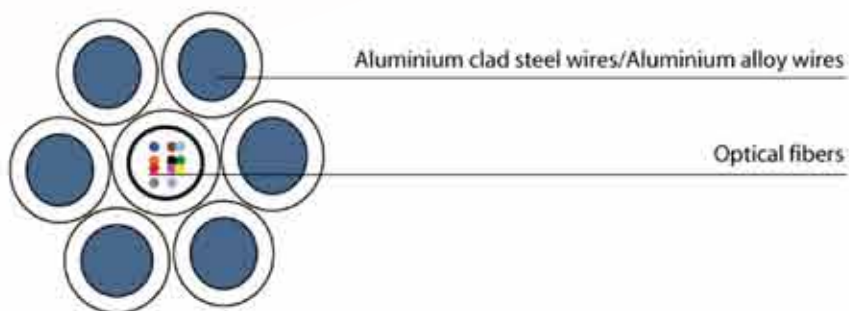


Typical Designs of Central Stainless Steel Tube OPGW



Central Tube OPGW Single/Double Armour layers

The central stainless steel tube is surrounded by single or double layers of aluminium clad steel wires(ACS) or mix ACS wires and aluminium alloy wires.



Characteristic and Application

- Small cable diameter and short-circuit current capacity, light weight.
- The stainless steel tube can form a suitable primary fiber excess length.
- The OPGW has slightly worse tensile, torsion and crush resistance performance.
- Apply to the transformation of old lines.

Typical Parameters:

Single Layer

ZTT Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA's)
OPGW-32[40.6;4.7]	12	7.8	243	40.6	4.7
OPGW-42[54.0;8.4]	24	9.0	313	54.0	8.4
OPGW-42[43.5;10.6]	24	9.0	284	43.5	10.6
OPGW-54[67.8;13.9]	36	10.2	394	67.8	13.9
OPGW-54[55.9;17.5]	36	10.2	356	55.9	17.5
OPGW-61[73.7;17.5]	48	10.8	438	73.7	17.5
OPGW-61[55.1;24.5]	48	10.8	358	55.1	24.5
OPGW-61[55.1;24.5]	48	10.8	358	55.1	24.5
OPGW-68[80.8;21.7]	54	11.4	485	80.8	21.7
OPGW-75[63.0;36.3]	60	12.0	459	63.0	36.3
OPGW-76[54.5;41.7]	60	12.0	385	54.5	41.7
OPGW-79[51.2;49.5]	72	12.3	403	51.2	49.5

Double Layers

ZTT Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA's)
OPGW-96[121.7;42.2]	12	13.0	671	121.7	42.2
OPGW-127[141.0;87.9]	24	15.0	825	141.0	87.9
OPGW-127[77.8;128.0]	24	15.0	547	77.8	128.0
OPGW-145[121.0;132.2]	28	16.0	857	121.0	132.2
OPGW-163[138.2;183.6]	36	17.0	910	138.2	183.6
OPGW-163[99.9;213.7]	36	17.0	694	99.9	213.7
OPGW-183[109.7;268.7]	48	18.0	775	109.7	268.7
OPGW-183[118.4;261.6]	48	18.0	895	118.4	261.6

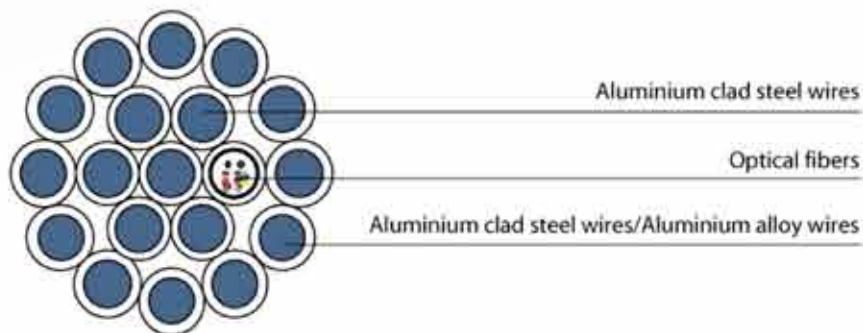
OPGW-32[40.6;4.7] OPGW-42[54.0;8.4] OPGW-42[43.5;10.6] OPGW-54[67.8;13.9] OPGW-54[55.9;17.5] OPGW-61[73.7;17.5] OPGW-61[55.1;24.5] OPGW-61[55.1;24.5] OPGW-68[80.8;21.7] OPGW-75[63.0;36.3] OPGW-76[54.5;41.7] OPGW-79[51.2;49.5]

Typical Designs of Stranded Stainless Steel Tube OPGW



OPGW With Stranded Layers, Single Tube And Multitube Are Available Double /Three Armour Layers

The stainless steel tube is stranded by double or three layers of aluminium clad steel wires(ACS) or mix ACS wires and aluminium alloy wires.



