



COUNTY OF NORTHERN LIGHTS

POLICY

RESPIRATORY PROTECTION

CREATED: 2/9/2025

REVISED:

TOTAL PAGES: 6

INTRODUCTION

The purpose of this Respiratory Protection Code of Practice is to be in compliance with regulatory requirements and to assist workers for respiratory protection when performing work.

SCOPE

This program applies to all workers, temporary workers and any contractors working for the company. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers all workers and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

RESPIRATORY PROGRAM ADMINISTRATOR

Overall responsibility for the respiratory protection program is assigned to the Safety Officer in order to ensure that specific requirements are followed. This assignment is made, however, with the understanding that individual supervisors will have to implement and enforce major portions of the program. It is understood that the Program Administrator will report performance problems to the appropriate manager for resolution. The person who will have responsibility for administering all the aspects of this program will be the senior manager. The responsibilities of the Program Administrator will include, but are not limited to:

- Conducting an assessment of the nature of airborne contaminants, the concentration or likely concentration of any airborne contaminants, the duration or likely duration of the workers exposure, the toxicity of the contaminants, the concentration of oxygen, the warning properties of the contaminants and the need for emergency escape.
- Ensuring an adequate supply of respirators, cartridges, and repair/replacement parts are always available at each work site, where deemed necessary.
- Ensuring that only respirators that have been approved ordered and used. Under no circumstances will respirators be used that have not been approved by current CSA standards.
- Ensuring that all respirator users have been trained in the use, selection and limitations of the type of respirators they will be using prior to the first time the respirator must be used.
- Ensuring that all respirator users have been medically evaluated and found fit to use the type of respirators that will be required in their job. The medical evaluation must be completed prior to assigning any worker to a task that requires use of a respirator.
- Ensuring that all respirator users are fit-tested at least annually and more often if other local regulatory requirements apply.
- Ensuring that respirators are individually issued, are cleaned, and sanitized on a regular basis and respirators are stored in a clean and accessible location. This duty may also be delegated but the Program Administrator retains final responsibility for seeing that it is done.
- Ensuring that worker exposure is monitored to assure correct respirator type is used.
- Ensuring surveillance of workers wearing respirators shall leave the area they are wearing respirators in to wash, change cartridges or if they detect break through or resistance with their PPE.
- Ensuring that the elements of the Respiratory Protection Code of Practice for the selection, use, cleaning/maintenance, storage and fit-testing of respirators are followed.
- Ensuring that respirator parts are not exchanged between brands of respirators.
- Ensuring medical evaluations, respirators and required training are provided at no cost to the worker.



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ASSESSING RESPIRATORY HAZARDS IN WORK AREAS

A hazard assessment is performed to identify respiratory hazards and establish respiratory protective equipment needs. Management must determine the degree of danger to a worker at a work site and whether the worker needs to wear respiratory protective equipment if a worker is or may be exposed to an airborne contaminant or a mixture of airborne contaminants in a concentration exceeding their occupational exposure limits, the atmosphere has or may have an oxygen concentration of less than 19.5 percent by volume or a worker is or may be exposed to an airborne bio hazardous material. Workers must wear respiratory protective equipment when airborne contaminants exceed occupational exposure limits.

Management must consider the nature and exposure circumstances of any contaminants or biohazardous material, the concentration or likely concentration of any airborne contaminants, the duration or likely duration of the worker's exposure, the toxicity of the contaminants, the concentration of oxygen, the warning properties of the contaminants and the need for emergency escape.

For work performed at a client's location, Management must ensure that workers observe posted respiratory hazard signage and implement controls as needed. A program of monitoring potential worker exposures has been implemented through the corporate health and safety department. Project personnel may also be assigned with the task of conducting air monitoring. Direct-reading instruments will also be used in the characterization of potential exposures. All the data collected is used to determine the appropriateness of the respiratory equipment.

Respiratory Equipment Requirements

Respiratory protective equipment is used where engineering controls are not practicable. Any establishment whose operation could cause the emission of gases, dusts, fumes, vapours, and mists into the work area shall be operated so that the concentration of any gas, dust, fume, vapour, or mist does not exceed, in the respiratory zone of the workers, occupational exposure limits.

Company establishments shall be designed, constructed, fitted, or provided with an evacuation system for gases, dusts, fumes, vapours, or mists. For work involving maintenance, inspection or repairs outside the workshop, or while waiting for measures to be implemented, the company shall provide the worker, free-of-charge, with respiratory protective equipment and ensure that he uses it.

Selection Criteria for Respiratory Protective Equipment

The program includes criteria to assist workers in selecting the proper respiratory protective equipment for each particular situation and includes a description of the various types of equipment provided to workers, including air purifying respirators and/or supplied air respirators.

Identification of Respiratory Hazards

Due to the many varied work locations the specific identification of respiratory hazards will be contained in the site-specific safety plan. However, common respiratory hazards that will be encountered include:

- Dust, Fumes, Gases,
- Chemical particles
- Oxygen Deficiency

Once the specific respiratory hazard is identified then the proper respirator will be selected. To aid in the selection process the safety manager will use the following to identify the proper respirator and filters or cartridges, where appropriate.

