



ELEVATOR SAFETY PROGRAM - TECHNICAL CLARIFICATION

T/C #: 20-01

Equipment Type: General - All Types		Topic: Hoistway Wiring	
Residential <input checked="" type="checkbox"/>	Commercial <input checked="" type="checkbox"/>	Code:	ASME A17.1/CSA B44,
Created:	March 1, 2020	Section/Req:	2.8
Last Revision:	March 1, 2020	WAC/RCW:	N/A

PURPOSE:

The purpose of this T/C is to clarify wiring that is permitted to be located in an elevator hoistway, machine/control room, or control space/room. The primary purpose of limiting wiring in elevator hoistways and equipment spaces, or rooms, is to protect worker safety. Minimizing the need for untrained personnel (non-elevator personnel) to enter elevator equipment spaces reduces the exposure to injury from moving and rotating machinery.

ISSUE:

There is some confusion as to what wiring may be introduced into an elevator hoistway or machine room, control room, control space, or machinery space. Wiring related only to the elevator operation and equipment is permitted to be in these spaces, rooms, or hoistways. For example, some would purport that since machine room illumination is for the elevator, it is permitted to traverse the hoistway to the machine or control room. This conclusion is erroneous and stretches the intent of prohibiting such wiring inside elevator spaces and hoistways.

Note: Since rooms are not permitted in hoistways, the term room will refer to a machine or control room located outside the hoistway.

BACKGROUND:

NFPA 70-2020, Art. 620.37 is worded identical to A17.1/B44, 2.8.2.2, The two requirements state:

“Only such electrical wiring, raceways, cables, coaxial wiring, and antennas used directly in connection with the elevator, including wiring for signals, for communication with the car, for lighting, heating, air conditioning, and ventilating the car, for fire detecting systems, for pit sump pumps, and for heating and lighting the hoistway and/or the machinery space, machine room, control space, or control room shall be permitted to be installed inside the hoistway, machinery space, machine room, control space, or control room.”

This current language dates back several decades to the 1955 edition of A17.1. References to rooms and spaces were added in the 2005s edition to deal with the arrival of the MRL (Machine-Room-Less) configured equipment. The term “electrical wiring”...”used directly in connection with the elevator” is intended to relate only to such wiring that is required for operation of the elevator and its appurtenances such as signal fixtures, communication devices, etc. For many decades, industry practice has been that no other conduits, raceways, or unrelated equipment is permitted in the hoistway or elevator equipment rooms or spaces.

It is recognized that the location of some non-elevator equipment may be necessary inside the elevator spaces. As an example, wiring for hoistway illumination is permitted when required by the building code for Fire Service Access Elevators. Sprinkler heads, smoke and heat detectors, sump pumps, illumination for overhead machinery spaces and pits are a few of the common instances where wiring is permitted in elevator equipment spaces. However, such wiring is limited from the point of entry to the hoistway or space that is necessary for connection

to the device(s) (i.e. detectors, light switches, luminaires, etc.). In such cases where non-elevator personnel need to enter a hoistway or room, they must be accompanied by elevator personnel.

Example: One might believe that machine room lighting falls under the umbrella of “electrical wiring”, simply because it “relates” to an elevator or control room. Even though the level of illumination is set by the elevator code, the illumination pertains to the building space and technically is not required for “elevator operation”. The illumination is only necessary when maintenance, testing, or repair is carried out in these rooms on elevator equipment. Nevertheless, the elevator hoistway cannot be used as a chase (pass-through) for the machine/control room illumination wiring from a building service panel to the machine or control room.

Other examples are similar in construct. In all cases, such wiring would only be considered for “existing” hoistways after the owner or elevator contractor submits a variance request to the department. The request must demonstrate why it is not feasible to run the conduit from a service panel to the machine room outside of the hoistway. Approval of such a request will not be based solely on the cost of running the raceway outside the hoistway or on the convenience of using the hoistway.

Note: There will be no such variances granted for new construction.

CONCLUSION

If an elevator contractor does not provide, install, or maintain a component or system, the component or system shall not be installed in elevator equipment locations including the hoistway.

Wiring that is permitted by NEC 620.37 or A17.1 2.8 such as fire detecting devices shall not have junction boxes in the hoistway. Pull boxes are acceptable.

