Section 6 – Personal Protective Equipment

PURPOSE

The following Personal Protective Equipment (PPE) procedure will be used to identify the specific requirements for the use of PPE.

To protect employees from potential workplace hazards, control of exposure to the hazards will be performed through use of the three general control strategies in the following order: Control at the Source, Control Along the Path and Control at the Worker.

SCOPE

The use of Personal Protective Equipment falls into the third and least desirable control method (Control at the Worker). Control at the Worker will only be considered as a supplement to another control method and/ or if it is the most practical method.

RESPONSIBILITIES

Health and Safety Coordinator Responsibilities:

- Arrange with the Superintendent for all company supplied and site specific PPE to be purchased and distributed.
- Arrange for general (orientation) and specific (Working at Heights) training is provided as required.
- Comply with all the requirements as defined under the Occupational Health and Safety Act and Regulations.
- Assist in developing PPE Plan for all workplaces and sites.
- Distribute and communicate information to the appropriate parties regarding any nonconformance or deficiencies reported.

Senior Management Responsibilities:

- Assist in development of the PPE Program.
- Ensure the appropriate PPE is implemented across all areas of responsibility.
- Take all measures reasonably necessary in the circumstances to protect employees from exposure all related hazards at all locations.
- Review Occupational Health and Safety Act and Regulations to ensure compliance within the PPE requirements.
- Ensure that the equipment, materials and protective devices as prescribed are provided, maintained in good condition and used as prescribed.

Project Manager Responsibilities:

- Ensure equipment, materials and protective devices are provided, maintained and used as required at site and office locations.
- Provide required protective devices, measures and procedures required by the Occupational Health and Safety Act and Regulations.

Superintendent Responsibilities:

- Arrange with the Health and Safety Coordinator for all company supplied and site specific PPE to be purchased and distributed.
- Ensure a site specific PPE for all workplaces and sites is used, maintained and in place.
- Distribute new and replace PPE as required.
- Follow-up on the findings and implement recommendations for each unsafe condition.
- Ensure equipment, materials and protective devices are provided, maintained and used as required at site and office locations.
- Provide required protective devices, measures and procedures required by the Occupational Health and Safety Act and Regulations.

Foreman Responsibilities:

- Ensure known site related hazards are defined with a site specific plan or Hazard Assessment and appropriate PPE is defined and provided as required.
- Distribute new and replace PPE as required.
- Take prompt and appropriate action when contraventions with the use or maintenance or PPE have been identified.
- Take every precaution reasonable in the circumstances for the protection of a worker.
- Where so prescribed, provide a worker with written instructions as to the measures and procedures to be taken for protection of the worker.

Workers Responsibilities:

- Use and maintain all required PPE as directed.
- Report any damage or missing PPE immediately to your Foreman.
- Works in the manner and with the protective devices, measures and procedures required by the Occupational Health and Safety Act and Regulations.
- Report to his or her Foreman any contravention of the Occupational Health and Safety Act and Regulations or the absence/defect in any equipment or protective device.

PROCEDURE

The **Health and Safety Coordinator** with the assistance of the **Senior Management** will develop a Personal Protective Equipment Program.

All required workers will receive PPE specific online training regarding their selection, fit, use/ care and limitations of their PPE with applicable demonstrations where required.

DISTRIBUTION

The specific requirements for PPE will be documented and communicated to all workers, along with appropriate warning signs.

RECORDS

Documentation of Safety Talks and/ or online training of employees will remain on file electronically and on the company servers.

Section 6 – Personal Protective Equipment

PERSONAL PROTECTIVE EQUIPMENT PROGRAM

INTRODUCTION

The primary focus of our Health and Safety Program is to eliminate or control potential hazards to which our employees could be exposed. It has been acknowledged that the use of Personal Protective Equipment (PPE) is the least desired method of controlling workplace hazards, therefore, the use of Personal Protective Equipment will only be considered after other control methods have been explored.

Potential harmful hazards exist at our locations and we will implement control measures to eliminate and/or control the harmful effects of these hazards. Engineering and Administrative Controls will be used for the most part; however, there are some circumstances and job functions which require the use of PPE to control the exposure to the hazard.

The following program will identify the need for PPE and the implementation of a program designed to protect our workers. This program will encompass the following areas:

- Legislative references
- Selection guidelines
- Fitting guidelines
- Use guidelines
- Care guidelines

MAINTENANCE OF PPE

All employees will be trained on the limitations, inspections and proper care and maintenance of their Personal Protective Equipment by the Health and Safety Coordinator in accordance with the legislative requirements and manufacturer's specifications. PPE Inspection will be performed daily by all workers in accordance with these instructions and recorded on the Daily GAZZ Card

All defective, damaged or non-repairable items will be taken out of service and replace with suitable replacements as required.

In addition, all clothing that has come into contact with solvents or other corrosive material must be removed from use as required.

