

THE UNIVERSITY OF SUSSEX
SAFETY PROCEDURES AND GUIDANCE
SPG-16-09
PERSONAL PROTECTIVE EQUIPMENT

INTRODUCTION

1. These Procedures and guidance have been prepared to provide managers, supervisors, employees, students and visitors with sufficient knowledge to comply with:

- (a) **Those parts of the Management of Health and Safety at Work Regulations 1992 (MOHASAW)** which are relevant to the provision and use of personal protective equipment. The principal requirement of the MOHASAW Regulations 1992 is to ensure that a hazard and risk assessment is made of every work activity, including fieldwork activities, and, where required, the assessment must indicate the preventive and protective measures required to either reduce or eliminate the risks to health.
- (b) **The Personal Protective Equipment at Work Regulations 1992.** These regulations, like the MOHASAW Regulations above, came into force on 1st January 1993. Detailed guidance is given in Health and Safety Executive Publication 'Personal Protective Equipment at Work Regulations 1992, Guidance on Regulations ISBN 0-7176-6139-8, copies of which are held in the Safety Office and can be obtained via the relevant School Safety Coordinator.

APPLICATION TO STAFF AND STUDENTS

Staff

2. The Health and Safety (Personal Protective Equipment) Regulations 1992 have been written specifically for the safety of staff.
3. These Safety Procedures and guidance have therefore been drafted to enable the University to comply with the above Regulations as they apply to employees.

Students

4. Under section 3 of the Health and Safety at Work Act 1974, the University has a clear duty to ensure, so far as is reasonably practicable, that non employed persons (i.e. including students) are not exposed to risks to their health or safety.
5. In its general safety policy statement, the University acknowledges that the systematic care for the health and safety of its employees, its students, visitors and the public at large is an essential part of the efficient functioning of the University.

6. Regulation 3 of the MOHASAWR requires the University to make a suitable and sufficient assessment of the risks to the health and safety of persons not employed by the University arising out of or in connection with the conduct of the University. The Health and Safety Executive have advised the use of relevant legislation in deciding upon the preventive and protective measures required to minimise the risks to health to all.

7. It therefore follows that those who have the managerial/supervisory responsibility, including academic supervisors, for compliance with the MOHASAWR 92 must:

- (a) ensure students are aware of the possible risks to their health which may arise from their academic work, e.g. work in teaching laboratories, fieldwork, and
- (b) ensure that an assessment of the risks to the health of all students who might require the provision of Personal Protective Equipment (PPE) has been undertaken and recorded, e.g. chemistry, biochemistry research and teaching work, fieldwork, work with lasers, work using workshop machinery.

8. It is suggested that students are made aware of the risks to health and safe systems of work by being given information in the following documents:

- School Safety Handbooks or School Safety Websites,
- University Safety Procedures and guidance documents,
- Research project assessment documents,
- Research equipment assessment documents,
- COSHH assessment documents.

9. Managers and supervisors, including academic supervisors, should use the the various University Policies and Safety Procedures and Guidance as a guide when assessing the risks to the health of students:

10. These Personal Protective Equipment Safety Procedures and Guidance also provides detailed advice to those supervising postgraduate and undergraduate students where assessments have indicated the need to provide personal protective equipment.

11. The University must make no charge to employees for personal protective equipment. In the case of students, there is often a clear moral duty to provide the necessary equipment without making a charge, e.g. safety spectacles provided for undergraduate chemistry teaching in laboratories. In the case of postgraduates undertaking work with lasers, protective goggles are normally provided free of charge as the cost of the goggles would have been foreseen and included in the research grant application.

12. In other instances it may be unreasonable for the University to provide PPE for students, e.g. undergraduates undertaking fieldwork would normally be expected to provide their own clothing for combating adverse weather conditions. For postgraduates the provision of cold weather protective clothing would probably have been foreseen and included within the funding application for the project.

13. The decisions as to the provision or non provision of PPE for students should be decided at School level, but supervisors must recognise the need to ensure that students are made aware of the risks to health and, where necessary, are equipped with the appropriate PPE whenever this provision is indicated by an assessment.

HAZARD AND RISK ASSESSMENTS

14. These assessments must be made by managers/supervisors and in most cases must be fully documented. Detailed advice is given in the University of Sussex Safety Procedures and Guidance SPG-17-09 for the implementation of the MOHASAW Regulations which form part of the University Safety Policy Document. Further information on assessments is given in Appendices of this document and the appendices in SPG-17-09

15. As each assessment is completed, the need for Personal Protective Equipment (PPE) must be considered. For example,

(a) **Use of chainsaw** to remove branches obstructing street lighting columns.

