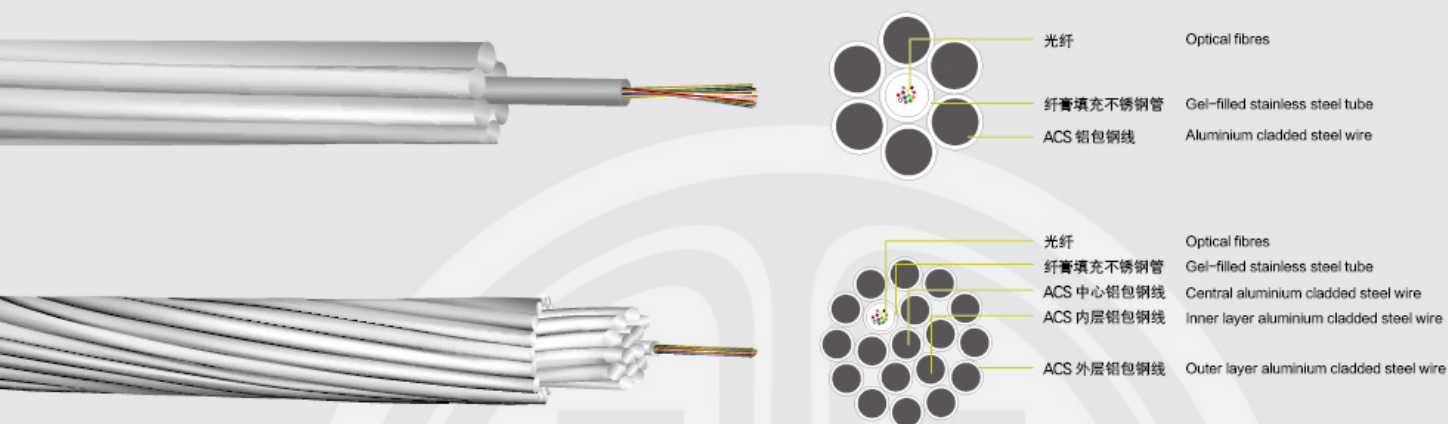


光纤复合架空光缆 (OPGW) Optical Fibre Composite Overhead Ground Wire

光纤被包裹在不锈钢管中，管中填充阻水油膏。光纤套管与铝包钢线及铝合金线绞合在一起成缆，并在缆的缝隙中填充防腐防锈油膏。
The fibers are positioned in a jelly filled stainless steel tube. The tubes are filled with a water-resistant filling compound. The tube is stranded with the ACS and AA wires and the gaps are filled with corrosion resistance compound.



● 敷设方式 Installation

自承式架空 Self-supporting aerial

● 产品特点 Characteristics

1. 不锈钢套管具有较高的机械强度，可有效地保证光缆的使用寿命并具有较高的抗拉伸及抗侧压能力，光纤的余长均匀分布，当蠕变和外力变化时，保证光纤不受力

The stainless steel tube that houses the fibre has a high tensile strength and a high crush resistance in order to provide an effective protection. The fibre is mechanically decoupled from other component parts of the cable structure in all expected conditions of use. This ensures successful operation during the life expectancy of the cable

2. OPGW 外径和截面小、结构紧凑、重量轻，有效地提高了光缆的抗风荷载的能力

TFO strives for compact and lightweight OPGW designs in order to reduce influences of wind and ice, and to minimize loading of the towers of the power line grid

3. 使用不锈钢材料作光纤保护单元，并且在不锈钢管中填充油膏，使得光纤单元在线路单相短路时可承受较高的热效应温度

By protecting the opticing fibre using a gel filled stainless steel tube which has a high radial thermal resistance, OPGW temperatures up to 300°C can be allowed in a single phase short-circuit situation

4. 通过精确调整铝包钢线中各种材料的比例，能使 OPGW 光缆在缩小缆径的同时具有较高的耐张强度。同时，不锈钢管热阻大，当线温升高时有效地保护光纤，因此能承受较高的短路电流

TFO realizes high strength / small diameter OPGW designs by selecting the right type and size for the aluminium clad steel wires in the center of the structure

5. 根据对侧地线的技术参数及对于短路电流的要求对 OPGW 光缆进行合理化配制与设计，以保证线路安全运行

TFO strives for designs with properties that maximally approach those of conventional earth wires in order to meet short-circuit requirements and to ensure secure operation on the power line circuit

