

(E) Dedicated Equipment Space. All switchboards, switchgear, panelboards, and motor control centers shall be located in dedicated spaces and protected from damage.

Exception: Control equipment that by its very nature or because of other rules of the Code must be adjacent to or within sight of its operating machinery shall be permitted in those locations.

(1) Indoor. Indoor installations shall comply with 110.26(E)(1)(a) through (E)(1)(d).

(a) *Dedicated Electrical Space.* The space equal to the width and depth of the equipment and extending from the floor to a height of 1.8 m (6 ft) above the equipment or to the structural ceiling, whichever is lower, shall be dedicated to the electrical installation. No piping, ducts, leak protection apparatus, or other equipment foreign to the electrical installation shall be located in this zone.

Exception: Suspended ceilings with removable panels shall be permitted within the 1.8-m (6-ft) zone.

(b) *Foreign Systems.* The area above the dedicated space required by 110.26(E)(1)(a) shall be permitted to contain foreign systems, provided protection is installed to avoid damage to the electrical equipment from condensation, leaks, or breaks in such foreign systems.

(c) *Sprinkler Protection.* Sprinkler protection shall be permitted for the dedicated space where the piping complies with this section.

(d) *Suspended Ceilings.* A dropped, suspended, or similar ceiling that does not add strength to the building structure shall not be considered a structural ceiling.

The dedicated electrical space, which extends the footprint of the switchboard or panelboard from the floor to a height of 6 feet above the height of the equipment or to the structural ceiling (whichever is lower), is required to be clear of piping, ducts, leak protection apparatus, or equipment foreign to the electrical installation. Plumbing, heating, ventilation, and air-conditioning piping, ducts, and equipment must be installed outside the width and depth zone. Busways,

conduits, raceways, and cables are permitted to enter equipment through this zone.

Foreign systems installed directly above the dedicated space reserved for electrical equipment are required to include protective equipment that ensures that occurrences such as leaks, condensation, and even breaks do not damage the electrical equipment located below.

Sprinkler protection is permitted for the dedicated spaces as long as the sprinkler or other suppression system piping complies with 110.26(E)(1)(c). A dropped, suspended, or similar ceiling is permitted to be located directly in the dedicated space, because they are not considered structural ceilings. Building structural members are also permitted in this space.

The electrical equipment also must be protected from physical damage. Damage can be caused by activities performed near the equipment, such as material handling by personnel or the operation of a forklift or other mobile equipment. See 110.27(B) for other requirements relating to the protection of electrical equipment.

Exhibits 110.24, 110.25, and 110.26 illustrate the two distinct indoor installation spaces required by 110.26(A) and 110.26(E), that is, the working space and the dedicated electrical space.

In Exhibit 110.24, the dedicated electrical space required by 110.26(E) is the space outlined by the width and the depth of the equipment (the footprint) and extending from the floor to 6 feet above the equipment or to the structural ceiling (whichever is lower). The dedicated electrical space is reserved for the installation of electrical equipment and for the installation of conduits, cable trays, and so forth, entering or exiting that equipment. The outlined area in front of the electrical equipment in Exhibit 110.24 is the working space required by 110.26(A). Note that sprinkler protection is afforded the entire dedicated electrical space and working space without actually entering either space. Also note that the exhaust duct is not located in or directly above the dedicated electrical space. Although not specifically required to be located here, this duct location may be a cost-effective solution that avoids the substantial physical protection requirements of 110.26(E)(1)(b).

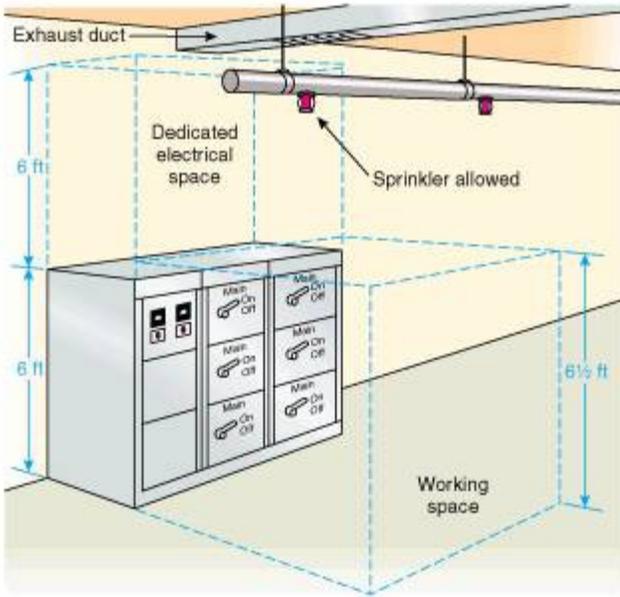


EXHIBIT 110.24 The two distinct indoor installation spaces: the working space and the dedicated electrical space.

