

## Chapter E 348

## ELECTRICAL METALLIC TUBING

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**E 348.01 Use.** (1) Electrical metallic tubing may be used for both exposed and concealed work. Electrical metallic tubing protected from corrosion solely by enamel shall not be used. Electrical metallic tubing shall not be used (a) where during installation or afterwards, it will be subject to severe physical damage; (b) in cinder concrete or fill where subject to permanent moisture unless protected on all sides by a layer of non-cinder concrete at least 2 inches thick or unless the tubing is at least 18 inches under the fill. Where practicable, the use of dissimilar metals throughout the system shall be avoided to eliminate the possibility of galvanic action.

(2) Unless made of material judged suitable for the condition, or unless corrosion protection approved for the condition is provided, ferrous or nonferrous electrical metallic tubing, elbows, couplings and fittings shall not be installed in concrete or in direct contact with the earth, or in areas subject to severe corrosive influences.

*Note:* See section E 300.05 for limitation in the use of ferrous raceways and fittings protected from corrosion solely by enamel.

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

**E 348.02 Other chapters.** Installations of electrical metallic tubing shall comply with the provisions of the applicable rules of chapter E 300.

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

## A. INSTALLATION

**E 348.04 Wet locations.** All supports, bolts, straps, screws, etc. shall be of corrosion-resistant materials or protected against corrosion by approved corrosion-resistant materials.

*Note:* See section E 300.05.

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

**E 348.05 Minimum and maximum sizes.** No tubing smaller than  $\frac{1}{2}$  inch, electrical trade size, shall be used except as provided for underplaster extensions in chapter E 344 and for enclosing the leads of motors as permitted in section E 430.145 (2). The maximum size of tubing shall be the 4-inch electrical trade size.

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

**E 348.06 Number of conductors in tubing.** One tubing shall not contain more conductors than as provided in section E 346.06.

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

**E 348.07 Threads.** Tubing shall not be coupled together nor connected to boxes, fittings, or cabinets by means of threads in the wall of the tubing, except by fittings approved for the purpose. Threads shall not be of the standard pipe thread dimensions.

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

**E 348.08 Couplings and connectors.** Threadless couplings and connectors used with tubing shall be made up tight. Where buried in masonry or concrete, they shall be concrete-tight type, or where installed in wet locations, shall be of the rain-tight type.

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

**E 348.09 Bends; how made.** Bends in the tubing shall be so made that the tubing will not be injured and that the internal diameter of the tubing will not be effectively reduced. The radius of the curve of the inner edge of any field bend shall not be less than shown in table E 346.10.

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

**E 348.10 Bends; number in one run.** A run of electrical metallic tubing between outlet and outlet, between fitting and fitting, or between outlet and fitting, shall not contain more than the equivalent of 4 quarter bends (360 degrees, total), including those bends located immediately at the outlet or fitting.

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

**E 348.11 Reaming.** All cut ends of electrical metallic tubing shall be reamed to remove rough edges.

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

**E 348.12 Supports.** See section E 300.11.

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

**E 348.13 Boxes and fittings.** See chapter E 370.

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

## B. CONSTRUCTION SPECIFICATIONS

**E 348.14 General.** Electrical metallic tubing shall conform to the following:

(1) **CROSS SECTION.** The tubing, and elbows and bends for use with the tubing, shall have a circular cross-section.

(2) **FINISH.** Tubing shall have such a finish or treatment of outer surfaces as will provide an approved durable means of readily distinguishing it, after installation, from rigid conduit.

(3) **CONNECTORS.** Where the tubing is coupled together by threads, the connector shall be so designed as to prevent bending of the tubing at any part of the thread.

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