

Your Global Cable Specialist



Submarine Cable



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Due to technology advancement, product is constantly enhanced, kindly contact or write to us for latest product information



Product Range

- Fiber optic cables
- Control cables
- Instrument cables
- Electric Submersible Pump cable (ESP)
- Submarine optic fiber cables
- Submarine power cables
- Hybrid cable
- Related accessories

About Us

ZTT penetrated the optical fiber cable industry in the year 1992 and grew to a public company in 2002. With constant growth in global market share, ZTT is now the largest cable manufacturer in China for power and telecommunication. Zhongtian Technology Submarine Cable Co., Ltd (ZTTSC) was established in 1999, a 100% arm of Zhongtian Technology Co., Ltd. (ZTT)

ZTT's leadership is clearly marked through its design development, manufacturing, marketing, and distribution program for its "King of Cable" family; submarine optic fiber cable, submarine power cable, submarine composite cable and other hybrid submarine cable for the energy, industrial and communication for the energy and telecommunication markets within China and globally.

ZTT places its top product quality stamp through State-of-the-Art technology, certification and acceptance. According to International Standards and product trends, its R&D department pushes on constantly in search of excellence in oceanic requirement.



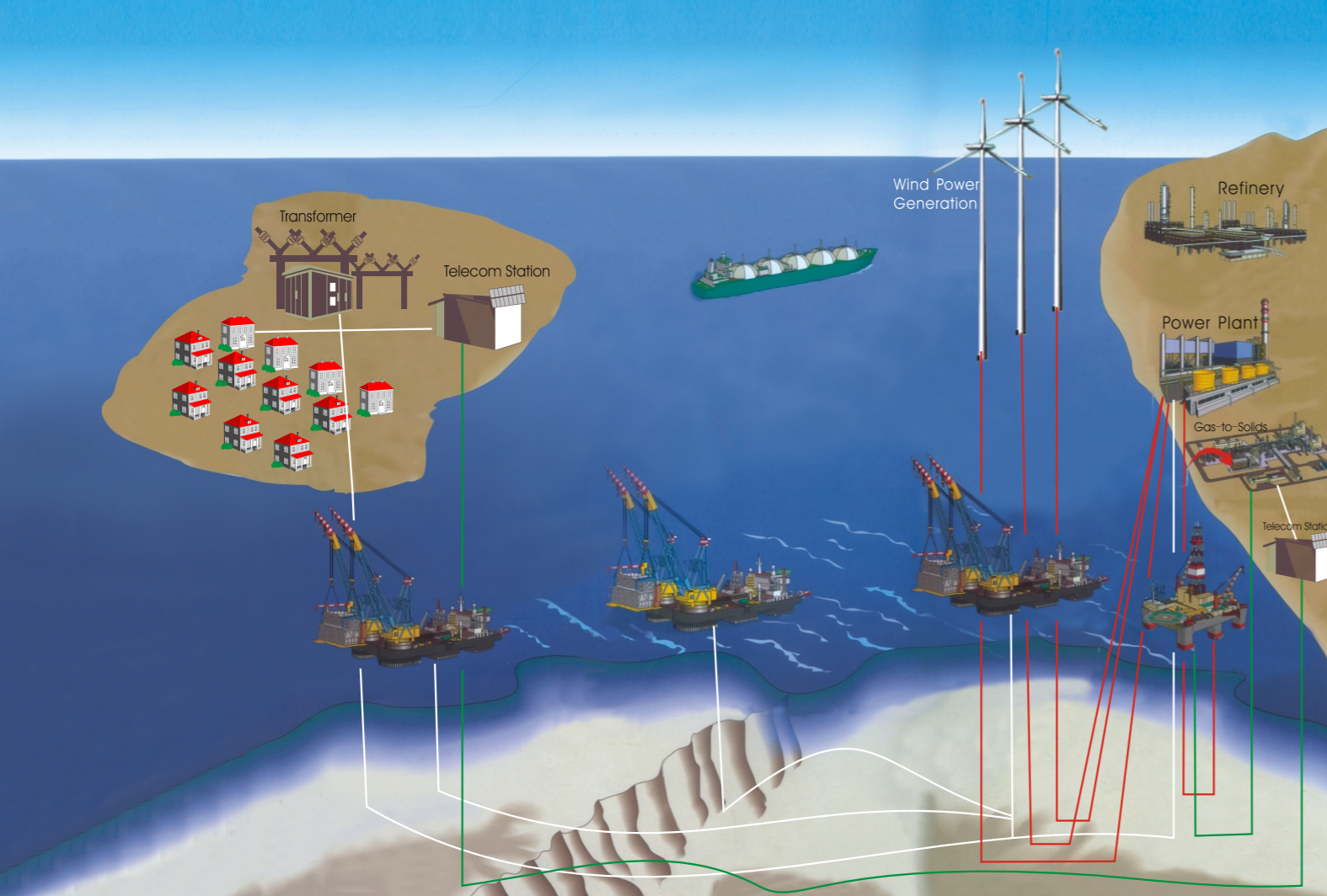
Service

ZTT has a team of highly trained product specialist for offshore jobs. Performing feasibility research, cable laying supervision, cable splicing, establishing terminal to its final project commissioning to complete the entire submarine cable system.



Application

- Offshore windfarms
- Tidal & wave energy farms
- Offshore oil and gas industry
- Islands connection
- Lake or river crossings



Quality and quality assurance has always been and will be the key element of ZTT's objective. ZTT established its own high technical laboratory to perform the necessary product tests before shipping. Having certified ISO9001 and ISO14001, every cable product carries a quality stamp label and certificate.



Health, Safety & Environment

HSE is ensured by a safety management system. All equipment meets National Standards and are subjected to a strict maintenance program and periodic calibration by qualified personnel or institutes. A constant reduction of raw material and energy as well as product improvement also forms part of ZTT environment policy.

Although submarine cables are usually produced according to specific project requirement, ZTT embraces international scientific consortium standards like IEC, ITU, CIGRE etc...



Research and Development

ZTT's R&D engineering experts are grouped from the Pioneers of Engineers for Submarine Cable System in China. To date, they still collaborate closely with specialists from leading laboratories, research institutes, professors from famous universities. With constantly upgrading in State-of-the-Art equipment and technology, they created and received many First in invention prize award for related products in the industry.

Submarine optic fiber cable is laid for data transmission between states, with the performance of huge transmission capacity, long distance and compatibility to severe ambience.

ZTT develops its own technique for manufacturing submarine optic fiber cable and has proprietary wharf and scored many firsts in invention.

The first to receive National Certification for deep sea SOFC.

The first to be certified by UJ consortium in China.

The largest manufacturing factory of submarine optic fiber cable in China.

