EN 166 – Personal eye protection

EN 166 tests both the lenses and the frames of protective eye wear. On every pair of safety spectacles it should have markings on both the lenses and the frames. The tests include:

Filtering

Code Number	Type of Filter
2	UV Filter
2C or 3	UV Filter with good colour recognition
4	Infrared filter
5	Sun glare filter
6	Sun glare filter with IR specification

Shade Number	Shade Colour/s
1,2	Clear / Amber
1,7	I/O / Minimizer
2,5	Bronze / Grey
3,1	Dark Bronze / Dark Grey / Blue Mirror / Red Mirror

Optical Class

Optical class denotes how long the safety eyewear can be worn for:

Optical Class	Wearing Time
1	Permanent Wear
2	Intermittent Wear
3	Sparse Wear

Impact Resistance

Details	Frame Marking	Lens Marking	Test
Increased Robustness		S	Resists a 22mm, 43g ball at 12 m/s.
Low Energy Impact	F	F	Resists a 6mm, 0.86g ball at 45 m/s.
Medium Energy Impact	B	B	Resists a 6mm, 0.86g ball at 120 m/s.
High Energy Impact	A	A	Resists a 6mm, 0.86g ball at 190 m/s.
Extreme	T	T	The letter “T” after the

Temperature			impact rating means it has that impact rating at extreme temperatures (-5 to +55)

Additional Requirements

Reference Letter/Number	Protection Against
8	Short circuit electric arc
9	Molten metal splash
K	Scratch Resistance
N	Resistance to fogging

Fields of Use

Code Number	Protection Against
3	Liquid Droplets (Goggles) / Liquid Splashes (Visors)
4	Large Dust Particles (up to 5µm) (Goggles)
5	Gas and Fine Dust (below 5µm) (Goggles)
8	Short Circuit Electric Arc (Visors)
9	Molten Metal and Hot Solids (Goggles/Visors)