

Product Information Report

Welding PPE (Personal Protective Equipment)



Proper



Improper

Overview

The Bureau of Labor Statistics reports that every day about 1,400 welders suffer eye injuries caused by hazards such as radiation, heat, spatter, slag, fumes and gases. To minimize injuries, welders must be aware of these risks and use the appropriate personal protective equipment (PPE). Wearing the proper PPE saves companies time and money that might have been lost due to worker injury.

What is Proper Welding PPE?

- Safety glasses*
- Respirator
- Helmet, spectacles, goggles
- Gloves
- Welding jacket
- Pants without cuffs
- Face shield

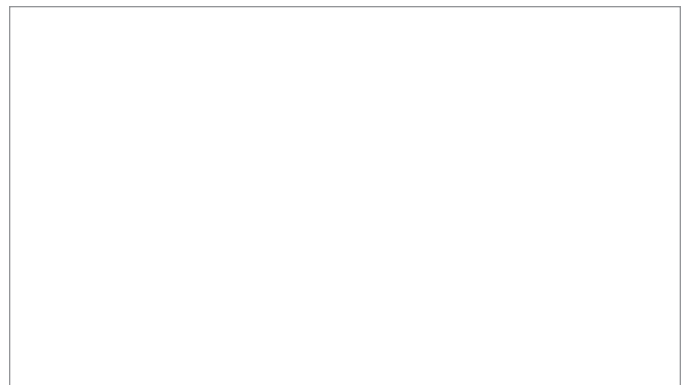
*ONLY with helmet. Spectacles and goggles are too small to wear safety glasses under.



When Must Welding PPE Be Worn?

Proper welding PPE must be worn at all times. Any person working or standing within 20 ft. of a welding arc should wear polycarbonate safety glasses with UV protection or be shielded by an opaque barrier. Any person observing a welding operation should also be wearing the proper PPE.

PPE	Benefits
Helmet and Safety Eyewear	Protects eyes, face, head and neck from heat and radiation
Respiratory Protection	Protects lungs from contaminants and fumes
Gloves	Protects hands from burns and other injuries



Face and Eye Protection



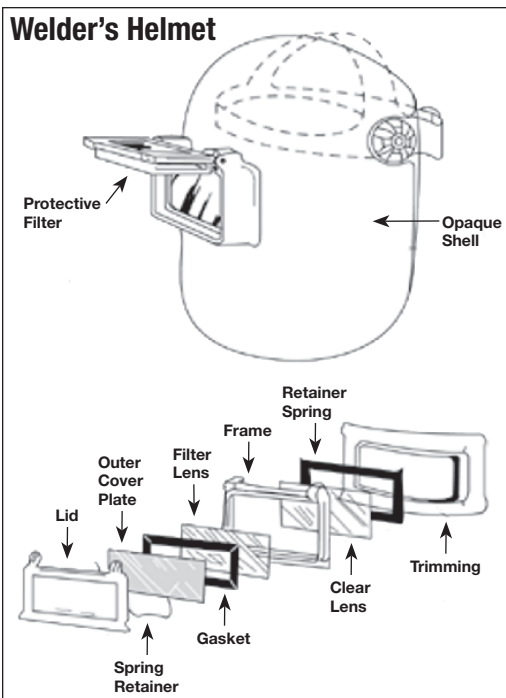
Eye protection is provided in an assembly of components:

- Helmet shell – must be opaque to light and resistant to impact, heat, and electricity
- Outer cover plate made of polycarbonate plastic which protects from UV radiation, impact and scratches
- Filter lens made of glass containing a filter which reduces the amount of light passing through to the eyes. Filters are available in different shade numbers ranging from 2 to 14. The higher the number, the darker the filter and the less light passes through the lens
- Clear retainer lens made of plastic prevents any broken pieces of the filter lens from reaching the eye
- Gasket made of heat-insulating material between the cover lens and the filter lens protects the lens from sudden heat changes which could cause it to break. In some models the heat insulation is provided by the frame mount instead of a separate gasket

What else should you know about eye protection?

- Choose a tight-fitting helmet to help reduce light reflection into the helmet through the space between the shell and the head
- Wear the helmet correctly – do not use it as a hand shield
- Protect the shade lens from impact and sudden temperature changes that could cause it to crack
- Use a cover lens to protect the filter shade lens – replace the cover lens if it gets scratched or hazy
- Make sure to replace the gasket periodically, if your helmet has one
- Replace the clear retaining lens to protect your eyes from broken pieces
- Clean lenses periodically
- Discard pitted or damaged lenses

Welder's Helmet



Welding Operation	Shade No.*
Shielded metal-arc welding: 1/16", 3/32" and 5/32" electrodes	10
Gas-shielded arc welding (nonferrous): 1/16", 3/32", 1/8" and 5/32" electrodes	11
Gas-shielded arc welding (ferrous): 1/16", 3/32", 1/8" and 5/32" electrodes	12
Shielded metal-arc welding: 3/16", 7/32" and 1/4" electrodes	12
Shielded metal-arc welding: 5/16" and 3/8" electrodes	14
Atomic hydrogen welding	10 – 14
Carbon arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting (up to 1")	3 or 4
Medium cutting (1" to 6")	4 or 5
Heavy cutting (6" and over)	5 or 6
Gas welding (light) up to 1/8"	4 or 5
Gas welding (medium) 1/8" to 1/2"	5 or 6
Gas welding (heavy) 1/2" and over	6 or 8

**Recommended Minimum*



Safety glasses should always be worn under a welding helmet to protect the welder from any spatter or slag that could bounce up under the helmet. This also protects the wearer from other sources of injury when the helmet is lifted to inspect the workpiece.

Respiratory Protection



Welding fumes often contain complex chemical combinations that can be harmful to a welder's health. These chemicals pose a serious health threat if the area is not properly vented to reduce the amount of these particles in the air.

Hand Protection



Hands are the easiest area to protect and usually the most forgotten. Workers often rush to get the job done, forgetting that their hands are exposed to UV and IR radiation, even if only briefly. This radiation, along with welding arc temperatures, which can reach over 6,000°F, can cause serious burns to the hands and wrists. There is also the risk of burns from spatter and slag flying off the workpiece. A good pair of leather welding gloves provides essential heat and cut resistance, as well as giving the welder the necessary dexterity for comfortable, successful welding.

