

- (f) Oil free clothing shall be worn when performing welding or cutting operations.
- (g) Always wear appropriate clothing when welding, grinding or working around an open flame.

3.2 Eye and Face Protection

OSHA standards require employers to provide suitable eye and face protection.

- (a) Types of protection
 - (1) Safety glasses with side protection (used for most situations).
 - (2) Goggles (used when dust or chemical splash hazards exist).
 - (A) Welder's Goggles
Used for gas cutting and welding operations. (See filter lens chart for proper shade and number in Figure 3a.)
 - (B) Welder's Shield
Used for electric arc-welding work. Lens shade chosen as above and protected by a clear cover glass.
 - (C) Face Shields
Shall be worn when entire face needs protection, (i.e.: flying sparks; chemical splash; etc.)
- (b) Employees shall wear eye and face protection equipment when machines or operations present potential eye or face injury from physical, chemical, or radiant agents, (i.e.: grinding; drilling; chiseling; babbiting; welding; dusty and windy atmosphere; etc.)
- (c) Eye and face protection shall meet the requirements specified in American National Standards Institute, "ANSI Z87.1-1989 (R1998), Practice for Occupational and Educational Eye and Face Protection."

- (d) Eye and face protection equipment shall be kept clean and in good repair. The use of this type equipment with structural or optical defects shall be prohibited.
- (e) Protection shall meet the following minimum requirements:
 - (1) Be adequate for the hazard.
 - (2) Fit snugly.
 - (3) Not interfere with the wearer's movements.
 - (4) Be durable, easy to clean, and capable of being disinfected.
 - (5) Be kept in good repair.
- (f) The user shall be instructed regarding any limitations or precautions indicated by the manufacturer.
- (g) Non-metallic eye protection shall be worn while working on or near electrical circuits or electrical apparatus.

Figure 3a

Filter lens shade numbers for protection against Radiant Energy	
Welding Operation	Shade Number
Shielded metal-arc welding 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	10
Gas-shielded arc welding (nonferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	11
Gas-shielded arc welding (ferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	12
Shielded metal arc welding (ferrous) 3/16-, 7/32-, 1/4-inch diameter electrodes	12
5/16-, 3/8-inch diameter electrodes	14
Atomic hydrogen welding	10-14
Carbon-arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, over 6 inches	5 or 6
Gas welding (light), up to 1/8-inch	4 or 5
Gas welding (medium), 1/8-inch to 1/2-inch	5 or 6
Gas welding (heavy), over 1/2-inch	6 or 8

*General Note: 1 in. = 25.4 mm