MONITORING

Monitoring for use of the required PPE will be conducted by all Foreman / Superintendent and the Health and Safety Coordinator where applicable. Foreman / Superintendent will visually check all workers to ensure that everyone is adequately wearing/ using their PPE where required according to the manufacturer's specifications and the job requirements.

Health and Safety Coordinator and Foreman / Superintendent are responsible to ensure that the PPE and equipment required for the project are present and , functional at all times and followed by all workplace parties including Managers and Sub-contractors. They will use Progressive Disciplinary Action for those employees who fail to wear the appropriate Personal Protective Equipment. The Foreman / Superintendent reserve the right to remove anyone who causes unsafe conditions or practices, or who performs in a manner not consistent with the requirements of the Occupational Health and Safety Act and/or it's Regulations.

All workers will immediately report missing or broken PPE to their supervisor for replacement or repairs as required.

TRAINING

Training for the proper selection, use, fit, care, limitations and inspections of the PPE provided to employees will be arranged by the Health and Safety Coordinator in accordance with the written guidelines for each type of PPE as below.

All training sessions provided to workers will be documented and maintained on file. New employees will receive this training during their Orientation to the workplace and during specific task training.

Basic PPE

1- <u>Head Protection:</u>

References:
- Construction Projects Regulation 213/91: Section 22
- CSA Z94.1 Industrial protective headwear –Performance, selection, care and use

Selection Guidelines:
- When selecting protective headwear, consider the type of hazards that may be encountered.
- Protective headwear must meet CSA Z94.1 and display the certification mark.
- The following additional considerations are to be used when selecting protective headwear:
  - Compatibility with other PPE that may be worn.
  - Consider sizing and fit of head protection.
  - Meet the requirements for head protection as specified Regulations for Construction Projects (Must protect the wearer head against impact and against small flying or falling objects, and must be able to withstand an electrical contact equal to 20, 000 volts phase-to-ground).
- Both parts of the headwear (shell and suspension) must be compatible and maintained according to manufacturer's instructions. If attachments are used with headwear, they must be designed specifically for use with the specific headwear used.
- Classes of headwear can include:
  - Type 1 - protection from impact and penetration at the crown (top) and
  - Type 2 - protection from impact, penetration at the crown (top) and laterally (sides)
- Each type is also available in the following classes:
  - Class E (20 000 V electrical rating) - non-conducting material (electrical trades)
  - Class G (2200 V electrical rating) - non-conducting material (general trades)
  - Class C (no electrical rating)

Fitting Guidelines:
- Ensure proper fitting of headwear to head shape.
- Ensure headwear is placed on head and push down until the headband and shell are at a comfortable height, leaving an air gap between the top of the head and crown of headwear – the air gap is a vital part of the shock absorption system for protecting the head against impact to the shell.

- Gradually tighten or adjust the strap until it is secure but comfortable. When properly tightened the headwear is not likely to fall from the head when the user shifts head side to side or leans forward.

Use Guidelines:

- Head protection must be worn when there is a risk of injury to the head due to impact, penetration or potential contact with electrical hazards. Head protection is worn when:
  - Objects may fall or strike from overhead.
  - There is the risk of bumping heads against a fixed object.
  - There is the possibility of accidental head contact with electrical hazards.
- Hard hat should be worn facing forward (the only time a hard hat can be worn in reverse is if the hard hat has a reverse orientation mark).

Care Guidelines:

- Proper care is required for headwear to perform efficiently. Its service life is affected by many factors, including temperature, chemicals, sunlight, and ultraviolet radiation (welding). The usual maintenance for headwear is simply washing with mild detergent and rinse thoroughly. Store hard hat away from direct sunlight. Always consult the manufacturer's instructions for use and care instructions.
  - Do inspect the headwear and its components.
  - Do replace headwear that is pitted, holed, cracked or brittle.
  - Do replace headwear that has been subjected to a blow even though damage cannot be seen.
  - Do remove from service any headwear if its serviceability is in doubt.
  - Do consult regulations or supplier for information on headwear, and when to replace equipment.
  - Do not drill holes, alter or modify the shell. Alterations may reduce the protection provided by the headwear.
  - Do not use solvents or paints on the shell (paint solvents can make plastic headwear brittle and more susceptible to cracks)
  - Do not put chin straps over the brims of certain classes of headwear.
  - Do not use any liner that contains metal or conductive material.
  - Do not paint, make holes or attach accessories unless in accordance with manufacturer's specifications.

2- <u>Foot Protection:</u>

References:

- Construction Projects Regulation 213/91: Section 23
- CSA Z195.1 Guideline on Selection, Care and Use of Protective Footwear

Selection Guidelines:

- Foot protection for construction projects must be a CSA-certified Grade 1 work boot
- Protective footwear shall be a safety shoe or safety boot with the following features:
  - A box toe that is adequate to protect the wearer's toes against injury due to impact and is capable of resisting at least 125 joules impact
  - A sole or insole that is adequate to protect the wearer's feet against injury due to puncture and is capable of resisting a penetration load of 1.2 kilonewtons when tested with a Deutsche Industrie Norm standard pin.

