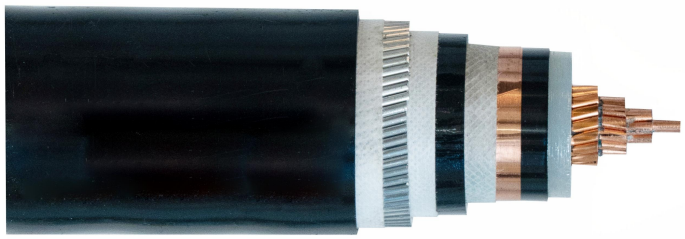
HUAPU CABLE

Medium-Voltage Power Cables



18/30 kV Water-Blocked, XLPE Insulated, Steel Wire Armoured, PE Sheathed

Standards: IEC 60502-2 (cable), IEC 60228 (conductor), IEC 60840; ref. GB/T 12706.2, VDE 0276-620

Technical Data

Rated voltage (U0/U / Um): 18/30 kV (Um = 36 kV)
Max. operating temperature: 90 °C (continuous, XLPE)
Max. short-circuit temperature: 250 °C (max. 5 s)
Min. bending radius: single-core ≥ 20 × D; three-core ≥ 15 × D (D = cable outer diameter)

Water-Blocking (Water-Tight) Performance

Longitudinal barrier: water-swellable tapes/yarns over the conductor and under the metallic screen prevent axial water migration along the cable
Radial barrier: aluminium-laminated (APL) foil bonded to the PE outer sheath forms a continuous moisture barrier against radial ingress
Test compliance: passes the IEC 60502-2 longitudinal water-penetration test; suitable for wet locations, direct burial, ducts, and submerged/flooded routes
Outer sheath: PE (type ST7) — low water absorption, superior to PVC in wet service

Application

Cables with low dielectric losses for power transmission and distribution at 18/30 kV in utility, industrial and substation networks. The water-blocking construction and PE sheath suit wet environments — direct burial, water-crossings, flooded ducts, and humid tunnels — while the round steel wire armour adds mechanical protection and longitudinal tensile strength for risers and demanding pulls.

Construction

①Compacted stranded copper conductor ② Inner semi-conductive (conductor) screen ③ XLPE insulation

④ Outer semi-conductive (insulation) screen ⑤ Semi-conductive water-swellable tape ⑥ Copper tape / wire screen

⑦ Aluminium-laminate radial water barrier ⑧ Inner sheath & fillers (3-core) ⑨ Round steel wire armour

⑩ PE outer jacket

Single-Core (1 × 35–400 mm²)

DIMENSION AND WEIGHTS			ELECTRICAL PROPERTIES									
Nominal Cross Section	Overall Dia. (approx)	Net Weight (approx)	Delivery Length	DC Res. 20°C Max	DC Res. 90°C Max	Operation Inductance		Operational Capacitance	Current Carrying Capacity			
									In ground at 20°C		In air at 30°C	
						Flat	Trefoil		Flat	Trefoil	Flat	Trefoil
mm²	mm	kg/km	m	Ω/km	Ω/km	mH/km	mH/km	μF/km	A	A	A	A
1 × 35	41.9	1345	1000	0.5240	0.6682	0.666	0.401	0.146	192	170	210	178
1 × 50	43.1	1522	1000	0.3870	0.4935	0.640	0.383	0.161	226	200	252	213
1 × 70	45.7	1941	1000	0.2680	0.3417	0.609	0.362	0.182	276	245	314	266
1 × 95	47.4	2236	1000	0.1930	0.2461	0.585	0.346	0.202	328	293	381	322
1 × 120	48.9	2524	1000	0.1530	0.1951	0.567	0.336	0.219	371	333	438	371
1 × 150	50.2	2848	1000	0.1240	0.1581	0.549	0.325	0.236	408	373	489	419
1 × 185	52.0	3240	500	0.0991	0.1264	0.534	0.317	0.255	456	421	557	480
1 × 240	54.4	3839	500	0.0754	0.0961	0.514	0.307	0.281	523	489	652	566
1 × 300	56.6	4477	500	0.0601	0.0766	0.497	0.298	0.305	585	552	738	646
1 × 400	61.1	5841	500	0.0470	0.0599	0.477	0.289	0.339	635	620	820	742

Flat = cores laid side-by-side; Trefoil = three single-cores in a touching triangle. Single-core armour should be non-magnetic or single-point/cross-bonded to limit circulating-current losses.

Three-Core (3 × 35–400 mm²)

DIMENSION AND WEIGHTS			ELECTRICAL PROPERTIES						
Nominal Cross Section	Overall Dia. (approx)	Net Weight (approx)	Delivery Length	DC Res. 20°C Max	DC Res. 90°C Max	Operation Inductance	Operational Capacitance	In ground at 20°C	In air at 30°C
mm²	mm	kg/km	m	Ω/km	Ω/km	mH/km	µF/km	A	A
3 × 35	79.0	4634	500	0.5240	0.6682	0.401	0.146	165	158
3 × 50	81.6	5217	500	0.3870	0.4935	0.383	0.161	194	188
3 × 70	85.1	6000	500	0.2680	0.3417	0.362	0.182	238	233
3 × 95	88.7	6940	300	0.1930	0.2461	0.346	0.202	285	281
3 × 120	92.0	7854	300	0.1530	0.1951	0.336	0.219	324	322
3 × 150	94.8	8873	300	0.1240	0.1581	0.325	0.236	363	363
3 × 185	98.7	10116	200	0.0991	0.1264	0.317	0.255	409	413
3 × 240	103.9	12009	200	0.0754	0.0961	0.307	0.281	476	486
3 × 300	108.6	14014	200	0.0601	0.0766	0.298	0.305	538	552
3 × 400	115.5	17290	200	0.0470	0.0599	0.289	0.339	608	630

Note: Conductors are compacted stranded copper (Class 2 per IEC 60228); DC resistance at 20 °C is the IEC 60228 maximum, and at 90 °C is derived (R90 = R20 × 1.275). Insulation thickness is the IEC 60502-2 nominal for 18/30 kV. Dimensions, weights, inductance, capacitance and current ratings are approximate, for reference only. Current-carrying capacities are valid for: in ground — 20 °C, 0.7 m laying depth, soil thermal resistivity 1 K·m/W, load factor 0.7; in air — 30 °C, load factor 1.0; number of systems: 1. Apply derating for other conditions, grouping, and laying method. Delivery length is governed by drum capacity and cable weight; other lengths available on request.