

Application Briefs



RAISED ACCESS FLOORS (IT Rooms)

Note: The suitability of any busway application is governed by the National Electric Code and ultimately interpreted by a local electrical inspector. The following information is an interpretation of the Code and does not imply any guarantee that a local inspector will concur. It is the responsibility of the system designer to ensure that the local electrical inspector will allow busway to be used in a manner that the customer intends.

Article 368 governs the use of busway.

Article 368-4 defines the permitted uses of busway.

- a) Busway shall be permitted to be installed where they are located as follows:
 - (1) Located in the open and are visible, or
 - (2) Installed behind access panels, provided the busways are totally enclosed, of the non-ventilating-type construction, and installed so that the joints between sections and at fittings are accessible for maintenance purposes. Where installed behind access panels, means of access shall be provided, and the following conditions shall be met:
 - (a) The space behind the access panel shall not be used for air handling purposes, or
 - (b) Where the space behind the access panels is used for environmental air, other than ducts or plenums, there shall be no provisions for plug-in connections, and the conductors shall be insulated.

Article 645 – Information Technology Equipment

Article 645 covers the equipment, power-supply wiring, equipment interconnect wiring, and grounding of information technology equipment and systems, including terminal units, in an information technology equipment room.

This article spells out specific requirements such as:

- a) A disconnect means for all electronic equipment.
- b) A disconnect means for the HVAC equipment.
- c) The control of these disconnect means shall be readily accessible at the principal exit doors.
- d) A separate HVAC system from the rest of the building.

Because the Code does not explicitly approve Busway for use under raised floors, it is incumbent upon the end user to seek and obtain prior approval from the local Electrical Inspector having jurisdiction in this matter. The following are important factors to consider for meeting the intent of the National Electric Code when using Starline Track Busway in IT Equipment Rooms under a raised floor:

- a) The tiles used in a raised floor meet the definition of "Access Panel".
- b) Floor tiles used for access to busway plug-in units must not be obstructed by other equipment

- c) Starline Track Busway, sizes B100 & B225, have a unique "maintenance free" joint design.
- d) When used with closure strip, Starline Track Busway is totally enclosed, non-ventilated busway.
- e) The copper bus bars reside in a UL Tested "Finger Safe" insulator.
- f) The IT equipment room will be occupied only by those personnel needed for the maintenance and functional operation of the installed information technology equipment.
- g) The HVAC system in an IT equipment room must be separate from the rest of the building per 645-2 (b).
- h) The disconnect means for the busway should not be beneath the raised floor and should be housed in an appropriate panelboard or switchboard.
- i) The use of busway in IT Equipment Rooms greatly reduces the complexity of power wiring and has been shown to reduce circuit breaker trips during equipment changeovers.

IT Rooms are special applications that have many safeguards against fire. The use of busway enhances these safeguards by minimizing power cables underneath the floor; minimizing wiring errors, eliminating the need to remove unused whips, and minimizing time spent underfloor adding cables.

Officially, Universal Electric cannot unequivocally authorize the use of busway under a raised floor. If under floor is the preferred method, the user must obtain prior approval from the Electrical Inspector having jurisdiction in this matter. We welcome feedback and insights from anyone. Interested persons may contact Steve Ross at Universal Electric. 1-800-245-6378.

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