**MASKS & RESPIRATORY PROTECTION CODE OF PRACTICE**

**When should a respirator be used?**

Workers should use respirators for protection from contaminants in the air only if other hazard control methods are not practical or possible under the circumstances. Respirators should not be the first choice for respiratory protection in workplaces. They should only be used:

* When engineering or administrative controls are not technically feasible
* While engineering controls are being installed or repaired
* When emergencies or other temporary situations arise (e.g., maintenance operations).

**How should you control respiratory hazards?**

Respiratory hazards can include airborne contaminants such as dusts, mists, fumes, and gases, or oxygen-deficient atmospheres. Well designed and maintained engineering controls are the preferred methods of controlling worker exposure to hazardous contaminants in the air. These control methods include:

* Mechanical ventilation
* Enclosure or isolation of the process or work equipment
* Proper control and use of process equipment, and
* Process modifications including substitution of less hazardous materials where possible.
* Administrative controls may be used in addition to engineering controls. Administrative controls limit workers' exposures by scheduling reduced work times in contaminant areas or by implementing other such work rules. These control measures have many limitations because the hazard is not removed. Administrative controls are not generally favored because they can be difficult to implement, maintain and are not reliable.

**Are there some things that you should know before you choose a respirator?**

Employers should have a written respirator program that describes the proper procedures for selecting and operating respiratory protective equipment. The correct use of a respirator is just as important as selecting the proper respirator. Parts of the respirator program deal with finding out what hazards are present and how much protection that the workers will need. Other parts should describe how to wear and look after the respirator.

Without a complete respiratory protection program, people will probably not receive the best protection from a respirator even if it is the correct choice for a specific job. A respiratory protection program includes several components such as:

* Hazard identification and control
* Exposure assessment
* Respirator selection
* Respirator fit-testing
* Training program
* Inspection and record keeping
* Cleaning and sanitizing respirators
* Repairing and maintaining respirators
* Proper storage of respirators
* Health surveillance
* Standard operating procedures (available in written form)
* Program evaluation.

Respiratory protective equipment must be fit tested in accordance with CSA Standard Z94.4-02, Selection, Care and Use of Respirators, or a method approved by a Director of Occupational Hygiene. Whether the fit test method is qualitative or quantitative determines the respirator’s assigned protection factor. The respirator seal check — a “user seal check” — must be done prior to fit testing and before each use of the respirator. Fit testing must be done

1. when the respirator is first issued and then at least every two years thereafter,
2. if the respirator type changes,
3. if conditions at the workplace change, or
4. if the worker’s facial features change e.g. scarring from an injury.

A physician should examine the medical and psychological fitness of workers. This should be done before they are assigned to work in areas where respirators may be required. The workers must be physically fit to carry out the work while wearing respiratory equipment. They must also be psychologically comfortable (e.g., not claustrophobic) about wearing respirators.

The evaluation should be appropriate to the level of respirator use and take into consideration

(a)  the type of respirator being used,

(b)  the type and concentration of contaminant the worker will be exposed to,

(c)  the amount of time that the respirator must be worn, and

(d)  the activities the worker must do while wearing a respirator.

Workers with beards, long sideburns, or even a two-day stubble may not wear respirators because the hair breaks the seal between the skin and the respirator mask. Wearing eyeglasses would also break the respirator seal. This means that the respirator mask will "leak" and will not provide the needed respiratory protection. Also, if a worker has facial scars or an acne problem, the facial skin may not be able to form a good seal with a respirator mask.

**What are the different classes of respirators?**

The two main types are air-purifying respirators (APRs) and supplied-air respirators (SARs).

