

- (4) Extended vertically through dry floors if totally enclosed in metal where passing through the floor and for a minimum distance of 1.8 m (6 ft) above the floor to provide protection from physical damage.
- (5) For voltages up to and including 35,000 volts ac nominal.

N 369.12 Uses Not Permitted. IBP systems shall not be used under the following conditions:

- (1) In any hazardous (classified) location except as permitted by other articles in this *Code*
- (2) For the support of luminaires or other equipment
- (3) Where concealed by the building structure
- (4) Where accessible to other than qualified person(s)

N 369.14 Installation. IBP systems shall be installed by qualified persons. All documentation shall be available to the authority having jurisdiction.

N 369.20 Termination or Connections. Manufacturer's supplied terminating means shall be used for IBP system connections or terminations. Connections employing dissimilar metals shall be avoided to eliminate the possibility of galvanic action.

Informational Note No. 1: See 110.14(C) for conductor temperature limitations due to termination provisions for installations up to and including 2000 volts.

Informational Note No. 2: See 110.40 for conductor temperature limitations due to termination provisions for installations 2001 volts to 35,000 volts.

N 369.80 Ampacity. IBP systems shall be used within the marked ampacity of the IBP.

N 369.90 Temperature Rating. IBP systems shall be used within the maximum rated conductor temperature.

N Part III. Construction Specifications

N 369.100 Construction. The IBP conductor shall be aluminum or copper. The bus pipe shall be permitted to be solid or hollow.

N 369.110 Barriers. Fire barriers shall be provided where fire walls, floors, or ceilings are penetrated.

Informational Note: See 300.21 for information concerning the spread of fire or products of combustion.

N 369.120 Marking. All IBP shall be marked to indicate the following information:

- (1) The maximum rated voltage phase-to-phase or phase-to-ground
- (2) The maximum rated ampacity
- (3) The manufacturer's name, trademark, or other distinctive marking by which the organization responsible for the product can be readily identified

- (4) The equivalent AWG size or circular mil area of the conductor
- (5) The maximum rated conductor temperature
- (6) The rated peak withstand current rating in rms symmetrical amperes or kA
- (7) Enclosure type designation, if other than Type 1
- (8) Rated short-time withstand current and duration if greater than 2 seconds

ARTICLE

370

Cablebus

Part I. General

370.1 Scope. This article covers the use and installation requirements of cablebus and associated fittings.

Cablebus consists of a metal structure or framework installed in a manner similar to that of a cable tray support system. As illustrated in Exhibit 370.1, continuous runs of insulated conductors of 1/0 AWG or larger are field installed within the framework on special insulating blocks at specified intervals to provide controlled spacing between conductors. A ventilated top cover is attached to the framework to completely enclose the conductors.

Part II. Installation

Δ 370.10 Uses Permitted. Cablebus shall be permitted as follows:

- (1) At any voltage or current for which spaced conductors are rated and where installed only for exposed work, except as permitted in 370.18
- (2) For branch circuits, feeders, and services
- (3) To be installed indoors, outdoors, or in corrosive, wet, or damp locations where identified for the use

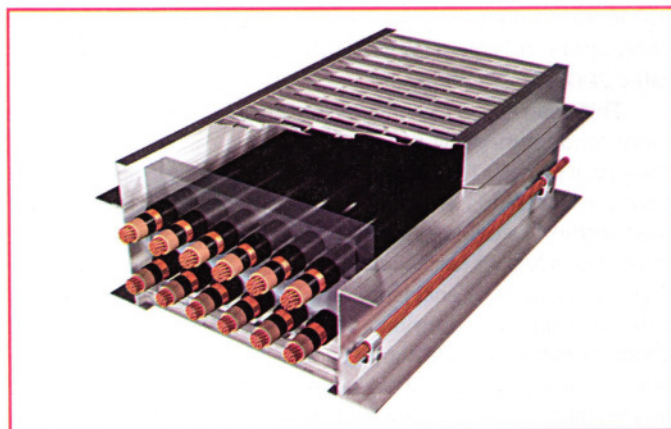


EXHIBIT 370.1 A section of cablebus with conductors in place and the ventilated top cover ready to be attached to the busway frame. (Courtesy of MP Husky Cable Bus & Cable Tray)

370.12 Uses Not Permitted. Cablebus shall not be permitted to be installed in the following:

- (1) Hoistways
- (2) Hazardous (classified) locations, unless specifically permitted in Chapter 5

370.18 Cablebus Installation. Cablebus shall be permitted to extend transversely through partitions and walls or vertically through platforms and floors in wet or dry locations where the installation, complete with the installed cables, is made in accordance with 300.21.

