Climate Adaptation on Site: Floods, Wildfire Smoke, Extreme Weather Stats and Facts



FACTS

- **Extreme Weather Is Now a Workplace Hazard:** Floods, wildfires, heat domes, and severe storms are recurring conditions that workers in construction, agriculture, utilities, and transportation encounter as part of their regular work environment.
- **Wildfire Smoke Is Not Just Unpleasant:** Wildfire smoke contains carbon monoxide, benzene, acrolein, and fine particulate matter. A single severe exposure event can cause lasting respiratory and cardiovascular damage — not just temporary irritation.
- **Air Quality Can Change Within a Single Shift:** During wildfire events, AQI readings can spike from acceptable to hazardous within hours. A work plan based on morning readings may be dangerously outdated by afternoon without continuous monitoring.
- **Flood Response Creates Secondary Hazards:** Workers in flooded areas face electrical shock from submerged equipment, contaminated water exposure, structural instability, and debris — layered on top of the original weather event.
- **Extreme Cold Is Also an Escalating Risk:** Polar vortex events and unexpected winter storms expose outdoor workers to rapid-onset hypothermia and frostbite in conditions that may not have been forecasted at shift start.

STATS

- Exposure to environmental heat resulted in 48 work-related deaths in the U.S. in 2024 and 7,100 DART cases in the 2023–2024 period, according to the National Safety Council citing BLS data.
- Wildfires accounted for roughly a quarter of total U.S. particulate emissions since 2018 — with wildfire smoke’s share of total emissions increasing nearly threefold over the last decade, according to research by Cabral and Dillender, 2024.
- Fine particulate matter and toxic metals from wildfires can cause neurological damage, respiratory issues, and cardiovascular problems,

disproportionately impacting outdoor workers including construction workers and firefighters, according to the Urban Institute’s 2025 Outdoor Workers at Risk report.

- California, Oregon, and Washington are the only three U.S. states with enforceable wildfire smoke standards requiring N95 respirators, worksite air quality monitoring, and worker training — as of 2024, no federal standard exists.
- In June 2023, wildfire smoke from Canada blanketed the northeastern United States, forcing outdoor workers — construction crews, delivery drivers, and agricultural laborers — to work in hazardous AQI conditions with no federal protection standard in place.