

# Respiratory Protection Policy



This Model Policy is based on BC OHS requirements but can be adapted for any other jurisdiction.

## 1. PURPOSE

ABC Company has adopted this Policy to ensure that effective respiratory protection is provided to all workers exposed to airborne hazards at its workplaces in accordance with the BC *Occupational Health and Safety Regulation* ("Regulation") (including but not limited to Part 8 of the Regulation), as well as the *Workers Compensation Act* ("Act"), the ABC Company Occupational Health and Safety Program ("OHS Program"), and other applicable requirements and standards.

## 2. DEFINITIONS

For purposes of this Policy:

- **"8-hour TWA limit"** means the time weighted average ("TWA") concentration of a substance in air which may not be exceeded over a normal 8 hour work period;
- **"ACGIH"** means the American Conference of Government Industrial Hygienists;
- **"Board"** means the BC Workers' Compensation Board (aka WorkSafeBC);
- **"Ceiling limit"** means the concentration of a substance in air which may not be exceeded at any time during the work period;
- **"Contaminant"** means a harmful or irritant material, or nuisance dust, foreign to the normal composition of a

substance, or a material that varies the normal proportions of components in a mixture such as air;

- **“Established 8-hour TWA limit”** means either:
  - The 8-hour TWA limit set by the Board for an air contaminant; or
  - If the Board has not set an 8-hour limit for an air contaminant, the TWA limit set by the ACGIH for the particular contaminant;
- **“Established STEL limit”** means either:
  - The short-term exposure limit (“STEL”) limit set by the Board for an air contaminant; or
  - If the Board has not set an STEL for an air contaminant, the STEL set by the ACGIH for the particular contaminant;
- **“Established ceiling limit”** means either:
  - The ceiling limit set by the Board for an air contaminant; or
  - If the Board has not set a ceiling limit for an air contaminant, the ceiling limit set by the ACGIH for the particular contaminant;
- **“HEPA”** means a high efficiency particulate air filter meeting the specifications of a nuclear grade filter, providing a 99.97% filtration efficiency at a 0.3 micrometre particle size;
- **“IDLH atmosphere”** means an atmosphere containing a substance at a concentration that is immediately dangerous to life and health (“IDLH”) because the concentration is greater than that from which a person could escape without any escape-impairing symptoms or irreversible health effects, and includes an atmosphere with an unknown concentration that has the potential to be IDLH;
- **“Maximum use concentration”** means the concentration of an airborne contaminant calculated using one of the methods set out in Section 8.3 of this Policy below;
- **“Oxygen deficient”** means, in relation to air, a condition in which there is less than 19.5% oxygen by

volume, or the partial pressure of oxygen is less than 16.3 kPa (122 mm Hg);

- **“Practicable”** means that which is reasonably capable of being done;
- **“Qualified”** means being knowledgeable of the work, the hazards involved, and the means to control them by reason of education, training, and/or experience;
- **“Short-term exposure limit” or “STEL”** means the TWA concentration of a substance in air which may not be exceeded over any 15-minute period, limited to no more than 4 such periods in an 8-hour work shift with at least 1 hour between any 2 successive 15-minute excursion periods.

### **3. POLICY STATEMENT**

Certain operations at ABC Company work sites may require workers to work in environments where the air contains or may contain high levels of contaminants that may make the air dangerous to breathe. Where practicable, ABC Company will use engineering controls like ventilation or purging to completely eliminate these contaminants or reduce them to safe and manageable levels so workers can safely breathe the air without using respirators. But where such controls are not practicable, workers will be provided and required to use respirators in accordance with the terms of this Policy.

### **4. WORKERS THIS POLICY IS INTENDED TO PROTECT**

The intent of this Policy is to ensure that **all workers** engaged to work at ABC Company work sites who are or may be exposed to unsafe levels of airborne contaminants are properly protected regardless of who pays or employs those workers, including:

- Full- or part-time workers employed by ABC Company;
- Temporary employees placed by an outside agency to work at the site;
- Contract labourers engaged to perform work at the site;

- Volunteers who work at the site for free; and
- Workers employed by prime contractors, contractors, and subcontractors to perform work at the site under a contract with ABC Company.

