Know the Space About Your Electrical Equipment

In addition to the general imperatives of ensuring your electrical equipment is free from recognized hazards, that it is installed in a neat and workmanlike manner, and it is used in accordance with any instructions in the listing or labeling of the equipment, OSHA’s General Electrical Standard 1910.303 includes certain requirements for the space around electrical equipment.

OSHA Standard 1910.303(g)(1) speaks to “Space about electrical equipment” for all equipment of 600 volts nominal or less –

**Sufficient access and working space shall be provided and maintained about all electric equipment to permit ready and safe operation and maintenance of such equipment.** [1910.303(g)(1)]

OSHA notes: “this particular section is concerned with the safety of a person qualified to work on the equipment (presumably an electrician). Obviously, the hazard must be treated in a different way if the person will remove guards and enclosures and actually work on the live parts. Sufficient access and working space shall be provided and maintained about all electric equipment to permit ready and safe operation and maintenance of such equipment.”

**Working Space**

The working space for equipment likely to require examination, adjustment, servicing, or maintenance while energized must comply with specific dimensions set out in the standard.

The width of working space in front of the electrical equipment must be the width of the equipment or 30 inches (whichever is greater), and in all cases, the working space must allow at least a 90-degree opening of equipment doors or hinged panels.

The working space must be clear and meet specific height requirements. Other equipment associated with the electrical installation and located above or below the electrical equipment may extend no more than 6 inches beyond the front of the electrical equipment.

There are minimum headroom requirements for working space about service equipment, switchboards, panelboards, or motor control centers, and different minimums apply based on whether the installations were built before (6.25 feet) or after (6.5 feet) August 13, 2007.

There are also specific conditions regarding exposed live parts that also dictate specific minimum clear distances. These are set out in Table S-1 of 1910.303(g)(1)(vi).

---

1 These requirements are found in 1910.303(b), Examination, installation, and use of equipment. For more information on these requirements, see *LBM Key Compliance Areas of Focus: General Electrical*.

2 This text comes from OSHA Office of Training and Education’s *Electrical*. Find the online version here: https://www.osha.gov/dte/library/electrical/electrical.html.
Table S-1. -- Minimum Depth of Clear Working Space at Electric Equipment, 600 V or Less

<table>
<thead>
<tr>
<th>Nominal voltage to ground</th>
<th>Minimum clear distance for condition</th>
<th>Condition A</th>
<th>Condition B</th>
<th>Condition C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ft</td>
<td>m</td>
<td>ft</td>
<td>m</td>
</tr>
<tr>
<td>0-150</td>
<td>1.0</td>
<td>0.9</td>
<td>3.0</td>
<td>1.0</td>
</tr>
<tr>
<td>151-600</td>
<td>1.2</td>
<td>0.9</td>
<td>3.0</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Notes to Table S-1:

1. Minimum clear distances may be 0.7 m (2.5 ft) for installations built before April 16, 1981.
2. Conditions A, B, and C are as follows:
   - **Condition A** -- Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by suitable wood or other insulating material. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts.
   - **Condition B** -- Exposed live parts on one side and grounded parts on the other side.
   - **Condition C** -- Exposed live parts on both sides of the work space (not guarded as provided in Condition A) with the operator between.
3. Working space is not required in back of assemblies such as dead-front switchboards or motor control centers where there are no renewable or adjustable parts (such as fuses or switches) on the back and where all connections are accessible from locations other than the back. Where rear access is required to work on deenergized parts on the back of enclosed equipment, a minimum working space of 762 mm (30 in.) horizontally shall be provided.

Working space about electric equipment must have sufficient lighting. Illumination must 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).

**Dedicated Space**

In addition to working space, there are also specific requirements for dedicated space for the electric equipment 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. Other systems not associated with the installation such as piping and ducts should not be located in this same area.

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

**Key Things to Know Regarding Space About Electrical 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. \[1910.303(g(1)\]

Work spaces must have sufficient clearances around all equipment rated 600 volts nominal or less. \[1910.303(g(1)(i)\]

Working space about electrical equipment may not be used for storage. \[1910.303(g(1)(ii)\]

When normally enclosed live parts are exposed for inspection or servicing, the working space, if in a passageway or general open space must be suitably guarded. \[1910.303(g(1)(ii)\]

At least one entrance of sufficient area must be provided to give access to the working space about electrical equipment. \[1910.303(g(1)(iii)\]

Working space about electric equipment must have sufficient lighting. \[1910.303(g(1)(v)\]

For equipment rated 1200 amperes or more and over 6 feet wide, containing overcurrent devices, switching devices, or control devices, there must be one entrance not less than 24 inches wide and 6.5 feet high at each end of the work space. \[1910.303(g(1)(iv)\]

If other systems, such as piping or ducts, share the same indoor dedicated space with an electrical installation, make sure the specifications for indoor dedicated space are met. \[1910.303(g(1)(v)(A)\]

Outdoor electrical equipment must be installed in suitable enclosures and protected from accidental contact by unauthorized personnel or vehicular traffic or accidental spillage or leakage from piping systems. \[1910.303(g(1)(vii)(B)\]