Applicable standard

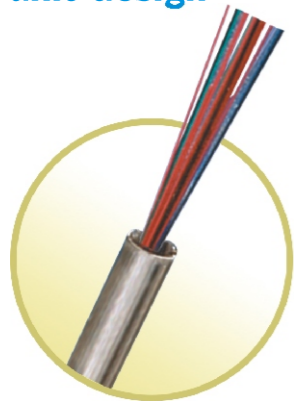
ZTT's SOFC are designed, manufactured and tested according to the latest edition of the following codes and standards:

National Standard GB/ T18480-2001

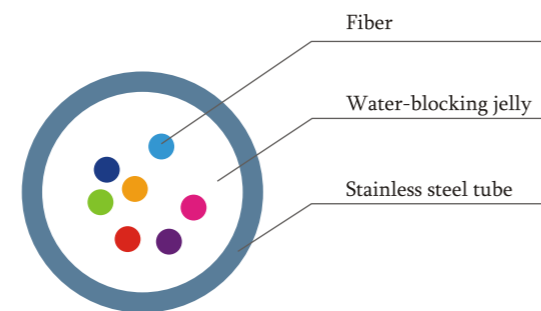
National Military Standard GJB4489-2002

ITU Recommendation for submarine cable system, ITU-T G971~978

Fiber unit design



Drawing of Fiber unit



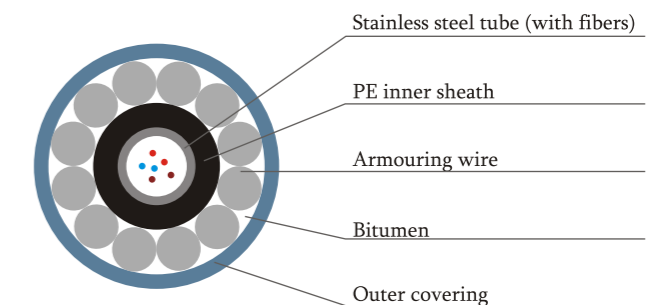
Characteristic

- High strength fiber – ensure stable signal transmission and effective operation life.
- Special water blocking jelly – prevent the ingress of water or hydrogen gas.
- On-line fiber excess control- exact fiber excess in finished cable
- Stainless steel tube – avoid external damages to optic fiber.

Typical structure of shallow sea SOFC

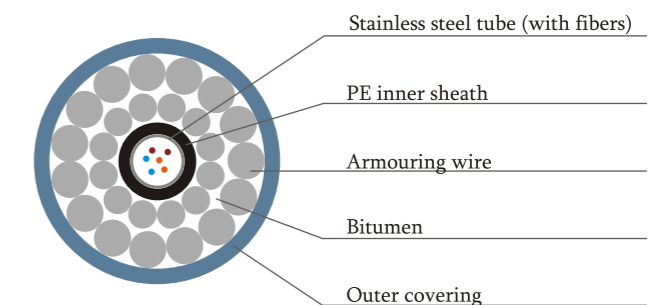
Single Armored / central tube type

Model: SOFC-SA/4~96F



Double armored / central tube type

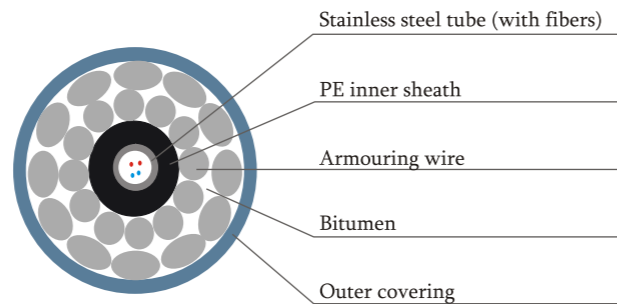
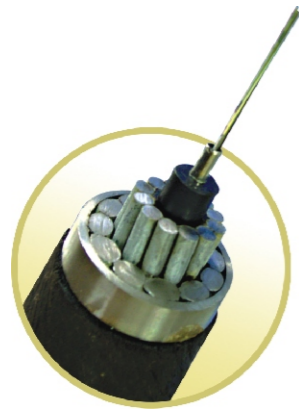
Model: SOFC-DA/4~96F



