



Safety Services Guidance



Eye Protection in Laboratories and Workshops

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Target audience: Supervisors/Managers, PIs, safety advisors

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Introduction

1. The importance of selecting the correct eye protection and wearing it cannot be over-emphasised. Eyes cannot be replaced and any damage from impact or chemicals is likely to be serious and permanent. When eye protection fails, eyes are unprotected (protective glasses “fail to danger”), so it must always be seen as a last resort. Other measures of controlling the risk to eyes must be implemented first, to the extent that is reasonably practicable.

Risk assessments

2. The need for eye protection should be clearly justified in a risk assessment. This must consider all who could be affected – including laboratory users, cleaning staff, visitors, contractors, etc.
3. Where there is justification, blue signs should clearly indicate where the provision and wearing of suitable eye protection is mandatory.



4. Some laboratory work is incompatible with wearing eye protection, eg use of microscopes, some work with display screens. Careful location of activities will help remove the conflicting requirements of a blue sign and activities for which eye protection is not required.

Specification of eye protection

5. Where eye protection is required, it must be correctly selected to protect against the specific hazard(s) involved. For example, goggles provided for occasional chemical splashes do not protect against high speed particles ejected from machinery, or against laser or other light sources.
6. All eye protection must have a CE mark, and the technical data will specify which European Standard(s) it complies with and hence what protection it provides. BS EN 166 and other standards listed below give technical details of the protection provided by devices CE-marked to that standard. Reputable suppliers will always be able to provide assistance on whether a particular model is suitable for a particular risk. See also the [Standards and Markings for Personal Protective Equipment](#) on the HSE webpage.

7. Where people already wear prescription spectacles, the selection process will need to take this into account. For short duration work, over-goggles or visors may be practicable. For longer work, it may be necessary to obtain prescription safety spectacles. Where these are a prescribed means of controlling the risk, the School will need to fund the safety-related costs.

8. There are several suppliers of safety equipment that can provide prescription safety glasses (e.g. Arco, Bolle, Pyramex and Uvex; the latter providing an online service). In addition to requiring a current prescription from an optician, the purchaser will need to choose a product that is CE marked and select the appropriate EN protection factor for the specific hazard (see paragraph 6 above). Choosing the right standard of protection can be complicated so it is advisable to discuss your requirements with the supplier and your local safety advisor/University Safety Co-ordinator before ordering.

Typical scenarios where eye protection is required

Scenario	HSS recommendation	Legal implications
"Traditional" wet chemistry lab	Eye protection should be mandatory & generally specified to protect against splashes (i.e. not immersion or prolonged chemical exposure). Higher performance ppe may be required in areas of higher risk. Consider good face seals to avoid chemicals dripping from forehead into eyes.	Blue sign on all entry points, wearing of eye protection must be rigorously enforced. PPE Regs apply
Workshops using metal and woodworking equipment, where there is a risk of materials being ejected at high speed	The risk exists whilst machinery is in use. Mandatory eye protection for user and others at risk in the vicinity to protect against high energy impacts, where risk cannot be eliminated by guarding.	When risk present, mandatory eye protection should be rigorously enforced. PPE Regs apply. In workshops where use of such machinery is occasional or at defined times only and no other eye risks exist, consideration may be given to systems of work that require the blue sign to be put up when machinery is

Scenario	HSS recommendation	Legal implications
		<p>in use only. Such systems are prone to failure however, and better solutions might be to enclose the machinery in smaller areas where eye protection is always mandatory.</p>
<p>In multi-user labs (typically biological labs), risks to eyes vary within a single laboratory, but range from very low indeed (use of microscope) to significant (eg acid dilutions).</p>	<p>Each lab or cluster of labs will need its own risk assessment to justify the decision to require or not require eye protection.</p> <p>It is essential however that work involving a risk to eyes is either segregated (eg carried out in a fume or biological safety cabinet or other enclosed area), or that everyone at risk is provided with suitable eye protection and expected to wear it.</p>	<p>In labs with mixed activities, some of which have no risk of eye injury, the lab protocol or procedure risk assessments could be used to identify activities for which eye protection must be worn. Supervision to ensure this occurs in practice will need to be provided.</p> <p>In some cases, areas within multi-user labs where, eg concentrated chemicals are diluted could be clearly marked up and provided with the blue sign.</p> <p>Practicality will need to form part of the risk assessment.</p> <p>If there is a blue sign on the entrance doors, eye protection for everyone is mandatory at all times, and PPE Regs apply.</p>
<p>Laboratories and workshops using lasers, sources of non-ionising radiation, welding sets,</p>	<p>Specialist eye protection will be needed unless the risk can be eliminated, and must be worn. Again, the protection selected must be the result of a risk assessment, and in accordance with the PPE Regulations, and may need</p>	<p>Mandatory blue sign, rigorously enforced.</p> <p>PPE Regs apply.</p>

Scenario	HSS recommendation	Legal implications
	to provide protection for other risks (eg cold burns from liquid nitrogen splashes, splatter of hot metal, UV radiation, laser radiation, welding)	

Wearing eye protection

9. Once the need for eye protection has been established through risk assessment, everyone who needs to wear it should be informed about the risks it is designed to protect against, the limitations in performance of the selected eye protection, and the consequences of eye injury. If other PPE is also required, efforts must be made to ensure all PPE is compatible and comfortable to wear. Poor fitting or uncomfortable PPE will not be worn and will not provide protection.

10. Managers and Supervisors should carry out regular checks to ensure PPE is being worn properly, and resolve any complaints or observations of non-compliance. In some cases, this may require review of the PPE specification or the risk assessment.

Additional note on the legal requirements

11. The requirements of Statutory Instrument No 2966/1992 The Personal Protection Equipment at Work Regulations 1992 are extensive, covering: selection & compatibility with other PPE items; maintenance & replacement; storage; theoretical and practical training; information, instruction and use, reporting of loss or defect. PPE should not be viewed as an easy option to control risk.

12. PPE should always be viewed as a risk control measure of last resort. It follows that regular review of the risk assessment should challenge the continued need for PPE and seek to implement other risk control strategies as and when these become available.

Bibliography

[Personal Protective Equipment Regulations 1992 \(as amended\) Guidance on the regulations](#), L25, 2nd edition, 2005 HSE Publication, ISBN 0 7176 6139 3

BS EN 166:2002 Personal Eye Protection – specifications

BS 7028: 1999 Eye Protection for Industrial and Other Uses – guidance on selection, use and maintenance.

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