



Respiratory Protection Equipment Purified Air



Before selecting RPE, a full risk assessment must be carried out in accordance with the relevant health and safety legislation. Where respirators are used in the workplace, a formal RPE plan should be implemented and reviewed at regular intervals.

Use our 4 Step Guide

1. Identify the potential hazard

Before the selection of any respiratory equipment can be made, it is important to identify the hazard in which you wish to protect against.

These hazards are divided into particles, vapours and gas. Consideration must be given to oxygen deficiency and extreme temperature.

Remember that respirators fitted with particle filters will not protect against gases or vapours and vice versa.

2. Understand the health effects

Once the material against which to provide protection has been identified, it is important to understand how that contaminant can affect the human body.

This information forms a vital part of the training the users receive and allows them to understand

why they should the equipment provided.

This is also an opportunity to assess the level of contaminant versus Workplace Exposure Limits (WELs)

3. Select the appropriate RPE

RPE comes in a wide variety of types, each suitable for certain applications. No respirator is suitable for all applications and care should be taken to understand the limitations of the respirator.

The selected respirator must be correct for the work, the environment and the wearer and not interfere with other PPE.

4. Train the wear in fitting, use, maintenance and care

Once the RPE has been correctly selected for a hazard, the application and the individual wearer, it is essential to train the wearer in the correct fitting, use, maintenance and care of the respirator.

A face fit test should be carried out on wearers of tight fitting face mask respirators.

Did You Know?

According to HSE Guidance, all users of negative pressure should take a break at least every hour to reduce the risk of wearer fatigue. Wearing powered air respirators removes this need and so employees can work continuously for longer durations.

- Powered Air Respirators are cooler. Heat levels within a powered air respirator headtop are lower than using negative pressure as breath exhalation can cause heat build up within the mask. Powered air respirators are fan assisted, providing a cooling effect for wearers.
- Powered Air Respirators allow for the use of multiple headtops, ensuring that the investment in one powered air respirator can be used for multiple applications, simply by changing the headtop.

Why should we wear RPE?

RPE can protect your health and even save your life. Many workers have died because they have entered confined spaces without RPE, used incorrect RPE and/or worn RPE incorrectly.

HSE statistics from 2015/16 suggest that 1.3 million people are suffering from work related illness.

Many of the gases, vapours and dusts that cause serious damage to lungs and other parts of the body can be invisible to the naked eye.

RPE can help to protect you from these hazardous substances that can cause serious ill health such as bronchitis, occupational asthma and some forms of cancer.

Employees have a legal duty to cooperate with their employers and use control measures (justified by risk assessment) provided in accordance with the instruction, information and training provided.

Assess the Workplace Exposure Limits (WELs) by using the EH40:2005.

When should RPE be used?

Exposure ought to be controlled by practicable measures, with RPE used as a final resort.

Despite other controls you have in place e.g. extraction systems, inhalation exposure risk remains so RPE can also be used as additional protection in case other control measures fail to operate.

RPE may be used for safe exit in an emergency or when there is a temporary failure of controls.

RPE is also suited for short-term (maintenance work, cleaning up a spill, cleaning etc) or infrequent exposure when other controls are impractical.



Why is RPE a last choice for protection?

RPE can only protect the wearer. Whilst process measures such as control, enclosure, ventilation or extraction of hazardous substances can protect everyone working in the area, disadvantages of RPE include:

- Some people would not want to wear it for any length of time as RPE is intrusive
- Some products can be uncomfortable to wear
- If the incorrect product size is worn, it can falsely give a sense of protection
- It may interfere with communication or vision
- It can interfere with the wearer's personal style such as facial hair
- It can cause disturbance to make-up, jewellery and hair style.

