N 335.7 Marking. The cable shall be marked in accordance with 310.8(A)(2) through (A)(5). Voltage ratings shall not be marked on the cable.

N 335.8 Ampacity. The ampacity of the conductors shall be 5 amperes, except for 22 AWG conductors, which shall have an ampacity of 3 amperes.

N 335.9 Overcurrent Protection. Overcurrent protection shall not exceed 5 amperes for 20 AWG and larger conductors, and 3 amperes for 22 AWG conductors.

N 335.10 Bends. Bends in Type ITC cables shall be made so as not to damage the cable.

ARTICLE
336 Power and Control Tray Cable: Type TC

Part I. General

336.1 Scope. This article covers the use, installation, and construction specifications for power and control tray cable, Type TC.

The basic standard to investigate power and control tray cable is ANSI/UL 1277, *Electrical Power and Control Tray Cables with Optional Optical-Fiber Members*. Summary information regarding listed power and control tray cable may be found in the UL *Guide Information for Electrical Equipment*, under category QPOR.

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336.6 Listing Requirements. Type TC cables and associated fittings shall be listed.

Part II. Installation

336.10 Uses Permitted. Type TC cable shall be permitted to be used as follows:

(1) For power, lighting, control, and signal circuits.
(2) In cable trays, including those with mechanically discontinuous segments up to 300 mm (1 ft).
(3) In raceways.
(4) In outdoor locations supported by a messenger wire.
(5) For Class 1 circuits as permitted in Parts II and III of Article 725.
(6) For non-power-limited fire alarm circuits if conductors comply with the requirements of 760.49.
(7) Between a cable tray and the utilization equipment or device(s), provided all of the following apply:

a. The cable is Type TC-ER.
b. The cable is installed in industrial establishments where the conditions of maintenance and supervision ensure that only qualified persons service the installation.
c. The cable is continuously supported and protected against physical damage using mechanical protection such as struts, angles, or channels.
d. The cable complies with the crush and impact requirements of Type MC cable and is identified with the marking "TC–ER."
e. The cable is secured at intervals not exceeding 1.8 m (6 ft).
f. Equipment grounding for the utilization equipment is provided by an equipment grounding conductor within the cable. In cables containing conductors sized 6 AWG or smaller, the equipment grounding conductor shall be provided within the cable or, at the time of installation, one or more insulated conductors shall be permanently identified as an equipment grounding conductor in accordance with 250.119(C).

Exception to (7): Where not subject to physical damage, Type TC-ER shall be permitted to transition between cable trays and between cable trays and equipment or devices for a distance not to exceed 1.8 m (6 ft) without continuous support. The cable shall be mechanically supported where exiting the cable tray to ensure that the minimum bending radius is not exceeded.

Specific types of tray cable are permitted to extend from a cable tray to a piece of equipment without the use of conduit. According to ANSI/UL 1277, *Electrical Power and Control Tray Cables with Optional Optical-Fiber Members*, cables suitable for use as exposed wiring between cable tray and the utilization equipment are surface-marked "Type TC-ER" (tray cable for exposed runs).

The exception permits TC-ER cable to exit a cable tray without continuous support for a maximum of 6 feet. However, extension from cable tray to cable tray or from cable tray to equipment is not allowed beyond 6 feet without continuous support.

(8) Type TC cable shall be resistant to moisture and corrosive agents where installed in wet locations.
(9) For one- and two-family dwelling units, Type TC-ER-JP cable containing conductors for both power and control circuits shall be permitted for branch circuits and feeders. Type TC-ER-JP cable used as interior wiring shall be installed per the requirements of Part II of Article 334 and where installed as exterior wiring shall be installed per the requirements of Part II of Article 340.

Exception: Where used to connect a generator and associated equipment having terminals rated 75°C (140°F) or higher, the cable shall not be limited in ampacity by 334.80 or 340.80.

Informational Note No. 1: See 725.136 for limitations on Class 2 or 3 circuits contained within the same cable with conductors of electric light, power, or Class 1 circuits.

Power conductors and control conductors are often used to run between a generator and transfer switch, or between equipment of an HVAC system. Type TC-ER cable allows the power and control circuit conductors to occupy the same cable.