Corporate Policy and Procedure



POLICY	Respiratory Protection Program		
CATEGORY	Health and Safety		
AUTHORITY	All Departments		
RELATED POLICIES	Personal Protective Equipment Program		
APPROVED BY	Executive Team		
EFFECTIVE DATE	December 1, 2018		
REVISION DATE	December 1, 2019		

Policy Statement

Guided by our corporate values, the City of Guelph shall ensure a hazard assessment is completed to identify specific tasks or areas where respiratory equipment may be required.

Purpose

The purpose of this procedure is to provide:

- Guidance in the use care and selection of respiratory equipment.
- Increased awareness of respiratory hazards in the workplace.
- Information to workers on means available to protect themselves and others from those hazards.

Where it is determined that respirator use may be required, engineering controls, substitution of less hazardous materials or administrative controls will be considered first to reduce the likelihood of workers wearing a respirator, if possible.

Scope

This policy applies to all City of Guelph full time, part time, casual and temporary workers.

Definitions

Air Purifying Respirator

A respirator with an air-purifying filter, cartridge or canister that removes specific contaminants by passing ambient air through the air-purifying medium.

Atmosphere Supplying Respirator

A respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere.

Fit Test

The use of qualitative or quantitative method to evaluate the fit of a specific make, model and size of respirator on an individual.

Hazardous Atmosphere

An atmosphere that is oxygen-deficient, exceeds occupation exposure limits, presents a fire or explosive hazard and/or contains an airborne toxic or disease-producing contaminant in concentrations deemed to be hazardous.

Health Care Professional

An individual who is licensed by a provincial licensing authority or equivalent to practice medicine or nursing and who possesses relevant experience and knowledge in the field of occupational health and safety.

Immediately Dangerous to Life and Health Atmosphere (IDLH)

An atmosphere that poses an immediate threat to life, would cause adverse health effects or impair an individual's ability to escape.

Qualified Person

An individual who possesses the knowledge, experience and training to fulfil the competencies of the roles defined in this program.

Quantitative Fit Test

A test method that uses an instrument to assess the amount of leakage into the respirator in order to assess the adequacy of the respirator fit.

Qualitative Fit Test

A test method that relies on the subject's sensory response to detect a challenge agent in order to assess the adequacy of the respirator fit.

Respirator

A device to protect the user from inhaling a hazardous atmosphere.

Service Life

The period of time during which a respirator provides adequate protection to the user.

Supervisor

A person who has charge of a workplace or authority over a worker.

User Seal Check

An action conducted by the respirator user to determine if the respirator is properly sealed to the face.

Worker

Means any of the following, but does not include an inmate of a correctional institution or like institution or facility who participates inside the institution or facility in a work project or rehabilitation program:

- 1. A person who performs work or supplies services for monetary compensation.
- 2. A secondary school student who performs work or supplies services for no monetary compensation under a work experience program authorized by the school board that operates the school in which the student is enrolled.
- 3. A person who performs work or supplies services for no monetary compensation under a program approved by a college of applied arts and technology, university, private career college or other post-secondary institution.
- 4. Such other persons as may be prescribed who perform work or supply services to an employer for no monetary compensation

Procedure Roles and Responsibilities

Executive Team

• Ensure that service area leaders are aware of the content of this policy, and support the successful implementation of the requirements as laid down.

Division Manager/Managers

- Investigate all possible alternatives to the use of respiratory protection equipment, such as substitution of hazardous materials or process, engineering controls and administrative controls.
- Where necessary, ensure this program is implement in the area(s) under their direction.
- Provide adequate resources to implement the program.

Supervisor

- Identify jobs/tasks or situations where respirators are required
- Conduct assessments for respiratory hazards in consultation with Health & Safety.
- Determine in consultation with Health & Safety the type of respiratory equipment required.
- Provide workers with appropriate respiratory protection.
- Ensure fit testing and health screening is completed prior to workers being assigned work that requires a respirator.
- Ensure training is provided on the use, care and selection of the equipment.
- Ensure respirators are cleaned, sanitized, inspected, maintained and stored in accordance with training and manufacturer's recommendations.
- Ensure workers required to wear a tight-fitting respirator are clean shaven where the mask fits the face.
- Inform worker(s) of task(s) that require wearing a respirator and the appropriate type of respirator to be worn.
- Provide details of the type of respirator selected and the anticipated working conditions to the Health Care Provider conducting the medical assessment
- Ensure workers wear appropriate respirator protection as required.

