Type designation: TSLI(F) 170kV 1x630A/95 (Design code 71009685)

High voltage power cable

General

Rated voltage	87/150 (170) kV
Standard	Construction and tests i.a.w. IEC 60840 (where applicable)
Reference standards	IEC 60228, outer sheath is flame retardant i.a.w. IEC 60332-3-24 and low smoke and halogen free
Temperature rating	Max. conductor operating temperature: 90°C Max. permissible conductor temperature at short-circuit for max. 5 s.: 250°C

Construction

Conductor

Round, stranded and compacted longitudinally watertight aluminium conductor. Watertightening by swellable material in the wire interstices and semi-conducting water-swellable tape over conductor.

Nominal cross-sectional area	mm²	630
Approximate diameter	mm	29.7
DC resistance at 20°C (max.)	ohm/km	0.0469

Conductor screen

Semi-conducting copolymer compound

Insulation

XLPE compound

Nominal thickness	mm	20.0
Approximate outer diameter	mm	73

Insulation screen

Semi-conducting copolymer compound

Bedding

Semi-conducting water-swellable tape

Metallic screen

A layer of copper wire helix and a copper contact tape counter helix

Cross-sectional area of Cu wires	mm²	95
DC resistance at 20°C (Cu wires max.)	ohm/km	0.20

Separation tape

Semi-conducting water-swellable tape and semi-conducting binder tape

Metallic foil

Longitudinal aluminium tape tightly bonded to sheath

Nominal thickness	mm	0.2

Sheath # 1

Black HDPE compound with flame retardant additives

Nominal thickness	mm	3.6

Sheath # 2

Semi-conducting PE compound with flame retardant additives, bonded to sheath # 1

Approximate thickness	mm	0.3

Complete cable

Approximate diameter	mm	89
Approximate weight	kg/km	8000

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Marking

Marks of origin	Embossed on the outer sheath: manufacturer, year and week of manufacturing. Printed on the outer sheath: manufacturer, cable type designation, year and week of manufacturing, length marking in metres.

Electrical data

Phase inductance in trefoil [1] (appr.)	mH/km	0.41
Phase inductance in flat formation [2] (appr.)	mH/km	0.46
Operating capacitance (appr.)	µF/km	0.18
Thermal short-circuit current (max.) for phase conductor for 1.0 s [3]	kA	60.0
Thermal short-circuit current (max.) for Cu wire-screen only for 1.0 s [4]	kA	15.3
Thermal short-circuit current (max.) for Cu wire-screen + metallic foil for 1.0 s [5]	kA	21.8

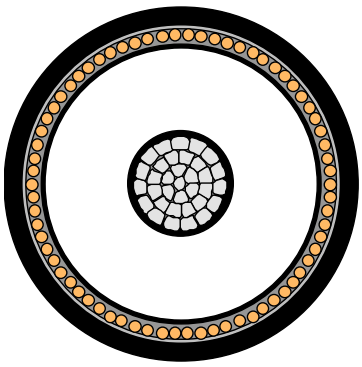
Mechanical data

Bending radius, during laying (min.)	m	1.78
Bending radius, final position (min.)	m	1.25
Pulling tension with pulling eye (max.)	kN	19

Type tests

Type tests and additional tests shall be separately agreed in advance.

Sketch



Note: Informative only - not to scale.

[1] Cables touching each other.
[2] Cables touching each other.
[3] Initial temperature of conductor before short-circuit 90°C, final temperature after short-circuit 250°C.
[4] Initial temperature of metallic screen before short-circuit 80°C, final temperature after short-circuit 250°C.
[5] Initial temperature of metallic screen and metallic foil before short-circuit 80°C, final temperature after short-circuit 250°C/170°C.