

5204. Occupational Exposures to Respirable Crystalline Silica.

NOTE: Contents

- (a) Scope and Application**
- (b) Definitions**
- (c) Permissible Exposure Limit**
- (d) Exposure Assessment**
- (e) Regulated Areas**
- (f) Methods of compliance**
- (g) Imminent Hazards.**
- (h) Respiratory protection.**
- (i) Housekeeping.**
- (j) Medical Surveillance**
- (k) Medical Removal**
- (l) Communication of silica hazards**
- (m) Reporting of silicosis**
- (n) Recordkeeping**

(a) Scope and application.

(1) This section applies to all occupational exposures to respirable crystalline silica, except:

- (A) Construction work covered under Section 1532.3;
- (B) Agricultural operations covered under Section 3436; and
- (C) Exposures that result from the processing of sorptive clays.

(2) This section does not apply where the employer has objective data demonstrating that employee exposure to respirable crystalline silica 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.

EXCEPTION: Subsection (a)(2) does not apply to high-exposure trigger tasks, as defined in subsection (b).

(3) This section applies to high-exposure trigger tasks regardless of employee exposures, exposure assessments, or objective data.

~~(4)~~ This section does not apply if the employer complies with Section 1532.3 and:

- (A) The task performed is indistinguishable from a construction task listed on Table 1 in subsection (c) of Section 1532.3; and
- (B) The task will not be performed regularly in the same environment and conditions.

(b) Definitions. For the purposes of this section the following definitions apply:

(1) “Action Level” means a concentration of airborne respirable crystalline silica of $25 \mu\text{g}/\text{m}^3$, calculated as an 8-hour TWA.

(2) “Artificial Stone” means any reconstituted, artificial, synthetic, composite, engineered, or manufactured stone, porcelain, or quartz. ~~It is commonly made by binding crushed or pulverized stone with adhesives, polymers, epoxies, resins, or other binding materials to form a slab. Also called, but not limited to quartz, quartzite, quartzitic sandstone, engineered stone and manufactured stone.~~

~~Exception: Materials demonstrated to contain 1% or less crystalline silica.~~

(3) “Chief” means the Chief of the Division of Occupational Safety and Health, or designee.

(4) “Confirmed Silicosis” means any one of the following:

(A) A written diagnosis of silicosis is made by a licensed physician accompanied by one or more of the following:

1. A chest radiograph, interpreted by an individual certified by NIOSH as a B reader, classifying the existence of pneumoconioses of category 1/0 or higher; or

2. Results from a computer tomography or other imaging technique that are consistent with silicosis; or

3. Lung biopsy findings consistent with silicosis; or

(B) Death certificate listing silicosis or pneumoconiosis due to dust containing silica as an underlying or contributing cause of death; or

(C) Exposure to airborne respirable crystalline silica accompanied by one or more of the following:

1. Chest radiograph (or other radiographic image, such as computed tomography) showing abnormalities interpreted as consistent with silicosis; or

2. Lung histopathology consistent with silicosis.

(5) “Director” means the Director of the National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, or designee.

(6) “Effective” means employee exposure to airborne respirable silica is demonstrated to be less than the action level.

(7) “Employee Exposure” means the exposure to airborne respirable crystalline silica that would occur if the employee were not using a respirator.

(8) “High-efficiency Particulate Air (HEPA)” Filter means a filter that is at least 99.97 percent efficient in removing mono-dispersed particles of 0.3 micrometers in diameter.

(9) “High-exposure trigger task” means machining, crushing, cutting, drilling, abrading, abrasive blasting, grinding, chipping, chiseling, carving, gouging, polishing, buffing, fracturing, or breaking artificial stone that contains any amount of more than 1 percent crystalline silica, or for natural stone that contains more than 1040 percent by weight crystalline silica. High-exposure trigger tasks include clean up, disturbing, or handling of wastes, dusts, residues, debris, or other materials created during the above-listed tasks.

EXCEPTION: Geologic field research is not a high-exposure trigger tasks where employees work in the field with natural stone for less than 30 days in a 12-month period and use respiratory protection in accordance with section 5144 during such work.

~~**Negative pressure enclosure (NPE) means a barrier surrounding the area where high exposure trigger task are performed with the following specifications:**~~

~~**(A) The NPE may be of any configuration;**~~

~~**(B) At least 4 air changes per hour shall be maintained in the NPE;**~~

~~**(C) A minimum of -0.02 column inches of water pressure differential, relative to outside pressure, shall be maintained within the NPE as evidenced by manometric measurements;**~~

~~**(D) The NPE shall be kept under negative pressure at all times when high exposure trigger tasks are performed; and**~~

~~**(E) Air movement shall be directed away from employees within the enclosure, and toward a HEPA filtration or a collection device.**~~

(10) “Objective Data” means information, such as air monitoring data from industry-wide surveys or calculations based on the composition of a substance, demonstrating 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 closely resembling or with a higher exposure potential than the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

(11) “Physician or Other Licensed Health Care Professional (PLHCP)” means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all of the particular health care services required by subsection **(j)** ~~and~~ **(k)**.

