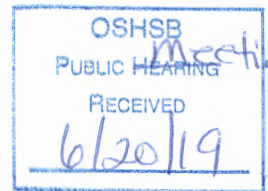


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Subchapter 7. General Industry Safety Orders  
Group 16. Control of Hazardous Substances  
Article 107. Dusts, Fumes, Mists, Vapors and Gases

Add new Section 5141.1 to read:

§5141.1. Protection from Wildfire Smoke.

(a) Scope.

(1) This section applies to outdoor workplaces where:

(A) The current Air Quality Index (current AQI) for PM2.5 is 151 or greater, regardless of the AQI for other pollutants; and

(B) The employer should reasonably anticipate that employees may be exposed to wildfire smoke. The local air pollution control district has issued a wildfire smoke alert.

(2) The following workplaces and operations are exempt from this section:

~~(A)~~ Enclosed buildings or structures in which the air is filtered by a mechanical ventilation system and the employer ensures that windows, doors, bays, and other openings are kept closed to minimize contamination by outdoor or unfiltered air.

~~(B)~~ (A) Enclosed vehicles in which the air is filtered by a cabin air filter and the employer ensures that windows, doors, and other openings are kept closed to minimize contamination by outdoor or unfiltered air.

~~(C)~~ (B) The employer demonstrates that the concentration of PM2.5 in the air does not exceed a concentration that corresponds to a current AQI of 151 or greater by measuring PM2.5 levels at the worksite in accordance with Appendix A.

~~(D)~~ (C) Employees exposed to a current AQI for PM2.5 of 151 or greater for a total of one hour or less during a shift.

~~(E)~~ (D) Firefighters engaged in wildland firefighting.

(3) For workplaces covered by this section, an employer that complies with this section will be considered compliant with sections 5141 and 5155 for the limited purpose of exposures to a current AQI for PM2.5 of 151 or greater from wildfire smoke.

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(2) Obtain AQI forecasts and the current AQI for PM2.5 directly from the EPA, California Air Resources Board, local air pollution control district, or local air quality management district by telephone, email, text, or other effective method; or

(3) Measure PM2.5 levels at the worksite and convert the PM2.5 levels to the corresponding AQI in accordance with Appendix A.

EXCEPTION: Subsection (c) does not apply where an employer assumes the current AQI for PM2.5 is greater than 500 and uses that assumption to comply with subsection (f)(4)(B).

(d) Communication. As required by section 3203, the employer shall establish and implement a system for communicating wildfire smoke hazards in a form readily understandable by all affected employees, including provisions designed to encourage employees to inform the employer of wildfire smoke hazards at the worksite without fear of reprisal. The system shall include effective procedures for:

(1) Informing employees of:

(A) The current AQI for PM2.5 as identified in subsection (c); and

(B) Protective measures available to employees to reduce their wildfire smoke exposures.

(2) Encouraging employees to inform the employer of:

(A) Worsening air quality; and

(B) Any adverse symptoms that may be the result of wildfire smoke exposure such as asthma attacks, difficulty breathing, and chest pain.

(e) Training and instruction. ~~As required by section 3203, The~~ the employer shall provide employees with ~~effective training and instruction. At a minimum, this shall contain the~~ information in Appendix B.

(f) Control of harmful exposures to employees.

(1) In emergencies, including rescue and evacuation, subsections (f)(2) and (f)(3) do not apply, and employers shall comply with subsection (f)(4). Emergencies include utilities, communications, and medical operations, when such operations are directly aiding firefighting or emergency response.

(2) Engineering Controls. The employer shall reduce employee exposure to PM2.5 to less than a current AQI of 151 by engineering controls whenever feasible, for instance by providing enclosed buildings, structures, or vehicles where the air is filtered. If engineering controls are

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**Appendix A to Section 5141.1. Protection from Wildfire Smoke**  
**Measuring PM<sub>2.5</sub> Levels at the Worksite**  
**(Mandatory if an Employer Monitors with a Direct Reading Instrument)**

- (a) An employer may use a direct-reading particulate monitor to determine PM<sub>2.5</sub> levels for section 5141.1, if the employer can demonstrate that it has complied with this appendix and selected a monitor that:
- (1) Does not underestimate employee exposures to wildfire smoke; or
  - (2) May underestimate wildfire smoke exposures, but the employer has obtained information on the possible error of the monitor from the manufacturer or other published literature and has accounted for the error of the monitor when determining exposures to PM<sub>2.5</sub> to ensure that employee exposure levels are not underestimated.
- (b) The monitor shall be designed and manufactured to measure the concentration of airborne particle sizes ranging from an aerodynamic diameter of 0.1 micrometers up to and including 2.5 micrometers. The employer may use a monitor that measures a particle size range beyond these limits, if the employer treats the results as the PM<sub>2.5</sub> levels.
- (c) The employer shall ensure that the monitor it uses is calibrated, maintained, and used, including the use of necessary accessories, in accordance with the manufacturer's instructions for accurately measuring PM<sub>2.5</sub> concentrations.
- (d) The employer shall use the following table to convert the PM<sub>2.5</sub> concentration to the AQI for PM<sub>2.5</sub>.

