Occupational Health, Safety & Environment

Respiratory Protection Program

March 2025

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1.0 PROGRAM OBJECTIVES

The Respiratory Protection Program aims to prevent adverse health effects from the inhalation of hazardous airborne contaminants, increase awareness of respiratory hazards in the workplace, and inform employees on how to protect themselves from the identified potential hazards.

2.0 PROGRAM SCOPE

WorkSafeBC requires the employer to provide an appropriate respirator if a worker is or might be exposed in a workplace to an air contaminant that exceeds an occupational exposure limit (Section 8.32, OHS Regulation).

This program applies to all UVic employees who require respiratory protection if a hazardous atmosphere is present in their work environment and cannot be eliminated or controlled to below harmful levels.

3.0 ROLES AND RESPONSIBILITIES

Individuals in every location where a Respiratory Protection Program exists play a vital role in ensuring a safe work environment. The responsibilities given to various individuals and groups on campus are outlined below.

3.1 DEPARTMENT HEAD

- Identifying all managers and supervisors under their authority and ensuring that they clearly understand their duties and responsibilities as individuals with principal authority for areas requiring a Respiratory Protection Program within their department.
- Ensuring all components of the University of Victoria's Respiratory Protection Program **are implemented in their department.**

3.2 MANAGER / SUPERVISOR

- Conducting a hazard assessment to identify situations where a respirator is required and report to Occupational Health, Safety and Environment (OHSE).
- Implementing adequate control measures to limit exposures of employees to airborne contaminants.
- Providing appropriate training for employees and maintaining records.
- Providing an appropriate respirator and ensuring that it is used correctly.
- Providing appropriate storage locations and supplies for workers to clean their respirators.
- Ensuring a medical assessment has been conducted for all employees prior to respirator fit testing and use.
- Arranging for annual fit-testing of employees and maintaining a record of testing.

3.3 OCCUPATIONAL HEALTH, SAFETY & ENVIRONMENT

- Ensuring that the worksite is evaluated for breathing hazards by reviewing the department's hazard assessment.
- Assisting departments with their hazard assessments, as required.
- Providing recommendations on eliminating or minimizing airborne hazards.
- Providing training to managers and supervisors responsible for their departmental Respiratory Protection Programs.
- Coordinating annual fit testing or fit test training for departments.
- Assisting managers and supervisors in the selection of appropriate respirators.

3.4 EMPLOYEE

- Wearing an appropriate respirator when performing tasks or working in an area where a respirator is required as a result of a hazard assessment.
- Inspecting the respirator prior to use and reporting any equipment malfunction or unsafe work condition(s) to their supervisor.
- Using the respirator as directed by the supervisor and in accordance with the manufacturer's specifications.
- Complete medical screening form, attend annual fit testing and sign-off on all required forms.
- Proper cleaning, maintaining, and storing respirator(s).
- Notify their supervisor if they have medical concerns regarding the use of their respirator, or if there is a change in their medical condition that may prevent them from continuing to use a respirator.

4.0 PROGRAM COMPONENTS

A departmental Respiratory Protection Program must be implemented where respiratory protection is required to protect workers from hazardous atmospheres. The elimination or reduction of respiratory hazards through substitution or engineering controls is preferred; however, there may be instances where employees require the use of an appropriate respirator. The following sections outline the main components of a Respiratory Protection Program.

4.1 HAZARD ASSESSMENT

A hazard assessment of the work area is required to determine whether a respiratory hazard exists and assist in identifying the contaminants for selection an appropriate respirator. Elimination or reduction of respiratory hazards through engineering controls or substitution is the preferred method of hazard control, whereas the use of a personal respirator should be considered the last option for mitigating potential exposures.

A *Respiratory Hazard Assessment Form* is provided as a guide to completing a preliminary assessment for a particular activity or work area (Appendix I). The completed form should be returned to the Department of Occupational Health, Safety and Environment for review.

A Hazard Assessment involves the following steps:

1. Identify which contaminants may be present in the workplace.
2. Identify the physical and toxicological properties of the airborne contaminant(s).
3. Determine if the atmosphere is potentially oxygen deficient.
4. Identify the appropriate occupational exposure limit for each airborne contaminant.
5. If a respiratory hazard is present based on steps 1-4, continue to the next step.
6. Determine if engineering control measures are feasible to limit exposures.
7. Select the appropriate respiratory protection if exposure limits cannot be controlled by other means according to the hierarchy of controls (e.g., engineering, substitution, administrative).

