

- (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