

## SELECTION AND USE OF EYE PROTECTION

Protection depends on an appreciation by management of the possible sources of injury and their effects together with expertise in the careful control of dangerous processes.

Minimisation of risks to the eyes is most effective when the plant is designed to eliminate as far as possible any risk of injury. Where the precautions built into the plant fall short of perfect, a second line of defence must be provided by supplying personal protective equipment for employees exposed to the hazards.

Such measures impose a responsibility on management for adequate training and supervision so that the importance of the equipment is understood and its use accepted as a personal responsibility by the employee. Management must set an example by meticulously obeying its own rules. Protection against all types of injury depends on good housekeeping and a satisfactory general environment. Types of hazard to the eyes and measures for reducing the risk of injury from them are discussed below.

The correct selection and use of eye protection can easily prevent entirely avoidable eye injury, which may have lifelong consequences.

### The main types of eye protection available include

**Safety spectacles**, the most widely used form of eye protection. For spectacle wearers prescription safety glasses will be provided if the employee is required to wear eye protection.

**Goggles** should be worn when handling hazardous liquids or other materials where there is a risk of foreign objects getting around normal safety glasses.

**Full-face visor** provides protection to the whole face and thus provides greater protection against the risk of chemical burns.



**The correct type of eye protection must be selected for the hazard.**

The hazards that need to be considered include:

- impact by solid particles
- droplets and splashes of liquids, including hot liquids
- large dust particles
- gas and fine dust particles
- molten metal and hot solids

For adequate protection, the eye protection used must meet the required standard, and this is set out in BS EN 166, summarized as follows.

<b>Current description</b>	<b>Marking</b>	<b>Former hazard description</b>
Increased robustness	EN 166 S	<i>Basic impact (12m/sec)</i>
Low energy (45m/sec)	EN 166 F	<i>Grade 2 impact (45m/sec)</i>
Medium energy (120m/sec)	EN 166 B	<i>Grade 1 impact (120m/sec)</i>
High energy (190m/sec)	EN 166 A	<i>No equivalent</i>
Droplets & splashes of liquids	EN 166-3	<i>Chemical splash</i>
Large dust particles	EN 166-4	<i>Dust</i>
Gas & fine dust particles	EN 166-5	<i>Gas</i>
Short circuit electric arc	EN 166-8	<i>No equivalent</i>
Molten metal and hot solids	EN 166-9	<i>Molten metal</i>

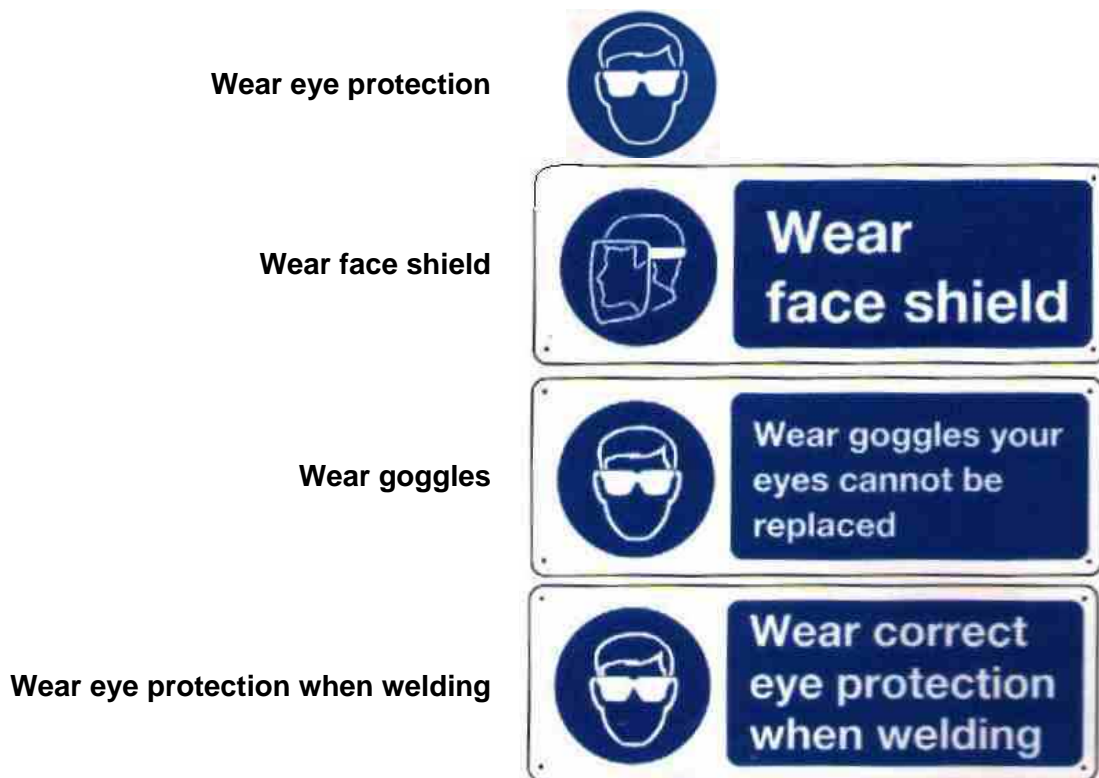
**Examples of the types of eye protection available and their application:**