4.2 SELECTION OF RESPIRATORS

All respirators must be selected in accordance with *CSA Standard CSA-Z94.4-11, Selection, Use, and Care of Respirators* and be NIOSH approved. Managers and supervisors, in consultation with the employee and OHSE, shall select an appropriate respirator when required by a hazard assessment. The *Respirator Selection Chart* and *Respirator Protection Factors Chart* will assist in this process (see Appendix II and III).

Selection factors to consider include:

1. Health of the worker and ability to wear respirator.
2. Hazard assessment results.
3. Length of time respirator is to be worn.
4. Nature of work and environment.
5. Physical characteristics, capabilities, and limitation of respirators.

4.3 RESPIRATOR FIT TESTING

- Proper fitting of respirators is essential for protection from airborne contaminants. The wearer must pass an appropriate quantitative or qualitative fit test when using a tight-fitting respirator and must be fit tested for the specific respirator that they will be wearing.
- Fit testing must occur prior to the initial use of a respirator. When a different respirator face piece (e.g., size, style, model) is used, another fit test must be conducted using the new model. If the user's physical condition changes affecting the respirator fit (e.g. facial surgery, significant weight gain/ loss) then the fit test must be completed again to ensure adequate fit. In addition, a respirator seal check shall be performed each time before the respirator is worn (see Appendix IV). WorkSafeBC Regulation states that fit tests must be completed on an annual basis.
- Records of respirator fit test results should include the following: name of the person tested, date of test, specific make, model, style and size of respirator, type of fit test (e.g. qualitative or quantitative) and test solution (e.g., Bitrex,

Saccharin), results of fit test, and name of the person giving the test (see Appendix V).

- Respirator fit testing shall be carried out by a qualified person. Contact Occupational Health, Safety and Environment if you require a fit test or fit test training.

4.4 EDUCATION AND TRAINING

Occupational Health Safety & Environment

- Occupational Health, Safety and Environment provides training and consultation to managers and supervisors on respiratory protection and the administration of the Respiratory Protection Program.

Managers and Supervisors

- Managers and supervisors are responsible for ensuring their employees are instructed and trained in the following:

    - The respiratory hazards present at the specific worksite and their potential health effects.
    - The capabilities and limitations of the selected respirator.
    - Inspection and maintenance procedures.
    - Cleaning and storage methods.
    - Donning the respirator.
    - Performing a seal check and participating in a fit test.
    - Proper use of the respirator and procedures to follow if the respirator malfunctions.
    - Filter cartridge change-out schedule and expirations dates.

A record of training shall be kept in the department for all employees who have received respirator training.

4.5 RESPIRATOR USE & CARE

4.5.1 Inspections

Each person issued a respirator shall inspect the respirator prior to each use to ensure that it is in good condition. This inspection shall include a check of the tightness of the connections and the condition of the facepiece, headbands, valves, and cartridges. Check the condition of the sealing flange and that the inhalation and exhalation valves are not missing, folded over, torn or hardened. The mask itself shall be inspected for any signs of deterioration. If any defects are noted, report to the Supervisor for replacement parts or a new respirator.

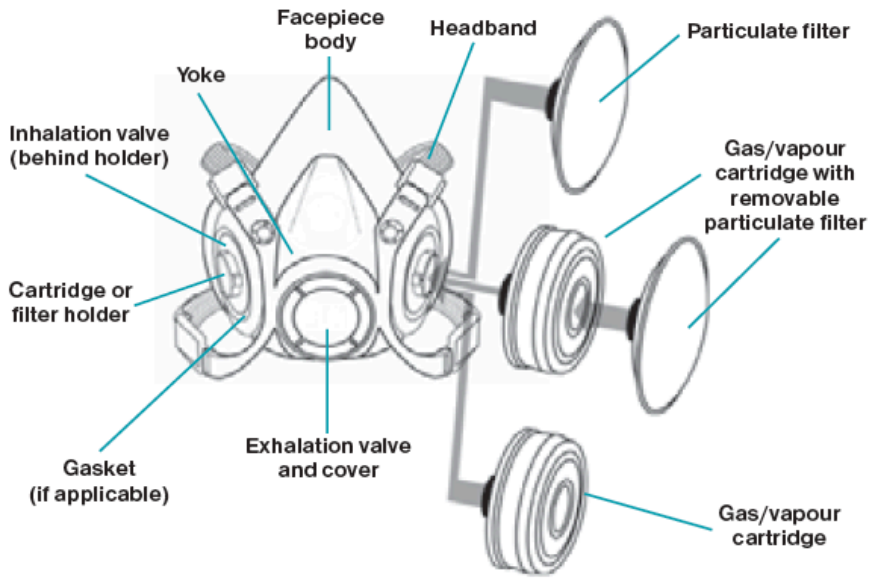


Figure 1. Respirator Parts. *Breathe Safer: How to use respirators safely and start a respirator program*. WorkSafeBC.