Variances will not be considered without providing a safer alternative than meeting the prescriptive requirements of the elevator code.

The following matrix gives guidance as to when certain types of circuits and other equipment are allowed in hoistways and elevator equipment rooms and spaces.

WIRING

<i>Item</i>	<i>Governing Codes</i>	<i>Permitted to be run in hoistway & rooms/spaces</i>	<i>Comment</i>
Elevator control wiring	A17.1/B44 NFPA 70	Yes	Necessary for the operation of the elevator equipment
Smoke (FAID) & heat detector wiring	NFPA 72 A17.1/B44	Yes	Only to the extent necessary to connect the wiring to the device(s). Wiring should enter the hoistway or room at a location near the device. Using the hoistway as a chase is prohibited.
Hoistway Lighting (other than pit or machinery space lighting)	Building Code (IBC)	Yes	Only for Fire Service Access Elevators as required by the building code.
Elevator power feeder wiring	NFPA 70 A17.1/B44	No	For existing building only! Where circumstances warrant, a variance will be considered.
Machine/control room lighting circuit & receptacles	NFPA 70 A17.1/B44	No	Where it is deemed impractical to reach an overhead machine/control room without running the hoistway. AHJ approval is required. Where a service panel is planned for the installation, it is not permitted to run feeders to this panel through the hoistway without obtaining a variance from the department.
Utilization Circuits	NFPA 70	No	

Elevator car A/C unit	NFPA 70	Yes	Typically, this will be connected in the machine or control room at the traveling cable.
HVAC circuits (for control and machine rooms only)	NFPA 70	Yes	Wire runs restricted to the extent necessary to connect the HVAC unit(s).
Pit lighting & receptacles ¹	NFPA 70	Yes	Wire runs restricted to the extent necessary to connect the switches, luminaires, and receptacles. Where two or more cars share a common pit, all luminaires shall activate when any associated light switch is turned on.
Communication Lines for the elevator car	A17.1/B44	Yes	Phone lines may enter a hoistway at a midpoint junction box or to a machine/control room to be connected to a traveling cable.
Security Systems (not supplied or maintained by the elevator company)	Not addressed in code	No	Only that which is necessary to interface with the elevator controller may be located in a machine or control room or space. If the elevator company supplies the security system and maintains it, it may be located in the room or space as applicable.
Transformers not provided by the elevator manufacturer	Not addressed in code	No	Step up or step down power transformers not provided by the elevator installer must be located outside the space or room.

PIPES

Sprinkler pipes	NFPA 13 IBC A17.1/B44	Yes	When required by the building code See A17.1/B44, 2.8.3.3 Restrictions apply.
Steam & hot water pipes	A17.1/B44	Yes	See A17.1/B44, 2.8.3.1 & 2.8.3.1.1 Restrictions apply
Sump pump(s)	NFPA 70	Yes	Wire runs restricted to the extent necessary to connect the pump or single dedicated receptacle.
Sump pump alarms and related controls	Not addressed by code	No	With exception of the pump, alarms and related equipment is not permitted in hoistways or elevator equipment rooms/spaces
Sump pump discharge lines	A17.1/B44 IBC	Yes	The pipe must run from the pump to the nearest point where it can exit the pit/hoistway. In some cases, this may be the ceiling at the bottom landing of the elevator. The discharge into another elevator room, space, or other hoistway is prohibited.
Pipes conveying hazardous gases, vapors or liquids	A17.1/B44	No	See A17.1/B44, 2.8.3.4; not permitted in any situation.
Roof drains	A17.1/B44	Yes	See A17.1/B44, 2.8.3.5 for limitations

DUCTS

Duct work	A17.1/B44	Yes	See A17.1/B44, 2.8.3.2. Restrictions apply. See also A17.1/B44 Handbook.
Hoistway Vent Damper Motors & Related Disconnects	IBC	No	

Variance requests for situations not covered above shall be considered on a case-by-case basis.

Gerald Brown
Chief Elevator Inspector

¹ Where a 120vac service panel is installed in an elevator equipment space or room, conduit from the panel to a pit or overhead space may be run inside the room to permit connection of the device(s). Where the machine room is overhead, pit lighting wiring may not be run down the hoistway.