- Grade 1 boots can be identified by the following markings:
  - A green triangular patch containing the CSA logo on the outside of the boot
  - A green label indicating Grade 1 protection on the inside of the boot
  - Grade 1 boots are also available with metatarsal and dielectric protection. A white label with the Greek letter Omega, □, in orange means that the boot protects against electric shock under dry conditions.

Fitting Guidelines:
- Walk in new footwear to ensure it is comfortable.
- Footwear should have ample toe room.
- Footwear should fit snugly around the heel and ankle when laced.
- Lace up boots fully. High-cut boots provide support against ankle injury.

Use Guidelines:
- Protective footwear must be worn to protect from falling or rolling objects and crushing or penetrating materials. Protective footwear should be worn when the following potential hazards are present:
  - Heavy objects such as barrels or tools may roll or fall on worker's feet
  - Working with sharp objects such as nails that can pierce the soles or uppers of shoes
  - Working around hot, wet or slippery surfaces
  - Possible exposure to corrosive or irritating substances
  - Possible explosive atmosphere includes the risk of static electrical discharges

Care Guidelines:
- Always consult the manufacturer's instructions for maintenance requirements.
  - Do inspect footwear regularly for damage (e.g., cracks in soles, breaks in leather, or exposed toe caps).
  - Do repair or replace worn or defective footwear.
  - Do choose footwear according to the job hazard and approved standards.
  - Do choose a high-cut boot to provide ankle support.
  - Do not wear defective footwear (i.e. exposed steel toe caps, holes, etc).
  - Do not modify footwear.
  - Do lace up boot and tie laces securely.

Specialized PPE

3- <u>Eye & Face Protection:</u>

References:
- Construction Projects Regulation 213/91: Section 24
- CSA Z94.3.1 Guideline for selection, use and care of eye and face protectors
- CSA Z94.3 Eye and Face Protectors

Selection Guidelines:
- In order to ensure the proper eye protection to be worn, potential hazards must be identified and the appropriate type of eyewear selected, maintained and worn. Consult with the PPE manufacturer about the uses and limitations for each type of eye or face protection.
- The first type, "basic eye protection", includes:
  - Eyecup goggles
  - Monoframe goggles and spectacles with or without side shields

- The second type, “Face Protection”, includes:
  - Metal mesh face shields for radiant heat or hot and humid conditions,
  - Chemical and impact resistant (plastic) face shields
  - Welder’s shields or helmets with specified cover
  - Filter plates and lens
- Regular prescription eyewear does not provide adequate protection and must not be used in place of eye and/or face protection. Over-the-glasses protectors (oversized protectors to be worn over prescription eyewear) should only be used by those who require only occasional protection.
- All PPE components must be CSA-Certified (e.g. lenses, frame, side shields, etc.)

Fitting Guidelines:

- Ensure your eye and face protection fit properly. Safety glasses should fit snugly without eyelashes hitting lenses.
- Eye and face protection should be individually assigned and fitted.
- Wear eye and face protection so that the temples fit comfortably over the ears. The frame should be as close to the face as possible and adequately supported by the bridge of the nose.
- Eye and face protection should be functional with other PPE that may be worn and the user should have unrestricted vision and movement.

Use Guidelines:

- Eye and face protection is PPE designed to protect against impact, splash and radiation hazards. Workers who may be exposed to eye or face hazards must wear appropriate PPE. Examples of hazards include the following:
  - Flying particles
  - Molten metal
  - Liquid chemicals
  - Acids or caustics
  - Harmful Light
  - Chemical Gases or Vapours

Care Guidelines:

- Always consult the manufacturer’s instructions for maintenance requirements.
  - Clean your eye and face protection daily. Avoid rough handling that can scratch lenses.
  - Store your eye and face protection in a clean, dry place where they cannot fall or be stepped on.
  - Replace scratched, pitted, broken, bent or ill-fitting glasses. Damaged glasses interfere with vision and do not provide protection.
  - Replace damaged parts only with identical parts from the original manufacturer to ensure the same safety rating.

4- <u>Hearing Protection:</u>

References:

- Noise Regulation 381/15
- CSA Standard Z94.2 Hearing Protection Devices

Selection Guidelines:

- Select hearing protection that is:
  - Correct for the job.
  - Provides adequate protection.
  - Comfortable enough to be accepted and worn.
- Noise Exposure Levels
  - Before choosing a hearing protector, it's important to find out the level of noise exposure that a worker will face throughout an entire working day.
  - The types of HPDs that will be used are earplugs or earmuffs. Earplugs attenuate noise by plugging the ear canal. Earmuffs cover the external part of the ear, providing an acoustical seal.
- The table below provides guidelines for proper selection of HPDs based on class and noise exposure, presuming a desired effective exposure of L(EX), 8h = 85 dBA when HPDs are worn.