## **5. ROLES & RESPONSIBILITIES**

### **5.1. ABC Company**

ABC Company owners, corporate officers and directors, upper managers, and other representatives who may be considered an “employer” under the Act will oversee this Policy and ensure it is effectively implemented and that:

- The resources necessary to implement this Policy effectively are provided;
- All ABC Company work sites under its control are assessed for potential respiratory hazards before work is conducted;
- Appropriate measures are selected to eliminate and control identified respiratory hazards in accordance with this Policy;
- The respiratory protective equipment workers are required to use is furnished to workers at no expense to themselves;
- Workers are allowed to participate in respiratory hazard assessment and the selection of respiratory protective equipment either directly or through their workplace Joint Safety and Health Committee (“Safety Committee”) or Health and Safety Representative (“Safety Representative”);
- Workers exposed to respiratory hazards receive the necessary safety information, training, and supervision in proper use, limitations, inspection, maintenance, and storage of such equipment;
- This Policy is appropriately reviewed.

### **5.2. Safety Coordinator, Site Manager**

The Safety Coordinator, facility manager, or other person designated as being in charge of safety at the site will be thoroughly familiar with and oversee implementation of this Policy, including ensuring that:

- The work site is assessed for potential respiratory hazards before work is conducted;
- Appropriate measures are selected to eliminate and control identified respiratory hazards;
- The respiratory protective equipment workers are required to use is furnished to workers at no expense to themselves;
- Workers are allowed to participate in respiratory hazard assessment and the selection of respiratory protective equipment either directly or through their workplace Safety Committee or Safety Representative;
- Where necessary, safe work procedures for use of respiratory protective equipment are developed and implemented;
- Workers exposed to respiratory hazards receive the necessary safety information, training, and supervision in proper use, limitations, inspection, maintenance, and storage of such equipment;
- This Policy is applied to prime contractors, contractors, and subcontractors hired to work at ABC Company work sites;
- This Policy is appropriately reviewed.

### **5.3. Supervisors**

Supervisors, lead-hands, foremen, and other persons in charge of work operations requiring use of respiratory protective equipment are responsible for day-to-day implementation of this Policy and applying it in actual operations, including ensuring:

- The work site is assessed for potential respiratory hazards before work is conducted;

- All workers are furnished and required to use the respiratory protective equipment required by this Policy, including but not limited to air-supplying respirators for working in IDLH and oxygen deficient atmospheres;
- All required respiratory protective equipment meets the requirements of the CSA standards cited in Part 8 of the Regulation and is properly used, stored, maintained, and cleaned;
- Workers exposed to respiratory hazards receive the necessary safety information, training, and supervision in proper use, limitations, inspection, maintenance, and storage of such equipment;
- Any safe work procedures for use of respiratory protective equipment are carried out;
- This Policy is consistently enforced, including where necessary, via the imposition of discipline against workers who commit infractions;
- This Policy is applied to prime contractors, contractors, and subcontractors hired to work at ABC Company work sites;
- This Policy is appropriately reviewed.

#### **5.4. Workers**

Workers exposed to airborne hazards will cooperate with ABC Company in implementing this Policy, including by:

- Ensuring they receive, understand, and apply the information and training they need to work safely, including:
  - What respiratory hazards they're exposed to;
  - The respiratory protective equipment they are required to use, how it works, and what its limitations are;
  - The proper use, cleaning, maintenance, and storage of their respiratory protective equipment;
  - How the respirator should fit and what to do to

- ensure a proper fit prior to each use;
- How to inspect their respirator prior to each use;
- Properly using, inspecting, storing, and caring for the respiratory protective equipment they are required to use;
- Ensuring their respiratory protective equipment fits properly;
- Following any safe work procedures that apply to the work;
- Where necessary, shaving to ensure that the facial seal required for the face mask of their respiratory protective to their skin is effected;
- Immediately reporting any respiratory hazards or respiratory protective equipment defects to their supervisor; and
- Participating in the identification, assessment, and control of respiratory hazards either directly or via their workplace Safety Committee or Safety Representative.

