

**FACT SHEET**

# RESPIRATORY PROTECTIVE EQUIPMENT - ADVICE FOR EMPLOYERS


**Is the respiratory protective equipment you're providing protecting your employees?**

## INTRODUCTION

As an employer you must provide your employees with respiratory protective equipment (RPE) when there is an airborne hazardous substance that can't be eliminated or isolated. Hazardous substances in the air can be in dust, mist, vapour or gas form. You must take all practicable steps to make sure that your employees are provided with, and have access to and use suitable RPE. This factsheet covers some factors to consider when using RPE in your workplace and explains the requirement to monitor the health of employees when RPE is used to minimise a hazard.

## FOLLOW THE HIERARCHY OF CONTROLS

Before deciding to use RPE to protect employees from airborne hazards you must first take all practicable steps to eliminate or isolate the hazard. If you can't eliminate or satisfactorily isolate the hazard you must use minimising controls such as personal protective equipment (PPE). In many cases you can apply a range of control measures (including requiring employees to wear PPE such as RPE), but remember that PPE should be used as a last line of defence. Providing employees with RPE is not a quick and easy fix. In the long term RPE can be costly and inconvenient to maintain and replace. Over a period of time engineering controls such as local exhaust ventilation may be more cost effective.



CONTROL TYPE	EXAMPLES
<b>Elimination</b> > remove the hazard from the workplace	Buy ready-made components so the process that produces the contaminant is not needed.
<b>Substitution</b> > use a safer alternative	Use a less toxic substance.
<b>Engineering/isolation</b> > keep the hazard away from employees	Enclose or contain the process, install an extraction system or otherwise modify the process to reduce the exposure of employees.
<b>Administrative controls</b> > safe work procedures	Limit the time an employee is exposed, limit the number of workers exposed.
<b>Personal protective equipment</b> > equipment designed to protect the wearer	Provide RPE.

**Figure 1:** Hierarchy of controls

You should regularly review the effectiveness of control measures. Follow industry publications to remain aware of technological and process developments that make ways of working safer.

### EXPOSURE MONITORING

Before deciding what control measures to use you should complete a thorough risk assessment. WorkSafe New Zealand recommends that exposure monitoring is undertaken as part of this assessment. The most common method of air sampling is to get an employee to wear a sampling device while they are working. The results are then compared to the relevant workplace exposure standard (WES) to determine the type of control measure required.

Exposure monitoring should be undertaken by a qualified occupational hygienist or similarly competent professional. They will help you understand the nature of the hazards that arise from the work so that you can implement the right control measures (which may include RPE).

Monitoring will also identify the need for and type of employee health monitoring you should undertake.

### SELECTING SUITABLE RPE

- > Respirators use filters to remove contaminants from the air being breathed in by the wearer.
- > Power assisted air purifying respirators (PAAPR) and supplied air respirators (SAR) provide a supply of clean air from a source such as a cylinder or air compressor.

The RPE that you provide your employees must be fit-for-purpose and fit each employee carrying out the work.

When selecting RPE think about:

- > What type of RPE will protect against the hazardous substance?
- > Is the RPE suitable for the form of the contaminant eg is it a mist, a gas or solid?
- > Is the RPE suitable for the type of work being done (light or heavy work, short or long duration, confined space, ventilation)?
- > The requirements for each of your employees eg – is the RPE the right size? Is it compatible with other PPE that your employees need to wear?
- > What control measures are recommended on the Safety Data Sheet (SDS)?

*Selecting the right RPE can be confusing; you can get advice from occupational hygienists and suppliers of RPE to make sure you provide your employees with the right protection.*



**Figure 2:** Common types of RPE

## FIT TESTING

Fit testing ensures that your employees are wearing proper fitting RPE. As facial characteristics vary greatly from person to person, it is unlikely that one model or size of RPE will fit everyone. Fit testing can be either qualitative (subjective smell or taste tests) or quantitative (involving specialised equipment). Fit testing can also be a useful training exercise to teach employees how wear their RPE correctly.

You should:

- > Arrange for fit testing if your employees are using respirators that require a tight seal between the face and the respirator to be effective.
- > Undertake fit testing when you first provide RPE to employees.
- > Ensure every employee has a fit test for each piece of RPE they use.
- > Engage a competent person to conduct a qualitative fit test. These can usually be arranged with your RPE supplier and are often factored into the cost of the equipment.
- > Complete testing at least annually or if there is a significant change in the wearer's facial characteristics (change in weight, substantial dental work).

