

## Key requirements: Oregon OSHA's permanent rules for protection from wildfire smoke – revised May 2024



Oregon OSHA's adopted permanent rules – OAR 437-002-1081 and OAR 437-004-9791, Protection from Wildfire Smoke – apply to employers whose employees are or will be exposed to hazardous levels of wildfire smoke. In May 2024, the [U.S. Environmental Protection Agency \(EPA\)](#) updated how it calculates and reports Air Quality Index (AQI) values. The requirements based on PM<sub>2.5</sub> concentrations in the Oregon OSHA wildfire smoke rules are not changing. The updated AQI system does not increase worker exposure to wildfire smoke or the threshold levels of Oregon OSHA's rules, which are measured in micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) of particulate matter (PM) 2.5. The conversion between the previous AQI, the new AQI, and where the rule is triggered is provided on the next page of this fact sheet.

With large-scale wildfire events across the western United States becoming more frequent, wildfire smoke is an increasing danger to Oregon workers. The harmful chemicals and tiny particles suspended in wildfire smoke can make anyone sick. The tiny particles of most concern and addressed in these standards is the particulate matter with a diameter in micrometers of 2.5 or less, commonly referred to as PM<sub>2.5</sub>.

Mild symptoms of wildfire smoke exposure include coughing, runny nose, and eye irritation and inflammation, while more serious health effects include trouble breathing, asthma attacks, reduced lung function, chest pain, and heart attacks.

Although OAR 437-004-9791 applies only to agricultural employers, its key requirements and exemptions are identical to OAR 437-002-1081, which applies for all other employers such as general industry, construction, and forest activities.

### These standards **do not** apply to the following:

- Enclosed buildings, structures, and vehicles in which air is filtered by a mechanical ventilation system, and when exterior openings are kept closed except when it is necessary to briefly open doors to enter or exit
- Employers that have predetermined to suspend operations to prevent employee exposure to wildfire smoke levels for PM<sub>2.5</sub> at or above  $35.5 \mu\text{g}/\text{m}^3$  (AQI 101)
- Employees working at home

### The following activities and operations are partially exempt from the standards:

- Wildland firefighting and associated support activities such as fire camp services and fire management
- Evacuation, rescue, utilities, communications, and medical operations directly involved in or aiding emergency operations or firefighting operations
- Work activities involving only intermittent employee exposure of less than 15 minutes in an hour to wildfire smoke levels for PM<sub>2.5</sub> at or above  $35.5 \mu\text{g}/\text{m}^3$  (AQI 101), for a total exposure of less than one hour in a single 24-hour period

Previous AQI values	New AQI values <i>(effective May 2024)</i>	Wildfire Smoke standards' key requirements for exposure level using new AQI values
101 - 250	101 - 276	<ol style="list-style-type: none"> <li>1. Assess and monitor air quality at each work location where employees are exposed</li> <li>2. Provide and document employee training</li> <li>3. Implement two-way communication system</li> <li>4. Implement engineering and administrative controls</li> <li>5. Provide NIOSH-approved filtering facepiece respirators for voluntary use</li> </ol>
251 - 500	277 - 848	<p>Follow steps 1-4 above; and</p> <ol style="list-style-type: none"> <li>6. Provide NIOSH-approved filtering facepiece respirators for <b>mandatory use</b> by implementing a <b>Wildfire Smoke Respiratory Protection Program</b> in accordance with Appendix A, in the Protection from Wildfire Smoke standards</li> </ol>
501 and above	849 and above	<p>Follow steps 1-4 above; and</p> <ol style="list-style-type: none"> <li>7. Provide NIOSH-approved respirators for mandatory use by implementing a <b>Respiratory Protection Program</b> in accordance with 29 CFR 1910.134 or OAR 437-004-1041</li> </ol>

Employers with employees who are exposed to wildfire smoke levels for PM<sub>2.5</sub> at or above 35.5 µg/m<sup>3</sup> (AQI 101) only when engaged in a partially exempt activity or operation listed above, are required to provide information and training only on elements in subsection (4)(a) through (4)(g) in the standards, in addition to providing National Institute for Occupational Safety and Health (NIOSH)-approved filtering facepiece respirators for voluntary use.

