

### Silica Health Hazard in Construction Industry

Time	Minutes	Topic/Activity	Lesson Plan	Terminal Learning Objectives	Enabling Learning Objectives
8:00-8:50	50	Introductions	Course Opening, Objectives, Introductions, Housekeeping, and Pre-test		
8:50-9:50	60	OSHA ACT, Silica Standard, Table 1, and Overview	<ul style="list-style-type: none"> <li>• Target audience</li> <li>• Provide training and education for workers and employers</li> <li>• Recognition, avoidance, and prevention of safety and health hazards in their workplaces</li> <li>• Inform employees of their rights and employers of their responsibilities under the OSH Act</li> <li>• How to file a complaint</li> </ul>	1) Students will be able to describe the purpose of the Susan Harwood Training Grant Program	1) Identify Workers Rights and Employer Responsibilities under the OSH Act 2) Recognize that employees have a right to voice safety and health concerns free from retaliation 3) Describe how to file a complaint
10 Minutes		Break			
10:00-11:30	90	Silica Health Hazard Information and Medical Surveillance	<ul style="list-style-type: none"> <li>• Major differences between the old versus new standards</li> <li>• Table entries or alternative exposure control methods (Table 1 in more detail below)</li> <li>• Respiratory protection (Respiratory protection in more detail below)</li> <li>• Housekeeping (Housekeeping in more detail below)</li> <li>• Written exposure control plan</li> <li>• Medical surveillance, including relevant important information for the worker, and why it is important to participate if they use a respirator for 30 or more days/year</li> <li>• Communication of respirable crystalline silica hazards to employees (More details below)</li> <li>• Recordkeeping</li> <li>• Effective dates with emphasis on June 23, 2017</li> </ul>	1) Trainees will be able to describe the requirements of the new silica standard for construction	1) Identify the major differences between the old and new silica standard 2) Identify the areas of the new standard that trainees should be concerned with
40 Minutes		Lunch			

### Silica Health Hazard in Construction Industry

Time	Minutes	Topic/Activity	Lesson Plan	Terminal Learning Objectives	Enabling Learning Objectives
12:10-1:40	90	Specific control Methods - Training and group activities	<ul style="list-style-type: none"> <li>• What is silica? Where is it found?</li> <li>• Briefly, particle size and clearance mechanisms</li> <li>• Oldest recognized occupational disease</li> <li>• What is silicosis? Pictures of silicosis versus healthy lung tissue</li> <li>• Other diseases: Lung cancer, COPD, Kidney disease</li> <li>• Activities that generate respirable silica. Examples, pictures, and discussion of participants' experiences</li> <li>• Hierarchy of Controls – engineering, administrative, and PPE using examples discussed in the new standard</li> </ul>	<ol style="list-style-type: none"> <li>1) Trainees will be able to discuss health hazards of respirable silica</li> <li>2) Trainees will be able to identify silica dust hazards and controls in the workplace</li> </ol>	<ol style="list-style-type: none"> <li>1) Identify health risks, both short and long-term, associated with silica exposure</li> <li>2) Identify activities likely to expose workers to silica exposure</li> <li>3) Identify the differences between engineering and administrative controls and PPE</li> </ol>

### Silica Health Hazard in Construction Industry

Time	Minutes	Topic/Activity	Lesson Plan	Terminal Learning Objectives	Enabling Learning Objectives
1:40-2:25	45	Respirator selection, use, and care and Lab -Part I	<ul style="list-style-type: none"> <li>• Based on the most common silica dust generating tasks found on a construction site - 18 tasks</li> <li>• Briefly discussion of each task. Survey participants to identify most common tasks they perform.</li> <li>• Difference between those who "are" or "are not" engaged in a task.</li> <li>• Instructor gives a task scenario and describes how engineering controls, work practices, and respiratory protection specified for the task were fully and properly implemented</li> <li>• Group activity using a task specific scenario. What questions should a worker ask before beginning the task? The task and time is specified, equipment is specified, manufacturer materials are provided, etc. Are the engineering controls, work practices, and respiratory protection specified for the task fully and properly implemented? How and why?</li> <li>• Group activity using a task specific scenario. What questions should a worker ask before beginning the task? The task and time is specified, equipment is specified, manufacturer materials are provided, etc. Are the engineering controls, work practices, and respiratory protection specified for the task fully and properly implemented? How and why?</li> <li>• Optional Group activity using a task specific scenario, however, only the task and time is specified. The student should identify the engineering controls,</li> </ul>	1) Trainees will be able to describe the requirements for Table 1 tasks	1) Identify the significance of including the specified exposure control methods 2) Identify tasks likely to expose workers to silica exposure 3) Identify ways to avoid and abate hazards associated with silica exposure 4) Identify requirements for engineering controls 5) Identify appropriate work practice controls 6) Identify requirements for respiratory protection
10 Minutes	Break				

### Silica Health Hazard in Construction Industry

Time	Minutes	Topic/Activity	Lesson Plan	Terminal Learning Objectives	Enabling Learning Objectives
2:35-3:20	45	Respirator selection, use, and care and Lab -Part II	<ul style="list-style-type: none"> <li>• Relevant respiratory protection requirements per 1910.134. Required versus voluntary use. Briefly, fit testing, medical evaluation, maintenance/care, and training requirements for required use.</li> <li>• Course instruction on different types of respirators likely to be encountered on the jobsite, i.e. particulate filtering facepiece (N95), half and full face elastomeric respirators</li> <li>• Instruction on how to don and doff the different types of respirators</li> <li>• Instruction on how to maintain and care for the respirator, i.e. particulate filtering facepiece (N95) versus elastomeric respirators</li> <li>• Instructions on when the respirator or cartridge should be replaced, i.e. what to look out for</li> <li>• Instruction on how to perform user seal checks of different types including particulate filtering facepiece (N95) per manufacturer's recommendations.</li> <li>• Hands on activity to demonstrate how to perform user seal checks of a particulate filtering facepiece (N95) per manufacturer's recommendations</li> </ul>	1) Trainees will be able to demonstrate knowledge and use of proper respiratory protection equipment	<ol style="list-style-type: none"> <li>1) Identify various types of PPE used to reduce health hazards associated with silica exposure</li> <li>2) Identify importance of respiratory protection</li> <li>3) Identify proper use of respiratory protection</li> <li>4) Identify when to perform and how to perform a user seal check</li> <li>5) Identify how to maintain and care for respiratory protection</li> <li>6) Identify when it is time to replace/change a respirator</li> </ol>

### Silica Health Hazard in Construction Industry

Time	Minutes	Topic/Activity	Lesson Plan	Terminal Learning Objectives	Enabling Learning Objectives
3:20-4:00	40	Housekeeping Techniques	<ul style="list-style-type: none"> <li>• Course instruction on what housekeeping techniques are ideal, i.e. HEPA vacuum, wet sweeping, and other methods that minimize the likelihood of dust generation</li> <li>• Course instruction on what housekeeping techniques are not allowed unless proven infeasible</li> <li>• Class discussions on infeasibility</li> <li>• Group activity or class discussion to identify measures that might be allowed given a situation</li> <li>• Group activity or class discussion to identify measures that could be considered as a better alternative</li> </ul>	1) Trainees will be able to identify appropriate housekeeping techniques to reduce risk of silica dust exposure	1) Identify what housekeeping techniques are allowed and not allowed 2) Identify when housekeeping measures are inappropriate and/or ineffective 3) Identify appropriate alternatives to wet sweeping or HEPA vacuuming
4:00-4:30	30	Post-test and course evaluation			
<b>Total Contact Hours</b>		<b>7.5</b>			