Wildfire Smoke Exposure Control Plan

Outdoor and semi-enclosed work · Template for Canadian employers

HSE ADVISOR CANADA
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Employer / company: _____ Site or operation: _____

Prepared by: _____ Position: _____

Date prepared: _____ Next review date: _____

1. SCOPE — WHO AND WHAT THIS COVERS

Crews, trades, and tasks covered by this plan:

Name the work, not just the job titles. Strenuous outdoor work, work in unfiltered enclosed cabs, and post-fire ash and debris cleanup each carry a different exposure and belong in scope explicitly.

2. THE HAZARD

Wildfire smoke exposes outdoor workers to fine particulate matter ($PM_{2.5}$) — particles 2.5 micrometres and smaller, fine enough to deposit deep in the lungs and pass into the bloodstream. Outside Quebec, the Air Quality Health Index (AQHI) is the public index to watch. In British Columbia the AQHI is calculated two ways each hour, from $PM_{2.5}$ alone and from $PM_{2.5}$, NO_2 and O_3 together, and the higher value is reported.

Workers doing heavy manual labour move several times the air volume of a person at rest, breathe more of it through the mouth, and sustain it across a full shift. The same ambient concentration therefore delivers a substantially larger dose to a working crew than the public health messaging implies.

> **Workers at higher risk on this site** (asthma, COPD, other chronic respiratory or cardiovascular conditions, pregnancy) — how they self-identify and who they report to:
>
> _____

3. AIR QUALITY INFORMATION SOURCE

Named source we check: _____

For example the Environment and Climate Change Canada AQHI for the nearest reporting community. Name one source and use it consistently — switching sources mid-event is how thresholds get argued over. Quebec does not use the AQHI; use the Info-Smog program there as your named source.

Reporting community or station used: _____

Who checks it: _____ When: _____

At minimum, start of shift and mid-shift once the index reaches the moderate band. Smoke can shift within an hour.

How the reading is communicated to the crew:

_____

4. AQHI TRIGGER LEVELS AND REQUIRED ACTIONS

No Canadian jurisdiction publishes a single AQHI number that stops outdoor work. Regulators instead route wildfire smoke through the employer's general duty to identify the hazard and control it — worded as "reasonably practicable" in some jurisdictions and "every precaution reasonable in the circumstances" in others, and set by the Canada Labour Code for federally regulated employers such as rail, interprovincial trucking, and telecom. That puts the threshold in this document rather than in the regulation. The framework below is a starting point — adjust the actions to your work, then apply them without a supervisor having to argue for them on the day.

AQHI BAND	BASELINE ACTION	OUR SITE'S ACTION (WRITE IN)
1–3 **Low Risk**	Normal operations. No additional controls required.	
4–6 **Moderate Risk**	Supervisor checks the index at start of shift and mid-shift. Brief the crew. Higher-risk workers self-identify and move to lighter duties. Respirators made available on request.	
7–10 **High Risk**	Reschedule strenuous work to the cleanest hours or another day. Extend rest breaks and take them in filtered air. Offer fit-tested respirators to everyone remaining outdoors. Increase water. Reassess hourly.	
Above 10 **Very High Risk**	Stop non-essential outdoor work. Move crews to indoor tasks with HEPA filtration or to a cleaner area. Essential outdoor work proceeds only with respiratory protection under a full written program and a documented reason.	
Any level	A worker reporting chest tightness, wheezing, dizziness, or unusual shortness of breath comes out of the smoke immediately, regardless of the number on the screen.	

Right to refuse. Every Canadian jurisdiction gives workers a right to refuse work they reasonably believe is unsafe, and wildfire smoke is not carved out of it. The refusal must be reported and investigated through the procedure set out in your jurisdiction's OHS legislation, and the right is limited where the hazard is a normal condition of the work. A crew that has been briefed on these thresholds and can see them being applied rarely needs to exercise it.

5. CLEAN-AIR REFUGE AND CONTROLS

- ☐ Filtered indoor break area or site trailer with a HEPA filtration unit — location: _____
- ☐ Vehicle and equipment cabs kept closed with recirculation on and cabin filters current
- ☐ Work rescheduled to the cleanest hours of the day where the task allows
- ☐ Drinking water increased and rest breaks extended during high-index days
- ☐ Other engineering or administrative control: _____

Respirators sit at the bottom of the hierarchy of controls. Exhaust the items above before relying on them.

6. RESPIRATOR SELECTION

RESPIRATOR	WHEN IT IS THE RIGHT CALL	WHAT WE STOCK (MODELS AND SIZES)
N95 filtering facepiece (NIOSH-approved)	Intermittent ambient smoke exposure. Filters at least 95 percent of airborne particles at the most-penetrating particle size. Disposable.	
Half-face elastomeric with P100 filters	Multi-week smoke conditions, and the default for post-fire ash and debris cleanup. P100 filters capture at least 99.97 percent of particles at the most-penetrating particle size, the facepiece seals more repeatably, and filters are swapped rather than the whole unit.	
Loose-fitting PAPR	Workers who cannot be clean-shaven for religious or medical reasons. Supplies filtered air under positive pressure and does not depend on a face seal.	

