



5420 Bay Center Dr. Suite 100
 Tampa, FL 33609
 Phone: 813.626.8156
www.ohcnet.com

1926.1153 Respirable Crystalline Silica Synopsis of the Standard

<i>(a) Scope</i>	This section applies to all occupational exposures to respirable crystalline silica in construction work, except where employee exposure will remain below 25 micrograms per cubic meter of air (25 $\mu\text{g}/\text{m}^3$) as an 8-hour time-weighted average (TWA) under any foreseeable conditions.
<i>Effective Dates</i>	This standard shall become effective June 23, 2016. All obligation of the standard shall become effective June 23, 2017 except requirements for sample analysis. Requirements for sample analysis become effective June 23, 2018.
<i>(c) Specified exposure control methods</i>	For each employee engaged in a task identified on Table 1, the employer shall fully and properly implement the engineering controls, work practices, and respiratory protection specified for the task on Table 1, unless the employer assesses and limits the exposure of the employee to respirable crystalline silica in accordance with paragraph (d) of this section.
<i>(d) Alternative Exposure Control Method</i>	Only required for tasks not listed in Table 1, or where the employer does not fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1 (see table I below):
<i>Permissible Exposure Limits</i>	Action Level- 25 $\mu\text{g}/\text{m}^3$ PEL- 50 $\mu\text{g}/\text{m}^3$
<i>Exposure assessment</i>	<p>The employer shall perform initial monitoring, on a representative number of employees, to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the exposures of employees on each shift, for each job classification, in each work area.</p> <p>If exposure monitoring is below the action level, then employer may discontinue monitoring for those employees.</p> <p>If employees exposure level are above the action level but below the PEL then employer shall repeat monitoring within six months of initial monitoring.</p> <p>If employees exposure level are above the PEL then employer shall repeat monitoring within three months.</p>

	<p>If employee exposure level on follow up monitoring indicate employee exposure level below the action level, then employer repeat such monitoring within six months of the most recent monitoring until two consecutive monitoring, taken seven or more days apart, are below the action level, then the employer may discontinue monitoring.</p> <p>Employer shall repeat exposure monitoring whenever there is change in the production, process, control equipment, personnel or work practices that may reasonably be expected to result in exposure above the action level.</p>
<p><i>Employee notification of assessment results</i></p>	<p>Within five working days after completing an exposure assessment the employer shall individually notify each affected employee in writing of the results of that assessment or post the results in an appropriate location accessible to all affected employees.</p> <p>Whenever an exposure assessment indicates that employee exposure is above the PEL, the employer shall describe in the written notification the corrective action being taken to reduce employee exposure to or below the PEL</p>
<p><i>Observation of monitoring</i></p>	<p>Where air monitoring is performed, the employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to respirable crystalline silica.</p> <p>When observation of monitoring requires entry into an area where the use of protective clothing or equipment is required for any workplace hazard, the employer shall provide the observer with protective clothing and equipment at no cost and shall ensure that the observer uses such clothing and equipment.</p>
<p><i>Methods of compliance</i></p>	<p><i>Engineering and work practice controls:</i> The employer shall use engineering and work practice controls to reduce and maintain employee exposure to respirable crystalline silica to or below the PEL, unless the employer can demonstrate that such controls are not feasible. Wherever such feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, the employer shall nonetheless use them to reduce employee exposure to the lowest feasible level and shall supplement them with the use of respiratory protection that complies with the requirements of paragraph (e) of this section.</p> <p><i>Abrasive blasting:</i> In addition to the requirements of paragraph (d)(3)(i) of this section, the employer shall comply with other OSHA standards, when applicable, such as 29 CFR 1926.57 (Ventilation), where abrasive blasting is conducted using crystalline silica-containing blasting agents, or where abrasive blasting is conducted on substrates that contain crystalline silica.</p>