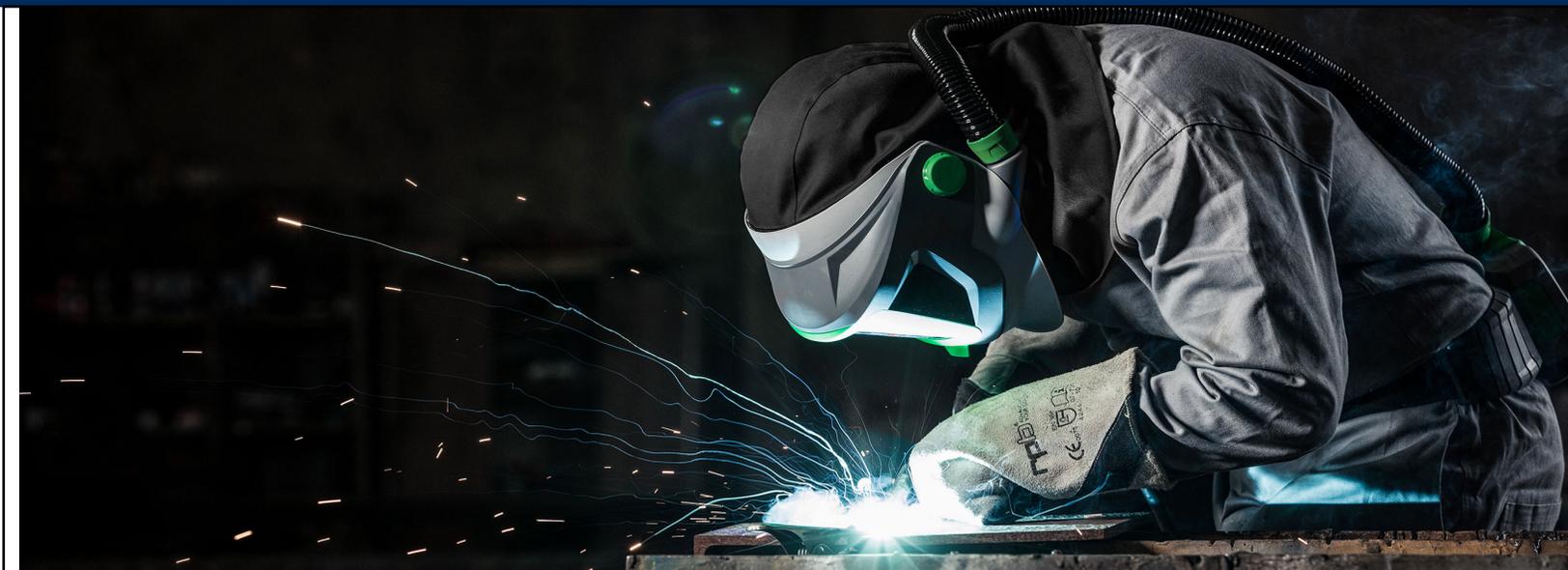


What should I do to ensure RPE is used correctly at work?

RPE is used in many workplaces, but to offer adequate protection RPE must be correctly selected, used and maintained.

Inadequate protection can happen when the RPE hasn't been matched to the hazardous substance, the work environment, the wearer or other personal protective equipment (PPE) worn.

Other problems include poorly or incorrectly maintained RPE, incorrect wearing, misuse or poor storage.



What should I do after providing RPE to employees?

For RPE to remain effective during use it should be integrated into operational procedures. You must ensure that RPE is properly used and not made ineffective by incorrect work practices or incorrect use.

You should ensure that employees use RPE in the way it is intended to be used and as trained and instructed by you. It is often best to give a choice of several correctly specified types of RPE to wearers so they can choose the one they like.

Training

It's important RPE users are trained so they understand why they are required to wear RPE, which RPE to use, how to wear it correctly, when to wear it, when to change filters and other consumable parts, how to maintain the RPE in good condition, how to clean it, how to store the RPE when it's not in use and when to replace it.

Selecting the correct equipment

The hazard and risk information gathered in your COSHH risk assessment is required to select the correct RPE. Select the RPE, including filters, that is right for the contaminant, environment in which it is going to be used, task and wearer.

Questions you should ask when considering purchasing RPE:

1. What protection does the RPE provide? (gas / vapours, particles or both)
2. Is there more than one size?
3. How do I know the RPE will fit?
4. Is the RPE certified and by who?
5. Will I be able to talk whilst wearing RPE?
6. Will my goggles fit comfortably whilst wearing RPE?
7. Will my goggles mist up whilst wearing RPE?
8. How do I store the face mask when it's not being used?
9. Can I use my RPE more than once? When will it need replacing?
10. How often will the filters last and how do I change them?
11. Are the filters included when I buy RPE?
12. What is the shelf life of the filters?
13. Do I need training how to wear it correctly?

