



The right fit for your respiratory and hearing protection

Make sure your PPE fits properly to guard against common hazards.

Personal protective equipment (PPE) helps protect you from safety and/or health hazards. But it's not just the hard hat, boots, glasses, and vest you wear every day. Respirators, for example, help limit your exposure to harmful gases, particles, bacteria, and viruses, while earplugs are essential to preventing the negative health effects associated with high levels of noise.

All companies should have clear policies and procedures regarding the provision and use of job-specific PPE. These requirements should be communicated to all affected employees, and a program should be in place to ensure that PPE requirements are being met.

It's also important to remember that PPE is only one layer of protection in an overall occupational health and safety management system. PPE does not eliminate the hazard; it only reduces your risk. And it won't do that very well if it doesn't fit you properly.

Respiratory protection

When respiratory protection is needed, you must be sure it is appropriate for the work conditions and hazards, which may include gases such as hydrogen sulfide (a.k.a. sewer gas), airborne microbes like mould and viruses, and irritants like dust. A number of different respirators are available to protect against these and other hazards. Generally, they are divided into two distinct classes:

- Air-purifying respirators, which use filters to clean the air as it is breathed in.
- Supplied-air respirators that provide clean air from an uncontaminated source.

Only a competent person who understands the hazards in play, anticipated exposure, and performance limitations of the available respirator options should be charged with selecting the equipment.

Get the right fit

Once selected, achieving proper fit is critical. This means undergoing a formal fit test before your first use of the equipment. Depending on the type of respirator being used, a fit test could entail wearing the equipment while being exposed to a solution with a particular smell and taste (if you can detect it, your respirator's fit needs to be adjusted), or wearing a respirator with a probe that measures leakage around the face seal of the respirator.

No worker should be assigned a respirator—or work in an environment where respiratory protection is necessary—unless a fit test has been conducted. After that, it's important to check the respirator's seal every time you put it on. This is a two-stage check:

- **Negative-pressure seal check:** Block the air inlets with your hands, then inhale gently and hold for five seconds. If the respirator is properly fitted, it should collapse slightly and not permit any air into the facepiece.
- **Positive-pressure seal check:** Cover the exhaust port and exhale gently. The facepiece should puff away from you, but no leakage should occur.

Of course, proper fit is not the sole determinant of a respirator's effectiveness. Thoroughly inspect your respirator for deterioration or damage before using it, and follow the manufacturer's instructions for maintaining and replacing the respirator's individual parts, including filters, valves, supply hoses, and compressors.

Hearing protection

Like respirators, hearing protective devices (HPDs) should be selected and provided to workers based on the workplace conditions—in particular, the anticipated noise level and duration of exposure. Too little protection can put you at risk of permanent noise-induced hearing loss. Conversely, too much protection can interfere with communication and isolate you from the work environment.

There are three commonly used types of earplugs, all of which must be inserted snugly into the ear canal, and should be worn during the entire period of noise exposure:

- **Formable:** Made of compressible foam or a similar material that expands to the shape of the wearer's ear canal.
- **Premoulded:** Usually made out of plastic or silicone in a variety of shapes and sizes to fit different ear canals.
- **Custom moulded:** Made for the individual worker by taking impressions of their ears.

Earmuffs are also an acceptable type of HPD. They fit over and around your ears, creating an “acoustical seal” to protect you from noise. Some models are equipped with a microphone to allow for communication with your coworkers.

Get the right fit

Proper insertion of your earplugs is essential to ensuring that they protect against noise. Because the ear canal is slightly S-shaped, you must pull back your ear to straighten the canal for the earplug to fit properly:

1. Reach one hand around the back of your head.
2. Pull your ear upwards to straighten your ear canal.
3. Insert the plug with your other hand, according to the manufacturer's instructions.

If you wear earmuffs, the cup part should fit snugly over the entire ear and be held firmly in place by a tension band. However, they should not be so tight as to cause discomfort. Note that if the tension of the headband decreases (for example, due to use over a period of time), so too does the earmuffs' overall effectiveness.

As with all PPE, you should inspect your hearing protection before each use and replace it if you notice any damage.



Learn more about your PPE



ACCESS comprehensive resources for many common types of PPE on our Personal Protective Equipment topic page: ihsa.ca/ppe



DOWNLOAD chapters of our *Construction Health and Safety Manual* (M029) specific to respiratory and hearing protection: ihsa.ca/hsm



SIGN UP for our Basics of Hearing Protection eLearning to improve your understanding of noise hazards, legislative requirements, and the selection, care, and use of hearing protection devices: ihsa.ca/elearning