HEALTH AND SAFETY
PERSONAL PROTECTIVE EQUIPMENT
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1 INTRODUCTION

1.1 Controlling hazards at source and keeping the workplace healthy and safe have long been considered preferable to a reliance on personal protective equipment (P.P.E).

1.2 Legislation such as the Control of Substances Hazardous to Health Regulations have placed P.P.E low down in a hierarchical system of control measures to minimise exposure to health risks.

1.3 There are a number of reasons for this approach. Firstly P.P.E protects only the person wearing it, whereas measures controlling the risk at source can protect everyone in the workplace. Secondly theoretical levels of protection are seldom achieved with P.P.E in practice and actual protection is quite difficult to assess.

1.4 Effective protection is only achieved by P.P.E if it is suitable, correctly fitted, adequately maintained and used correctly.

1.5 It is not always possible to introduce or apply engineering central measures immediately therefore a reliance on P.P.E is essential.

1.6 There will be instances where P.P.E is a long term solution eg. maintenance staff when cleaning extraction ducting. In addition some forms of P.P.E can be used for entering hostile environments eg. for rescue or emergency purposes.

1.7 Whether for short or long term use P.P.E needs to be underpinned by a system to ensure correct selection, fitting, maintenance, training and monitoring of usage.

2 STANDARDS

2.1 Personal protective equipment is presently made either to a relevant British Standard (BS) or European Norm (EN). (see appendix I).

When selecting new products only those with a CE mark are suitable. Secondhand products may still be used if they are appropriate for the purpose. A CE mark indicates that either the product has been approved by the relevant authority or in the case of simple products that the manufacturer has made a declaration of conformity to the relevant authority.

3.1 ASSESSMENT OF RISK

3.1 Whatever P.P.E is chosen it must be remembered that some types of equipment can provide high levels of protection, none will provide 100%/0 protection. Some indication is needed of the level of risk so that the performance of the required P.P.E can be determined.
3.2 This information may have been gathered through risk assessments under COSHH and through general data or guidance from the Health and Safety Executive.

3.3 A risk survey may be necessary in helping to identify the type of personal protective equipment required. (see appendix 2).

4 SELECTION OF SUITABLE P.P.E

4.1 Once the potential hazards have been identified there may be several type of P.P.E that could be considered suitable.

4.2 The nature of the danger and the parts of the body endangered are the two key elements to consider.

i) When making an assessment on the need for eye protection the types of must be identified. These could be airborne dust, liquid splashes or hazard projectiles.

Then assess the degree of risk for example the velocity and probable size of a projectile.

Selection can then be made from a range of suitably marked equipment. Eye protection is designed for dust, chemical and different levels of impact.

ii) Before respiratory protection can be correctly selected certain information must be gathered. The type and character of the contaminant and its airborne concentration needs to be identified before a suitable selection can be made.

iii) Protective gloves can offer very good protection from a variety of substances which would normally present a serious hazard to unprotected skin. Information on the type and concentration of the substance must be identified before the right glove type can be selected.

The above three examples illustrate the necessity of proper identification of the hazard, the level of risk involved and then the selection of the appropriate type of P.P.E.

Further advice and confirmation may be necessary to ensure the equipment selected will provide the necessary protection.

Manufacturers and suppliers have duties under Section b of the Health and Safety At Work Act to provide information of this type.
5 ERGONOMICS IN SELECTION

5.1 Selection of P.P.E should also consider the demands of the work to be completed. This will require:

i) consider the physical effort required to complete the work
ii) the method of work
iii) how long will the P.P.E need to be worn
iv) assessing the need for communication and visibility

5.2 It may be necessary to consider different types and sizes of P.P.E as there will be considerable differences in the physical dimension of the users.

5.3 It is important that the principal of end user acceptance of the P.P.E is established. This can be realised by involving the users in a consultation and selection procedure.

6 MAINTENANCE

6.1 In general all P.P.E should be examined to ensure it is in good working order.

6.2 P.P.E should be examined before it is put on and should not be used if it is found to be defective or requires cleaning.

6.3 Such examinations should be carried out to the manufacturers instructions. Most P.P.E will be issued on a personal basis. Where this is not the case a programme of cleaning and disinfecting must be established.