Workers

- Wear appropriate respiratory protection as required.
- Inspect respirators prior to each use.

- Be clean shaven where the mask fits the face when required to wear a tight-fitting respirator.
- Clean, maintain and store the respirator as instructed.
- Complete a user seal check to verify the seal to the face prior to each use.
- Inform the Occupational Health Nurse of any medical conditions that would affect their ability to wear a respirator and provide documentation to support.
- Inform supervisor of any issues relating to respirator fit, limitations or maintenance.
- Inform supervisor of any changes to facial fit, such as weight gain or loss, surgical procedures affecting the face or similar.
- Report and damage of malfunction of the respirator to their supervisor.

Health & Safety

- Develop and maintain the respiratory protection program.
- Assist in conducting respiratory hazard assessments.
- Assist in determining the appropriate respiratory equipment for specific hazards.
- Facilitate fit testing of Workers required to wear respirators.
- Identify appropriate training on the use, care and selection of the respiratory protection
- Determine a change out schedule for the replacement of the cartridges for air purifying respirators where there is no end of service life indicator.

Occupational Health Nurse

- Assess the suitability of the user to safely use the selected respirator
- Determine what tests, evaluations, etc. are necessary to make the determination of a user's suitability to wear respiratory equipment.
- Report to the supervisor whether the user meets medical requirements to wear a respirator, medical requirements with limitations or does not meet medical requirements to wear the selected respirator.
- Maintain medical records.

General Procedure

Hazard Identification, Assessment and Control

- Identify contaminants that may be present in the workplace
- Identify regulatory limits establish by the Provincial government or recognized agencies such as the American Conference of Industrial Hygienists (ACGIH) or the National Institute of Occupation Safety and Health (NIOSH).
- Identify the likelihood of exposure to airborne particulate, fumes, vapours or gases.

Note: In instance where exposures cannot be identified or reasonably estimated, the atmosphere shall be considered IDLH.

Selection of Respirators

Respirators shall in all cases be NIOSH approved, and be selected based on the following criteria:

- Health of the worker and ability to wear a respirator
- Type of respirator hazard
- The hazard assessment
- Existing legislation and standards relevant to the work
- Work requirements and conditions

- Duration of exposure
- Characteristics and limitations of respirators
- Respirator assigned protection factors (<u>Appendix D</u>)
- Respirators shall be selected by the supervisor in consultation with Health & Safety.
- Respirator Selection Guide (<u>Appendix D</u>) can be used to assist in the selection of an appropriate respirator.
- Workers shall be issued only those respirators for which they have been fit tested and medically approved.
- A change out schedule shall be established for cartridges and canisters used with air purifying respirators where there is no end-of-service-life indicator
- Where an IDLH atmosphere is identified, only pressure-demand self-contained breathing apparatus or a combination pressure-demand supplied air respirator with auxiliary self-contained air supply, with a minimum rated service time of 15 minutes shall be used.
- Respirators approved for escape only **shall not** be used for non-emergency applications.
- Atmosphere-supplying respirators that make use of compressed air for breathing shall meet the standards set out in Table 1 of the CSA Standard Z180.1-00, Compressed Breathing Air and Systems.
- Atmosphere-supplying respirators that make use of ambient breathing air system shall have the air intake located in accordance with Appendix B of **CSA Standard Z180.1-00**.

Respirator Fit Testing

- Workers required to wear a tight fitting respirator shall be clean-shaven where the mask fits the face (see <u>Appendix A</u>).
- Workers must pass an appropriate quantitative or qualitative fit test when using a respirator with a tight fitting face piece.
- A fit test shall be carried out:
 - Every 2 years
 - Prior to initial use of a tight fitting respirator
 - When there is a change in respirator (make, model or size)
 - When there are changes to the user's physical condition that could affect respirator fit, such as facial scarring, dental changes, cosmetic surgery, obvious changes in weight or a dermatological condition.
- Worker shall be fit tested with the same make, model, style and size of respirator to be used.
- Where other personal protective equipment, such as eye, head or hearing protection is required to be worn, the same protective equipment shall be worn during the fit test to ensure they are compatible.
- Records shall be maintained for three years.