Ontario: from July 1, 2026, a respirator under Regulation 833 may be approved by CSA as well as NIOSH (O. Reg. 113/26).

> **No air-purifying respirator removes carbon monoxide.** Not an N95, not a P100, not an organic vapour and acid gas cartridge. If crews are close enough to active fire that carbon monoxide is a live concern, the control is supplied air or withdrawal, not respirator selection.

Stock target during a sustained smoke event: at least one disposable respirator per worker per shift, and more where workers are exerting themselves or the index sits above 7. Reused respirators are stored dry in a breathable paper bag, never a plastic one.

Quantity held on site: _____ Reorder trigger: _____ Responsible person: _____

7. REQUIREMENTS THAT FOLLOW ONCE RESPIRATORS ARE REQUIRED

Making respirators available and requiring them are treated differently under OHS regulation. Once the employer requires respiratory protection, CAN/CSA-Z94.4-18 (R2023), *Selection, use, and care of respirators*, and your OHS regulation bring the full program with it. A revised edition of Z94.4 is in development, so confirm which edition your jurisdiction currently references before you rely on this list. Confirm each element is in place before you make use mandatory:

- ☐ Written respiratory protection program (called a *code of practice* in Alberta, and forming part of the exposure control plan in British Columbia)
- ☐ Documented hazard assessment covering wildfire smoke
- ☐ Justified selection of the respirator for the hazard
- ☐ Medical clearance for each worker required to wear one
- ☐ Fit testing per CSA Z94.4 — before first use, then at least every two years, and sooner after significant weight change, major dental work, facial surgery or scarring, or any change of respirator make, model, or size. Some sectors and employer programs require it more often
- ☐ Training on use, limitations, seal checks, and storage
- ☐ Clean-shaven requirement enforced where facial hair crosses the sealing surface, with shaving within 12 to 24 hours of wear
- ☐ Maintenance, inspection, and storage records

> **Fit test and seal check are not the same thing.** The fit test is a formal supervised procedure, done on a schedule and documented. The seal check is what the worker does every time they put the respirator on. Audit the second one — it is the one that quietly stops happening in week three of a smoke event.

Fit testing provider: _____ Booked for: _____

Book spring testing while a fit tester can still be scheduled inside a week rather than a month.

8. REPLACEMENT — BY CONDITION, NOT BY THE CLOCK

Discard a disposable respirator when breathing through it becomes noticeably harder, when it is damp from sweat or exhaled moisture, when it is visibly soiled or deformed, when the straps have lost tension, or when the worker can no longer get a good seal check. In an occupational setting a respirator that has lost its seal is finished regardless of hours worn.

9. TRAINING, COMMUNICATION, AND RECORDS

- ☐ Pre-season toolbox talk: what the AQHI means, where to look it up, how to seal-check a respirator, when to shave, and who to tell about symptoms
- ☐ Wildfire smoke added as a named hazard in the site hazard assessment, alongside heat and cold
- ☐ Daily readings and actions recorded on the supervisor check sheet (Part 2) and retained
- ☐ Fit test records, medical clearances, and training records retained on file

Training delivered by: _____ Date: _____

Records retained by: _____ Retention period: _____

10. REVIEW

This plan is reviewed at least annually before wildfire season, and after any smoke event in which a threshold was applied, a worker reported symptoms, or a control did not work as written. Record what changed.

PREPARED BY — SIGNATURE _____ DATE _____

REVIEWED AND APPROVED BY _____ DATE _____

Supervisor Daily Smoke Check Sheet

One sheet per week · Retain with site records

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Site or operation: _____ Week beginning: _____

Supervisor: _____ AQHI source used: _____

DAILY RECORD

DATE	START AQHI	MID-SHIFT AQHI	FORECAST TOMORROW	ACTION TAKEN UNDER THE TRIGGER TABLE	RESPIRATORS ISSUED	SYMPTOMS REPORTED / WORKER MOVED	INITIALS

Bands: 1–3 Low Risk · 4–6 Moderate Risk · 7–10 High Risk · above 10 Very High Risk. Record the number you actually read, not the band.

START-OF-SHIFT CHECKS — TICK EACH DAY WORKED

CHECK	M	T	W	TH	F	SA	SU
AQHI checked from the named source and recorded above							
Crew briefed on today's index and what it changes							
Higher-risk workers confirmed and on suitable duties							
Respirator stock sufficient for the shift							
Workers wearing respirators are clean-shaven at the seal							
Seal checks observed being performed, not just instructed							
Clean-air break area available and filtration running							
Drinking water stocked and breaks scheduled							
Used respirators stored dry in paper, or discarded							

NOTES, INCIDENTS, AND THRESHOLD DECISIONS

Record any day the index crossed a threshold and what was decided, any worker who came out of the smoke, any refusal, and anything that did not work as the plan describes.

WEEK-END SIGN-OFF

SUPERVISOR — SIGNATURE _____ DATE _____

REVIEWED BY _____ DATE _____

Want help applying this?

Our consultants (CRSP Certified · COR & ISO 45001 Lead Auditors) can adapt this to your workplace or review your safety program with you.

(647) 620-5278 · **info@hseadvisor.ca** · **hseadvisor.ca/contact**

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