ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*.

The finish rating of wall and ceiling finish materials tested and rated by UL as part of wall and ceiling assemblies can be found in the UL *Fire Resistance Directory*, immediately following the assembly rating and just below the design number. Only assemblies containing combustible support members, however, have published finish ratings. Obviously, limiting ENT to constructions consisting of combustible support members is not the intent. This section is intended to provide a 15-minute thermal barrier as a minimum threshold of acceptability.

Commentary Table 362.1, reproduced from the NFPA *Fire Protection Handbook*, 20th edition (Volume 2, Section 19, Chapter 2, Table 19.2.13), provides ratings for common finish materials. If the finish rating concealing the ENT is unknown or is less than 15 minutes, the ENT can still be used if the installation meets the criteria in 362.10, including the three-floor limitation, where required, and the installation is not prohibited by 362.12. For finish materials not tested and rated in the UL *Fire Resistance Directory*, use Commentary Table 362.1.

See also

10.2.1 of NFPA *101®*, *Life Safety Code®*, for more information regarding classification of interior finish material

(3) In locations subject to severe corrosive influences as covered in 300.6 and where subject to chemicals for which the materials are specifically approved.
(4) In concealed, dry, and damp locations not prohibited by 362.12.
(5) Above suspended ceilings where the suspended ceilings provide a thermal barrier of material that has at least a 15-minute finish rating as identified in listings of fire-rated assemblies, except as permitted in 362.10(1)a.

Exception to (5): ENT shall be permitted to be used above suspended ceilings in buildings exceeding three floors above grade where the building is protected throughout by an approved automatic fire protective system.

Informational Note No. 3: See NFPA 13-2022, *Standard for the Installation of Sprinkler Systems*, a recognized fire sprinkler system(s) standard.

(6) Encased in poured concrete floors, ceilings, walls, and slabs.
(7) Embedded in a concrete slab on grade where ENT is placed on sand or approved screenings, provided fittings identified for this purpose are used for connections.
(8) For wet locations as permitted in this section or in a concrete slab on or belowgrade, with fittings listed for the purpose.
(9) Metric designator 16 through 27 (trade size ½ through 1) as listed manufactured prewired assembly.

Prewired ENT is a listed assembly whose conductors must be installed at the manufacturing facility, where controlled conditions prevent damage to the conductor insulation. Special tools are required for cutting prewired ENT to prevent nicking of the conductor insulation.

(10) With conductors or cables rated at a temperature higher than the listed temperature rating of ENT if the conductors or cables are not operated at a temperature higher than the listed temperature rating of the ENT.

362.12 Uses Not Permitted. ENT shall not be used in the following:

(1) In any hazardous (classified) location, except as permitted by other articles in this *Code*
(2) For the support of luminaires and other equipment
(3) Where subject to ambient temperatures in excess of 50°C (122°F) unless listed otherwise
(4) For direct earth burial
(5) In exposed locations, except as permitted by 362.10(1), 362.10(5), and 362.10(8)
(6) In theaters and similar locations, except as provided in 518.4 and 520.5
(7) Where exposed to the direct rays of the sun, unless identified as sunlight resistant
(8) Where subject to physical damage

Informational Note: Extreme cold may cause some types of nonmetallic conduits to become brittle and therefore more susceptible to damage from physical contact.

362.20 Size.

(A) Minimum. ENT smaller than metric designator 16 (trade size ½) shall not be used.

(B) Maximum. ENT larger than metric designator 63 (trade size 2½) shall not be used.

Informational Note: See 300.1(C) for the metric designators and trade sizes. These are for identification purposes only and do not relate to actual dimensions.

362.22 Number of Conductors. The number of conductors shall not exceed that permitted by the percentage fill in Table 1, Chapter 9.

Cables shall be permitted to be installed where such use is not prohibited by the respective cable articles. The number of cables shall not exceed the allowable percentage fill specified in Table 1, Chapter 9.

Table 4 of Chapter 9 provides the usable area within the selected conduit or tubing, and Table 5 provides the required area for each conductor. Examples using these tables to calculate a conduit or tubing size are provided in the commentary following Chapter 9, Notes to Tables, Note 6.

To select the proper trade size of ENT, see the appropriate sub-table for Article 362, Electrical Nonmetallic Tubing (ENT), in Table 4 of Chapter 9. If the conductors are of the same wire size and insulation type, Tables C.2 and C.2(A) for ENT in Informative Annex C can be used instead of performing the calculations.