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 60⁰ C, due to the installation requirements found in Articles 334 and 340. There is an exception that permits the use of the 75⁰ C ampacity column if the cable is used for permanently installed generator applications that have equipment and terminals rated at 75⁰ C at all conductor terminations.

Distribution List:
Standards and Conformity Assessment Policy Committee
Codes and Standards Committee
NEMA Technical Services Department
NOTICE AND DISCLAIMER

The information in this publication was considered technically sound by the consensus of persons engaged in the development and approval of the document at the time it was developed. Consensus does not necessarily mean that there is unanimous agreement among every person participating in the development of this document.

NEMA standards and guideline publications, of which the document contained herein is one, are developed through a voluntary consensus standards development process. This process brings together volunteers and/or seeks out the views of persons who have an interest in the topic covered by this publication. While NEMA administers the process and establishes rules to promote fairness in the development of consensus, it does not write the document and it does not independently test, evaluate, or verify the accuracy or completeness of any information or the soundness of any judgments contained in its standards and guideline publications.

NEMA disclaims liability for any personal injury, property, or other damages of any nature whatsoever, whether special, indirect, consequential, or compensatory, directly or indirectly resulting from the publication, use of, application, or reliance on this document. NEMA disclaims and makes no guaranty or warranty, expressed or implied, as to the accuracy or completeness of any information published herein, and disclaims and makes no warranty that the information in this document will fulfill any of your particular purposes or needs. NEMA does not undertake to guarantee the performance of any individual manufacturer or seller’s products or services by virtue of this standard or guide.

In publishing and making this document available, NEMA is not undertaking to render professional or other services for or on behalf of any person or entity, nor is NEMA undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances. Information and other standards on the topic covered by this publication may be available from other sources, which the user may wish to consult for additional views or information not covered by this publication.

NEMA has no power, nor does it undertake to police or enforce compliance with the contents of this document. NEMA does not certify, test, or inspect products, designs, or installations for safety or health purposes. Any certification or other statement of compliance with any health or safety-related information in this document shall not be attributable to NEMA and is solely the responsibility of the certifier or maker of the statement.