



Elevator Safety Program - Technical Clarification

Equipment: Residential Elevators		Topic: TC 18-06 Private Residential Elevator Machine Rooms	
December 21, 2018	#: 18-06	Code/Rule: ASME A17.1-2016/CSA B44-16, Section 5.3	

Issue: Machine rooms are not required by the elevator code for Private Residential Elevators (PRE). When provided, electrical code requirements shall be considered and enforced.

Background and Concerns: During multiple plan reviews, many PRE-drawings are showing machine room layouts for elevator controllers and machinery. In some cases, the room’s dimensions are too small to comply with the working and electrical clearances required by NFPA 70.

Clarification: The following clearance requirements from NFPA 70 provide for safe working clearances in front of electrical panels (i.e. elevator control cabinets).

110.26 Spaces About Electrical Equipment. Access and working space shall be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment.

(A) **Working Space.** Working space for equipment operating at 1000 volts, nominal, or less to ground and likely to require examination, adjustment, servicing, or maintenance while energized shall comply with the dimensions of 110.26(A)(1), (A)(2), (A)(3), and (A)(4) or as required or permitted elsewhere in this Code.

Informational Note: NFPA 70E-2015, Standard for Electrical Safety in the Workplace, provides guidance, such as determining severity of potential exposure, planning safe work practices, arc flash labeling, and selecting personal protective equipment.

(1) **Depth of Working Space.** The depth of the working space in the direction of live parts shall not be less than that specified in Table 110.26(A)(1) unless the requirements of 110.26(A)(1)(a), (A)(1)(b), or (A)(1)(c) are met. Distances shall be measured from the exposed live parts or from the enclosure or opening if the live parts are enclosed.

(a) **Dead-Front Assemblies.** Working space shall not be required in the back or sides of assemblies, such as dead-front switchboards, switchgear, or motor control centers, where all connections and all renewable or adjustable parts, such as fuses or switches, are accessible from locations other than the back or sides. Where rear access is required to work on nonelectrical parts on the back of enclosed equipment, a minimum horizontal working space of 762 mm (30 in.).

(2) **Width of Working Space.** The width of the working space in front of the electrical equipment shall be the width of the equipment or 762 mm (30 in.), whichever is greater. In all cases, the work space shall permit at least a 90-degree opening of equipment doors or hinged panels.

(3) **Height of Working Space.** The work space shall be clear and extend from the grade, floor, or platform to a height of 2.0 m (6 1/2 ft) or the height of the equipment, whichever is greater. Within the height requirements of this section, other equipment that is associated with the electrical installation and is located above or below the electrical equipment shall be permitted to extend not more than 150 mm (6 in.) beyond the front of the electrical equipment.

Minimum Clear Distance			
Nominal Voltage to Ground	Condition 1	Condition 2	Condition 3
0-150	900 mm (36")	900 mm (36")	900 mm (36")
151-600	900 mm (36")	1000 mm (42")	1200 mm (48")
601-1000	900 mm (36")	1200 mm (48")	1500 mm (60")

In most installations, the voltage to ground in a single-family dwelling will be about 110 volts. The working clearances would then be a minimum of 900 mm (36 in.) based on the table above.

NFPA 70, Art. 620.5 does permit these clearances to be reduced. However, the code in Art. 620 refers to “controlled-entry” to the elevator equipment room. Only trained persons would normally have access to such spaces and therefore some clearances may be reduced. However, in single-family dwelling, there is no assurance that the home-owner will have the knowledge of codes and safety requirements relating to elevator equipment. Therefore, the working clearances shall be as prescribed in NFPA 70, Art. 110-16A.

Action Required: These clearances apply where a machine/control room is provided for residential elevator installations. Where no specific enclosure is provided to secure the elevator equipment, these requirements do not apply.

The following requirements also apply where a machine/control room is provided:

1. The location of the mainline disconnect shall be as required by WAC 296-96-02460.
2. The car lighting and type of disconnect shall comply with NFPA 70, Art. 620.22 and 620.53 respectively.
3. Machine room illumination shall comply with ASME A17.1-2016/CSA B44-16, 2.7.9.1.
4. Receptacles shall be either GFCI protected or of the GFCI type.

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