

# EYE PROTECTION



- Technical Data Information
- Spectacles
- Goggles

## Technical Data Information

Potential Hazards	Cause and Damages	Common Related Tasks
Impact	Depends on size, heavy impact or speed of a flying object e.g. wood or metal	Grinding, Lathe, Sanding, Wood cutting-sewing, drilling, etc.
Chemical	Explosion, splash, fume, vapors, risk of chemical Causes burning, eyesore, swelling or red eye	Chemical mixing-cleaning, plating metal, blood or secretion.
Particulate	Areas where there is a lot of dust.	Woodworking, cement
Light, Radiation	UV, IR (Infrared Rays), and reflection	Welding, Argon, TIG or Plasma
Heat	Thermal energy, high temperature	Fumace operations, welding, hot dipping

## Eye Protection Types

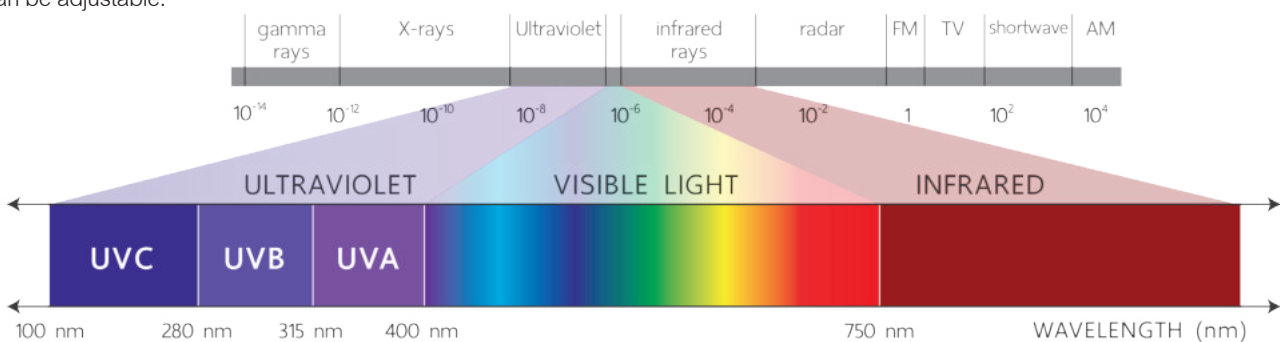
There are many kinds of eye protection. The most important thing is selecting the suitable one for the risk encountered. Eye protection can be classified as follows:



**1. Spectacles:** Safety Spectacles are designed to protect eye both in front and from the sides. Most lens types are manufactured from optical quality polycarbonate and can be treated to give abrasion resistance and/or anti-mist properties. Spectacle frames are designed to fit most facial contours and can be adjustable.



**2. Goggles:** Goggles are fitted with a soft PVC frame that surrounds the ocular area and are generally fitted with an elasticated headband. Lenses are generally optical quality polycarbonate and can be treated to give abrasion resistance and/or anti-mist properties.



**Visible Light and the Eye's Response** The eye can detect light at wavelengths in the visual spectrum, in the wavelengths between 380-750 nanometers. When white light shines through a prism, the white light is broken apart into the colors of the visible light spectrum. If we know the wavelength in our workplace, it will be easy to select a lens type for effective protection, e.g.

**UV 99.9%** is the qualification of polycarbonate lens that protects against UV light at wavelength of 380 nm. (UV A partial, B, C)

**UV 100%** is the qualification of polycarbonate lens that protects against UV light at wavelength of 400 nm. (UV A, B, C)

### Knowledge

#### Polycarbonate Lens Characteristics

1. Strongest material for impact resistance
2. Light weight
3. Most have built-in UV radiation protection
4. Can be coated for abrasion resistance or anti-mist properties

Features & Benefits

**Lens** moulded from optical quality polycarbonate. They are stronger than regular lenses, are impact-resistant, lightweight and can be tinted or vacuum coated. CE approved to EN 166

**Soft Temples** provide a comfortable and secure fit.

**Adjustable Temple Arms** can be adjusted vertically and/or horizontally for maximum comfort and security and to suit individual wearers

**Len Colors** variety of tints and vacuum coatings are available to suit most radiation hazards encountered.



**GLSS0102**  
Spectacle  
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**Spectacle Cord** is included with most models to ensure no loss of fit spectacles.