Risk	PPE required
• wood chips	eye protection - mesh visor
• falling branches	head protection – helmet
• foot protection	safety boots
• noise	ear defenders
• chainsaw hitting leg and foot	ballistic nylon or Kevlar trousers, boots.
• cold and rain	weatherproof warm clothing

(b) **Class 3B laser:** Beam enclosed. Laser protective goggles required for 'lining-up' operations.

APPLICATION OF THE PERSONAL PROTECTIVE EQUIPMENT AT WORK REGULATIONS 1992

16. The PPE 92 Regulations do not apply where there are already existing comprehensive Regulations which require PPE, e.g.

- (a) The Control of Substances Hazardous to Health Regulations 1988, which in some circumstances require respiratory protection;
- (b) The Control of Lead at Work Regulations 1980 (respiratory protection);
- (c) The Ionising Radiations Regulations 1985 (respiratory protection);
- (d) The Control of Asbestos at Work Regulations 1987 (respiratory protection);
- (e) The Noise at Work Regulations 1989 (ear defenders);
- (f) The Construction (Head Protection) Regulations 1989 (safety helmets).

17. The PPE 92 Regulations do apply where there are no current regulations dealing with PPE, e.g. chainsaw operators.

18. Where there are existing but not comprehensive regulations requiring PPE, the PPE 92 Regulations will apply and will complement the requirements of existing regulations, e.g. The Docks Regulations 1988 require high visibility reflective jackets
Acknowledgement; Original written by Peter balance, revised by M. Strong & T. Knapp

in specific areas. The PPE 92 Regulations will require high visibility jackets in all other areas in the Docks where there is a risk from vehicle movements. This requirement will now also apply to the University staff whenever they are engaged in road works or whenever they may be at risk from moving vehicles, e.g. grounds work on or near traffic. PPE therefore includes:

- protective aprons,
- protective clothing for adverse weather conditions,
- gloves,
- safety footwear, e.g. construction work, use of Flymos,
- safety helmets,
- high visibility waistcoats, jackets,
- eye protection, e.g. laser goggles, chainsaw visors,
- life jackets ,
- respirators,
- safety harnesses,
- underwater breathing apparatus.

POLICY - STUDENTS AND VISITORS

19. Although the PPE 92 Regulations do not specifically mention students, it is the policy of the University that whenever a hazard/risk assessment indicates that PPE is required, that equipment must be used whether the persons at risk are staff, students, or visitors,

e.g. geography field trip examining rock formations at the base of steep cliffs. PPE 92 would require employees (faculty, technicians) present to wear helmets to protect against rock falls, and perhaps to carry life jackets in case of someone being injured and the proposed journey taking much longer than expected, and hence be at risk from an incoming tide. The University would expect all students present on this excursion to be provided with and, if required, to use the same PPE as that issued to staff.

POLICY - HEAD PROTECTION

20. Although PPE 92 specifically excludes the Construction (Head Protection) Regulations 1989, the University has decided to include the requirement to wear head protection within the Safety Procedures and Guidance dealing with Personal Protective Equipment. This will simplify hazard and risk assessments and will avoid the need for a separate safety Procedures and Guidance document dealing with head protection.

21. The University Safety Procedures and Guidance therefore require managers/supervisors of any activity to assess two specific risks of head injury:

- (a) the risk of a person striking their head on a hard or sharp object, e.g. when walking or crawling in low service ducts, or on scaffolding, etc.
- (b) the risk of head injury from falling objects, e.g. materials from above head height construction work or the head being hit by moving objects such as

Acknowledgement; Original written by Peter balance, revised by M. Strong & T. Knapp

overhead digger buckets, material suspended from cranes, crane hooks or other moving components.

22. If an assessment indicates a risk of injury, then suitable head protection must be provided. (This will in most cases mean provision of an industrial safety helmet to British Standard 5240 or equivalent. For work in confined spaces 'bump caps' to BS 4033 may be appropriate.) The persons involved must be instructed in the use of the head protection and must be effectively supervised to ensure that the head protection is worn when required. Persons required to wear head protection must be informed in writing, e.g. by use of a permit to work/safety assessment form or by the use of 'wear head protection' signs.