Using the Respirator

- Prior to being assigned any task requiring the use of a respirator, the worker shall complete the health screening, fit testing and training requirements.
- Workers with facial hair that may interfere with the seal on a tight fitting respirator cannot use a tight fitting respirator.
- Other personal protective equipment shall not interfere with the seal of a tight fitting respirator.
- Workers requiring prescription glasses shall be issued a respirator spectacle kit.

- Workers shall check the seal of the respirator immediately after putting it on.
- The Worker must **never** break the respirator face seal to communicate.
- Supervisors shall enforce the use of respiratory protection when required.
- Workers shall not remove the respirator seal at any time while working in an IDLH atmosphere.
- The respirator shall not be altered in any manner
- All cartridges, replacement parts, etc. shall be from the same manufacturer as the respirator (e.g. use only 3M cartridges and parts for a 3M respirator).
- Workers wishing to wear respiratory protection in locations and doing tasks not requiring a respirator may do so. However, if an Employee wears a respirator he/she must follow all rules of the respirator program including training and fit testing.

Cleaning, Inspection, Maintenance and Storage

- Each Employee shall be responsible for cleaning, inspecting, maintaining and storing his/her respiratory protective device.
- The respirator shall be cleaned and sanitized according to the manufacturer's instructions and/or the procedures found in <u>Appendix E</u>.
- Respirators shall be cleaned and disinfected after each use.
- Workers shall inspect their respirator before and after each use.
- Self-Contained Breathing Apparatus (SCBA) cylinders shall be inspected by a qualified person according to the requirements of the applicable CAN/CSA standards.
- Emergency SCBA shall be inspected on a schedule to ensure readiness for the anticipated emergency use.
- Records of all inspections and service performed on an SCBA respirator and cylinder shall be maintained by the person responsible for the unit for the life of the equipment.
- Workers shall report defective or non-functioning respirators **immediately** to their supervisor.
- Defective respirators shall be tagged and removed from service.
- Any respirator or cylinder repairs and subsequent tests and checks shall be performed by the manufacturer or a qualified external contractor.
- Defective or non-functioning half face respirators shall be disposed of and replaced.
- Workers shall store their respirators in a clean, sanitary location in sealable plastic bags or containers.
- When packed or stored, each respirator shall be positioned to retain its natural configuration.
- Used cartridges to be reused shall be stored in a manner to prevent contamination.
- Used filters will be disposed of appropriately.

Health Surveillance of Respirator Wearers

- Prior to fit testing and respirator use, it shall be confirmed that the worker is free from any physiological or psychological condition that would prevent them from wearing a respirator.
- All workers required to wear a respirator shall complete a Respirator User Screening Form (<u>Appendix B</u>).
- The questionnaire shall be forwarded to the City of Guelph Occupational Health Nurse along with information regarding the conditions in which the respirator will be used.
- The Occupational Health Nurse shall determine if further testing or assessment is required by a medical practitioner.

- Workers with a medical condition that could affect their ability to wear a respirator shall notify their Supervisor prior to wearing a respirator, and inform the Occupation Health Nurse of their condition.
 - Workers who have questions about their ability to wear a respirator due to health reasons are asked to report their concerns to their Supervisor and contact the Occupational Health Nurse to discuss the details of their concern.
 - Individuals with such concerns may be required to have a medical evaluation and clearance from a physician for the conditions and work.
 - After the medical evaluation the Occupational Health Nurse or a physician shall provide an opinion regarding the worker's ability to use a respirator.
 - A re-evaluation of the worker shall be performed based on one of the following criteria:
 - The worker reports signs or symptoms that are relevant to the worker's ability to use a respirator.
 - The Occupational Health Nurse or Physician, Supervisor or Health & Safety considers it necessary for the worker to be re-evaluated.
 - A change in workplace conditions occurs that may result in substantial increase in the physiological burden the respirator use place on the worker

Note: Workers who do not meet the medical requirements to use a selected respirator shall not work in an area where the use of a respirator is required.

Recordkeeping

Supervisors shall maintain the following documentation:

- Training records for workers under their supervision
- Respirator selection
- Inspection, maintenance and storage.

Health & Safety shall maintain the following documentation:

- Respirator User Screening Form (<u>Appendix B</u>)
 - Hazard assessments
 - Respirator selection evaluations
 - Program evaluation

The Occupational Health Nurse shall maintain the medical records for the workers that have undergone medical evaluation. These records shall be treated as medically confidential.