(12) “Regulated Area” means an area, demarcated by the employer, where an employee's exposure to airborne concentrations of respirable crystalline silica exceeds, or can reasonably be expected to exceed, the PEL.

(13) “Respirable Crystalline Silica” means quartz, cristobalite, and/or tridymite contained in airborne particles that are determined to be respirable by a sampling device designed to meet the characteristics for respirable-particle-size-selective samplers specified in the International Organization for Standardization (ISO) 7708:1995: Air Quality - Particle Size Fraction Definitions for Health-Related Sampling.

(14) “Specialist” means an American Board Certified Specialist in Pulmonary Disease or an American Board Certified Specialist in Occupational Medicine.

(15) “Supervising physician” means the occupational or pulmonary medicine physician who is:

(A) An American Board Certified Specialist in Pulmonary Disease or an American Board Certified Specialist in Occupational Medicine;

(B) Knowledgeable about spirometry, pulmonary disease, surveillance for occupational disease, the diagnosis and management of occupational disease, and the requirements of this standard; and

(C) ~~Responsible for administering for~~ The administrator, on behalf of the employer, of all the medical program requirements described in subsections **(j) and **(k)**, as well as all applicable medical guidelines, for places of employment where high-exposure trigger tasks occur.**

(16) “Suspected silicosis” means any one of the following:

(A) An employee with respirable crystalline silica exposure who has one or more of the following symptoms for ~~14~~ seven or more days: cough, difficult breathing, fatigue, shortness of breath, chest pain, weakness, fever or unexplained weight loss, ~~shortness of breath, difficulty breathing, weakness, fatigue, fever, cough, chest pain, or unexplained weight loss~~ unless symptom is explained by another illness; or

(B) An employee with respirable crystalline silica exposure and radiological or other imaging findings suggestive of silicosis regardless of symptoms that is not yet a confirmed silicosis case; or

(C) An employee with respirable crystalline silica exposure with abnormal spirometry regardless of symptoms that is not yet a confirmed silicosis case.

(17) “This Section” means this respirable crystalline silica standard, Section 5204.

(18) “Wet methods” means **effectively** suppressing dust by one of the following:

(A) Applying a constant, continuous, and appropriate volume of running water directly onto the surface of the work object. When water flow is integrated with a tool, machine, or equipment, water flow rates shall equal or exceed manufacturer recommendations and specifications to ensure effective dust suppression. ~~or~~

(B) Submersing the work object underwater.

(C) Water jet cutting (use of high pressure water to cut material).

Regardless of the method used, water must cover the entire surface of the work object where a tool, equipment, or machine is contacting the work object.

(c) Permissible exposure limit (PEL). The employer shall ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of $50 \mu\text{g}/\text{m}^3$, calculated as an 8-hour TWA.

(d) Exposure assessment.

(1) General. The employer shall assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level in accordance with either the performance option in subsection (d)(2) or the scheduled monitoring option in subsection (d)(3). **High exposure trigger tasks shall be presumed to expose employees over the permissible exposure limit.**

(2) Performance option. The employer shall assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica. **Subsection (d)(2) does not apply to high exposure trigger tasks, which shall use scheduled monitoring in accordance with subsection (d)(3).**

(3) Scheduled monitoring option.

(A) The employer shall perform initial monitoring 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. Where several employees perform the same tasks on the same shift **on the same material** and in the same work area, the employer may sample a representative fraction of these employees in order to meet this requirement. In representative sampling, the employer shall sample the employee(s) who are expected to have the highest exposure to respirable crystalline silica.

(B) If initial monitoring indicates that employee exposures are below the action level, the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring. **However, monitoring shall not be discontinued for high-exposure trigger tasks. For high-exposure trigger tasks, monitoring shall be repeated at least every 12 months or more frequently as otherwise required in this section.**

(C) Where the most recent exposure monitoring indicates that employee exposures are at or above the action level but at or below the PEL, the employer shall repeat such monitoring within six months of the most recent monitoring.

(D) Where the most recent exposure monitoring indicates that employee exposures are above the PEL, the employer shall repeat such monitoring within three months of the most recent monitoring.

