132/76 kV XLPE Cable

Single-core XLPE High Voltage Cable with Aluminium laminated sheath

Cable layout

- *Copper* conductor, stranded, cross-sections of 1000 sqmm and above segmented, optionally with longitudinal water barrier
- Inner semiconductive layer, firmly bonded to the XLPE insulation
- XLPE main insulation, cross-linked
- Outer semiconductive layer, firmly bonded to the XLPE insulation
- *Copper* wire screen with semi-conductive swelling tapes as longitudinal water barrier
- *Aluminium* lamninated sheath
- HDPE oversheath, halogen-free, as mechanical protection, optionally: with semi-conductive and/or flame-retardant layer

Production process

The inner semiconductive layer, the XLPE main insulation and the outer semiconductive layer are extruded in a single operation.

Special features of metallic sheath

- *Copper* wire screen as short-circuit current carrying component
- *Aluminium* foil, overlapped, 0,25 mm thick, as radial diffusion barrier
- Low weight, low cost, internationally proven design

Applicable standards

IEC 60840 (2004-04)
AEIC CS7-93
ANSI / ICEA S-108-720-2004

XDRCU-ALT
132/76 kV

Technical data

Copper conductor cross-section		Outer diameter approx.	Cable weight appox.	Capacitance	Impedance (90°C, 50 Hz) • • •	Surge impedance	Min. bending radius	Max. pulling force
mm^2	kcmil	mm	kg/m	µF/km	Ω/km	Ω	mm	kN
240	500	73	6	0,13	0,26	59	1500	14
300	600	76	7	0,14	0,25	49	1550	18
400	800	77	8	0,16	0,23	49	1600	24
500	1000	83	9	0,16	0,22	49	1700	30
630	1250	86	10	0,18	0,22	49	1750	38
800	1600	87	12	0,24	0,20	42	1800	48
1000	2000	91	14	0,27	0,19	39	1850	60
1200	2400	95	15	0,30	0,19	37	1900	72
1400	2750	96	21	0,34	0,18	34	1950	84
1600	3200	99	22	0,35	0,18	33	2000	96
2000	4000	104	27	0,39	0,17	31	2100	120
2500	5000	111	33	0,43	0,17	29	2250	150

Ampacity

		Buried in soil ∴	Buried in soil ∴	Buried in soil • • •	Buried in soil • • •	In free air ∴	In free air • • •
Load Factor		0.7	1.0	0.7	1.0	-	-
mm^2	kcmil	A	A	A	A	A	A
240	500	607	513	657	569	631	698
300	600	687	579	745	642	721	799
400	800	789	660	861	737	837	936
500	1000	896	748	979	836	960	1074
630	1250	1020	847	1123	953	1107	1249
800	1600	1154	949	1292	1086	1275	1467
1000	2000	1377	1126	1530	1276	1550	1776
1200	2400	1488	1212	1661	1380	1691	1947
1400	2750	1605	1302	1810	1497	1843	2147
1600	3200	1699	1377	1925	1589	1964	2297
2000	4000	1869	1507	2147	1763	2195	2603
2500	5000	2050	1643	2396	1954	2456	2969

Calculation basis:
Conductor temperature 90°C, 50 Hz, soil temperature 25°C, laying depth 1200 mm, soil thermal resistivity 1.0 Km/W, phase distance at flat formation 30 cm, air temperature 35° - Earthing method: Single-end bonding or Cross-bonding

Values apply for cables with rated voltages from 132 kV to 138 kV acc. to IEC 60840