

Turck Industrial Ethernet Cables: Guide for use in cable trays

Turck offers CAT 5e industrial Ethernet cables with two different UL approvals. For the most common industrial Ethernet applications, we offer cables with c(UL)US CMX-OUTDOOR-CM approval. For applications in hazardous locations, such as Class 1 Division 2, we offer ITC/PLTC approval.

Ethernet is considered a communications cable. The CM listing for "Communications Cables" is appropriate for many Ethernet installations. NEC Article 800 "Communications Circuits" applies to most Ethernet installations in buildings, and table 800.154 (attached) lists the areas where CM cables are approved for install. The following Turck industrial Ethernet cable types are CM listed, and may be used as indicated in the yellow highlighted column: **440, 441, 442, 443, 444, 840, 841, 842, 843**. These cables can be used when supported by cable trays or in any raceway.*

In hazardous locations, a different UL approval is needed. Turck offers CAT 5e industrial Ethernet cables that are both UL 13 PLTC listed (compliant to NEC Article 725 "Class 1, Class 2, and Class 3 Remote-Control, Signaling, and Power Limited Circuits) and UL 2250 ITC listed (compliant to Article 727 "Instrumentation Tray Cable"). Turck industrial Ethernet cable type **444**, and types **421, 423** for PROFINET are suitable for use when Ethernet cabling is installed as described in these articles.

Important: Industrial Ethernet users and installers must determine their own code compliance needs, and whether a CM or ITC/PLTC listed cable is suitable for their specific installation and application.

Turck industrial Ethernet shielded cables are also UL AWM 600V recognized. This 600V construction and agency approval means these cables can be installed in cable trays near other 600V cables, as long as all other requirements are met and installation best practices are observed.

Turck Industrial Ethernet Jacket Material Provides:

- Excellent oil resistance (including lubricants used in most robot dress packs)
- Excellent moisture resistance
- Good ozone resistance
- Excellent UV and weathering resistance
- Excellent weld spatter resistance
- UL 1685 vertical flame test approval
- High flexing up to 10 million cycles for stranded cable
- Low temperature brittle point
- Tested for full CAT 5E performance

Turck Ethernet with CMX-OUTDOOR-CM Approval:

- Can be used when supported by cable trays or in recognized raceways*
- UL AWM 600V recognized
- Flexlife rated (stranded)
- TPE cable jacket
- 24 AWG

Turck Ethernet with ITC/PLTC Approval:

- Can be used in hazardous locations (C1D2 environments)
- UL AWM 600V recognized
- Flexlife rated (stranded)
- TPE cable jacket
- 22 AWG

PLEASE NOTE: All Turck industrial Ethernet cables meet or exceed full CAT 5e performance

* Recognized in NEC Article 800, Chapter 3

Applications of Communication Wires, Cables & Raceways in Buildings from NEC Table 800.154

| Applications | | Wire and Cable Type | | | | | |
|--|---|---------------------|-----|-----------|-----|------|-------------------------------|
| | | CMP | CMR | CMG CM | CMX | CMUC | Hybrid Power & Communications |
| In Air Ducts | In air ducts | Y | N | N | N | N | N |
| | In metal raceway that complies with 300.22(B) | Y | Y | Y | Y | N | N |
| In Other Spaces Used for Environmental Air (Ceiling Cavity, Raised Floor and Air-Handling Room Plenums) | In other spaces used for environmental air | Y | N | N | N | N | N |
| | In metal raceway that complies with 300.22(C) | Y | Y | Y | Y | N | N |
| | In plenum communications raceways | Y | N | N | N | N | N |
| | Supported by open metal cable trays | Y | N | N | N | N | N |
| | Supported by solid bottom metal cable trays with solid metal covers | Y | Y | Y | Y | N | N |
| In Risers | In vertical runs | Y | Y | N | N | N | N |
| | In metal raceways | Y | Y | Y | Y | N | N |
| | In fireproof shafts | Y | Y | Y | Y | N | N |
| | In plenum communications raceways | Y | Y | N | N | N | N |
| | In riser communications raceways | Y | Y | N | N | N | N |
| | In riser cable routing assemblies | Y | Y | N | N | N | N |
| | In one- and two-family dwellings | Y | Y | Y | Y | N | Y |
| Within Buildings in Other than Air-Handling Spaces and Risers | General | Y | Y | Y | Y | N | N |
| | In one- and two-family dwellings | Y | Y | Y | Y | Y | Y |
| | In multifamily dwellings | Y | Y | Y | Y | Y | N |
| | In non-concealed spaces | Y | Y | Y | Y | Y | N |
| | Supported by cable trays | Y | Y | Y | N | N | N |
| | Under carpet | N | N | N | N | Y | N |
| | In distributing frames and cross-connect arrays | Y | Y | Y | N | N | N |
| | In any raceway recognized in Chapter 3 | Y | Y | Y | Y | N | N |
| | In plenum communications raceways | Y | Y | Y | N | N | N |
| | In riser communications raceways and riser cable routing assemblies | Y | Y | Y | N | N | N |
| | In general-purpose communications raceways and general-purpose cable routing assemblies | Y | Y | Y | N | N | N |