Evaluation of Program

Health & Safety shall review the respirator program on an annual basis. The review will include the following:

- Effectiveness of the respirators being used
- Fit testing records
- Worker and Supervisor training records
- Respirator use, inspection, maintenance, cleaning and storage
- Health surveillance of respirator users
- Employee suggestions for respirator program improvements
- Improvements in engineering controls to minimize respirator use
- Compliance to all standards and regulations

Training

• All Workers required or with the potential to require wearing a respirator shall be

trained on the following:

- \circ $\;$ Airborne contaminants specific to the facility or work location
- \circ $\,$ Symptoms, toxic effects and warning properties of contaminants specific to the facility or work location
- Respirator capabilities and limitations
- Donning and fit checking his/her respirator
- Maintenance, cleaning, sanitizing and storage of respirators
- Provincial legislation on respiratory protection
- The City of Guelph Respiratory Protection Program
- Workers shall receive training prior to the initial use of the respirator and every three years thereafter.
- Training in the use of self-contained breathing apparatus, if required, shall be provided by a qualified external trainer.
- Records of training and fit testing will be maintained.

Reference Documents

Occupational Health and Safety Act, R.S.O. 1990, c. O.1 R.R.O. 1990, Reg. 851: INDUSTRIAL ESTABLISHMENTS O. Reg. 213/91: CONSTRUCTION PROJECTS CSA Z180.1-13 Compressed Breathing Air and Systems Transportation of Dangerous Goods Act CSA Z94.4-02 Selection, Use and Care of Respirators Code of Federal Regulations 42-Part 84 Approval of Respiratory Protective Devices (NIOSH) CAN/CSA-B339-18 CAN/CSA-B340-18 <u>3M Respirator Selection Guide</u>

Appendices

- Appendix 1 Clean-Shaven Policy
- Appendix 2 Respirator User Screening Form
- Appendix 3 Example of Qualitative Respirator Fit Test Instructions
- Appendix 4 Respirator Selection Guide
- Appendix 5 Procedure for Respirator Maintenance

Revision History

Document Owner	Issue/Revised Date	Reason For Changes	
Health & Safety	December 1, 2018	Initial Draft	

Appendix A – Clean Shaven Policy

Clean Shaven Policy

All Workers of the City of Guelph required to wear a respirator must abide by this clean shaven policy. Workers required to wear respirators shall be clean shaven where the mask fits the face, as denoted in the chart below. It is the expectation that workers required to wear respirators will be clean shaven daily prior to donning a respirator to be considered fit for duty.



Appendix B - Respirator User Screening Form

Part 1 - Employer Information Division: Department:	Supervisor: Phone:
Part 2 – Respirator User Information Title/Occupation: Date:	Name: Phone:
Part 3 - Conditions of Use Activities requiring respirator use:	
Frequency of respirator use: Daily Weekly Monthly Exertion level during use:	Yearly Other
□ Light □ Moderate □ Heavy Duration of respirator use per shift: □ <1/4 h □ >1/4 h □ >2 h Temperature during use:	Other Variable
 <0 ∘C >0 ∘C and <25 ∘C Atmospheric Pressure during use: ☐ Reduced ☐ Normal/ambient 	□ >25 °C □ Increased
Special Work Considerations Uncontrolled hostile environments: Emergency Escape Hazardous Materials (emergency) IDLH	Oxygen Deficiency Confined Space
Other Personal Protective Equipment	
Estimated total weight of tools/equipm	ent carried during respirator use:
Maximum: Minimum:	_
Part 4 - Types of Respirators Used: Tight-fitting Non-tight- Mouth-bit Supplied-a Air purifying, non-power Supplied-a Air purifying powered Supplied-a Combination Pressure demand/supplied-air with air-purifying	air demandSCBA- closed circuitair continuous flowSCBA-escapeair, pressure-demandSCBA-escape, closed circuitd-air with escapeSupplied-air suit

	usly affect your ability to safe other condition that may affe Breathing difficulties Chest pain on exertion Cardiovascular disease Fainting spells Claustrophobia Colour blindness Reduced sense of smell Back/neck problems respirator use: control a condition? a respirator?		Yes No Emphysema Allergies Diabetes Seizures Dentures Pacemaker ste
Part 6 – Health Care Pro	ofessional (HCP) Primary	Assessment (if requir	ed) Date:
Respirator use permitted?			🗌 Yes 🗌 No 🗌
Uncertain Referred to medical assess	ment?		🗌 Yes 🗌 No
Comments:			
Reassessment date (if requine of (HCP): Name of (HCP): Signature of HCP:		Title of HCP:	
Part 7: Medical Assessm	ent (if required)		Date:
Class 1 – No restriction	S		
Class 2 – Some specific			
Class 3 – Respirator us	e is NUT permitted.		
Name of Physician		Signature of	Physician
		Signature of	пузыан

Appendix C – Example of Qualitative Respirator Fit Test Instructions

These instruction are based on the 3M FT10, Qualitative Fit Test Kit. If using a different kit please read and follow the instructions that come with the specific fit test kit.