4.5.2 Use

All workers wearing a seal fitting respirator must be clean-shaven. Facial hair breaks the seal between the skin and the respirator mask.

4.5.3 Cleaning

Respirators shall be regularly cleaned and disinfected. Respiratory equipment should be washed with soap and warm water (remove cartridges from the respirator prior to washing). After washing and disinfecting the respirator, rinse it with clean, warm water and allow the respirator to dry. Consult the manufacturer's guide for specific cleaning instructions.

4.5.4 Storage

Store the respirator in a clean sealed container in an area not exposed to chemicals or particulates.

4.6 MEDICAL SURVEILLANCE

Prior to fit testing and respirator use, the employee must complete the health screening section of the Respirator Fit Test Form (see Appendix V). It shall be confirmed that the employee is free from any physiological or psychological conditions that may prevent them from being assigned the use of a respirator.

The completed section will be reviewed by the OHSE Consultant or qualified person before proceeding with the fit test. If concerns regarding the use of a respirator are identified, the Fit Tester will refer the employee to a medical physician for further assessment.

Employees who do not meet the medical requirements shall not work in an area where respiratory protection is required.

4.7 ANNUAL PROGRAM REVIEW

The University of Victoria Respiratory Protection Program document will be reviewed annually. In addition, OHSE in partnership with managers and supervisors, will review Departmental Respiratory Protection Programs for compliance. This includes a review of fit test and training records, employee training and instruction, control measures to ensure they are effective in limiting exposures, and the inspection of respirator devices, storage, and maintenance.

The program review will also include an evaluation of wearer acceptance of respirator. Employees should be consulted periodically on the following issues:

- Resistance to breathing
- Fatigue
- Interference with vision
- Interference with communication
- Restriction of movement
- Interference with job performance

5.0 RESOURCES

WorkSafeBC
"Breathe Safer: How to use respirators safely and start a respirator program."
http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/breathe_safer.pdf

Canadian Standards Association (CSA) Standards
Z94.4-11 Selection, use and care of respirators
http://www.ccohs.ca/legislation/csa.html

Occupational Health, Safety and Environment
University of Victoria
250-721-8971
ohs@uvic.ca

Applicable Legislation:

- *British Columbia's Occupational Health and Safety Regulation, Part 8*

Relevant Standards:

- Canadian Standards Association (CSA*): Z94.4-11: Selection, Use, and Care of Respirators*
- Canadian Standards Association (CSA*): Z180.1-M85: Compressed Breathing Air and Systems*
- National Institute for Occupational Safety and Health (NIOSH) Standard 42 CFR 84 (1995) for Non-Powered Particulate Filtering Respirators

APPENDIX I

Respiratory Hazard Assessment Form

This form is designed to assess whether a respiratory hazard exists and assist Manager/ Supervisors in the proper selection of respirator equipment. Complete a hazard assessment form for each work activity that may present an airborne hazard. Please return the completed forms to the Department of Occupational Health, Safety and Environment.

Supervisor: _____ Department: _____

Date: _____ Job Title: _____

Description of Work Activity: _____

_____

Respiratory hazards: (list below):

Respiratory hazard	Contaminant	Duration of work activity	*Exposure Limit
e.g. Particulates/aerosols	*e.g. Asbestos, welding fumes, etc.*	*e.g. Welding for 4 hours/3 days a week*	
e.g. Gases and/or vapour	*e.g. Toluene, paints, etc.*	*e.g. Painting for 5 hours/ twice weekly*	
e.g. Oxygen-deficient atmosphere			

*Exposure limit is based on WorkSafeBC Table of Exposure Limits for Chemical and Biological Substances and will be filled out by OHSE.

