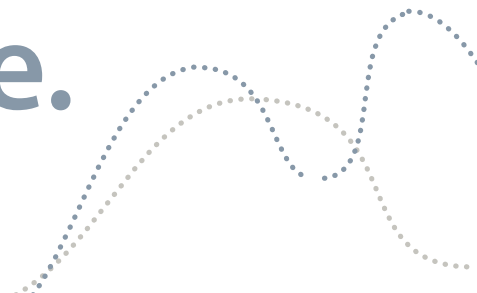


Issue1
2017

Our respiratory protection guide.

www.sitexindustrial.com



Our respiratory protection guide.

Answering common questions in a handy guide.



UCFD-P2VC
FFP2 valved fold flat mask with incorporated carbon.

What is Respiratory Protective Equipment (RPE)?

RPE covers both respirators which are designed to filter harmful substances and also breathing apparatus (BA) which is designed to provide a supply of clean air. An employer has a legal responsibility to control substances which may be hazardous to a workers health and where it is not possible to control these substances in other ways, then RPE may be the last option available. The term last option is important here, as before considering RPE all other alternatives should be considered. These options can include fume cabinets, bespoke ventilation systems or changes to the way an operation is carried out. As with any PPE it is always the optimal solution to remove the hazard rather than protect against it.

What does the law say?

The laws governing the control of harmful substances in the workplace, and their supporting ACOP, say that you should only use RPE after you have taken all other reasonably practicable measures to prevent or control exposure. By going through the risk assessment process required by these laws, you can determine whether the use of RPE is necessary in your workplace. If you write your justification for using RPE on your risk assessment record you should remember the reasons behind your chosen control regime and be able to adapt it in the future as necessary. If you have fewer than five employees you are not legally required to record your risk assessment.

When to use RPE?

Where an inhalation exposure risk remains **after** you have put in place other reasonable controls (residual risk);
While you are putting in place other control measures (interim measures);
For emergency work or temporary failure of controls where other means of control are not reasonably practicable;
For short-term or infrequent exposure, such as during maintenance work, where you decide that other controls at the source of the exposure are not reasonably practicable.

Types of RPE

There are basically two types of RPE, designed for very different situations. The first most common type are **respirators** which are designed to filter dusts, mists, fumes, gas or vapours which can result from such activities as cutting, painting, welding or handling dusty materials. The second less common type in our industry is **breathing apparatus (BA)** equipment which is used where there is insufficient oxygen in the environment, for example when working in tanks, silos or other enclosed areas. **Respirators should not be used in oxygen deficient atmospheres under any circumstances.** This guide only generally covers respirators as this is the most common type of protection (although we do also supply a small range of air fed equipment for specialised applications).

Respirator Types

These fall into two basic types, **loose-fitting face pieces** which in simple terms rely on a supply of filtered, clean air being fed to the user via a hood, helmet, visor etc and the second type which is the more common **tight fitting face piece** commonly referred to as a mask. We offer a range of loose fitting face pieces and associated equipment from leading UK manufacturers and can provide further information on request. We also stock a wide range of our own brand masks as well as more specialised masks from some of the leading suppliers in the UK. We have included a **very brief** guide to some of the most common types with an explanation of some of their advantages and disadvantages below. This is a far from exhaustive list and we suggest obtaining specialist advice on the subject before implementation. The HSE offers an excellent guide on this subject **HSG53 (Fourth edition, published 2013)** which is available to download free of charge from their website covering the legal implications and employer responsibilities.



More information available online at www.siteindustrial.com

Our respiratory protection guide.

Disposable masks and common respiratory protection questions.

P3 PROTECTION	Masks are identifiable by red markings and suitable for use as P2 but at higher concentration levels.
P2 PROTECTION	Masks are identifiable by blue markings and suitable for use with fine toxic dusts, fumes, water and oil based mists/aerosols.
P1 PROTECTION	Masks are identifiable by yellow markings and suitable for use with fine dusts, fumes, water and oil based mists/aerosols.

COLOUR CODED IDENTIFICATION

All our masks are colour coded for easy identification of protection levels.