(E) Where the most recent (non-initial) exposure monitoring indicates that employee exposures are below the action level, the employer shall repeat such monitoring within six months of the most recent monitoring until two consecutive measurements, taken 7 or more days apart, are below the action level, at which time the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring, except as otherwise provided in subsection (d)(4). **However, monitoring shall not be discontinued for high-exposure trigger tasks. For high-exposure trigger tasks, monitoring shall be repeated at least every 12 months or more frequently as otherwise required in this section.**

(4) Reassessment of exposures. The employer shall reassess exposures whenever a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional exposures at or above the action level, or when the employer has any reason to believe that new or additional exposures at or above the action level have occurred.

(5) Methods of sample analysis. The employer shall ensure that all samples taken to satisfy the monitoring requirements of subsection (d) are evaluated by a laboratory that analyzes air samples for respirable crystalline silica in accordance with the procedures in Appendix A to this section.

(6) Employee notification of assessment results.

(A) Within 15 working days after completing an exposure assessment in accordance with subsection (d), 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.

(B) 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.

(7) Observation of monitoring.

(A) Where air monitoring is performed to comply with the requirements of this section, the employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to respirable crystalline silica.

(B) 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.

(e) Regulated areas.

(1) Establishment. The employer shall establish a regulated area wherever an employee's exposure to airborne concentrations of respirable crystalline silica is, or can reasonably be expected to be, in excess of the PEL. **All high-exposure trigger tasks shall be conducted within a regulated area regardless of employee exposures, exposure assessments, or other objective data.**

(2) Demarcation.

(A) The employer shall demarcate regulated areas from the rest of the workplace in a manner that minimizes the number of employees exposed to respirable crystalline silica within the regulated area.

(B) The employer shall post signs at all entrances to regulated areas that bear the legend specified in subsection (i)(2).

(3) Access. The employer shall limit access to regulated areas to:

(A) Persons authorized by the employer and required by work duties to be present in the regulated area;

(B) Any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring procedures under subsection (d); and

(C) Any person authorized by the Occupational Safety and Health Act or regulations issued under it to be in a regulated area.

(4) Provision of respirators. The employer shall provide each employee and the employee's designated representative entering a regulated area with an appropriate respirator in accordance with subsection (h) and shall require each employee and the employee's designated representative to use the respirator while in a regulated area.

(f) Methods of compliance.

(1) Engineering and work practice controls. 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 subsection (h). **Subsection (f)(1) does not apply to high-exposure trigger tasks, which are covered by subsection (f)(2).**

(2) The employer shall use the following engineering controls and work practices for all high-exposure trigger tasks, regardless of employee exposures, exposure assessments, or objective data.

(A) Engineering Controls. Engineering controls are required at all times for all tasks without exception.

1. Effective wet methods, as defined in subsection (b), shall be used.

2. Where the employer demonstrates wet methods are not possible, the employer shall use effective local exhaust ventilation in accordance with section 5143 and manufacturer recommendations on abrasive disc saws, grinders, sanders, polishers, and other equipment. All local exhaust ventilation shall be equipped with HEPA filtered dust collection systems or water-based dust collection systems that provide equivalent or better dust collection efficiency.

(B) Housekeeping.

1. Wastes, dusts, residues, debris, or other materials that are generated from high-exposure trigger tasks or that otherwise contain or are contaminated with respirable crystalline silica shall be promptly and properly cleaned-up and placed into leak-tight containers, bags, or equivalent. At a minimum, all such wastes, dusts, residues, debris, or other materials shall be cleaned-up at the end of each shift ~~or~~ and more frequently as needed to ensure there is no visible dust build-up in the workplace.

2. Wet methods or vacuum cleaners equipped with HEPA filters shall be used to collect all wastes, dusts, residues, debris, or other materials that are generated from high-exposure trigger tasks or that otherwise contain or are contaminated with respirable crystalline silica.

3. Employees engaged in housekeeping tasks shall use respirator protection in accordance with subsection (h)(3).(C) Hygiene. For each employee engaged in high exposure trigger tasks or who works within the regulated area:

1. The employer shall provide employees clean work clothing at the start of each shift at no cost to the employee. The employer shall ensure that employees do not take work clothing outside of the workplace.

2. The employer shall provide clean changing facilities to allow employees to change into and out of work clothing.

3. In addition to work clothing, employees who engage in high-exposure trigger tasks shall wear a full-length, water-impermeable apron, which shall be provided by the employer at no cost to the employee. Aprons shall be rinsed off with water before breaks and at the end of each shift.

Exception: Water impermeable aprons are not required where local exhaust ventilation is used in lieu of wet methods in accordance with subsection (f)(2)(A) Engineering Controls and employees are not exposed to wet methods.

4. The employer shall provide readily accessible washing facilities in accordance with section 3366 (Washing Facilities).