370.20 Conductor Size and Termination.

Δ **(A) Conductors.** The current-carrying conductors in cablebus shall comply with the following:

- (1) Have an insulation rating of 75°C (167°F) or higher and be of an approved type suitable for the application
- (2) Be sized in accordance with the design of the cablebus but in no case be smaller than 1/0

(B) Termination. Approved terminating means shall be used for connections to cablebus conductors.

Informational Note No. 1: See 110.14(C) for conductor temperature limitations due to termination provisions for installations up to and including 2000 volts.

Informational Note No. 2: See 110.40 for conductor temperature limitations due to termination provisions for installations 2001 volts to 35,000 volts.

The construction of and cable arrangement within cablebus allows for free air circulation around the insulated conductors. Therefore, the ampacity of the conductors can be selected from the applicable “free air (as applied to conductors)” tables in Articles 310 (0–2000 volts) and 315 (2001–35,000 volts) in accordance with 370.80. See the definition of *free air (as applied to conductors)* in Article 100. However, the new informational notes to 370.20 alert the user of cablebus to the fact that the terminations within the supply-end and load-end equipment are based on ampacities for 60°C or 75°C insulated conductors in Table 310.16 for conductors rated 0–2000 volts and for 90°C insulated conductors in Tables 315.60(C)(3) and (C)(4) for conductors rated 2001–35,000 volts.

This restriction may necessitate transitioning to larger or more conductors in parallel at the supply end and the load end of the circuit in order to coordinate the equipment termination temperature limitations with the higher permitted conductor ampacities within the cablebus run. Because cablebus systems are most typically built for a specific installation, the necessary transition connectors or enclosures can be provided by the manufacturer to facilitate connecting the cablebus conductors to conductors that provide compliance with the equipment terminal temperature limitations. This same condition is found with cable tray installations where conductors in cable tray can carry more current than is permitted by the conductor ampacity tables referenced in 110.14(C) and 110.40 that are used to control heating at connections within supply-end and load-end equipment.

370.22 Number of Conductors. The number of conductors shall be that for which the cablebus is designed.

370.23 Overcurrent Protection. Cablebus shall be protected against overcurrent in accordance with the ampacity of the cablebus conductors in accordance with 240.4.

Exception: Overcurrent protection shall be permitted in accordance with 245.26 and 245.27.

370.30 Securing and Supporting.

(A) Cablebus Supports. Cablebus shall be securely supported at intervals not exceeding 3.7 m (12 ft). Where spans longer than 3.7 m (12 ft) are required, the structure shall be specifically designed for the required span length.

(B) Conductor Supports. The insulated conductors shall be supported on blocks or other identified mounting means.

The individual conductors in a cablebus shall be supported at intervals not greater than 900 mm (3 ft) for horizontal runs and 450 mm (1½ ft) for vertical runs. Vertical and horizontal spacing between supported conductors shall be not less than one conductor diameter at the points of support.

Δ **370.42 Fittings.** A cablebus system shall include fittings for the following:

- (1) Changes in horizontal or vertical direction of the run
- (2) Terminations in or on connected apparatus or equipment or the enclosures for such equipment
- (3) Additional physical protection where required, such as guards where subject to severe physical damage

370.60 Grounding. A cablebus system shall be grounded and/or bonded as applicable:

- (1) Cablebus framework, where bonded, shall be permitted to be used as the equipment grounding conductor for branch circuits and feeders.
- (2) A cablebus installation shall be grounded and bonded in accordance with Part V and Part VI of Article 250, excluding 250.86, Exception No. 2.

Cablebus framework is recognized as an equipment grounding conductor (EGC) by 250.118(A)(12). Similar to cable tray, the product evaluation organizations can test the cablebus framework for ground-fault current-carrying performance and “classify” it for the specific purpose. The classification program tests the cablebus only for equipment grounding performance and is not an overall listing of the product. As is the case with cable tray in Article 392, the overall cablebus product is a cable support system and is not required by the NEC® to be a listed product. Specific information relating to the rating of the framework as an EGC is available from the cablebus manufacturer.

370.80 Ampacity of Conductors. The ampacity of conductors in cablebus shall be in accordance with 310.17 and 310.19 for