Compliance Cheat Sheet: How to Write & Implement a Respiratory Protection Program

What’s At Stake

The best way to keep workers from breathing in harmful mists, vapours, fumes, gases and other airborne contaminants is to keep them out of the air, e.g., via mechanical ventilation. Unfortunately, total elimination of airborne hazards isn’t a feasible option for most employers. In situations where exposure to respirable hazards can’t be avoided, it becomes imperative to provide and ensure workers use the right respiratory protective equipment (which, for simplicity’s sake, we’ll refer to as “respirators”). Otherwise, you put your organization at risk of OHS penalties and your workers at risk of serious illness, injury and even death.

Do You Need a Respiratory Protection Program’

The respiratory protection measures required under OHS laws are roughly the same across Canada. One difference is that Alberta, New Brunswick and, starting January 1, 2020, Ontario require employers to implement these measures via a written respiratory protection program (RPP). The RPP, in other words, doesn’t create new obligations so much as organize and ensure systematic implementation of existing ones with regard to safe respirator use. That’s why it’s advisable to implement an RPP at your own workplace even if the OHS regulations of your jurisdiction don’t expressly require it.

8 Steps to Comply

Regardless of whether you do it as part of an RPP, if workers at your site use respirators, there are 10 things you must do to ensure compliance with respiratory protection rules:

1. Select the Right Respirators

There are many kinds of respirators, each of which have their own specific capabilities and limitations. The RPP must set out your procedures and criteria for selecting the right respirator for your workers based on the findings of the hazard assessment and atmospheric testing you perform before undertaking the work. (Click here to find out how to perform a respiratory hazard assessment.) Thus, for example, if the work involves exposure to asbestos, workers must use respirators with a HEPA or particulate filter if work involves exposure to asbestos.

Respirator selection, 101: There are 2 basic types of respirator:

- **Air-purifying respirators** protect workers by filtering out contaminants and/or adsorbing gases or vapours via an adsorbing material contained in a cartridge or cannister.
- **Supplied-air respirators (SARs)** supply clean breathing air from a compressed air tank or air line.

Rather than go into specifics, OHS laws require respirators selection to meet the technical standards of outside organizations like NIOSH or CSA. In general:

- General selection must meet CSA Z94.4, *Selection, Use and Care of Respirators* (all jurisdictions except ON, SK, NWT and NU); and
- Breathing air in SARs must meet CSA Z180.1, *Compressed Breathing Air and Systems.*

Ontario, Alberta, Newfoundland and the Federal jurisdiction also require that respiratory protective equipment be approved by NIOSH or another government-approved safety agency. In Ontario and BC, specific kinds of respirators must provide at least the Protection Factor specified for that particular respirator type in a table listed in the regulation. There are also separate, stricter criteria for work done in IDLH (short for immediately dangerous to life or health) atmospheres, i.e., conditions that would pose an immediate threat to life, cause irreversible adverse health effects or impair a worker's ability to escape. Examples include atmospheres with:

- Concentrations of contaminants above the OEL (occupational exposure level) for the substance;
- Concentrations of flammable or combustible gases or vapours at or above 20% of their LEL (lower explosive limit); and
- Dangerously low levels of oxygen.

Required Respirator Selection Standards by Jurisdiction

Jurisdiction	Standards Equipment Must Meet (Note: *References to CSA standards by date typically include subsequent versions*)
Federal	*CSA Z94.4-M1982 *NIOSH-approved (IDLH atmosphere respirators) *Air in SAR must meet CSA CAN3-Z180.1-M85
Alberta	*CSA Z94.4-02 *NIOSH or other organization approved by Director of Occupational Hygiene *Self-contained breathing air must meet CSA Z180.1-00 (R2005) + can't have substance <10% of its OEL