~~**(C) All processes producing respirable crystalline silica shall be enclosed or isolated in negative pressure enclosures.**~~

~~**(D) The regulated area shall be properly ventilated in such a way as to move contaminated air away from the breathing zone of employees and toward a filtration or collection device equipped with a HEPA filter.**~~

~~**(D)**~~ **(E) The Division may require the employer to take additional actions to protect employees through the issuance of an Order to Take Special Action in accordance with section 332.3.**

~~**(E)**~~ **(F) Prohibitions. The following practices are prohibited for high-exposure trigger tasks, regardless of exposure levels.**

~~**1. Use of abrasive disc saws, grinders, sanders, polishers, or other equipment that are not equipped with local exhaust ventilation and a HEPA filtered dust collection system.**~~

~~**Exception to subsection (f)(2)(F)1. Local exhaust ventilation is not required during tasks where the employer has demonstrated that exposures during these tasks are continuously maintained below the action level through representative air sampling conducted at least once every six months and in accordance with subsection (d)(3)(A).**~~

~~**2. Use of compressed air on respirable crystalline silica.**~~

~~**3. Use of compressed air on waste, dust, debris, residue, or other materials or objects that may contain respirable crystalline silica.**~~

1. Any use of compressed air:

- a. On waste, dust, debris, residue, or other materials that may contain crystalline silica; and
- b. On any surface or clothing or body surface that may contain crystalline silica; and
- c. To back flush, backwash, or clean water, air, or other type filters that may contain crystalline silica.

2. Dry sweeping, shoveling, disturbing, or other dry clean-up of wastes, dusts, debris, or other materials that are generated during high exposure trigger tasks or that may be otherwise likely to contain respirable crystalline silica.

3. Use of employee rotation as a means of reducing employee exposure to respirable crystalline silica.

4. Walking or moving equipment on or through dry dust, debris, residue, or other materials that may contain crystalline silica.

~~(G) Imminent Hazards. High exposure trigger tasks performed without wet methods and or respiratory protection in accordance with subsection (g) shall be considered an imminent hazard and subject to an Order Prohibiting Use from the Division.~~

(32) Written exposure control plan.

(A) The employer shall establish and implement a written exposure control plan that contains at least the following elements:

1. A description of the tasks in the workplace that involve exposure to respirable crystalline silica;
2. A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task; and
3. A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica.

(B) The employer shall review and evaluate the effectiveness of the written exposure control plan at least annually and update it as necessary.

(C) 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 Chief, and the Director.

(D) In addition to the requirements of subsections (f)(3)(A) through (f)(3)(C), workplaces where high-exposure trigger tasks occur shall also include the following in their written exposure control plan:

~~1. A record of exposure measurements to demonstrate that wet methods and other engineering controls continuously maintain exposure levels below the action level.~~

~~2. A weekly record of measurements or tests to confirm that regulated areas are under negative pressure.~~

23. Written procedures for the proper donning and doffing of personal protective equipment, including work clothing and respiratory protection, to effectively prevent exposures to respirable crystalline silica and prevent take-home exposures.

34. Documentation of proper reporting to the Division, pursuant to section 5203, Carcinogen Report of Use Requirements.

Note: Respirable Crystalline Silica is a known human carcinogen according to the International Agency for Research on Cancer (IARC), the U.S. Department of Health and Human Services National Toxicology Program, and others. Respirable Crystalline Silica is a regulated carcinogen per section 5203.

45. Documentation of an agreement with the Supervising Physician who will perform or oversee medical surveillance exams as required by this Section, and documentation that the Supervising Physician meets the requirements in (i)(1)(D).

5. The procedures the employer will use to ensure that employees are properly trained to prevent silica exposures, in accordance with subsection (l)(4).

(43) Abrasive blasting. In addition to the requirements of subsection (f)(1), the employer shall comply with other Title 8 standards, when applicable, such as Section 5143 (General Requirements of Mechanical Ventilation Systems) and Section 5151 (Ventilation and Personal Protective Equipment Requirements for Abrasive Blasting Operations), where abrasive blasting is conducted using crystalline silica-containing blasting agents, or where abrasive blasting is conducted on substrates that contain crystalline silica.

(g) Imminent Hazards. Failure to comply with any of the following subsections shall be considered an imminent hazard and may be subject to an Order Prohibiting Use from the Division:

(1) Subsection (f)(2)(A) Engineering Controls;

(2) Subsection (f)(2)(D) Prohibitions;

(3) Subsection (h)(3) Respiratory Protection;

(4) Subsection (k) Medical Removal;

(5) Carcinogen reporting: Failing to report carcinogen use to Cal/OSHA, as required under section 5203.

(h) Respiratory protection.

(1) General. Where respiratory protection is required by this section, the employer must provide each employee an appropriate respirator that complies with the requirements of this subsection and Section 5144. Respiratory protection is required:

(A) Where exposures exceed the PEL during periods necessary to install or implement feasible engineering and work practice controls;

(B) Where exposures exceed the PEL during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible;

(C) 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; and

(D) During periods when the employee is in a regulated area.