<i>(e) Respiratory protection</i>	<p>Where respiratory protection is required by this standard, the employer must provide each employee an appropriate respirator that complies with the requirements of this paragraph and 29 CFR 1910.134. Respiratory protection is required:</p> <ol style="list-style-type: none"> 1. Where specified by Table 1 of paragraph (c) of this section; or 2. For tasks not listed in Table 1, or where the employer does not fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1: 3. Where exposures exceed the PEL during periods necessary to install or implement feasible engineering and work practice controls; 5. Where exposures exceed the PEL during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible; and 6. During tasks for which an employer has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce exposures to or below the PEL.
<i>Respiratory protection program</i>	<p>Where respirator use is required by this section, the employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134.</p>
<i>Specified exposure control methods</i>	<p>For the tasks listed in Table 1 in paragraph (c) of this section, if the employer fully and properly implements the engineering controls, work practices, and respiratory protection described in Table 1, the employer shall be considered to be in compliance with the respiratory protection of this section and the requirements for selection of respirators in 29 CFR 1910.134(d)(1)(iii) and (d)(3) with regard to exposure to respirable crystalline silica.</p>
<i>(f) Housekeeping</i>	<p>The employer shall not allow dry sweeping or dry brushing where such activity could contribute to employee exposure to respirable crystalline silica unless wet sweeping, HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure are not feasible.</p> <p>The employer shall not allow compressed air to be used to clean clothing or surfaces where such activity could contribute to employee exposure to respirable crystalline silica unless:</p> <ol style="list-style-type: none"> (i) The compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air; or (ii) No alternative method is feasible.

<p><i>(g) Written exposure control plan</i></p>	<p>1. The employer shall establish and implement a written exposure control plan that contains at least the following elements:</p> <p>(i) A description of the tasks in the workplace that involve exposure to respirable crystalline silica;</p> <p>(ii) A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task;</p> <p>(iii) A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica; and</p> <p>(iv) A description of the procedures used to restrict access to work areas, when necessary, to minimize the number of employees exposed to respirable crystalline silica and their level of exposure, including exposures generated by other employers or sole proprietors.</p> <p>2. The employer shall review and evaluate the effectiveness of the written exposure control plan at least annually and update it as necessary.</p> <p>3. The employer shall make the written exposure control plan readily available for examination and copying, upon request, to each employee covered by this section, their designated representatives, the Assistant Secretary and the Director.</p> <p>4. The employer shall designate a competent person to make frequent and regular inspections of job sites, materials, and equipment to implement the written exposure control plan.</p>
<p><i>(g) Medical surveillance</i></p>	<p>The employer shall make medical surveillance available at no cost to the employee, and at a reasonable time and place, for each employee exposed above the PEL or who will be required under this section to use a respirator for 30 or more days per year.</p> <p>The employer shall ensure that all medical examinations and procedures required by this section are performed by a PLHCP as defined in paragraph (b) of this section.</p> <p>Initial examination: The employer shall make available an initial (baseline) medical examination within 30 days after initial assignment, unless the employee has received a medical examination that meets the requirements of this section within the last three years. The examination shall consist of:</p> <p>(i) A medical and work history, with emphasis on: Past, present, and anticipated exposure to respirable crystalline silica, dust, and other agents affecting</p>

	<p>the respiratory system; any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing); history of tuberculosis; and smoking status and history;</p> <ul style="list-style-type: none"> (ii) A physical examination with special emphasis on the respiratory system; (iii) A chest X-ray (a single posteroanterior radiographic projection or radiograph of the chest at full inspiration recorded on either film (no less than 14 x 17 inches and no more than 16 x 17 inches) or digital radiography systems), interpreted and classified according by a NIOSH-certified B Reader; (iv) A pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV₁) and FEV₁/FVC ratio, administered by a spirometry technician with a current certificate from a NIOSH-approved spirometry course; (v) Testing for latent tuberculosis infection; and (vi) Any other tests deemed appropriate by the PLHCP. <p>Periodic examinations: The employer shall make available medical examinations that include the procedures described above, except testing for latent tuberculosis, at least every three years, or more frequently if recommended by the PLHCP.</p> <p>Information provided to the PLHCP: The employer shall ensure that the examining PLHCP has a copy of this standard, and shall provide the PLHCP with the information regarding employee's potential exposure and previous medical records.</p>
<p><i>PLHCP's written medical report for the employee</i></p>	<p>The employer shall ensure that the PLHCP explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of each medical examination performed. The written report shall contain the results of the examination, any condition that would restrict the employee from exposure to Crystalline Silica or respiratory protection and any referral to a specialist.</p>
<p><i>PLHCP's written medical opinion for the employer</i></p>	<p>The employer shall obtain a written medical opinion from the PLHCP within 30 days of the medical examination.</p>