Standard for Respirators

Respiratory protective equipment must meet CSA Standards. The company must ensure that respiratory protective equipment used at a work site is selected in accordance with CSA Standard Z94.4-02, Selection, Use, and Care of Respirators (or current version).



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Characteristics of Hazardous Operation or Process

- Hot operations: welding, chemical reactions, soldering, melting, melding and burning
- Liquid operations: painting, degreasing, dipping, spraying, brushing, coating, etching, cleaning, pickling, plating, mixing, galvanizing and chemical reactions
- Solid operations: pouring, mixing, separations, extraction, crushing, conveying, loading, bagging, and demolition.
- Pressurized spraying: cleaning parts, applying pesticides, degreasing, sand blasting and painting
- Shaping operations: cutting, grinding, filing, milling, melding, sawing and drilling

Nature of Hazard

Gaseous Contaminants

- Inert gases (helium, argon, etc.), which do not metabolize in the body but displace air to produce an oxygen deficiency.
- Acid gases (SO_2 , H_2S , HCl , etc.) which are acids or produce acids by reaction with water.
- Alkaline gases (NH_3 , etc.), which are alkalies or produce alkalies by reaction with water.
- Organic gases (butane, acetone, etc.), which exist as true gases or vapours from organic liquids.
- Organometallic gases (tetraethyl lead, organophosphates, etc.), which have metals attached to organic groups.

Particulate Contaminants

- Dusts are mechanically generated solid particulates (0.5 to $10\mu\text{m}$)
- Fumes are solid condensation particles of small diameter (0.1 to $1.0\mu\text{m}$)
- Mists are liquid particulate matter (5 to $100\mu\text{m}$)
- Smoke is chemically generated particulates (solid and liquid) of organic origins (0.01 to $0.3\mu\text{m}$)

Concentration of Contaminant

- The concentration of contaminant will determine the model and type of respirator and cartridges or filters to be used. The concentration is based on a sampling of the atmosphere.

RESPIRATOR EQUIPMENT

Air-Purifying Respirators

Air-purifying respirators can be either full-face or half masks with mechanical or chemical cartridges to filter dusts, mists, fumes, vapours, or gases. They are available in three types: disposable, reusable, and disposable/reusable.

- Disposable air-purifying respirators are intended to be used once or until the cartridge expires. The cartridges are permanently attached and have no replacement parts.
- Reusable air-purifying respirators use both replaceable cartridges and parts.

NOTE:

The replaceable cartridges and parts must be from the same manufacturer.

Cartridge respirators and canister masks shall be marked to identify the nature of protection provided, shall not be used otherwise than as marked, shall not be used for periods of time in excess of their usefulness and shall not be used in atmosphere deficient in oxygen.

Powered Air-Purifying Respirators

Powered air-purifying respirators use a blower to pass the contaminated air through a filter. The purified air is then delivered into a mask or hood. They filter dusts, mists, fumes, vapours, and gases, just like ordinary air-purifying respirators.



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Air-purifying respirators cannot be used in oxygen-deficient atmospheres, which can result when another gas displaces the oxygen or consumption of oxygen by a chemical reaction occurs. Oxygen levels below 19.5% require either a source of supplied air or supplied-air respirator protection. Levels below 16% are considered to be unsafe and could cause death.

To determine the proper cartridge for air-purifying respirators, contact the qualified on-site safety representative of the client. You may also consult the Material Safety Data Sheet of the substance that needs to be filtered.

All cartridges and/or filters shall be changed at the beginning of each shift. Cartridge respirators cannot provide protection in all instances. Some of their limitations include:

- They do not provide oxygen and so cannot be used in oxygen deficient atmospheres.
- They cannot be used to enter atmospheres that are Immediately Dangerous to Life or Health (IDLH)
- They should not be used to enter unknown atmospheres.
- Negative pressure respirators all leak to some degree. Except for specialty eyewear approved by local regulatory requirements use with positive pressure full face piece, nothing is permitted which intrudes between the face piece and the face, or which interferes with the face seal of the face piece. Facial hair (or any hair) in the sealing surface of the respirator will cause greater leaks.
- Weight gain or loss of 10 or more pounds, dentures, or facial scars will affect the seal of the respirator to your face. If any of these conditions occur, you should recheck the fit of your respirator.
- Standard eyeglasses with attached temple bars will interfere with the seal of full-face respirators. If full face protection is needed, eyeglass inserts that are filled with a prescription are available and should be used.

Mixing parts from other respirator manufacturers is prohibited. This includes airline hoses, valves, gaskets, cartridges, etc.

MAINTENANCE AND INSPECTION REQUIREMENTS FOR RESPIRATORY PROTECTIVE EQUIPMENT

Management must ensure that respiratory protective equipment kept ready to protect a worker is stored in a readily accessible location, stored in a manner that prevents its contamination, maintained in a clean and sanitary condition, inspected before and after each use to ensure it is in satisfactory working condition and serviced and used in accordance with the manufacturer's specifications.