Level of Noise Exposure LEX (dBA)	Class
≤90	C
91 to 95	B or BL*
96 to 105	A or AL*
> 105	Dual

- AL or BL class HPDs meet the requirements for either Class A or Class B and have a minimum attenuation of 20 dB at 125 Hz.
- Dual hearing protection is required (Class B earmuff and Class A ear plug). Limit exposure duration. Octave-band analyses required for attenuation predictions and more frequent audiometric testing required.

Fitting Guidelines:

- Earmuffs
  - Earmuffs should conform to the latest issue of CSA Standard Z94.2.
  - The cup part of the earmuff should fit snugly over the entire ear and be held firmly in place by a tension band.
  - The cup and band should not be so tight as to cause discomfort.
  - Cup, cushion, and band should be checked for possible defects such as cracks, holes, or leaking seals before each use of the HPD.
  - Because band tension can be reduced over a period of time, the band may require repair or replacement.
- Defective or damaged parts should be repaired or replaced as needed. Tension band, cushions, and cups are readily replaceable. Consult the manufacturer's instructions for information related to the selection, care, and use of earmuffs.
- Earplugs
  - Earplugs should conform to the latest issue of CSA Standard Z94.2.
  - Because the ear canal is slightly S-shaped, the ear must be pulled back to straighten the canal for the plug to fit properly.
  - Earplugs must be fitted snugly in the ear canal.
  - Earplugs with torn or otherwise damaged flanges should be replaced.

Use Guidelines:

- Gazzola will protect workers from overexposure to noise and ensure that no worker is exposed to a sound level greater than an equivalent sound exposure level of 85 dBA over an 8-hour work period.

- Engineering and administrative controls will be used to reduce noise at the source or along the path, where workers are exposed to levels above 85 dBA over an 8-hour period.
- If it is not possible to control noise at the source or along the path, personal protective equipment (PPE) such as hearing protection devices (HPDs) will be used to control noise at the worker.
- The proper HPDs must be selected based on the jobsite conditions and must provide adequate training and instruction on the HPDs workers will be using.
- A hearing protection device shall be selected having regard to:
    - Sound levels to which a worker is exposed;
    - The attenuation provided by the device; and
    - The manufacturer's information about the use and limitations of the device.
    - A hearing protection device shall be used and maintained in accordance with the manufacturer's instructions
- Any worker who uses an HPD will be provided with adequate training and instruction in the care and use of the device, including its limitations, proper fitting, inspection and maintenance and, if applicable, cleaning and disinfection.

Care Guidelines:

- Clean your hearing protection and replace, as required by manufacture instructions.
- Avoid rough handling and accumulation of dirt that can damage or ruin the plugs.
- Store your hearing protection in a clean, dry place where they cannot fall or be stepped on.
- Replace damaged or soiled plugs. Damaged pods interfere with hearing protection, and dirt build up can hurt/injure your ear and do not provide protection.
- Replace damaged parts only with identical parts from the original manufacturer to ensure the same safety rating.
- Do not modify your equipment.
- Clean with mild soap and warm water only. Pat dry with a towel. Do not treat with any other substances, as the earplugs may degrade and compromise use. Single use earplugs should be discarded after each use.

5- <u>High Visibility Protection:</u>

References:

- Construction Projects Regulation 213/91: Section 69.1
- CSA Z96-15 High-Visibility Safety Apparel Standard

Selection Guidelines:

- To comply with the CSA Standard, the Hi-Visibility Protection should meet the following criteria for the stripes/bands:
    - A waist-level horizontal stripe/band that goes completely around the High Visibility Safety Apparel (HVSA).
    - Two vertical stripes on the front passing over the shoulders and down to the waist.
    - A symmetric "X" on the back extending from the shoulders to the waist.
    - For Class 3 apparel, stripes/bands encircling both arms and both legs are added.
- CSA lists three classes of garments based on body coverage provided. Each class covers the torso (waist to neck) and/or limbs according to the minimum body coverage areas specified for each class.
    - Class 1 provides the lowest recognized coverage and good visibility.
    - Class 2 provides moderate body coverage and superior visibility.

  - Class 3 provides the greatest body coverage and visibility under poor light conditions and at great distance.
- As per the Construction Project regulations, any worker who may be endangered by vehicular traffic on a project must wear a garment that covers the upper body and provides a high level of visibility. The reflective garment must:
  - The garment shall be fluorescent blaze or international orange in colour.
  - On the front and the back, there shall be two yellow stripes that are 5 centimetres wide. The yellow area shall total at least 500 square centimetres on the front and at least 570 square centimetres on the back.
  - On the front, the stripes shall be arranged vertically and centred and shall be approximately 225 millimetres apart, measured from the centre of each stripe. On the back, they shall be arranged in a diagonal “X” pattern.
  - The stripes shall be retro-reflective and fluorescent.
- If the garment is a vest, it shall have adjustable fit.
- A nylon vest shall also have a side and front tear-away feature
- In addition, a worker who may be endangered by vehicular traffic during night-time hours shall wear retro-reflective silver stripes encircling each arm and leg, or equivalent side visibility-enhancing stripes with a minimum area of 50 square centimetres per side.