<b><u>PM<sub>2.5</sub> in Micrograms per Cubic Meter (µg/m<sup>3</sup>)</u></b>	<b><u>Air Quality Index (AQI) Categories for PM<sub>2.5</sub></u></b>
<u>0 to 12.0</u>	<u>0 to 50</u>
<u>12.1 to 35.4</u>	<u>51 to 100</u>
<u>35.5 to 55.4</u>	<u>101 to 150</u>
<u>55.5 to 150.4</u>	<u>151 to 200</u>
<u>150.5 to 250.4</u>	<u>201 to 300</u>
<u>250.5 to 500.4</u>	<u>301 to 500</u>



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**Appendix B to Section 5141.1. Protection from Wildfire Smoke  
Information to Be Provided to Employees (Mandatory)**

**CONTENTS**

- (a) The health effects of wildfire smoke.
- (b) The right to obtain medical treatment without fear of reprisal.
- (c) How employees can obtain the current Air Quality Index (AQI) for PM2.5.
- (d) The requirements in Title 8, section 5141.1 about wildfire smoke.
- (e) The employer's two-way communication system.
- (f) The employer's methods to protect employees from wildfire smoke.
- (g) The importance, limitations, and benefits of using a respirator when exposed to wildfire smoke.
- (h) How to properly put on, use, and maintain the respirators provided by the employer.

- 
- (a) The health effects of wildfire smoke.

Although there are many hazardous chemicals in wildfire smoke, the main harmful pollutant for people who are not very close to the fire is "particulate matter," the tiny particles suspended in the air.

Particulate matter can irritate the lungs and cause persistent coughing, phlegm, wheezing, or difficulty breathing. Particulate matter can also cause more serious problems, such as reduced lung function, bronchitis, worsening of asthma, heart failure, and early death.

People over 65 and people who already have heart and lung problems are the most likely to suffer from serious health effects.

The smallest—and usually the most harmful—particulate matter is called PM2.5 because it has a diameter of 2.5 micrometers or smaller.

- (b) The right to obtain medical treatment without fear of reprisal.

Employers shall allow employees who show signs of injury or illness due to wildfire smoke exposure to seek medical treatment, and may not punish affected employees for seeking such treatment. Employers shall also have effective provisions made in advance for prompt medical

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The employer's communication system is:

(f) The employer's methods to protect employees from wildfire smoke.

Employers shall take actions if feasible and practicable to protect employees from PM2.5 when the current AQI for PM2.5 is 151 or greater. Examples of protective methods include:

- (1) Locating work in enclosed structures or vehicles where the air is filtered.
- (2) Changing procedures such as moving workers to a place with a lower current AQI for PM2.5.
- (3) Reducing work time in areas with unfiltered air.
- (4) Increasing rest time and frequency, and providing a rest area with filtered air.
- (5) Reducing the physical intensity of the work to help lower the breathing and heart rates.

The employer's control system at this worksite is:

(g) The importance, limitations, and benefits of using a respirator when exposed to wildfire smoke.

Respirators can be an effective way to protect employee health by reducing exposure to wildfire smoke, when they are properly selected and worn. ~~Respirator use can be beneficial even when the AQI for PM2.5 is less than 151, to provide additional protection.~~

When the current AQI for PM2.5 is 151 or greater, employers shall provide their workers with proper respirators for voluntary use. If the current AQI is greater than 500, respirator use is required.

A respirator should be used properly and kept clean.

The following precautions shall be taken:

- (1) Employers shall select respirators certified for protection against the specific air contaminants at the workplace. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Center for Disease Control and Prevention certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will list what the respirator is designed for (particulates, for example).

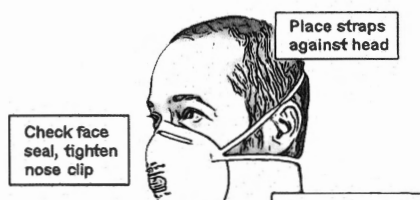
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*Drawing Showing Proper Fitting of a Filtering Facepiece Respirator  
(shaving is not required for **voluntary** respirator use)*

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For a respirator that relies on a tight seal to the face, check how well it seals to the face by following the manufacturer's instructions for user seal checks. Adjust the respirator if air leaks between the seal and the face. The more air leaks under the seal, the less protection the user receives.

Respirator filters should be replaced if they get damaged, deformed, dirty, or difficult to breathe through. Filtering facepiece respirators are disposable respirators that cannot be cleaned or disinfected. A best practice is to replace filtering facepiece respirators at the beginning of each shift.

If you have symptoms such as difficulty breathing, dizziness, or nausea, go to an area with cleaner air, take off the respirator, and get medical help.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Sections 142.3 and 144.6, Labor Code.

Revisions proposed by CALPASC, Bruce Wick.