CIGRE TB 496 HVDC XLPE

HVDC XLPE

±525 kV Extruded DC-XLPE Insulated Copper Land High-Voltage

CIGRE TB 496 / CIGRE TB 852 / IEC 62895 · ±320 kV – ±525 kV DC · −25…+90 °C industrial



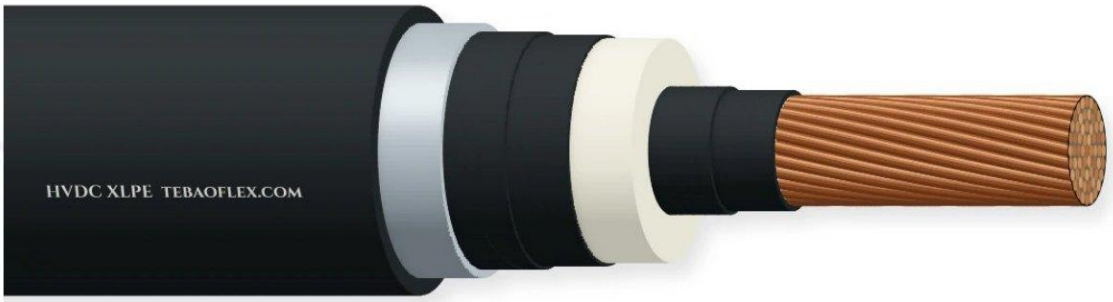
CIGRE TB 496 / CIGRE TB 852 / IEC | ±320 kV – ±525 kV DC | −25…+90 °C

Application

±525 kV Extruded DC-XLPE Insulated Copper Land High-Voltage Direct-Current (HVDC) Cable (HVDC XLPE) engineered to CIGRE TB 496 / CIGRE TB 852 / IEC 62895 for ±320 kV – ±525 kV DC service across −25…+90 °C, featuring stranded copper conductor and hdpe

Typical uses: High-Voltage Grid & Substation Interconnects, Wind, Solar & Hydro Power Evacuation, Utility Overhead & Underground Distribution, Industrial Power Infrastructure

Construction





Cross-section, not to scale

1	Stranded copper conductor	CIGRE TB 496 / CIGRE TB 852 / IEC 62895
2	Inner water-swellable tape	CIGRE TB 496 / CIGRE TB 852 / IEC 62895
3	Inner semiconducting screen	CIGRE TB 496 / CIGRE TB 852 / IEC 62895
4	Low-peroxide XLPE core insulation	CIGRE TB 496 / CIGRE TB 852 / IEC 62895
5	Outer semiconducting screen	CIGRE TB 496 / CIGRE TB 852 / IEC 62895
6	Water-swellable barrier tapes	CIGRE TB 496 / CIGRE TB 852 / IEC 62895
7	Longitudinally welded aluminium sheath	CIGRE TB 496 / CIGRE TB 852 / IEC 62895
8	HDPE outer sheath	CIGRE TB 496 / CIGRE TB 852 / IEC 62895

Technical data

Typical values

Rated voltage / duty	±320 kV – ±525 kV DC (CIGRE TB 496 / CIGRE TB 852 / IEC 62895)	**Conductor construction**	Stranded copper conductor — High-conductivity copper conductor per CIGRE TB 496 / CIGRE TB 852 / IEC 62895
Primary insulation / dielectric	Inner water-swellable tape — Inner water-swellable tape (lapped tape)	**Continuous operating temperature**	−25…+90 °C per CIGRE TB 496 / CIGRE TB 852 / IEC 62895
Short-circuit / peak thermal limit	+160 °C to +250 °C (5 s adiabatic limit depending on dielectric class)	**Minimum installation temperature**	−5 °C (thermoplastic) / −25 °C (cross-linked or elastomer) / −40 °C (metallic)
Outer protection / covering	HDPE outer sheath — Extruded HDPE outer sheath protective layer (continuous layer)	**Minimum bending radius**	20 × OD (installed / static routing)
Layer count & geometry	8 concentric/structural layers verified by cross-section inspection	**Environmental & chemical durability**	Engineered for industrial service in accordance with CIGRE TB 496 / CIGRE TB 852 / IEC 62895
RoHS & REACH compliance	RoHS 2 (2011/65/EU + 2015/863) & REACH SVHC compliant	**Standards**	CIGRE TB 496 / CIGRE TB 852 / IEC 62895

Sizes

12 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Configuration	Outer Ø ≈ mm	Weight ≈ kg/km	Min. bend R fixed mm
HVDC XLPE Standard Production Schedule (±320 kV – ±525 kV DC · −25…+90 °C) 12 sizes				
☐ **HVDC XLPE 3G1.5**	**3 × 1.5 mm²**	**8.4**	**105**	**68**
☐ **HVDC XLPE 4G1.5**	**4 × 1.5 mm²**	**9.2**	**128**	**74**
☐ **HVDC XLPE 5G1.5**	**5 × 1.5 mm²**	**10.1**	**156**	**81**
☐ **HVDC XLPE 3G2.5**	**3 × 2.5 mm²**	**9.8**	**148**	**78**
☐ **HVDC XLPE 4G2.5**	**4 × 2.5 mm²**	**10.8**	**186**	**86**
☐ **HVDC XLPE 5G2.5**	**5 × 2.5 mm²**	**11.9**	**228**	**95**
☐ **HVDC XLPE 4G4**	**4 × 4.0 mm²**	**12.6**	**268**	**101**
☐ **HVDC XLPE 4G6**	**4 × 6.0 mm²**	**14.2**	**365**	**114**
☐ **HVDC XLPE 4G10**	**4 × 10 mm²**	**17.5**	**580**	**140**
☐ **HVDC XLPE 4G16**	**4 × 16 mm²**	**20.4**	**845**	**163**
☐ **HVDC XLPE 4G25**	**4 × 25 mm²**	**24.8**	**1,290**	**198**
☐ **HVDC XLPE 4G35**	**4 × 35 mm²**	**27.9**	**1,710**	**223**

– Single-core and multi-core sizes from 0.5 mm² up to 630 mm² (or AWG/kcmil) available per CIGRE TB 496 / CIGRE TB 852 / IEC 62895.

Conductor resistance & current-carrying capacity

8 sizes

Cross-section	Max. DC R_{20} Ω/km	Current in air A (30 °C) ≈	Voltage drop mV/A-m
1.5 mm² (AWG 16)	**13.30**	**18**	**29.0**
2.5 mm² (AWG 14)	**7.98**	**26**	**17.5**
4.0 mm² (AWG 12)	**4.95**	**34**	**10.9**
6.0 mm² (AWG 10)	**3.30**	**44**	**7.3**
10 mm² (AWG 8)	**1.91**	**61**	**4.2**
16 mm² (AWG 6)	**1.21**	**82**	**2.7**
25 mm² (AWG 4)	**0.78**	**108**	**1.7**
35 mm² (AWG 2)	**0.55**	**135**	**1.2**

– Current ratings are for 3 loaded conductors at 30 °C ambient in free air/tray per IEC 60364-5-52 / NEC.

Standards and approvals

- CIGRE TB 496 Compliant
- EN 10204 3.1 Routine Test Certificate
- CE, RoHS 2 (2011/65/EU) & REACH

Certifications

Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone
+86 185 9591 3361

Email
info@tebaoflex.com

Web
tebaoflex.com/cables/hvdc-525kv-extruded-dc-xlpe-land-transmission-cable

Typical values for this cable type, based on CIGRE TB 496 / CIGRE TB 852 / IEC 62895. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.