Fitting Guidelines:

- For safety and best performance, garments should be fitted to the person. Don't forget to consider the bulk of clothing that might be worn underneath the garments, and how the garment should be worn (i.e., done up properly around the body with no loose or dangling components). The garments should sit correctly on your body and stay in place during your work.
- The apparel should be comfortable to wear - the parts of the apparel that come into direct contact with the worker should not be rough, have sharp edges, or projections that could cause excessive irritation or injuries. The apparel should also be lightweight.
- Garments should be selected and worn so that no other clothing or equipment covers the high-visibility materials (e.g., glove gauntlets, equipment belts, and high-cut boots).

Use Guidelines:

- High-visibility protection is needed when working where there is low light and poor visibility, especially when working around moving vehicles (cars, trucks or other machinery traveling under their own power - e.g., forklifts, backhoes, etc). High-visibility items allow the worker to be spotted by the drivers of those vehicles sooner and more readily.

Care Guidelines:

- Always follow the manufacturer’s instructions for care and cleaning of High-Visibility Protection Equipment.
  - Keep your high-visibility apparel clean and well-maintained. Contaminated or dirty retroreflective materials provide lower visibility.
  - Replace garments that show signs of wear and tear, soiling, or contamination as it will no longer be able to provide acceptable levels of visibility.

6- Hand Protection:

References:
- Safety Data Sheets

Selection Guidelines:
- Always refer to the manufacturer instructions and/or Safety Data Sheets when selecting hand protection.
- Types of Hand Protection:
  - **Leather, Canvas or Metal Mesh Gloves:** These types of gloves protect against cuts, burns and punctures.
  - **Fabric and Coated Fabric Gloves:** These types of gloves are made of cotton or other fabric. They generally protect against dirt, chafing and abrasions.
  - **Insulating rubber gloves:** These gloves are used for protection against electrical hazards.
  - **Chemical and liquid resistant gloves:** When working with chemicals with a high acute toxicity, working with corrosive materials in high concentrations, handling chemicals for extended periods of time or immersing all or part of a hand into a chemical, the appropriate glove material should be selected, based on chemical compatibility.
- Other Considerations:
  - Dexterity
  - Glove thickness
  - Glove length
  - Glove size

Fitting Guidelines:
- Follow manufacture instructions when choosing the right glove size. Make sure that the gloves fit properly and are comfortable to wear.

Use Guidelines:
- All gloves should be inspected for signs of degradation or puncture before use.
- Disposable gloves should be changed when there is any sign of contamination. Reusable gloves should be washed frequently if used for an extended period of time.
- Gloves should not be worn where there is a risk of being caught in moving machinery parts.

Care Guidelines:
- Follow the manufacturer's instructions for washing and caring of hand protection.

7- Respiratory Protection:

References:
- O. Reg. 833: Control of Exposure to Biological or Chemical Agents
- CSA-Z94.4-11: Selection, Use and Care of Respirators
- Safety Data Sheets
- NIOSH

Selection Guidelines:

- Personnel conducting respirator selection shall understand and comply with the limitations of the selected respirators under the conditions of use.
- Personnel conducting respirator selection should consider extraordinary circumstances in the operations that could adversely affect the function of a respirator (e.g., extreme cold or radiant heat, hypobaric or hyperbaric conditions). Advice should be sought from the manufacturer's technical experts.
- Respirator selection shall be based on a systematic review of the hazards and knowledge of standards, regulatory criteria, and manufacturers' information on the types of respirators and their limitations to ensure that appropriate respirators are selected for the intended conditions of use. Refer to CSA-Z94.4-11 standards for respirator selection requirements.

For the purpose of selection, respirators shall be grouped as follows:

- atmosphere-supplying respirators
  - self-contained breathing apparatus (SCBA) (pressure-demand, open- or closed-circuit)
  - airline (pressure-demand or continuous-flow)
  - multi-functional (a configuration incorporating both SCBA and airline)
- air-purifying respirators, non-powered (APR) and powered (PAPR)
  - gas- and vapour-removing;
  - particulate-removing;
  - gas-, vapour-, and particulate-removing
  - multi-functional (a configuration incorporating both APR and PAPR)
- combined respirator (a configuration incorporating both atmosphere-supplying and air-purifying)
- escape-only respirators (atmosphere-supplying or air-purifying)

Fitting Guidelines:

<u>Qualitative Test Procedure:</u>

- A qualitative fit test can be performed with a variety of test agents including isoamyl acetate, saccharin solution aerosol, bitter aerosol (denatonium benzoate), and irritant smoke (stannic chloride). The choice of the test agent will depend on the type of mask selected.
- A qualitative fit test shall be done in the following matter:
  - The worker puts on the selected respirator according to the manufacturer's instructions.
  - He/she is asked to perform a seal check.
  - When using a half-face respirators and irritant smoke as a test agent, workers should be reminded to keep their eyes closed during the test, since smoke can irritate the eyes.
  - A threshold check is performed.
  - The worker is exposed to an atmosphere containing an odorant, irritant or taste agent.
  - The worker is then asked to perform the following exercises for at least 30 seconds:
    - Breathe normally
    - Breathe deeply
    - Turn their head from side to side; inhale and exhale when the head is at either side
    - Nod head up and down; inhale when the head is in fully up position, and exhale when the head is in fully down position
    - Talk aloud and slowly
    - Bending over

- The worker then reports any noticed odor or taste changes. If the test agent is detected, the test is immediately terminated due to improper fit. A different respirator is then selected, adjusted and the entire test procedure is then repeated until a respirator is deemed to fit that individual.
- If the worker does not detect the test solution during the entire test, then the respirator fits properly. The type, size and style of respirator, including the cartridges needed are then documented and kept on file.

Seal Check Cartridge Respirators

- Before fit testing and whenever the respirator is put on, a seal check shall be performed. Workers should perform a negative (inhalation check) and a positive (exhalation) pressure seal check; or a check recommended by the respirator manufacturer.
- To conduct a negative pressure seal check: cover the cartridges with your hands, inhale gently to collapse the face-piece slightly, and hold your breath for 10 seconds. If the face-piece remains slightly collapsed and no leakage is detected, the respirator fits properly.
- To conduct a positive pressure seal check: cover the exhalation valve with your hand and exhale gently into the face-piece. If a slight positive pressure is built up inside the face-piece without any evidence of leakage, the fit is suitable.

Use Guidelines:

- Hazard Assessment
  - A hazard assessment shall be performed by a qualified person to determine the respiratory hazards present and to assist in the selection of an appropriate respirator where required.
  - The nature of the hazard shall be determined with guidance from the following criteria:
    - Identification of contaminants present in the workplace
    - Identification of the physical states of airborne contaminants
    - Measurement (or estimation) of the concentration of the contaminants
    - Determined if the atmosphere is oxygen-deficient
    - Identification of the established occupational exposure limit for each airborne contaminant
    - Determine if an Immediately dangerous to life or health (IDLH) atmosphere is present
    - Determine if there is a specific health regulation or substance-specific standard for the contaminant
    - Determine (for particulate hazards) if there is oil present in the workplace
    - Determine if the contaminant can be absorbed through, or is irritating to, the skin or eyes
- Training of Respirators
  - Training shall be provided by a qualified person with a practical understanding of the respiratory protection program roles, responsibilities, and requirements.
  - Records of training shall be kept on file and maintained.

Care Guidelines:

- Respirators should be properly maintained to preserve their original effectiveness. Care shall include:
  - Cleaning and sanitizing
  - Inspection, testing and repair
  - Storage
  - Record Keeping

- Cleaning and Sanitizing Requirements
  - Respirators must be cleaned after every use according to the respirator manufacturer's instructions or according to the following alternative procedure:
    - Remove filters, cartridges canisters or any other components recommended by the manufacturer (anything not to be washed).
    - Wash the respirator in warm water with a mild cleanser that contains a disinfecting agent.
    - Rinse the respirator very thoroughly in warm running water.
    - Allow respirator to air dry; alternatively, hand-dry with a clean, lint-free cloth.
    - Reassemble the face-piece, replacing filters, cartridges, and canisters where necessary.
    - Test the respirator to ensure that all components work properly.
    - Properly store the respirator. Storing a respirator in a sealed bag is recommended.
  - Note: If the respirator is not individually assigned, then cleaning and sanitizing must be performed before the next use of the device.
- Inspection Requirements
  - Workers shall inspect their respirators before and after each use in accordance with the manufacturer's instructions. Inspection of the respirator includes the following points:
    - Condition of component parts
    - Tightness of connections
    - End-of–service-life indicators
    - Shelf-life dates
    - Proper functioning of regulators, alarms, and other warning systems / devices
- Repair and Test Requirements
  - Defective or non-functioning respirators must be identified and tagged as "out of service" or equivalent and removed from service until repaired or replaced. Only qualified persons shall repair and test respirators and cylinders, using original manufacturer's replacement parts and repair procedures.
- Storage Requirements
  - Respirators must be stored in a manner to protect them against dust, ozone, sunlight, heat, extreme cold, excessive moisture, or any other potential hazard that may have a detrimental effect on the respirator. Respirators shall be stored in accordance with the respirator manufacturer's instructions to prevent the deformation of rubber or other parts.
- Record Retention
  - Appropriate records of activities conducted within the confines of this program must be kept by the applicable workplace parties. Documentation required to be maintained includes:
    - Hazard assessments
    - Selection of the appropriate respirator
    - Fit test records
    - Training records for the respirator user
    - Maintenance records of respirators
- N95 Respirator Practices
  - Use for solid particulates and liquid mists in concentrations not exceeding 10X PEL/OEL.
  - Always follow User Instructions and use in manners as indicated.
  - Do not use for gases and vapors, oil, aerosols, asbestos, arsenic, cadmium, lead, 4,4-methylene dianiline (MDA), or abrasive blasting.