Typical structure of shallow sea SOFC

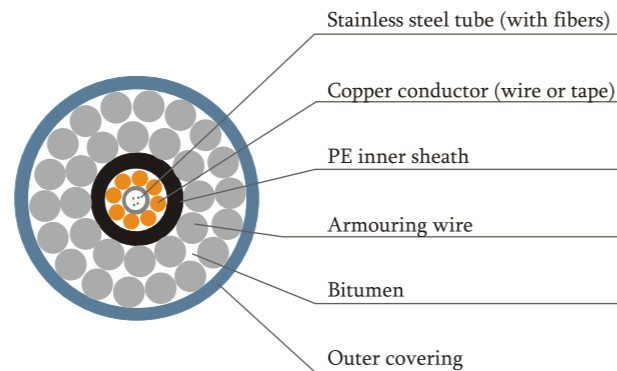
Rock Armored / central tube type

Model: SOFC-RA/4 ~ 96F



Double Armored / central tube type with power feeding

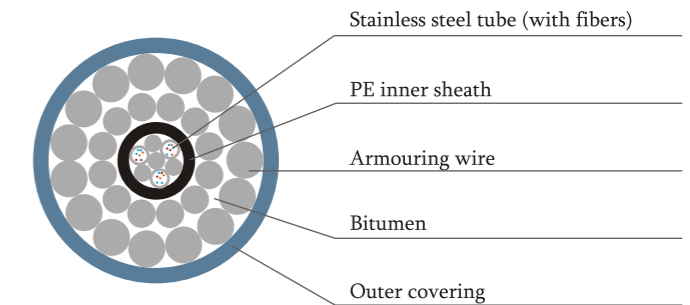
Model: SOFC-DA/4 ~ 96F-R



Typical structure of shallow sea SOFC

Double Armored / stranded type

Model: SOFC-DA/48 ~ 288F



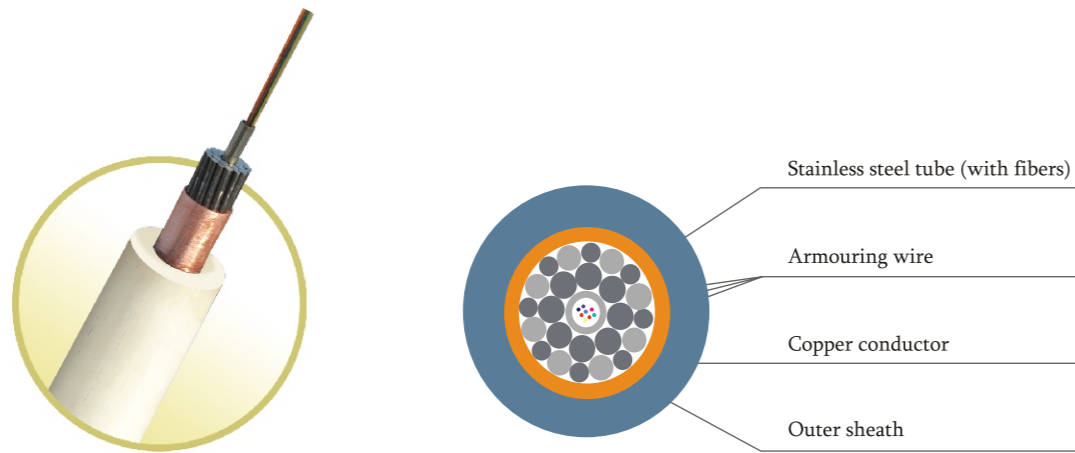
Typical parameter for shallow sea SOFC

Type	Nominal OD (mm)	Nominal weight (kg/km)		CBL (kN)	NTTS (kN)	NOTS (kN)	NPTS (kN)	Unloaded min. bending radius (m)	Crush (kN/100mm)	Impact (N.m)	Repeated bending	Operational temp. (°C)	Storage temp. (°C)
		in air	in water										
SOFC-SA	22	1.0	0.6	100	60	30	20	0.75	>20	>200	50	-20~+50	-30~+60
SOFC-SA	27	1.4	1.0	200	120	60	40	0.75	>20	>200	50	-20~+50	-30~+60
SOFC-SA	33	3.2	2.5	350	210	105	70	0.90	>20	>200	50	-20~+50	-30~+60
SOFC-DA	28	2.2	1.6	260	156	78	52	0.75	>30	>300	30	-20~+50	-30~+60
SOFC-DA	34	3.3	2.4	400	240	120	80	0.85	>40	>400	30	-20~+50	-30~+60
SOFC-DA	40	4.8	3.7	600	360	180	120	1.00	>40	>400	30	-20~+50	-30~+60
SOFC-DA	42	5.6	4.1	800	480	240	160	1.10	>40	>400	30	-20~+50	-30~+60
SOFC-RA	44	7.2	6.2	450	300	160	100	1.10	>40	>400	30	-20~+50	-30~+60

Typical structure of deep sea SOFC (S17-for Repeater System)

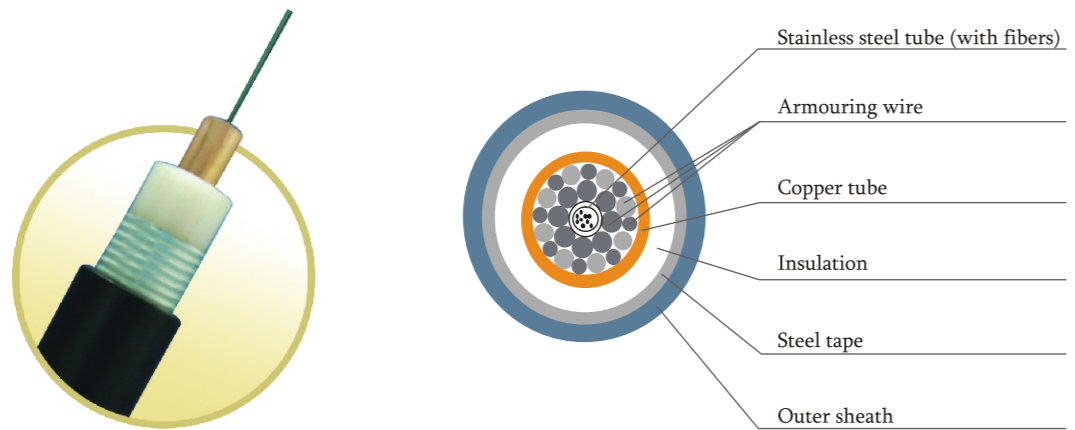
Light weight

Model : SOFC-S17-LW



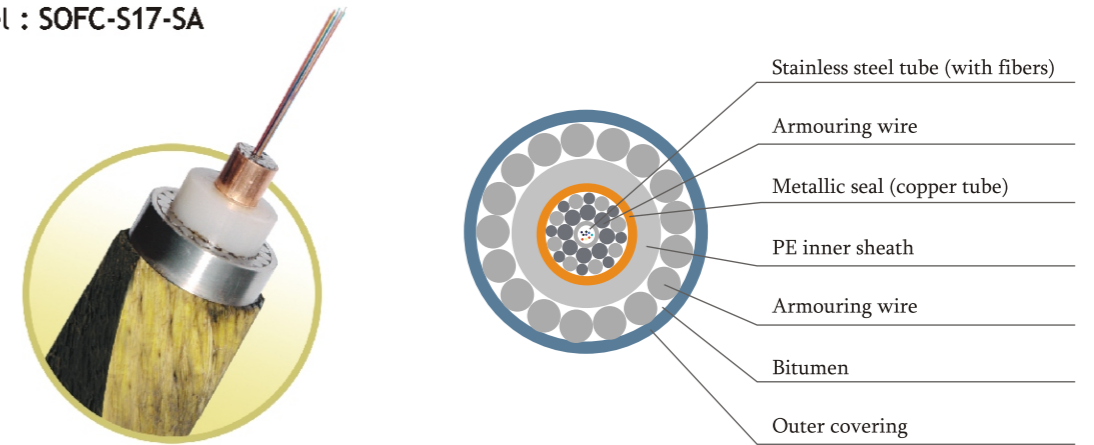
Light weight protection

Model : SOFC-S17-LWP



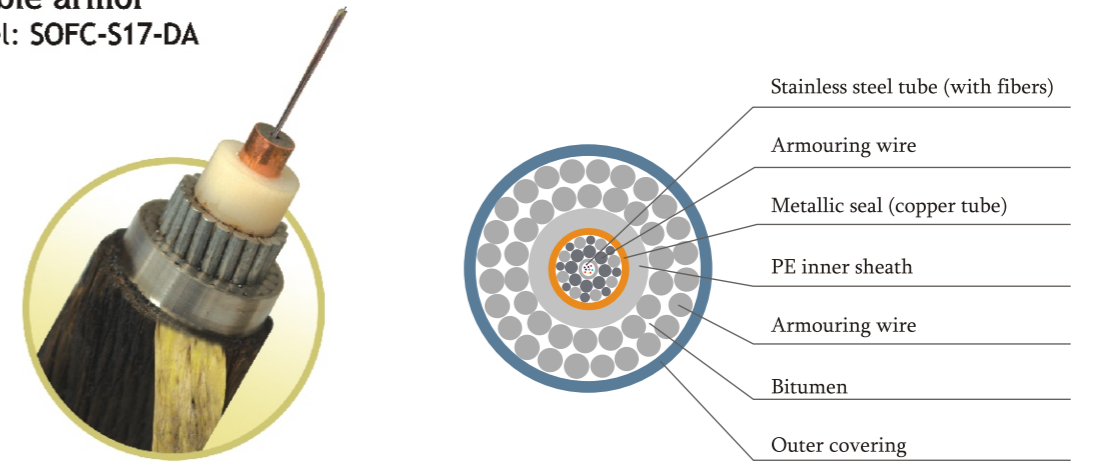
Single armor

Model : SOFC-S17-SA



Double armor

Model: SOFC-S17-DA



Technical parameter for deep sea SOFC (S17 Repeater system)

Type	Nominal OD (mm)	Nominal weight (kg/km)		CBL (kN)	NTTS (kN)	NOTS (kN)	NPTS (kN)	Unloaded min. bending radius (m)	Crush (kN/100mm)	Impact (N.m)	Repeated bending	Operational temp. (°C)	Storage temp. (°C)
		in air	in water										
SOFC-S17-LW	17	0.62	0.4	80	50	30	20	0.5	>10	>100	50	-20~+50	-30~+60
SOFC-S17-LWP	23.6	0.86	0.43	80	50	30	20	0.5	>10	>100	50	-20~+50	-30~+60
SOFC-S17-SA	30.4	2.48	1.88	320	210	125	65	1.0	>20	>200	50	-20~+50	-30~+60
SOFC-S17-DA	39.4	5.12	3.91	660	420	265	135	1.2	>40	>400	30	-20~+50	-30~+60

Submarine power cable or submarine optic fiber composite power cable are widely used in offshore wind generation farm, tide generation farm, or offshore oil & gas platforms. ZTT owns complete production chain for producing submarine cable, together with own test center and has established itself as a professional solution provider for submarine cable system in the region.