(2) Subsection (h)(1) does not apply to high-exposure trigger tasks, which are covered by subsection (h)(3).

(3) When employees perform high-exposure trigger tasks or work within a regulated area where high-risk exposure tasks occur, the employer shall provide, and shall ensure that employees properly use, the following respiratory protection, in accordance with section 5144:

(A) A full face, tight-fitting powered-air purifying respirator (PAPR) or a respirator providing equal or greater protection equipped with a HEPA, N100, R100, or P100 filter. For artificial stone, a HEPA, N100, R100, or P100 filter and organic vapor cartridge shall be used.

EXCEPTION 1: The organic vapor cartridge may be omitted where the employer demonstrates that there are no exposures over the permissible exposure limit established in section 5155 for any organic compound known to be present in the artificial stone, based on information provided in the manufacturer's safety data sheet.

EXCEPTION 2: The employer may provide employees with a loose-fitting PAPR, a full facepiece air-purifying respirator, or another respirator providing equal or greater protection where the employer demonstrates that employee exposures to respirable crystalline silica are continuously maintained below the action level through representative air sampling conducted at least once

every six months in accordance with subsection (d)(3)(A). This exception does not apply if the PLHCP, Specialist, or Supervising Physician recommends use of a full face, tight-fitting PAPR, or other more protective respirator.

(B) A full face, tight-fitting supplied-air respirator in pressure-demand or other positive pressure mode for any employees known to the employer to be diagnosed with confirmed silicosis, meet the definition of suspected silicosis, or whenever the PLHCP, Specialist, or Supervising Physician recommends use of a supplied-air respirator. The air source for the supplied-air respirator shall be located outside the regulated area and in an area that is free of respirable crystalline silica and other airborne contaminants.

(42) Respiratory protection program. Where respirator use is required by this section, the employer shall institute a respiratory protection program in accordance with Section 5144.

(i) Housekeeping.

(1) 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.

(2) 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:

(A) The compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air; or

(B) No alternative method is feasible.

(3) Feasibility exceptions in subsection (i) do not apply to high-exposure trigger tasks, which are covered by subsection (f)(2).

(j) Medical surveillance.

(1) General.

(A) The employer shall make medical surveillance available at no cost to the employee, and at a reasonable time and place, for each employee who will be occupationally exposed to respirable crystalline silica at or above the action level for 30 or more days per year.

(B) For workplaces where high-exposure trigger tasks occur, the employer shall make medical surveillance available at no cost to the employee, and at a reasonable time and place, for each employee who performs high-exposure trigger tasks or works within a regulated area for 10 or more days per year regardless of exposure levels.

~~(C)~~ (B) The employer shall ensure that all medical examinations and procedures required by this section are performed by a PLHCP as defined in subsection (b).

(D) For workplaces where high-exposure trigger tasks occur, the employer shall ensure that all medical examinations and procedures required by this section are performed under the direction of the Supervising Physician as defined in subsection (b). The employer shall ensure that the Supervising Physician is provided with all the information that the employer is obligated to provide to the PLHCP in subsection (j)(4).

(2) 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 **12 months** ~~three years~~. The examination shall consist of:

(A) A medical and work history, with emphasis on: Past, present, and anticipated exposure to respirable crystalline silica, dust, and other agents affecting 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;

(B) A physical examination with special emphasis on the respiratory system;

(C) 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 to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconioses by a NIOSH-certified B Reader;

(D) 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;

(E) Testing for latent tuberculosis infection; and

(F) Any other tests deemed appropriate by the PLHCP.

(G) The PLHCP or Supervising Physician should shall request past medical records when clinically indicated and shall document a comparison with prior X-rays, spirometries, and other tests.

(3) Periodic examinations.

(A) The employer shall make available medical examinations that include the procedures described in subsection (j)(2) (except subsection (j)(2)(E)) at least every three years, or more frequently if recommended by the PLHCP.

(BA) The employer shall make available ensure that employees who perform high-exposure trigger tasks or who work within the regulated area receive a medical examination every 12 months, or more frequently if recommended by the PLHCP, Specialist, or Supervising Physician, that includes the procedures described in subsection (j)(2) and (i)(3)(A) (except subsection (j)(2)(E)) for employees who perform high-exposure trigger tasks or who work within a regulated area where high exposure trigger tasks occur.

EXCEPTION: The employer may make periodic medical exams available at least every three years in lieu of every 12 months if the employer demonstrates that employee exposures to respirable crystalline silica are continuously maintained below the action level through representative air sampling conducted at least once every six months in accordance with subsection (d)(3)(A). This exception does not apply if a PLHCP, Specialist, or Supervising Physician recommends more frequent periodic medical exams

(CB) A high-resolution computerized tomography (CT) scan, low-dose CT scan, and/or lung diffusing capacity exam shall be included in periodic examinations when determined to be appropriate by the PLHCP, Specialist, or Supervising Physician.

