



Respiratory Protection Plan Standard

1.0 PURPOSE

This standard supports the Hazard Controls Policy and specifies the requirements for a Respiratory Protection Plan. The SaskPower Respiratory PPE Standard has been combined into this standard.

2.0 DEFINITIONS

2.1 Airborne Contaminants

- **Aerosols** – liquid droplets or solid particles of fine enough particle size to remain dispersed in air for prolonged period of time.
 - **Dust** – solid particles and/or fibers generated by handling, crushing, grinding, rapid impact, detonation and breakdown of organic or inorganic materials such as insulation, rock, ore, metal, coal, wood and grain.
 - **Fume** – solid particles generated by condensation from the gaseous state, generally after volatilization from melted substances (e.g., welding) and often accompanied by a chemical reaction, such as oxidation.
 - **Gases** – formless fluids, at room temperature and standard pressure, that expand to occupy the space in which they are confined.
 - **Mist** – suspended liquid droplets generated by condensation of liquids from the vapour back to the liquid state or by breaking up a liquid into a dispersed state such as splashing or atomizing.
 - **Particulates** – airborne contaminants other than gas and vapour, but including dusts, fumes, mists, fibres, fog, pollen, smoke, and spores.
 - **Smoke** – consists of carbon or soot particles and results from the incomplete combustion of carbonaceous materials such as coal or oil.
- Vapour** – the gaseous state of a substance that is solid or liquid at room temperature and standard pressure.

2.2 Air-Purifying Respirators

An air-purifying respirator has an air-purifying filter, cartridge or canister that removes specific air contaminants by passing ambient air through a filtering or chemical absorption/reactive media.

2.3 Approved Respirator

An approved respirator is a respirator that is US Centers for Disease Control and Prevention (CDC) National Institute for Occupational Safety and Health (NIOSH) tested and certified. Certified respirators and filters/chemical cartridges are listed in the NIOSH Certified Equipment List (CEL) found at <https://www.cdc.gov/niosh/npptl/topics/respirators/cel/>

2.4 Assigned Protection Factor (APF)

Assigned Protection Factor is the anticipated level of respiratory protection that would be provided by a properly functioning respirator to properly fitted and trained users. The higher the number, the better the protection. Assigned Protection Factors are listed in Exhibit A.

2.5 Atmosphere-Supplying Respirators

An atmosphere-supplying respirator supplies the respirator user with compressed breathing air or an oxygen and nitrogen gas mixture from a source independent of the ambient atmosphere. The compressed air shall meet the criteria specified in Table 1 of CAN/CSA Z180.1 00 (R2010) Compressed breathing air systems.



2.6 Cartridges

A cartridge is a component of a respirator that removes vapours and/or gases from the air that is inhaled by the person wearing the respirator.

2.7 Competent person

A competent person possesses knowledge, experience and training to perform a specific duty.

2.8 Fit Testing

Fit testing is the use of a qualitative or a quantitative method by a competent person to evaluate the fit of a specific make, model and size of respirator on an individual.

2.9 Medical Clearance

Medical clearance is obtained in writing, from a health care professional indicating the employee is fit to wear a respirator and has no medical conditions that can interfere with their ability to use a respirator.

2.8 Particulate Filters

Particulate filters are components of a respirator that filter dust, fumes, smoke, aerosols and other particulates from air being inhaled by the person wearing the respirator. Some respirators masks are designed to be particulate filtering while others use replaceable particulate filter cartridges.

2.10 Third Party

Third party standards are developed from outside agencies and represent a consensus of best practice across industry.

2 METHOD/PRACTICE

3.1 Identify Hazard

- All tasks, assignments and circumstances where airborne contaminants present respiratory exposure hazards shall be identified via a documented Hazard and Aspect Risk Assessment (HARA) to:
 - Identify airborne contaminant properties.
 - Estimate or measure airborne contaminant(s) concentration.
 - Estimate anticipated contaminant(s) exposure during work periods and compare exposures against latest Threshold Limit Values (ACGIH TLVs® and BEIs®) to determine the need for exposure reduction through hazard control methods.

3.2 Hazard Control Methods

Where practical respiratory hazards shall be removed. Where respiratory hazards cannot be removed controls shall be used to reduce exposure. It is preferable to establish layers of protection by combining the following three control types.

