td>$7,000 per violation</td>
<td>$12,471 per violation</td>
</tr>
<tr>
<td>Repeat</td>
<td>$70,000 per violation</td>
<td>$124,709 per violation</td>
</tr>
<tr>
<td>Willful</td>
<td>$70,000 per violation/$5,000 min.</td>
<td>$124,709 per violation/$8,909 min.</td>
</tr>
<tr>
<td>Posting Requirements</td>
<td>$7,000 per violation</td>
<td>$12,471 per violation</td>
</tr>
<tr>
<td>Failure to Abate</td>
<td>$7,000 per day unabated beyond the abatement date [generally limited to 30 days maximum]</td>
<td>$12,471 per day unabated beyond the abatement date [generally limited to 30 days maximum]</td>
</tr>
</tbody>
</table>
Respirable Crystalline Silica in Construction Standard Final Rule Published on March 25, 2016
Reasons for the Rule

- Previous permissible exposure limits (PELs) are formulas that many find hard to understand
- Construction/shipyard PELs are obsolete particle count limits
- General industry formula PEL is about equal to $100 \, \mu g/m^3$; construction/shipyard formulas are about $250 \, \mu g/m^3$
Most Important Reason for the Rule

• Previous PELs do not adequately protect workers
• Extensive epidemiologic evidence that lung cancer and silicosis occur at exposure levels below 100 µg/m³
Exposure and Health Risks

• Exposure to respirable crystalline silica has been linked to:
  o Silicosis (irreversible lung disease)
  o Chronic obstructive pulmonary disease
  o Lung cancer
  o Kidney disease

Healthy Lung

Silicotic Lung
Workers and Industries Affected

• 2.3 million workers:
  o Construction: 2 million
  o GI/Maritime: 300,000

• 676,000 establishments
  o Construction: 600,000
  o GI/Maritime: 76,000
What is Crystalline Silica?

• Crystalline silica is a common mineral that is found in natural materials such as sand, stone, and rock; it is also found in manmade materials such as concrete, brick, block, and mortar and quartz.

• Crystalline silica is a hazard in the workplace when silica-containing materials are handled in a manner that releases respirable silica dust.
  – Respirable silica particles are about 100 times smaller than grains of sand typically found on beaches or playgrounds.
Scope of Coverage

Exposures from chipping, cutting, sawing, drilling, grinding, sanding, and crushing of concrete, brick, block, rock, and stone products (such as in construction operations)

Exposures from using sand products (such as glass manufacturing, foundries, and sand blasting)
Industries and Operations with Exposures

- Construction
- Glass manufacturing
- Pottery products
- Structural clay products
- Concrete products
- Foundries
- Dental laboratories
- Paintings and coatings
- Jewelry production
- Refractory products
- Asphalt products
- Landscaping
- Ready-mix concrete
- Cut stone and stone products
- Abrasive blasting in:
  - Maritime work
  - Construction
  - General industry
- Refractory furnace installation and repair
- Railroads
- Hydraulic fracturing for gas and oil
Respirable Crystalline Silica Rule

- Two standards:
  - One for general industry and maritime
  - One for construction
- Similar to other OSHA health standards and ASTM consensus standards
Construction Standard

(a) Scope
(b) Definitions
(c) Specified exposure control methods
   OR
(d) Alternative exposure control methods
   (1) PEL
   (2) Exposure Assessment
   (3) Methods of Compliance
(e) Respiratory protection
(f) Housekeeping
(g) Written exposure control plan
(h) Medical surveillance
(i) Communication of silica hazards
(j) Recordkeeping
(k) Dates
Does this Standard Apply?

Could employees be exposed to respirable crystalline silica at or above 25 μg/m³ as an 8-hour TWA under any foreseeable conditions, while performing construction activities?

