No splices or reinsulated conductors, such as would be the case with abandoned outlets on loop wiring, shall be allowed in raceways.

Part III. Construction Specifications

374.100 General. Cellular metal floor raceways shall be constructed so that adequate electrical and mechanical continuity of the complete system will be secured. They shall provide a complete enclosure for the conductors. The interior surfaces shall be free from burrs and sharp edges, and surfaces over which conductors are drawn shall be smooth. Suitable bushings or fittings having smooth rounded edges shall be provided where conductors pass.

ARTICLE
376 Metal Wireways

Part I. General

376.1 Scope. This article covers the use, installation, and construction specifications for metal wireways and associated fittings.

Wireways are sheet-metal enclosures equipped with hinged or removable covers and are manufactured in 1-foot to 10-foot lengths and various widths and depths. Couplings, elbows, end plates, and accessories such as T and X fittings are available. Unlike auxiliary gutters, which are not permitted to extend more than 30 feet from the equipment they supplement, wireways may be run throughout an entire area.

Part II. Installation

376.10 Uses Permitted. The use of metal wireways shall be permitted as follows:

(1) For exposed work.
(2) In any hazardous (classified) location, as permitted by other articles in this *Code*.
(3) In wet locations where wireways are listed for the purpose.
(4) In concealed spaces as an extension that passes transversely through walls, if the length passing through the wall is unbroken. Access to the conductors shall be maintained on both sides of the wall.

376.12 Uses Not Permitted. Metal wireways shall not be used in the following:

(1) Where subject to severe physical damage
(2) Where subject to severe corrosive environments

376.20 Conductors Connected in Parallel. Where single conductor cables comprising each phase, neutral, or grounded conductor of an alternating-current circuit are connected in parallel as permitted in 310.10(G), the conductors shall be installed in groups consisting of not more than one conductor per phase, neutral, or grounded conductor.

Informational Note: The purpose of having all parallel conductor sets within the same group is to prevent current imbalance in the paralleled conductors due to inductive reactance.

376.21 Size of Conductors. No conductor larger than that for which the wireway is designed shall be installed in any wireway.

376.22 Number of Conductors and Ampacity. The number of conductors or cables and their ampacity shall comply with 376.22(A) and (B).

(A) Cross-Sectional Areas of Wireway. The sum of the cross-sectional areas of all contained conductors and cables at any cross section of a wireway shall not exceed 20 percent of the interior cross-sectional area of the wireway.

(B) Adjustment Factors. The adjustment factors in 310.15(C)(1) shall be applied only where the number of current-carrying conductors, including neutral conductors classified as current-carrying under 310.15(E), exceeds 30 at any cross section of the wireway. Conductors for signaling circuits or controller conductors between a motor and its starter and used only for starting duty shall not be considered as current-carrying conductors.

376.23 Insulated Conductors. Insulated conductors installed in a metal wireway shall comply with 376.23(A) and (B).

(A) Deflected Insulated Conductors. Where insulated conductors are deflected within a metal wireway, either at the ends or where conduits, fittings, or other raceways or cables enter or leave the metal wireway, or where the direction of the metal wireway is deflected greater than 30 degrees, dimensions corresponding to one wire per terminal in Table 312.6(A) shall apply.

(B) Metal Wireways Used as Pull Boxes. Where insulated conductors 4 AWG or larger are pulled through a wireway, the distance between raceway and cable entries enclosing the same conductor shall not be less than that required by 314.28(A)(1) for straight pulls and 314.28(A)(2) for angle pulls. When transposing cable size into raceway size, the minimum metric designator (trade size) raceway required for the number and size of conductors in the cable shall be used.

See also

Exhibit 314.10 for an example showing calculations for splices, angle pulls, or U pulls

Exhibit 314.11 for an example showing calculations for raceways enclosing the same conductor

376.30 Securing and Supporting. Metal wireways shall be supported in accordance with 376.30(A) and (B).

(A) Horizontal Support. Wireways shall be supported where run horizontally at each end and at intervals not to exceed 1.5 m (5 ft) or for individual lengths longer than 1.5 m (5 ft) at each end or joint, unless listed for other support intervals. The distance between supports shall not exceed 3 m (10 ft).

(B) Vertical Support. Vertical runs of wireways shall be securely supported at intervals not exceeding 4.5 m (15 ft) and shall not have more than one joint between supports. Adjoining wireway sections shall be securely fastened together to provide a rigid joint.

376.56 Splices, Taps, and Power Distribution Blocks.

(A) Splices and Taps. Splices and taps shall be permitted within a wireway, provided they are accessible. The conductors, including splices and taps, shall not fill the wireway to more than 75 percent of its area at that point.

(B) Power Distribution Blocks.

(1) Installation. Power distribution blocks installed in metal wireways shall be listed. Power distribution blocks installed on the line side of the service equipment shall be marked "suitable for use on the line side of service equipment" or equivalent.

(2) Size of Enclosure. In addition to the wiring space requirement in 376.56(A), the power distribution block shall be installed in a wireway with dimensions not smaller than specified in the installation instructions of the power distribution block.

(3) Wire Bending Space. Wire bending space at the terminals of power distribution blocks shall comply with 312.6(B).

(4) Live Parts. Power distribution blocks shall not have uninsulated live parts exposed within a wireway, whether or not the wireway cover is installed.

(5) Conductors. Conductors shall be arranged so the power distribution block terminals are unobstructed following installation.

376.58 Dead Ends. Dead ends of metal wireways shall be closed.

N **376.60 Grounding.** Listed metal wireway shall be permitted as an equipment grounding conductor in accordance with 250.118(A)(13).

376.70 Extensions from Metal Wireways. Extensions from wireways shall be made with cord pendants installed in accordance with 400.14 or with any wiring method in Chapter 3 that includes a means for equipment grounding. Where a separate equipment grounding conductor is employed, connection of the equipment grounding conductors in the wiring method to the wireway shall comply with 250.8 and 250.12.

Extensions from wireways are made through knockouts provided on the wireway or are field punched. The extension wiring method must provide for equipment grounding. Cables and nonmetallic raceways as well as the wireway must include a wire-type equipment grounding equipment (EGC) to ensure effective continuation of the ground path.

Part III. Construction Specifications

376.100 Construction.

Custom-made wireways and fittings must comply with the requirements in 376.100(A) through (D).

(A) Electrical and Mechanical Continuity. Wireways shall be constructed and installed so that electrical and mechanical continuity of the complete system are assured.

(B) Substantial Construction. Wireways shall be of substantial construction and shall provide a complete enclosure for the contained conductors. All surfaces, both interior and exterior, shall be suitably protected from corrosion. Corner joints shall be made tight, and where the assembly is held together by rivets, bolts, or screws, such fasteners shall be spaced not more than 300 mm (12 in.) apart.

(C) Smooth Rounded Edges. Suitable bushings, shields, or fittings having smooth, rounded edges shall be provided where conductors pass between wireways, through partitions, around bends, between wireways and cabinets or junction boxes, and at other locations where necessary to prevent abrasion of the insulation of the conductors.

(D) Covers. Covers shall be securely fastened to the wireway.

376.120 Marking. Metal wireways shall be so marked that their manufacturer's name or trademark will be visible after installation.

ARTICLE 378 Nonmetallic Wireways

Part I. General

378.1 Scope. This article covers the use, installation, and construction specifications for nonmetallic wireways and associated fittings.

378.6 Listing Requirements. Nonmetallic wireways and associated fittings shall be listed.

Part II. Installation

378.10 Uses Permitted. The use of nonmetallic wireways shall be permitted in the following:

(1) Only for exposed work, except as permitted in 378.10(4).