Disposable masks

This style of RPE is the most common as it is easy to purchase, relatively low in cost and generally speaking is maintenance free being discarded after use. Most often used for protection against dusts, mists and fumes it is available in three basic protection level variants, **FFP1,2 &3**. You may also come across “nuisance masks” which can look similar to FFP masks but offer no measurable protection and should not be confused with RPE as they offer little or no protection.

How long should the user wear the mask for?

Usually we would suggest a wear time of no more than 60 minutes without a break. If used for longer than this then the mask can become uncomfortable with the inherent risk of the wearer loosening or removing the mask. If used for long periods air fed or powered respirators may be a better choice.

Conditions of fit

Do they have facial hair which could allow the mask to leak, any pre-existing medical conditions, do they need to wear anything else with the RPE which may interfere with safe operation. You should also consider whether the user has been trained in safe use and most importantly, **does the mask fit**. We recommend a proper fit test be carried out as not all masks will be suitable for all wearers.

What level of protection is actually needed? And against what?

The actual level of protection should be ascertained to ensure exposure stays well below prescribed limits. It is also important that you know what the hazard is, there may be more than one. It is pointless and dangerous to provide, for example, a particulate respirator to protect against gases. In some instances you may require a respirator to protect against a combination of hazards requiring different or a combination of filters.

What are the environmental conditions?

In hot or humid conditions, tight fitting RPE can soon become very uncomfortable to wear. In these conditions powered or air fed respirators may be a better choice. It is also easy to combine this type of respirator with other PPE such as helmets, visors or hoods providing a flow of cooler clean air to the user, particularly useful if the respirator needs to be worn for long periods.

Levels of exertion

While tight fitting masks can be useful at normal levels of exertion, the user may soon feel uncomfortable as the breathing rate increases with exertion. Rapid breathing causes a build up of heat within the mask, even if fitted with an exhalation valve and condensation can build up inside the mask making things even more uncomfortable.

Nuisance masks (non PPE)

A typical “nuisance mask” is shown below, this carries no FFP markings and is not certified to EN149. These masks are used for product protection or against none harmful particles. They should not be used as RPE or for protection against any harmful products and are shown here for the sake of completeness and to ensure awareness of potential confusion issues which could have serious consequences.



UC-DM
Non-PPE dustmask.

More information available online at www.siteindustrial.com

Our selection guides to eyewear, head protection, hand and arm protection, work at height, hearing protection, workwear and clothing and footwear.

New developments in our suppliers mask range, and Ultimesh™ technology.

Our respiratory protection guide.

Different masks, different protection.

PRODUCT SPOTLIGHT

OUR REF: UC-P2V

Traditional, semi-rigid, cup shape moulded respirator designed for single use. Light and comfortable with foam nose seal, adjustable nose clip and **comfort valve**. Colour coded for easy identification of protection levels. Maintenance free.

EN 149:2001+A1:2009 FFP2



Standard FFP masks come in several different versions with protection levels from:

FFP1, with an APF of 4 (in simple terms reducing the hazard by a factor of 4.)

FFP2, with an APF of 10 (reducing the hazard by a factor of 10)

FFP3, with an APF of 20, (reducing the hazard by a factor of 20)

Cup/Moulded Masks as the name suggests are usually preformed into shape.

Fold Flats come folded flat which reduces their size and also enables them to fit easily into the pocket.

Valved versus **Non-valved** is also an important issue to consider. While non-valved masks are less expensive they do have certain disadvantages. Resistance to airflow when exhaling is higher without a valve, particularly with FFP2 and FFP3 masks meaning the user finds it harder to breathe and also the warm, moist exhaled breath can make the mask uncomfortable to wear. This becomes a major problem once you reach FFP3 levels of protection and we currently only offer our respirators with valves at this level.

Activated Carbon can also be incorporated into this style of mask which can offer protection against nuisance level smells and odours (below the OEL).

Welding applications can also be accommodated with specialised masks made from flame retardant materials specifically to deal with ozone produced from electric arcs (usually for protection up to 10 x WEL).

