Safety Note 55

Eye protection for university staff and students

1. Introduction

Selection and wearing the correct eye protection at work is very important; damage from impact, chemicals, lasers or ultra violet light is likely to be serious and permanent. Eye protection must always be seen as a last resort and other measures of controlling the risk to eyes must be implemented first.

2. Supervisors duties

Line management and supervisors are responsible for:

- identifying eye hazards associated with work activities undertaken by staff and students
- carrying out risk assessments to eliminate, or where this is not possible, control these hazards
- providing any eye protection identified as being necessary.

Risk assessments must also identify any others who may be harmed by the activity and who may need protection (for example, but not limited to, other facility users, visitors, maintenance staff).

Schools are responsible for ensuring that eye protection is used as instructed, is maintained in good condition and is replaced when damaged.

Eye injury hazards

Some of the more common eye injury hazards include:

	Hazard	Source
Chemical/biological	Chemical splashes	Laboratory work, maintenance and cleaning work
	Liquid aerosols	Laboratory work
	Steam jets	Pressure vessels
	Fine dusts and powders	Laboratory work, maintenance work e.g. wall sanding
	Fumes, vapours and gases	Varnishing, using adhesives. Laboratory work
	Biological agents	Laboratory work, first aid, waste management
Radiation	Ionising and infra red	Laboratory work, gas welding
	Visible light	High intensity artificial light, strong sunlight

	Hazard	Source
	Ultra-violet	Transilluminators
	Laser	Laboratories and workshops
Mechanical	Flying particles	Metal or wood workshops, gardening, maintenance or laboratory work
	Coarse airborne dusts	Maintenance work, workshops
	High pressure water	Water jet blasting
	Burns	Liquid nitrogen (cold), laboratory and maintenance work

3. Specification of eye protection

Where eye protection is required, it must be correctly selected to protect against the specific hazards involved. Appendix 1 provides a guide on selecting the correct eye protection for the task. All eye protection must have a CE mark. The technical data will specify which European Standard(s) it complies with and hence what protection it provides.

Where people already wear prescription spectacles this needs to be taken into account. For short duration work, over goggles or visors may be practicable but for longer periods of work it may be necessary to obtain prescription safety spectacles. Users requiring eye protection with vision correcting lenses must provide a current opticians prescription. The School should then make provision for employees by funding the purchase of appropriate safety glasses with vision correction lenses that meet the required standards for the activity. Further advice on vision correction safety glasses is available from the H&S services office.

4. Correct fit

Care must be taken to ensure the protective eyewear fits correctly and is comfortable. Wearers of uncomfortable produces will be tempted not to use the glasses or remove them during work. A good fit is essential to provide the intended level of protection.

It is quite common for eye protection to be worn with other types of PPE such as safety helmets, ear protectors or respirators. Care must be taken to ensure items of PPE do not affect the fit of the others, for example side arms of safety spectacles might disturb the correct fit of ear defenders, a full face respirator might prevent spectacles sitting correctly. If more than one type of PPE is required extra care must be taken to ensure the correct PPE is provided, and in some cases provision of purpose designed combination products may be required.

5. Ensuring use

Supervisors must ensure that PPE is used as instructed. Where risk assessments confirm the need for protection, mandatory eye protection signs must be clearly displayed. **If indicated on the laboratory door eye protection must be worn at all times throughout the laboratory.** However some laboratories may only need small specific areas designated as eye protection areas.

6. Duties of PPE wearers

Employees or students who are provided with eye protection must wear it when engaged in any process that could potentially cause damage to their eyes. PPE must be worn in accordance with the information, instruction and training received from their line manager or supervisor. Users issued with eye protection should ensure it stays in good condition, kept clean and is maintained and stored in a safe, clean location after use. Users should report any loss or obvious defect in their eye protection to their line manager, supervisor or representative.

7. Maintenance and inspection

Eye protection should be issued on a personal basis and used only by the person they are issued to. If eye protection is re-issued it should be thoroughly cleaned and disinfected.