Characteristic and Application

- larger cable diameter and much more fiber count.
- larger tensile strength and fault current capacity to reach a better balance of electrical and mechanical performance.
- The amount of Stainless Steel Tube could be 1, 2 or 3 (max. at present).
- Optimum stranding design to reach a suitable secondary fiber excess length.
- The stranded layers could be double layers or three layers, the stranded wires could be AS wires with/or AA and Al wires.

Typical Parameters:

Double Layers

ZTT Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA's)
OPGW-89[55.4;62.9]	24	12.6	381	55.4	62.9
OPGW-91[53.6;66.4]	24	12.7	377	53.6	66.4
OPGW-110[90.0;86.9]	24	14.0	600	90.0	86.9
OPGW-104[64.6;85.6]	28	13.6	441	64.6	85.6
OPGW-127[79.0;129.5]	36	15.0	537	79.0	129.5
OPGW-137[85.0;148.5]	36	15.6	575	85.0	148.5
OPGW-145[98.6;162.3]	48	16.0	719	98.6	162.3
OPGW-164[100.2;214.8]	48	17.1	687	100.2	214.8
OPGW-120[70.0;117.6]	72	15.0	509	70.0	117.6
OPGW-137[79.7;152.2]	96	16.0	574	79.7	152.2
OPGW-174[98.6;246.5]	128	18.2	724	98.6	246.5

Three Layers

ZTT Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA's)
OPGW-232[343.0;191.4]	28	20.15	1696	343.0	191.4
OPGW-254[116.5;554.6]	36	21.0	889	116.5	554.6
OPGW-347[366.9;687.7]	48	24.7	2157	366.9	687.7
OPGW-282[358.7;372.1]	96	22.5	1938	358.7	372.1

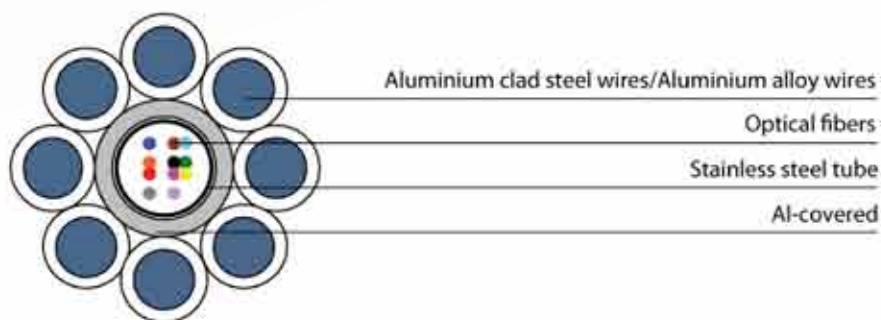
* The above designs are ZTT's typical options, and ZTT can provide any specific cable according to your requirement.

Typical Designs of Central Al-covered Stainless Steel Tube OPGW



Central Al-covered stainless steel tube OPGW Single/Double Armour Layers

The central Al-covered steel tube is surrounded by single or double layers of aluminium clad steel wires(ACS) or mix ACS wires and aluminium alloy wires.



Characteristic and Application

- Al-covered Stainless Steel tube design increases the cross section of AL, to reach a better fault current and lightning resistance performance.
- Good anti-corrosion performance.
- Apply to the transmission line which requires small diameter and large fault current.

