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Respiratory protective equipment – advice for workers

Respiratory protective equipment (RPE) is a type of personal protective equipment (PPE) that protects people from breathing in substances hazardous to health. This quick guide is for workers who use RPE at work.

Effects of breathing substances hazardous to health

Airborne substances hazardous to health can be in dust, mist, vapour or gas form (for example, wood dust, welding fumes, solvent vapours). You may or may not be able to see these in the air.

If you inhale these you can become unwell. Depending on the substance, the effects can be immediate or long term.

Common short-term (or acute) health effects from breathing substances hazardous to health may include headaches, forgetfulness, drowsiness, feeling dizzy and sick, mood changes, and eye and skin irritation.

Long-term (or chronic) effects include sleep disorders, memory loss, cancer, organ damage, fertility problems and death.

Who provides RPE?

The person conducting a business or undertaking (PCBU) who directs the carrying out of work must provide you with RPE, unless:

- another PCBU provides it or
- you genuinely and voluntarily chose to provide your own RPE and the PCBU is satisfied the RPE is suitable
 - however, you may change your mind at any time and require the PCBU to provide it instead. If you do this, you must give the PCBU reasonable notice.

PCBUs must not charge you for anything done or provided for health and safety – this includes RPE.

When do you need to wear your RPE?

You need to wear RPE when you're doing work where you could breathe in substances hazardous to health.

The PCBU should explain to you why RPE needs to be worn.

You must use or wear RPE in accordance with any information, training or reasonable instruction given by your PCBU. You must not intentionally misuse or damage the RPE.

Choosing suitable RPE

The PCBU must ensure RPE:

- is suitable for the work (and its hazards), is a suitable size and fit, is reasonably comfortable and compatible with other PPE that needs to be worn
- is kept clean, hygienic and in good working order
- is maintained, repaired or replaced so it continues to minimise the risk.

The selection of RPE will usually require expert help. The PCBU must get your views when deciding which RPE to use.

If you wear RPE for extended periods, talk to the PCBU about what the reasonably comfortable RPE options are.

RPE must be appropriate for the size and shape of your face. In addition, some types of RPE (such as negative pressure respirators – those where you suck air through a filter cartridge) must have a tight seal around your face to be effective.

The PCBU will arrange a facial fit test to ensure your RPE fits properly. A fit test checks the seal between the respirator and your face by using a substance that you can smell or taste, or a special piece of equipment that tests the air inside the mask. For negative pressure respirators, an annual facial fit (or more often if needed) is required or when new equipment is purchased.

Types of respirators include:

- Respirators that use filters to remove contaminants from the air the wearer breathes. These can be:
 - disposable (commonly referred to as dust masks). These are designed for short term or one off use. They are only available to protect the wearer from harmful particles such as dust, fume and fibres.
 - reusable. They can come in half face and full face versions, with the wearer able to choose the correct cartridge for protection from a variety of contaminants.
- Powered air purifying respirators (PAPRs) where contaminated air is forced by a powered fan through filters to provide purified air for the wearer.
- Supplied air respirators that provide a supply of clean air from a source such as a cylinder or air compressor.

Figure 1 shows common types of RPE.



Disposable respirator (dust mask)



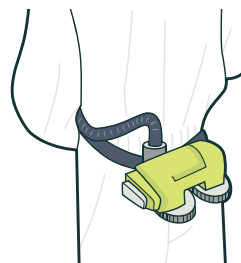
Reusable half-face respirator



Full-face respirator (cartridge)



Full-face powered respirator (cartridge)



Supplied air respirator (cylinder)

FIGURE 1: Common types of RPE

What else to know about wearing respirators

Wearing any type of respirator could physically or mentally stress you. For example:

- You could feel claustrophobia, isolation or anxiety when wearing helmet, hood or full facepieces. Training programmes may help to overcome these feelings.
- Non-powered air purifying RPE can impose an extra burden on heart and lungs – especially for people who wear RPE for long periods and suffer from:
 - emphysema
 - asthma
 - heart disease
 - anaemia
 - epileptic seizures
 - claustrophobia
 - a facial injury or dental treatment etc. that affects how well the facepiece seals to your face.

If relevant, your PCBU should request you undergo a medical examination to check that you're able to wear a respirator.

Using RPE

The PCBU must provide information, training or instruction to you about how to correctly use, wear, store and maintain RPE. You should be told the reasons why the PCBU requires you to wear RPE, and what the limitations of the RPE are.

You must use or wear RPE in accordance with any information, training or reasonable instruction given by the PCBU.

It's important that you only use RPE that has been fitted to you. Don't share with others. If you use different RPE for different tasks, make sure you're using the right RPE for the task. Don't use negative pressure respirators in low oxygen environments and remember particulate filters don't provide protection against gases.

Don't take RPE off when inside a hazardous area - even for a short time, and make sure that you put on the RPE before entering the hazardous areas.

