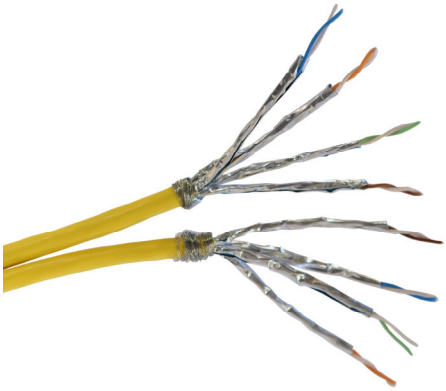
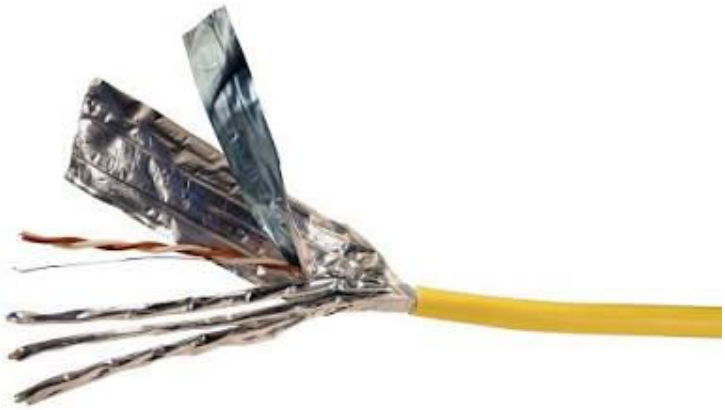
# Cat6A F/FTP Ethernet Bulk Cable — LSZH

**4 Pairs | 24 AWG Solid Bare Copper | 500 MHz | 305 m (1000 ft) Reel**





## 1. GENERAL DESCRIPTION

Cat6A F/FTP (double foil-screened) bulk cable is designed for structured cabling and Ethernet networks up to 10GBASE-T (10 Gigabit Ethernet) over the full 100 m channel. It features four twisted pairs of solid pure bare copper conductors with each pair individually screened with aluminium/polyester foil, an overall foil screen with drain wire, and a Low Smoke Zero Halogen (LSZH) jacket, making it suitable for indoor installations in electrically noisy environments such as data centres, industrial areas and buildings with high EMI, where low smoke and halogen-free emission are also required. 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
- Individually foil-screened pairs plus overall foil (F/FTP) — excellent EMI / RFI immunity and near-zero alien crosstalk
- Cross-web separator for improved NEXT and PS NEXT performance
- LSZH jacket: low smoke, zero halogen, reduced toxic and corrosive gas emission in fire
- Supports 10GBASE-T over 100 m and PoE / PoE+ / PoE++ (IEEE 802.3af / at / bt)
- Characterised up to 500 MHz with alien crosstalk (PS ANEXT) performance — pair screens provide wide alien-crosstalk margin
- 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 and 10GBASE-T Ethernet
- Voice, CCTV / IP cameras, access control, PoE devices
- Data centres, hospitals and industrial areas with high electromagnetic interference
- Installations near power cables, motors, lifts, lighting ballasts or other EMI sources

## 4. APPLICABLE STANDARDS

- ANSI/TIA-568.2-D — Category 6A balanced twisted-pair cable
- ISO/IEC 11801 and IEC 61156-5 — Class EA generic cabling
- IEC 60332-1 — Flame propagation (single vertical cable)
- IEC 60754-1 / -2 — Halogen content and acidity of gases
- IEC 61034 — Smoke density

## 5. CABLE CONSTRUCTION

| | |
|---|---|
| **Conductor** | Solid pure bare copper, 24 AWG (Ø 0.57 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 |
| **Pair Screening** | Individual Al/PET foil screen on each pair (FTP) — coverage [100 %] |
| **Overall Screening** | Overall Al/PET foil screen (F), foil-to-foil overlap — coverage [100 %] |
| **Drain Wire** | [24 AWG tinned copper (7/0.20 mm)] |
| **Outer Jacket** | LSZH (Low Smoke Zero Halogen) — colour: [Grey / Blue / White] |
| **Marking** | CAT6A F/FTP 4P 24AWG LSZH [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.)** | [7.5 ± 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 (1–500 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 (500 MHz)** | 536 ns/100 m |
| **Max. Delay Skew** | 45 ns/100 m |

| | |
|---|---|
| **Min. PS ANEXT (100 MHz)** | 37.0 dB per 100 m [per TIA-568.2-D] |
| **Min. ACR-F / PS ACR-F (100 MHz)** | 27.8 dB / 24.8 dB per 100 m |
| **Nominal Velocity of Propagation (NVP)** | [ ~ 0.67 ] |
| **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 | 2.1 | 74.3 | 72.3 |
| 4 | 3.8 | 65.3 | 63.3 |
| 10 | 5.9 | 59.3 | 57.3 |
| 31.25 | 10.5 | 51.9 | 49.9 |
| 62.5 | 15.0 | 47.4 | 45.4 |
| 100 | 19.1 | 44.3 | 42.3 |
| 250 | 31.1 | 38.3 | 36.3 |
| 500 | 45.3 | 33.8 | 31.8 |

## 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 — Cat6A performance is sensitive to cable deformation.
- 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.
- Use shielded Cat6A-rated connectors, jacks and patch panels throughout the link.
- Terminate each pair foil, the overall 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 (Cat6A permanent link).