### **5.5. Safety Committee/Safety Representative**

The workplace Safety Committee or Safety Representative may be called on to:

- Participate in the hazard assessment required by this Policy;
- Provide input into the selection of respiratory protective equipment appropriate to protect workers from risks identified in the hazard assessment;
- Provide input into the development of safe work procedures necessary to perform work involving exposure to respiratory hazards safely;
- Consider the effectiveness of respiratory protective equipment as part of its routine monthly workplace inspection;
- Issue recommendations for improving respiratory protection;

- Participate in the investigation of injuries, illnesses, incidents, or accidents involving respiratory hazards;
- Participate in the review of this Policy.

## **5.6. Visitors**

Visitors to ABC Company workplaces will:

- Stay away from areas of the work site where respiratory hazards exist unless they:
  - Are authorized to be in those areas;
  - Follow all applicable safe work procedures while in those areas;
  - Use all required respiratory protection equipment;
- Refrain from engaging in any conduct that distracts or interferes with the implementation of the procedures and protections set out in this Policy;
- Comply with the terms of the ABC Company Visitors' Safety Policy.

## **6. HAZARD IDENTIFICATION & ASSESSMENT**

ABC Company will designate a qualified person to conduct a hazard assessment of the workplace to identify respiratory hazards including the presence or potential presence of airborne contaminants at concentration levels that may endanger a worker's health and safety. Identified respiratory hazards will be assessed on the basis of the following risk factors:

- The nature and circumstances of exposure;
- The concentration or likely concentration of any airborne contaminants;
- The likely duration of the worker's exposure;
- How toxic the contaminants are;
- The concentration of oxygen;
- The warning properties of contaminants, e.g., odours; and
- The need for emergency escape.



Hazard identification and assessment will be carried out in consultation with the Safety Committee or Safety Representative, or where no Committee or Representative exists, directly with affected workers at the work site.

The respiratory hazard assessment will be reviewed on a regular basis and:

- Immediately after injuries, illnesses, incidents, or accidents related to respiratory hazards occur;
- Before new work processes affecting respiratory hazards that were not adequately addressed in the previous hazard assessment are introduced to the work site;
- Before significant changes to the work processes or operations affecting respiratory hazards that were not addressed in the previous hazard assessment are made;
- Before significant new technology affecting respiratory hazards is introduced to the work site;
- Before the construction of significant additions or alterations to a work site are made;
- In response to other indications of changes or respiratory hazards not adequately addressed in the previous hazard assessment report.

## **7. WHEN RESPIRATORS MUST BE USED**

Relying on the results of the respiratory hazard assessment, ABC Company will provide an appropriate respirator (and ensure that the respirator is properly used) to any worker is or might be exposed to an air contaminant that exceeds:

- An 8-hour TWA limit, ceiling limit or short-term exposure limit set by the ACGIH for the contaminant;
- Any other limit for the contaminant set by the Board under its authority (provided in Section 5.48 of the Regulation) to establish occupational exposure limits for hazardous substances; or
- Any excursion limit for the air contaminant set by the

Board under Section 5.49 of the Regulation.

## **8. CONTROL OF RESPIRATORY HAZARDS**

### **8.1. Selection of Appropriate Respirators**

ABC Company will select appropriate respirators for exposed or potentially exposed workers:

- In consultation with the Safety Committee, Safety Representative, or where no Committee or Representative exists, directly with affected workers at the site, select an appropriate respirator for exposed workers;
- In accordance with the principles set out in CSA Z94.4-02, Selection, Use, and Care of Respirators.