Applicable standard

Submarine cable (<35KV) meets the requirements of ZTT enterprise standard Q/320623AP 27-2006 “rated voltage 1KV~35KV XLPE insulated submarine power cable”.

The rated voltage 110KV submarine cable complies with the enterprise standard Q/320691AAG 01-2008 “rated voltage 110KV XLPE insulated submarine cable”.

Comparing with land power cable, except the mechanical performance, ZTT submarine cable has the same electrical performance, which complies with IEC or ICEA. Optical performance of submarine composite cable is same with that of submarine optic fiber cable.

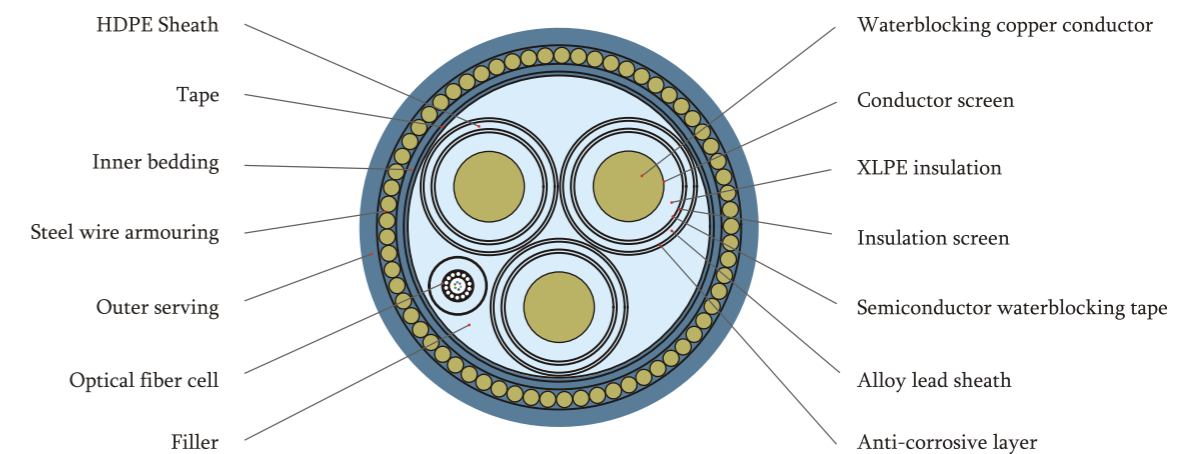
Model and Description

Model	Description
ZS-YJA41 ZS-YJAF41	submarine power cable: copper conductor with water-blocking tape, XLPE insulation system, LAP * sheath or separately LAP sheath, PE sheath, armor bedding, steel wire armor, out yarns serving.
ZS-YJQ41 ZS-YJQF41	Submarine power cable: copper conductor with water-blocking tape, XLPE insulation system, lead sheath or separately lead sheath, PE sheath, armor bedding, steel wire armor, out yarns serving.
ZS-YJA41+OFC ZS-YJAF41+OFC	submarine composite cable: copper conductor with water-blocking tape, XLPE insulation system, LAP * sheath or separately LAP sheath, PE sheath, inserted optic fiber cable, armor bedding, steel wire armor, out yarns serving.
ZS-YJQ41+OFC ZS-YJQF41+OFC	Submarine composite cable: copper conductor with water-blocking tape, XLPE insulation system, lead sheath or separately lead sheath, PE sheath, inserted optic fiber cable, armor bedding, steel wire armor, out yarns serving.

Remark: * LAP: laminated aluminium plastic tape



Model: ZS-YJQF41 + OFC
3 cores (copper) XLPE insulation,
Lead sheath,
Steel wire armor,
Yarns serving submarine cable



Note: Below value is based on following condition: lead sheath, single circuit, conductor operating temp. = 90°C, ground temp. = 25°C, ground thermal resistance = 1.0km/w, burying depth 1.5m, air temp. = 45°C

Rated voltage: 8.7/10kV, 8.7/15kV (ZS-YJQF41, ZS-YJQF41 + OFC)

Cross section	Conductor diameter	Insulation diameter	Lead sheath thickness	HDPE thickness	Bedding thickness	Armoring steel wire dia.	Outer serving thickness	Approx. Cable dia.	Approx. Cable weight.
mm ²	mm	mm	mm	mm	mm	mm	mm	mm	kg/m
50	8.2	4.5	1.3	2.0	2.0	5.0	3.0	82	16.1
70	10.0	4.5	1.3	2.0	2.0	5.0	3.0	86	18.0
95	11.6	4.5	1.4	2.0	2.0	5.0	3.0	90	19.8
120	13.0	4.5	1.4	2.0	2.0	5.0	3.0	93	21.5
150	14.4	4.5	1.5	2.0	2.0	5.0	3.0	96	23.3
185	16.2	4.5	1.5	2.0	2.0	5.0	3.0	100	25.6
240	18.4	4.5	1.6	2.1	2.0	5.0	3.0	105	28.9
300	20.6	4.5	1.6	2.1	2.0	5.0	3.0	111	32.4
400	23.5	4.5	1.7	2.2	2.0	5.0	3.0	120	38.2

Nominal cross section	Screen Cross section	DC@20°C Conductor resistance	AC@90°C Conductor resistance	DC@20°C Screen resistance	Capacitance	Inductance	Ampacity		Short circuit Current, 1s	
							Air	Ground	Conductor	Screen
mm ²	mm ²	Ω / km	Ω / km	Ω / km	μF/km	mH/km	A	A	kA	kA
50	94.3	0.387	0.494	2.27	0.213	0.438	194	193	7.2	2.3
70	101.7	0.268	0.342	2.10	0.242	0.412	240	235	10.0	2.5
95	117.0	0.193	0.246	1.83	0.267	0.393	288	278	13.6	2.9
120	123.2	0.153	0.196	1.74	0.289	0.379	328	314	17.2	3.0
150	139.0	0.124	0.159	1.54	0.311	0.367	369	348	21.5	3.4
185	147.5	0.0991	0.127	1.45	0.339	0.354	418	389	26.5	3.6
240	168.9	0.0754	0.0976	1.27	0.374	0.341	481	441	34.3	4.1
300	180.0	0.0601	0.0778	1.19	0.408	0.331	542	489	42.9	4.4
400	213.6	0.0470	0.0614	1.00	0.466	0.324	614	541	57.2	5.2