- Do not use in any manner not indicated in the User Instructions.
- Replace the respirator when it becomes dirty, damaged, or difficult to breathe through.
- It is recommended to store respirators away from contaminated areas, dust, sunlight, extreme, temperatures, excessive moisture, and damaging chemicals.

8- <u>Fall Protection:</u>

References:

- Construction Projects Regulation 213/91: Section 26
- CSA Z259.12-11 Fall Protection Standard

Selection Guidelines:

- Workers who may be exposed to a fall hazard must be protected by the highest- ranked method of fall protection that is practicable (O. Reg. 213/91, s. 26.1(2)). The higher the method is ranked, the less chance there is for a worker to be injured. These methods are ranked in order below:
  - **Hazard Elimination** – changing the work process so the hazard no longer exists
  - **Guardrails, Protective Covers, and Warning Barriers** – protect a fall from unprotected edges or openings
  - **Travel Restraint System** – allows a worker to reach the edge but not fall over it
  - **Fall Restricting System** – designed to limit a fall distance to 0.6 m (2 ft)
  - **Fall Arrest System** – designed to stop a falling worker before they hit the ground or objects below
  - **Safety Net** – designed to catch a falling worker before they hit the ground or objects below
- Fall Protection Components
  - **CSA-approved Full-Body Harness**
    - The chest strap should be snug and near the middle of the chest. Leg straps should allow a fist to fit snugly between the strap and leg. The D-ring should be in the centre of the back between the shoulder blades.
  - **CSA-approved Lifeline**
    - A typical lifeline is 16-mm (5/8-in) synthetic rope (polypropylene blend). All lifelines must meet the CSA standard Z259.2.5-12 for fall arresters and vertical lifelines.
  - **CSA-approved Lanyard with Energy Absorber**
    - Lanyard should be secured to an attachment point higher than waist level and kept as short as possible to reduce fall distance. Remember: the energy absorber can increase lanyard length by as much as 1.1 m (42 in).
  - **CSA-approved Connecting Devices**
    - Must be capable of supporting at least 22 kN (5,000 lb). Snap hooks and carabiners must be self-locking to prevent accidental roll-out. Rope grabs must be attached to the lifeline in the correct direction. **Note:** Rope grabs are designed for use with a specific diameter of lifeline and length of lanyard.
  - **Anchorage or Fixed Supports**
    - Must be capable of supporting all loads that may be placed on it (16 kN (3,600 lb) at minimum)
- Types of Anchors
  - **Permanent anchors (Designed fixed supports)**
    - Load-rated anchors that are permanently installed for fall protection as an integral part of a structure (e.g., roof anchors).

- **Temporary fixed supports**
  - Designed to be connected to the structure using specific installation instructions (e.g., nail-on anchors).
- **Existing structural features**
  - Not intended as an anchor but verified by a professional engineer or competent person to serve as one (e.g., reinforced concrete columns)
- **NEVER** anchor to roof vents or hatches, small pipes and ducts, metal chimneys, TV antennas, stair or balcony railings, or fixed access ladders.

- Types of Lifelines
  - **Vertical lifelines**
    - Can be used by only one person at a time and must have a positive stop to prevent the rope grab from running off the end.
  - **Horizontal lifelines**
    - Must be designed by a professional engineer and clearly indicate the anchor points, the design loads, and the number of workers that can be safely attached.
  - **Self-retracting lifelines (SRLs)**
    - Allows the line to unspool and retract based on the worker's movements, thereby limiting the fall distance. Most are designed to be anchored overhead.
  - **CAUTION:** Knots along the length of either a horizontal or vertical lifeline can reduce its strength by as much as 40 per cent.

Fitting Guidelines:

- Full-body harnesses are fully adjustable and available in different sizes. Proper fit of the harness is important, especially when it is being used for fall arrest. Always refer to manufacturer's instructions for proper use and fit of a full-body harness
  - Adjust the chest strap so that it is snug and located near the middle of your chest. A general rule is above the sternum, just below the armpits. If you fall, a properly adjusted chest strap will prevent you from coming out of the harness.
  - Adjust the leg straps so that your fist can fit snugly between the strap and your leg.
  - Adjust the shoulder straps so that the back D-ring rests between your shoulder blades. A properly positioned D-ring will keep you upright after a fall.