British Columbia	*CSA Z94.4-93 *Self-contained breathing air must meet CSA Z180.1-00
Manitoba	*CSA Z94.4-02 *Supplied breathing air must meet CSA Z180.1-13
New Brunswick	*CSA Z94.4-93 *Self-contained breathing air must meet CSA Z180.1-M85
Newfoundland	*CSA Z94.4 *NIOSH-approved *Supplied breathing air must meet CSA Z180.1
Nova Scotia	*CSA Z94.4 *Supplied breathing air must meet CSA Z180.1
Ontario	*Assigned Protection Factor table listed in Schedule 2 of Reg. *NIOSH or other approved organization *Self-contained breathing air must meet CSA Z180.1-13
Prince Edward Island	*CSA Z94.4 *Supplied breathing air must meet CSA Z180.1
Qu□bec	*CSA Z94.4-93 *Supplied breathing air must meet CSA Z180.1-00
Saskatchewan	Supplied breathing air must meet CSA Z180.1-M85
NWT/Nunavut	None specified
Yukon	*CSA Z94.4-02 *Supplied breathing air must meet CSA Z180.1-00

2. Ensure Proper Respirator Fit

The RPP must should provide for mandatory fit testing of workers who use respirators that include a tight-fitting facepiece to verify that the fit is proper and the seal is tight enough to keep airborne contaminants from leaking in. Fit testing should take place before the worker uses the respirator for the first time, before a different respirator facepiece (size, style, model or make) is used and at least once a year after that.

Respirator Fit Re-testing Red Flags
You should do additional fit tests after a worker reports or a supervisor, co-worker, medical technician or other person observes changes in the worker's physical condition that may affect respirator fit, including:
• Facial scarring;
• Dental changes;
• Cosmetic surgery; and
• Obvious changes in body weight.

There are 2 basic methods of fit testing:

- **Quantitative Fit Testing (QNFT)** detects leakage by having the respirator user stand inside a test chamber containing a nontoxic aerosol while probes or other devices measure concentrations of the aerosol on the inside and outside of the facepiece; and
- **Qualitative Fit Testing (QLFT)** is a non-numeric pass/fail test in which a user stands in an enclosure into which a nontoxic test agent like banana oil is introduced. If the user detects the agent, it means the facepiece is leaking and the test is a fail.

Most respirators can be tested using either QLFT or QNFT. Exceptions: QNFT is

the only acceptable method of testing SARs, self-contained breathing apparatus (SCBA) and positive air-purifying respirators (PAPRs). And you don't have to do any kind of fit testing for mouthbit or loose-fitting respirators.

OHSI Resources
Respirator Fit Testing Form

3. Create Safe Work Procedures for Respirator Use

The RPP must list procedures for proper use of respirators in both routine and emergency situations, including:

- **User Seal Check Procedures:** Require workers that use respirators with tight-fitting facepieces to do a seal check before each use to verify that they put on the respirator right and that it's working properly.
- **Ban on Use by Workers with Facial Hair:** Don't let workers use tight fitting respirators if they have facial hair or any other condition that may interfere with the seal or valve function, such as scars on the face or jewelry or headgear that gets under the facepiece seal. Workers should be allowed to use corrective glasses, goggles or other protective equipment under their facepiece as long as they wear in it a way that doesn't interfere with the facepiece seal, distort their vision or cause any other harm.
- **Monitoring Work Conditions Impacting Respirator Effectiveness:** Do surveillance to detect changes to concentration levels of the contaminant, time of exposure or any other work, operation or equipment changes that may impair a respirator's effectiveness.
- **Observation of Workers:** There should be a procedure for observing the workers using respirators for indications of discomfort or improper use.
- **Exit Procedures:** There should be procedures in place requiring workers to leave the area where respirators are being used:
    - To wash their faces and facepieces so as to prevent eye or skin irritation (there should be a "safe area" nearby where workers can do this);
    - If they detect vapor or gas breakthrough, changes in breathing resistance or leakage of the facepiece; and/or
    - To replace the respirator or the filter, cartridge or canister elements.
- **Procedures for IDLH Atmospheres:** There must be procedures for work in IDLH atmospheres to ensure that:
    - At least one worker is located outside the IDLH atmosphere at all times;
    - Visual, voice, or signal line communication is maintained between worker(s) in the IDLH atmosphere and worker(s) outside;
    - The worker(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue; and
    - Workers are equipped with and trained to use emergency escape respirators or other escape equipment.