Rated voltage: 12/20kV (ZS-YJQF41, ZS-YJQF41 + OFC)

Cross section	Conductor diameter	Insulation diameter	Lead sheath thickness	HDPE thickness	Bedding thickness	Armoring steel wire dia.	Outer serving thickness	Approx. Cable dia.	Approx. Cable weight.
mm ²	mm	mm	mm	mm	mm	mm	mm	mm	kg/m
50	8.2	5.5	1.4	2.0	2.0	5.0	3.0	87	17.6
70	10.0	5.5	1.4	2.0	2.0	5.0	3.0	91	19.4
95	11.6	5.5	1.5	2.0	2.0	5.0	3.0	94	21.4
120	13.0	5.5	1.5	2.0	2.0	5.0	3.0	97	23.1
150	14.4	5.5	1.5	2.0	2.0	5.0	3.0	101	25.0
185	16.2	5.5	1.6	2.0	2.0	5.0	3.0	105	27.4
240	18.4	5.5	1.6	2.1	2.0	5.0	3.0	110	30.8
300	20.6	5.5	1.7	2.1	2.0	5.0	3.0	115	34.3
400	23.5	5.5	1.8	2.2	2.0	5.0	3.0	125	40.2

Nominal cross section	Screen Cross section	DC@20°C Conductor resistance	AC@90°C Conductor resistance	DC@20°C Screen resistance	Capacitance	Inductance	Ampacity		Short circuit Current, 1s	
							Air	Ground	Conductor	Screen
mm ²	mm ²	Ω / km	Ω / km	Ω / km	μF/km	mH/km	A	A	kA	kA
50	110.8	0.387	0.494	1.93	0.185	0.453	196	193	7.2	2.7
70	118.8	0.268	0.342	1.80	0.208	0.425	242	235	10.0	2.9
95	135.2	0.193	0.246	1.58	0.229	0.405	290	279	13.6	3.3
120	141.8	0.153	0.196	1.51	0.247	0.391	331	314	17.2	3.5
150	148.4	0.124	0.159	1.44	0.265	0.379	372	349	21.5	3.6
185	167.9	0.0991	0.127	1.27	0.289	0.367	421	389	26.5	4.1
240	178.9	0.0754	0.0976	1.20	0.317	0.352	485	441	34.3	4.4
300	202.4	0.0601	0.0778	1.06	0.345	0.341	545	488	42.9	4.9
400	238.1	0.0470	0.0614	0.90	0.392	0.333	616	540	57.2	5.8

Rated voltage: 18/30kV (ZS-YJQF41, ZS-YJQF41 + OFC)

Cross section	Conductor diameter	Insulation diameter	Lead sheath thickness	HDPE thickness	Bedding thickness	Armoring steel wire dia.	Outer serving thickness	Approx. Cable dia.	Approx. Cable weight.
mm ²	mm	mm	mm	mm	mm	mm	mm	mm	kg/m
50	8.2	8.0	1.5	2.0	2.0	5.0	3.0	98	21.6
70	10.0	8.0	1.6	2.0	2.0	5.0	3.0	102	23.5
95	11.6	8.0	1.6	2.1	2.0	5.0	3.0	106	25.7
120	13.0	8.0	1.6	2.1	2.0	5.0	3.0	109	27.6
150	14.4	8.0	1.7	2.1	2.0	5.0	3.0	113	29.6
185	16.2	8.0	1.7	2.2	2.0	5.0	3.0	117	32.0
240	18.4	8.0	1.8	2.2	2.0	5.0	3.0	122	35.6
300	20.6	8.0	1.9	2.2	2.0	5.0	3.0	127	39.4
400	23.5	8.0	1.9	2.3	2.0	5.0	3.0	137	45.6

Nominal cross section	Screen Cross section	DC@20°C Conductor resistance	AC@90°C Conductor resistance	DC@20°C Screen resistance	Capacitance	Inductance	Ampacity		Short circuit Current, 1s	
							Air	Ground	Conductor	Screen
mm ²	mm ²	Ω / km	Ω / km	Ω / km	μF/km	mH/km	A	A	kA	kA
50	142.8	0.387	0.494	1.50	0.143	0.485	200	196	7.2	3.5
70	161.9	0.268	0.342	1.33	0.160	0.456	246	238	10.0	3.9
95	170.0	0.193	0.246	1.26	0.175	0.435	294	281	13.6	4.1
120	176.9	0.153	0.196	1.21	0.188	0.420	335	316	17.2	4.3
150	196.0	0.124	0.159	1.09	0.200	0.406	376	348	21.5	4.8
185	205.6	0.0991	0.127	1.04	0.217	0.392	423	388	26.5	5.0
240	230.7	0.0754	0.0976	0.93	0.236	0.377	488	439	34.3	5.6
300	257.3	0.0601	0.0778	0.83	0.256	0.364	547	485	42.9	6.3
400	281.7	0.0470	0.0614	0.76	0.289	0.355	619	537	57.2	6.9

Rated voltage: 26/35kV (ZS-YJQF41, ZS-YJQF41 + OFC)

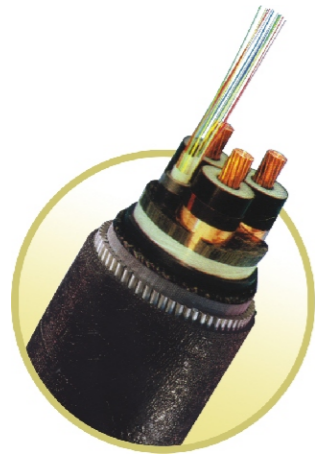
Cross section	Conductor diameter	Insulation diameter	Lead sheath thickness	HDPE thickness	Bedding thickness	Armoring steel wire dia.	Outer serving thickness	Approx. Cable dia.	Approx. Cable weight.
mm ²	mm	mm	mm	mm	mm	mm	mm	mm	kg/m
50	8.2	10.5	1.7	2.1	2.0	5.0	3.0	110	26.1
70	10.0	10.5	1.7	2.1	2.0	5.0	3.0	114	28.3
95	11.6	10.5	1.8	2.2	2.0	5.0	3.0	118	30.4
120	13.0	10.5	1.8	2.2	2.0	5.0	3.0	121	32.4
150	14.4	10.5	1.8	2.2	2.0	5.0	3.0	124	34.5
185	16.2	10.5	1.9	2.3	2.0	5.0	3.0	129	37.1
240	18.4	10.5	1.9	2.3	2.0	5.0	3.0	134	41.0
300	20.6	10.5	2.0	2.4	2.0	5.0	3.0	139	44.9
400	23.5	10.5	2.1	2.4	2.0	5.0	3.0	149	51.5