**No**: No further action is required

**Yes**: Choose from the following options:

- Specified exposure control methods in Table 1
- Alternative methods of compliance
Foreseeable Conditions

Exposures to respirable crystalline silica occur when the following tools are used on concrete, brick, block, stone, mortar, and other materials that contain crystalline silica:

<table>
<thead>
<tr>
<th>Tool Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stationary masonry saws</td>
<td>Handheld power saws</td>
</tr>
<tr>
<td>Walk-behind/drivable saws</td>
<td>Crushing machines</td>
</tr>
<tr>
<td>Rig-mounted core saws or drills</td>
<td>Handheld and stand-mounted drills</td>
</tr>
<tr>
<td>Dowel drilling rigs</td>
<td>Vehicle-mounted drilling rigs</td>
</tr>
<tr>
<td>Jackhammers and handheld powered chipping tools</td>
<td>Walk-behind milling machines and floor grinders</td>
</tr>
<tr>
<td>Handheld grinders</td>
<td>Drivable milling machines</td>
</tr>
</tbody>
</table>
Foreseeable Conditions
Foreseeable Conditions

Exposures to respirable crystalline silica can also occur during tunneling operations and during abrasive blasting when sand or other blasting agents containing crystalline silica are used, or when abrasive blasting is performed on substrates that contain crystalline silica, such as concrete.
Construction – Specified Exposure Control Methods

• Table 1 in the construction standard matches 18 tasks with effective dust control methods and, in some cases, respirator requirements.
• Employers that fully and properly implement controls on Table 1 do not have to:
  o Comply with the PEL
  o Conduct exposure assessments for employees engaged in those tasks
### Example of a Table 1 Entry

<table>
<thead>
<tr>
<th>Equipment / Task</th>
<th>Engineering and Work Practice Control Methods</th>
<th>Required Respiratory Protection and Minimum APF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Handheld power saws (any blade diameter)</strong></td>
<td>Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturers’ instruction to minimize dust. - When used outdoors - When used indoors or in an enclosed area</td>
<td>None</td>
</tr>
</tbody>
</table>
## List of Table 1 Entries

<table>
<thead>
<tr>
<th>Stationary masonry saws</th>
<th>Handheld grinders for mortar removal (tuckpointing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handheld power saws</td>
<td>Handheld grinders for other than mortar removal</td>
</tr>
<tr>
<td>Handheld power saws for fiber cement board</td>
<td>Walk-behind milling machines and floor grinders</td>
</tr>
<tr>
<td>Walk-behind saws</td>
<td>Small drivable milling machines</td>
</tr>
<tr>
<td>Drivable saws</td>
<td>Large drivable milling machines</td>
</tr>
<tr>
<td>Rig-mounted core saws or drills</td>
<td>Crushing machines</td>
</tr>
<tr>
<td>Handheld and stand-mounted drills</td>
<td>Heavy equipment and utility vehicles to abrade or fracture silica materials</td>
</tr>
<tr>
<td>Dowel drilling rigs for concrete</td>
<td>Heavy equipment and utility vehicles for grading and excavating</td>
</tr>
<tr>
<td>Vehicle-mounted drilling rigs for rock and concrete</td>
<td></td>
</tr>
<tr>
<td>Jackhammers and handheld powered chipping tools</td>
<td></td>
</tr>
</tbody>
</table>

**OSHA**
Fully and Properly Implementing Controls Specified on Table 1

• Presence of controls is not sufficient.
• Employers are required to ensure that:
  o Controls are present and maintained
  o Employees understand the proper use of those controls and use them accordingly
Employees Engaged in Table 1 Tasks

- Employees are “engaged in the task” when operating the listed equipment, assisting with the task, or have some responsibility for the completion of the task.
- Employees are not “engaged in the task” if they are only in the vicinity of a task.
Respiratory Protection Requirements on Table 1

• Respirators required where exposures above the PEL are likely to persist despite full and proper implementation of the specified engineering and work practice controls

• Where respirators required, must be used by all employees engaged in the task for entire duration of the task

• Provisions specify how to determine when respirators are required for an employee engaged in more than one task
Alternative Exposure Control Methods

• The alternative exposure control methods approach involves:
  – Compliance with permissible exposure limit (PEL)
    • PEL = 50 µg/m3 as an 8-hour TWA
    • Action Level = 25 µg/m3 as an 8-hour TWA
  – Assessing employee exposure to respirable crystalline silica
  – Limiting exposure to the PEL using feasible engineering and work practice control methods
Alternative Exposure Control Methods – Exposure Assessment

• Required if exposures are or may reasonably be expected to be at or above action level of 25 µg/m³

• Exposures assessments can be done following:
  o The performance option
  o The scheduled monitoring option
Performance Option

The performance option gives employers flexibility to determine the 8-hour TWA exposure for each employee based on any combination of:

– air monitoring data, or
– objective data

that can accurately characterize employee exposures to respirable crystalline silica.
Air Monitoring Data

