

2017 NFPA Codes & Standards - News Flash

The National Fire Protection Association has just published the 2017 National Electrical Code® (NEC®), along with NFPA 75, Standard for the Fire Protection of Information Technology Equipment. Several changes are important to the communications cable industry.

Cable Temperature Ratings

The 2017 NEC® now has consistent temperature rating requirements for all communications and data cables. All cables are required to have at least a 60°C rating and the temperature rating shall be marked on the cable if it exceeds 60°C.

The purpose of having a temperature rating is to make sure that cables are operated so that they do not exceed their rating. The 2017 NEC® plugged two gaps in the enforcement of that basic concept.

1. The first gap is that Class 2 and Class 3 power-limited circuit cables did not explicitly have temperature ratings in the 2014 NEC® (however, these were included in the UL Listing requirements). Cable temperature ratings are now required in Article 725 of the 2017 NEC®.
2. The second gap is that communications cables, even though they had temperature rating requirements in the 2014 NEC®, there was no language that enforced that this rating shall not be exceeded. The requirements for communications circuits are in an independent chapter of the NEC® (Chapter 8), which did not reference the fundamental requirements concerning overheating of conductors in another part of the code.

CCCA submitted the Public Comment that resulted in the new requirement in Section 800.3 (H) in the 2017 NEC® that communications cables are not allowed to be used in such a manner that they exceed their temperature ratings.

Powering over Communications / Data Cables

Communications / data cables are widely used for simultaneously powering and communicating / signaling with equipment. Recognizing that the trend in the industry is to supply increasing levels of power, there are provisions in the 2017 NEC® to assure that the temperature of communications / data cables do not exceed their temperature ratings.

While the NEC® has numerous ampacity tables to guide the use of power wiring, these ampacity tables generally do not cover the small wire gauges used in communications cables. The 2017 NEC® has a new section in Article 725 to address the safe installation of Class 2 and Class 3 cables used for simultaneously powering and communicating / signaling with equipment.

A key component of the new Section 725.144, *Transmission of Power & Data*, is an Ampacity Table for 4-pair Class 2 and Class 3 cables that takes into account wire gauge (AWG #22, #23, #24 & #26) and cable bundle / grouping size, typical for communications LAN cable designs and installations. There is also a new type of cable, "limited power" (-LP) cables, that have marked ampacities and are suitable for use in any grouping, including the large groupings found in cable trays and cable routing assemblies. The new use requirements for Class 2 and Class 3 circuit cables also now apply to communications LAN cables powering communications equipment, if the power is above a minimal level (60 watts).

- More -

Painting of Cables

In the construction of office buildings, cables are often installed before construction is completed. Consequently, communications cables may be inadvertently spray-painted or coated with foreign substances. Painting the cables can change the cable performance properties in unknown ways. This is especially true of plenum cables, which are designed to have excellent fire resistance properties. Painting or coating of plenum cables might compromise their fire safety properties.

In order to alert users to this issue, Informational Notes have been added to Articles 770 (optical fiber cables), 800 (communications cables) and 820 (CATV coaxial cables). The note for Article 800 reads:

“Informational Note No. 3: Paint, plaster, cleaners, abrasives, corrosive residues, or other contaminants may result in an undetermined alteration of communications wire and cable properties.”

CCCA submitted Public Comments in support of these informational notes.

Under-Carpet Cables Extended to Modular Flooring

In the 2017 *NEC*[®], applications of communications “under-carpet” cables have been extended to include the installation of cables under modular flooring.

CCCA submitted Public Comments in support of the extension for the use of under-carpet cables.

Plenum Grade Cable Routing Assemblies

The 2017 *NEC*[®] has new safety Listing requirements for plenum grade cable routing assemblies. The new requirements correlate with those that are currently specified in *NFPA 90A Standard for the Installation of Air-Conditioning and Ventilating Systems*. Consequently, these new Listings allow plenum grade cable routing assemblies to be installed in plenums.

CCCA submitted Public Inputs and Public Comments to effect these changes.

NFPA 75 Passive Fire Protection Options in Concealed Spaces

The 2017 *NFPA 75 Standard for the Fire Protection of Information Technology Equipment* now requires the use of plenum cables and plenum communication raceways if there is not active fire suppression (such as sprinklers or clean agents) installed in concealed spaces / under floor plenums in data centers.

CCCA supported Public Inputs and Public Comments to effect these changes.