

## 500/290 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* laminated 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 62067 (2001)  
ANSI / ICEA S-108-720-2004

**XDRCU-ALT  
500/290 kV**



### Technical data

Copper conductor cross-section		Outer diameter approx. mm	Cable weight approx. kg/m	Capacitance µF/km	Impedance (90°C, 50 Hz) Ω/km	Surge impedance Ω	Min. bending radius mm	Max. pulling force kN
mm <sup>2</sup>	kcmil							
630	1250	122	18	0.12	0.22	54	2450	38
800	1600	123	20	0.14	0.20	49	2500	48
1000	2000	127	23	0.16	0.19	47	2550	60
1200	2400	128	24	0.17	0.19	44	2600	72
1400	2750	129	26	0.19	0.18	42	2600	84
1600	3200	135	29	0.19	0.18	42	2700	96
2000	4000	143	34	0.19	0.17	40	2900	120
2500	5000	144	40	0.23	0.17	37	2900	150

### Ampacity

Load Factor		Buried in soil ∴ 0.7	Buried in soil ∴ 1.0	Buried in soil ∴ ∴ 0.7	Buried in soil ∴ ∴ 1.0	In free air ∴ -	In free air ∴ ∴ -
mm <sup>2</sup>	kcmil	A	A	A	A	A	A
630	1250	954	806	1026	882	1053	1152
800	1600	1076	901	1170	998	1211	1341
1000	2000	1268	1055	1377	1166	1452	1608
1200	2400	1369	1134	1497	1261	1588	1772
1400	2750	1473	1215	1622	1361	1728	1944
1600	3200	1561	1286	1718	1440	1835	2068
2000	4000	1711	1403	1901	1585	2045	2326
2500	5000	1873	1522	2120	1751	2301	2670

#### Calculation basis:

Conductor temperature 90°C, soil temperature 25°C, laying depth 1200 mm, 50 Hz; phase distance flat 30 cm, air temperature 35°  
Earthing method: Single-end bonding or Cross-bonding