Typical Parameters :

Single Layer

ZTT Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA's)
OPGW-78[78.7;37.6]	24	11.6	498	78.7	37.6
OPGW-77[63.6;41.6]	28	11.6	451	63.6	41.6
OPGW-77[78.6;36.2]	28	11.6	496	78.6	36.2
OPGW-111[58.9;103.7]	48	13.8	511	58.9	103.7
OPGW-187[75.3;308.2]	48	18.0	679	75.3	308.2
OPGW-81[63.2;46.7]	48	11.9	458	63.2	46.7
OPGW-74[68.5;36.4]	60	11.4	444	68.5	36.4
OPGW-84[42.4;59.9]	60	12.1	383	42.4	59.9

Double Layers

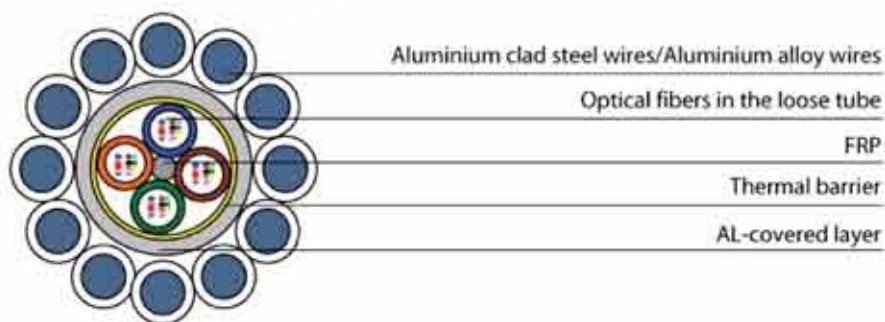
ZTT Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA's)
OPGW-191[110.8;296.0]	24	18.0	809	110.8	296.0
OPGW-146[84.3;172.0]	28	15.8	625	84.3	172.0
OPGW-146[72.7;177.4]	28	15.8	591	72.7	177.4
OPGW-199[115.3;322.2]	48	18.4	845	115.3	322.2
OPGW-226[128.6;414.2]	60	19.7	954	128.6	414.2

* The above designs are ZTT's typical options, and ZTT can provide any specific cable according to your requirement.

Typical Designs of Aluminum Tube OPGW

Aluminium tube OPGW Single/Double Armour Layers

The Aluminium tube is surrounded by single or double layers of aluminium clad steel wires(ACS) or mix ACS wires and aluminium alloy wires.



Characteristic and Application

- Good anti-corrosion performance.
- Material and structure are uniform, good resistance to vibration fatigue.
- Short circuit current has small effect on the optical fiber transmission properties.
- Good anti-lightning performance.

Typical Parameters:

Single Layer

ZTT Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA ² s)
OPGW-81[73.9;43.6]	24	12.5	488	73.9	43.6
OPGW-86[76.8;49.5]	24	12.8	510	76.8	49.5
OPGW-103[93.8;68.9]	24	13.8	611	93.8	68.9
OPGW-85[76.8;46.8]	32	12.8	509	76.8	46.8
OPGW-85[50.5;54.5]	32	12.8	445	50.5	54.5
OPGW-112[106.7;80.0]	36	14.7	688	106.7	80.0
OPGW-112[86.0;90.3]	48	14.7	627	86.0	90.3
OPGW-112[62.7;104.5]	48	14.7	498	62.7	104.5
OPGW-122[65.6;123.9]	48	15.2	534	65.6	123.9
OPGW-132[121.0;108.7]	60	16.0	810	121.0	108.7
OPGW-132[63.9;148.0]	60	16.0	545	63.9	148.0

Double Layers

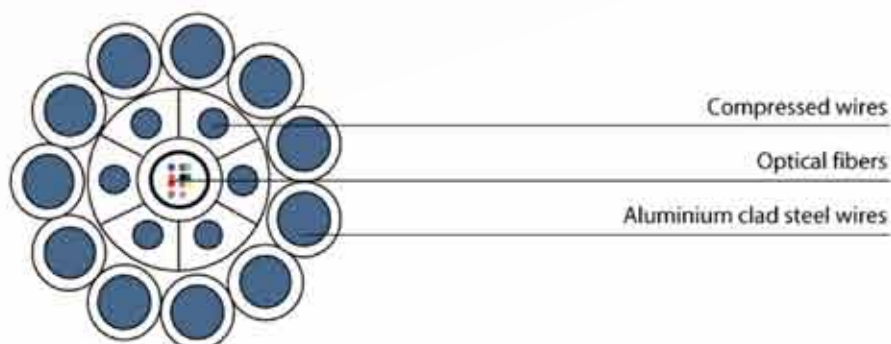
ZTT Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA ² s)
OPGW-174[101.0;247.7]	24	17.7	744	101.0	247.7
OPGW-244[141.2;479.7]	24	20.7	1030	141.2	479.7
OPGW-249[147.0;501.4]	48	21.1	1065	147.0	501.4
OPGW-207[121.8;348.1]	48	19.4	892	121.8	348.1
OPGW-233[135.8;441.9]	60	20.6	999	135.8	441.9

* The above designs are ZTT's typical options, and ZTT can provide any specific cable according to your requirement.

