

TOOLBOX TALK: WILDFIRE SMOKE

Job or site _____

Date _____

Led by _____

Open with this

What is the air quality number right now, and who checked it? Not yesterday, not this morning at the yard. Right now, for this address.

The talk

What we are actually talking about is PM2.5: solid particles and liquid droplets suspended in air with a diameter of two and a half micrometers or smaller. That size is the whole problem. It does not get caught in your nose or your throat, it goes to the bottom of your lungs and some of it goes into your blood. You cannot feel it happening and a haze that looks mild can be a serious number.

There is no federal OSHA standard that puts a number on wildfire smoke. Three states have written one: California, Oregon and Washington. They were written at different times and they do not match, so the first thing to know is which rule this job is under, because the answer changes what has to happen today.

California, section 5141.1. The trigger is the current Air Quality Index for PM2.5 at 151 or greater, and the employer has to determine that at the start of each shift and periodically after, not once a day. It does not apply inside a building or a vehicle where the air is filtered and everything stays shut, or where somebody is in it for a total of one hour or less across the whole shift.

Once California is triggered, the order is fixed. Engineering controls first, to get exposure under a current AQI of 151 wherever that is feasible. Then administrative controls if it is not: relocating the work somewhere the number is lower, changing schedules, reducing work intensity, more rest breaks. Then respirators. From 151 up to 500 the employer has to provide enough respirators for voluntary use and encourage people to wear them, N95 or better. Above 500 it stops being voluntary and respirator use is required.

Oregon, rule 437-002-1081, is written in micrograms per cubic meter instead, which is what the AQI is calculated from. It applies at or above 35.5 micrograms per cubic meter. At or above 200.9, filtering facepiece respirators have to be worn. At or above 500.4, it is a full respiratory protection program under 1910.134, which means fit testing and medical evaluations.

Washington, chapter 296-820, is also written in micrograms and it starts lower than either of the others. From 20.5 the employer is encouraged to hand out N95s on request. From 35.5 to 250.4 the employer must provide them free to everyone exposed and encourage their use. From 250.5 to 500.3 they have to be put directly into each person's hand rather than left in a box somewhere. From 500.4 up, wearing one is mandatory and everybody is in

a full respiratory protection program.

Now the trap, and it is worth the whole five minutes. Oregon's rule says 500.4 micrograms per cubic meter is an AQI of 501. Washington's rule says 500.4 micrograms per cubic meter is an AQI of 849. Same amount of smoke, same air, two different AQI numbers, because the scale that converts micrograms into an AQI was changed between the two rules being written and the microgram number was not. So if your rule is written in micrograms, read the micrograms. A crew that runs the day off whatever the phone app is showing can be standing well over a legal threshold while the screen says something that sounds survivable.

The other half of every one of these rules is that you tell somebody. All three require a two way system: the employer tells you the number and what protection is available, and you tell the employer when the air gets worse or when somebody starts having symptoms, without fear of reprisal, which is written into the rule in those words. The symptoms named are asthma attacks, difficulty breathing and chest pain. Any of those today is a stop, not a wait and see.

One thing that trips people up on the paperwork side: where a respirator is voluntary rather than required, a filtering facepiece like an N95 does not need fit testing or a medical evaluation. Where it is required, it does. That is the real difference between the low bands and the top band, and it is why nobody should be waiting until the top band to think about it.

Point at these before anybody starts

- Today's number for this address, and which of the three rules this job is under.
- Where the respirators are, how many there are, and whether anybody has actually got one.
- Which vehicles and site boxes genuinely have filtered air with everything shut, and which just have the windows up.
- Work that can move, be rescheduled, or be slowed down today rather than pushed through.
- Anybody on the crew with asthma or a heart condition, who feels this first.
- The three symptoms, said out loud, and who to tell.

The rules that apply

- California 5141.1 applies where the current AQI for PM2.5 is 151 or greater and exposure is reasonably anticipated. Exposure has to be determined at the start of each shift and periodically thereafter. From an AQI of 151 up to 500 respirators are provided for voluntary use and use is encouraged; above 500 respirator use is required.
- Oregon 437-002-1081 applies at or above 35.5 micrograms per cubic meter of PM2.5. Filtering facepiece respirators must be worn at or above 200.9, and a full respiratory protection program under 29 CFR 1910.134 applies at or above 500.4.
- Washington chapter 296-820 requires N95s to be provided free to all exposed employees from 35.5 to 250.4 micrograms per cubic meter, distributed directly to each employee from 250.5 to 500.3, and provided and worn under a complete respiratory protection program from 500.4 up. The 15 minute exemption people quote is WAC

296-820-840(4)(b), and it disclaims only subsection (4), which is the band from 500.4 to 554.9. At 555 and above, subsection (5), the rule requires a full facepiece or a powered air purifying respirator and gives no short exposure exemption at all.

- Oregon's rule states that 500.4 micrograms per cubic meter is an AQI of 501. Washington's rule states that the same 500.4 micrograms per cubic meter is an AQI of 849. Oregon OSHA confirmed why in technical guidance TG 2024-01, dated 13 June 2024: the EPA changed how AQI is calculated from PM2.5 in May 2024, so the AQI values printed in the Oregon rule no longer reflect the current scale, while the microgram concentrations the rule actually sets are unaffected and still apply as written. Where a rule sets its thresholds in micrograms, the micrograms control and the AQI shown by an app does not.

- All three rules require a two way communication system: the employer informs employees of the current level and the protective measures available, and employees are encouraged to report worsening air quality and symptoms without fear of reprisal.

- Where respirator use is voluntary, fit testing and medical evaluation are not required for a filtering facepiece such as an N95. Where respirator use is required, the full respiratory protection standard applies.

Ask the crew

- What is the number for this site right now, and where did you get it from?

- What are the three symptoms that mean you stop and tell somebody?

- If our rule is written in micrograms, why is the AQI on your phone not the answer?

Close with this

Smoke is the one hazard on this site that nobody can point at and everybody is already breathing. Get the number before the shift, not after somebody says they feel rough.

Attendance

Everybody who was present signs, including subcontractors and anybody visiting the site.

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This talk is general safety information for a crew briefing, not legal advice and not a substitute for the training your employees are required to have. Standards are quoted for orientation only. Check the current text of the standard and your own state plan, which may be stricter than the federal rule.