PURPOSE

The purpose of this manual is to serve as a guideline/resource for Field Management during training sessions on silica safety.

Information contained in this manual supplements and should be used to enhance the instruction and delivery of required learning objectives.

LEARNING OBJECTIVES

Provide training to introduce/reinforce the following learning objectives:

➢ Understand silica exposure risks and definitions
➢ Identify activities that may result in hazardous silica exposure
➢ Apply guidelines for controlling silica exposure
➢ Apply housekeeping requirements
➢ Execute written exposure control plans
➢ Enforce safety requirements and recordkeeping

TRAINING GUIDELINES

Before Training

➢ Familiarize yourself with the content
➢ Assess trainee’s understanding of content (beginner, moderate, advanced)
➢ Plan your training approach accordingly (hands on, lecture/philosophy, etc.)

During Training

➢ Utilize training references (PowerPoint, policy, etc.)
➢ Ensure participants are attentive
➢ Facilitate training using the Tell, Show, Do & Ask Model
  o Tell: Communicate what the expectation is
  o Show: Demonstrate how to complete the activity/process
  o Do: Allow them to perform the activity while you direct and provide feedback
  o Ask: Follow up immediately to ensure they understood the expectation

After Training

➢ Have participants sign the training sign in sheet
➢ Ensure training references are accessible (PowerPoint, policy, etc.)
➢ Document tasks that may generate silica dust via the site exposure control plan
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TRAINING CONTENT

USE THE SILICA EXPOSURE CONTROL PLAN & SILICA SAFETY PRESENTATION WHEN CONDUCTING TRAINING

OVERVIEW

- Explain that the purpose of PDI's silica safety policy is to:
  - ✓ provide awareness about silica exposure hazards
  - ✓ outline precautions to avoid hazardous levels of silica dust
  - ✓ identify common silica related work duties to minimize exposure in accordance with the OSHA Respirable Crystalline Silica standard

- Review the items all PDI employees and ITR subcontractors must abide by:
  - ✓ training directives
  - ✓ equipment requirements
  - ✓ material specifications

- Explain the origin of silica
  - ✓ Composed of soil, sand, granite and many other minerals (quartz is the most common form)
  - ✓ All materials containing silica can result in the presence of respirable silica particles when chipping, cutting, drilling or grinding
  - ✓ Silica exposure occurs through inhalation of silica containing particles

- Identify the health hazards that result from exposure to excessive silica dust over long periods of time:
  - ✓ silicosis
  - ✓ lung cancer
  - ✓ kidney disease
  - ✓ other respiratory diseases

- Review activities that may result in silica exposure
  - Abrasive blasting
  - Concrete crushing
  - Rock drilling
  - Drilling of concrete, blocks or bricks
  - Chipping of concrete, blocks or bricks
  - Tuckpointing of blocks or bricks
  - Moving or dumping of concrete or rocks
  - Using coatings containing silica
  - Jack hammering
  - Hoe ramming
  - Mixing of concrete, mortar or grout
  - Sawing of concrete, blocks or bricks
  - Demolition of concrete blocks or bricks
  - Grinding or polishing of concrete
  - Rock crushing
  - Removing coatings containing silica

DEFINITIONS

- Explain each definition associated with silica exposure:
  - ✓ Action Level
  - ✓ Assigned Protection Factor (APF)*
  - ✓ Competent Person
  - ✓ Employee Exposure
  - ✓ Engineering & Work Practice Controls
  - ✓ High-Efficiency Particulate Air (HEPA) Filter
  - ✓ Objective Data
  - ✓ Permissible Exposure Limit (PEL)
  - ✓ Respirable Crystalline Silica

*For example, an APF of 10 for a respirator means a user could expect to inhale no more than one tenth of the airborne contaminant present
CONTROLLING SILICA EXPOSURE

- Review each equipment/task listed on Table 1 (refer to Silica Exposure Control Plan) and identify the required:
  - ✓ engineering and work practice control methods
  - ✓ respiratory protection

  It is PDI policy to **not** perform work when a task hazard assessment requires the use of respiratory protection
  The use of jack hammers and hand held powered chipping tools shall be performed by a third party contractor
  **THIS IS MANDATORY!**

- Explain that if the total duration of all tasks worked is more than 4 hours, the required respiratory protection is the what’s listed in the > 4 hours/shift column

- Explain that scopes not listed on Table 1 will not be authorized without complete and proper implementation of:
  - ✓ engineering controls
  - ✓ work practices
  - ✓ respiratory protection

### HOUSEKEEPING

- Review prohibited activities that could contribute to employee exposure to respirable crystalline silica and acceptable solutions:
  - ✓ Dry sweeping/brushing
    - o SOLUTION: wet sweeping or mopping
  - ✓ Compressed air to clean clothing/surfaces
    - o SOLUTION: HEPA filtered vacuuming

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<table>
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<tr>
<th>Task Description</th>
<th>Engineering and Work Practice Control Methods</th>
<th>Respiratory Protection</th>
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<tbody>
<tr>
<td>Stationary:</td>
<td><strong>No</strong></td>
<td><strong>No</strong></td>
</tr>
<tr>
<td>Augmentation:</td>
<td><strong>No</strong></td>
<td><strong>No</strong></td>
</tr>
<tr>
<td>Hand tools &amp; equipment:</td>
<td><strong>No</strong></td>
<td><strong>No</strong></td>
</tr>
<tr>
<td>Dust collection:</td>
<td><strong>No</strong></td>
<td><strong>No</strong></td>
</tr>
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</table>

Post the Silica Exposure Control plan in the office trailer and/or material lockup for reference of proper equipment/tasks use

Tip! It is PDI policy to **not** perform work when a task hazard assessment requires the use of respiratory protection
The use of jack hammers and hand held powered chipping tools shall be performed by a third party contractor
**THIS IS MANDATORY!**
**WRITTEN EXPOSURE CONTROL PLAN**

- Review the items documented for Exposure Control Plans:
  - tasks that involve exposure to respirable crystalline silica
  - engineering controls, work practices, and respiratory protection
  - housekeeping measures used to limit exposure
  - procedures used to restrict access to work areas

- Explain that control plans must be:
  - created for all exposure related tasks
  - documented by a competent person (Foreman or Super)
  - signed off by applicable parties & workers

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**MEDICAL SURVEILLANCE**

- Explain that medical surveillance is available at no cost to employees who use a respirator for 30 or more days per year

**REMEMBER:** It is PDI policy to **not** perform work when a task hazard assessment requires the use of respiratory protection. The use of jack hammers and hand held powered chipping tools shall be performed by a third party contractor. **THIS IS MANDATORY!**

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**TRAINING & RECORD KEEPING**

- Explain that Silica Awareness Training is conducted initially upon hiring and to affected employees prior to working with silica
  - Employees must sign the Silica Exposure Training - Sign In Sheet to acknowledge they have read, understand and will comply with all Silica Exposure Control Plan requirements

- Ensure hazards for all silica-related tasks are documented using the Written Silica Exposure Control Plans (see above)
  - Plans must be signed off by applicable parties & workers
  - Failure to comply with the Silica Exposure Control Plan can result in disciplinary action, up to and including removal from the project and / or termination of employment.