Knowledge



Clear

**Clear lens** protects against flying particles.



Indoor/  
Outdoor

**I/O lens** works in and out door e.g. warehouse



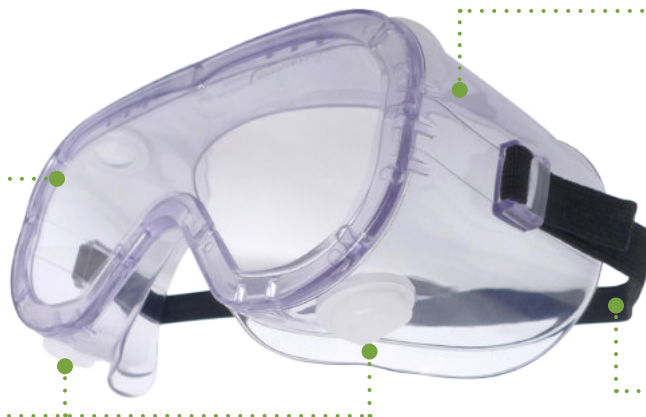
Grey

**Grey lens** used outdoors to reduce glare

**Soft Nosebridges** made of synthetic rubber and can be adjusted to individual requirements ensuring a non-slip fit whilst sitting comfortably on the nose.

Features & Benefits

**Lens** moulded from optical quality polycarbonate. CE approved to EN 166



**Ventilation Port**  
Reduces misting but not suitable for toxic Gas protection.

**GLSS0082**  
Goggle  
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**Goggle Frame** is flexible and fits to facial contour.

**Head Band** is elastic, flexible and adjustable.

Safety Eyewear

1. Inspect eye protection before use for scratches, breakages, pits or blemishes or broken lens.
2. Clean lenses in line with manufacturer's recommendations.
3. Adjust spectacles to fit the face shape.
4. Do not put the lens down on the work surface as it may scratch the lens.
5. Always wear eye protection while working.

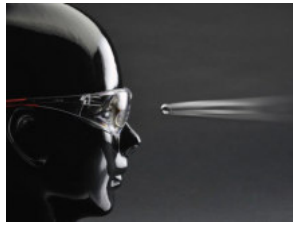
Maintenance

1. Clean the eye protective equipment after use.
2. Keep in a clean and dry area and away from chemicals or excessive heat etc.
3. If damaged or after impact replace immediately.

## Technical Data Information

### Impact-Resistant Lens

Tested by firing 6 mm steel ball at varying speeds both frontal and laterally.



- F** Low energy (45 m/s)
- B** Medium energy (120 m/s)
- A** High energy (190 m/s)

### Types and Color Shades

Lenses Color	Clear	Indoor/outdoor	Grey
Filter type and shade EN 166	2-1.2	5-1.7	5-2.5

### Optical Class

Symbols	Optical Class
1	+/- 0.06: Can be worn often
2	+/- 0.12: For occasional wear
3	+/- 0.25: Limited wear only

### Other Qualifications (EN166)

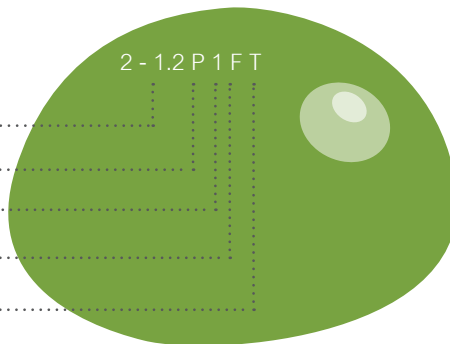
N	Anti-Mist Coated
K	Scratch-Resistant Coating
T	Extremes of Temperature -5°C - 55°C (+/-2°C)
3	Liquid Splash
4	Coarse Dust Particles (>5 micron)
5	Fine Dust Particles and Gas (<5 micrometre)
9	Molten Metal and Hot Solids

### Spectacle's Standard

- EN 166 Personal Eye Protectors
- EN 169 Filters for Welding
- EN 170 Ultraviolet (UV) Filters
- EN 172 Sunglare Filters for Industrial Use
- EN 175 Eye and Face Protectors for Welding