The Regulations

The Health and Safety at Work etc Act 1974 and the Management of Health and Safety at Work Regulations 1999 require you to provide and maintain a safe working environment, so far as is reasonably practicable. They set out the basic requirements for you to follow.

In addition to the COSHH Regulations 2002, RPE may need to be used to satisfy requirements in the following pieces of legislation.

You will need to consider whether any of these Regulations apply to you and comply with any specific requirements they contain on RPE:

- Control of Asbestos Regulations 2012
- Control of Lead at Work Regulations 2002
- Ionising Radiations Regulations 1999
- Confined Spaces Regulations 1997

These Regulations are supported by Approved Codes of Practice. ACOPs give practical guidance on compliance and have a special status in law.

If you are prosecuted for a breach of health and safety law, and it is proved that you did not follow the relevant provisions of the code, you will need to show that you have complied with the law in some other way or a court will find you at fault.

For RPE use that is not covered by any of the above Regulations, employers and employees have duties under the Personal Protective Equipment at Work Regulations 1992.



Facepiece fit testing

If you are considering RPE with a tight-fitting facepiece, by law, RPE must provide adequate protection for individual wearers. Every wearer should undergo fit testing to ensure their RPE facepiece is suitable.

Facepiece fit testing is a method of checking that a tight-fitting facepiece matches the wearer's facial features and seals adequately to their face. It will also help to identify unsuitable facepieces that should not be used.

It is unlikely that one size of mask will fit all employees in a workplace. Facial hair coming into contact with the face seal area of a face mask can seriously affect the fit of the mask. A similar effect can be caused by: deep cuts or scars, heavy wrinkles, moles, glasses, goggles, hearing protectors with head bands, neck bands of a helmet or a head protector or fashion jewellery worn on the face.

Remember, people come in different shapes and sizes, so facial differences will mean that one kind of RPE is unlikely to fit all. The differences are even more significant between men, women, and people of different ethnicity. If the RPE does not fit, it will not protect the wearer.

To help ensure a good fit:

- suppliers produce face masks in a range of sizes (small, medium and large)
- masks must fit closely and tightly to the wearer's face to function correctly
- wearers must be provided with the right size and shape of mask
- fit testing is required when the worker is first provided with a facepiece, with periodic re-testing as good practice. RPE fit testing should be conducted by a competent person - you should take steps to ensure that any person you engage as a fit tester is appropriately trained, qualified and experienced.