Use Guidelines:

- Personal fall protection systems must be inspected before each use and defective components must be removed from service.
- Check the harness to make sure that:
  - the hardware and straps are intact and undamaged
  - moving parts are moving freely
  - the webbing is free of burns, cuts, loose or broken stitching, frayed material, and signs of heat or chemical damage
  - the fall arrest indicator has not deployed
- Check the lanyard for:
  - fraying, kinking, and loose or broken stitching
  - rust, cracks, and damage to the lanyard hardware
  - stress or tearing on the cover jacket of the energy absorber
- Check the lifeline for:
  - tears, cuts, or burns
  - strands that are different sizes or shapes
  - discoloration and brittleness
  - broken or loose strands inside the rope
  - buildup of powder or dirt inside the rope

- loose thimbles
- Check connecting components for:
  - damage, cracking, dents, bends, or signs of deformation
  - sharp edges
  - moving parts that don't work smoothly
  - rust and signs of wear or metal fatigue
- Access Structures
  - Most ladders are not work platforms. They are a means of access. When over 3 metres, you must follow the fall protection requirements, which includes training.
  - Other means to consider instead of using a ladder include:
    - Scaffold work platforms more than 2.4 m (8 ft) high must be fully planked, have guardrails, and have a safe means of access and egress (ladder or stairway).
    - Elevating work platforms (EWP) must have guardrails. Operators must be trained on the specific class of EWP they will use. If the EWP will be moved, any worker on the platform must be tied off.
    - Suspended access equipment (SAE) users must be tied off while working on it or getting on or off it and they must have received WAH and SAE Users training. Only a designated competent worker with SAE Installers train in can install, alter, or dismantle SAE. Only a competent worker or qualified person (see CAN/CSA Z271-10) can inspect, test, or maintain SAE.
- Emergency Rescue Plan
  - A worker whose fall has been arrested must be brought to safety as quickly as possible without causing further injury or putting rescuers at risk. Before using a fall arrest system, written fall rescue procedures will be developed and communicated to the worker.
- Fall Clearance Distance
  - A fall protection system must prevent a falling worker from hitting the ground or an object below. This requires knowing the Fall Clearance Distance, which is the distance from the ground (or object below) to the connection point where the worker attaches their lanyard to the anchor or lifeline.
  - The calculation for Fall Clearance Distance is:
    - Length of Lanyard + Length of Deployed Energy Absorber + Height of Worker + Safety Factor = Fall Clearance Distance.
- Fall Arrest Planning
  - Before using a fall arrest system, the hazards a worker may be exposed to in case of a fall will be assessed:
    - Will the worker "bottom out" (i.e., hit the ground or any material, equipment, or a lower level of the structure before the fall is arrested)?
    - Will the pendulum effect or "swing fall" cause the worker to swing from side to side, possibly striking some equipment, material, or the structure?
    - How will the suspended worker be rescued?
  - To prevent the risk of bottoming out: the Total Fall Distance will be calculated to make sure it is less than the distance from the work surface to the surface below.
  - To minimize pendulum effect: the lanyard or lifeline perpendicular will be kept (at a 90° angle behind the worker) from the edge to the anchor point. Or run a horizontal lifeline parallel to the edge. The worker can attach a lanyard to it and move along the edge, staying close to perpendicular at all times.
  - **CAUTION:** The friction exerted by a swing fall may cause the lanyard or lifeline to break where it runs over a sharp edge. Use edge softeners to minimize this risk.
- Mandatory Training
  - Before use, workers must be trained to understand:

        - The application limits (for example maximum permitted free falls, distance needed below to stop before hitting lower levels or objects, minimizing swing falls, etc.) of the equipment.
        - Proper hook-up, anchoring, and tie-off techniques.
        - Proper use, inspection, and storage of equipment.
        - Training must be provided by CPO-approved Working at Heights training provider.
    - A refresher training must be completed every 3 years.
- Inspection of Equipment
    - Fall protection equipment needs to be inspected prior to using and after each use. Harnesses should be inspected for marking on load bearing webbing, cuts, burns, discolouration, excess dirt or wear, knots, other damage and activation of the impact indicator where applicable.
    - All labels must be present. Hardware such as D-rings, snap hooks and buckles should be free of cracks, corrosion, deformation, burrs, missing parts, or other damage and/or wear.
    - If there is ever any sign of an unsafe condition or if the harness shows signs that it has been used to arrest a fall it should be immediately withdrawn from service and destroyed.

Care Guidelines:

- Basic care increases the life of the unit and contributes to its performance. Follow the manufacturer's instructions on how to care and clean the equipment. Steps may include:
    - Wipe off all surface dirt with a sponge dampened in plain water. Rinse the sponge and squeeze it dry. Dip the sponge in a mild solution of water and commercial soap or detergent. Work up a thick lather with a vigorous back and forth motion.
    - Rinse the webbing in clean water.
    - Wipe dry with a clean cloth. Hang freely to dry.
    - Dry the equipment away from direct heat, and out of long periods of sunlight.
    - Store in a clean, dry area, free of fumes, sunlight, corrosive materials, sharp edges, or vibration and in such a way that it does not warp or distort the equipment.