Wilkins Safety Group

H & S Guidance - Respiratory Protective Equipment

INTRODUCTION

Damage to health and death can be caused by breathing in hazardous substances, such as dusts, fumes, vapours, gases or even micro-organisms. If direct prevention or control of exposure is not possible then respiratory protective equipment (RPE) may be needed; this should always be seen as a measure of last resort in the hierarchy of control measures. RPE includes a very wide range of devices from simple respirators offering basic protection against low levels of harmful dusts etc. to self-contained breathing apparatus.

Occasionally work needs to be carried out in conditions that are described as being 'IDLH'. This stands for 'immediately dangerous to life or health' and can occur not only when toxic chemicals are present but also when there is a deficiency of oxygen (when the concentration of oxygen in air falls below 17%). In these circumstances, individuals can be so quickly overcome that they are unable to effect an escape and could suffer irreversible damage or may die.

LEGAL REQUIREMENTS FOR RPE

RPE must be either CE-marked or HSE approved.

Before CE-marking became compulsory in 1995, any RPE which was not already so marked had to be approved by HSE. This equipment can still be used as long as it is suitable, maintained and performs correctly. Any queries regarding HSE approved equipment should be directed to:

Respiratory Apparatus Testing and Certifying Officer

Health and Safety Laboratory

Broad Lane

Sheffield

Tel:0114 289 2920

(web site:**www.hsl.gov.uk**)

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Risk assessments for work involving hazardous substances are required by the Control of Substances Hazardous to Health Regulations 1999.

TYPES OF RPE.

- Disposable filtering half mask
- Valved filtering half mask
- Half mask, reusable with filters
- Full face mask
- Power-assisted respirators incorporating a full face mask

NB There are other types of RPE (shown in HS(G) 53, The Selection, Use and Maintenance of RPE – A Practical Guide. These include powered respirators incorporating hoods, blouses and helmets and equipment providing air from an independent source.

SELECTION OF RPE

RPE should be suitable for the task.

If RPE is used incorrectly or is badly maintained, the wearer may receive no protection. Detailed guidance to assist you in your calculations and determination of the correct choice of RPE can be found in HS(G)53 and includes selection charts. Medical advice & confirmation should be sought from the manufacturer or supplier. Answers to some questions may be available from generalised data, from past experience, suppliers and HSE guidance but if you do not have exposure monitoring data, or are unable to make a worst-case estimate, you will have to arrange for air monitoring.

In brief, for RPE to be judged "suitable", employers should be able to show that their assessment has taken full account of:

1)the substance, it’s properties and effects on the body

2)the concentration of that substance in the atmosphere

3)the relevant occupational exposure limit

4)the duration of exposure

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5)the pace of work

6)environmental factors (eg. heat)

7)the requirements and limitations of the individual wearers and their jobs:

•medical fitness

•face size & shape

•facial hair (hoods, visors etc. generally better than relying on a face seal)

•spectacles, contact lenses, other accessories worn for fashion, cosmetic, corrective or religious reasons

•physical effort required

•use of eye protection, hearing protectors, safety helmets

•methods of work

•mobility

•visibility

8)other RPE that may need to be worn.

9)the manufacturer's performance specification.

10)methods of communication

11)effects of other tools/equipment

12)the concentration of oxygen in the air during the whole period of exposure

Nuisance dust masks do not give any reliable protection against hazardous substances and hence will not satisfy these approval requirements for RPE.

When choosing RPE some costs can easily be overlooked and you would be advised to consider the information contained in HSG53 on the relative costs of the varied types of RPE.

Information should be sought from manufacturers/suppliers about the range of use for which their RPE has been designed and the steps that should be taken to ensure that it meets the performance specification.

TRAINING

•Suitable information, instruction and training for employees is required, so they can make effective use of the measures provided to control their exposure to hazardous substances.

•May take from 1 to 2hrs for disposables to, up to two+ days for breathing apparatus

•May use video/literature/demos/formal training/occupational hygienists/fire and rescue services/manufacturers courses

•It should include:

- the use of RPE

- how to wear it

- what the limitations of the RPE are

- maintenance, repair & testing

and be delivered as both initial and refresher training

USE, STORAGE & MAINTENANCE OF RPE

•Use

-in accordance with manufacturers'/suppliers' instructions

-after proper training

-examination prior to use every time

-face seal/fit test each time

-limit wear time to allow relief from discomfort

-appropriate replacement intervals for filter cartridges

-RPE decontamination facilities at the exit from a contaminated area when appropriate

-communication set up for out of sight work in IDLH atmospheres

•Storage

- according to manufacturers instructions

- to segregate 'usable' from 'awaiting repair or maintenance'

- stocks of spares

•Maintenance

-includes cleaning, disinfection, examination, repair, testing and record keeping according to manufacturers instructions.

-RPE should not be used unless it has had a recent thorough examination (apart from one-shift disposable filtering facepiece respirators and some escape devices). The interval between thorough examinations should not be more than ONE MONTH except for half mask respirators which are used occasionally to protect against exposures to dust or fumes of relatively low toxicity, in which case the interval may be extended to THREE MONTHS.

-details of the requirements for thorough examinations are contained in the COSHH Approved Code of Practice. Records should be kept in any format, readily available for inspection.

CHECKLIST

- RESPIRATORY PROTECTIVE EQUIPMENT (RPE)

1 Where it is not reasonably practicable to control exposure Yes No

to hazardous substances by means other than RPE, have you: Yes No

(i)assessed what type of RPE is required?

(ii)ensured and can show that the RPE is 'suitable' for the purpose for which it is used?

(iii)considered personal and work-related factors?

2 Have you provided adequate information, instruction and training relating to the use and maintenance/repair/testing of RPE? Yes No

3 Have you provided suitable storage for RPE? Yes No

4 Do you have an established maintenance system (with appropriate record keeping)? Yes No

REFERENCES/FURTHER DETAILS

*1.Booklet HS(G)53 – 'The Selection, Use and Maintenance of Respiratory Protective Equipment - a practical guide' (HSE) ISBN 0-7176-1537-5 (£9.50)

2. Guide to implementing an effective respiratory protective device programme BS 4275:1997

3. Costing a respiratory protective equipment programme SIR50 HSE BOOKS 1995