- Engineering Controls are the preferred controls where practical and include the design of the plant and work processes.
- Administrative Controls include suitable work practices and schedules.
 - Appropriate warning shall be posted in areas or locations where respiratory hazards exist or respiratory protection is required.
- Personal Protective Equipment (PPE) shall be used where engineering and administration controls do not effectively reduce the respiratory exposure hazard.



- Respiratory protection shall be worn where a respiratory exposure hazard is identified.
- The physical characteristics, the functional capabilities and the performance limitations of the various types of respirators shall be considered in respirator selection.
- Respiratory protection shall meet SaskPower's PPE Standard for Respiratory Protection.

3.4 Fit Testing

- Where a worker is likely to be exposed to airborne contaminants and where there is potential for significant harm to the worker, employees shall be fit tested prior to use of the respirator.
- Subsequent fit testing shall occur every two years by a competent person and in an approved manner in accordance with CAN/CSA-Z94.4-11 (R2016) - Selection, Use, and Care of Respirators. Fit testing frequency may vary based on the hazard and risk assessment(s) and the approval of the local Division management.
- Additional fit testing shall be required under special circumstances, such as a change in the brand/size of a respirator or change to the facial shape through rapid change in weight, injury or facial or dental surgery.
- Additional fit testing shall also be required when user's seal check fails.
- Employees required to use a respirator shall have no facial hair in the areas where a specific respirator must seal to the skin.
 - The fit tester will not perform a fit test on an employee where facial hair will interfere with the seal.
- Fit testing shall be done either qualitatively or quantitatively by a competent person and in an approved manner (CAN/CSA-Z94.4-11 (R2016)). In addition to the fit of the respirator, the person wearing the respirator shall also demonstrate the correct method for:
 - Donning the respirator;
 - User seal check; and
 - Adjusting the respirator.
- The user and fit tester shall complete a Fit Test Record.
 - When a quantitative fit test using an instrument has printing capability, the printed record shall be attached to the fit test record.

3.4 Use

- Assigned protection factors shall not be exceeded when using specific respirators.
- Air purifying respirators shall not be used in Immediately Dangerous to Life and Health (IDLH) environments.
- Respirator components shall be changed out as they become ineffective in providing the required assigned protection factor.

3.4 User Seal Checks

- All workers requiring the use of respirators shall be trained in performing seal checks.
- Seal checks shall be performed by a worker every time a respirator is donned.
- The seal check shall involve positive and negative pressure procedures.

3.5 Inspection and Maintenance

- Respirators shall be inspected according to the manufacturer's instructions.
- The condition of components shall be inspected, such as face-pieces, filters and cartridges, before and after each use, maintenance repair or component replacement
- Respirators shall be cleaned and sanitized according to manufacturer's instructions.
- The respirators shall be stored in a clean, secure location that is readily accessible to employees.
- End-of-service-life indicator or shelf-life dates shall be inspected.
- The respirators shall be inspected or are to be removed from use.
- The respirators are to be removed from use or service when damaged.



- Contaminated disposable respirators or disposable respirator components shall be discarded as hazardous waste, if required.
- Respirators used for emergency response must be inspected at least once per month and before and after each use.
- All air supplied respirator components such as harnesses, hoses, compressed air tanks, pressure regulators are not to be modified, serviced or maintained except by manufacturer's certified respirator technicians.
- Changing empty SCBA compressed air tanks for full tanks is not considered to be a service or maintenance activity requiring the assistance of manufacturer trained personnel.

3.5 Respirator Screening Evaluation

The fit tester shall ensure that identified respirator users participate in the respirator screening process.

- Document the respirator screening evaluation.
- Where an employee has indicated in the screening that they do not have any conditions that can be affected by the use of a respirator, the fit testing process can continue.
- Where the program administrator or respirator user is concerned that a condition exists that impedes the use of a respirator, the employee will be required to obtain medical clearance from their health care provider before they will be permitted to use a respirator
- The fit tester or RTW would notify the worker's supervisor that the worker could not be tested until medical clearance is obtained. No medical reason would be provided to the supervisor; just a notification that the worker has a limitation preventing them from performing work requiring the use of a respirator at the time of the current fit testing.