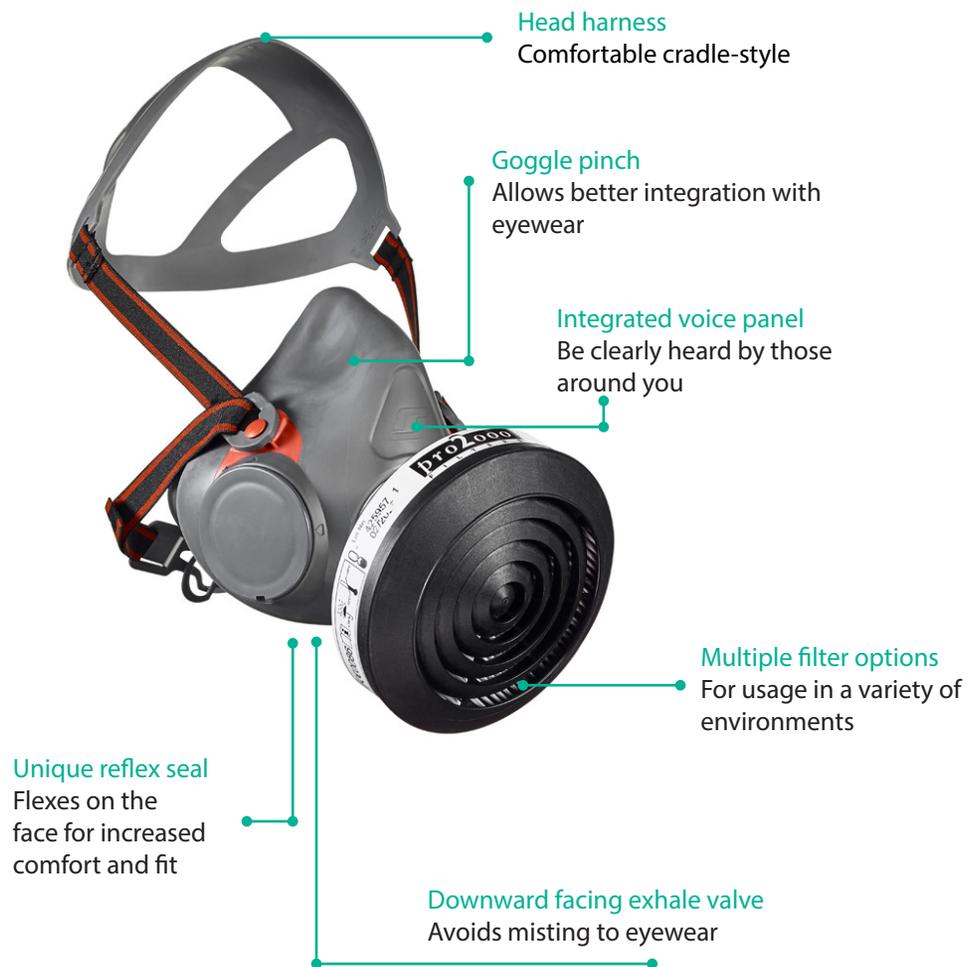
AVIVA Half Face Mask

The AVIVA half mask from Scott Safety is the next step forward in half mask technology.

Innovative design elements have been integrated into the AVIVA half mask, with superior user comfort and protection in mind.

Workers can be assured that their negative pressure mask fits and will protect against a wide range of hazards.

A wide range of filter options makes AVIVA suitable for use in a variety of applications.



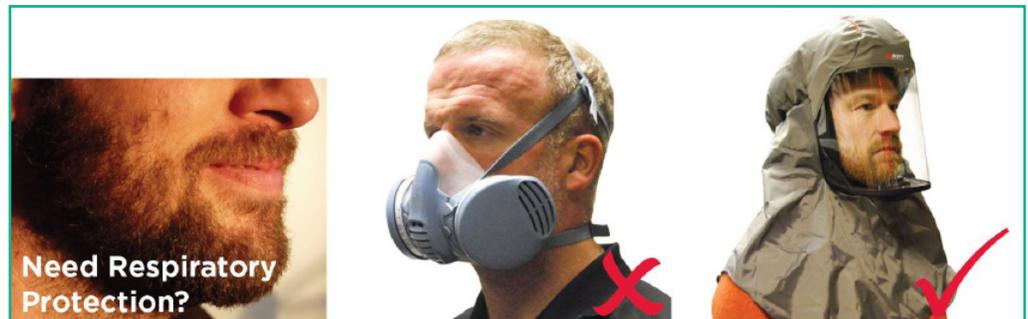
KEY FEATURES

- Reflex seal absorbs facial movements, maintaining protection
- Silicone-like comfort, suitable for spray painting applications
- Goggle pinch - designed for improved eye PPE integration
- Enhanced voice intelligibility
- Comfortable, durable head cradle suitable for use underneath headwear
- Easy to use leak check mechanism
- Wide assortment of filters available to suit most requirements including:
 - Particulate
 - Gas
 - Combination
- Compatible with Pro² Flex low profile particulate and nuisance relief filters
- READY-PAK option for clean storage and easy transportation

“Innovative design elements such as a reflex face seal, an easy-to-use leak check mechanism and goggle ‘pinch’ have been integrated into the AVIVA half mask, with user comfort and protection in mind”

KEEP THE BEARD, STAY PROTECTED!