	The employer shall ensure that each employee receives a copy of the written medical opinion within 30 days of each medical examination performed.
Additional examinations	<p>If the PLHCP's written medical opinion indicates that an employee should be examined by a specialist, the employer shall make available a medical examination by a specialist within 30 days after receiving the PLHCP's written opinion.</p> <p>The employer shall ensure that the examining specialist is provided with all of the information that the employer is obligated to provide to the PLHCP listed above.</p> <p>The employer shall ensure that the specialist explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of the examination.</p> <p>The employer shall obtain a written opinion from the specialist within 30 days of the medical examination.</p>
(i) Communication of respirable crystalline silica hazards to employees	The employer shall include respirable crystalline silica in the hazard communication program. The employer shall ensure that each employee has access to labels on containers of crystalline silica and safety data sheets, and is trained in accordance with the provisions of HCS and paragraph (i)(2) of this section. The employer shall ensure that at least the following hazards are addressed: Cancer, lung effects, immune system effects, and kidney effects.
(j) Recordkeeping	<p>Air monitoring data- 30 years</p> <p>Objective Data- 30 years</p> <p>Medical Records- 30 years plus duration of employment.</p>
<p><i>This synopsis was prepared by James F. Rizk, CIH. This only represent a summary of the standard. To access the final rule on the Federal Register click here:</i></p> <p><u>https://www.federalregister.gov/articles/2016/03/25/2016-04800/occupational-exposure-to-respirable-crystalline-silica</u></p> <p>If you need additional information, please contact OHC at 813.626.8156</p>	

See below table I

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	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None.
(ii) Handheld power saws (any blade diameter).	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions: —When used outdoors —When used indoors or in an enclosed area	None APF 10	APF 10. APF 10.
(iii) Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less).	For tasks performed outdoors only: Use saw equipped with commercially available dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency.	None.	None.
(iv) Walk-behind saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions: —When used outdoors —When used indoors or in an enclosed area	None APF 10	None. APF10.
(v) Drivable saws	For tasks performed outdoors only: Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None.
(vi) Rig-mounted core saws or drills.	Use tool equipped with integrated water delivery system that supplies water to cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None.
(vii) Handheld and stand-mounted drills (including impact and rotary hammer drills).	Use drill equipped with commercially available shroud or cowling with dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 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. Use a HEPA-filtered vacuum when cleaning holes.	None	None.
(viii) Dowel drilling rigs for concrete	For tasks performed outdoors only: 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. Use a HEPA-filtered vacuum when cleaning holes.	APF 10	APF 10.
(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. OR Operate from within an enclosed cab and use water for dust suppression on drill bit.	None	None.
(x) Jackhammers and handheld powered chipping tools.	Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact: —When used outdoors —When used indoors or in an enclosed area OR Use tool equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None APF 10	APF 10. APF 10.

<p>(xi) Handheld grinders for mortar removal (<i>i.e.</i>, tuckpointing).</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: —When used outdoors —When used indoors or in an enclosed area</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>	<p>None APF 10 APF 10</p>	<p>APF 10. APF 10. APF 25.</p>
<p>(xii) Handheld grinders for uses other than mortar removal.</p>	<p>For tasks performed outdoors only: 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>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: —When used outdoors —When used indoors or in an enclosed area</p>	<p>None</p>	<p>None.</p>
<p>(xiii) Walk-behind milling machines and floor grinders.</p>	<p>Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>OR</p> <p>Use machine equipped with dust collection system recommended by the manufacturer.</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 manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism.</p> <p>When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes.</p>	<p>None None None</p>	<p>None. APF10. None.</p>
<p>(xiv) Small drivable milling machines (less than half-lane).</p>	<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>	<p>None</p>	<p>None</p>
<p>(xv) Large drivable milling machines (half-lane and larger).</p>	<p>For cuts of any depth on asphalt only: 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>For cuts of four inches in depth or less on any substrate: 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>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>	<p>None None</p>	<p>None. None.</p>
<p>(xvi) Crushing machines</p>	<p>Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (<i>e.g.</i>, 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>	<p>None</p>	<p>None</p>

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
			.
(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.