Fit Test Equipment

The Kit contains the following:

- One Hood
- One Collar Assembly
- Nebulizer #1 (Sensitivity)
- Nebulizer #2 (Fit Test)
- Two Sets Replacement Nebulizer Inserts
- Sensitivity Solution (#1)
- Fit Test Solution (#2)

Preparation

- 1) Attach hood to collar by placing the drawstring between flanges on collar. Tighten the drawstring and tie with square knot or bow.
- Pour a small amount (approximately one teaspoon) of the sensitivity test solution (#1) into the nebulizer labelled "#1 Sensitivity Test Solution".
- Pour the same amount of Fit Test Solution #2 into the second nebulizer labelled "#2 Fit Test Solution."
- 4) Immediately recap the bottles.
- 5) Ensure all non-disposable respirators have been cleaned thoroughly before beginning the test. Respirator cleaning wipes may be used.

Sensitivity Test

This test is done to ensure the person being fit tested can detect the sweet taste of the test solution at very low levels. The Sensitivity Test Solution is a very dilute version of the Fit Test Solution.

The test subject should not eat, drink (except water) or chew gum for 15 minutes before the test.

- 1) Have the worker put on the hood and collar assembly without a respirator.
- 2) Position the hood assembly forward so that there is about six inches between the subject's face and the hood window.
- 3) Instruct the worker to breathe through the mouth with the tongue extended.
- 4) Remove both plugs on the nebulizer openings before use.
- 5) Hold the nebulilzer in an upright position to ensure aerosol generation.
- 6) Using Nebulizer #1 with the Sensitivity Test Solution, inject ten squeezes of the bulb, fully collapsing and allowing the bulb to expand fully on each squeeze.
- 7) Ask the worker if they can detect the sweet taste of the solution. If tasted, note the number of squeezes as 10 and proceed to the fit test.
- 8) If not tasted, inject another 10 squeezes of the aerosol into the hood, repeat if

necessary with an additional 10 squeezes.

- 9) If after the 30 squeezes the worker is still unable to detect the sweet taste, the test must end. Another type of fit test must be used.
- 10) Remove the test hood and give the worker a few minutes to clear the taste from their mouth. It may be helpful to have the subject rinse their mouth with water.

Fit Test

- 1) Have the worker don the respirator and perform a user seal check per the instructions provided on the respirator package.
- 2) Have the worker wear any applicable safety equipment that may be worn during actual respirator use that could interfere with respirator fit.
- 3) Have the worker put on and position the test hood so there is about six inches between the subject's face and the hood window; have them breathe through their mouth with the tongue extended.
- 4) Using the fit test solution in Nebulizer #2, inject the fit test aerosol using ten squeezes (or the same number as needed for the sensitivity test) with the nebulizer in the upright position to ensure aerosol generation.
- 5) To maintain an adequate concentration of aerosol during this test, inject ¹/₂ the number of squeezes (5, 10, or 15) every 30 seconds for the duration of the fit test procedure.
- 6) After the initial injection of aerosol, ask the test subject to perform the following test exercises for 60 seconds each;
 - (a) Normal breathing In a normal standing position, without talking, instruct the worker to breathe normally.
 - (b) Deep breathing In a normal standing position, instruct the worker to breathe slowly and deeply, taking caution so as not to hyperventilate.
 - (c) Turning head side to side Instruct the worker to stand in place and slowly turn his head from side to side between the extreme positions on each side. The worker should inhale at each extreme.
 - (d) Moving head up and down Instruct the worker to slowly move their head up and down. Instruct the worker to inhale while the head is in the up position while looking at the ceiling.
 - (e) Talking Instruct the worker to talk out loud, slowly and loud enough to be heard by the person conducting the test.
 - (f) Bending over Instruct the worker to bend at the waist, as if to touch toes. Jogging in place could be substituted for this exercise.
 - (g) Normal breathing.
- 7) The test is terminated at any time the sweet taste of aerosol is detected by the worker, as this indicates an inadequate fit. Wait 15 minutes and perform the sensitivity test again.
- 8) Repeat the fit test after re-donning and readjusting the respirator. A second failure may indicate a different size or model respirator is needed.
- 9) If the entire test is completed without the subject detecting the sweet taste of the aerosol, the test is successful and the respirator fit has been demonstrated.
- 10) Periodically check the nebulizer to make sure it is not clogged. If clogging is found, clean the nebulizer and retest.

