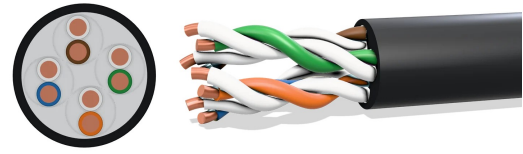


Application

Cat 6 outdoor U/UTP is an unscreened four-pair LAN cable built for outdoor, duct and direct-burial routing between buildings and to external equipment, 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/HDPE) insulation; two cores are twisted into a pair and the four pairs (4 × 2 × AWG23) are laid up around a central cross-filler under a black, UV-stabilised polyethylene (PE) outer sheath. Unlike an indoor PVC cable, the PE sheath resists sunlight (UV), moisture, cold and mechanical stress, and the cable is normally gel-filled (petroleum-jelly flooding compound) or fitted with a water-blocking tape/yarn so that moisture cannot travel along the core - essential for buried and ducted runs. Being U/UTP it carries no metallic screen. It supports 1000BASE-T and 10GBASE-T (up to 55 m) plus PoE/PoE+/PoE++ and is supplied on reels or in pull-boxes. For long outdoor spans and lightning/earth-potential exposure a screened (F/UTP) outdoor variant or an armoured / figure-8 messenger variant is available; a double-jacket (PE over an inner PVC) heavy-duty version is also offered. NOTE: an all-outdoor PE cable is not fire-rated for permanent indoor runs - transition to an indoor CPR-rated cable at the building entry (or observe the permitted indoor entry length).



CONSTRUCTION

Conductor	Solid bare (plain) copper, AWG23 (nominal 0.57 mm); 8 conductors (4 pairs).
Insulation	Solid polyethylene (PE / HDPE), nominal 1.0 mm over the insulation.
Central filler	Non-metallic cross-shaped separator (spline) between the four pairs for pair separation and transmission stability.
Pair assembly	Two cores twisted to a pair; four pairs (4 × 2 × AWG23) laid up around the central cross with pair-specific lay lengths.
Screen	None - unscreened U/UTP (no overall foil and no pair foil).
Water blocking	Gel-filled (petroleum-jelly flooding compound) or dry water-blocking tape/yarn to stop longitudinal water ingress; ripcord for stripping.
Outer sheath	Black, UV-stabilised polyethylene (PE); resistant to sunlight, moisture and cold for outdoor / duct / direct-burial use. A double-jacket heavy-duty version (PE over inner PVC) is available.
Core identification	Pairs colour-coded blue, orange, green, brown (with white/striped mates) per TIA-568; sheath black.

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.
Conductor size	AWG23, solid bare copper (nominal 0.57 mm).
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.
Sheath / outdoor rating	Black UV-stabilised PE; suitable for outdoor, duct and direct-burial. Not a CPR/fire-rated indoor sheath - transition at building entry.
Max. operating temperature	+70 °C (PE sheath).
Temperature range	Operating -40 to +70 °C; installation typically -10 to +50 °C.
Min. bending radius	8 × outer diameter during installation; 4 × outer diameter when installed.
Reaction to fire (CPR)	Fca (EN 50575); outdoor PE cable, not intended for permanent installation inside buildings (the indoor version is Eca).

KEY FIGURES

Nominal outer diameter	approx. 7.5 mm
Nominal weight	approx. 54 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. The outdoor PE sheath is not a CPR-rated indoor jacket. All values are indicative and non-binding.