

## Chapter E 336

## NON-METALLIC SHEATHED CABLE

## Types NM and NMC

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**E 336.01 Definition.** A non-metallic sheathed cable is an assembly of 2 or more insulated conductors having an outer sheath of moisture-resistant, flame-retardant, non-metallic material.

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

**E 336.02 Construction.** Nonmetallic sheathed cable shall be an approved type NM or NMC in sizes No. 14 through 2 AWG with copper conductors and in sizes No. 12 through 2 with aluminum conductors. In addition to the insulated conductors, the cable may have an approved size of uninsulated or bare conductor for grounding purposes only.

(1) **TYPE NM.** The conductors shall comply with the requirements for the type of conductor used. Overall fibrous coverings shall have a flame-retardant and moisture-resistant finish.

(2) **TYPE NMC.** The cable shall be of a type approved for the purpose. The over-all covering shall be flame-retardant, moisture-resistant, fungus-resistant and corrosion-resistant.

(3) **MARKING.** In addition to the provisions of Wis. Adm. Code chapter E 310, the cable shall carry distinctive marker on exterior for its entire length, specifying cable type, and the name of the manufacturing company.

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

**E 336.03 Use.** Non-metallic sheathed cable may be installed for both exposed and concealed work as follows:

(1) **TYPE NM.** This type of non-metallic sheathed cable may be installed for both exposed and concealed work in normally dry locations. It may be installed or fished in air voids in masonry block or tile walls where such walls are not exposed or subject to excessive moisture or dampness. Type NM cable shall not be installed where exposed to corrosive fumes or vapors; nor shall it be embedded in masonry, concrete, fill or plaster; nor run in shallow chase in masonry or concrete and covered with plaster or similar finish.

(2) **MOISTURE AND CORROSION-RESISTANT TYPE NMC.** This type of non-metallic sheathed cable may be installed for both exposed and concealed work in dry, moist, damp or corrosive locations, and in

outside and inside walls of masonry block or tile. Where embedded in plaster or run in a shallow chase in masonry walls and covered with plaster within 2 inches of the finished surface, it shall be protected against damage from nails by a cover of corrosion-resistant coated steel at least 1/16 inch in thickness and 3/4 inch wide in the chase or under the final surface finish.

(3) USES NOT PERMISSIBLE FOR EITHER TYPE NM OR NMC NON-METALLIC SHEATHED CABLE. These types shall not be used as: (a) Service-entrance cable, (b) in commercial garages, (c) in theaters except as provided in section E 520.04, (d) in motion picture studios, (e) in storage battery rooms, (f) in hoistways, (g) in any hazardous location, (h) embedded in poured cement, concrete or aggregate.

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

**E 336.04 Other chapters.** In addition to the provisions of this chapter, installations of non-metallic sheathed cable shall conform to the other applicable provisions of this code. See especially chapter E 300.

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

**E 336.05 Supports.** Non-metallic sheathed cable shall be secured by approved staples, straps, or similar fittings, so designed and installed as not to injure the cable. Cable shall be secured in place at intervals not exceeding 4 1/2 feet and within 12 inches from every cabinet, box or fitting, except that in concealed work in finished buildings or finished panels for prefabricated buildings where such supporting is impracticable, the cable may be fished between points of access.

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

**E 336.06 Exposed work; general.** In exposed work, except as provided in sections E 336.08 and E 336.09, the cable shall be installed as follows:

(1) The cable shall closely follow the surface of the building finish or of running boards.

(2) It shall be protected from physical damage where necessary, by conduit, pipe, guard strips or other means. Where passing through a floor the cable shall be enclosed in rigid metal conduit or metal pipe extending at least 6 inches above the floor.

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

**E 336.07 Through studs, joists and rafters.** See section E 300.08.

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

**E 336.08 In unfinished basements.** Where the cable is run at angles with joists in unfinished basements, assemblies not smaller than two No. 6 or three No. 8 conductors may be secured directly to the lower edges of the joists; smaller assemblies shall either be run through bored holes in the joists or on running boards. Where run parallel to joists, cable of any size shall be secured to the sides or face of the joists.

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

**E 336.09 In accessible attics.** Cable in accessible attics or roof spaces shall also conform with section E 334.13.

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

**E 336.10 Bends.** Bends in cable shall be so made, and other handling shall be such, that the protective coverings of the cable will not be injured, and no bend shall have a radius less than 5 times the diameter of the cable.

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

**E 336.11 Devices of insulating material.** (1) Switch, outlet, and tap devices of insulating material may be used without boxes in exposed cable wiring, and for concealed work for rewiring in existing buildings where the cable is concealed and fished. Openings in such devices shall form a close fit around the outer covering of the cable and the device shall fully enclose that part of the cable from which any part of the covering has been removed.

(2) Where connections to conductors are by binding screw terminals, there shall be available as many terminals as conductors, unless cables are clamped within the structure and terminals are of a type approved for multiple conductors.

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

**E 336.12 Boxes of insulating material.** Non-metallic outlet boxes approved for the purpose may be used as provided in section E 370.03.

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