(4) Information provided to the PLHCP **or Supervising Physician**. The employer shall ensure that the examining PLHCP **or Supervising Physician** has a copy **and is knowledgeable** of this standard, **including Appendix B**, and shall provide the PLHCP or **Supervising Physician** with the following information:

(A) A description of the employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to respirable crystalline silica;

(B) The employee's former, current, and anticipated levels of occupational exposure to respirable crystalline silica;

(C) A description of any personal protective equipment used or to be used by the employee, including when and for how long the employee has used or will use that equipment; and

(D) Information from records of employment-related medical examinations previously provided to the employee and currently within the control of the employer.

(E) Name, phone number, email, and physical address of any previous PLHCP, Specialist, or Supervising Physician.

(F) Names and contact information of employees who have symptoms consistent with suspected silicosis, as defined in subsection (b), Definitions.

(5) PLHCP's or **Supervising Physician** written medical report for the employee. 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:

- (A) A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica and any medical conditions that require further evaluation or treatment;
- (B) Any recommended limitations on the employee's use of respirators;
- (C) Any recommended limitations on the employee's exposure to respirable crystalline silica; ~~and~~
- (D) A statement that the employee should be examined by a specialist (pursuant to subsection (j)(7)) if the chest X-ray provided in accordance with this section is classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP. ~~;~~

(E) Opinion on whether a supplied-air respirator is recommended for the employee;

(F) Recommended frequency of further medical surveillance or follow-up exams; and

(G) Whether or not the employee has a diagnosis of confirmed silicosis or suspected silicosis.

(6) PLHCP's or **Supervising Physician's** written medical opinion for the employer.

(A) The employer shall obtain a written medical opinion from the PLHCP within 30 days of the medical examination. The written opinion shall contain only the following:

1. The date of the examination;
2. A statement that the examination has met the requirements of this section; ~~and~~
3. Any recommended limitations on the employee's use of respirators. ~~;~~

4. Opinion on whether a supplied-air respirator or full-face tight-fitting PAPR is recommended for the employee;

5. Recommended frequency of further medical surveillance or follow-up exams;

6. Any recommended special protective measures to be provided to the employee, or limitations to be placed upon the employee's exposure to respirable crystalline silica; and

7. Opinion as to whether the employee has any detected health-related condition that would place the employee's health at increased risk of material impairment from exposure to respirable crystalline silica.

(B) If the employee provides written authorization, the written opinion shall also contain either or both of the following:

~~1. Any recommended limitations on the employee's exposure to respirable crystalline silica;~~

~~1.2-~~ A statement that the employee should be examined by a specialist (pursuant to subsection (j)(7)) if the chest X-ray provided in accordance with this section is classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP.

2. Whether or not the employee has a diagnosis of confirmed silicosis or is considered a suspected silicosis case.

(C) The employer shall ensure that each employee receives a copy of the written medical opinion described in subsection (j)(6)(A) and (B) within 30 days of each medical examination performed.

(7) Additional examinations.

(A) 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. (B) 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 in accordance with subsection (j)(4).

(C) 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. The written report shall meet the requirements of subsection (j)(5) (except subsection (j)(5)(D)).

(D) The employer shall obtain a written opinion from the specialist within 30 days of the medical examination. The written opinion shall meet the requirements of subsection (j)(6) (except subsection (j)(6)(A)2. and (j)(6)(B)2.).

(k) Medical Removal Protection

(1) When the PLHCP or Supervising Physician recommends an employee's removal from a job assignment to eliminate silica exposure or recommends modification of an employee's job to reduce silica exposure, the employer shall:

(A) Modify the employee's job or transfer the employee to comparable work for which the employee is qualified or can be trained in a short period (up to six months). The employer shall maintain the employee's current earnings, seniority, and other benefits. If there is no work available that would not involve the employee being exposed to respirable crystalline silica, the employer shall maintain the employee's current earnings, seniority, and other benefits until any of the following occurs:

1. Such work becomes available.

2. The employee is determined by the PLHCP, Supervising Physician, or is determined in accordance with subsection (k)(4), to be able to return to his or her original job status.

3. The employee is determined by the PLHCP, Supervising Physician, or is determined in accordance with subsection (k)(4), to be permanently unable to return to work involving exposure to respirable crystalline silica.

4. Six months have elapsed since the beginning of the current medical removal period.

(B) Provide competent medical counseling on the increased risk of significant health impairment for employees with medical conditions that may be directly or indirectly aggravated by exposure to respirable crystalline silica.

