

## Chapter E 357

## STRUCTURAL RACEWAYS

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**E 357.01 Definitions.** Structural raceways are formed steel members approved for the installation of electrical wires or cables within them.

(1) Vertical members used for studs or columns shall be tubes or channels.

(2) Horizontal headers used as beams or top plates shall be provided with suitable covers, end closers, and fittings.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 357.02 Use.** Structural raceways used to enclose electrical conductors shall be used only in single-family dwellings.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 357.03 Other articles.** Installation of conductors in structural raceways shall comply with the applicable provisions of Wis. Adm. Code chapter E 300.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

## A. INSTALLATION

**E 357.04 Openings in vertical members.** Vertical members may have openings provided in them for the purpose of installing wiring devices. Vertical members may be concealed. Openings in vertical members shall provide access to wiring. The size of such openings shall comply with the provisions of section E 300.14 and chapter E 370. Wiring devices may be installed in openings in vertical members without the use of individual boxes, provided that the back and sides of each device are surrounded by terminal barriers.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 357.05 Horizontal headers.** Horizontal headers shall be securely fastened to vertical members.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 357.06 Number of conductors in raceway.** Structural raceways shall not contain more than 20 current-carrying conductors at any cross-section, and the total cross-sectional areas of all contained conductors shall not exceed 20% of the interior cross-section.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 357.07 Splices and taps.** Splices and taps shall be made only in horizontal headers, or junction boxes. The conductors including splices and taps shall not fill the structural raceway to more than 75% of its area at that point. All splices and taps shall be made and insulated by approved methods.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 357.08 Size of conductors.** No conductor larger than number 6 AWG shall be installed in vertical or horizontal members.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 357.09 Accessibility.** The covers of the horizontal members shall be accessible after installation and shall not be obstructed by the wall finish.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 357.10 Fittings.** Fittings shall be designed and installed to prevent physical damage to electrical conductors. Fittings shall be free from burrs and sharp edges.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 357.11 Extensions from vertical structural members.** Extensions from vertical structural members shall be made with rigid or flexible metal conduit, electrical metallic tubing, surface metal raceway or metal-clad cable.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 357.12 Dead ends.** Dead ends of structural raceways shall be closed.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 357.13 Installation of electrical devices.** The installation of switches, receptacles and outlets shall be in accordance with the requirements of Wis. Adm. Code chapters E 380 and E 310, except as otherwise permitted in this chapter.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 357.14 Grounding.** All elements of structural raceway systems shall be bonded and effectively grounded.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

## B. CONSTRUCTION SPECIFICATIONS

**E 357.15 Marking.** Structural raceways and fittings shall be marked with the manufacturer's name, trademark, or identification symbol.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.

**E 357.16 General.** All metal components shall be properly coated to prevent corrosion. The interior shall be free from sharp edges and burrs. The structural raceway systems shall be constructed to provide electrical and mechanical continuity of the complete system. They shall provide a complete enclosure for the conductors. Enclosures shall be approved for the purpose.

**History:** Cr. Register, January, 1968, No. 145, eff. 2-1-68.