

# Respiratory Protection

## The Law - *an overview*

The selection and correct use of RPE is of vital importance to the health of employees and it is now generally accepted that its selection should take into account guidance on 'best practice' in the guise of BS4275: 1997, as well as the relevant COSHH legislation. In short, following the implementation of COSHH which states that Respiratory Protective Equipment (RPE) must be **(a)** capable of adequately controlling exposure **(b)** be suitable for the purpose & **(c)** bear the CE mark, the selection process for RPE was based on a combination of the Nominal Protection Factor for the respiratory device along with the appropriate Occupational Exposure Limit (OEL), as specified in HSE EH40.

However, information from research carried out in the preparation of BS4275 has shown that 'even when correctly worn and used, the levels of protection achieved by RPE in the workplace may be substantially different to the theoretical NPF's as measured in laboratory tests'. Therefore current advice suggests that the Assigned Protection Factor (based on data gathered during Workplace Protection Factor studies) for a respiratory device should replace the Nominal Protection Factor in any selection process as this generally allows for a higher margin of safety.

### How do I choose the correct respirator?

There are many types of RPE and several ways of categorising them based on their technical features, e.g. Air-Filtering devices such as disposable, re-usable & powered respirators, and Air-Supplied devices such as Airline fed or BA; or as Negative Pressure and Positive Pressure devices. However, to try to bring together the products in a more user-friendly format we have grouped our respiratory range into the following three sections

**(1) Disposable & Re-Usable respirators**

**(2) Powered and Airline Fed [modular systems]**

**(3) BA & Escape sets [self-contained].**

To start the process of selection you must first identify the 'type' of hazard that you are facing. This information, combined with a preference for either disposable (maintenance free), re-usable or powered respirators etc, will guide you towards a particular respirator style. This initial selection will be further refined based on information regarding the type and concentration of the contaminant, which will point you towards a respirator with the recommended Assigned Protection Factor for that contaminant.

If you should need help or advice in any area of the selection process, then please speak to a member of the SBA sales team who will be happy to assist.

## Types of Hazard

*In today's working environment there are essentially 5 main types of hazard, grouped into two broader categories of **Gas & Vapour** and **Particulates** which includes **Dusts, Mists & Fumes**.*

### **DUSTS**

*are created when solid materials are broken into fine particles. The smaller the dust the greater the hazard. Dusts are produced by operations such as grinding, drilling, blasting, sanding and milling.*

### **MISTS**

*are tiny liquid droplets that are formed from liquid materials by atomisation and condensation processes such as spraying, plating, mixing and cleaning operations.*

### **FUMES**

*are created when solid materials vaporise under high heat. The vapour then cools quickly and condenses into extremely fine particles e.g. particles within metal fumes are generally less than one micron in diameter. Metal fumes can originate from operations such as welding, smelting and pouring of molten metal.*

### **GASES**

*are created below room temperature from compounds that are easily liquefied by pressure. Gases themselves are characterised by their ability to diffuse or spread freely throughout a container in a similar fashion to air. Examples include oxygen, carbon monoxide, nitrogen and helium.*

### **VAPOURS**

*are the gaseous state of substances that are either liquids or solids at room temperature. They are created through the process of evaporation. Petroleum is an example of a volatile liquid that evaporates easily, producing petroleum vapour. Other examples include paint thinners and degreasing solvents.*

# Respiratory Protection

## Fit Testing - *now law*

### What is Fit Testing - How does it affect me?

Checking to ensure that a tight fitting respirator provides an adequate facial seal has always been considered best practice within a general RPE (Respiratory Protective Equipment) Programme. With the introduction of the COSHH 2002 (Control of Substances Hazardous to Health) Regulations in November 2002 & its associated ACoP (Approved Code of Practice) specifically paragraphs 146 through 151, fit testing is now mandatory. The respirators to which this update in the law relates include **Disposable, Half Mask & Full Face** including those that form part of a **Powered or Airline Fed system**.

### When should Fit Testing be carried out?

- ▶ Fit testing should be carried out on **ALL** wearers of RPE with tight fitting face pieces where fit testing has not previously been undertaken - Fit testing has always been a mandatory requirement under the UK Asbestos Regulations
- ▶ During the initial selection of RPE

### Does Fit Testing ever need to be repeated?

Yes - The Fit Testing procedure should be repeated if:

- ▶ The wearer of the RPE loses or gains significant amounts of weight, has major dental work, or sustains a major facial injury
- ▶ If a different size or model of RPE is chosen (model - could be a change in make, a change from a disposable to re-usable mask or in the level of protection e.g. from P2 to P3 etc)
- ▶ If company policy requires the test to be carried out as part of an annual personal health check

**Note** - Fit Testing is in addition to the requirement to perform a pre-use fit check or airflow check.

### How is Fit Testing done - Are there different methods of carrying it out?

There are two main test methods, a Qualitative and a Quantitative one.

The Qualitative method gives a **subjective** result as to the quality of the face seal based upon the wearer detecting or not detecting the taste or odour of specific test substances.

The Quantitative method offers an **objective** result as to the quality of the face seal based upon the use of a particle counting probe producing a fit number. The test can be undertaken either within a test chamber or by using a portable particle counting device.

Once completed, a record of the result of the test should be kept for at least 5 years. Although not currently specified, it is believed by certain parties that as these fit test records are identifiable to an individual, then they may need to be kept for 40 years.

### Who should do the testing - How do we get advice?

The responsibility for carrying out testing rests with the 'end user organisation' i.e. the Employer and failure to follow the advice given within the ACoP could result in prosecution. The SBA sales team will be happy to offer you advice and guidance as to the appropriate method of testing for your specific RPE.

It is our belief that no one method is suitable, or for that matter cost effective, in all situations, therefore as a general rule, we recommend that each manufacturer's RPE is tested using that manufacturer's test equipment. For further guidance please contact the SBA sales team either via phone or by email on [sales@sba.co.uk](mailto:sales@sba.co.uk)