(2) Workers' Compensation Claims. If a removed employee files a claim for workers' compensation for a silica-related disability, then for up to a maximum of six months pending final disposition of the claim, the employer shall continue to provide medical removal protection benefits. To the extent that an award is made to the employee for earnings lost during the period of removal, the employer's medical removal payment obligation shall be reduced by such amount. The employer shall receive no credit for workers' compensation payments received by the employee or a health care provider for treatment related expenses.

(3) Other Credits. The employer's obligation to provide medical removal protection payments to a removed employee may be reduced by the amount that the employee receives in compensation for:

(A) Earnings lost during the period of removal from a publicly or employer-funded compensation program, or

(B) Income received from employment with another employer made possible by virtue of the employee's removal.

(4) Multiple Physician Review.

(A) After any medical evaluation or consultation conducted pursuant to subsection (j), the employee may designate an independent physician to review any findings, determinations, or recommendations

and to conduct such examinations, consultations, and laboratory tests as this second physician deems necessary and appropriate to facilitate this review.

(B) The employer may condition its payment for the employee designated physician in the multiple physician review mechanism upon the employee doing the following within fifteen (15) days after receipt of the notification of the right to seek a second medical opinion, or receipt of the initial PLHCP's written opinion, whichever is later:

- 1. The employee informs the employer in writing of the intention to seek a second medical opinion, and**
- 2. The employee initiates steps to make an appointment with a second physician.**

(C) If the findings, determinations, or recommendations of the second physician differ from those of the initial PLHCP, then the employer and the employee shall assure that efforts are made for the initial PLHCP and the second physician to resolve the disagreement. If they are unable to quickly resolve their disagreement, then the employer and the employee through their respective physicians shall designate a third physician who shall be a specialist in the field at issue:

- 1. To review the findings, determinations, or recommendations of the initial PLHCP and the second physician; and**
- 2. To conduct such examinations, consultations, laboratory tests and discussions with the prior PLHCP and physician as the third physician deems necessary to resolve the disagreement.**

(D) In the alternative, the employer and the employee or authorized employee representative may jointly designate such third physician.

(E) The employer shall act consistent with the findings, determinations, and recommendations of the third physician, unless the employer and the employee reach an agreement which is otherwise consistent with the recommendations of at least one of the three physicians.

(f) Communication of respirable crystalline silica hazards to employees.

(1) Any training, communications, signs, labels, and written information required by subsection (f) shall be provided in a language understood by employees and be appropriate for the educational level and literacy of employees.

(2)~~(1)~~ Hazard communication. The employer shall include respirable crystalline silica in the program established to comply with the hazard communication standard (HCS) (Section 5194). 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 subsection ~~(f)~~**(1)**(3). The employer shall ensure that at least the following hazards are addressed: Cancer, lung effects, immune system effects, and kidney effects.

(3)~~(2)~~ Signs. The employer shall post signs at all entrances to regulated areas that bear the following legend:

DANGER

RESPIRABLE CRYSTALLINE SILICA

CAUSES PERMANENT LUNG DAMAGE THAT MAY LEAD TO DEATH

MAY CAUSE CANCER

CAUSES DAMAGE TO LUNGS

WEAR RESPIRATORY PROTECTION IN THIS AREA

AUTHORIZED PERSONNEL ONLY

PELIGRO

SÍLICE CRISTALINA RESPIRABLE

PROVOCA DAÑO PERMANENTE A LOS PULMONES QUE PODRIA CAUSAR LA MUERTE

PUEDE PROVOCAR CÁNCER

PROVOCA DAÑO PERMANENTE A LOS PULMONES USAR PROTECCIÓN

RESPIRATORIA EN ESTA ÁREA

SOLO PERSONAL AUTORIZADO

(4)(3) Employee information and training.

(A) The employer shall ensure that each employee covered by this section can demonstrate knowledge and understanding of at least the following:

1. The health hazards associated with exposure to respirable crystalline silica;

2. Symptoms related to exposure to respirable crystalline silica such as cough, difficult breathing, fatigue, shortness of breath, weakness, fever, difficulty breathing, weakness, fatigue, fever, cough, chest pain, or unexplained weight loss.

3. Specific tasks in the workplace that could result in exposure to respirable crystalline silica, including high-exposure trigger tasks, and how to prevent silica exposure while performing those tasks;

4. Specific measures the employer has implemented to prevent employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used, including for high-exposure trigger tasks;

5. How to properly use and implement engineering controls, work practices, and respiratory protection in order to prevent employee exposure to respirable crystalline silica;

6. The contents of this section; and

7. The purpose and a description of the medical surveillance program required by subsection (j).

8. The increased risk of death that results from the combined effects of smoking and silica exposure.

9. The increased risk of a latent tuberculosis infection becoming active that results from the effects of silica exposure. (B) The employer shall make a copy of this section readily available without cost to each employee covered by this section.