### Lens Marking

- Scales number (filters only)
- Identification of the Manufacturer
- Optical class
- Symbol for mechanical strength
- Other qualification

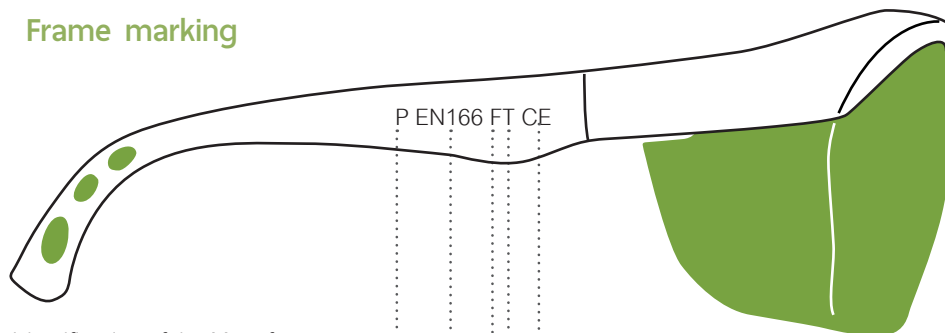


### Symbols

- Anti-Scratch Lens
- Anti-Fog Lens

### Frame marking

- Identification of the Manufacturer
- Number of the EN standard
- Symbol for resistance to high speed particles
- Other qualification
- Certification mark



- Adjustable Temple Length
- Pantoscopic Adjustment
- Soft Rubber

Spectacles

Specification

- Lenses manufactured from optical quality polycarbonate.
- Most models have abrasion resistant and anti-mist lenses fitted as standard.
- Superior vision to optical Class 1
- Impact resistant to EN 166 level F **F**
- All spectacles tested at extremes of temperature



Len Types	UV Protection	Workplace
Clear	UV 99.9%	Indoor, Laboratory, Maintenance
I/O	UV 100 %	Indoor and outdoor
Grey	UV 99.9%	Outdoor

Spectacles # ET-46A

EN166 ANSI Z87.1

- Panoramic lens c/w impact resistant integrated sideshields ensures optimum coverage.
- Abrasion Resistant & Anti-mist lens.
- Adjustable ratchet temple arm.



Code	Description	Color	UOM	Package
GLSS0088	Spectacles #ET-46A+	Grey	1 piece	12 pieces/box
GLSS0089	Spectacles #ET-46A+	Clear	1 piece	12 pieces/box
GLSS0090	Spectacles #ET-46A+	I/O	1 piece	12 pieces/box

Spectacles # ET-83R

EN166 ANSI Z87.1

- One piece optical quality polycarbonate lens c/w integrated sideshields.
- Abrasion Resistant & Anti-mist lens.
- Ergonomically designed nosebridge for a secure and comfortable fit.
- Fully adjustable temple arm for optimum fit.



Code	Description	Color	UOM	Package
GLSS0098	Spectacles #ET-83R+	Clear	1 piece	12 pieces/box
GLSS0099	Spectacles #ET-83R+	Grey	1 piece	12 pieces/box
GLSS0100	Spectacles #ET-83R+	I/O	1 piece	12 pieces/box



**Spectacles # J-13S-2**

EN166 ANSI Z87.1

- One piece optical quality polycarbonate lens c/w integrated sideshields.
- Abrasion Resistant & Anti-mist lens.
- Ergonomically designed nosebridge for a secure and comfortable fit.
- Adjustable temple arm for optimum fit.
- Soft temple tips for additional comfort

Code	Description	Color	UOM	Package
GLSS0101	Spectacles #J-13S-2+	Clear	1 piece	12 pieces/box
GLSS0102	Spectacles #J-13S-2+	Grey	1 piece	12 pieces/box
GLSS0103	Spectacles #J-13S-2+	I/O	1 piece	12 pieces/box



**Spectacles # J-55**

EN166 ANSI Z87.1

- Modern, lightweight design
- Optical quality lens offering excellent all round vision
- Abrasion resistant anti-mist lens fitted as standard
- Soft ear pieces provide a secure optimum fit.
- Ergonomically designed nosebridge for a secure and comfortable fit.