Nominal cross section	Screen Cross section	DC@20°C Conductor resistance	AC@90°C Conductor resistance	DC@20°C Screen resistance	Capacitance	Inductance	Ampacity		Short circuit Current, 1s	
							Air	Ground	Conductor	Screen
mm ²	mm ²	Ω / km	Ω / km	Ω / km	μF/km	mH/km	A	A	kA	kA
50	189.6	0.387	0.494	1.13	0.121	0.514	203	197	7.2	4.6
70	199.2	0.268	0.342	1.07	0.134	0.483	250	239	10.0	4.9
95	220.5	0.193	0.246	0.97	0.146	0.461	298	281	13.6	5.4
120	228.5	0.153	0.196	0.94	0.156	0.445	339	315	17.2	5.6
150	236.4	0.124	0.159	0.91	0.166	0.431	380	350	21.5	5.8
185	260.8	0.0991	0.127	0.82	0.178	0.415	428	388	26.5	6.4
240	274.0	0.0754	0.0976	0.78	0.193	0.399	493	440	34.3	6.7
300	302.8	0.0601	0.0778	0.71	0.209	0.385	551	484	42.9	7.4
400	345.7	0.0470	0.0614	0.62	0.234	0.374	623	537	57.2	8.4

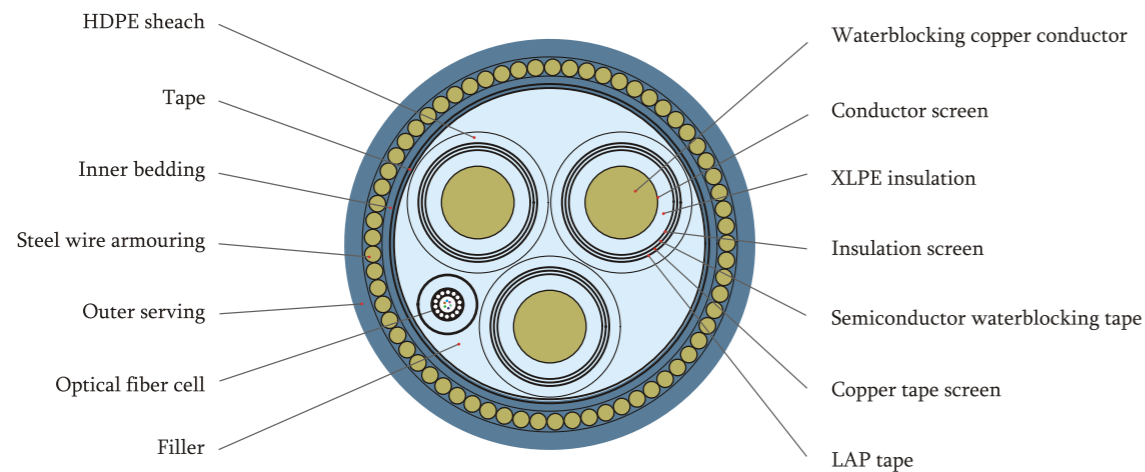
Rated voltage: 48/66kV (ZS-YJQF41, ZS-YJQF41 + OFC)

Cross section	Conductor diameter	Insulation diameter	Lead sheath thickness	HDPE thickness	Bedding thickness	Armoring steel wire dia.	Outer serving thickness	Approx. Cable dia.	Approx. Cable weight.
mm ²	mm	mm	mm	mm	mm	mm	mm	mm	kg/m
70	10.0	13.0	2.0	2.2	2.0	6.0	3.0	130	34.4
95	11.6	13.0	2.0	2.2	2.0	6.0	3.0	134	36.3
120	13.0	13.0	2.1	2.2	2.0	6.0	3.0	137	38.7
150	14.4	13.0	2.1	2.3	2.0	6.0	3.0	140	40.9
185	16.2	13.0	2.2	2.3	2.0	6.0	3.0	145	43.9
240	18.4	13.0	2.2	2.3	2.0	6.0	3.0	150	47.1
300	20.6	13.0	2.3	2.4	2.0	6.0	3.0	155	51.4

Nominal cross section	Screen Cross section	DC@20°C Conductor resistance	AC@90°C Conductor resistance	DC@20°C Screen resistance	Capacitance	Inductance	Ampacity		Short circuit Current, 1s	
							Air	Ground	Conductor	Screen
mm ²	mm ²	Ω / km	Ω / km	Ω / km	μF/km	mH/km	A	A	kA	kA
70	270.2	0.268	0.342	0.79	0.111	0.509	272	225	10.0	6.6
95	280.2	0.193	0.246	0.76	0.120	0.486	318	261	13.6	6.9
120	304.1	0.153	0.196	0.70	0.127	0.469	354	289	17.2	7.5
150	313.4	0.124	0.159	0.68	0.135	0.455	389	316	21.5	7.7
185	341.4	0.0991	0.127	0.63	0.144	0.438	429	346	26.5	8.4
240	356.6	0.0754	0.0976	0.60	0.156	0.420	481	386	34.3	8.8
300	389.5	0.0601	0.0778	0.55	0.167	0.406	525	419	42.9	9.6



Model: ZS-YJAF41 + OFC
3 cores (copper) XLPE insulation,
Laminated aluminium plastic tape,
Steel wire armor,
Yarns serving submarine cable



Note: below value is based on following condition: copper tape screen, single circuit, conductor operating temp. =90°C, ground temp. =25°C, ground thermal resistance =1.0K.m/w, burying depth 1.5m, air temp. =45°C.

Rated voltage: 8.7/10kV, 8.7/15kV (ZS-YJAF41, ZS-YJAF41+OFC)

Cross section	Conductor diameter	Insulation diameter	Lead sheath thickness	HDPE thickness	Bedding thickness	Armoring steel wire dia.	Outer serving thickness	Approx. Cable dia.	Approx. Cable weight.
mm ²	mm	mm	mm	mm	mm	mm	mm	mm	kg/m
50	8.2	4.5	0.3	2.3	2.0	5.0	3.0	80	12.9
70	10.0	4.5	0.3	2.3	2.0	5.0	3.0	84	14.4
95	11.6	4.5	0.3	2.4	2.0	5.0	3.0	88	15.9
120	13.0	4.5	0.3	2.4	2.0	5.0	3.0	91	17.3
150	14.4	4.5	0.3	2.4	2.0	5.0	3.0	94	18.7
185	16.2	4.5	0.3	2.5	2.0	5.0	3.0	98	20.6
240	18.4	4.5	0.3	2.5	2.0	5.0	3.0	103	23.3
300	20.6	4.5	0.3	2.5	2.0	5.0	3.0	108	26.1
400	23.5	4.5	0.3	2.6	2.0	5.0	3.0	117	30.7

Nominal cross section	Screen Cross section	DC@20°C Conductor resistance	AC@90°C Conductor resistance	DC@20°C Screen resistance	Capacitance	Inductance	Ampacity		Short circuit Current, 1s	
							Air	Ground	Conductor	Screen
mm ²	mm ²	Ω / km	Ω / km	Ω / km	μF/km	mH/km	A	A	kA	kA
50	8.1	0.387	0.494	2.13	0.213	0.433	184	187	7.2	1.1
70	8.8	0.268	0.342	1.96	0.242	0.406	229	229	10.0	1.2
95	9.4	0.193	0.246	1.84	0.267	0.387	275	272	13.6	1.3
120	9.9	0.153	0.196	1.74	0.289	0.374	315	307	17.2	1.3
150	10.5	0.124	0.159	1.65	0.311	0.362	355	343	21.5	1.4
185	11.1	0.0991	0.127	1.55	0.339	0.349	395	376	26.5	1.5
240	12.0	0.0754	0.0976	1.44	0.374	0.336	459	431	34.3	1.6
300	12.8	0.0601	0.0778	1.35	0.408	0.325	518	482	42.9	1.7
400	14.3	0.0470	0.0614	1.20	0.466	0.318	623	554	57.2	1.9