• Air monitoring data are any results of air monitoring (analyzed according to the procedures and requirements in Appendix A) that the employer has done to meet the requirements of the standard.
Objective Data

- Objective data is information that demonstrates employee exposure to respirable crystalline silica associated with a particular product or material or a specific process, task, or activity.
- The data must reflect workplace conditions that closely resemble or could result in higher exposures than the processes, types of material, control methods, work practices, and environmental conditions in the employer’s current operations.
Objective Data Examples

• Air monitoring data from industry-wide surveys
• Calculations based on the composition of a substance
• Area sampling results and exposure mapping profile approaches; and
• Historic air monitoring data.
Scheduled Monitoring Option

• Prescribes a schedule for performing initial and periodic personal monitoring

• If monitoring indicates:
  o Initial below the AL: no additional monitoring
  o Most recent at or above the AL: repeat within 6 months
  o Most recent above the PEL: repeat within 3 months
  o When two consecutive non-initial results, taken 7 or more days apart, are below the AL, monitoring can be discontinued
  o Reassess if circumstances change
Appendix A – Methods of Sample Analysis

• Employers must ensure that samples are analyzed by a laboratory that follows the procedures in Appendix A
• Appendix A specifies methods of sample analysis
  o Allows for use of OSHA, NIOSH, or MSHA methods
  o Analysis must be conducted by accredited laboratories that follow specified quality control procedures
Alternative Exposure Control Methods – Methods of Compliance (Hierarchy of Controls)

• Employers can use any engineering or work practice controls to limit exposures to the PEL

• Respirators permitted where PEL cannot be achieved with engineering and work practice controls
Engineering Controls

Cutting block without engineering controls

Cutting block using water to control the dust
Engineering Controls (cont.)

Grinding without engineering controls

Grinding using a vacuum dust collector
Engineering Controls (cont.)

Jackhammer use without engineering controls

Jackhammer use with water spray to control dust
Respiratory Protection

• Must comply with 29 CFR 1910.134
• Respirators required where specified by Table 1, or for exposures above the PEL:
  o While installing or implementing controls or work practices
  o For tasks where controls or work practices are not feasible
  o When feasible controls cannot reduce exposures to the PEL
Housekeeping

• When it can contribute to exposure, employers must not allow:
  o Dry sweeping or brushing
  o Use of compressed air for cleaning surfaces or clothing, unless it is used with ventilation to capture the dust

• Those methods can be used if no other methods like HEPA vacuums, wet sweeping, or use of ventilation with compressed air are feasible
Construction – Written Exposure Control Plan

• The plan must describe:
  o Tasks involving exposure to respirable crystalline silica
  o Engineering controls, work practices, and respiratory protection for each task
  o Housekeeping measures used to limit exposure
  o Procedures used to restrict access, when necessary to limit exposures
Construction – Competent Person

- Construction employers must designate a competent person to implement the written exposure control plan.
- *Competent person* is an individual capable of identifying existing and foreseeable respirable crystalline silica hazards, who has authorization to take prompt corrective measures.
- Makes frequent and regular inspection of job sites, materials, and equipment.
Construction – Medical Surveillance

• Employers must offer an initial or periodic medical examination to employees who will be required by the silica standard to wear a respirator for 30 or more days per year in the upcoming year (the next 365 days).
• Respirator use with past employers does not count toward the 30-day threshold.
Medical Opinion

• Worker receives *report* with detailed medical findings, any work restrictions, and recommendations concerning any further evaluation or treatment

• Employer receives an *opinion* that only describes limitations on respirator use, and if the worker gives written consent, recommendations on:
  - Limitations on exposure to respirable crystalline silica, and/or
  - Examination by a specialist
Communication of Hazards

• Employers required to comply with hazard communication standard (HCS) (29 CFR 1910.1200)
• Address: Cancer, lung effects, immune system effects, and kidney effects as part of HCS
• Train workers on health hazards, tasks resulting in exposure, workplace protections, the identity of the competent person, and the medical surveillance program
Recordkeeping

• Must maintain records per 29 CFR 1910.1020 for:
  o Air monitoring data
  o Objective data
  o Medical records
Construction – Compliance Dates

• Employers must comply with all requirements by June 23, 2017 (Delayed)

• Current date is September 23, 2017
MEMORANDUM FOR: REGIONAL ADMINISTRATORS

FROM: THOMAS GALASSI
Acting Deputy Assistant Secretary

SUBJECT Launch of Enforcement of the Respirable Crystalline Silica in Construction Standard, 29 CFR § 1926.1153

The Respirable Crystalline Silica construction standard, 29 CFR § 1926.1153, becomes enforceable on September 23, 2017. The standard establishes a new 8-hour time-weighted average (TWA) Permissible Exposure Limit (PEL) of 50 μg/m³, an action level (AL) of 25 μg/m³, and a host of ancillary requirements.