### **8.2. Proper Use of Respirators**

ABC Company will ensure that workers properly use the respirators they are provided. In carrying out the above responsibility, ABC Company will take steps to ensure that no worker uses a respirator for protection against a concentration of an airborne contaminant in the workplace that is greater than the maximum use concentration for that particular respirator.

### **8.3. Calculation of Maximum Use Concentration**

To keep respirator use within the maximum use concentration limits, ABC Company will determine the maximum use concentration of an airborne contaminant to which the worker is or may be exposed, and refer to the below Respirator Protection Factor Table (Table 8-1 of the Regulation) to verify that the protection factor for the particular respirator the worker is using is within the maximum use concentration limit for that contaminant.

#### **Table 8-1: Respirator Protection Factors**

<b>RESPIRATOR TYPE</b>	<b>PROTECTION FACTOR</b>
<b>Air Purifying</b>	
Half facepiece, non-powered	10
Full facepiece, non-powered	50
Full facepiece, powered (PAPR), equipped with HEPA filters for exposure to asbestos	100
Full facepiece, powered (PAPR), equipped with HEPA filters and/or sorbent cartridge or canister for exposure to contaminants other than asbestos	1 000
Loose-fitting facepiece, powered (PAPR)	25
Hood or helmet facepiece, powered (PAPR), and equipped with a HEPA filter or a sorbent cartridge or canister or both a HEPA filter and a sorbent cartridge or canister, if section 8.34 (5) applies	25
Hood or helmet facepiece, powered (PAPR), and equipped with a HEPA filter or a sorbent cartridge or canister or both a HEPA filter and a sorbent cartridge or canister, if the conditions set out in section 8.34 (4) are met	1 000
<b>Air Supplying</b>	
<b>Airline – Demand (negative pressure)</b>	
Half facepiece	10
Full facepiece	50
<b>Airline – Continuous Flow</b>	
Loose-fitting facepiece/hoods	25
Half facepiece	50
Full facepiece	1 000
Helmet/hood	1 000

<b>Airline – Pressure Demand (positive pressure)</b>	
Half facepiece	50
Full facepiece	1 000
Full facepiece, with egress bottle	10 000
<b>Self-Contained Breathing Apparatus (SCBA)</b>	
Demand (negative pressure)	50
Pressure demand (positive pressure)	10 000
Other factors such as warning properties, IDLH levels, and cartridge/canister limitations must also be taken into account when determining the maximum use concentration. Refer to the manufacturer's instructions and standards acceptable to the Board for further information.	

ABC Company will use one of the following methods to determine if a respirator a worker is using to protect against a contaminant is within the maximum use concentration for that contaminant:

- Method 1: If an established 8-hour TWA limit applies to the contaminant, the maximum use concentration will be calculated by multiplying:
  - the established 8-hour TWA limit for the contaminant
- x
- The protection factor set out in Table 8-1 for the type of respirator the worker is using
- Method 2: If there is no established 8-hour TWA limit that applies to the contaminant, the maximum use concentration will be calculated by multiplying:

- the established short-term exposure limit for the contaminant

x

- the protection factor set out in Table 8-1 for the type of respirator the worker is using
- Method 3: If there is no established 8-hour TWA limit or short-term exposure limit that applies to the contaminant, the maximum use concentration will be calculated by multiplying:
  - the established ceiling limit for the contaminant

x

- the protection factor set out in Table 8-1 for the type of respirator the worker is using

The protection factor of 1,000 set out in Table 8-1 for a hood or helmet facepiece, powered (PARR), and equipped with a HEPA filter *or* sorbent cartridge or canister, or both a HEPA filter *and* sorbent cartridge or canister applies only if ABC Company can produce evidence from the manufacturer demonstrating that:

- The manufacturer tested that type of respirator; and
- Those tests demonstrated that a respirator of that type has a protection factor of at least 1,000.