Rated voltage: 12/20kV (ZS-YJAF41, ZS-YJAF41 + OFC)

Cross section	Conductor diameter	Insulation diameter	Lead sheath thickness	HDPE thickness	Bedding thickness	Armoring steel wire dia.	Outer serving thickness	Approx. Cable dia.	Approx. Cable weight.
50	8.2	5.5	0.3	2.3	2.0	5.0	3.0	85	14.0
70	10.0	5.5	0.3	2.4	2.0	5.0	3.0	89	15.4
95	11.6	5.5	0.3	2.4	2.0	5.0	3.0	92	17.1
120	13.0	5.5	0.3	2.4	2.0	5.0	3.0	95	18.3
150	14.4	5.5	0.3	2.5	2.0	5.0	3.0	99	19.8
185	16.2	5.5	0.3	2.5	2.0	5.0	3.0	103	21.8
240	18.4	5.5	0.3	2.5	2.0	5.0	3.0	108	24.6
300	20.6	5.5	0.3	2.6	2.0	5.0	3.0	112	27.4
400	23.5	5.5	0.3	2.6	2.0	5.0	3.0	122	32.0

Nominal cross section	Screen Cross section	DC@20°C Conductor resistance	AC@90°C Conductor resistance	DC@20°C Screen resistance	Capacitance	Inductance	Ampacity		Short circuit Current, 1s	
							Air	Ground	Conductor	Screen
mm ²	mm ²	Ω / km	Ω / km	Ω / km	μF/km	mH/km	A	A	kA	kA
50	8.9	0.387	0.494	1.94	0.185	0.447	187	188	7.2	1.2
70	9.5	0.268	0.342	1.81	0.208	0.419	231	229	10.0	1.3
95	10.1	0.193	0.246	1.70	0.229	0.400	278	273	13.6	1.4
120	10.7	0.153	0.196	1.61	0.247	0.386	318	309	17.2	1.4
150	11.2	0.124	0.159	1.54	0.265	0.373	357	344	21.5	1.5
185	11.9	0.0991	0.127	1.45	0.289	0.360	399	378	26.5	1.6
240	12.7	0.0754	0.0976	1.36	0.317	0.346	463	431	34.3	1.7
300	13.5	0.0601	0.0778	1.27	0.345	0.334	520	482	42.9	1.8
400	15.1	0.0470	0.0614	1.14	0.392	0.327	617	554	57.2	2.0

Rated voltage: 18/30kV (ZS-YJAF41, ZS-YJAF41 + OFC)

Cross section	Conductor diameter	Insulation diameter	Lead sheath thickness	HDPE thickness	Bedding thickness	Armoring steel wire dia.	Outer serving thickness	Approx. Cable dia.	Approx. Cable weight.
50	8.2	8.0	0.3	2.4	2.0	5.0	3.0	96	16.8
70	10.0	8.0	0.3	2.5	2.0	5.0	3.0	100	18.3
95	11.6	8.0	0.3	2.5	2.0	5.0	3.0	104	19.9
120	13.0	8.0	0.3	2.5	2.0	5.0	3.0	107	21.3
150	14.4	8.0	0.3	2.6	2.0	5.0	3.0	110	22.9
185	16.2	8.0	0.3	2.6	2.0	5.0	3.0	114	25.0
240	18.4	8.0	0.3	2.6	2.0	5.0	3.0	119	27.7
300	20.6	8.0	0.3	2.7	2.0	5.0	3.0	124	30.6
400	23.5	8.0	0.3	2.7	2.0	5.0	3.0	133	35.6

Nominal cross section	Screen Cross section	DC@20°C Conductor resistance	AC@90°C Conductor resistance	DC@20°C Screen resistance	Capacitance	Inductance	Ampacity		Short circuit Current, 1s	
							Air	Ground	Conductor	Screen
mm ²	mm ²	Ω / km	Ω / km	Ω / km	μF/km	mH/km	A	A	kA	kA
50	10.8	0.387	0.494	1.60	0.143	0.479	191	190	7.2	1.4
70	11.4	0.268	0.342	1.51	0.160	0.450	236	231	10.0	1.5
95	12.0	0.193	0.246	1.43	0.175	0.429	275	275	13.6	1.6
120	12.6	0.153	0.196	1.37	0.188	0.414	310	310	17.2	1.7
150	13.1	0.124	0.159	1.32	0.200	0.400	345	345	21.5	1.8
185	13.8	0.0991	0.127	1.25	0.217	0.386	379	379	26.5	1.9
240	14.6	0.0754	0.0976	1.18	0.236	0.371	432	432	34.3	2.0
300	15.4	0.0601	0.0778	1.12	0.256	0.351	482	482	42.9	2.1
400	17.0	0.0470	0.0614	1.02	0.289	0.348	556	57.2	57.2	2.3

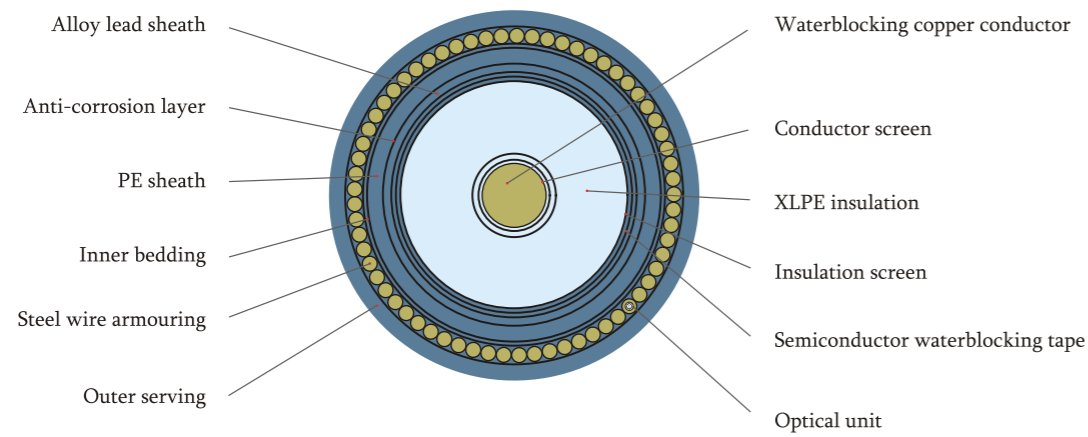
Rated voltage: 12/20kV (ZS-YJAF41, ZS-YJAF41 + OFC)