Controls in place (check all that apply):

☐ Local exhaust ☐ Dilution ventilation ☐ Task specific ventilation ☐ Enclosed system ☐ Other

----------OHSE OFFICE USE----------

Comments: _____

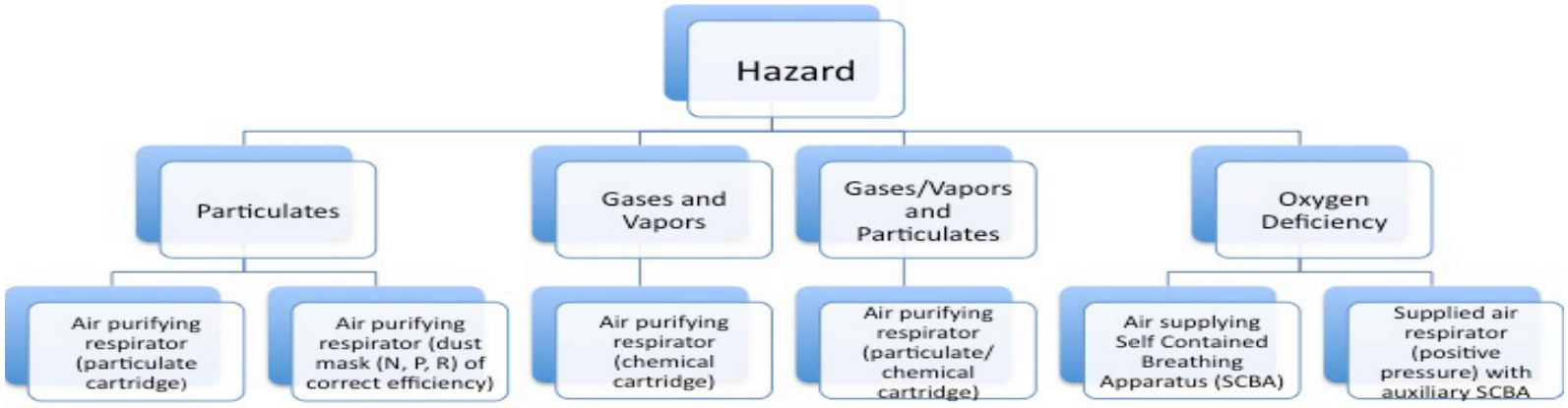
_____

Respirator required: ☐ YES – *proceed to respirator protection selection chart (Appendix II)* ☐ NO

Reviewed by: _____

APPENDIX II

Respirator Protection Selection Chart



Job Title: **Type of respirator selected:**

Make: **Model:**

APPENDIX III

Respirator Protection Factors

*Table 1. Respirator Protection Factors***

Respirator type	Protection Factor
Air Purifying	
Half facepiece, non-powered	10
Full facepiece, non-powered	50
Full facepiece, powered air-purifying respirator (PAPR), equipped with HEPA filters for exposure to asbestos	100
Full facepiece, PAPR, equipped with HEPA filters and/or sorbent cartridge or canister for exposure to contaminants other than asbestos	1 000
Loose-fitting facepiece, PAPR	25
Air Supplying	
Airline - Demand (negative pressure)	
Half facepiece	10
Full facepiece	50
Airline - Continuous Flow	
Loose-fitting facepiece/hoods	25
Half facepiece	50
Full facepiece	1 000
Helmet/hood	1 000
Airline - Pressure Demand (positive pressure)	
Half facepiece	50
Full facepiece	1 000
Full facepiece, with egress bottle	10 000
Self-Contained Breathing Apparatus (SCBA)	
Demand (negative pressure)	50
Pressure demand (positive pressure)	10 000
Other **factors** such as warning properties, immediately dangerous to life or health (**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 WorkSafeBC for further information.	

** The protection factor or assigned protection factor (APF) of a respirator reflects the level of **protection** that a properly functioning respirator would be expected to provide to a population of properly fitted and trained users. For example, an APF of 10 means that a user could expect to inhale no more than one-tenth of the airborne contaminant present; an APF of 50 **m**eans that a user could expect to inhale no more than one-fiftieth of the airborne contaminant.

https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-08-personal-protective-clothing-and-equipment#SectionNumber:8.32

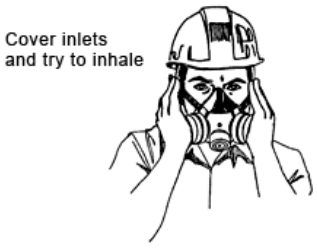
APPENDIX IV

Donning and Doffing a Respirator

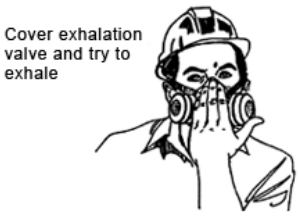
Seal Check:
A respirator seal check is required each time that you wear your respirator.

Negative User Seal Check: With the intake valves blocked, the wearer **inhales** gently and holds. The respirator should collapse slightly on the wearer's face. No leakage around the face seal should be noted while maintaining a negative pressure inside the respirator or several seconds.