Code	Description	Color	UOM	Package
GLSS0104	Spectacles #J-55+	Clear	1 piece	12 pieces/box
GLSS0105	Spectacles #J-55+	Grey	1 piece	12 pieces/box



**Spectacles # S-278**

EN166 ANSI Z87.1

- Modern, stylish design
- One piece optical quality polycarbonate lens c/w integrated sideshields.
- Abrasion resistant & anti-mist lens
- Ergonomically designed nosebridge for a secure and comfortable fit.

Code	Description	Color	UOM	Package
GLSS0106	Spectacles #S-278+	Clear	1 piece	12 pieces/box
GLSS0107	Spectacles #S-278+	Grey	1 piece	12 pieces/box

Goggles

Specification

- Lenses manufactured from optical quality, impact resistant polycarbonate.
- All lenses either abrasion resistant, anti-mist or both
- Optical Class 1 for superior vision
- Soft PVC frames for added comfort
- EN 166 level B impact resistant
- Various models tested for protection against dust, chemical splash and molten metal/hot solids.
- All models tested at extremes of temperature
- Must Pangovision goggles can be fitted over most prescription spectacles.



Eye Protection

Superior Range of Goggles: G-08V & G-11 Impact & Chemical Resistant Goggle

EN166, ANSI Z87.1

- Optical quality polycarbonate lens c/w abrasion resistant & anti-mist coating
- Ergonomic panoramic design affording excellent peripheral vision and protection.
- Soft PVC frame for superb comfort and fit.
- Fully adjustable, high quality head strap.
- Sophisticated indirect ventilation system ensures exceptional wearer comfort.
- GLSS00109 has a unique design affording complete protection when worn with half mask respirators.



G-08V



GLSS0108



G-11



GLSS0109

Can be used over most prescription spectacles.

Ergonomic design, panoramic vision for optimum protection & comfort.

Code	Description	Color	UOM	Package
GLSS0108	Goggles #G-08V+	Clear	1 piece	10 pieces/box
GLSS0109	Goggles #G-11+	Clear	1 piece	10 pieces/box



EN166, ANSI Z87.1



EN166, ANSI Z87.1

Impact Resistant Goggle # A611

- Economic box type goggle
- Hypoallergenic, soft PVC frame
- Direct ventilation
- Adjustable head band

Code	Description	Color	UOM	Package
GLSS0081	Goggles #A611+	Clear	1 piece	12 pieces/box

Eco-Impact & Chemical Resistant Goggle # A611-1

- Superior box type goggle c/w anti-mist lens
- Hypoallergenic, soft PVC frame
- Indirect ventilation
- Adjustable head band
- Offers additional protection against large dust particles, chemical splash & molten metal/hot solids

Code	Description	Color	UOM	Package
GLSS0082	Goggles #A611-1+	Clear	1 piece	12 pieces/box



Accessory



Spectacle Cord

- For all spectacles

Code	Description	Color	UOM	Package
GLSS0062	Spectacles Cord	Black	1 piece	50 pieces/box

Visitor Spectacles # P660

CE EN166, ANSI

- Economic polycarbonate one piece visitors spectacle
- Can be worn over most prescription spectacles
- Abrasion resistant
- Optical class 1 lens
- Comes with free spectacle cord as standard
- Impact resistant to EN 166 F

Code	Description	Color	UOM	Package
GLSS0080	Visitor #P660+	Clear	1 piece	12 pieces/box



Welding Goggle



Welding Goggle # WG-008

CE EN166, ZNSI Z87.1

- Soft close-fitting frame fitted with flip-up welding lens
- 108mm x 50mm UV/IR shade 5 welding lens (EN169)
- Replaceable optical quality cover and backing lenses
- Indirect ventilation
- Fully meets the requirements of EN166 & EN175

Code	Description	Color	UOM	Package
GLSS0015	Welding Goggles #WG-008:	Green	1 piece	10 pieces/box

Welding Goggle # GW250

EN166:2001 EN175:1997

- Soft close-fitting frame fitted with flip-up welding lenses
- 50mm UV/IR shade 5 welding lenses (EN169)
- Replaceable optical quality cover and backing lenses
- Indirect ventilation
- Fully meets the requirements of EN166 & EN175

Code	Description	Color	UOM	Package
GLSS0085	Welding Goggles #GW250+	Green	1 piece	12 pieces/box