



# Wildfire Smoke Regulation in California

## §51 41 .1 Wildfire Smoke Regulations

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As of October 21, 2021

Wildfires in California became significantly worse in 2018, and as an example, the well-known “Camp Fire” was one of the deadliest and most destructive wildfire in state history. On January 8, 2019, Governor Gavin Newsom issued [Executive Order N-05-19](#), declaring that 2018 was the most destructive fire season in California history, with over 7,600 wildfires burning across 1,846,445 acres. The Order states that “...the reality of climate change – persistent drought, warmer temperatures and more severe winds – has created conditions that will lead to more frequent and destructive wildfires.”

Cal-OSHA also noted reports in which employees were working without respirators when wildfire smoke had reportedly caused unhealthy air quality, which could pose serious health risks. Cal-OSHA received reports indicating that some employers of outdoor workers did not provide appropriate respirators or take other precautions to reduce employee exposure to wildfire smoke, so Cal-OSHA concluded that adoption of an emergency standard is essential, before the height of the next wildfire season. The intent was to clarify how employers should protect their workers from the harmful effects of wildfire smoke. So, the Cal-OSHA Standards Board passed the emergency standard, and the season came and went. Since then, the Cal-OSHA Standards board has taken public comment,

adjusted some sections of the emergency standard, and has made the determination that the Wildfire Smoke standard must become a permanent standard.

Wildfire smoke is composed of chemicals and tiny particles suspended in the air that can present a health hazard for workers exposed to it. These particles can irritate the lungs and cause serious health effects, such as:

- ▶ Reduced lung function
- ▶ Bronchitis
- ▶ Worsening of asthma
- ▶ Heart failure

### Which employers must comply with the regulation?

Employers with a work environment that meet these two conditions must comply with the full standard:

- ▶ The current AQI for PM2.5 is 151 or greater, regardless of the AQI for other pollutants.
- ▶ The employer should “reasonably anticipate” that employees may be exposed to wildfire smoke.



## Which employers are exempt from compliance with the regulation?

Employers with workplaces in any of the following conditions are exempt from [§ 5141.1](#):

- ▶ 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, except when it is necessary to open doors to enter or exit.
- ▶ 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, except when it is necessary to open doors to enter or exit the vehicle.
- ▶ 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 of § 5141.1](#)

- ▶ Employees exposed to a current AQI for PM2.5 of 151 or greater for a total of one hour or less during a shift.
- ▶ Firefighters engaged in wildland firefighting.

## What does the regulation require?

[§ 5141.1](#) created the following requirements for employers to protect workers from wildfire smoke:

### 1. Identification of Harmful Exposures

- ▶ For worksites covered by the regulation, employers (with certain exceptions) must determine employee exposure to PM2.5 at the start of each shift and periodically thereafter, as needed.

### 2. Communication

- ▶ Employers must implement a system for communicating wildfire smoke hazards in a language readily understandable by employees.

### 3. Training and instruction information

- ▶ For worksites covered by the regulation, employers must provide effective training that includes at least the information contained in [Appendix B of § 5141.1](#).

#### 4. Control of harmful exposures to employees

- ▶ With certain exceptions, employers must reduce workers' exposure to wildfire smoke in the following ways:
  - If feasible, by providing an enclosed location with filtered air so that employee exposure to PM2.5 is less than a current AQI of 151, or to the extent feasible.
  - If that is not feasible or adequate, by relocating to another outdoor location where the current AQI for PM2.5 is lower, changing work schedules, reducing work intensity, or providing more rest periods.
  - With respiratory protective equipment if employers cannot reduce workers' exposure to PM2.5 to a current AQI of less than 151.
    1. Where the current AQI for PM2.5 is from 151 to 500, employers must provide a sufficient number of NIOSH-approved particulate respirators, such as N95 masks, to all employees for voluntary use, and training on the regulation, the health effects of wildfire smoke, and the safe use and maintenance of respirators.
    2. Where the current AQI for PM2.5 is higher than 500, the employer must provide and require employees to use NIOSH-approved particulate respirators that will reduce employee exposure to PM2.5 to an equivalent of an AQI less than 151.

#### How do we determine current AQI and PM2.5 levels

- ▶ Employers may use the Air Quality Index or their own direct reading instruments to determine employee exposure to wildfire smoke.

#### Current Air Quality Index (Current AQI)

- ▶ Current Air Quality Index (or Current AQI) is the method used by the U.S. Environmental Protection Agency (U.S. EPA) to report air quality on a real-time basis. "Current AQI" is also referred to as the "NowCast," and represents data collected over time of varying length in order to reflect present conditions as accurately as possible.

*The current AQI is divided into six categories as shown in the table below.*

#### AIR QUALITY INDEX (AQI)

| CATEGORIES FOR PM 2.5 | LEVELS OF HEALTH CONCERN       |
|-----------------------|--------------------------------|
| 0 to 50               | Good                           |
| 51 to 100             | Moderate                       |
| 101 to 150            | Unhealthy for Sensitive Groups |
| 151 to 200            | Unhealthy                      |
| 201 to 300            | Very Unhealthy                 |
| 301 to 500            | Hazardous                      |

## Direct reading instruments

- ▶ If an employer monitors the PM 2.5 levels at the worksite using a direct reading instrument, the employer must do so in accordance with the information contained in [Appendix A of § 5141.1](#) and is required to use the following table to convert the PM 2.5 concentration to the AQI for PM 2.5:

## PM 2.5 CONVERSION

| PM 2.5 IN MICROGRAMS PER CUBIC METER (MG/M3) | AIR QUALITY INDEX (AQI) CATEGORIES FOR PM 2.5 |
|--|---|
| 0 to 12.0                                    | 0 to 50                                       |
| 12.1 to 35.4                                 | 51 to 100                                     |
| 35.5 to 55.4                                 | 101 to 150                                    |
| 55.5 to 150.4                                | 151 to 200                                    |
| 150.5 to 250.4                               | 201 to 300                                    |
| 250.5  | 301 to 500                                    |

Interestingly enough, there is no requirement for an organization to develop a written program. However, from a practical standpoint, it would be wise to create documentation for items that may be useful if an organization found themselves in a situation where they needed to defend themselves in the event of a citation. For example, it would be a good idea to be able to prove that someone in the organization checked to see if it was reasonable to anticipate that wildfire smoke would be present, and what the current AQI was for the work area. There is an old adage that says, “if you didn’t document it, you didn’t do it”. This is true for many aspects of business, especially in the world of safety and Cal-OSHA. If you need some assistance integrating these requirements into your current IIPP, please don’t hesitate to reach out to your local Leavitt Risk Manager. Our safety professionals will be happy to make sure you have all of the tools you need to both minimize your legal exposure, and most of all, keep your most valuable asset safe - your people.

## Additional federal, state, and local government sources for current AQI for PM 2.5 information:

- ▶ One of the best sites for companies to use to implement the program, [Cal-OSHA’s Wildfire Resource Page](#)
- ▶ The U.S. EPA [AirNow](#)
- ▶ The [U.S. Forest Service](#)
- ▶ The [Interagency Wildland Fire Air Quality Response Program](#)
- ▶ The [California Air Resources Board](#)
- ▶ The [local air pollution control district](#)
- ▶ The [local air quality management district](#)