Air-purifying respirators can remove contaminants in the air that you breathe by filtering out particulates (e.g., dusts, metal fumes, mists, etc.). Other APRs purify air by adsorbing gases or vapors on a sorbent (adsorbing material) in a cartridge or canister. They are tight-fitting and are available in several forms:

* Mouth bit respirator (fits in the mouth and comes with a nose clip to hold nostrils closed - for escape purposes only)
* Quarter-mask (covering the nose and mouth),
* Half-face mask (covering the face from the nose to below the chin), or
* Full face piece (covering the face from above the eyes to below the chin).
* Respirators with a full-face piece also protect the eyes from exposure to irritating chemicals.

Supplied-air respirators (SARs) supply clean air from a compressed air tank or through an air line. This air is not from the work room area. The air supplied in tanks or from compressors must meet certain standards for purity and moisture content (e.g., CSA Standard Z180.1-00: Compressed Breathing Air and Systems).

Supplied-air respirators may have either tight-fitting or loose-fitting respiratory inlets. Respirators with tight-fitting respiratory inlets have half or full-face pieces. Types with loose-fitting respiratory inlets can be hoods or helmets that cover the head and neck, or loose-fitting face pieces with rubber or fabric side shields. These are supplied with air through airlines.

**Examples of these classes of respirators include:**

Air-purifying respirators (APRs):

* Particulate respirators (previously called dust, fume, and mist respirators or masks),
* Chemical cartridge respirators that can have a combination of chemical cartridges, along with a dust prefilter: this combination provides protection against different kinds of contaminants in the air
* Gas masks (contain more adsorbent than cartridge-type respirators and can provide a higher level of protection than chemical cartridge respirators)
* Powered air-purifying respirators (PAPRs).

Supplied-air respirators (SARs):

* Self-contained breathing apparatus (SCBA),
* Airline supplied-air respirators,
* Protective suits that totally encapsulate the wearer's body and incorporate a life-support system.
* There are some combinations of airline respirators and SCBAs that allow workers to work for extended periods in oxygen-deficient areas or where there are airborne toxic contaminants. The auxiliary or backup SCBA source allows the worker to escape with an emergency source of air if the airline source fails.
* There are also combination air-purifying and atmosphere supplying respirators. These will offer worker protection if the supplied-air system fails, if the appropriate air-purifier units are selected. These cannot be used in oxygen-deficient areas or where the air concentration of a contaminant exceeds the IDLH level (i.e., immediately dangerous to life or health).

**How do you select the right respirator?**

Choosing a respirator is a complicated matter. Experienced safety professionals or occupational hygienists, who are familiar with the actual workplace environment, are the staff who should select the proper respirator. The owner or a manager of the [Farm Name] is responsible for overseeing the process of selecting, providing, and maintaining respiratory protective equipment. They can choose a suitable respirator only after they have evaluated all relevant factors. This includes considering the limitations of each class of respirator. The owner or manager can be reached [Phone Number]

**Before the proper respirator can be selected for a job, be sure you have already:**

* Identified the respiratory hazard.
  + dust, mist, or fume
* Evaluated the hazard.
* Considered whether engineering controls are feasible.

**Before the proper respirator can be selected for a job, be sure to consider:**

* nature of the contaminant,
* concentration or likely concentration of airborne
* contaminants or biohazardous materials,
* duration or likely duration of worker exposure,
* toxicity of the contaminants,
* concentration of oxygen in the work area,
* warning property of the contaminants,
* need for emergency escape.

Respiratory protective equipment must be selected, used, maintained and cared for in the proper manner. Only approved respirators may be used. Approved respirators are those that have undergone testing and have been approved

1. by NIOSH, or
2. by other standards setting and equipment testing organization, or combination of organizations, approved by a Director of Occupational Hygiene.

For enforcement purposes, respirators approved by an agency subject to (a) and (b) must bear the registered identifying logo or mark of the agency or organization. All NIOSH-approved respirators, respirator cartridges and filters bear a sequence of approval numbers beginning with “TC”.

