

not be permitted to engage in, or be exposed to the process until the following special precautions have been taken:

(i) The use of chlorinated solvents shall be kept at least 200 feet, unless shielded, from the exposed arc, and surfaces prepared with chlorinated solvents shall be thoroughly dry before welding is permitted on such surfaces.

(ii) Employees in the area not protected from the arc by screening shall be protected by filter lenses meeting the requirements of subpart E of this part. When two or more welders are exposed to each other's arc, filter lens goggles of a suitable type, meeting the requirements of subpart E of this part, shall be worn under welding helmets. Hand shields to protect the welder against flashes and radiant energy shall be used when either the helmet is lifted or the shield is removed.

(iii) Welders and other employees who are exposed to radiation shall be suitably protected so that the skin is covered completely to prevent burns and other damage by ultraviolet rays. Welding helmets and hand shields shall be free of leaks and openings, and free of highly reflective surfaces.

(iv) When inert-gas metal-arc welding is being performed on stainless steel, the requirements of paragraph (c)(2) of this section shall be met to protect against dangerous concentrations of nitrogen dioxide.

(e) *General welding, cutting, and heating.* (1) Welding, cutting, and heating, not involving conditions or materials described in paragraph (b), (c), or (d) of this section, may normally be done without mechanical ventilation or respiratory protective equipment, but where, because of unusual physical or atmospheric conditions, an unsafe accumulation of contaminants exists, suitable mechanical ventilation or respiratory protective equipment shall be provided.

(2) Employees performing any type of welding, cutting, or heating shall be protected by suitable eye protective equipment in accordance with the requirements of subpart E of this part.

[44 FR 8577, Feb. 9, 1979; 44 FR 20940, Apr. 6, 1979, as amended at 55 FR 42328, Oct. 18, 1990; 58 FR 35179, June 30, 1993]

§ 1926.354 **Welding, cutting, and heating in way of preservative coatings.**

(a) Before welding, cutting, or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Preservative coatings shall be considered to be highly flammable when scrapings burn with extreme rapidity.

(b) Precautions shall be taken to prevent ignition of highly flammable hardened preservative coatings. When coatings are determined to be highly flammable, they shall be stripped from the area to be heated to prevent ignition.

(c) Protection against toxic preservative coatings: (1) In enclosed spaces, all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a distance of at least 4 inches from the area of heat application, or the employees shall be protected by air line respirators, meeting the requirements of subpart E of this part.

(2) In the open air, employees shall be protected by a respirator, in accordance with requirements of subpart E of this part.

(d) The preservative coatings shall be removed a sufficient distance from the area to be heated to ensure that the temperature of the unstripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heating area may be used to limit the size of the area required to be cleaned.

Subpart K—Electrical

AUTHORITY: Sections 6 and 8 of the Occupational Safety and Health Act of 1970 (29 U.S.C. 655 and 657); sec. 107, Contract Work Hours and Safety Standards Act (40 U.S.C. 333); Secretary of Labor's Order No. 9-83 (48 FR 35736) or 1-90 (55 FR 9033), as applicable; 29 CFR part 1911.

SOURCE: 51 FR 25318, July 11, 1986, unless otherwise noted.

GENERAL

§ 1926.400 **Introduction.**

This subpart addresses electrical safety requirements that are necessary

§ 1926.401

for the practical safeguarding of employees involved in construction work and is divided into four major divisions and applicable definitions as follows:

(a) *Installation safety requirements.* Installation safety requirements are contained in §§ 1926.402 through 1926.408. Included in this category are electric equipment and installations used to provide electric power and light on jobsites.

(b) *Safety-related work practices.* Safety-related work practices are contained in §§ 1926.416 and 1926.417. In addition to covering the hazards arising from the use of electricity at jobsites, these regulations also cover the hazards arising from the accidental contact, direct or indirect, by employees with all energized lines, above or below ground, passing through or near the jobsite.

(c) *Safety-related maintenance and environmental considerations.* Safety-related maintenance and environmental considerations are contained in §§ 1926.431 and 1926.432.

(d) *Safety requirements for special equipment.* Safety requirements for special equipment are contained in § 1926.441.

(e) *Definitions.* Definitions applicable to this subpart are contained in § 1926.449.

§ 1926.401 [Reserved]

INSTALLATION SAFETY REQUIREMENTS

§ 1926.402 Applicability.

(a) *Covered.* Sections 1926.402 through 1926.408 contain installation safety requirements for electrical equipment and installations used to provide electric power and light at the jobsite. These sections apply to installations, both temporary and permanent, used on the jobsite; but these sections do not apply to existing permanent installations that were in place before the construction activity commenced.

NOTE: If the electrical installation is made in accordance with the National Electrical Code ANSINFPA 70-1984, exclusive of Formal Interpretations and Tentative Interim Amendments, it will be deemed to be in compliance with §§ 1926.403 through 1926.408, except for §§ 1926.404(b)(1) and 1926.405(a)(2)(ii) (E), (F), (G), and (J).

29 CFR Ch. XVII (7-1-06 Edition)

(b) *Not covered.* Sections 1926.402 through 1926.408 do not cover installations used for the generation, transmission, and distribution of electric energy, including related communication, metering, control, and transformation installations. (However, these regulations do cover portable and vehicle-mounted generators used to provide power for equipment used at the jobsite.) See subpart V of this part for the construction of power distribution and transmission lines.

§ 1926.403 General requirements.

(a) *Approval.* All electrical conductors and equipment shall be approved.

(b) *Examination, installation, and use of equipment—(1) Examination.* The employer shall ensure that electrical equipment is free from recognized hazards that are likely to cause death or serious physical harm to employees. Safety of equipment shall be determined on the basis of the following considerations:

(i) Suitability for installation and use in conformity with the provisions of this subpart. Suitability of equipment for an identified purpose may be evidenced by listing, labeling, or certification for that identified purpose.

(ii) Mechanical strength and durability, including, for parts designed to enclose and protect other equipment, the adequacy of the protection thus provided.

(iii) Electrical insulation.

(iv) Heating effects under conditions of use.

(v) Arcing effects.

(vi) Classification by type, size, voltage, current capacity, specific use.

(vii) Other factors which contribute to the practical safeguarding of employees using or likely to come in contact with the equipment.

(2) *Installation and use.* Listed, labeled, or certified equipment shall be installed and used in accordance with instructions included in the listing, labeling, or certification.

(c) *Interrupting rating.* Equipment intended to break current shall have an interrupting rating at system voltage sufficient for the current that must be interrupted.

(d) *Mounting and cooling of equipment—(1) Mounting.* Electric equipment