3.6 Medical Clearance for all SaskPower Employees

Where screening has indicated that an employee could have a condition that is affected by the use of a respirator, a medical clearance by the employee's health care provider is required. All requests for medical clearance for SaskPower employees will be handled by the Return to Work Office.

- Fit testing shall not be completed until medical clearance has been obtained and any required employee restrictions have been identified and managed.
- The employee shall be provided with a cover letter and the respirator screening results for review and medical clearance by their health care provider.
- Medical clearance will be provided directly to the Return to Work Office, and where restrictions have been identified for respiratory wear, the process shall be facilitated by the Return to Work Office.
- Costs incurred for medical clearance for SaskPower employees shall be paid for by SaskPower.

3.7 Health Surveillance

Health surveillance of respirator users shall occur every two years or when an employee reports health concerns in wearing a respirator.

- Health Surveillance will follow the process set out in Section 3.5, Respirator Screening Evaluation, and in Section 3.6, Medical Clearance.

3.8 Record Retention

SaskPower shall retain the following records in accordance with the Safety Management system Control of Records Procedure, the SaskPower Privacy Policy and The Saskatchewan Occupational Health and Safety Regulations.

- Respirator Fit Testing Record.
- Respirator training records.
- Medical clearances and health surveillance.



All references to record keeping, forms and costs for Medical Clearance for this standard applies to SaskPower employees only.

3.9 Training

- Employees shall be trained in the maintenance, use, and cleaning of air purifying respirators. Employees shall be trained in the limitations of each respirator in use in their workplace.

Where respiratory PPE is used only for emergency response, semi-annual training is required

3.10 Provisioning

- Respirators shall be supplied through SaskPower Central Stores or through the Divisions purchasing process.
- No SaskPower employee shall bring into the workplace or use in the workplace any respirator that has not been provided by the employer.
- Air-purifying respirators will be assigned to an individual worker and not shared.

3.0 REFERENCES

- Saskatchewan
 - The Occupational Health and Safety Regulations, 1996,
- SaskPower
 - Hazard Control Policy
 - Personal Protective Equipment Policy
 - Safety Rulebook
 - SaskPower Privacy Policy
 - Respirator Screening Form
 - Medical Clearance Sample Cover Letter
 - Enterprise Classification & Retention Schedule
- Third Party
 - CAN/CSA-Z94.4-11 (R2016) Selection, Use and Care of Respirators
 - American Conference of Governmental Hygienists (ACGIH®) TLVs® and BEIs® Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices.
- CAN/CSA Z180.1 00 (R2010) Compressed breathing air systems.



EXHIBIT A: ASSIGNED PROTECTION FACTORS

TYPE	SUB-TYPE	ASSIGNED PROTECTION FACTOR	LIMITATIONS
Airline Types ⁽²⁾ Includes: Airline Respirators, Hoods, Helmets, and Suits	Demand Mode Half-Face piece	10	Hose limits the workers' mobility. Only <i>positive-pressure</i> ⁽¹⁾ equipped units with an escape air-supply bottle may be used in immediately dangerous to life or health (IDLH) situations.
	Demand Mode Full-Face piece	100 ⁽³⁾	
	Positive Pressure ⁽¹⁾ Half-Face piece	50	
	Positive Pressure ⁽¹⁾ Full-Face piece	1000	
	Helmet/Hood ⁽⁴⁾	1000	
	Loose-Fitting Face piece ⁽⁴⁾	25	
Self-Contained Breathing Apparatus (SCBA)	Demand Mode Full-Face piece	100 ⁽³⁾	Use time limited by worker training and cylinder capacity. Bulk and weight limits use for strenuous work and work in confined spaces. Only <i>positive-pressure</i> ⁽¹⁾ units with at least a 30-minute capacity and a low-capacity warning alarm may be used in IDLH situations.
	Pressure-demand (positive pressure)	10,000	

- Notes: (1) Positive pressure refers to pressure-demand mode or continuous-flow mode respirators.
 (2) Air used for atmosphere-supplying respirators must be of a quality that complies with Table 1 of CSA Standard Z180.1-00, *Compressed Breathing Air and Systems*.
 (3) Assigned protection factors listed are from CSA Standard Z94-10 for a respirator that has been fitted using quantitative fit-test methods according to the standard. If qualitative fit testing is done, the assigned protection factor for demand-mode airline respirators and SCBA is 10.
 (4) Need not be fit tested.