(C) The employer shall encourage employees to report any symptoms related to exposure to respirable crystalline silica without fear of reprisal. Employers are prohibited from taking or threatening to take any adverse action against employees who report symptoms or who suffer from a silica-related illness.

(m) Reporting of silicosis

(1) Within 24 hours of receiving information regarding a confirmed silicosis case or lung cancer related to silica exposure, the employer shall report the following information to the California Department of Public Health (CDPH) and to the Division.

(A) The name and phone number, email, and mailing address of each employee identified with silicosis or lung cancer, or their next of kin;

(B) Date of birth of employee;

(C) The employer's business name, including any aliases or dba identifiers, and the employer's phone number, email, and mailing address;

(D) The name, phone number, email, physical address, and mailing address of the manager responsible for the facility where each employee with silicosis is, or was, employed;

(E) The name and phone number, email, and mailing address of the diagnosing PLHCP, and the date of diagnosis;

(F) The number of years each employee identified with silicosis has been, or was, employed by the employer, and the tasks the employee engaged in during this time period, including the number and frequency of high-exposure trigger tasks;

(G) The specific protections, if any, implemented by the employer during this time period to prevent exposure to respirable crystalline silica; 8. Results of air monitoring for respirable crystalline silica conducted by the employer during this time period;

(H) A description of any personal protective equipment provided by the employer and used by the employee during this time period; and

(I) Whether or not the employer has reported the facility with the Division as required by section 5203.

(J). Prior employers, if known, where employee had silica exposure.

(2) PLHCPs, Specialists, and Supervising Physicians shall report cases of confirmed silicosis cases to CDPH and the Division. The report shall contain the following information:

(A) Name of employer

(B) Phone number and email for the employer

(C) Physical and mailing address of the workplace

(D) The employee's levels of occupational exposure to respirable crystalline silica, if known

(E) A description of any personal protective equipment used by the employee, if known

(F) Name, date of birth, phone number, email, and physical address of affected employee.

(n~~k~~) Recordkeeping.

(1) Air monitoring data.

(A) The employer shall make and maintain an accurate record of all exposure measurements taken to assess employee exposure to respirable crystalline silica, as prescribed in subsection (d).

(B) This record shall include at least the following information:

1. The date of measurement for each sample taken;
2. The task monitored;
3. Sampling and analytical methods used;
4. Number, duration, and results of samples taken;
5. Identity of the laboratory that performed the analysis;
6. Type of personal protective equipment, such as respirators, worn by the employees monitored; and
7. Name, social security number, and job classification of all employees represented by the monitoring, indicating which employees were actually monitored.

(C) The employer shall ensure that exposure records are maintained and made available in accordance with Section 3204.

(2) Objective data.

(A) The employer shall make and maintain an accurate record of all objective data relied upon to comply with the requirements of this section.

(B) This record shall include at least the following information:

1. The crystalline silica-containing material in question;
2. The source of the objective data;
3. The testing protocol and results of testing;

4. A description of the process, task, or activity on which the objective data were based; and
5. Other data relevant to the process, task, activity, material, or exposures on which the objective data were based.

(C) The employer shall ensure that objective data are maintained and made available in accordance with Section 3204.

(3) Medical surveillance.

(A) The employer shall make and maintain an accurate record for each employee covered by medical surveillance under subsection (j).

(B) The record shall include the following information about the employee:

1. Name and social security number;
2. A copy of the PLHCPs' and specialists' written medical opinions; and
3. A copy of the information provided to the PLHCPs and specialists.

(C) The employer shall ensure that medical records are maintained and made available in accordance with Section 3204.

~~(f) Dates:~~

~~(1) This section is effective October 17, 2016.~~

~~(2) Except as provided for in subsections (1)(3) and (4), all obligations of this section commence June 23, 2018.~~

~~(3) For hydraulic fracturing operations in the oil and gas industry:~~

~~(A) All obligations of this section, except obligations for medical surveillance in subsection (i)(1)(A) and engineering controls in subsection (f)(1), commence June 23, 2018;~~

~~(B) Obligations for engineering controls in subsection (f)(1) commence June 23, 2021; and~~

~~(C) Obligations for medical surveillance in subsection (i)(1)(A) commence in accordance with subsection (1)(4).~~

~~(4) The medical surveillance obligations in subsection (i)(1)(A) commence on June 23, 2018, for employees who will be occupationally exposed to respirable crystalline silica above the PEL for 30 or more days per year. Those obligations commence June 23, 2020, for employees who will be occupationally exposed to respirable crystalline silica at or above the action level for 30 or more days per year.~~

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