Key requirements: Oregon OSHA’s temporary rules for protection from wildfire smoke during 2021

These rules – 437-002-1080 and 437-004-9790, Protection from Wildfire Smoke – apply to employers whose employees are or will be exposed to particulate matter in wildfire smoke. The index Oregon OSHA uses is based on a measure commonly referred to as PM2.5, which includes particles that have a diameter in micrometers of 2.5 or less and can be seen only with an electron microscope. The threshold of this rule is when the PM2.5 equals or is greater than 35.5 micrograms per cubic meter of air (ug/m3) (AQI 101). Adverse health effects have been associated with exposure to PM2.5, at levels above 35.5 ug/m3 (AQI 101). These adverse health effects begin to effect people in sensitive groups.

You can determine PM2.5 levels by referring to the Air Quality Index (AQI), which was developed by the U.S. Environmental Protection Agency. The AQI is an indicator of overall air quality and includes PM2.5. Here are three ways to determine current Oregon AQI and PM2.5 levels statewide:

- AirNow website: [https://www.airnow.gov/](https://www.airnow.gov/)
- Oregon DEQ website: [https://oraqi.deq.state.or.us/home/map](https://oraqi.deq.state.or.us/home/map)
- OregonAir (DEQ) app: Search for the free “OregonAir” app in your app store

Although 437-004-9790 applies only to agricultural employers, the key requirements for 437-004-9790 and 437-002-1080 are identical. These rules do not apply to:

- Enclosed buildings and structures in which the air is filtered by a mechanical ventilation system. Windows, doors, bays, and other exterior openings must remain closed, except when it is necessary to open doors to enter or exit.
- Intermittent exposure of less than 15 minutes in any hour or short-duration exposure of less than two hours in a single 24 hours. This language was omitted from the final rule in error, but an Advisory Memo is forthcoming to clarify the exemption.
• Enclosed vehicles in which the air is filtered by a cabin air filter. Windows, doors, and other openings must remain closed, except when it is necessary to open doors to enter and exit. (However, buses, light rail, and other vehicles used for transit systems where doors are frequently opened to board and deboard passengers are not exempt from these rules.)

Employers whose employees are engaged in the following activities and operations must follow the information and training requirements in section (3)(a)-(3)(d) of these rules, when feasible:

• Wildland firefighting and associated support activities such as fire camp services and fire management.
• Evacuation, rescue, utilities, communications, and medical operations that are directly involved in or aiding emergency operations or firefighting operations.

These employers are not required to follow the communication requirements in section (4) or the exposure control requirements in section (5) of the rules.

Key requirements

The rules’ key requirements include:

• Training: required by Aug. 16 for employees who may be exposed to PM2.5 at or above 35.5 ug/m3 (AQI 101).

• System to communicate wildfire smoke hazards: required for employees who could be exposed to PM2.5 at or above 35.5 ug/m3 (AQI 101).

• Exposure controls: covering voluntary use of respirators, engineering and administrative controls, and required use of respirators.

Training

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

• The symptoms of wildfire smoke exposure, including:

  - Burning sensations, redness, and tearing of the eyes caused by irritation and inflammation that can temporarily impair vision.
- Runny nose, sore throat, cough, difficulty breathing, sinus irritation, wheezing, and shortness of breath.
- Fatigue, headache, irregular heartbeat, and chest pain.
- The potential health effects of wildfire smoke, including increased risk for sensitive groups (defined in section (2) (f) of the rules).
- The right to report health issues related to wildfire smoke exposure and to obtain medical treatment without fear of retaliation.
- Procedures the supervisor must follow if an employee exhibits severe symptoms of wildfire smoke exposure.
- How to obtain the current and forecasted ambient air concentration for PM2.5 and equivalent AQI levels.
- How to operate and interpret an air quality monitoring device provided by the employer to comply with these rules.
- The methods for protection from wildfire smoke.
- The communication system for notifying employees about wildfire smoke hazards.
- The benefits and limitations of using a filtering facepiece respirator and how to properly put it on.
- Wildfire smoke training materials can be found at: https://osha.oregon.gov/Pages/topics/wildfires.aspx

**System to communicate wildfire smoke hazards**
The communication system must notify employees whenever ambient air concentrations for PM2.5 at the work location are at or above:

- 35.5 ug/m³ (AQI 101).
- 150.5 ug/m³ (AQI 201).
- 500.4 ug/m³ (AQI 501).

The communications system must also notify employees when the ambient air concentration for PM2.5 drops below these levels and let them inform their employer if air quality changes or they experience health symptoms such as an asthma attack, difficulty breathing, and chest pain.

**Exposure controls**
The rules include four levels of exposure controls.

1. Control by voluntary use of respirators (AQI ≥ 101).
2. Engineering and administrative controls (AQI ≥ 201).
3. Control by use of KN-95 or NIOSH-approved respirators (AQI ≥ 201).

**Control by voluntary use of respirators**
NIOSH-approved respirators that protect employees from PM2.5 particulates must be readily available at no charge for employees who request them when PM2.5 levels are equal to or greater than 35.5 ug/m³ (AQI 101). Employers must maintain sufficient numbers and sizes at each work location where the employees are exposed.

**Engineering and administrative controls**
When feasible, engineering and administrative controls are required to reduce PM2.5 exposure levels to less than
150.5 ug/m³ (AQI 201). Examples of engineering controls include enclosed buildings, structures, or vehicles where the air is filtered to keep PM2.5 exposure levels below 150.5 ug/m³ (AQI 201).

Examples of administrative controls include relocating work to an outdoor location where the current ambient air concentration of PM2.5 is less than 150.5 ug/m³ (AQI 201), or scheduling work when the ambient air concentration of PM2.5 is less than 150.5 ug/m³ (AQI 201).

Control by use of KN-95 or NIOSH-approved respirators

When employees are exposed to PM2.5 levels at or above 150.5 ug/m³ (AQI 201) – even after the use of engineering and administrative controls – employers must ensure that their employees wear KN-95 or NIOSH-approved filtering facepiece respirators.

- During the 2021 wildfire season, KN-95 respirators previously approved under the FDA’s Emergency Use Authorization can substitute for NIOSH-approved filtering facepiece respirators for exposures under 500.4 ug/m³ (AQI 501).

- When employees use KN-95 or NIOSH-approved filtering facepiece respirators exclusively for protection from wildfire smoke, their employers must implement a Respiratory Protection Program that complies with 1910.134. However, employers must follow the Wildfire Smoke Respiratory Protection Program requirements in the Appendix to these rules. If you supply or allow any other type of respirator for exposure to wildfire smoke (such as an elastomeric respirator), you must still fully comply with the requirements of 1910.134. The exemptions allowed by the wildfire smoke rule apply only to filtering facepiece respirators below an AQI of 501.

- Residents of employer-provided housing are not required to wear filtering facepiece respirators while they are in the housing.

Control by use of NIOSH-approved respirators

When employees are exposed to PM2.5 levels at or above 500.4 ug/m³ (AQI 501), even after the use of engineering and administrative controls, employers must ensure that their employees wear only NIOSH-approved respirators. When employees use filtering facepiece respirators exclusively for protection from wildfire smoke, their employers must implement a Respiratory Protection Program, that complies with 1910.134.