NIOSH certifies the following three classes of particulate filters:

1. N-series (not resistant to oil);
2. R-series (resistant to oil); and
3. P-series (oil proof).

Table 18.3 Classes of filters certified by NIOSH

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| **Filter series** | **Filter type designation** | **Minimum efficiency (%)** | **Comments** |
| “N” Series | N100/N99/N95 | 99.97/99 95 | May be used for any solid or non-oil containing particulate. |
| “R” Series | R100/R99/R95 | 99.97/99 95 | May be used for any particulate contaminant. May only be used for one shift if used for an oil-containing particulate. |
| “P” Series | P100/P99/P95 | 99.97/9995 | May be used for any particulate contaminant. |

For more information [www.cdc.gov/niosh/userguid.html](http://www.cdc.gov/niosh/userguid.html) - NIOSH Guide to the Selection and Use of Particulate Respirators

**How do you clean, store, and maintain respiratory equipment?**

**Cleaning**

A cleaning and maintenance program ensure that respiratory protective equipment is clean and functions effectively. Follow the manufacturers specifications for the mask used and cartridge and/or filter change out schedules as well as cleaning procedures. A copy of these procedures must be kept with the mask and cartridges.

Strong detergents, hot water or household cleaners or solvents must not be used because they may damage rubber parts and face piece. A stiff bristle brush (not wire) can be used to remove dirt if necessary. The respirator can be sanitized using a weak bleach and water solution or by using appropriate wipes. The respirator should then be rinsed thoroughly in clean, warm water. This is important because detergents or cleaners that dry on the facepiece may later cause skin irritation.

The respirator can be hand-dried with a clean, lint-free cloth, or air-dried and then reassembled. The respirator should be tested to ensure all parts work properly before being used.

**Storage**

Respirators must be stored in a clean location, preferably in a plastic bag in a locker or on a shelf. They should be stored away from sunlight, solvents and other chemicals, extreme cold or heat, and excessive moisture. Respirators must not be left out on a bench or hanging on a nail in the shop where they can gather dust and dirt or be damaged or abused.

**Inspection**

Regular cleaning and inspection of respirators is extremely important and must be done according to the manufacturer’s specifications and documented on the respirator checklist. Respirators need to be cleaned and inspected daily by routine users, and before and after each use by occasional users. If shared by different people, respirators must be sanitized between uses.

Prior to cleaning a respirator, each part of the respirator must be inspected. Defective parts must be replaced before the respirator is used. The face piece must be checked for cuts, tears, holes, melting, stiffening or deterioration. If the unit is damaged, it must be replaced. Head straps must be checked for breaks, frays, tears or loss of elasticity. Cartridge sockets can be inspected by removing the cartridges. Special attention must be given to the rubber gaskets located at the bottom of the cartridge sockets. Cracks or flaws may contribute to an ineffective seal.

The cover on the exhalation valve must be removed and the rubber valve carefully examined to ensure it seals properly and has not become brittle. The edge of the valve must be examined for holes, cracks and dirt that may interfere with a proper seal. The exhalation valve is a critical component of the respirator and must be replaced if there is any doubt about its ability to function properly. The valve cover is also important and must not be damaged or fit too loosely. The interior of the face piece and inhalation valves must be examined. Dust or dirt accumulating on inhalation valves can interfere with their operation. Inhalation valves should be soft, pliable and free of tears or cuts to the flaps.

**Maintenance**

All respirator manufacturers suggest regular maintenance and parts replacement. Respirators must be maintained and inspected according to the instructions provided with each respirator. Only replacement parts approved by the manufacturer should be used. Mixing and matching of parts from one respirator brand or model to another must never be allowed. Makeshift parts for respirators must never be installed.

The CSA Standard "Selection, Use and Care of Respirators" Z94.4-02 outlines a respirator selection decision logic model in more detail.

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| **Task** | **Airborne Hazard** | **Type of Respirator** | **Respirator Make & Model** | **Type of Cartridge** | **Cartridge Make & model** | **Use Mandatory**  **Yes or No** |
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