Compliance Pointer: In addition to these general safety procedures for IDLH and non-IDLH atmospheres, there must be specific procedures for particular kinds of hazardous work requiring respirator use, e.g., confined space entry, asbestos removal, abrasive blasting and structural firefighting operations.

OHSI Resources
Checklist for Proper Use of Respirators
Model Respirator Seal Check Procedure

4. Ensure Proper Respirator Care, Maintenance & Storage

There must be a system to ensure that respirators and respiratory protective equipment is properly cleaned, disinfected, serviced and maintained in accordance with the manufacturer's recommendations. SCBA, including regulators, must be serviced by a competent person. The equipment must be stored in a readily accessible location that's free of dust, sunlight, extreme temperatures, moisture and other conditions and contaminants that may impair its effectiveness.

5. Ensure Proper Respirator Inspection

The RPP should require respirators to be inspected before each use (in Alberta, inspection is also required *after* each use), after each cleaning and in response to complaints or indications that the equipment isn't working properly. Inspections should be performed in accordance with manufacturer's instructions and CSA Z94.4, *Selection, Use and Care of Respirators* and include checks of:

- The respirator function, tightness of connections and condition of the various parts including, the facepiece, head straps, valves, connecting tube and cartridges, canisters or filters; and
- Elastomeric parts for pliability and signs of deterioration.

SCBA and emergency use respirators must be inspected before they're introduced to the workplace, after each use and at least once a month to ensure that regulator and warning devices function properly and that air and oxygen cylinders are maintained in a fully charged state. Keep records of SCBA and emergency use respirator inspections listing:

- The inspection date;
- The inspector's name or signature;
- The inspection findings;
- The corrective action required, if any: and
- A serial number or other means of identifying the respirator.

Defective equipment must be immediately removed from service and not used again unless and until it's properly repaired.

6. Ensure Workers Receive Proper Respirator Safety Training

The RPP should state that workers may not use respirators unless and until they receive training on the equipment's use, limitations and care covering, at a minimum:

- Why they must use a respirator;
- How improper fit, use or maintenance can hurt a respirator's effectiveness;

- How the particular respirators they must use, including the cartridges, work to protect them;
- The limitations of the respirator they use;
- The risk of malfunction, types of emergencies that may arise and the procedures in place for responding to them;
- How to put on and remove the respirator;
- How to inspect and check the respirator;
- How to perform seal checks; and
- How to clean, maintain and store the respirator.

Simply delivering training isn't enough. You must also verify that workers understood their training. Best practice: Require them to demonstrate proper respirator use, seal checking, etc. after training ends.

OHSI Resources
The 10 Things Workers Must Understand Before Using a Respirator
Checklist for Proper Respirator Training

7. Provide for Ongoing Monitoring of RPP Effectiveness

You should periodically monitor your RPP to evaluate its effectiveness by, among other things, getting feedback from the workers who actually wear respirators at your site. Suggested questions:

- Does your respirator interfere with your hearing or vision'
- Do you have fatigue or difficulty breathing while using your respirator'
- Does your respirator restrict your movements or interfere with your job in any way'
- Is your respirator uncomfortable'
- Are you confident that you're using your respirator right'
- Are you confident that your respirator is performing well'

Be sure to take steps to correct any problems that you identify during your RPP assessment.

8. Specify Recordkeeping Requirements

Finally, you must retain and make available to workers, their representatives and OHS officials upon request for inspection and copying certain RPP related records, including:

- A copy of the RPP itself;
- Respirator fit testing records;
- Records of respirator inspections, maintenance and repairs;
- Respirator training records; and
- RPP monitoring records.