

Hot Work: Protection of Personnel Checklist

What personal protective requirements exist for hot work operators?

Hot work operators can be suggested to where various types of personal protective equipment (PPE) when conducting hot work operations. Specifically PPE for protection of the eyes, face and protection against burns. This guide will list the PPE requirements while conducting hot work operations.

What are the PPE requirements for eye and face protection?

The following information lists the suggested eye protection for the work that is being done.

Arc Welding/Cutting

- Helmets or hand shields should be used during all arc welding or arc cutting operations. Helpers or attendants should also be provided with proper eye protection.

Gas Welding/Cutting

- Goggles or other suitable eye protection should be used during all gas welding or cutting operations. Spectacles without side shields, with suitable filter lenses, are permitted for use during gas welding operations on light work, for torch brazing or inspection.

Other Operations

- Eye protection in the form of suitable goggles should be provided and used where needed for brazing operations not already covered.

This guide will list the PPE requirements while conducting hot work operations.

What are the requirements for the actual protective equipment itself?

	Done
Helmets and hand shields should be made of a material that is an insulator for heat and electricity. Helmets, shields and goggles should not be readily flammable and should be capable of withstanding sterilization.	<input type="checkbox"/>
Helmets and hand shields should be arranged to protect the face, neck and ears from direct radiant energy from the arc.	<input type="checkbox"/>
Helmets should be provided with filter plates and cover plates designed for easy removal.	<input type="checkbox"/>
All parts should be constructed of a material that will not readily corrode or discolor the skin.	<input type="checkbox"/>
Goggles should be ventilated to prevent fogging of the lenses as much as practicable.	<input type="checkbox"/>
All glass for lenses should be tempered, substantially free from striae, air bubbles, waves and other flaws. Except when a lens is ground to provide proper optical correction for defective vision, the front and rear surfaces of lenses and windows should be smooth and parallel.	<input type="checkbox"/>
Lenses should bear some permanent distinctive marking that may readily identify the source and shade.	<input type="checkbox"/>



The following is a guide for the selection of the proper shade numbers. These recommendations may be varied to suit the individual's needs.

	Welding Operation	Shade Number
<input type="checkbox"/>	Shielded metal-arc welding – 1/16-, 3/32-, 1/8-, 5/32 inch electrodes	10
<input type="checkbox"/>	Gas-shielded arc welding (nonferrous) – 1/16-, 3/32-, 1/8-, 5/32 inch electrodes	11
<input type="checkbox"/>	Gas-shielded arc welding (ferrous) – 1/16-, 3/32-, 1/8-, 5/32 inch electrodes	12
<input type="checkbox"/>	Shielded metal-arc welding: 3/16-, 7/32-, 1/4 inch electrodes	12
<input type="checkbox"/>	Shielded metal-arc welding: 5/16-, 3/8-inch electrodes	14
<input type="checkbox"/>	Atomic hydrogen welding	10 - 14
<input type="checkbox"/>	Carbon arc welding	14
<input type="checkbox"/>	Soldering	2
<input type="checkbox"/>	Torch brazing	3 or 4
<input type="checkbox"/>	Light cutting, up to 1 inch	3 or 4
<input type="checkbox"/>	Medium cutting, 1 inch to 6 inches	4 or 5
<input type="checkbox"/>	Heavy cutting, 6 inches and over	5 or 6
<input type="checkbox"/>	Gas welding (light) up to 1/8 inch	4 or 5
<input type="checkbox"/>	Gas welding (medium) 1/8 inch to 1/2 inch	5 or 6
<input type="checkbox"/>	Gas welding (heavy) 1/2 inch and over	6 or 8

NOTE: In gas welding or oxygen cutting where the torch produces a high yellow light, it is desirable to use a filter or lens that absorbs the yellow or sodium in the visible light of the operation.

All filter lenses and plates should be certified to ANSI Z87.1 – 1968.

What are the requirements for the protection of workers or other persons adjacent to welding areas?

- Protection from arc welding rays.
- Where the work allows, the welder should be enclosed in an individual booth painted with a low reflectivity such as zinc oxide and lamp block, or should be enclosed with noncombustible screens similarly painted.
- Booths and screens should permit the circulation of air at the floor level.
- Workers or other persons adjacent to the welding areas should be protected from the rays by noncombustible or flameproof screens or shields or should be suggested to wear appropriate goggles.



What are the requirements for protective clothing?

- Employees exposed to the hazards created by welding, cutting or brazing operations should be protected by PPE. Appropriate protective clothing suggested for any welding operation will vary with the size, nature and location of the work to be performed.
- Employees should evaluate the hazards associated with the hot work and wear PPE that is effective in preventing injury from occurring from those hazards.
- More than one fire watch is suggested if combustible materials that could be ignited by hot work procedures cannot be directly observed by the initial fire watch. If hot work procedures are being performed above multiple levels, then a fire watch will be suggested on every level under the hot work. Fire watchers should take precautions to protect themselves from heat, sparks and slag.

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