Suitable Respiratory Protection for Employees with Facial Hair



Guidance from the Health & Safety Executive:

• Respiratory Protective Equipment at Work (Health & Safety Executive, published 2013) sets out guidance for employers on the selection and use of Respiratory Protective Equipment to comply with the law. This includes how to select RPE and considerations which should be made, including face fit issues with facial hair:

“The wearer needs to be clean-shaven around the face seal to achieve an effective fit when using tight-fitting facepieces. If workers have beards, or are unable to be clean-shaven, a tight-fitting device will not be suitable so an appropriate loose-fitting device should be chosen.”

Employees who have a beard or facial hair are *NOT suitable to use tight fitting respirators*, therefore the recommended alternative is Powered Air Respirators.

All employees who wear tight fitting facepieces are legally obliged to undergo face fit testing by a competent person to ensure a proper fit and seal.

A tight fitting respirator (half or full face mask) can only protect the wearer from contaminants if the respirator is able to achieve a good seal with the face.

Beards and facial hair will impede the ability for a face mask to achieve a good seal and will fail a face fit test.

If an employee cannot achieve a seal with a tight fitting facepiece; there are two options;

- 1: The employee would either have to shave their facial hair or,
 - 2: The employer would need to provide alternative protection.
- In the case of point 2, the alternative would be powered air.

Powered Air Respirators, when worn with loose fitting headtops, are a convenient alternative solution, allowing users to **retain their facial hair** and high levels of protection against hazards.

Head tops are available to ensure the correct level of protection, suitable for a specific application.



T-Link Hood



FH1 Half Hood



FH2 Full Hood

Powered air respirators provide protection in the workplace and allow you to carry on with the job in hand without worrying about breathing in particulates or hazardous gases.

Positive pressure respirators provide comfort and protection for head, face, eye and hearing. They are available with a wide range of approved RPB Safety and Scott Safety head tops (full hoods, half hoods, visors, caps) and filters for a variety of applications.



PX4 POWERED AIR RESPIRATOR

Safety first

Audible and vibrating alarm when airflow is below the minimum requirements.

Ergonomic Design

The sleek and flexible design ensures the PX4 sits comfortably on your lower back.

Complete Portability

The PX4 provides clean breathing air without the restriction of attached airlines

Clean Breathing Air

Highly efficient filter cartridge provides maximum filtration.

- Move around your job as required without the restriction of airlines
- Battery operates for up to 13 hours on a single charge
- Battery has a quick test button to view the current battery charge status
- Highly efficient filter cartridge provides maximum filtration
- Audible and vibrating alarm when flow is below the minimum requirement
- Two belt options: standard webbed belt or Nomex FR rated belt for use in spark environments
- Ultra-efficient, multi-speed fan
- Weighs only 2.5lbs (1.13kg)
- Ergonomically designed to contour the operators lower back
- Ultra quiet fan operates as low as 65dba
- Electronic calibration ensures optimum airflow

DURAFLOW POWERED AIR RESPIRATOR



KEY FEATURES

- User notification of reaching correct airflow on start up
- Battery options for lightweight/longer duration (Lithium-Ion)
- LED display: battery life & operating status
- Removable battery to minimise downtime
- Wide assortment of headtops & filters
- High IP rating for effective decontamination
- Starter kit & readypaks available including most popular headtop types

DURAFLOW features a simple, easy to use control panel, enabling the user to concentrate on the task at hand, not their equipment. An automatic monitoring feature checks that the unit is operating correctly, warns the user of low battery and quickly compensates for changes in airflow. Battery levels and flow rate alerts are displayed on the simple LED display.



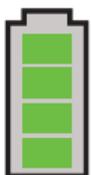
POWER

The large power switch enables users to power on the unit even with no direct line of sight. An audible alarm will sound three times when the unit reaches the correct flow rate.



ALERT

The large alert icon illuminates if the unit drops below minimum flow rate (160 l/min). This is accompanied by an audible alarm.



BATTERY STATUS

The battery level is displayed with a simple LED gauge, enabling users to quickly check their battery status. An audible alarm will accompany the display when the unit reaches low battery level, indicating the user should immediately evacuate the hazardous area.



Head Tops

Respiratory Visors, Helmets & Hoods are popular because they are loose fitting and they don't require the wearer to have a face fit test. They offer increased comfort for longer duration wear due to the cooling effect of air circulation.