**DESCRIPTION OF EACH KEY REQUIREMENT (1-7):**

**1. Assess and monitor air quality at each work location where employees are exposed**

The level of wildfire smoke at work locations that triggers these standards is when the PM<sub>2.5</sub> ambient



air concentration equals or exceeds 35.5 µg/m<sup>3</sup>, which is equivalent to an AQI for PM2.5 of 101 or greater. The AQI was developed by the EPA as an indicator of overall air quality for the general population, and is largely and easily accessible by the public. When work locations are affected by wildfire smoke, employers and employees with internet access can determine air quality conditions by checking the current average AQI value for PM2.5 for their geographical area by using the following websites or apps:

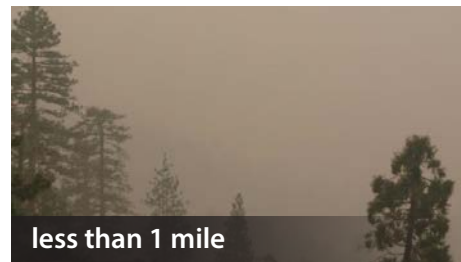
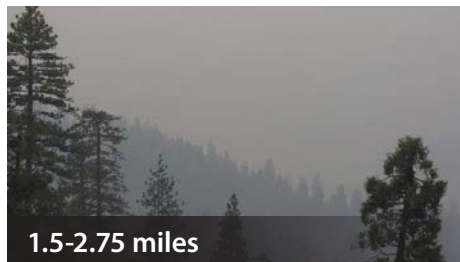
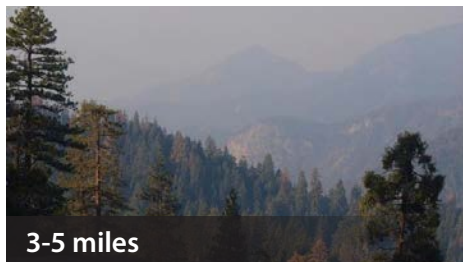
- Oregon DEQ website: <https://aqi.oregon.gov/>
- OregonAir (DEQ) app: Search for "OregonAir" in your mobile app store (free)
- U.S. EPA AirNow Fire and Smoke Map website: <https://fire.airnow.gov/>
- U.S. EPA AirNow app: Search for "EPA AirNow" in your app store (free)

Additionally, employers can choose to directly measure workplace ambient air concentration for PM2.5 by purchasing and using a calibrated measuring device for PM2.5 and following the manufacturer's instructions. This method will provide the most accurate level of PM2.5, especially for indoor workplaces where the air is not filtered by mechanical ventilation.

For employers that have determined and can demonstrate that none of the methods listed above are available for their work location, a method known as the [5-3-1 Visibility Index](#) can be used to estimate the current air concentration for PM2.5, and equivalent AQI value, as shown below:

New AQI values (effective May 2024)	Visibility Index Values (How far you can see)
0 – 50	over 15 miles
51 – 100	5 – 15 miles
<b>101 – 150</b>	3 – 5 miles
151 – 200	1 – 3 miles
201 – <b>277</b> – 300	1 mile
301 – <b>849</b> and higher	less than 1 mile
Rule exposure thresholds and visibility distances highlighted in red.	

**VISIBILITY DISTANCES:**



Photos above are from the United States Forest Service's InciWeb – Incident Information System, at [inciweb.nwcg.gov](http://inciweb.nwcg.gov)

## 2. Provide and document employee training

Training must be provided to employees in a manner and a language they readily understand and must include:

A. The symptoms of wildfire smoke exposure, including:

- Eyes: burning sensations, redness, and tearing of the eyes caused by irritation and inflammation that can temporarily impair vision
- Respiratory system: runny nose, sore throat, cough, difficulty breathing, sinus irritation, wheezing, and shortness of breath
- Fatigue, headache, irregular heartbeat, and chest pain

B. The potential acute and chronic health effects from wildfire smoke exposure, including increased health risks to sensitive groups, and how chronic exposures can increase the risk of cardiovascular disease and can exacerbate asthma.

C. Each employee's right to report health issues related to wildfire smoke exposure and obtain medical treatment for such workplace exposures without fear of retaliation.

D. How employees can obtain the current average and forecasted ambient air concentration for PM<sub>2.5</sub> and equivalent AQI value for their work location.

E. The importance, limitations, and benefits of using a filtering facepiece respirator, which is provided by the employer at no cost to the employee to reduce exposure to wildfire smoke, and how to use and maintain their filtering facepiece respirator.

