

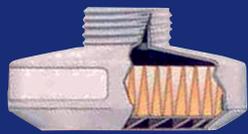
### What types of filter are there?

There are two types of filter, one for particles and one for gases and vapours. 'P' filters, marked P1, P2 or P3, trap particles and allow air through. P3 is the most efficient, trapping the highest percentage of particles. Gas and vapour filters work differently. They are labelled with colour and letter codes to show the type of gas they protect against. They are also classed 1, 2 or 3, but based on how long they will last. Gas filters use activated carbon to adsorb gas or vapour hazards and allow air through. Not every gas can be filtered so careful selection is necessary.

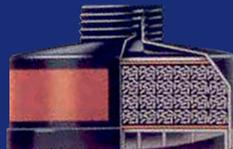
Combined filters are also available, and widely used. They protect against particles, gases and vapours at the same time by containing both types of filter media, and they carry both markings.

### How do I select the right respirator?

There is an online RPE selector available, developed by the HSE and the Scottish Centre for Healthy Working Lives, which takes you step by step through the selection process: <http://www.healthyworkinglives.com/rpe-selector> and there is a lot more information on using RPE in the workplace at <http://www.hse.gov.uk/respiratory-protective-equipment>. RPE manufacturers and suppliers can also provide a lot of assistance to help you make the right selection. For some applications, e.g. spraying isocyanate paints, HSE guidance clearly describes the type of RPE to be used.



Particle



Gas



Combined

### Is there anywhere you can't use filter respirators?

Filter respirators have limitations. They should never be used before the conditions have been assessed, or if the hazard could become more severe unexpectedly, or if the work area is confined or enclosed to the extent that it is difficult to ventilate. Remember that respirator filters work by capturing breathing hazards from the air, allowing filtered air to pass through to the wearer. To use a filter respirator, therefore, the work area must have a mixture of the hazard and normal air. If the area cannot be easily ventilated, the filter will still remove the contaminant but there won't be enough clean air left to breathe. These are circumstances in which Breathing Apparatus would be necessary.

If you need to use RPE then you should ensure that your workforce is involved in its selection and it works with any other safety equipment they have to use or wear. Selecting and supplying the right type and model is only the first step. Users should be fit tested if applicable, fully trained in its use and if it is re-useable they will also need facilities and training to clean, maintain and store it.

**If you think there is a breathing hazard at work, get it checked out. It will save lives in the long run.**

Our stakeholders and supporters offer their own information and campaign material on respiratory hazards:

IOSH: <http://www.iosh.co.uk/NTTL/Home/About-NTTL.aspx>

NHS Health Scotland: <https://www.youtube.com/watch?v=G5K0Jh13BC0>

BOHS: [www.breathefreely.org.uk](http://www.breathefreely.org.uk)

SGUK: <http://www.safetygroupsuk.org.uk/info/2013/rapid-reference-cards-breathing.pdf>

You can download a workplace poster, a presentation, a tool-box talk and find links to further information here:

<http://www.bsif.co.uk/clean-air-take-care->

Please let us know if you found this information useful.

If you have any comments visit [www.bsif.co.uk](http://www.bsif.co.uk) or e-mail [enquiries@bsif.co.uk](mailto:enquiries@bsif.co.uk)



**CLEAN AIR?  
TAKE CARE!**

**Deciding how to approach breathing hazards at work -  
Do you need Respiratory Protection, and what types are available?**



- Avoid your workforce suffering illness in future years that will affect them and their families, and lead to their early death
- Develop a respiratory programme to keep business costs down. Understand clearly that good safety is good for business
- Straightforward guidance on reducing hazards before you decide if respirators are necessary
- Follow the links for support on prevention, available options, product selection and training



Download a useful workplace poster and further copies of this brochure here

British Safety Industry Federation

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A BSIF campaign on behalf of the safety industry and supported by:



## Occupational respiratory illness is still a big killer

In the UK around 12,000 people die every year of respiratory diseases, caused by breathing in a hazardous substance at work. Many thousands more suffer serious illnesses, affecting almost every aspect of their lives and ruining later years, just when they are supposed to have the time to enjoy life. And it's not a question of 'for how long' or 'to what level'; sometimes just a short exposure is enough to do permanent damage. So don't let it go, or think 'it won't happen here'; if you are concerned there could be a breathing hazard at work address it. You owe it to your workforce and colleagues, their families, friends and loved ones.



## What are breathing hazards?

One type of breathing hazard is fine particles, such as dusts and fibres. The other is gases and vapours, which may not even have a smell. Particle hazards are the most common. To control the risk you need to know what the hazard is. Employers must appoint a competent person to carry out a risk assessment and find out if there is an issue.

