

For your eyes only

One of the most frequent requests for guidance that we receive is for information on protective eyewear. Here we breakdown the information from BS 4163:2014 to help you make the right choice in the workshop.

In BS 4163:2014 *'Health and safety for design and technology in education and similar establishments - Code of Practice'* there are five different levels of PPE protective eyewear directly referred to for use in Scottish Technical departments. Welding has its own classification and two of the five levels detailed are for Soft Soldering and Ferric Chloride Etching respectively and will be covered in a later bulletin article. The three levels of eye protection PPE guidance which are relevant to practical work in Scottish craft rooms are:

BS EN 166:2002 1F low energy impact glasses

The 'F' refers to the mechanical strength, and low energy impact protective eyewear have been tested to resist a 0.86 g steel ball fired at 6 mm thick glasses at 42 ms⁻¹ [1]. This is the minimum standard



of safety glasses that are approved for selected use in a school workshop. However, there are common workshop machines and tool activities where these glasses are not appropriate for use.

These standard of safety glasses are recommended for use with Hand Tool use, Cutting units, Sawing machines, power Hacksaws and metal cutting Bandsaws [2].

BS EN 166:2002 1B medium energy impact goggles

The '1' is the optical quality of the ocular (and 1 is the highest quality available) [3]. The 'B' refers to the resisting of high speed particles, and medium energy impact is tested by firing a 0.86 g steel ball at 120 ms⁻¹ at 6 mm thick goggles [4]. The use of this level of safety goggles will ensure you meet all recommendations for eyewear PPE in a Scottish Technical department (excluding the 3 specific tasks detailed within the face shield spec).



These safety goggles are specifically approved for Abrasive Belt/Linishing machines, Surface Grinding machines, Grinders, Drilling machines, all portable Tool use, Centre Lathe, Wood Lathe [5] and the majority of other workshop tool and machine tasks.

BS EN 166:2002 1 9B face shield

The '9' refers to ocular resistance to molten metals and hot solids on a faceshield [6]. Again the 'B' refers to resisting high speed particles and medium energy impact. These are the only grade of face shield that are acceptable for use during hot metal work.



The faceshield is the only grade of eye protection PPE recommended for Forging, Casting and can also be worn for all Lathe work to protect the full face of the user. ◀

Ensuring the correct level of eye protection PPE being worn in the craft room is essential in contributing to best and current safe practice being applied in a department. Signage should also be displayed to guide users as to which eye protection should be worn for the different tasks. These specific details can then be placed in the department Health and Safety policy and/or pupils' tool and machine passport.

References

- [1] <http://www.abdo.org.uk/wp-content/uploads/2013/04/ABDO-Protective-Eyewear-WEB.pdf>.
- [2] BS 4163:2014 The British Standards Institution.
- [3] <http://www.hse.gov.uk/foi/internalops/oms/2009/03/om200903app3.pdf>.
- [4] <http://www.abdo.org.uk/wp-content/uploads/2013/04/ABDO-Protective-Eyewear-WEB.pdf>.
- [5] BS 4163:2014 The British Standards Institution.
- [6] <http://www.abdo.org.uk/wp-content/uploads/2013/04/ABDO-Protective-Eyewear-WEB.pdf>.