

numbers of filter lenses or plates used in welding. Shades more dense than those listed may be used to suit the individual's needs.

TABLE E-2—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 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

(2) *Laser protection.* (i) Employees whose occupation or assignment requires exposure to laser beams shall be furnished suitable laser safety goggles which will protect for the specific wavelength of the laser and be of optical density (O.D.) adequate for the energy involved. Table E-3 lists the maximum power or energy density for which adequate protection is afforded by glasses of optical densities from 5 through 8.

TABLE E-3—SELECTING LASER SAFETY GLASS

Intensity, CW maximum power density (watts/cm <sup>2</sup> )	Attenuation	
	Optical density (O.D.)	Attenuation factor
10 <sup>-2</sup>	5	10 <sup>5</sup>
10 <sup>-1</sup>	6	10 <sup>6</sup>
1.0	7	10 <sup>7</sup>
10.0	8	10 <sup>8</sup>

Output levels falling between lines in this table shall require the higher optical density.

(ii) All protective goggles shall bear a label identifying the following data:

(a) The laser wavelengths for which use is intended;

(b) The optical density of those wavelengths;

(c) The visible light transmission.

[44 FR 8577, Feb. 9, 1979; 44 FR 20940, Apr. 6, 1979, as amended at 58 FR 35160, June 30, 1993]

§ 1926.103 Respiratory protection.

NOTE: The requirements applicable to construction work under this section are identical to those set forth at 29 CFR 1910.134 of this chapter.

[63 FR 1297; Jan. 8, 1998]

§ 1926.104 Safety belts, lifelines, and lanyards.

(a) Lifelines, safety belts, and lanyards shall be used only for employee safeguarding. Any lifeline, safety belt, or lanyard actually subjected to in-service loading, as distinguished from static load testing, shall be immediately removed from service and shall not be used again for employee safeguarding.

(b) Lifelines shall be secured above the point of operation to an anchorage or structural member capable of supporting a minimum dead weight of 5,400 pounds.

(c) Lifelines used on rock-scaling operations, or in areas where the lifeline may be subjected to cutting or abrasion, shall be a minimum of 7/8-inch wire core manila rope. For all other lifeline applications, a minimum of 3/4-inch manila or equivalent, with a minimum breaking strength of 5,400 pounds, shall be used.

(d) Safety belt lanyard shall be a minimum of 1/2-inch nylon, or equivalent, with a maximum length to provide for a fall of no greater than 6 feet. The rope shall have a nominal breaking strength of 5,400 pounds.

(e) All safety belt and lanyard hardware shall be drop forged or pressed steel, cadmium plated in accordance with type 1, Class B plating specified in Federal Specification QQ-P-416. Surface shall be smooth and free of sharp edges.

(f) All safety belt and lanyard hardware, except rivets, shall be capable of withstanding a tensile loading of 4,000 pounds without cracking, breaking, or taking a permanent deformation.

§ 1926.105 Safety nets.

(a) Safety nets shall be provided when workplaces are more than 25 feet above the ground or water surface, or