Informational Note No. 3: See 310.14(A)(3) for temperature limitation of conductors.

(5) Types I and II construction where installed within raceways permitted to be installed in Types I and II construction.

A well-established means of codifying fire protection and fire safety requirements is to classify buildings by types of construction, based on materials used for the structural elements and the degree of fire resistance afforded by each element. The five fundamental construction types used by the model building codes are as follows:

Type I (fire resistive)
Type II (noncombustible)
Type III (combination of combustible and noncombustible)
Type IV (heavy timber)
Type V (wood frame)

Types I and II basically require all structural elements to be noncombustible, whereas Types III, IV, and V allow some or all of the structural elements to be combustible (wood).

The selection of building construction types is regulated by the local building code, based on the occupancy, height, and area of the building. If a building of a selected height (in feet or stories above grade) and area is permitted to be built of combustible construction (i.e., Types III, IV, or V), the installation of nonmetallic-sheathed cable is permitted. Common areas (corridors) and incidental and subordinate uses (such as laundry rooms and lounge rooms) that serve a multifamily dwelling occupancy are also considered part of the multifamily occupancy. Type NM cable is allowed in such areas.

If a building is of noncombustible construction (Type I or II) by the owner's choice, even though the building code would permit combustible construction, the building is allowed to be wired with Type NM cable. In such an instance, Type NM cable may be installed in the noncombustible building because the building code would have permitted the building to be of combustible construction.

If Type I or Type II construction is required, Section 334.10(5) permits Type NM cables to be installed if the cables are in a raceway. A raceway is permitted to be used only if it complies with the article for the raceway and its use does not violate another article in the *NEC*.

See also

Informative Annex E for information on the types of construction as well as a table that cross-references the five construction types to the types described in the model building codes

(A) Type NM. Type NM cable shall be permitted as follows:

(1) For both exposed and concealed work in normally dry locations except as prohibited in 334.10(3)
(2) To be installed or fished in air voids in masonry block or tile walls

For concealed work, cable should be installed where it is protected from physical damage often caused by nails or screws. Where practical, care should be taken to avoid areas where trim, door and window casings, baseboards, moldings, and so forth are likely to be nailed.

See also

300.4 for details on protection against physical damage

(B) Type NMC. Type NMC cable shall be permitted as follows:

(1) For both exposed and concealed work in dry, wet, damp, or corrosive locations, except as prohibited by 334.10(3)
(2) In outside and inside walls of masonry block or tile
(3) In a shallow chase in masonry, concrete, or adobe protected against nails or screws by a steel plate at least 1.59 mm (1/16 in.) thick and covered with plaster, adobe, or similar finish

If Type NM cable is used in dairy barns and similar agricultural buildings (see Article 547), it must be Type NMC (corrosion resistant). The cable will be exposed to fumes, vapors, or liquids such as ammonia and barnyard acids. Under such circumstances, ordinary Type NM cable can deteriorate rapidly due to ammonia fumes or the growth of fungus or mold.

334.12 Uses Not Permitted.

Restrictions of use of Type NM cable also exist elsewhere in the *NEC*. For example, Type NM cables are not permitted to be installed in ducts, plenums, and other air-handling spaces.

See also

300.22, which limits the use of materials in ducts, plenums, and other air-handling spaces that can contribute smoke and products of combustion during a fire

Δ **(A) Types NM and NMC.** Types NM and NMC cables shall not be permitted as follows:

(1) In any dwelling or structure not specifically permitted in 334.10(1), 334.10(2), 334.10(3), and 334.10(5)
(2) Exposed within a dropped or suspended ceiling cavity in other than one- and two-family and multifamily dwellings

Nonmetallic-sheathed cables are prohibited in the space above hung ceilings that allow access. This requirement does not apply to dwelling-type occupancies. The term *exposed*, as used in this requirement, meets the definition of *exposed (as applied to wiring methods)* found in Article 100, which states "on or attached to the surface or behind panels designed to allow access."

For example, cables installed above a gypsum board ceiling or soffit would not be considered exposed cable, if the area above the ceiling is not accessible (does not have removable tiles or does not contain an access panel). Because hung or dropped ceilings are often accessible, cables installed above those types of ceilings would be considered exposed cables if the cables do not have additional physical protection.