*Note: Facial hair and stubble make it almost impossible to get a good seal. If your employees have beards you will need to consider providing other forms of RPE that do not rely on a tight face fit. Jewellery, glasses, long hair and makeup can also compromise face fit.*

## USING RPE

Employees should visually check their RPE for signs of damage before each use.

### Respirators that require a tight fit

If your employees are using RPE that requires a tight fit they must check it fits properly before entering a hazardous area. There are two types of 'fit check' that they should do.

#### FIT CHECKS FOR HALF MASK AND FULL FACE RESPIRATORS



##### Positive pressure fit check

1. Block the exhalation valve with the palm of hand.
2. Gently exhale and hold for about 10 seconds.
3. Check to see if the respirator is bulging slightly.
4. If the respirator remains bulging and there are no leaks between the face and the respirator, the respirator fits properly. If leaks are detected readjust the straps and check again for a proper fit.



##### Negative pressure fit check

1. Block the cartridges/filters with the palm of hand.
2. Gently inhale and hold for about 10 seconds.
3. Check to see if the respirator is collapsing slightly.
4. If the respirator remains collapsed and there are no leaks between the face and the respirator, the respirator fits properly. If leaks are detected leaks adjust the straps and check again for a proper fit.

## **TRAINING**

Your employees must use and maintain their RPE properly. Training should be provided by a competent person such as a consultant, an experienced in-house employee or a representative from a RPE manufacturer or supplier.

Training should refer to the RPE manufacturer's instructions and cover the following topics:

- > the hazards, risks and effects of exposure to the harmful substance, and why employees need RPE
- > the type of RPE that is being provided and how it works
- > why fit testing is required (if relevant)
- > how to wear and fit check RPE
- > when and how to maintain RPE
- > how to clean and store RPE
- > employee's responsibilities.

## **HEALTH MONITORING**

Employees who are exposed to solvents, fumes, dusts, radiation, noise, vibration and hazardous substances must have their health monitored to determine whether they are being harmed. This is particularly important where control measures such as PPE/RPE are used.

Monitoring for exposure to respirable hazardous substances can include lung function tests. Depending on the substance, blood and urine tests may be required. Monitoring must be undertaken by a qualified occupational health professional. It is usually conducted on a yearly basis, in some circumstances a qualified occupational health professional may recommend it is undertaken more frequently.

You will need to get consent from your workers to undertake medical testing. You must provide your employees with a copy of their personal results. If the results show that there has been a decline in your employees' health you should review your hazard management plan. Deterioration in health could indicate that control measures are not adequate and further controls are required to protect employees and prevent further occupational ill health.

You should include health monitoring expectations in employment contracts and policies. You should consult with your employees about any changes to your health monitoring regime. It is advisable to have employees undergo pre-employment health screening to determine whether they are medically fit to wear RPE and establish a baseline of their health.

## EMPLOYER'S CHECKLIST

- Have you identified hazards in your workplace?
- Have you put control measures in place (eliminate, isolate, minimise)?
- Do you have a system for reviewing hazards and ensuring the controls are working?
- Do you involve your employees in hazard management?
- Do your employees know about the hazards associated with the substances they work with?
- Have you assessed the nature of the hazards identified and had a qualified person determine the exposure?
- Have you carried out fit testing for your employees who will be wearing RPE?
- Have you trained employees on the correct use of the RPE (with reference to manufacturer's guidelines)?
- Have you documented this in their personnel record?
- Do you have a process in place for the issue and maintenance of RPE?
- Is relevant health monitoring provided to employees who use RPE? Have you provided employees with their results?
- Do you have Safety Data Sheets for all hazardous substances used/stored in your workplace?
- Have you included health monitoring expectations in your organisation's employment contracts?

## FURTHER INFORMATION

Respiratory Protective Equipment – Advice for Employees.

*AS/NZS 1715 Selection, Use and Maintenance of Respiratory Equipment.* For information on training, face fitting, maintenance of RPE, record keeping, issue, medical screening, disposal and allocating an administrator.

*AS/NZS 1716 Respiratory Protective Devices.* For information on the various types of respirator available and their performance requirements.

For advice about testing equipment, or health or exposure monitoring contact an experienced occupational health professional or an occupational hygienist. Check the Yellow Pages® for the services available in your area.