Gases and vapours

While most styles of disposable masks are designed to protect against particulates it is possible to obtain disposable masks to protect against gases and vapours as well. As a general rule this type of respirator is only designed to cope with gases and vapours with **good warning properties**. That is vapours with a strong or distinctive smell such that the user would immediately be aware that the filter medium was saturated and should be discarded. This style usually also protects against particulates and has a typical life of up to 28 days (once opened) but this could be significantly reduced at higher concentrations of contaminant.

Potential problems

- Spectacle sidearms can prevent the mask sealing.
- Can be a source of ignition in certain atmospheres.
- Difficult to judge when saturated.
- Verbal communication can be difficult.
- Exhaust air from tools can affect valves.
- Masks can slip on the face during use.

	FFP1	FFP2	FFP3
Protection	APF 4	APF 10	APF 20
Typically used for	Non toxic dusts, mists and fumes based on water and oil . Working with non toxic dusts, mists and fumes. Hand sanding, drilling and cutting.	Harmful dusts, fumes and aerosols based on water and oil Working with softwood, glass fibres, metal and plastics [besides PVC] and oil mists.	Harmful and carcinogenic dusts, fumes and aerosols based on water and oil. Working with highly toxic metals, hardwood, radioactive and biochemical active substances as well as oil mists.

APF is the "Assigned Protection Factor" which indicates the level of protection provided by the mask. A respirator with an APF of 20 offers double the protection of one with an APF of 10. WEL is the "Workplace Exposure Limit" which in simple terms is the maximum amount of airborne contaminant allowed when averaged over a specific time period. Clearly this varies depending on the contaminant and there are also two reference time periods used, TWA (8 hour Time Weighted Average) and STEL (15 minute Short Term Exposure Limit)

More information available online at www.siteindustrial.com

Our respiratory protection guide.

Reusable masks.

DID YOU KNOW?



Our manufacturers supply some of the largest bluechip companies in the UK and Ireland through trusted distributors.

Reusable masks

This style of RPE covers a large range of applications as masks come in half or full face versions and can accommodate a wide range of filter combinations. While more expensive than disposable versions they can still provide economic protection as only the filtering element generally needs replacing. It is also possible to purchase spare parts for most styles and they can protect against a wider range of hazards than their disposable counterparts.

Half masks are designed to cover the lower half of the face, the same as disposable masks but tend to provide a more secure fit. These masks can accept gas and vapour filters, particulate filters or a combination of both. This style of mask has similar disadvantages to disposable masks but does provide a large range of filtering options to cover most applications.

Full face masks provide the same features as half masks with the added advantage of protecting the eyes. Different lens options can be specified providing protection from certain chemicals and particulates.

Potential problems

Filters cover a huge range of potential hazards but the wearer must be made aware of the filter type he is using. It is easy to assume you are protected simply because you are wearing a mask. For example a gas filter is not designed to protect against particulates and vice versa. Training and the correct filter(s) selection is vital for safe operation and this may well require expert assistance.

Gas and vapour filters.

While often supplied with additional particulate protection this type of filter is normally used for protection against gases and vapours. A brief summary of common filter types are shown below and we will be happy to arrange an on site consultation from Scott or Moldex on request.

Type	Colour	Hazard Type	Examples	Maximum Use Level
A1	A1	Organic gases and vapours, boiling point >65°C	Working with solvents from paints and adhesives	10 x WEL (half mask) 20 x WEL (full face mask) Or 1000 ppm whichever is lower
A2	A2	Organic gases and vapours, boiling point >65°C at higher concentrations	As A1 above but at higher concentrations or prolonged use.	10 x WEL (half mask) 20 x WEL (full face mask) Or 5000 ppm whichever is lower
A1B1E1	A1 B1 E1	As A1 + inorganic gases and vapours + acid gases. (NOT for Carbon Monoxide)	As A1 + working with chlorine, bromine, hydrochloric acid and other acid gases	10 x WEL (half mask) 20 x WEL (full face mask) Or 1000 ppm whichever is lower
A1B1E1K1	A1 B1 E1 K1	As A1B1E1 + ammonia and ammonia derivatives.	As A1B1E1 + ammonia and its derivatives.	10 x WEL (half mask) 20 x WEL (full face mask) Or 1000 ppm whichever is lower



Air Fed options are also available for situations where RPE needs to be worn continuously for long periods.



More information available online at www.siteindustrial.com