Cleaning

1) At the end of each session, or at least every four hours, discard the unused solution from the nebulizers.

2) Do not pour used solutions back into the bottles.

- 3) Rinse the nebulizers with warm water to prevent clogging and shake dry.
- 4) Wipe out the inside of the hood with a damp cloth or paper towel to remove any deposited Test Solution.
- 5) Respirator Cleaning Wipes may be used to clean non-disposable type respirator face pieces between fit tests.

Appendix D - Respirator Selection Guide

Protection Factor Chart

Negative Pressure Respirator	APF	Powered Air Purifying Respirator (PAPR)	APF
Half Face Respirator	10	Half Face Respirator	50
Full Face Respirator- QLFT	10*	Full Face Respirator	1000
Full Face Respirator – QNFT	100*	Loose Visor	25
		Hood/Helmet	1000

APF - Assigned Protective Factor – the anticipated level of respiratory protection that would be provided by a properly functioning respirator or class of respirators to properly fitted and trained users. For example if the contaminant had a threshold limit value of 1 mg/m3, the respirator would provide protection up to 10 times that amount, i.e.:10 mg/m3.

QLFT - Qualitative Fit Test – a pass/fail test method that relies on the subject's sensory response to detect a challenge agent in order to assess the adequacy of the respirator fit.

QNFT - Quantitative Fit Test – A test method that uses an instrument to assess the amount of leakage into the respirator in order to assess the adequacy of the respirator fit.

For specific chemical protection, it is advised, if in doubt, to consult the <u>3M Respirator</u> <u>Selection Guide</u>.

Appendix E – Procedures for Respirator Maintenance

The principal aspects of respiratory care include: cleaning/disinfecting, inspection, storage and repair.

Cleaning and Disinfecting

- 1. Remove filters, cartridges or canisters, disassemble face piece and discard or repair any defective parts.
- 2. Wash components in warm (43°C maximum) water with mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle brush may be used to remove any dirt.
- 3. Rinse components thoroughly in clean, warm, preferably running water.
- 4. When the cleaner used to clean the respirator does not contain a disinfecting agent, respirator components should be fully immersed for 2 minutes in one of the following:
 - a) Sodium hypochlorite solution 1mL of bleach to 1L of water
 - b) Aqueous solution of iodine 0.8mL of tincture of iodine to 1L of water
 - c) Other commercially available cleaners of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
- 5. Rinse components thoroughly in clean, warm, preferably running water.
- 6. Components should be allowed to air dry or be hand dried with a clean, lint free cloth.
- 7. Reassemble face piece, replace filters, cartridges or canisters where necessary.

Note: Disinfection steps 4 & 5 are not required for a respirator used by only one worker. For multiple users steps 4 & 5 are required.

Inspecting

- a) Check the condition of component parts:
 - Check condition of the face piece, looking for cracks, cuts, tears, holes and distortion of face piece;
 - Check head straps to ensure they are properly attached and have elasticity;
 - Check head straps for broken buckles, breaks and tears;
 - Check inhalation and exhalation valves to ensure they are in place and are not damaged;
 - Check all rubber or flexible parts for cracks and pliability;
 - Check cartridges, canisters and filters to ensure they are not spent;
 - Check for cracks or damage to cartridges, filters or canister;
 - Check the breathing tube (if present) for cracks, holes, missing or loose clamps and broken or missing end connectors;
 - Check the hood, helmet or suit (if present) for ripped, or torn seams and for cracks or breaks in the face shield;
 - Check the PAPR assembly (PAPR users only)
- b) Check the tightness of connections between cartridges, filters and the respirator face piece.
- c) Check the end of service-life indicator (if present).
- d) Check the expiration date on the side of the cartridge, filter or canister.
- e) Check proper functioning of the regulators, alarms and other warning systems (not required on air purifying respirators)

f) If using supplied air, check the air quality of the air supply.