<b>Safety spectacles</b>	Low to medium energy impact Large dust particles
<b>Goggles</b>	Low, medium to high energy impact Large dust particles Gas and fine dust particles
<b>Full face visor</b>	Increased robustness Droplets and splashes of liquids
<b>Retractable visor</b>	Increased robustness, low energy impact Large dust particles (limited)
<b>Welding shield</b>	Welding applications (meeting BS EN 169 and BS EN 175)

**Eye protection will be required when undertaking any of the following activities:**

- using hammers and chisels
- the handling of, or coming into contact with, corrosive or irritant substances such as acids or alkalis such as cement
- the use of any gas, vapour, dust or powder under pressure
- any work with molten metals or other molten substances
- work with any hot liquids, dusts or powders
- working with any equipment which uses light-producing instruments
- work carried out using abrasive material where sparks may be given off
- work with any tools which will result in chippings being broken off
- work with milling machines where fine fragments are spun off at speed
- work with equipment where radiation is given off
- work involving welding where intense lights may be produced

**Wearing eye protection is mandatory where a notice indicates that it MUST be worn:**



Places where eye protection MUST be worn include:

- silo fill points while powder is being blown in under pressure
- handling hot dusts
- supervising or attending bitumen deliveries
- breaking out concrete residue in a pan mixer
- removing mortar build up
- handling lime spillages
- chipping welding spatter
- washing down using recycled water at a concrete or mortar batching plant

This list is not exhaustive - there will be other places where you must wear eye protection.

Look after your eye protection - if it becomes scratched or damaged you must obtain a replacement. You are responsible for checking your glasses, goggles or visor.

**QUESTIONS – (there may be more than one correct answer)**

		<b>A</b>	<b>B</b>	<b>C</b>
<b>1</b>	<b>What hazards need to be considered?</b>	Impact by solid particles	Noise and vibration	Droplets and splashes of liquids
<b>2</b>	<b>When is eye protection required?</b>	Using a hammer and chisel	Using a hand held screwdriver	Using a powered hand grinder
<b>3</b>	<b>For high energy impact protection, what gives you better protection?</b>	Safety spectacles	Goggles	Your normal prescription glasses
<b>4</b>	<b>When dealing with droplets and splashing liquids, what gives you better protection?</b>	Safety spectacles	Goggles	Full face visor
<b>5</b>	<b>How will you know what type of protection you should be wearing?</b>	Local signage should be displayed	You should have received training for the task which will tell you what to wear	Assume that you do not need protection unless told