If both of these conditions are **not** met, the protection factor of 25 set out in Table 8-1 for a hood or helmet facepiece, powered (PARR), and equipped with a HEPA filter *or* sorbent cartridge or canister, or both a HEPA filter *and* sorbent cartridge or canister applies.

#### **8.4. Respiratory Protection for IDLH or Oxygen Deficient Atmospheres**

Any worker required to enter or work in an IDLH or oxygen deficient atmosphere must:

- Wear a full facepiece positive pressure respirator that is either an SCBA, or an airline respirator with an auxiliary self-contained cylinder of sufficient capacity to permit the worker to escape unassisted from the contaminated area if the air supply fails; and
- Be attended by at least one other worker stationed at or near the entrance to the contaminated area who is similarly equipped and capable of effecting rescue.

Where there is a significant risk of accidental release into a worker's breathing zone of quantities of an air contaminant sufficient to produce an IDLH atmosphere, workers must wear a full facepiece positive pressure respirator that is either an SCBA, or an airline respirator with an auxiliary self-contained cylinder of sufficient capacity to permit the worker to escape unassisted from the contaminated area if the air supply fails.

### **8.5. Emergency Escape Respirators**

Workers must carry an emergency escape respirator in circumstances where the nature or quantity of an air contaminant and the nature of the work area might make the worker unable to escape from a contaminated area without help. Such emergency escape respirator must be:

- Carried on the worker's person or be within arm's reach at all times; and
- Sufficient to enable the worker to leave the contaminated area without assistance.

### **8.6. Quality of Respirable Air**

Compressed breathing air supplied for equipment such as an SCBA and a supplied air respirator must be tested at least once a year to ensure that the supplied air meets the

requirements of CAN/CSA Standard Z180.1-00, "Compressed Breathing Air & Systems." Where an SCBA cylinder that has not been used for more than a year, air in the cylinder must be slowly depressurized to atmosphere and refilled with compressed air that meets the requirements of CAN/CSA Standard Z180.1-00, "Compressed Breathing Air & Systems."

## **8.7. Respirators for Protection against Asbestos**

A single use respirator is not appropriate for and may not be used for protection against asbestos.

## **8.8. Optional Respirators**

Where a respirator is **not** required under the criteria set out in Section 7 above, but ABC Company chooses to provide workers a respirator or workers choose to use a personal respirator:

- The respirator may not be used unless it meets the requirements of a standard acceptable to the Board for protection against airborne contaminants in the workplace.
- The respirator must:
  - Be selected and used in accordance with recognized standards and provide effective protection;
  - Not in itself create a hazard to the worker;
  - Be compatible so that it does not render another item of personal protective equipment ("PPE") ineffective;
  - Be maintained in good working order and in a sanitary condition;
- If the optional respirator creates hazards equal to or greater than those its use is intended to prevent, alternative PPE must be used or other appropriate measures taken;
- ABC Company must ensure that the user is adequately instructed in the optional respirator's correct use, limitations, and assigned maintenance duties for the

equipment to be used.

## **9. FULL FACEPIECE RESPIRATORS**

### **9.1. Corrective Eyewear**

If a worker who wears prescription eyeglasses is required to wear a full facepiece respirator, ABC Company will assess the work to be performed and provide appropriate specialty corrective eyewear, if necessary, to ensure that the work can be performed safely. Workers required to wear a full facepiece respirator may use contact lenses as long as their use is not likely to negatively affect the worker's health and safety.

### **9.2. Facial Seals**

Nothing may be permitted to intrude between the facepiece and the face, or interfere with the face seal of the facepiece; Exception: Workers may wear specialty eyewear approved by the Board for use with a positive pressure full facepiece respirator. Workers required to wear a respirator that requires an effective seal with the face for functioning must be clean shaven in the facial area where the respirator seals with the face.

### **9.3. Fit Testing**

Respirators that require an effective seal with the face for proper functioning may not be issued unless a fit test is carried out and demonstrates that the facepiece forms an effective seal with the worker's face.