Typical Designs of Lightning Resistant Central Stainless Steel Tube OPGW with Compressed Wires



The central stainless steel tube is surrounded by double layers of aluminium clad steel wires(ACS),the inner layer aluminium clad steel wires are compressed,the outer layer aluminium clad steel wires are all compressed or all round.



Characteristic and Application

- Compressing round AS wires into sector AS wires during stranding.
- Compared with round AS wires stranding, sector AS wires stranding can increase the cross section and fault current capacity while the cable diameter is the same.
- Compared with round AS wires stranding, sector AS wires stranding can dramatically increase the diameter of outer wires to enhance the lightning performance.
- Apply to the transmission line which requires small diameter and large fault current.
- Apply to heavy thunderstorm areas.

Typical Parameters:

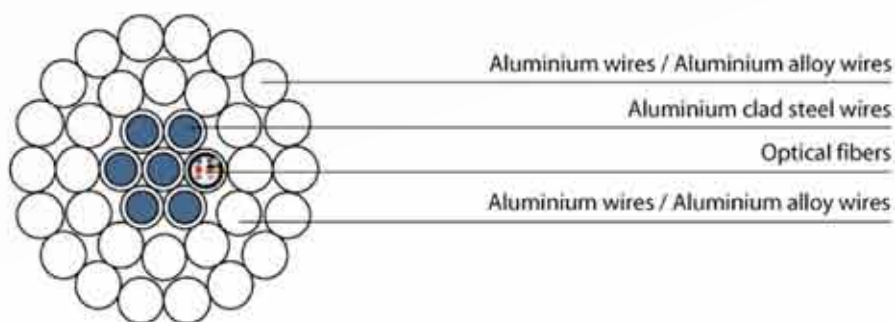
ZTT Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA ² s)
OPGW-YS/138-147.9	30	15.2	680	89.0	147.9
OPGW-YS/159-196.3	30	16.2	780	102.5	196.3
OPGW-YS/115-97.1	36	14.0	610	81.3	97.1
OPGW-YS/128-121.0	36	14.8	671	89.8	121.0
OPGW-YS/150-168.1	36	16.0	777	104.2	168.1
OPGW-YS/132-135.2	48	15.0	652	85.1	135.2
OPGW-YS/151-177.0	48	16.0	742	97.4	177.0
OPGW-YS/133-138.1	48	15.0	658	86.0	138.1
OPGW-YS/145-164.3	48	15.7	716	93.8	164.3

* The above designs are ZTT's typical options, and ZTT can provide any specific cable according to your requirement.

Typical Designs of OPPC



The Aluminium tube is surrounded by single or double layers of aluminium clad steel wires(ACS) or mix ACS wires and aluminium alloy wires.



Characteristic and Application

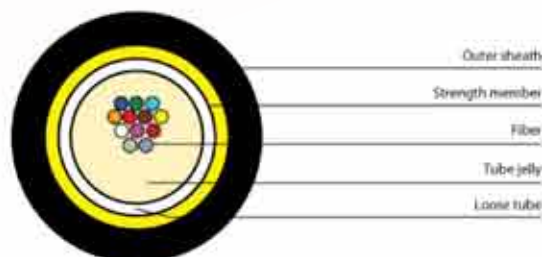
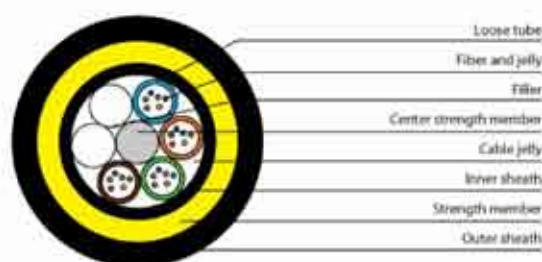
- Replacing one or several wires of the traditional conductor with stainless steel tube and strand the tube with AS/steel wires and AL/AA wires.
- Replacing one of the three phase conductors with OPPC, thus to form a transmission line which consists of one OPPC and two phase conductors.
- Mechanical and electrical performance can match the adjacent two phase conductors.
- OPPC can meet durative high temperature resistant which verified by Temperature Cycling test and Short Current test.
- OPPC is applied to middle & high voltage power lines without ground wires such as 10kV, 35kV, 66kV and so on.
- Telecommunications for middle & high voltage power lines in urban and rural areas; Providing optical cables for building distribution automation station.

