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**§ 1926.98**

**29 CFR Ch. XVII (7–1–21 Edition)**

**§ 1926.98 [Reserved]**

**§ 1926.100 Head protection.**

(a) Employees working in areas where there is a possible danger of head injury from impact, or from falling or flying objects, or from electrical shock and burns, shall be protected by protective helmets.

(b) *Criteria for head protection.* (1) The employer must provide each employee with head protection that meets the specifications contained in any of the following consensus standards:

(i) American National Standards Institute (ANSI) Z89.1–2009, “American National Standard for Industrial Head Protection,” incorporated by reference in § 1926.6;

(ii) American National Standards Institute (ANSI) Z89.1–2003, “American National Standard for Industrial Head Protection,” incorporated by reference in § 1926.6; or

(iii) American National Standards Institute (ANSI) Z89.1–1997, “American National Standard for Personnel Protection—Protective Headwear for Industrial Workers—Requirements,” incorporated by reference in § 1926.6.

(2) The employer must ensure that the head protection provided for each employee exposed to high-voltage electric shock and burns also meets the specifications contained in Section 9.7 (“Electrical Insulation”) of any of the consensus standards identified in paragraph (b)(1) of this section.

(3) OSHA will deem any head protection device that the employer demonstrates is at least as effective as a head protection device constructed in accordance with one of the consensus standards identified in paragraph (b)(1) of this section to be in compliance with the requirements of this section.

[44 FR 8577, Feb. 9, 1979, as amended at 77 FR 37600, June 22, 2012; 77 FR 42988, July 23, 2012]

**§ 1926.101 Hearing protection.**

(a) Wherever it is not feasible to reduce the noise levels or duration of exposures to those specified in Table D–2, Permissible Noise Exposures, in § 1926.52, ear protective devices shall be provided and used.

(b) Ear protective devices inserted in the ear shall be fitted or determined individually by competent persons.

(c) Plain cotton is not an acceptable protective device.

**§ 1926.102 Eye and face protection.**

(a) *General.* (1) The employer shall ensure that each affected employee uses appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

(2) The employer shall ensure that each affected employee uses eye protection that provides side protection when there is a hazard from flying objects. Detachable side protectors (*e.g.* clip-on or slide-on side shields) meeting the pertinent requirements of this section are acceptable.

(3) The employer shall ensure that each affected employee who wears prescription lenses while engaged in operations that involve eye hazards wears eye protection that incorporates the prescription in its design, or wears eye protection that can be worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses.

(4) Eye and face PPE shall be distinctly marked to facilitate identification of the manufacturer.

(5) Protectors shall meet the following minimum requirements:

(i) They shall provide adequate protection against the particular hazards for which they are designed.

(ii) They shall be reasonably comfortable when worn under the designated conditions.

(iii) They shall fit snugly and shall not unduly interfere with the movements of the wearer.

(iv) They shall be durable.

(v) They shall be capable of being disinfected.

(vi) They shall be easily cleanable.

(b) *Criteria for protective eye and face protection.* (1) Protective eye and face protection devices must comply with any of the following consensus standards:

(i) ANSI/ISEA Z87.1–2010, Occupational and Educational Personal Eye and Face Protection Devices, incorporated by reference in § 1926.6;

(ii) ANSI Z87.1–2003, Occupational and Educational Personal Eye and

Face Protection Devices, incorporated by reference in §1926.6; or

(iii) ANSI Z87.1-1989 (R-1998), Practice for Occupational and Educational Eye and Face Protection, incorporated by reference in §1926.6;

(2) Protective eye and face protection devices that the employer demonstrates are at least as effective as protective eye and face protection devices that are constructed in accordance with one of the above consensus standards will be deemed to be in compliance with the requirements of this section.

(c) *Protection against radiant energy—*  
 (1) *Selection of shade numbers for welding filter.* Table E-1 shall be used as a guide for the selection of the proper shade 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-1—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-2 lists the maximum power or energy density for which adequate protection is afforded by glasses of optical densities from 5 through 8. Output levels falling between lines in this table shall require the higher optical density.

TABLE E-2—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>

(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; 81 FR 16092, Mar. 25, 2016]

**§ 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 5,000 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.