23. Detailed advice on head protection is given in the Construction (Head Protection) Regulations 1989, Guidance on Regulations, ISBN 0-7176-1478-3. Copies are held by the University Safety Office.

PROVISION OF PPE MUST BE A 'LAST RESORT'

24. Following each hazard/risk assessment, the MOHASAW Regulations 1992 establish a clear procedure in determining the protective and preventive measures. First try to control the risk by engineering controls, e.g. enclosing the process, then, if that is not possible, by establishing a safe system of work. If this cannot be achieved without some risk to the persons undertaking the task, then, and only then, should the use of PPE be considered.

PROVIDING PPE - REQUIREMENTS TO BE MET

25. If PPE is specified, it must:
- (a) be appropriate for the particular risks involved and for the conditions at the place where the exposure to risk may occur;
 - (b) take account of the ergonomic requirements of the task, e.g. the physical effort required to do the job, how long the PPE must be worn and the requirements for visibility and communication. The state of health of the person who will use the equipment must also be considered;
 - (c) fit the wearer correctly;
 - (d) so far as is practicable, be effective to prevent or adequately control the risks without increasing the overall risk;
 - (e) comply with any UK Regulations which implement European Community Directives concerned with health and safety provisions. To comply with this requirement, all new PPE will have to carry the 'CE' mark indicating its approval for use within the Community. Existing non CE marked PPE may still be used so long as it remains effective.

COMPATIBILITY OF EQUIPMENT

26. If more than one item of PPE is to be worn, the different items of PPE must be compatible with each other, e.g. some ear defenders will not fit properly if a helmet has to be worn.

CONSULTATION WITH USERS OF PPE

27. The Health and Safety Executive have advised that persons having to wear PPE should be consulted and involved in the selection and specification of the equipment. There is clearly a better chance of PPE being used effectively if it has been accepted as suitable by each user.

ASSESSMENT OF PPE

28. The suitability of any PPE selected for use must be assessed by managers/supervisors. This assessment is to determine how effective particular equipment is likely to be in minimising risks. In making these assessments the following are some of the risks which may need to be considered:

- falls from a height,
- being hit or crushed by falling or moving objects,
- risk of cuts or puncture wounds,
- vibration ('white finger'),
- slips and falls on a level,
- heat, low temperature,
- non ionising radiation, e.g. lasers,
- electricity,
- immersion, drowning,
- noise,
- fumes, dusts, vapours, gases,
- splashes, especially chemicals, hot metals,
- biologically hazardous materials, e.g. pathogens.

29. For each hazard identified, the risk must be considered and attention given to identifying which of the following parts of the body may require suitable protective equipment:

- eyes,
- ears,
- lungs, nose, mouth,
- face,
- whole head, including skull,
- hands, arms,
- feet, legs,
- skin,
- chest, abdomen,

- whole body.

30. In considering suitability of PPE care must be taken in selecting the appropriate equipment:

- e.g. - Some face shields only give protection against chemical splashes; they will not protect against flying glass or metal projectiles if chemicals explode!
- Most dust masks give no useful protection against fine dusts - only respirators approved for particular purposes by the Health and Safety Executive are effective. If in any doubt, consult the Safety Office.

This is particularly important where very toxic materials, e.g. asbestos, are involved. Also remember that dust respirators, even of the highest quality, give no protection against toxic gases or vapours.

31. After 1st January 1993, only 'CE' marked PPE may be purchased and used. (See paragraph 25(e) for detailed advice).

32. As required by the PPE (Safety) Regulations 1992 and under Section 6 of the Health and Safety at Work Act 1974, manufacturers and suppliers of PPE have a duty to supply sufficient information regarding the suitability of their equipment for combating the particular risks to health for which it has been designed and marketed. Information on suitability of equipment may be obtained from the Safety Office.

MAINTENANCE AND REPLACEMENT OF PPE

33. Managers/supervisors must ensure that all PPE is effectively maintained (including cleaning) and where necessary replaced. The PPE must, when provided for use, be available for use in efficient working order and in good repair. All PPE must be visually checked by users before each period of use.

34. Where appropriate, records of tests and examinations should be kept. This is particularly important for items such as fall-arrestors which all require a planned preventive maintenance programme, including examination testing and overhaul. Gloves may only require a before-use check by users.

35. Defective PPE must not be used.

36. Safety helmets have a limited life. Managers/supervisors must make sure that helmets are removed from service (and destroyed) when their date marked period of giving effective protection has expired.

