

- (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**

<b>Filter lens shade numbers for protection against Radiant Energy</b>	
<b>Welding Operation</b>	<b>Shade Number</b>
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