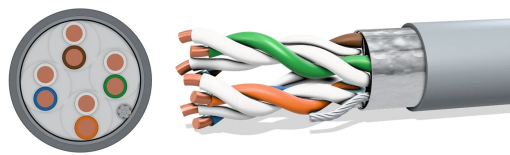


Application

Cat 6 F/UTP is a foil-screened four-pair horizontal installation cable for structured building cabling and high-speed LAN/network wiring in electrically noisy environments, supporting Class E links to ISO/IEC 11801 and EN 50173 up to 250 MHz. Each conductor is a solid bare copper wire of AWG23 (nominal 0.57 mm) with solid polyethylene (PE) insulation; two cores are twisted into a pair and the four pairs (4 × 2 × AWG23) are laid up and enclosed by ONE overall aluminium/polyester (Al/PET) foil screen, run with a tinned-copper drain (continuity) wire for easy earthing at the connector. The overall foil gives strong protection against external electromagnetic interference (EMI) and limits alien crosstalk while keeping the cable slimmer than a fully braided S/FTP. A PVC outer jacket completes the construction; the cable supports 1000BASE-T and 10GBASE-T (up to 55 m) plus PoE/PoE+/PoE++. It is supplied on reels or in pull-boxes for fixed indoor installation. The standard sheath is PVC with a CPR reaction-to-fire class of Eca (Dca on request); a low-smoke halogen-free (LSZH) version with class Dca or B2ca is available; the required class depends on the building use and the type of space (Bbl, table 4.42).



CONSTRUCTION

Conductor	Solid bare (plain) copper, AWG23 (nominal 0.57 mm); 8 conductors (4 pairs).
Insulation	Solid polyethylene (PE), nominal 1.0 mm over the insulation.
Pair assembly	Two cores twisted to a pair; four pairs (4 × 2 × AWG23) laid up (often around a central cross-filler) with pair-specific lay lengths.
Screen	One overall aluminium/polyester (Al/PET) foil around all four pairs (aluminium side out), with a tinned-copper drain / continuity wire for earthing. No per-pair foil and no braid (F/UTP).
Outer jacket	Polyvinyl chloride (PVC), flame-retardant to IEC 60332-1-2; a low-smoke halogen-free (LSZH) jacket is available as a variant.
Core identification	Pairs colour-coded blue, orange, green, brown (with white/striped mates) per TIA-568; sheath typically grey (PVC) or blue/orange (LSZH).

ELECTRICAL & TRANSMISSION PROPERTIES

Category / class	Cat 6, Class E acc. to ISO/IEC 11801 and EN 50173.
Frequency range	Up to 250 MHz.
Characteristic impedance	100 Ω ± 15% (1-250 MHz).
Pairs	4 × 2 × AWG23, overall foil-screened (F/UTP).
Conductor size	AWG23, solid bare copper (nominal 0.57 mm).
Screen	Overall Al/PET foil + tinned-copper drain wire; earthed at the connector/patch panel.
NEXT / RL / insertion loss	Per the Cat 6 / Class E category limits (NEXT, return loss and attenuation as specified by the standard); not a vendor-specific guarantee.
Reaction to fire (CPR)	Eca as standard (EN 50575); Dca / B2ca (LSZH) on request.
Max. operating temperature	+60 °C.
Temperature range	Operating -20 to +60 °C; installation 0 to +50 °C.
Min. bending radius	8 × outer diameter during installation; 4 × outer diameter when installed.

KEY FIGURES

Nominal outer diameter	approx. 7.4 mm
Nominal weight	approx. 52 kg/km
Conductor	4 × 2 × AWG23 solid bare copper

Outer diameter and weight are nominal values of the leading manufacturer reference; the transmission characteristics (impedance, NEXT, return loss, insertion loss) are the ISO/IEC 11801 / EN 50173 Class E (Cat 6) category requirements, not vendor-specific guarantees. All values are indicative and non-binding.