For face-pieces that need to fit tight

If you're using RPE that needs a tight fit always check it before entering a hazardous area. There are two 'fit checks' that you should do.



Positive pressure fit check

1. Block the exhalation valve with the palm of your hand.
2. Gently breathe out and hold for about 10 seconds.
3. Check to see if the face-piece is bulging slightly.
4. If the face-piece remains bulging and there are no more leaks between the face and face-piece, the respirator is properly fitted. If you detect leaks, readjust the straps and check again for a proper fit.



Negative pressure fit check

1. Block the cartridges with the palms of your hands.
2. Gently inhale and hold for about 10 seconds.
3. Check to see if the face-piece is collapsing slightly.
4. If the face-piece remains collapsed and there are no more leaks between the face and face-piece, the respirator is properly fitted. If you detect leaks, readjust the straps and check again for a proper fit.

FIGURE 2: Fit checking

If you can't get your RPE to fit properly talk to the PCBU as you may need to get another size or make.

Facial hair and stubble (even one day's growth) make it almost impossible to get a good seal between your face and RPE. If you have a beard, you should talk to your PCBU about other forms of RPE that do not rely on a tight face fit. Jewellery, glasses, long hair and makeup can also compromise face fit.

If your safety glasses fog up, this indicates that there is a leak at the top of the respirator.

Checks for powered air purifying respirators (PAPRs) and supplied air respirators

- Before using PAPRs and supplied air respirators check that all the hoses are connected properly.
- For PAPRs, check that the battery is fully charged.
- Follow the manufacturer's recommendations.
- Stop working if the airflow rate drops or any of the warning devices activate.

Cleaning RPE

The PCBU must provide information, training or instruction to you about how to correctly clean RPE. You must tell the PCBU when you become aware your RPE needs to be cleaned or decontaminated.

It is very easy to damage the sensitive inhalation and exhalation valves.

You should:

- clean RPE after each use (since cleaning RPE can be tricky, your PCBU may arrange for specialist cleaning)
- follow the instructions from your training and the manufacturer's instructions
- use the recommended detergent and disinfectant as some harsher products can cause damage
- rinse RPE well to prevent skin irritation.

Note: Disposable RPE should not be cleaned.

Maintaining RPE

The PCBU must provide information, training or instruction to you about how to correctly maintain RPE. You must tell the PCBU of any RPE damage or defect that you become aware of.

You should:

- inspect your RPE regularly for signs of damage
- check the straps for perishing, breaks, tears and loss of elasticity
- check the inhalation and exhalation valves are working
- replace particulate filters if there is an increase in resistance when breathing, if they are damaged or if they're past their service date
- replace vapour or gas filters when scheduled

- change cartridges immediately when you detect a smell or taste
- for PAPRs and supplied air respirators, check the connections and settings
- check the battery charge and flow-rate for powered devices.

Storing RPE

Your training must cover how to store your RPE. If it doesn't, follow the RPE manufacturer's instructions.

Also, you should:

- store your RPE in a clean dry place, away from dust, oil and sunlight - RPE should be stored so that it doesn't get crushed
- keep gas and vapour filters in containers or bags with air tight seals - this is so the moisture in the air does not get adsorbed onto the filter material
- store half-face respirators or full-face respirators fitted with gas cartridges in a sealed container between uses.

Health monitoring

If you use RPE or other PPE at work the PBCU may require you to take part in a health monitoring programme. Health monitoring involves ongoing health checks to see if your work is harming your health:

- Testing for health effects from substances that you breathe often involves a lung function test. You only need health checks that are relevant to the hazards at your work.
- An occupational health professional with experience in health monitoring should carry out the health checks.
- Your PCBU should seek your views when selecting the occupational health professional.
- You should receive the results of your health checks.

The PCBU should use the findings of the health monitoring programme to guide improvement of control measures.

Note: A PCBU may carry out exposure monitoring. Exposure monitoring is used to find out if workers are being exposed to a hazard at harmful levels. Exposure monitoring is done by having workers wear personal monitoring equipment as they do their job. It can also be done periodically or without having workers wear monitoring equipment under some circumstances (for example, to test the effectiveness of control measures).

Worker checklist

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- The PCBU has provided me with RPE and explained the health risks that it will protect me from.
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- I have been facial fit tested for my RPE.
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- I have been trained how to use my RPE and store it.
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- I understand that I am not to share my RPE with others because the RPE given to me has been fit tested for my use only.
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- With the PCBU's help, I will complete a regular cleaning, maintenance and storage routine for my RPE.
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- I will visually inspect my RPE daily and do the positive and negative pressure tests to ensure there is a complete seal before using it in a hazardous area.
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- I have read and understood the manufacturer's guidelines for my RPE.
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- I am aware of the hazards from the substances I am working with. I know what to do in an emergency such as a spill or first aid incident.
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- I know how and when to change both particulate and gas cartridges (if relevant).
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Further information

WorkSafe's quick guide *Respiratory Protective Equipment - Advice for Businesses*