These video links provide information on work related respiratory diseases and how to prevent them;

- <https://www.youtube.com/watch?v=ELvLIBQDt1w&feature=youtu.be>
- <http://www.europeanlung.org/en/lung-disease-and-information/lung-diseases/occupational-lung-disease>
- <https://www.youtube.com/watch?v=UxAX-1CENcc>

## How do you control the hazard and protect your workers?

If the assessment finds a breathing hazard there is a list of actions aimed at reducing exposure to a harmless level:

<p><b>ELIMINATION</b> Change the process</p>
<p><b>SUBSTITUTION</b> Use a less hazardous alternative</p>
<p><b>ENGINEERING CONTROLS</b> Enclose the area or use a Local Exhaust Ventilation extraction system</p>
<p><b>ADMINISTRATIVE CONTROLS</b> Training and work scheduling to avoid exposure</p>
<p><b>RESPIRATORY PROTECTIVE EQUIPMENT</b> Provide adequate and suitable RPE</p>

As with other types of workplace hazard, these actions promote ways of eliminating or reducing the hazard so that using personal protective equipment (PPE) is not necessary. So first of all see if an alternative substance that is not hazardous can be used. If not, enclose the process to separate it from the workforce, or use local exhaust ventilation (LEV) to draw it away before it is breathed in. Lastly, organise the work schedule so as few people as possible are around when the hazard is present, then you only have to control it for those few. You might combine several of these steps to tackle the hazard, but if you still can't reduce it to a harmless level you may need to use respiratory protective equipment (RPE).



It is a legal requirement that employers do not allow staff to be exposed to more than levels permitted by HSE, but good practice is to reduce exposure as far as possible.

Find out more about LEV here:

<http://www.cibse.org/institute-of-local-exhaust-ventilation-engineers-i/hse-downloads>

## What types of respirators are there?

There are two main groups of RPE: Filter respirators and Air Supplied respirators.

Filter respirators use the air surrounding you and clean it as you breathe in, while Air Supplied respirators bring air from a separate source, independent of the surrounding atmosphere.

Filter respirators are the most commonly used in everyday work situations. There are several types:

	Filtering Facepieces, also known as disposable or single shift respirators, usually cup shaped or folded out from a flat shape. After use they are generally discarded.
	Re-useable Half Mask Respirators with detachable filters. After use most of the respirator is retained, cleaned and maintained. Once exhausted the filter is discarded and replaced.
	Low Maintenance Respirators (usually half masks), look similar to re-useable masks but the filters are not detachable. Once the filters are exhausted the whole respirator is discarded.
	Full Face Mask Respirators, which also cover the eyes and face with a protective visor. They provide a higher level of protection to half mask respirators.
	Powered Respirators, with a rechargeable battery and a motorised fan to direct the filtered air to the breathing zone. These are more comfortable for longer periods. They often use hoods or visors with a 'loose seal' at the chin or neck, which do not require a fit test, but they do not provide protection with the power off.
	Power Assisted Respirators, operating in the same way as powered respirators but feeding the air to a half or full facemask (a 'tight fitting' face piece). They are sometimes used against higher levels of hazard than a powered respirator with a loose seal as, power off, they 'failsafe' to work like an unpowered respirator and continue to provide protection.

## Will they need to wear it all day?

RPE should be put on before entering the work area with the hazard, worn all the time where there is potential for exposure, and not removed until the wearer is clear of that area. The HSE recommend that non-powered respirators are not used continuously for more than one hour without a break. If your workforce need to use RPE continuously for more than an hour consider using a powered respirator or constant flow airline.

## Will they need a fit test?

Respirators that work by sealing on the wearer's face; the HSE call them 'tight fitting'; require anyone using one at work to have a fit test to show the make and model they use suits them individually and is capable of providing them with the expected level of protection. If you don't check that the RPE you plan to use fits the wearer, it's very likely to let unfiltered air in at the face seal, so it's not protecting them.

A fit test is different from a pre-use seal check, which should be done every time the respirator is worn to check the wearer has put it on correctly. Think of it like a pair of shoes. You can be measured to ensure you buy shoes that fit you properly, so they won't hurt your feet. That's like a fit test. But every time you wear the shoes you check that you've done the laces up correctly, so they won't fall off. That's like a seal test. Everyone on your workforce who uses a 'tight fitting' respirator for protection will need to have a fit test.

Air supplied RPE includes Constant Flow Airline, used where compressed air is available such as in a spray booth. Breathing apparatus, or BA, is also air supplied, pressurised either in a hose or cylinder. This can be used in poorly ventilated conditions and is more often associated with emergency situations or maintenance processes, employed by specialist users such as fire brigades. This HSE video tells you a lot about using RPE: <https://www.youtube.com/watch?v=nrieWGoCfE> and a lot more about fit testing from this link [www.fittofit.org](http://www.fittofit.org)



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