

CHOOSING SAFETY
GLASSES VS GOGGLES VS FACE SHIELDS

Australians suffer around 50 000 eye injuries every year even though many of them were wearing eye protection at the time of their injury.

Safety eyewear is often incorrectly fitted, is not rated appropriately for the task or does not provide adequate protection. Subsequently, injuries often occur when foreign bodies enter under, over or around the sides of the safety eyewear, according to [a 2008 report from Safe Work Australia](#) (SWA).

These eye injuries can lead to permanent vision loss, contributing to depression and negatively affect work and social relationships, as described in a Comcare [“Eye Health in the Workplace”](#) guide.

The most dangerous injuries for the eyes are construction, mining, agriculture, forestry and fishing industries, in which 60 per cent of all eye injuries in Australia occur. Chemical splashes, metal or plastic debris hitting the eye, tools accidentally striking the face, and improper use of equipment are the most common causes.

It is therefore critical you have the appropriate eye protection. That means knowing when to use medium, high or extra high impact rated eye protection and when to use safety glasses, safety goggles, face shields or a combination of these.

Choosing your impact rating

Eye protection impact ratings are determined by its ability to withstand an impact from a specifically weighted ball without cracking, detaching or dislodging, breaking or coming into contact with the eye or the head.

Low Impact: Can withstand impact from an object moving at 12 metres per second.

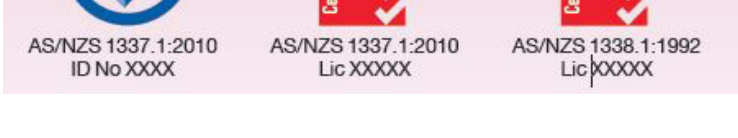
Medium Impact: Can withstand impact from an object moving up to 45 metres per second.

High Impact: Can withstand impact from an object moving up to 120 metres per second.

Extra High Impact: Can withstand impact from an object moving up to 190 metres per second.

Impact resistance Certification

All ProChoice safety eyewear is rated medium impact or higher, have polycarbonate lenses; 99.9% UV protection and are Certified to AS/NZS1337.1:2010 Standards. That [Certification means you have quality assurance](#) that the product will perform as stated. Check your safety eyewear to see if it has the Australian Standards logo which indicates they conform to tests for impact resistance.



Choosing Impact Resistance

Figure 1.0 outlines how different ratings are marked while Figure 1.1 provides broad guidance on what impact protection rating should be considered for different tasks. However this information should not be relied upon to determine suitable safety eyewear. A [risk assessment should be carried out](#) by a [qualified OHS professional](#) to choose which PPE suits your work environment.

Figure 1

Type of Protector	Ocular Marking	Eye Protector Marking
Low Impact	The letters 'HT' where the ocular heat is tempered The letters 'CT' where the ocular is chemically treated Use of the letter 'S' is optional	No requirements additional to Clause 3.5.1(a) Use of the letter 'S' is optional
Medium Impact	As for low impact and with the letter 'I' or 'F' *	As for low impact and with the letter 'I' or 'F' *
High Impact	As for low impact and with the letter 'V' or 'B' *	As for low impact and with the letter 'V' or 'B' *
Extra High Impact	As for low impact and with the letter 'A'	As for low impact and with the letter 'A'
Molten Metal and Hot Solids	As for low impact and with the letter 'M' or '9' *	As for low impact and with the letter 'M' or '9' *
Splashproof	As for low impact	As for low impact and with the letter 'C' or '3' *
Dustproof	As for low impact	As for low impact and with the letter 'D' or '4' *
Gastight	As for low impact	As for low impact and with the letter 'G' or '5' *
Outdoor Use, Untinted	The letter 'O'	As for low impact and with the letter 'O'
High Temperature	As for low impact and with the letter 'H'	As for low impact and with the letter 'H'

*Second letter or number is that specified in the EN and proposed ISO Standard. Future revision will specify this marking where there is currently an alternative

Figure 1.1

Hazard	Task	PPE
Impact: flying or falling objects, fragments or particles, including sparks, sand, dirt and large chips	Chipping	Safety glasses are the minimum and preferably will have side shields to reduce the risk of foreign objects going around the lenses.
	Grinding	
	Drilling	
	Sawing	
	Chiselling	
	Sanding	Safety goggles are more effective at protecting against hazards from going under or around the edges due to the seal.
	Riveting	
	Machining	
	Spalling	The impact rating of the lenses should be fit for the task.
	Hammering	
Heat: anything emitting heat at high temperatures including molten metal and sparks.	Managing a strap under tension	Face shields are recommended for explosive power tools, including nail guns.
	Using power tools or nail guns	
	Landscaping	
	Wire handling	Safety glasses/goggles with lenses fit for high temperatures.
	Brick cutting	
	Stone dressing	
	WoodworkingMetalworking	When working with molten metal, safety goggles and face shields are vital to reduce the risk of splash injuries.
	Welding	
	Pouring	
	Casting	Safety goggles and/or face shields must be used.
Chemicals: splashes, sprays, mists, vapours and fumes	Hot dipping	
	Operating furnaces	Safety goggles are NOT adequate protection against chemical hazards.
	Acid and chemical handling	
	Degreasing	
	Plating	Safety goggles are the only PPE which provide adequate protection against harmful dust and airborne particles as they form a protective seal around the eyes.
	Woodworking	
	Buffing	
	Generally dusty conditions	Filter lenses in protective eyewear should be fit for the maximum intensity of radiation the worker could potentially be exposed to in the task.
	Welding	
	Soldering	
Radiation: intense concentrations of heat, infrared, ultraviolet and reflected light radiation	Working with lasers	Welding helmets should always be used.
	Torch-cutting	
	Brazing	Protective eyewear with a UV protection rating should be used when working outdoors.
	Outdoor work (UV from the sun)	

