# Technical Specification

# for

# XLPE-insulated

# High Voltage Cables supplement

# Submarine Cables

This technical specification is valid for the business unit E.ON Sweden of the market unit E.ON Nordic. With this specification, technical determinations were made beyond existing publications.

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# 3 Further Requirements

## 3.1 Cable Construction

### 3.1.1 Conductors

The conductors shall be made of copper or aluminum, solid conductors or as stranded compacted. The shape of conductors shall be circular. It must be ensured that the conductor screen material cannot protrude between the wires.

Water tightness TL and TT is required,

### 3.1.2 Screens

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XLPE-insulated High Voltage Cables

#### *3.1.2.1 Insulation Screen*

See Technical Specification for
XLPE-insulated High Voltage Cables Insulation

### 3.1.3 Semi-conducting Layers

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The semi-conducting layers if any between insulation screen and metallic screen must be easily removable and must not show any adherence to the insulation screen.

### 3.1.4 Metallic Screen

The metallic screen wires of annealed copper can be applied in wound form helically, or in wave form or in parallel with the longitudinal axis of the cable. To ensure that the wave form and parallel wires remain in place they should be embedded in conductive material.

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The metallic screen wires shall be evenly distributed around the cable core and the number of wires shall be chosen so that the average distance between the wires is not more than 4 mm and a maximum distance of 8 mm.

The metallic screen can also be realised by a lead sheat.

### 3.1.5 Additional Layer over Metallic Screen

An additional layer is required for cables with longitudinal and radial water tightness (-TT). For the other cable types it is up to the manufacturer responsibility.

The additional layer between the metallic screen and outer sheath must be made of non-hygroscopic material.

The additional layer between the metallic screen and outer sheath should be made of conductive PE.

### 3.1.6 Longitudinal Water Tightness (-LT)

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### 3.1.7 Longitudinal and Radial Water Tightness (-TT)

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### 3.1.8 Outer sheath

**Assembling**

The Assembling should be of Polypropylene yarns in one or two layers.

**Cable core binder**

Cable core binder should be consists of polymeric tape

**Bedding**

The bedding should consist of Bitumen impregnated tape.

**Armour**

Galvanized steel wires and Bitumen.

Steel wires at least diameter 4,0 mm.

If single core cables must the armour be non magnetic.

Outer cover

Polypropylene yarns and Bitumen.

Thickness at least 4,0 mm

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#### 3.1.8a Option

On request by the buyer the outer sheath shall have two layers of steel wires or wires of non magnetic material

On request by the buyer the outer cover shall have two layers of Polypropylene yarns and Bitumen.

### 3.2 Identification Marks and Symbols

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## 4 Approval and Testing

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