Inspection of compressed air cylinders must be done in accordance with CSA Standard CAN/CSA-Z94.4-02, Selection, Use, and Care of Respirators. Self-contained breathing apparatus, including regulators, must be serviced and repaired by qualified persons.

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

Breathing air must meet CSA Standards. The company will ensure that air used in a self-contained breathing apparatus, or an airline respirator is of a quality that meets the requirements of Table 1 of CSA Standard Z180.1-00 (R2005), Compressed Breathing Air and Systems (or current version) and does not contain a substance in a concentration that exceeds 10 percent of its occupational exposure limit. The CSA Standard specifies that breathing air samples should be collected and analyzed at least once every six months.

Maintenance records for air supplying respirators, powered air purifying respirators and for sorbent cartridges and canisters will be maintained.

All respiratory protective devices are to be regularly cleaned and maintained in an approved manner and ensure that the respiratory protective device is kept, when not in use, in a convenient and sanitary location



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in which the respiratory protective device is not exposed to extremes of temperature or to any contaminant that may inactivate the respiratory protective device.

Respirator Inspection

Management shall ensure that any respiratory protective device for emergency use is thoroughly inspected by a competent person at least once a month and after each use. The date of every inspection made and the name of the person who made the inspection are recorded and conspicuously displayed at the location where the respiratory protective device is stored and any defects identified during the inspection carried out are corrected immediately by a competent person.

Management shall ensure that respirators are inspected additionally as follows:

- All respirators used in routine situations shall be inspected by the worker before each use and during cleaning. A check by the worker of respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the face piece, head straps, valves, connecting tube, and cartridges, canisters or filters; and
- A check of elastomeric parts for pliability and signs of deterioration.

RESPIRATOR FIT TESTING & EFFECTIVE FACIAL SEAL OF RESPIRATORY PROTECTIVE EQUIPMENT

Management must ensure that respiratory protective equipment that depends on an effective facial seal for its safe use is correctly fit tested and tested in accordance with CSA Standard Z94.4-02, Selection, Use and Care of Respirators (or current version). Management must ensure that, if a worker is or may be required to wear respiratory protective equipment and the effectiveness of the equipment depends on an effective facial seal, the worker is clean shaven where the face piece of the equipment seals to the skin of the face.

Ensuring a Proper Face Seal

A worker required to wear a respirator which requires an effective seal with the face for proper functioning must be clean shaven where the respirator seals with the face. Except for specialty eyewear approved by the Board for use with positive pressure full face piece respirators, nothing is permitted which intrudes between the face piece and the face, or which interferes with the face seal of the face piece.

Conducting a Positive or Negative Pressure Test (Seal Check)

Before each use of a respirator which requires an effective seal with the face for proper functioning, the worker must perform a positive or negative pressure user seal check in accordance with the latest CSA Standard - CAN/CSA-Z94.4-02, Selection, Use, and Care of Respirators.

When Fit Testing is Done

- The respirator must be operating in a demand (negative pressure) air supply or non-powered air purifying mode.
- The tester must be qualified and trained to do the type of tests required. They are also required to maintain fit test records. The fit tester must also be able to wear a respirator and have worn one before.
- The wearer of the respirator must be clean-shaven where the respirator will contact the skin of the face prior to fit testing or fit testing may not be done.
- The wearer must be able to wear the respirator safely.



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AN IDLH OR OXYGEN DEFICIENT ATMOSPHERE

Supplied air respiratory protective equipment must be used in conditions that are immediately dangerous to life or health (IDLH). If Management determines that breathing conditions at a work site are or may become immediately dangerous to life or health (IDLH), management must ensure that a worker wears self-contained breathing apparatus or an airline respirator that is of a type that will maintain positive pressure in the face piece has a capacity of at least 30 minutes unless management hazard assessment indicates the need for a greater capacity, provides full face protection in situations where contaminants may irritate or damage the eyes, in the case of an airline respirator, is fitted with an auxiliary supply of respirable air of sufficient quantity to enable the worker to escape from the area in an emergency, and in the case of a self-contained breathing apparatus, has an alarm warning of low pressure.

All respirators maintained for use in emergency situations shall be inspected at least monthly and in accordance with the manufacturer's recommendations and shall be checked for proper function before and after each use.

TRAINING

Workers wearing respiratory protective equipment must be thoroughly trained in its use and limitations. Training must include:

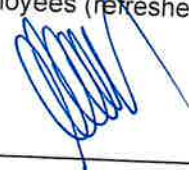
- information about the airborne contaminants, including their potential health effects and ways to detect the contaminants' presence,
- why the particular respiratory protective equipment was chosen, and information about its capabilities and limitations,
- how to properly put on and take off the respirator,
- how to test for a satisfactory fit and
- familiarization with the company Respiratory Protection Code of Practice.

This training needs to be updated regularly, whenever different respiratory protective equipment is used or work conditions change.

COMMUNICATION

As per the company's Safety Management System Manual, and corporate communication policy, all applicable policies and procedures are reviewed with all new employees prior to engaging in any work activities (during orientation) and annually with seasonal/ returning employees (refresher training).



Chief Elected Official

Chief Administrative Officer