Sourced from information contained in the [US Eye and Face Protection e-Tool](#) and [Better Health Victoria's Eye Safety at Work](#).

The difference between glasses goggles and face shields

Safety glasses allow air in and around the eye area while safety goggles fit tight against the face, offering protection against dust and splashes. Face shields provide further protection and can also be worn over spectacles or goggles.

In determining suitable safety eyewear, [a risk assessment should be carried out](#) by a [qualified OHS professional](#) to choose what suits your work environment.

Figure 2.0 gives some guidance on the selection of appropriate protective eyewear; whether a spectacle, goggle or face shield:

Figure 2.0

Appropriate Eyewear Selection Guide:			
Work Situation	Spectacle	Goggle	Faceshield
Chemical Cleaning		•	•
Education	•	•	•
Furnace Operation, Pouring, Casting			•
General Engineering Workshop	•	•	•
General Factory Areas	•	•	
Hazardous Chemical Use (Splash)		•	
High Dust Environment		•	•
Laboratories - Hazardous Chemical		•	•
Laboratories - Non-Hazardous	•	•	•
Light Chemical Use (No Splash)	•	•	•
Masonry Work - Brick/Stone/Concrete		•	•
Medical and Dentistry	•	•	•
Metal Grinding / Turning		•	•
Solid Chemical Handling	•	•	•
Spray Painting		•	•
Waste Handling	•	•	•
Woodworking (Non-powered hand tools)	•	•	•
Woodworking (Power tools)		•	•

PLEASE NOTE: This table is a general guide only and is not an absolute basis for eyewear selection as some working conditions may require customised protection.

NOTE: Ordinary eyewear such as prescription glasses, sunglasses or contact lenses do not offer appropriate eye protection and can actually increase the severity of injuries in the event of an incident.
While impact resistance and the type of protection is critical, other considerations should also include the type of lense, the shape of your head and if anti-fog lenses for use in humid conditions are required (see more on these below).

UV Damage

The sun’s ultraviolet radiation can cause a range of conditions, from mild irritation to cataracts and cancer of the conjunctiva.

All ProChoice safety glasses – even those with clear lenses – provide 99.9% UV protection, so if you are using a ProChoice product, this is one eye hazard you do not need to worry about.

Choosing the Right Lense

The correct choice of lense finish plays an important part in the safety eyewear selection process. Consider the following features:

Amber Lenses: The characteristics of the filter show absorption of the blue light in the visible range; producing contrast enhancement in low light.

Clear Lenses: Provide protection against general indoor hazards.

Smoke Lenses: Filter harmful UV rays as well as visible light and reduces glare from artificial light.

Polarised Lenses: Filter glare and enhance contrast.

Mirror Lenses: The mirror coating reduces the amount of light through the lens by reflecting the glare.

Indoor / Outdoor Lenses: A slight mirror coating on a clear lense allows more visible light through and reduces glare from artificial light.

Choosing the right frame shape

All ProChoice eye protection has a “frame shape”, which is designed to match the user’s face shape and provide the best possible fit, comfort and protection.

OVAL

Oval shaped faces have a forehead that’s just slightly wider than their chin (like an upside down egg). The jawline is somewhat rounded and the face shape is longer than it is wide.
Suited Frame Shape: Square with rounded edges.

SQUARE

Straight sides of the face typify a square face, and they are nearly as wide as they are long. A strong jawline is defining feature of this face shape, with only a minimal curve.
Suited Frame Shape: Oval shape.

ROUND

Round faces are often associated with round plump cheeks but that isn’t always the case. The cheekbones are the widest part of the face on round face shapes and The jaw will be curved. Much like a square face with softer angles.
Suited Frame Shape: Wide and angular

HEART

Heart-shaped faces have a long and pointed jawline. The chin is the smallest point of a heart shaped face; much like an upside down triangle.
Suited Frame Shape: Rounded edges

LONG

Long or rectangular face shapes are characterised by a long length but also forehead, cheeks and jawline should all be pretty much the same width.
Suited Frame Shape: Oversized, round or square frames

DIAMOND

A diamond shaped face has a narrow and pointed chin as well as high cheekbones. The difference between diamond shaped faces and heart shaped faces is that the hairline is narrower on a diamond shaped face.
Suited Frame Shape: Oval or frameless shapes