● 应用范围 Applications

架空地线 Power line

● 产品标准 Standards

DL/T 832/IEEE 1138/IEC60794-4-10

中心管式结构和性能参数 OPGW central tube datasheet

不锈钢管直径 / Stainless steel tube diameter	mm	3.0				3.6			
最大芯数 / Max. fibre count		32				48			
铝包钢线等级 / wire grade		20%	23%	27%	40%	20%	23%	27%	40%
铝包钢线直径 / wire diameter	mm	3.0	3.0	3.0	3.0	3.6	3.6	3.6	3.6
光缆外径 / Outer diameter	mm	9.0	9.0	9.0	9.0	10.8	10.8	10.8	10.8
光缆重量 / Mass	kg/km	304	290	275	221	435	415	393	314
最小安装弯曲半径 / Min. bend diameter (installation)	mm	25D	25D	25D	25D	25D	25D	25D	25D
最小运行弯曲半径 / Min. bend diameter (operation)	mm	15D	15D	15D	15D	15D	15D	15D	15D
额定抗拉强度 / Rated tensile strength	kN	55	50	44	28	79	72	64	41
最大允许拉伸力 / Max allowed tensile strength	kN	22	20	18	11	32	29	26	16
截面积 / Cross section area	mm ²	40	40	40	40	60	60	60	60
热线性膨胀系数 / Coefficient of linear expansion	10 ⁻⁵ /K	1.27	1.26	1.30	1.50	1.27	1.26	1.31	1.51
杨氏模量 / Modulus of elasticity	GPa	158	145	136	106	158	146	137	106
短路电流容量 / Short current capacity	kA ² .s	8.92	9.87	11.3	14.87	18.49	20.46	23.43	30.84
短路电流 / Short current (0.25s, 40-200°C)	kA	5.98	6.29	6.73	7.72	8.60	9.05	9.68	11.11
最大直流电阻 / DC resistance @ 20°C	Ohm/km	2.03	1.79	1.53	1.03	1.41	1.24	1.06	0.71

层绞式结构和性能参数 OPGW stranded datasheet

不锈钢管直径 / Stainless steel tube diameter	mm	2.6	2.8	3.0	3.2	2.8	2.9	3.2
钢管数量 / No. of stainless steel tube		1	1	1	1	2	2	2
最大芯数 / Max. fibre count		24	32	40	48	64	72	96
铝包钢线等级 / ACS wire grade		20%	20%	20%	20%	20%	20%	20%
铝包钢中心线直径 / Central wire diameter	mm	2.6	2.8	3.0	3.2	2.8	2.9	3.2
铝包钢内层线直径 / Inner wire diameter	mm	2.6	2.8	3.0	3.2	2.8	2.9	3.2
铝包钢内层线数量 / No. of inner wire	pcs	5	5	5	5	4	4	4
铝包钢外层线直径 / Outer wire diameter	mm	2.6	2.8	3.0	3.2	2.8	2.9	3.2
铝包钢外层线数量 / No. of outer wire	pcs	12	12	12	12	12	12	12
光缆外径 / Outer diameter	mm	13.0	14.0	15.0	16.0	14.0	14.5	16
光缆重量 / Mass	kg/km	659	764	876	996	742	795	965
最小安装弯曲半径 / Min. bend diameter (installation)	mm	25D	25D	25D	25D	25D	25D	25D
最小运行弯曲半径 / Min. bend diameter (operation)	mm	15D	15D	15D	15D	15D	15D	15D
额定抗拉强度 / Rated tensile strength	kN	122	142	162	185	134	143	175
最大允许拉伸力 / Max allowed tensile strength	kN	48	56	64	74	53	57	70
截面积 / Cross section area	mm ²	95	110	125	145	105	110	135
热线性膨胀系数 / Coefficient of linear expansion	10 ⁻⁵ /K	1.22	1.22	1.22	1.22	1.22	1.22	1.22
杨氏模量 / Modulus of elasticity	GPa	152	152	152	152	152	152	152
短路电流容量 / Short current capacity	kA ² .s	45.2	60.8	80.2	103.8	54.3	62.5	92.6
短路电流 / Short current (0.25s, 40-200°C)	kA	13.46	15.61	17.92	20.38	14.74	15.81	19.25
最大直流电阻 / DC resistance @ 20°C	Ohm/km	0.906	0.781	0.680	0.598	0.827	0.771	0.633

注：以上参数仅供参考
Remark: The above datasheets are just for reference.

