

## Air Supplying

Air supplying respirators are available in a variety of types. There are self contained breathing apparatus (SCBA), air hoods, full body suits, airlines, or work packs. Since air supplying respirators are sometimes used for IDLH (Immediately Dangerous to Life and Health) atmospheres, you must be properly trained, use safe work procedures, and follow the Codes of Practice.

Never enter an atmosphere requiring an air supplying respirator if you are not 100% confident with the methods of use for the equipment and safe job procedures.

## Records of Use

Maintain records of use for all respiratory equipment. How much time has a cartridge been used? When was the most recent inspection of the respirators? These elements are parts of the Code of Practice.

## Maintenance and Care

Always inspect respiratory equipment before use. Replace all parts that are cracked, torn, broken, missing, or worn.

After each use, test and clean your equipment. Wash it in warm soapy water.

Store equipment at the end of each shift. Protect it from dust, sunlight, heat, cold, excessive moisture, and chemicals.

Remember, only competent personnel can repair respirators. Do not mix parts from different manufacturers. Always follow all manufacturer's instructions.

## Consider Other Solutions

Respiratory protective equipment is personal protective equipment (PPE). As with other PPE (hard hats and steel-toed boots), respiratory protection is always used as the last line of defense. Always try to use other controls first to eliminate or reduce the hazard. Here are some considerations:

- Substitute safer products (use less toxic solvents).
- Ventilate to improve air quality.
- Isolate the hazard (use fume hoods to exhaust contaminants).
- Change the work procedure (use high pressure water blasting to cut concrete).
- Put a barrier or distance between the worker and the hazard.

If you need to use respiratory equipment, make sure you use it right! Appropriate use of respirators can save lives. Remember, if in doubt, contact your supervisor!

For more information, refer to current applicable Occupational Health and Safety Legislation.

**The Alberta Construction Safety Association's** mission is to provide quality advice and education for the construction industry that will reduce human suffering and financial costs associated with workplace incidents. This brochure is part of a series, **The Toolbox Brochures**, which are available on a variety of safety topics. If you have any questions or comments please contact:



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# Respiratory Protection



## Making Safety A Way Of Life



# The Alberta Construction Safety Association



## Hazardous Jobs

There are a variety of jobs in construction that require respirators. For example:

- Grinding, cutting materials that produce dust
- Welding, which produces fumes
- Mixing chemicals, which produces vapours or mists
- Entry into confined spaces
- Construction in areas containing toxic substances
- Clean-up procedures which use solvents, acids, alkalis, and/or may create dusts, fumes, mists, vapours, or gases

## Immediate and Long Term Effects

If you are working unprotected around respiratory hazards, you could suffer from immediate or long term effects.

**Immediate:** Effects will become evident in seconds, minutes, or hours. Examples of immediate effects are:

- Burning sensation
- Shortness of breath
- Dizziness
- Unconsciousness
- Death

**Long term:** Some hazards create no obvious short-term effects. After many years of exposure, or many years after a single high level exposure, the results become evident. Examples of long term effects are:

- Silicosis
- Impaired lung function
- Cancer of the lung(s)
- Becoming sensitive to certain chemicals

## Get Training

**Know the Code of Practice.** Using respiratory protective equipment requires training. Make sure you get proper training for the specific type of equipment you need to use, and suitable protection for the hazard present.

## The Choice Is Yours

Different respirators are used for different hazards. To make sure you use the right respiratory protection, follow these steps:

1. Decide if you need respiratory protection. Ask yourself—have all other methods of controlling the hazard been considered first?
2. Find out everything you need to know about the hazard. If the hazard is created by a controlled product, look at the WHMIS label and read the Material Safety Data Sheet. It will tell you what protection you need
3. Choose the right protection.

## The Right Fit

Respiratory protection only works if it fits right:

- Make sure your equipment fits you—there are different sizes available.
- Do not strap equipment on too tight—firm but comfortable provides the best seal.
- Beards, sideburns, mustaches, and stubble are not permitted with respirator use—they prevent a good seal.
- Fit test to verify the seal!
- Eye glasses may affect the fit—corrective lenses can be mounted inside a full face piece.
- Do not wear contact lenses—dry air causes problems.
- Be aware of the temperature. Cold temperatures can cause fogging, valve sticking, and rubber stiffness. A nose cup can reduce fogging.

Remember to always test the fit of the respirator before use. If it doesn't fit, do not use it. Always don the equipment in a safe atmosphere, away from the hazard.

**Remember—unknown atmospheres can be deadly e.g., They can be flammable!**

## Disposable Respirators

Dust masks are used for nuisance dusts such as sawdust. They are not suitable for concrete dust. Make sure the nose clip fits easily and snugly over the bridge of your nose. Dust masks provide a minimum degree of protection.

## Air Purifying (Cartridge Type)

Air purifying respiratory devices are very common in construction. However, this equipment has a number of limitations.

Air purifying respirators:

- Do not protect against oxygen-deficient atmospheres (these atmospheres require supplied air).
- Cannot be used for entry into immediately dangerous to life or health (IDLH) atmospheres such as hydrogen sulphide.
- Cannot be used with substances with poor warning properties (odourless, eye irritants, or respiratory irritants, e.g., hydrogen sulphide and carbon monoxide).
- Understand the type of contaminant.

Air purifying respirators only work if you use the right cartridge and/or filter for the specific contaminant. There are two types:

1. Mechanical filters stop solid particles. When breathing becomes difficult it is time to change the filter.
2. Chemical filters soak up substances. There is little to indicate when the filter is used up, so be aware of time limits for the particular hazard.

Using the wrong cartridge is often worse than using nothing at all because you create a false sense of security. Know the colour coding system.