37. Particular attention must be paid to the elastic headbands for laser eye protective goggles. These must be examined, before each period of use, by wearers, and formally by supervisors at least once each calendar quarter.

STORAGE OF PPE

38. Managers/supervisors must provide 'safe' storage for PPE when it is not in use. Storage must be adequate to protect the PPE from any contamination and from loss or damage, including possible effects of damp, temperature, sunlight, or harmful substances.

INFORMATION, INSTRUCTION AND TRAINING

39. All potential users of PPE must, before using the equipment, receive sufficient information, instruction and training to enable them to make effective use of the PPE provided.

40. The users of PPE must be made aware of the risks to health the PPE is designed to minimise, the reasons for issuing PPE, and the manner in which it is to be used, including how to correctly fit and wear the equipment. The users may also need to practise using the equipment. Training should be carried out in accordance with the recommendations and instructions supplied by the PPE manufacturer. Users must also be trained how to clean and maintain their equipment and to recognise defects. Users must also be made aware of the limitations of the PPE, e.g. goggles and full face visors may give different standards of impact resistance. Some dust respirators are not effective against airborne asbestos fibres.

USE OF PPE - SUPERVISION AND USERS' DUTIES

41. The use of PPE must be effectively supervised by managers and supervisors, who should be aware of their personal vulnerability to prosecution under Section 37 of the Health and Safety at Work Act 1974 if they connive at the failure to obey safety regulations. Managers/supervisors must ensure that PPE is properly used.

42. The users who have been supplied with PPE must use the equipment in accordance with any instructions or training they have been given concerning its use.

43. Users must return PPE after use to the storage place provided (except for some disposable PPE, e.g. overalls).

44. Users who have been provided with PPE must report to their supervisors any loss of or obvious defect in that PPE.

APPENDIX 1**Hazard and Risk Assessments**
A guide to tasks where a requirement
to provide PPE is likely to arise**Head protection:**

- construction/building work, especially near or underneath scaffolding and elevated workplaces, including erection or removal of form work or scaffolding and demolition work;
- work in deep pits, trenches or tunnels;
- work with bolt driving tools;
- work near cranes, hoists, lifts;
- work near mechanical diggers;
- tree felling, tree surgery;
- work from suspended access systems.

Eye protection:

- work with corrosive chemicals;
- work with reactive (potentially explosive) chemicals;
- distillations;
- working with power tools and machine tools where chips are likely to fly or abrasives be propelled;
- work with molten metals;
- welding operations;
- use of lasers (Class 3 and above);
- using gases or vapours under pressure.

Leg and foot protection:

- construction/building work - nail penetration, toe crushing;
- mechanical or manual handling of loads - risk of toe crushing;
- electrical work - HV may require insulating footwear;
- high or low temperature work (for liquid nitrogen - loose fit wellingtons worn inside trousers);
- work with some chemicals - splash-resistant footwear;
- forestry - chainsaw footwear and ballistic Kevlar leg protection;
- molten metals - foundry boots, leg protection.

Hand and arm protection

- corrosive chemical work, e.g. in labs, or descaling calorifier elements;
- manual handling - sharp objects, timber, bricks, paving slabs;
- vibrating tools - gloves needed to prevent 'white finger' (blood supply restriction effects). It is therefore essential to keep hands warm;
- hot and cold materials - gloves must be loose fitting for cryogenic liquids,
 - e.g. liquid nitrogen, so that gloves can easily be removed if liquid splashes inside the glove;
- electricity - some tasks require insulating gloves.

Body protection:

- chemicals - use lab coats, chemical suits;
- outdoor work - protect against cold and rain;
- work in cold rooms - body heat must be protected;
- road work in proximity to vehicles - high visibility clothing required,
 - reflective for night work, especially traffic controls;
- spraying pesticides - impermeable material;
- food processing;
- welding and molten metal work.

APPENDIX 2

Further Information

- Personal Protective Equipment at Work, Personal Protective Equipment at Work Regulations 1992 - Guidance on Regulations, ISBN 0-7176-6139-8.
- HSG53 Respiratory Protective Equipment ISBN 0-7176-2904-6.
- INDG174 A short Guide to PPE at work Regs ISBN 0-7176-6141-1
- INGG330 Selecting Protective gloves for work with Chemicals HSE web site
- The web site <http://www.ansellpro.com/specware/index.asp> gives advice on selecting Chemical Hand Protection.