Fit testing will be performed in accordance with CSA Z94.4-02, Selection, Use, and Care of Respirators, with fit tests carried out:

- Before initial use of the respirator;
- At least once a year;
- Whenever there is a change in respirator facepiece, including the brand, model, and size; and



- Whenever changes to the worker's physical condition could affect how the respirator fits.

Results of fit testing will be recorded in writing. During fit testing, workers must wear any other PPE that they will be wearing at the same time as the respirator and which could interfere with the respirator's fit.

#### **9.4. User Seal Check**

Workers must perform a positive or negative pressure user seal check in accordance with CSA Z94.4-02, Selection, Use, and Care of Respirators before each use of a respirator that requires an effective seal with the face for proper functioning. Exception: The preceding rule does not apply to the emergency use of an escape respirator.

### **10. MEDICAL ASSESSMENT**

Where a worker is required to use a respirator and there is doubt as to the worker's ability to use the respirator for medical reasons:

- The worker must be examined by a physician; and
- ABC Company will provide the examining physician the information he/she needs to advise ABC Company of the worker's ability to wear a respirator.

### **11. INSPECTION & MAINTENANCE**

Inspection of compressed air cylinders will be done in accordance with CSA Z94.4-02, Selection, Use, and Care of Respirators.

Self-contained breathing apparatus, including respirators, will be serviced and repaired by qualified persons.

Compressed air cylinders will be hydrostatically tested in accordance with CSA B339-96, Cylinders, Spheres, and Tubes for the Transportation of Dangerous Goods.

## **12. RECORDS**

ABC Company will keep written records of:

- Fit test results and worker instruction;
- Maintenance done on:
  - Air supplying respirators;
  - Powered air purifying respirators; and
  - Sorbent cartridges and canisters;
- Maintenance and repairs of each self-contained breathing apparatus and all air cylinders in accordance with CSA Z94.4-02, Selection, Use, and Care of Respirators.

## **13. TRAINING & INSTRUCTION**

ABC Company will ensure that workers using respiratory protective equipment under this Policy:

- Are adequately trained by a qualified person in the proper fit, testing, maintenance, use, and cleaning of the equipment and its limitations;
- Are able to test, maintain, and clean the equipment;
- Are able to use the equipment safely; and
- Inspect and test the equipment before each use.

## **14. PRIME CONTRACTORS, CONTRACTORS & SUBCONTRACTORS**

ABC Company will ensure that any prime contractors, contractors, and subcontractors hired to perform work involving exposure to respiratory hazards at its work sites are, before such work begins:

- Notified about the respiratory hazards at the site, the dangers they pose, and the respiratory protective equipment and other controls used by ABC Company to protect workers exposed to them;
- Given a copy of this Policy;
- Required to notify their own workers about and ensure they comply with the terms of this Policy.

Prime contractors in control of work at an ABC Company site that involves exposure to respiratory hazards requiring the use of respiratory protective equipment under this Policy will ensure that exposed workers engaged in the contract work are adequately protected by applying either:

- This Policy and any ABC Company safe work procedures for carrying out the work safely; or
- An equivalent policy and safe work procedures that meet the requirements of Part 8 of the Regulation and is coordinated with and provides at least the same level of protection as this Policy and ABC Company safe work procedures to workers exposed to respiratory hazards.

## **15. EVALUATION**

This Policy will be reviewed, in consultation with the Safety Committee or Safety Representative, at least once a year and more often in response to incidents, injuries, illnesses, changes to work conditions, and other developments suggesting the current Policy may no longer be suited to current work conditions.

### **Legislation/Regulations/Standards**

Workers Compensation Act, RSBC 1996, c 492

Occupational Health and Safety Regulation, BC Reg 296/97

CSA Z180.1-00, Compressed Breathing Air & Systems

CSA Z94.4-02, Selection, Use, and Care of Respirators

CSA B339-96, Cylinders, Spheres, and Tubes for the Transportation of Dangerous Goods