The RPB Safety Head Tops are compatible with the PX4 Respirator.



**Z-Link
Welding Helmet**

Lightweight welding helmet which provides respiratory protection suitable for welders.

Wear instead of a hard hat for impact protection



**T-Link
Full Hood**

Ultra-lightweight full hood provides neck and shoulder protection.

Not suitable for impact protection



**Z4
Helmet with
Flip-up Welding Visor**

All in one multi-purpose powered air respirator and head protection for use in welding & grinding applications.

Wear instead of a hard hat

Choose between a neck shroud or shoulder cape for protection.



**FH1
Half Hood**

Ultra-lightweight half hood, provides face and head cover protection

Not suitable for impact protection



**FH2
Full Hood**

Ultra-lightweight full hood provides face, neck and shoulder skin protection.

Not suitable for impact protection



**FH21
Full Hood**

Ultra-lightweight anti-static full hood provides neck and shoulder protection.

Not suitable for impact protection

The Scott Safety Head Tops are all compatible with DURAFLOW Powered Air Respirator.

What are hazardous substances and where are they found?

Hazardous substances are defined in the Control of Substances Hazardous to Health (COSHH) regulations as substances hazardous to health.

Under certain conditions, they can exist in more than one form at the same time (eg during paint spraying). You need to identify the form of the hazardous substances in the air to select the right RPE. Note that:

- solid and liquid forms will be present as particles;
- fine sprays and mists are made up of liquid particles (droplets);
- fumes are very fine solid particles and not gas or vapour;
- smoke, fume and airborne liquids require RPE that is suitable for use against particles.

In addition to the above, volatile liquids may under certain conditions become airborne as both particles and vapour.

The suppliers of a hazardous substance must provide a Safety Data Sheet (SDS) to aid a safer working environment.

Hazardous substances can also be generated as by-products during a work activity. For example, wood dust, or spray painting.

Hazardous substances can be present in the workplace in different physical states:

Form	Properties	Examples
Solid particles	Particles of solid material, including aerosols, dusts, fibres, smokes and fume	Asbestos dust Engine exhaust particles & fume Lead dust & fume Stone dust Welding fume Wood dust Smoke Fungal spores & parasites Bacteria and viruses Flour
Liquid particles	Fine sprays, mists and aerosols made up of small droplets of liquid	Sprayed liquids: • paints • pesticides • powder coating mix • liquid jetting Mists: • chrome acid • cutting fluids • oil mist
Vapour	Gaseous forms of a solid or liquid	Solvent vapour Mercury vapour
Gas		Carbon monoxide Engine exhaust gases Sewer gas Chlorine

Before the selection of any respiratory equipment can be made, it is important to identify the hazard in which you wish to protect against. These hazards are divided into particles, vapours and gas and are coded as follows: A, B, E, K, AX. These are available as individual filters or a combination of several filters. The filter type will be indicated using a colour-coded label.

Gas Filter Capacity EN 14387	
Filter Type	Description
A	Organic gases and vapours with a boiling point higher than 65°C
B	Inorganic gases and vapours excluding Carbon Monoxide (CO)
E	Acidic gases e.g. Sulphur Dioxide (SO ₂), Hydrogen Chloride (HCl)
K	Ammonia (NH ₃)
AX	Organic gases and vapours with a boiling point lower than 65°C
Hg	Mercury
P	Particulates
Reactor	Radioactive agents
Class	Type A, B, E, K, AX are further classified according to their filter capacity
Class 1	Low capacity - up to 1000ppm
Class 2	Medium capacity - up to 5000ppm
Class 3	High capacity - up to 10,000ppm

Particulate classification and efficiency EN 143		
Class	Description	Efficiency
P1	Low efficiency (against coarse and minor solid particles)	80%
P2	Medium efficiency (against solid and liquid hazardous particles)	94%
P3	High efficiency (against solid and liquid toxic particles, and radioactive particles and microorganisms)	99.95%

Filter Combinations

If a filter is a combination of types, it shall meet the requirements of each type separately. the filter must also be marked with each colour code. For example an ABEK2P3 filter will be marked Brown, Grey, Yellow, Green and White

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