F. The employer's methods to protect employees from wildfire smoke, including how filtering facepiece respirators are required to be made readily accessible to employees for voluntary use, and how employees can obtain such respirators before exposure and replace them when needed.

G. Review of any job tasks performed by employees in which the use of a filtering facepiece respirator would expose the wearer to a hazard associated with a substantially more serious injury or illness than the potential acute health effects of wildfire smoke exposure.





- H. The procedures supervisors must follow when an employee reports or exhibits health symptoms that necessitate immediate medical attention, including, but not limited to, asthma attacks, difficulty breathing, and chest pain.
- I. How to operate and interpret exposure results based on any PM2.5 monitoring device used by the employer in compliance with the standard.
- J. An explanation of the employer's two-way communication system for wildfire smoke exposure control information.

Training elements (a) through (e) above are included in [Oregon OSHA's wildfire smoke training course](#) that is available to all employers and employees in both English and Spanish.

Employers that are not partially exempt from the standard must verify supervisor and employee training by preparing a written or electronic record that includes at least the name or identification number of each employee trained, the dates of the trainings, and the name of the people who conducted the training. The most recent annual training record for each employee must be maintained for one year.

### **3. Implement two-way communication system**

A two-way communication system must be used to communicate wildfire smoke information between supervisors and employees. Such information includes any changes in the air quality at the work location that would necessitate an increase or decrease in the level of exposure controls. The two-way communication must also allow employees to report issues concerning their access to exposure controls and any health symptoms from wildfire smoke exposure that could necessitate medical attention. The means to communicate information may include, but are not limited to, in-person, cell phone, and two-way radio.

### **4. Implement engineering and administrative controls to employees exposed to PM2.5 levels at or above 35.5 µg/m<sup>3</sup> (AQI 101)**

Engineering and administrative controls that are functionally possible and would not prevent the completion of work must be used to reduce employee exposure to wildfire smoke. Such controls include relocating outdoor workers to enclosed buildings or to outdoor locations where the air quality is better, and making work schedule changes to reduce employee exposures. The use of engineering and administrative controls may be used in combination with NIOSH-approved filtering facepiece respirators.

**5. Provide NIOSH-approved filtering facepiece respirators for voluntary use to employees exposed to PM2.5 levels at or above 35.5 µg/m³ (AQI 101)**

Employer-provided respirators for voluntary protection from wildfire smoke must either be distributed directly to employees or be made readily accessible to any exposed employee at each work location. Respirator supplies must be in a location that does not restrict or hinder employee access nor discourage the replacement of a respirator when needed. NIOSH-approved filtering facepiece respirators do not include any "KN" designations, such as KN95s. Such "KN" respirators are not appropriate to reduce employee exposure to wildfire smoke. NIOSH-approved filtering facepiece respirators appropriate for wildfire smoke protection include: N95, N99, N100, R95, R99, R100, P95, P99, and P100.

**6. Provide NIOSH-approved filtering facepiece respirators for mandatory use to employees exposed to PM2.5 levels at or above 200.9 µg/m³ (AQI 277) by implementing a Wildfire Smoke Respiratory Protection Program in accordance with Appendix A of the Protection from Wildfire Smoke standards**

Employer-provided NIOSH-approved filtering facepiece respirators used strictly for mandatory protection from wildfire smoke must either follow the Wildfire Smoke Respiratory Protection Program as described in Appendix A, which do not require medical evaluations and fit testing, or be in accordance with the applicable Respiratory Protection standard, 29 CFR 1910.134 or OAR 437-004-1041.



**7. Provide NIOSH-approved respirators for mandatory use to employees exposed to PM2.5 levels at or above 500.4 µg/m³ (AQI 849) by implementing a Respiratory Protection Program in accordance with 29 CFR 1910.134 or OAR 437-004-1041**

Due to the high hazard level of air quality conditions at or above 500.4 µg/m³ (AQI 849), employers must ensure that employees wear appropriate NIOSH-approved respirators in accordance with the applicable Respiratory Protection Standard, [29 CFR 1910.134](#) or [OAR 437-004-1041](#).



[Visit Oregon OSHA](#)

**WORKERS**

Your employer cannot retaliate against you for reporting any workplace health or safety concern or violation. For more information on your rights, visit Oregon OSHA.