

Chapter E 331

ALUMINUM SHEATHED CABLE

Type ALS

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A. GENERAL

E 331.01 Definition and construction. Aluminum sheathed type ALS cable is factory assembled cable consisting of one or more insulated conductors enclosed in an impervious, continuous, closely fitting tube of aluminum. It shall be used with approved fittings for terminating and connecting to boxes, outlets and other equipment.

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

E 331.02 Use. (1) Aluminum sheathed cable may be used in both exposed and concealed work, in dry or wet locations. The sheath of aluminum sheathed cable exposed to destructive corrosive conditions such as environments containing strong chlorides or caustic alkalis, or where vapors of chlorine or hydrochloric acid are present or where the cable is installed underground, shall be protected by materials suitable for those conditions. See section E 300.05.

(2) Aluminum sheathed cable and fittings shall not be embedded or buried directly in concrete or used in areas subject to severe corrosive influences unless suitable supplemental corrosion protection is provided.

Note: See section E 310.06.

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

E 331.03 Other chapters. In addition to the provisions of this chapter, the installation of aluminum sheathed cable shall comply with the other applicable provisions of this code. See especially chapter E 300.

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

B. INSTALLATIONS

E 331.04 Supports. Aluminum sheathed cable shall be securely supported by staples, straps, hangers, or similar fittings so designed and installed as not to injure the cable. Cable shall be secured at intervals not exceeding 6 feet except where the cable is fished.

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

E 331.05 Through studs, joists and rafters. See section E 300.08.

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

E 331.06 Wet locations. See section E 300.05.

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

E 331.07 Bends. All bends shall be so made that the cable will not be damaged and the radius of the curve on the inner edge of any bend shall be not less than:

- (1) Ten times the external diameter of the sheath for cable not more than $\frac{3}{4}$ inch in external diameter.
- (2) Twelve times the external diameter of the sheath for cable more than $\frac{3}{4}$ inch but not more than $1\frac{1}{2}$ inches in external diameter; and
- (3) Fifteen times the external diameter of the sheath for cable more than $1\frac{1}{2}$ inches in external diameter.

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

E 331.08 Fittings. When aluminum sheathed cable is connected to boxes or equipment, the fittings shall be approved for the conditions of service. When single conductor aluminum sheathed cables enter metal boxes through separate openings refer to section E 300.20.

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

C. CONSTRUCTION

E 331.09 General. Type ALS cable shall conform to the following:

- (1) **CONDUCTORS.** The conductors shall be copper or electrical conductor (EC) grade aluminum, solid or stranded.
- (2) **INSULATION.** The insulation shall be a type listed in table E 310.02 (2).
- (3) **INSULATION COVERING.** The covering over the insulation shall be the same as permitted for lead sheathed cable or multiple conductor cable.
- (4) **OUTER SHEATH.** The outer sheath shall be of a continuous closely fitting tube of aluminum to provide mechanical protection, a moisture seal and an adequate path for equipment grounding purposes and shall conform with provisions of section E 331.02. The sheath shall not be used as a current-carrying conductor.

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