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Tray Cable for use in Residential Applications

In the 2017 National Electrical Code®, a new allowance for tray cable was added for one- and two-family dwellings in Section 336.10(9). Tray cable with both power and control conductors is permitted to be used (without being installed in cable tray) in these occupancies. Interior installations are required to comply with the installation requirements of nonmetallic-sheathed cable (NM-B), and exterior installations are required to comply with the installation requirements of underground feeder cable (UF-B). These installations requirements are found in Article 334 for interior installations and Article 340 for exterior installations.

The designation of the tray cable used in these residential applications is "TC-ER-JP." The "TC" stands for tray cable, the "ER" stands for exposed runs, and the "JP" stands for joist pull. The "ER" rating means that the cable has been tested to withstand the same crush and impact levels as MC (metal-clad) cable. The "JP" rating means that the cable has been tested to withstand the same pulling stresses through framing members as nonmetallic-sheathed cable.

The new allowance is limited to applications that require both power and control conductors, and it is intended to provide an option for a nonmetallic cable wiring method for use in permanent generator installations. It may also be useful for certain HVAC applications, like mini-splits.

Cables containing power and Class 2 or 3 control circuits contained within the same cable require special construction features. The power and Class 2 or 3 control circuit conductors must be separated within the cable as required by Section 725.136.

Note that the ampacity of the cable is limited to 60º C, due to the installation requirements found in Articles 334 and 340. There is an exception that permits the use of the 75º C ampacity column if the cable is used for permanently installed generator applications that have equipment and terminals rated at 75º C at all conductor terminations.

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