Technical data 33 kV Submarine cable system WOW01V20AAF/DU057

33 kV submarine cable			
	Unit	***Platform connection cables – (PCC)***	***Inter Connection cables – (ICC)***
Conductor cross section and material	mm^2	500 Cu	150 Cu
Conductor construction		Stranded and compacted	Stranded and compacted
Longitudinal water tightening material		Swelling powder	Swelling powder
Conductor, outside diameter	mm	27.6	14.4
Semiconductor, outside diameter	mm	29.2	15.4
Insulation material and thickness	mm	XLPE 8.0	XLPE 8.0
Insulation outer diameter	mm	45.2	31.4
Insulation semi conductor screen, thickness	mm	Semiconducting PE 0.45	Semiconducting PE 0.45
Screen, outer diameter	mm	48.9	35.1
Number of screen wires	pcs	38	24
Dimension of wires	mm	0.92	0.92
Radial water tightness barrier each core or covering all 3 core		APL on each core	APL on each core
Type of material for radial water tightness barrier, if lead the type of lead		Aluminium	Aluminium
Radial water tightness barrier, thickness	mm	0.2	0.2
Radial water tightness barrier outer diameter	mm	49.5	36.1
A protection layer over the radial water tightness barrier, type of material		Semiconducting PE	Semiconducting PE
Protection layer, thickness	mm	2.6	2.2
Core outside diameter	mm	54.7	40.1

Overall three core diameter before armouring	mm	120.9	89.4
Filling material between cores, type of material, solid or loose		Rubber Profiles	Fillers of polypropylene yarn
Armouring, single/double		Single armouring	Single armouring
Type of armouring material		Galvanized Steel	Galvanized Steel
Numbers of wire	No.	70	82
Dimensions of wire	mm	5.0	3.15
Length of lay of armouring wire along the cable	mm	1570	1147
Armouring corrosive protection material		Asphalt	Asphalt
Outer protection yarn, material and thickness	mm	Polypropylene 3.0	Polypropylene 3.0
Overall diameter	mm	139	104
Conductor weight per m	Kg/m	13.5	4.0
Screen weight per m	Kg/m	0.7	0.4
Armouring weight per m	Kg/m	11.1	5.2
Cable weight in air	Kg/m	34.0	15.0
Cable weight in sea water	Kg/m	18.8	6.5
Minimum bending radius of 3 core armoured cable	mm	2100	1600
Minimum bending radius of 3 core armoured cable at drum	mm	1400	1050
Minimum bending radius of single core	mm	550	400
Minimum bending radius of optical fibre	mm	250	250
Maximum allowed pulling force	kN	93.5	43.5
Maximum allowed free cable length hanging from the hang off, in air	m	200	150

Maximum continuous current in the submarine section, 2m burial	A	750	425
Maximum continuous current in the the J-tubes	A	To be provided later	
Thermal resistance between conductors and cable surface	Km/W	To be provided later	
Capacitance per phase	µF/km	0.318	0.195
Conductor dc-resistance per phase at 20° C	Ω/km	0.0366	0.124
Screen ac-resistance per phase at 20° C	Ω/km	0.0403	0.125
Metallic water barrier ac-resistance per phase at 20° C	Ω/km	0.727	1.16
Inductance between conductors per phase	mH/km	0.327	0.393
Positive sequence impedance per phase @90°C	Ω/km	0.054+j·0.15	0.16+j·0.12
Negative sequence impedance per phase @90°C	Ω/km	0.054+j·0.15	0.16+j·0.12
Zero sequence impedance per phase @90°C	Ω/km	0.37+j·0.053	0.71+j·0.055
Total losses at 100% of nominal current I_n	W/m	114	52
Total losses at 50% of nominal current I_n	W/m	26	12
Conductor losses at 100% of nominal current I_n	W/m	80	46
Conductor losses at 50% of nominal current I_n	W/m	17	10
Shield/armouring losses per phase at 100% of nominal current I_n	W/m	33	6
Shield/armouring losses per phase at 50% of nominal current I_n	W/m	8	2
Dielectric losses per phase at 33 kV	W/m	0.1	0.1

Maximum field strength at 36 kV	kV/mm	2.9	3.4
Conductor temperature at 100% of nominal current I_n	°C	87	55
Conductor temperature at 50% of nominal current I_n	°C	31	24
Cable surface temperature at 100% of nominal current I_n	°C	66	40
Temperature drop between conductor and ambient	°C	72	4
Temperature drop across the insulation	°C	8	7
Max. conductor short circuit current for 1 second	A	71500	21500
Max. conductor temperature after 1 second with max. short circuit current	°C	250	250
Max. screen short circuit current for 1 second	A	4300	2800

Technical data for "ICC transportation drums"

	Unit		***Inter Connection Cables***
Outer drum dimensions (Width x Lengts =)	mm	See section 11.6	2700 x 4300
Weight of drum	kg	See section 11.6	4500

Technical data integrated Optic fibre cables

Integrated Optic fibre cables			
	Unit	Platform Connection Cables	Inter Connection Cables
Cable type (designation)		3 x fibre cables in the cable	3 x fibre cables in the cable
Manufacturer		-	-
Number of single mode fibres		24	16
Longitudinal water tightening material		-	-
Type of material for radial water tightness barrier		Stainless steel	Stainless steel
Radial water tightness barrier, thickness	mm	<1	<1
Radial water tightness barrier outer diameter	mm	2.8	2.3
A protection layer over the radial water tightness barrier, type of material	mm	Al armouring wires + semi conducting PE	Semi conducting PE
Protection layer, thickness	mm	2	2
Cable weight in air	Kg	0.016	0.013
Cable weight in sea water	Kg	-	-
Minimum bending radius of optical fibre cable	mm	105	105
Maximum allowed pulling force	kN	-	-