Typical Parameters:

ZTT Standard	Fiber Count(Max)	Diameter (mm)	weight (kg/km)	RTS (kN)	Current 40-70℃	Carrying 40-80℃	Capacity 40-90℃
OPPC-70/10	16	11.75	281	24.3	216	262	299
OPPC-110/25	16	15.4	494	45.7	299	364	418
OPPC-150/25	16	17.4	598	52.8	351	430	495
OPPC-185/25	16	19.0	695	58.5	395	486	561
OPPC-70/40	24	13.6	460	57.7	234	284	325
OPPC-95/20	24	14.0	402	37.0	264	321	368
OPPC-85/20	24	13.5	376	34.4	254	308	353
OPPC-120/25	24	15.9	523	49.0	308	376	432
OPPC-150/35	24	17.6	641	64.5	348	427	492
OPPC-210/35	24	20.4	812	74.3	424	524	605
OPPC-185/45	28	19.65	797	79.6	398	491	567
OPPC-230/40	36	21.8	949	87.7	455	563	652
OPPC-240/55	48	22.5	1037	102.5	467	580	672
OPPC-90/50	48	16.1	651	82.0	281	344	395

**The above designs are ZTT's typical options, and ZTT can provide any specific cable according to your requirement.*

All-dielectric Self-supporting Aerial Installation Cable —ADSS



Characteristic and Application

- ADSS are mainly installed at existing 220kV or lower voltage power lines.
- Layer or central tube design.
- Aramid yarn is used as the strength member to assure the tensile and strain performance, and Du Pont is our only partner.
- Outer sheath can be classified into PE and Tracking resistance PE to correspond the space potential below and more than 12kV.
- ADSS (stranded layer type) maximum fiber count: 312.
- ADSS (stranded layer type) maximum span can be up to 1500m.

Typical Parameters:

Stranded Layer Type

ZTT Standard	Weather conditions	Max Span (m)	RTS (kN)	MAT (kN)	Crush (N/10cm)	Weight(kg/km)		Diameter (mm)
						PE	AT	
ADSS-24B1-100m	TEMPERATURE RANGE: -40--+70°C; MAX.ICE THICKNESS: 5MM MAX WIND SPEED: 25M/S	100	8.5	3.4	2200	124	133	11.6
ADSS-24B1-200m		200	15.3	6.1	2200	131	139	12.0
ADSS-24B1-300m		300	20.4	8.2	2200	136	145	12.3
ADSS-24B1-400m		400	25.5	10.2	2200	141	150	12.5
ADSS-24B1-500m		500	30.6	12.2	2200	146	156	12.8
ADSS-24B1-600m		600	39.1	15.6	2200	166	176	13.8
ADSS-24B1-700m		700	45.9	18.4	2200	179	190	14.2
ADSS-24B1-800m		800	52.7	21.1	2200	186	197	14.5
ADSS-24B1-900m		900	59.5	23.8	2200	192	204	14.8
ADSS-24B1-1000m		1000	66.3	26.5	2200	197	209	15.1
ADSS-24B1-1100m		1100	71.4	28.6	2200	202	214	15.3
ADSS-24B1-1200m		1200	76.5	30.6	2200	215	226	15.5
ADSS-24B1-1500m		1500	90.0	36.0	2200	230	245	16.1

Central Tube Type

ZTT Standard	Weather conditions	Max Span (m)	RTS (kN)	MAT (kN)	Crush (N/10cm)	Weight(kg/km)		Diameter (mm)
						PE	AT	
ADSS-X-24B1-50m	TEMPERATURE RANGE: -40--+70°C; MAX.ICE THICKNESS: 5MM MAX WIND SPEED: 25M/S	50	5.0	2.0	2200	55	59	8.0
ADSS-X-24B1-100m		100	7.5	3.0	2200	57	61	8.2
ADSS-X-24B1-200m		200	12.5	5.0	2200	65	70	8.6

* The above designs are ZTT's typical options, and ZTT can provide any specific cable according to your requirement.