6.4 Effective maintenance of P.P.E is vital if the protective dualities of the equipment are to be maintained. Maintenance programmes should include:

i) cleaning
ii) disinfection
iii) examination
iv) repair
v) testing
vi) record keeping

6.5 The degree of maintenance required will of course vary between the different types of equipment eg. mechanical fall-arrestors will require regular examination, testing and overhaul, whereas most gloves will only require inspection by the user.

6.6 Manufacturer maintenance schedules and instruction must be followed. Basic maintenance may be carried out by the user, however where complex P.P.E is being used a high standard of maintenance will be required, carried out by personnel trained for the purpose.

6.7 P.P.E should be provided with suitable accommodation for storage. This could be quite simple eg. cases for protective eye wear and suitable containers for whole worker clothing.
6.8 Where quantities of P.P.E are stored the storage area should be free from contamination from harmful substances, damp or sunlight. P.P.E which is ready for use should be segregated from that which is awaiting repair or maintenance.

7 EDUCATION AND TRAINING

7.1 All users of P.P.E should receive information, instruction and training in P.P.E. This will enable effective use to be made of the P.P.E provided against health and safety risks.

7.2 Users must be trained in the proper use of P.P.E how to wear it and its limitations. Supervisory staff must also be aware of why P.P.E is being used and how it should be used correctly. Staff involved in maintaining, repairing, testing of P.P.E should also receive training.

7.3 The degree of training will depend on the complexity and performance of the P.P.E.

7.4 With some equipment eg. safety helmets, basic instructions to the user would be sufficient. However complex equipment eg. breathing apparatus, would require formal instruction, training and testing.

8 USER TRAINING

- the effects of unprotected exposure
- where to obtain the equipment
- how to fit the protection
- when and where the protection should be used
- where necessary how to clean the equipment
- what to do with faulty and damaged equipment

8.1 Management and supervisory staff need the following additional knowledge;

- responsibilities of supervisory and management staff in the protection scheme.
- how the system operates for selection, issues, maintenance and cleaning of personal protective equipment,
- why a high usage of the protection by other people is unlikely to be achieved unless they set a goad example.

It is advisable to keep records of training details to ensure the training courses are run effectively.

Many manufacturers of P.P.E run training courses on the use of their own equipment and it maybe advisable to take advantage of these.
9 SUPERVISION AND MONITORING

9.1 It is important that a member of staff is given overall responsibility for the scheme within a department. This would be a predominantly co-ordinating role. Monitoring should also be undertaken to ascertain:

i) whether staff are using the P.P.E
ii) whether the P.P.E is adequately cleaned and maintained
iii) whether training is being carried out consistently.

A personal protection scheme is unlikely to be adequate unless everyone is committed to making it a success.
APPENDIX

BRITISH AND EUROPEAN STANDARDS (NON EXHAUSTIVE)

Head Protection

BS 4033: 1966 Specification for industrial scalp protectors (light duty) (to be replaced by BS EN 812)

BS 5240 Part 1: 1987 Industrial safety helmets - specification fort construction and performance (to be replaced by BS EN 397)

Eye Protection

BS 1542: 1982 Specification for equipment for eye, face and neck protection against non-ionising radiation arising during welding and similar operations

BS EN 169 Personal eye protection. Filters for welding and related techniques: Transmittance requirements and recommended use

BS EN 170 Personal eye protection: Ultraviolet filters: Transmittance requirements and recommended use

BS EN 171 Personal eye protection: Infrared filters: Transmittance requirements and recommended use

Footwear

BS 1870: Pts I, 2 and 3 Safety Footwear

BS 4972: 1973 Specification for women's protective footwear

BS 5462: Footwear with midsole protection

BS 5462: Part 2: 1984 Specification for lined or unlined polyvinyl chloride (PVC) footwear with penetration resistant midsoles

BS EN 345 Specification for safety footwear for professional use

BS EN 346 Specification for protective footwear and professional use

BS EN 347 Specification for occupational footwear for professional use
Gloves

BS 697: 1986  Specification for rubber gloves for electrical purposes
BS 1651: 1986  Specification for industrial gloves
BS EN 421  Protective gloves against ionising radiation to include irradiation and contamination
BS EN 374 (Parts I to 5)  Protective gloves against chemicals and micro-organisms
BS EN 407  Protective gloves against thermal hazards
BS EN 511  Protective gloves against cold

Protective Clothing

BS 2653: 1955  Specification for protective clothing for welders
BS 3595: 1981  Specification for life-jackets
BS EN 471  High visibility warning clothing