EXHIBIT 110.25 Illustrates the working space in front of the panelboard by 110.26(A). No equipment, electrical or otherwise, is allowed in the working space.

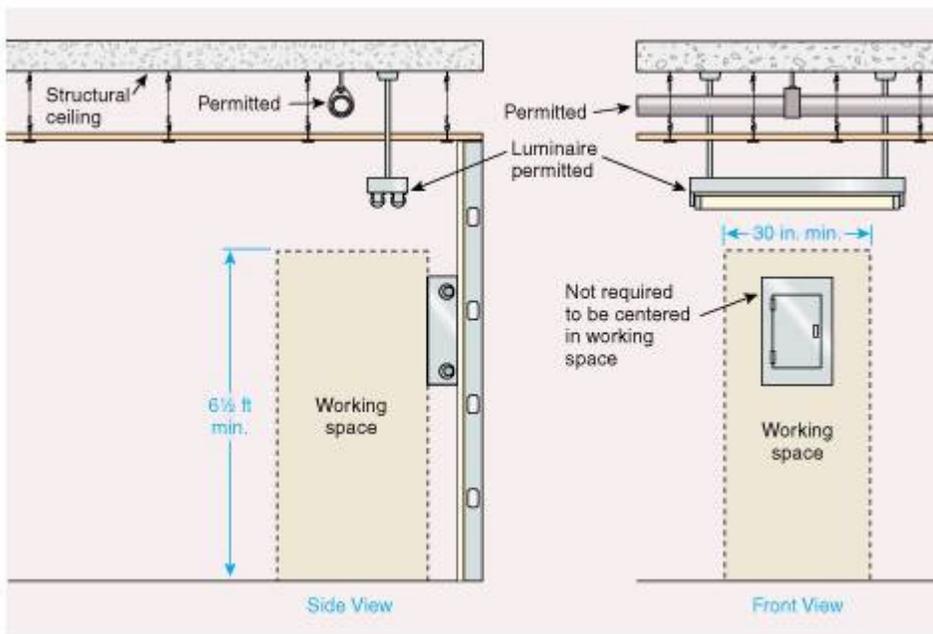


EXHIBIT 110.25 The working space in front of a panelboard. (This illustration supplements the dedicated electrical space shown in Exhibit 110.24.)

Exhibit 110.26 illustrates the dedicated electrical space above and below the panelboard required by 110.26(E)(1). This space is for the cables, raceways, and so on, that run to and from the panelboard.

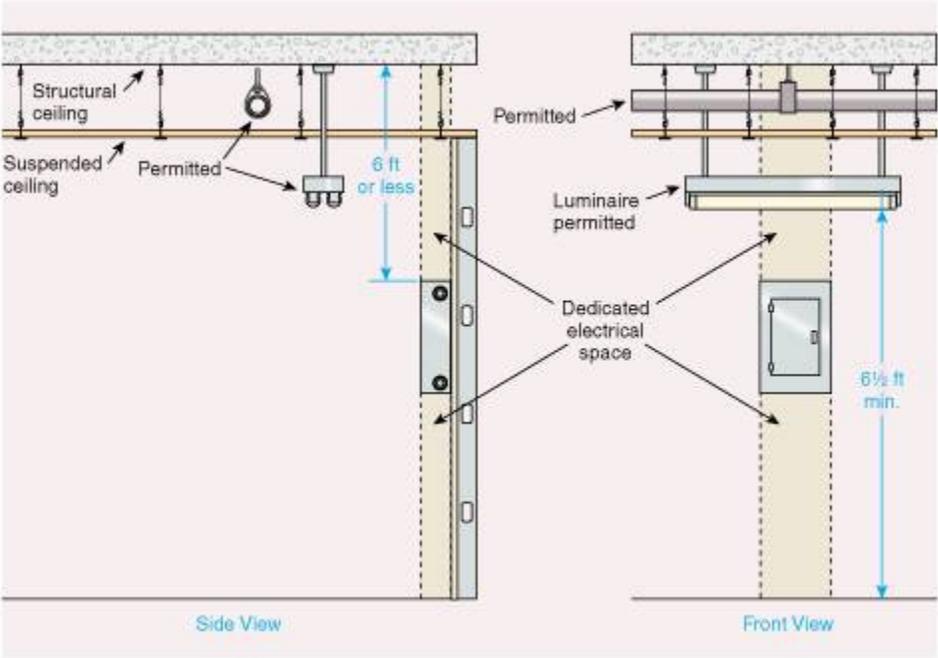


EXHIBIT 110.26 *The dedicated electrical space above and below a panelboard.*