The lenses of eye protectors must be kept clean as dirty lenses restrict vision which can cause eye fatigue and lead to accidents. Lenses that are scratched or pitted must be replaced as they may impair vision and their resistance to impact may be impaired. Transparent face shields must be replaced when warped, scratched or have become brittle with age.

Users should regularly inspect the eye protection provided by checking:

- Lenses – any significant scratches, abrasions, clouding or discolouration should result in the lenses being replaced.
- Frames – should be undistorted and undamaged and capable of being adjusted to give optimum fit. Any ventilation openings on goggles should be unclogged and secure in the frame, side shields if fitted should be secure and undamaged.
- Face shields – welding shield windows should hold the filters securely, flip down holders should close without allowing entry of stray light. Mesh screens should not be torn or distorted.
- Headbands – should provide a secure optimum fit and be easily adjustable. There should be no slippage in headband assemblies when they are tightened.

Any defects should be reported to a supervisor as soon as possible to arrange repair or replacement.

8. Provision of eye protection for staff and students

Staff

Eye protection must be provided at no cost to employees. Where practicable it should be provided on a personal basis. If possible employees should be involved in choosing their own. When eye protection is needed for occasional use only a communal supply must be kept.

Undergraduate students

Schools are responsible for risk assessing undergraduate laboratory practicals and ensuring eye protection identified in risk assessments is provided free of charge and is worn. This

can be either basic eye shields which can be worn over prescription glasses, or communal if more specialist protection is required for specific projects or tasks.

Postgraduate students

Postgraduate students should also be provided with eye protection free of charge, as required by risk assessment. This will normally be basic eye shields or communal specialist equipment. If prescription safety glasses are regarded as essential due to the nature and/or long duration of the work, the School must pay for these.

9. Requirements for visitors

Contractors are required to provide their own eye protection. Other visitors to hazardous areas should be provided with suitable eye protection in accordance with the findings of risk assessments.

Appendix 1 Selection of occupational eye protection

There are three main types of eye protection: spectacles, goggles and face shields.

Spectacles can come as twin type lenses (including corrective prescription lenses) held within a conventional spectacle frame or one-piece single lens units sometimes known as eye shields. The more modern style of spectacles come with adjustable side arms for improved fit and comfort and often side shielding. Also included in this category are the eye shields designed to be worn over normal prescription glasses.

Goggles may also come as twin lenses type (cup frames) or single lenses with box frames. Goggles are usually held in position by a headband and provide complete enclosure of the eyes. Frames may sometimes include direct or indirect ventilation to prevent misting of the lenses. In some cases larger box type goggles can be worn over prescription glasses.

Face shields may comprise a single piece sheet or moulded visor attached to a brow guard or headband and some available can be attached to a safety helmet. Face shields provide protection to all or part of the face and may be worn over prescription glasses. Some face-shields can provide protection to UV radiation. Welding face-shields are opaque with an aperture to accommodate welding filters.

Selection of the correct type of eye protectors depends on the nature of the hazard.

Impact		
A	High energy impact	Only available in polycarbonate face shields
B	Medium energy impact	Goggles and face shields (polycarbonate or acetate)
F	Low energy impact	Spectacles, goggles and face shields (polycarbonate or acetate)
S	Enhanced solidity	Spectacles, goggles and face shields (CR39, toughened glass)
Other uses		
	Short circuit electric arc	Face shield only
	Molten metal and hot solid	Goggles and face shield
	Liquid droplets	Goggles recommended
	Liquid splashes	Spectacles, goggles or face shields dependent on chemicals and volumes used
	Large dust particles	Goggles
	Fine dust, vapours and gases	Goggles
	Ultra violet (natural exposure – sun)	Spectacles with 100% UV protection
2(C)/ 3	Ultra violet (artificial)	UV specified face shields
	Lasers	Spectacles and goggles - care must be taken to select the correct lens filter for the laser wavelength
	Welding	Specific welding face shields with appropriate filter (numbered 1-7)