Positive User Seal Check: With the exhaust valve covered, the wearer **exhales** gently to generate a slight positive pressure within the face piece. No leakage outward around the seal should be noted.



Negative Seal Check



Positive Seal Check

Fit Test:
Employees will be properly fitted and tested for a face seal prior to the first use of a respirator, and re-fitted on an annual basis. A fit test will determine if an adequate fit is provided between the respirator and face. Qualitative fit testing will be the method of testing at the University of Victoria.

Example of Qualitative Fit Test Procedures:
If the mask is fitted correctly, you should not be able to taste the fit test solution (e.g., Bitrex, Saccharin, and Irritant Smoke).

Test exercises include the following:

1. Normal breathing
2. Deep breathing
3. Turn your head side to side and inhale at each side
4. Move your head up and down and inhale at the up and the down
5. Talk out loud slowly and loud enough so that you can be heard clearly
6. Bend over and to touch your toes
7. Finish with normal breathing again

APPENDIX V

RESPIRATOR FIT TEST FORM

Name of Worker		**Supervisor**			
Job Title		**Department**		**Phone**	

Does the worker wear? **Eye Glasses** ☐ **Dentures** ☐ **Facial Hair** ☐ *(explain why they interfere with N95)*

Health Surveillance

(a) Some conditions can affect your ability to safely use a respirator. Have you had or do you currently have any of the conditions below that may affect respirator use? Yes ☐ *No* ☐

Health Conditions (no need to specify)**:**

Chronic bronchitis	Allergies/Sensitivities	Other diagnosed lung disease
Difficulty breathing	Prescription medication	Claustrophobia
Asthma	Dizziness/Nausea	Panic attacks

List any other conditions that you feel may interfere with respirator use:

(b) Have you ever had health related difficulties while using a respirator? Yes ☐ *No* ☐

(c) Do you have health concerns about your ability to use a respirator safely? Yes ☐ *No* ☐

Please note: If worker has answered YES to part (c) below then refer worker to *Physician Health Screening Assessment Form*

Qualitative Fit Test: ☐ **Quantitative Fit Test:** ☐

☐ **BITREX** ☐ **SACCHARIN**

Sensitivity Test Results:
☐ **10** ☐ **20** ☐ **30**

Difficulties testing? ☐ **Yes** ☐ **No**

Adverse reaction to Bitrex or Saccharin? ☐ **Yes** ☐ **No**

Comments:

Sensitivity Sol. Lot # **Fit Test Sol. Lot #**

Respirator(s) Fit Tested: **N95** ☐ **Elastomeric Half-face** ☐ **Elastomeric Full-face** ☐

	Make	Model	Result
1.			☐ **Pass** ☐ **Fail**
2.			☐ **Pass** ☐ **Fail**
3.			☐ **Pass** ☐ **Fail**

Check when successfully completed:

☐ Correct positioning of respirator and strap adjustments?

☐ Passed seal check? *Remind worker to do a seal check every time they don a respirator*

Information Discussed with Worker:

☐ When another Fit Test is required
☐ Respirator limitations and reuse
☐ Difference between N95 and dust mask ☐N/A
☐ Inspecting the respirator
☐ Respiratory Protection Program
☐ Donning & Doffing

I've been fit tested and counseled in the use and limitations of respirator(s) listed above. I also understand and have received an explanation of the nature, possible effects, available alternatives and risks of the fit testing procedure.

Employee Signature:_____ **Test Date:**_____

Fit Tester Signature:_____ **Next Test Date:** _____

*Please send a copy of the completed report to the OHSE Department grhodes@uvic.ca *V2024-1.1*

APPENDIX VI

Physician Health Screening Assessment Form

Part 1: Employee Information

Name: _____ Job Title: _____

Department: _____Supervisor:_____

Email: _____ Phone *(on campus):*_____

Health Conditions

I have answered the questions on the Fit Test Form to the best of my ability and knowledge. I also understand that I will report to my Supervisor and the OHSE Safety Consultant any changes in my physical health that might affect my ability to safely wear a respirator.

Signature of respirator user: _____ Date: _____

After Part 1 and 2 have been completed, please return the form in an enclosed envelope marked "Completed Fit Test Form" to the Department of Occupational Health, Safety and Environment, Attention: OHSE Consultant, fax to **250-721-6359**, *or scan and email:* **ohs@uvic.ca**

----------Physician Use Only----------

Part 2: Medical Assessment by a Physician

a) Meets medical requirements? ☐ YES ☐ NO

b) Meets medical requirements with limitations (please provide specific details):

_____

Name of Physician (*please print*): _____Signature: _____