PORTWEST®

Eye Protection Range

USA Standards

ANSI/ISEA Z87.1: 2015

American National Standard - Personal Eye and Face Protective Devices.

ANSI Z87.1 sets forth criteria related to the general requirements, testing, permanent marking, selection, care and use of protectors to minimize or prevent injuries from such hazards as impact, non-ionizing radiation, and chemical exposures in occupational and educational environments including, but not limited to, machinery operations, material welding and cutting, chemical handling, and assembly operations. The most recent update of ANSI Z87.1 was established in 2015. The new standard is focused on the hazards and is organized so that users can seek guidance by type of hazard, such as impact, optical radiation, splash, fine dust and mist.

ANSI Z87.1: 2015 markings

Marking	Meaning	Position
PW: Portwest	Manufacturer Identification	Frame & Lens
Z87	Non Impact protector	Frame & Lens
OPTIONAL MARKINGS Required only when impact rating is claimed by the manufacturer	**Meaning**	**Position**
Z87+	Impact protector	Frames used for an impact-rated protector are marked with Z87 + (lenses show just a " +" symbol)
OPTIONAL MARKINGS Required only when special lens/use is claimed by the manufacturer	**Meaning**	**Position**
-(no marking)	Lens type - Clear	
W - followed by shade number	Lens type - Welding	Lens
U and scale number*	Lens type - UV filter	Lens
L and scale number*	Lens type - Visible light filter	Lens
R and scale number	Lens type - IR filter	Lens
V	Lens type - Variable Tint	Lens
S	Lens type - Special Purpose	Lens
D3	Splash/Droplet	Frame
D4	Dust	Frame
D5	Fine Dust	Frame

PREMIUM PROTECTION

*** = see tables below for more details on U marking (UV filters performances) and L marking (Visible Light Filters performances)**

Transmittance requirements for Visible Light Filters:

Scale (Marking)	Maximum %	Nominal %	Minimum %
L1.3	85	74.5	67
L1.5	67	61.5	55
L1.7	55	50.1	43
L2	43	37.3	29
L2.5	29	22.8	18
L3	18	13.9	8.5
L4	8.5	5.18	3.16
L5	3.16	1.93	1.18
L6	1.18	0.72	0.44
L7	0.44	0.27	0.164
L8	0.164	0.1	0.061
L9	0.061	0.037	0.023
L10	0.023	0.0139	0.0085

Transmittance requirements for Ultraviolet Filters:

Scale (Marking)	Maximum effective Far-Ultra-Violet (200-315nm) Average transmittance %	Maximum effective Near-Ultra-Violet (325-380nm) Average transmittance %
U2	0.1	3.7
U2.5	0.1	2.3
U3	0.07	1.4
U4	0.04	0.5
U5	0.02	0.2
U6	0.01	0.1

MANUFACTURER DECLARES
ANSI ISEA Z87.1
PRODUCT TESTED TO

European Standards

EN 166: 2001 Personal Eye Protection

European Standard, applying to all types of individual protection of the eye which protects from hazards likely to damage the eye, except for nuclear radiation, x-rays, laser emissions and infrared emitted by low-temperature sources. Does not apply to eye protection for which separate standards exist (e.g. anti-laser eye protection, sunglasses for general use).

EN 170:2002 European Standard for Ultraviolet Filters

Specifies the scale numbers and transmittance requirements for filters for protection against ultraviolet radiation.

EN 172 European Standard for Sun glare filters for industrial use

Specification for Sun glare Filters Used In Personal Eye-Protection For Industrial Use

EN 166 Markings

MANUFACTURER SYMBOL	Lens / Visor	Frame / Holder	Glasses	Goggles	Visors
PW: Portwest	✓	✓	✓	✓	✓
OPTICAL CLASS					
1: Permanent wear (distortion free)					
2: Occasional wear	✓		✓	✓	✓
3: Brief wear					
MECHANICAL RESISTANCE					
S: Minimal impact resistance (5,1 m/sec)			✓	✓	✓
F: Low energy impact (45 m/sec)			✓	✓	✓
B: Medium energy impact (120 m/sec)	✓	✓		✓	✓
A: High energy impact (190 m/sec)					✓
T: Impact test at extreme temperature (-5°C/+55°C) OPTIONAL			✓	✓	✓
CHEMICAL RISKS (OPTIONAL)					
3: Resistance to liquid droplets				✓	
3: Resistance to liquid splashes	✓	✓			✓
4: Resistance to large dust particles (with > 5µm grain size)				✓	
5: Resistance to gases and fine dust particles (with < 5µm grain size)				✓	
ELECTRICAL RISKS (OPTIONAL)					
8: Short circuit arc resistance		✓			✓
THERMAL RISKS (OPTIONAL)					
9: Molten Metal splashes and hot solid projections		✓			✓
LENS TREATMENTS (OPTIONAL)					
K: Resistance to surface damage by fine particles (anti-scratch treatment)	✓		✓	✓	✓
N: Resistance to fogging of oculars (anti-fog treatment)					

AF **N**

- AF = Anti-Fog treatment (corresponds to N - when the treatment is certified by the notified body and marked on the lens).

AS **K**

- AS = Anti-Scratch treatment (corresponds to K - when the treatment is certified by the notified body and marked on the lens).