Cross section	Conductor diameter	Insulation diameter	Lead sheath thickness	HDPE thickness	Bedding thickness	Armoring steel wire dia.	Outer serving thickness	Approx. Cable dia.	Approx. Cable weight.
50	8.2	10.5	0.3	2.5	2.0	5.0	3.0	107	19.7
70	10.0	10.5	0.3	2.6	2.0	5.0	3.0	111	21.4
95	11.6	10.5	0.3	2.6	2.0	5.0	3.0	115	23.0
120	13.0	10.5	0.3	2.6	2.0	5.0	3.0	118	24.6
150	14.4	10.5	0.3	2.7	2.0	5.0	3.0	121	26.2
185	16.2	10.5	0.3	2.7	2.0	5.0	3.0	125	28.2
240	18.4	10.5	0.3	2.7	2.0	5.0	3.0	130	31.1
300	20.6	10.5	0.3	2.8	2.0	5.0	3.0	135	34.2
400	23.5	10.5	0.3	2.8	2.0	5.0	3.0	144	39.3

Nominal cross section	Screen Cross section	DC@20°C Conductor resistance	AC@90°C Conductor resistance	DC@20°C Screen resistance	Capacitance	Inductance	Ampacity		Short circuit Current, 1s	
							Air	Ground	Conductor	Screen
mm ²	mm ²	Ω / km	Ω / km	Ω / km	μF/km	mH/km	A	A	kA	kA
50	12.6	0.387	0.494	1.36	0.121	0.507	195	192	7.2	1.7
70	13.3	0.268	0.342	1.29	0.134	0.476	240	233	10.0	1.8
95	13.9	0.193	0.246	1.24	0.146	0.454	289	277	13.6	1.9
120	14.4	0.153	0.196	1.19	0.156	0.438	330	313	17.2	1.9
150	15.0	0.124	0.159	1.15	0.166	0.424	370	349	21.5	2.0
185	15.7	0.0991	0.127	1.10	0.178	0.408	413	383	26.5	2.1
240	16.5	0.0754	0.0976	1.05	0.193	0.392	477	436	34.3	2.2
300	17.3	0.0601	0.0778	1.00	0.209	0.378	536	482	42.9	2.3
400	18.9	0.0470	0.0614	0.91	0.234	0.367	635	561	57.2	2.5



Model: ZS-YJQ41 + OFC
Single core (copper) XLPE insulation,
Lead sheath,
Steel wire armor,
Yarn serving submarine cable



Note: below value is based on following condition: copper tape screen, single circuit, conductor operating temp. =90°C, ground temp. =25°C, ground thermal resistance =1.0K.m/w, burying depth 1.5m, air temp. =45°C.

Rated voltage: 64/110kV (ZS-YJQ41, ZS-YJQ41+OFC)

Cross section	Conductor diameter	Insulation diameter	Lead sheath thickness	HDPE thickness	Bedding thickness	Armoring steel wire dia.	Outer serving thickness	Approx. Cable dia.	Approx. Cable weight.
mm ²	mm	mm	mm	mm	mm	mm	mm	mm	kg/m
240	18.4	19.0	4.0	4.0	2.0	5.0	3.0	106	27.4
300	20.6	18.5	4.0	4.0	2.0	5.0	3.0	107	28.3
400	23.5	17.5	4.0	4.0	2.0	5.0	3.0	108	29.4
500	26.6	17.0	4.0	4.0	2.0	5.0	3.0	110	30.9
630	30.0	16.5	4.0	4.5	2.0	5.0	3.0	114	33.3
800	34.0	16.0	4.0	4.5	2.0	5.0	3.0	117	36.1
1000	38.2	16.0	4.0	4.5	2.0	5.0	3.0	122	39.0

Nominal cross section	Screen Cross section	DC@20°C Conductor resistance	AC@90°C Conductor resistance	DC@20°C Screen resistance	Capacitance	Inductance	Ampacity		Short circuit Current, 1s	
							Air	Ground	Conductor	Screen
mm ²	mm ²	Ω / km	Ω / km	Ω / km	μF/km	mH/km	A	A	kA	kA
240	847.2	0.0754	0.0976	0.31	0.125	1.768	573	587	34.8	22.4
300	860.1	0.0601	0.0777	0.30	0.135	1.748	635	641	43.4	22.5
400	875.3	0.0470	0.0613	0.30	0.152	1.719	707	698	57.8	22.5
500	898.2	0.0366	0.0484	0.29	0.167	1.696	778	752	72.2	22.8
630	930.4	0.0283	0.0382	0.28	0.184	1.672	853	807	90.9	23.3
800	975.3	0.0221	0.0309	0.27	0.207	1.647	921	852	115.3	24.2
1000	1026.1	0.0176	0.0224	0.25	0.224	1.624	981	888	144.0	25.3

Cable accessory

The deployment of submarine cable is a highly professional piece of engineering work. Installation vessel outfitted with special equipment. Professional desktop design and supervision service at site is vital to the operation. ZTT not only produces submarine cable but also supply related accessory, including J-tube seal, cable clamp, pulling head and joint box etc..

Submarine joint box is necessary for submarine cable project. ZTT possess its own intellectual property for submarine joint box. The product series includes direct joint box, branch joint box, joint box for submarine composite cable, flexible joint, onshore joint box, etc..

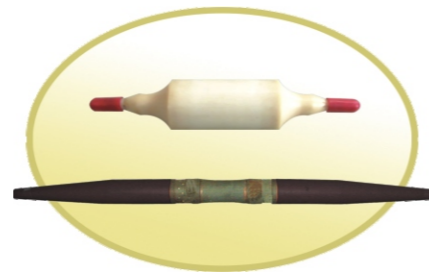
Joint box for shallow sea application / model: GJHQ

- Suitable for cable connection and repair in shallow sea condition, less than 200m water depth.
- High mechanical strength, good sealing and strong anti-corrosion.
- Tin alloy cover has good performance of anticorrosion.
- Cone-shape locking of steel wire ensures good recovery of cable tensile strength.



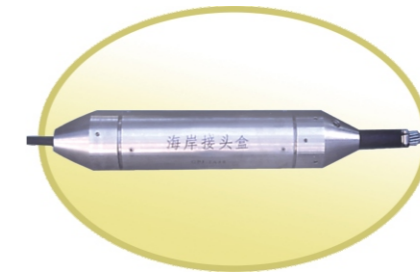
Joint box for deep sea application / model: GJSH

- Suitable for cable connection and repair in deep sea condition, less than 8000m water depth.
- Guarantee the power circuit of deep sea SOFC, and the splicing between repeater and cable.
- Adopt overall injection and molding art for the splicing closure.
- Use special gimbal to adjust the bending radius. Good performance of water sealing and electrical insulation under 8000m water depth.
- Withstand the strength above 90% UTS of deep sea SOFC.



Beach Joint box / model: GPJ-JA48

- Use to connect SOFC to land FO cable after exit from the manhole.
- High mechanical strength, good sealing and strong anti-corrosion
- Stainless steel cover has a good performance of anti-corrosion
- Cone-shape locking of steel wire ensures good recovery of cable tensile strength



Joint box for submarine composite cable / model: GDFH-JT

- Use for cable connection and repair of submarine composite cable
- High mechanical strength, good sealing and strong anti-corrosion
- Stainless steel cover has a good performance of anti-corrosion
- Cone-shape locking of steel wire ensures good recovery of cable tensile strength
- Half structure of out cover

