

Cable Design



The main components are reported in the figure and table below:

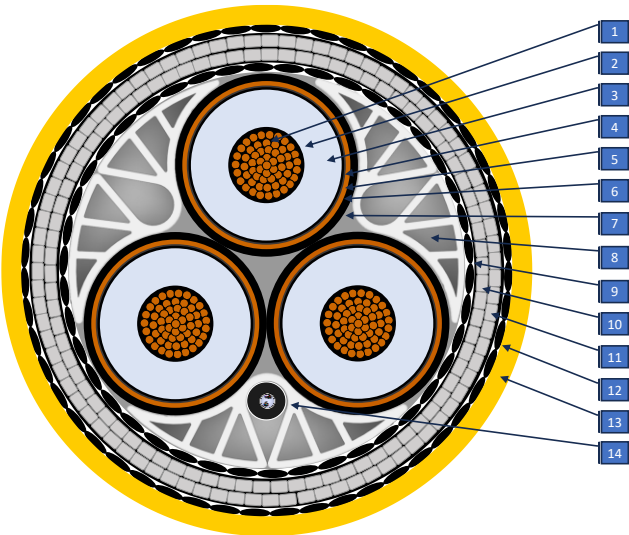


Figure 1. Cu dynamic submarine cable 245 kV dry design cross-section (illustration purpose only – not to scale)

Table 1 – Cu dynamic submarine cable 245 kV dry design components

ID	Layer	Description
1	Conductor	Stranded round longitudinally water blocked class 2 Cu conductor
2	Conductor screen	Extruded semi conductive compound
3	Insulation	XLPE
4	Insulation screen	Extruded semi conductive compound
5	Metallic screen bedding	Water blocking semi-conductive tapes
6	Metal screen	Corrugated copper welded sheath
7	Core jacket	Extruded insulating PE sheath
8	Fillers	Shaped PE fillers
9	1st Armour bedding	Polypropylene yarns bedding
10	1st Armour	Galvanized flat steel wires
11	2nd Armour	Galvanized flat steel wires
12	Serving	Polypropylene yarns
13	Outersheath	Extruded PE sheath
14	Fiber optic cable	1 x FO Cable with 48 SM fibers

CABLE/PRODUCT DESCRIPTION

Conductor

The conductors are made with round copper wires compacted in circular design complying with **Error! Reference source not found.** Class 2 requirements. The conductors are water-blocked to limit longitudinal water propagation.

Conductor screen, insulation, and insulation screen

The insulation system consists of an inner semi-conducting screen layer (XLPE compound), the XLPE insulation and an outer semi-conducting extruded insulation screen (XLPE compound).
All three layers are applied together in a triple extrusion process.

Metallic screen bedding

Semi-conducting water blocking tapes are applied under the metallic sheath to serve as bedding.

Metallic screen

The metallic screen is composed of a corrugated copper welded sheath providing radial water barrier function and electrical functions. This specific kind of metallic sheath allows a high degree of flexibility and improved fatigue performance, thus making it suitable for a dynamic cable.

Core jacket

An extruded layer of PE is provided over the metallic sheath, acting as anti-corrosion and abrasion protection.

Installed Power to be transmitted	MW	250
OVERALL CABLE DIMENSIONS (approx.):		
Conductor Diameter	mm	41.5
Outer Diameter	mm	275
Weight in air	kg/m	116
Weight in water	kg/m	61

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