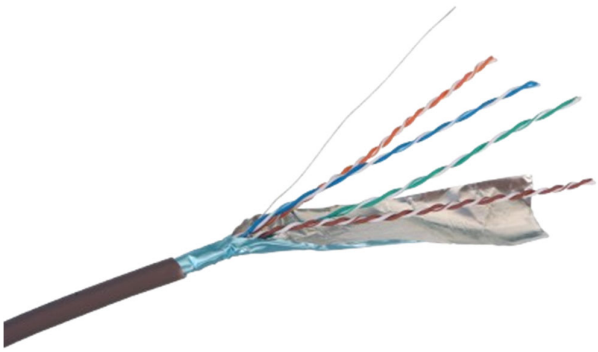
# Cat5e F/UTP Ethernet Bulk Cable — PVC

**4 Pairs | 24 AWG Solid Bare Copper | 100 MHz | 305 m (1000 ft) Reel**





## 1. GENERAL DESCRIPTION

Cat5e F/UTP (foil-screened) bulk cable is designed for structured cabling and Ethernet networks up to 1000BASE-T (Gigabit Ethernet). It features four twisted pairs of solid pure bare copper conductors an overall foil screen with drain wire, and a flame-retardant PVC jacket, making it suitable for indoor installations in electrically noisy environments such as data centres, industrial areas and buildings with high EMI. Supplied on a reel for easy, tangle-free pulling.

## 2. KEY FEATURES

- Pure bare copper solid conductors for low attenuation and stable long-run performance
- Overall foil screen (F/UTP) with drain wire for improved EMI / RFI immunity and reduced alien crosstalk
- Flame-retardant PVC jacket: flexible, durable and easy to strip and terminate
- Supports Gigabit Ethernet and PoE / PoE+ (IEEE 802.3af / 802.3at)
- Optimised pair twist lengths for low crosstalk and high return-loss stability
- Supplied on a 305 m reel for smooth, tangle-free pay-out

## 3. APPLICATIONS

- Horizontal cabling in structured cabling systems (permanent link / channel)
- 10BASE-T, 100BASE-TX, 1000BASE-T Ethernet
- Voice, CCTV / IP cameras, access control, PoE devices (IEEE 802.3af/at)
- Installations near power cables, motors, lifts, lighting ballasts or other EMI sources

## 4. APPLICABLE STANDARDS

- ANSI/TIA-568.2-D — Category 5e balanced twisted-pair cable
- ISO/IEC 11801 and IEC 61156-5 — Class D generic cabling
- IEC 60332-1 — Flame propagation (single vertical cable)

## 5. CABLE CONSTRUCTION

| | |
|---|---|
| **Conductor** | Solid pure bare copper, 24 AWG (Ø 0.51 mm nominal) |
| **Insulation** | Solid HDPE (high-density polyethylene) |
| **Pairs** | 4 twisted pairs, different twist lengths to minimise crosstalk |

| | |
|---|---|
| **Pair Colour Code** | Blue / White-Blue, Orange / White-Orange, Green / White-Green, Brown / White-Brown |
| **Screening** | Overall Al/PET foil screen (F/UTP), foil-to-foil overlap, with drain wire — coverage [100 %] |
| **Drain Wire** | [24 AWG tinned copper (7/0.20 mm)] |
| **Separator / Ripcord** | [None / Cross filler (X-spline)] / [Yes / No] |
| **Outer Jacket** | Flame-retardant PVC — colour: [Grey / Blue / White] |
| **Marking** | CAT5e F/UTP 4P 24AWG PVC [standard] [metre marking] |
| **Packing** | 305 m (1000 ft) on reel / pull box |

### Pair colour code

| Pair | Conductor 1 (Tip) | Conductor 2 (Ring) |
|---|---|---|
| 1 | White / Blue | Blue |
| 2 | White / Orange | Orange |
| 3 | White / Green | Green |
| 4 | White / Brown | Brown |

## 6. MECHANICAL & ENVIRONMENTAL

| | |
|---|---|
| **Overall Diameter (approx.)** | [6.0 ± 0.3 mm] |
| **Min. Bending Radius (installation)** | 8 × overall diameter |
| **Max. Pulling Tension** | 110 N (25 lbf) |
| **Operating Temperature** | [-20 °C to +60 °C] |
| **Installation Temperature** | [0 °C to +50 °C] |
| **Flame Retardancy** | IEC 60332-1 |

## 7. ELECTRICAL CHARACTERISTICS (AT 20 °C)

| | |
|---|---|
| **Characteristic Impedance (1–100 MHz)** | 100 Ω ± 15 Ω |
| **Max. DC Resistance (per conductor)** | 93.8 Ω/km (9.38 Ω/100 m) |
| **Max. DC Resistance Unbalance** | 5 % |
| **Max. Mutual Capacitance (1 kHz)** | 5.6 nF/100 m |
| **Max. Capacitance Unbalance (pair to ground)** | 330 pF/100 m |
| **Max. Propagation Delay (100 MHz)** | 538 ns/100 m |
| **Max. Delay Skew** | 45 ns/100 m |
| **Min. ACR-F / PS ACR-F (100 MHz)** | 23.8 dB / 20.8 dB per 100 m |
| **Nominal Velocity of Propagation (NVP)** | [ ~ 0.65 ] |
| **Max. Operating Voltage** | [72 V] |

| | |
|---|---|
| **Screening Effectiveness** | [ Transfer impedance / coupling attenuation per IEC 61156-5 ] |
| **Dielectric Strength (DC, 1 min)** | [ 1.0 kV ] |

## 8. TRANSMISSION PERFORMANCE (PER 100 M)

| Frequency (MHz) | Insertion Loss — max (dB) | NEXT — min (dB) | PS NEXT — min (dB) |
|---|---|---|---|
| 1 | 2.0 | 65.3 | 62.3 |
| 4 | 4.1 | 56.3 | 53.3 |
| 10 | 6.5 | 50.3 | 47.3 |
| 16 | 8.2 | 47.2 | 44.2 |
| 31.25 | 11.7 | 42.9 | 39.9 |
| 62.5 | 17.0 | 38.4 | 35.4 |
| 100 | 22.0 | 35.3 | 32.3 |

## 9. INSTALLATION & HANDLING GUIDELINES

- Do not exceed the max. pulling tension (110 N) or the min. bending radius (8 × OD).
- Avoid kinks, sharp bends, crushing and over-tight cable ties.
- Keep separation from power cables according to local wiring standards (EN 50174-2 / TIA-569).
- Untwist pairs by no more than 13 mm (0.5 in) at termination points.
- Terminate the foil and drain wire to the shielded connector and ground the screen at one or both ends per the site earthing design; keep the shield continuous end to end.
- Test every installed link with a certified cable tester (Cat5e permanent link).