

Protecting your construction crew from wildfire smoke requires an active monitoring routine, modified labor schedules, and accessible respiratory protection. The following material combines an actionable 5-minute site toolbox talk with a structured Air Quality Action Plan tailored for construction job sites.

Part 1: 5-Minute Construction Toolbox Talk

1. The Hazard on the Job - Wildfire smoke is a hazardous mix of soot and toxic gases. These particles are small enough to be inhaled into the lungs. Symptoms of exposure include coughing, wheezing, chest pain, and sore, watery eyes. Workers with pre-existing conditions like asthma, COPD, or heart disease, as well as older adults, are at the highest risk.

- **Physical strain:** Heavy construction labor causes faster, deeper breathing.
- **Increased intake:** Faster breathing dramatically accelerates toxin inhalation.
- **Immediate symptoms:** Expect burning eyes, coughing, and dizziness.
- **High-risk workers:** Crew members with asthma or heart conditions face immediate medical risks.

2. On-Site Protections / Exposure Controls / Worksite Adjustments - Follow the hierarchy of controls to protect your team:

- **Elimination/Substitution:**
 - **Defer non-essential outdoor tasks** on days with poor air quality. Move workers to indoor tasks if possible.
 - **Reduce Exertion:** Heavy labor increases breathing rates, causing workers to inhale more smoke. Take it easy and slow the pace of work.
 - **Rotate Crews:** Limit the amount of time individual employees spend performing strenuous work outdoors.
 - **Take Mandatory Breaks:** Establish clean-air trailers / resting areas where workers can temporarily escape the smoke
- **Engineering Controls:** If working in vehicles or heavy equipment:
 - **Cabin ventilation:** Keep heavy equipment windows fully closed.
 - **Air settings:** Set all equipment cabin A/C to "recirculate" instead of drawing in outside air.
- **PPE / Respirator Rule:** If workers must be active outdoors in unhealthy air,
 - **Assess your workers exposure and Provide** properly fitted NIOSH-approved N95 masks / respirators.
 - **Conduct Respirator Training** with all users on the safe use, limitations, care and inspection of respirators. Tight fitting elastomeric cartridge type

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respirator users must first pass a medical evaluation. Refer to OSHA standard 1910.134.

- **Mask fit:** Ensure a tight seal around your nose and chin. Dispose of damaged and contaminated respirators.
- **Banned gear:** Standard dust masks, cloth surgical masks, bandanas, or neck gaiters are not effective and do not filter out the hazardous fine particles

Part 2: Construction Site Air Quality Action Plan

This plan relies on real-time data from the AirNow Fire and Smoke Map. Enter your zip code at <https://www.airnow.gov/> to get air quality data at your location and actions to take at your site operations. Depending on the AQI Level value, the risk for smoke-related illness can range from lower to very hazardous. As the value goes up, more preventive measures are needed to protect employees.

AQI Level & Color	Health Risk	Mandatory Construction Action Items
0 – 100  Green /  Yellow	Good / Moderate	* Check daily morning air forecasts. * Verify N95 stockpiles in the safety trailer.
101 – 150  Orange	Unhealthy for Sensitive Groups	* Identify high-risk operators and laborers. * Move vulnerable crew to indoor or cabin work. * Provide N95 masks for voluntary deployment.
151 – 300  Red /  Purple	Unhealthy / Very Unhealthy	* Supply N95 respirators to all outdoor personnel. * Halt high-exertion manual digging and hauling. * Mandatory equipment operation with closed cabs. * Increase rest break frequencies inside clean zones.
301+  Maroon	Hazardous	* Stop all non-essential outdoor site activities. * Mandatory respirator enforcement under full OSHA rules. * Transition the entire crew to enclosed indoor fit-outs.

Daily Supervision Tasks

- **Conduct toolbox talk training** with all crews and new employees as they arrive.
- **Check tools:** Check the air app at 06:00, 11:00, and 14:00 daily.
- **Monitor work and worker conditions** regularly throughout the day.
- **Clean breaks:** Run a dedicated job trailer with closed doors and MERV-13 air filters.
- **Stop work:** Empower foremen to halt outdoor work if visibility falls, smoke spikes rapidly, or essential control methods are inadequate or unavailable.

Additional Resources:

<https://www.cdc.gov/wildfires/safety/how-to-safely-stay-safe-during-a-wildfire.html>

<https://www.aqmd.gov/home/air-quality/wildfire-health-info-smoke-tips>

<https://www.epa.gov/emergencies-iaq/wildfires-and-indoor-air-quality-iaq>

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<https://www.osha.gov/wildfires/resources>