During the first 30 days of enforcement, OSHA will carefully evaluate good faith efforts taken by employers in their attempts to meet the new construction silica standard. OSHA will render compliance assistance and outreach to assure that covered employers are fully and properly complying with its requirements. Given the novelty of the Table 1 approach, OSHA will pay particular attention to assisting employers in fully and properly implementing the controls in the table. OSHA will assist employers who are making good faith efforts to meet the new requirements to assure understanding and compliance.

If, upon inspection, it appears an employer is not making any efforts to comply, OSHA’s inspection will not only include collection of exposure air monitoring performed in accordance with Agency procedures, but those employers may also be considered for citation. Any proposed citations related to inspections conducted in this time period will require National Office review.

To ensure effective implementation of the new standard, OSHA has developed interim inspection and citation guidance to be released prior to termination of this memorandum. The compliance directive will be finalized thereafter.

Regional offices are advised to contact the Office of Health Enforcement at 202-693-2190 with questions regarding enforcement of the new silica rule.
Guidance and Outreach

- Silica Rulemaking Webpage: www.osha.gov/silica
  - Fact sheets
  - FAQs
  - Video
- Appendix B – Medical Surveillance Guidelines
- Small Entity Compliance Guide
Provisions call for employers to electronically submit injury and illness data that they already record.

Why Is OSHA Issuing this rule?

This simple change in OSHA’s rulemaking requirements will improve safety for workers across the country. One important reason stems from our understanding of human behavior and motivation. Behavioral economics tells us that making injury information publicly available will “nudge” employers to focus on safety. And, as we have seen in many examples, more attention to safety will save the lives and limbs of many workers, and will ultimately help the employer's bottom line as well. Finally, this regulation will improve the accuracy of this data by ensuring that workers will not fear retaliation for reporting injuries or illnesses.

What does the rule require?

"Our new rule will 'nudge' employers to prevent work injuries to show investors, job seekers, customers and the public they operate safe and well-managed facilities. Access to injury data will also help OSHA better target compliance assistance and enforcement resources, and enable 'big data' researchers to apply their skills to making...
OSHA has provided a secure website that offers three options for data submission.

First, users are able to manually enter data into a webform.

Second, users are able to upload a CSV file to process single or multiple establishments at the same time.

Last, users of automated recordkeeping systems will have the ability to transmit data electronically via an API (application programming interface).
Injury Tracking Application Login

Log in or create an account.

Username or Email Address

Place email or username here

Password

Place password here

Forgot Password?

Log In

You are about to access a U.S. Government computer/information system. Access to this system is restricted to authorized users only. Unauthorized access, use, or modification of this computer system or of the data contained herein, or in transit to/from this system, may constitute a violation of Title 18, United States Code, Section 1030 and other federal or state criminal and civil laws. These systems and equipment are subject to monitoring to ensure proper performance of applicable security features or procedures. Such monitoring may result in the acquisition, recording and analysis of all data being communicated, transmitted, processed or stored in this system by a user.

If monitoring reveals possible misuse or criminal activity, notice of such may be provided to supervisory personnel and law enforcement officials as evidence.

Anyone who accesses a Federal computer system without authorization or exceeds their access authority, and by any means of such conduct obtains, alters, damages, destroys, or discloses information, or prevents authorized use of information on the computer, may be subject to fine or imprisonment, or both.
OSHA also published a notice of proposed rulemaking to extend the date by which certain employers are required to submit the information from their completed 2016 Form 300A electronically from July 1, 2017 to December 1, 2017.
OSHA was “...the instrument of a revolutionary law. I always looked upon it as ensuring Americans of a new right in the Bill of Rights — the right to a safe and healthful workplace.”

Morton Corn, PhD, CSP
OSHA Assistant Secretary
Ford Administration
QUESTIONS?