

# Eye Protection

Toolbox Talk G10



The wearing of Eye & Face Protection in hazardous areas is a requirement under Regulation 4 of the Personal Protective Equipment at Work Regulations 1992.

## When to provide PPE for eyes

Suitable PPE for eyes should be provided when:

- All other means of controlling exposure have been exhausted.
- A risk assessment deems that PPE for the eye is necessary.
- Projectiles and flying particles are present.
- Splashing from hazardous liquids etc. are present i.e. cement, paints, plaster
- Irritant dust and gases etc. are present.
- Intense light and heat are present, i.e. Welding

## How to select suitable PPE for eyes

A risk assessment must be performed so that anyone exposed to hazards that may cause injury to the eyes is given suitable PPE. The following advice should be considered when selecting suitable eye protection for individuals:

- It should match the hazards associated with the task in hand.
- It should provide all-round protection for the eyes when there is a risk of exposure to injurious fumes.
- Full face shields may be preferable for hazards such as molten metal and chemical splashes due to the 'misting up' problems associated with goggles.
- Safety spectacles may be considered as suitable where full all-round eye protection is not necessary.
- There should be an adequate gap between prescription spectacles and eye protectors that are worn over the top of them.
- If eye protectors are worn with other PPE i.e. a hard hat and ear defenders, then all of the PPE should be compatible. This may require the employer to try various types of the same PPE from various manufacturers until a good fit is achieved between it and the wearer.
- If eye protectors are to be re-issued to another employee, and are suitable, they should be thoroughly cleaned and disinfected before the new employee wears them.
- All PPE should be marked with a 'CE' symbol. This demonstrates that it meets the minimum legal standards, usually by conforming to a European Standard. It must also be HSE approved type and standard.

### **Safety Spectacles (Lens strength Grade F)**

They look very similar to ordinary prescription spectacles but very often have side shields fitted to them. The lenses are usually made of toughened glass or polycarbonate. They are available in a range of styles and as such can be matched to the wearer. Most manufacturers can supply safety spectacles with prescription lenses. Moreover, when prescription lenses are fitted, the cost of these falls upon the employer under Regulation 4 of the PPE at Work Regulations 1992 (as amended).



### **Eye shields (Generally lens strength Grade F)**

They have a frameless, one-piece moulded lens. Some designs of eye shields can be worn over prescription spectacles where necessary.



### **Goggles (Generally lens Strength Grade B but may be S or F)**

Very often these are held in place by an attached elastic headband. They give greater protection than the two pieces of protective eyewear already mentioned as they form a seal around the entire periphery of the face. The lenses are often made of plastic or toughened glass.



### **Face shields**

These tend to be heavier and bulkier than other forms of PPE for eyes. They usually have an adjustable headband or harness fitted with either a one piece ear shield protecting the entire face, a metal mesh screen or an opaque shield into which lenses are fitted.



### **Combined protection**

This may incorporate eye protection. There are several designs that integrate head, eye and respiratory protection in one unit. The eye protection can stop projectiles and chemicals from entering and injuring the wearer's eyes and provides head protection at the same time, in addition to respiratory protection, usually by supplying the wearer with filtered air or air via a compressed air line.

## **A Brief Guide to the European Standards for Eye Protection - EN166**

All manufacturers of safety eyewear are required to have their products independently tested against a European standard. Firstly it is important to remember that both the Frame and Lens are tested, therefore both must include the CE symbol and the manufacturer's logo. The CE marking certifies that a product has met EU consumer safety, health or environmental requirements.

### **Frame Markings**

The frame will usually be marked on the inside of both arms. All safety frames must pass the European EN166 standard. This is a higher standard than the US or Asian equivalent and is considered the baseline for safety eyewear. If EN166 is not stamped on the frame then it may be advisable to look elsewhere. Next will be numbers and/or letters which indicate to what degree the frames passed the EN166 test within various categories.

### **Lens Markings**

Unlike the frame, lenses can meet various safety standards including EN166, 169, 170 & 172. For obvious reasons the manufacturers are not required to print every standard on the lens but simply the degree to which they meet the standard. Using the guide below you can determine which standards they meet. Once again the manufacturers seal and the CE mark are mandatory. In addition will be a degree of solar or UV radiation protection, the optical quality and then the mechanical strength.

### **Strength**

S - withstand impacts against small objects travelling up to 12 meters per second

F - withstand impacts against small objects travelling up to 45 meters per second

B - withstand impacts against small objects travelling up to 120 meters per second

A - withstand impacts against small objects travelling up to 190 meters per second

T - withstand impacts at extreme temperatures

A - frame/lens can have a combination of these markings.

**Grade B is the minimum requirement for grinding, percussive tools and similar, NOT Grade F or S. This means that safety spectacles cannot be used for such activities.**

**Finally... The user should always check they have been given the correct eyewear to match the task they are undertaking. If in doubt, stop work and check. You only have one pair of eyes!**

