LBM Key Compliance Areas of Focus: General Electrical

OSHA Standard 1910.303 addresses General Electrical considerations as one of several parts of 1910 Subpart S, Electrical. Subpart S is organized around general electrical requirements, wiring design and protection, wiring methods, components and equipment for general usage, as well as specific purpose equipment, hazardous locations, and special systems. Subpart S also addresses training, selection and use of work practices, use of equipment, and safeguards for personal protection.

Of the requirements specified in Standard 1910.303, General Electrical, the LBM sector has been cited in these areas -

1. **Examination.** Electric equipment shall be free from recognized hazards that are likely to cause death or serious physical harm to employees. [See 1910.303(b)(1)].

   The OSHA Standard identifies a number of considerations to use for determining safety of equipment. These include suitability for installation, mechanical strength and durability and classification by type, size, voltage, current capacity and specific use. Suitability of equipment for an identified purpose may be evidenced by listing or labeling for that identified purpose. See 1910.303(b)(1)(i) – (viii).

2. **Installation and use.** Listed or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling. See 1910.303(b)(2).

3. **Mechanical execution of work.** Electric equipment must be installed in a neat and workmanlike manner. See 1910.303(b)(7).

4. **Identification of manufacturer and ratings.** Electric equipment may not be used unless the following markings have been placed on the equipment:
   - The manufacturer's name, trademark, or other descriptive marking by which the organization responsible for the product may be identified [1910.303(e)(1)(i)]
   - Other markings giving voltage, current, wattage, or other ratings as necessary [1910.303(e)(1)(ii)]

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1 See 1910.303(b), Examination, installation, and use of equipment, is organized in the following sections: 1910.303(b)(1), Examination; 1910.303(b)(2), Installation and use; 1910.303(b)(3), Insulation integrity; 1910.303(b)(4), Interrupting rating; 1910.303(b)(5), Circuit impedance and other characteristics; 1910.303(b)(6), Deteriorating agents; 1910.303(b)(7), Mechanical execution of work; and 1910.303(b)(8), Mounting and cooling of equipment.

2 See Note to paragraph (b)(1)(i) of 1910.303.
5. **Services, feeders, and branch circuits.** Each service, feeder, and branch circuit, at its disconnecting means or overcurrent device, must be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident. See 1910.303(f)(2).

6. **Space about electric equipment.** Sufficient access and working space must be provided and maintained about all electric equipment to permit ready and safe operation and maintenance of such equipment. See 1910.303(g)(1).

There are specific dimensions required for the working space about electric equipment. Specifically, working space for equipment likely to require examination, adjustment, servicing, or maintenance while energized must comply with the specified dimensions stated in the Standard. See 1910.303(g)(1)(i).

The specific dimensions are based on specific conditions of live parts, and the distances vary from 2.5 feet to 4.0 feet. See 1910.303(g)(1)(i) subparagraphs (A) – (C). Distances are measured from the live parts if they are exposed or from the enclosure front or opening if they are enclosed.

**Working space about electric equipment may not be used for storage.** See 1910.303(g)(1)(ii).

When normally enclosed live parts are exposed for inspection or servicing, the working space, if in a passageway or general open space shall be suitably guarded. See 1910.303(g)(1)(iii).

**Sufficient access to the equipment must be provided.** There must be at least one entrance of sufficient area to give access to the working space about electric equipment. See 1910.303(g)(1)(iii). There are specific dimensional requirements for access for equipment rated 1200 amperes or more and over 6.0 feet wide, containing overcurrent devices, switching devices, or control devices. See 1910.303(g)(1)(iv).

**Working space about electric equipment must have sufficient lighting.** Illumination shall be provided for all working spaces about service equipment, switchboards, panelboards, and motor control centers installed indoors. Additional lighting fixtures are not required where the working space is illuminated by an adjacent light source. In electric equipment rooms, the illumination may not be controlled by automatic means only. See 1910.303(g)(1)(v).

**There are minimum headroom requirements for working space about electric equipment.** Minimum headroom of working spaces about service equipment, switchboards, panelboards, or motor control centers depends on whether installation was before August 13, 2007 (6.25 feet) or after August 13, 2005 (6.5 feet, or not less than the height of the equipment exceeding 6.5 feet in height. See 1910.303(g)(1)(vi).

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3 1910.303(f), Disconnecting means and circuits, is organized in the following sections: 1910.303(f)(1), Motors and appliances; 1910.303(f)(2), Services, feeders, and branch circuits; 1910.303(f)(3), Durability of markings; 1910.303(f)(4), Capable of accepting a lock; 1910.303(f)(5), and Marking for series combination ratings.

4 1910.303(g), 600 Volts, nominal, or less, is organized in the following sections: 1910.303(g)(1), Space about electric equipment, and 1910.303(g)(2), Guarding of live parts.
Switchboards, panelboards, and distribution boards installed for the control of light and power circuits, and motor control centers must be located in dedicated spaces and protected from damage. See 1910.303(g)(1)(vii).

**In addition to working space, there are also specific requirements for dedicated space based on whether the installation is indoor or outdoor.** See 1910.303(g)(1)(vii).

In general, for indoor installation, a space equal to the width and depth of the equipment and extending from the floor for 6 feet above the equipment is required. See 1910.303(g)(1)(vii)(A). Other systems not associated with the installation such as piping and ducts should not be located in this same area. See 1910.303(g)(1)(vii)(A)(1).

The width and depth of the dedicated space must be kept clear of foreign systems unless proper protection is provided to prevent condensation, leaks or breaks. This area extends upward to the structural ceiling only. However, sprinkler protection and its required piping are allowed and control equipment associated with the installation is allowed. See 1910.303(g)(1)(vii)(A)(3) and (4).

Outdoor electric equipment must be installed in suitable enclosures and shall be protected from accidental contact by unauthorized personnel, or by vehicular traffic, or by accidental spillage or leakage from piping systems. Furthermore, no architectural appurtenance or other equipment may be located in the working space. See 1910.303(g)(1)(vii)(B).

7. **Guarding of live parts. [1910.303(g)(2)]**

Approved cabinets or other enclosures must be used to guard live parts of electric equipment. Except as elsewhere required or permitted by OSHA Standard 1910.303, live parts of electric equipment operating at 50 volts or more must be guarded against accidental contact by use of approved cabinets or other forms of approved enclosures or by one of several means set out in the Standard. See 1910.303(g)(2)(i). These include by location in a room or similar enclosure accessible only to a qualified person, suitable permanent, substantial partitions or screens, placement on suitable elevated balconies, galleries or platforms, or by elevation of 8.0 feet or more above the floor or working surface. See 1910.303(g)(2)(i)(A) – (D).

In locations where electric equipment is likely to be exposed to physical damage, the arrangement and strength of enclosures or guards must be able to prevent damage. See 1910.303(g)(2)(ii).

Entrances to rooms and other guarded locations containing exposed live parts must be marked with conspicuous warning signs forbidding unqualified persons to enter. See 1910.303(g)(2)(iii).

Want to know more? Download NLBMDA’s 1910-303 General Electrical Checklist, found at NLBMDA’s [EHS Resource Center](#). See also Know the Space About Your Electrical Equipment.