

Panic Hardware on Electrical Rooms



From the well-known blog idighardware.com, Lori Greene brings some much-needed clarity to codes.

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BEGINNING WITH THE 2002 EDITION, the *National Electric Code* (NFPA 70) has included requirements for some electrical rooms to have doors that open in the direction of egress and are *“equipped with panic bars, pressure plates, or other devices that are normally latched but open under simple pressure.”* These requirements have changed with the subsequent editions, and the 2014 edition of NFPA 70 includes some substantial changes and clarifications.

The terminology originally used to describe the hardware for some electrical room doors was not very specific, leaving it open to interpretation. “Simple pressure” would typically be a motion in the direction of egress to release the latch, rather than turning a knob or lever. By this definition, a hospital latch or paddle-type release could be considered devices that are normally latched but open under simple pressure, but because the words “panic bar” are used in the code, this has prompted many code officials to require panic hardware for these locations. The purpose of this requirement is to provide egress for someone working in the electrical room if an incident occurs that injures their arms or hands and makes it difficult for them to operate a knob or lever. Injuries to a technician’s vision can also affect their ability to exit safely.

According to Article 110 of the 2002 edition, hardware that operates with simple pressure was required for rooms housing equipment with more than 1,200 amperes (amps) or more than 600 volts, and for transformer vaults. The 2005 edition made a slight change with regard to room size requirements, and the 2008 edition added language that would require this hardware if the door was within 25 feet of the nearest edge of the required working space around the electrical equipment (the section on transformer vaults does not include the 25-foot requirement). The 2011 edition added some specifics for electrical vaults, including a requirement for a 3-hour-rated fire door, with the same description of the hardware: panic bars, pressure plates, or other devices that are normally latched but open under simple pressure.



For some rooms housing electrical equipment (not just rooms that are officially designated as “electrical rooms”), the 2014 edition of NFPA 70 has removed the “simple pressure” terminology, and now requires “listed panic hardware.” Personnel doors within 25 feet of the working space and intended for entrance and egress are required to have panic hardware in the following conditions:

- Where equipment is 600 volts or less and 800 amps or more and contains overcurrent devices, switching devices, or control devices (110.26 (C) (3))
- Where equipment is 600 volts or more (110.33 (A) (3))
- Battery rooms (480.9 (E))

The hardware is no longer left up to interpretation for these rooms—listed panic hardware is required. Note that the requirement for 600

volts or less and 800 amps or more was changed from the previous editions, which was 600 volts or less and 1,200 amps or more. The sections for electrical vaults (110.31

(A)), transformer vaults (450.43 (C)), and modular data centers (646.19) still state: *“Personnel doors shall swing out and be equipped with panic bars, pressure plates, or other devices that are normally latched but that open under simple pressure.”* However, if these rooms meet the criteria for voltage and/or amperage previously stated, and the doors are intended for entrance/egress and are located

within 25 feet of the work space, they would be required to have panic hardware, not just a latch that opens under simple pressure.

The *International Building Code* (IBC) also includes a requirement for panic hardware that pertains to electrical rooms. Section 1008.1.10 of the 2012 edition states that panic hardware or fire exit hardware is required for rooms with equipment rated 1,200 amperes or more and over 6 feet wide that contain overcurrent devices, switching devices or control devices (note that this is different from what is required by NFPA 70-2014). NFPA 101, *The Life Safety Code*, does not include specific requirements but does reference NFPA 70 in Section 7.4.2, Spaces About Electrical Equipment.

Although your jurisdiction may not have adopted the 2014 edition of NFPA 70 yet, I think it’s clear that the intent is for panic hardware to be used on any door intended for entrance to/egress from these rooms and located within 25 feet of the working space. The code is not specific regarding whether both

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leaves of a pair would require panic hardware, so this would be left up to the Authority Having Jurisdiction (AHJ). Some would say that the inactive leaf is not intended for entrance/egress; others would point out that NFPA 70 says, *“doors... shall be equipped with panic hardware”*.

The same would be true for “extra doors”—doors that are not required by code but may be included in

the design for convenience. If the code requires two doors for a large electric room, but the plans show

panic hardware to ensure that the door construction is appropriate for use with fire exit hardware.

Keep in mind that there are many other considerations with regard to electrical rooms beyond the requirements for panic hardware. As always, the Authority Having Jurisdiction should be consulted for specific interpretations and final decisions.

three, is that third door intended for entrance/egress? If it is, the AHJ would likely require panic hardware there. A technician with a serious injury probably won't stop to think about which doors can be used for egress. And if there are additional doors a technician would need to pass through that are within 25 feet of the work space, those doors need to have panic hardware as well. For example, if the entrance to an electrical room is a vestibule with two doors in series, and both of those doors are within 25 feet of the work space, both doors would need panic hardware. The code doesn't specifically address this situation if one of the doors has push/pull hardware and no latch, but in my opinion, the push/pull hardware would meet the intent of NFPA 70 as long as the door with the push/pull hardware was not fire rated.

A utility company may have additional requirements, and I have seen several AHJs require existing electrical room doors to be retrofitted with panic hardware. Keep in mind that if the door is fire rated, it must have fire exit hardware—the type of panic hardware used on fire doors. Fire doors with fire exit hardware require a label stating the use of fire exit hardware, so existing fire doors may need to be replaced when changing from a lockset to

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Here are the referenced sections from the 2014 edition of NFPA 70, *The National Electric Code*:

600 Volts, Nominal or Less:

110.26 (C) (3) Personnel Doors. *Where equipment rated 800 A or more that contains overcurrent devices, switching devices, or control devices is installed and there is a personnel door(s) intended for entrance to and egress from the working space less than 7.6 m (25 ft) from the nearest edge of the working space, the door(s) shall open in the direction of egress and be equipped with listed panic hardware.*

Over 600 Volts, Nominal:

110.31 (A) Electrical Vaults (4) Locks. *Doors shall be equipped with locks, and doors shall be kept locked, with access allowed only to qualified persons. Personnel doors shall swing out and be equipped with panic bars, pressure plates, or other devices that are normally latched but that open under simple pressure.*

110.33 (A) Entrance to Enclosures and Access to Working Space (3) Personnel Doors. *Where there is a personnel door(s) intended for*

entrance to and egress from the working space less than 7.6 m (25 ft) from the nearest edge of the working space, the door(s) shall open in the direction of egress and be equipped with listed panic hardware.


Transformer Vaults:

450.43 (C) Locks. *Doors shall be equipped with locks, and doors shall be kept locked, access being allowed only to qualified persons. Personnel doors shall swing out and be equipped with panic bars, pressure plates, or other devices that are normally latched but open under simple pressure.*

Battery Locations:

480.9 (E) Egress. *A personnel door(s) intended for entrance to, and egress from, rooms designated as battery rooms shall open in the direction of egress and shall be equipped with listed panic hardware.*

Modular Data Centers:

646.19 Entrance to and Egress from Working Space. *For equipment over 1.8 m (6 ft) wide or deep, there shall be one entrance to and egress from the required working space not less than 610 mm (24 in.) wide and 2.0 m (6 1/2 ft) high at each end of the working space. The door(s) shall open in the direction of egress and be equipped with panic bars, pressure plates, or other devices that are normally latched but open under simple pressure. A single entrance to and egress from the required working space shall be permitted where either of the conditions in 646.20(1) or (2) is met. *

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