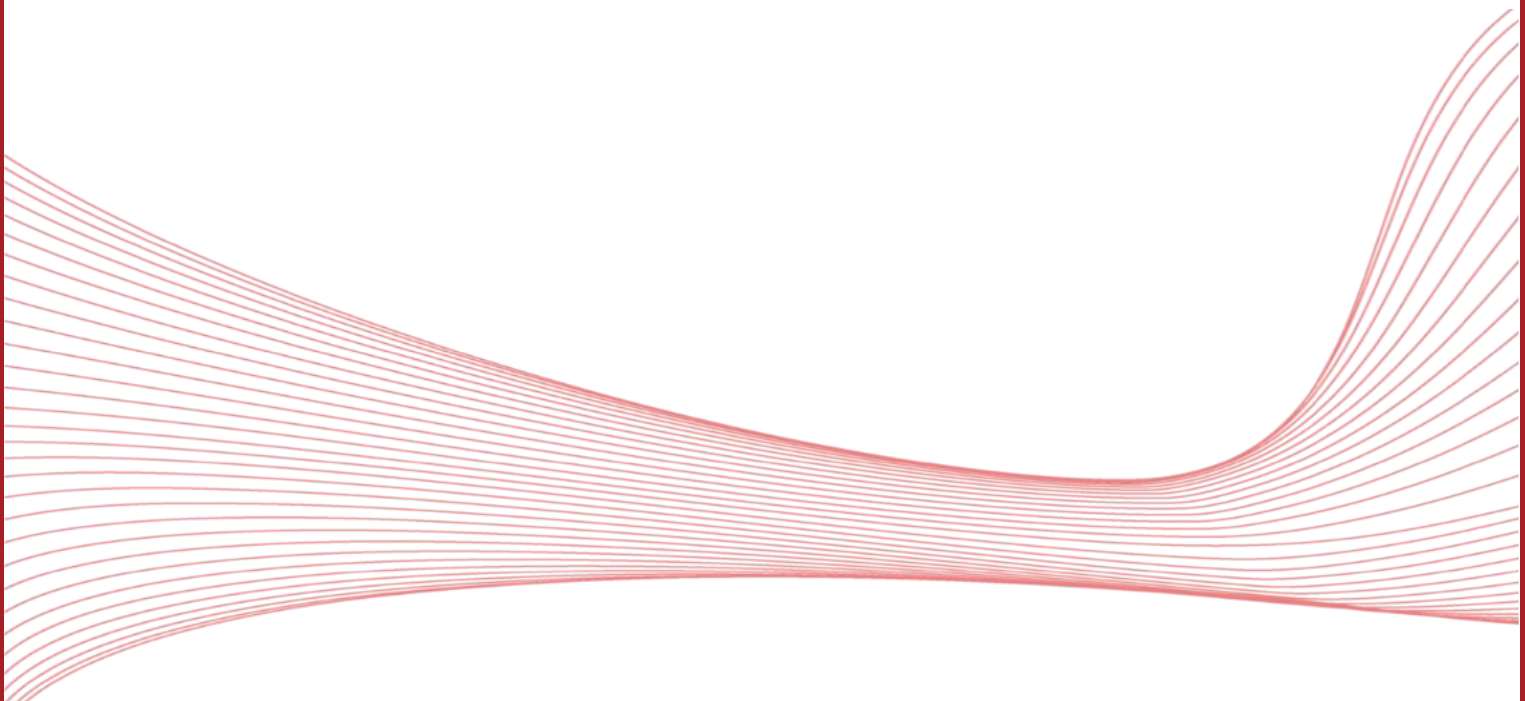
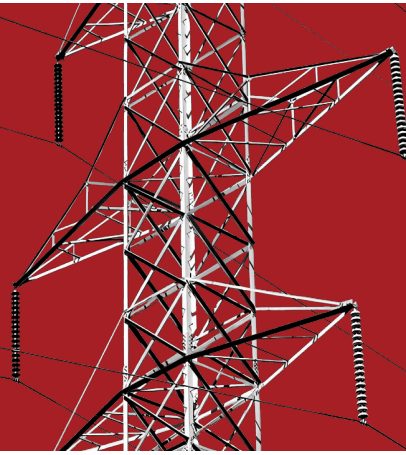




TECHNICAL SPECIFICATION

OPGW Optical Ground Wire

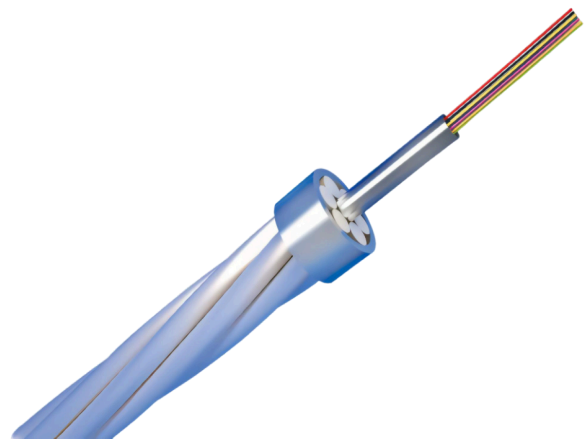
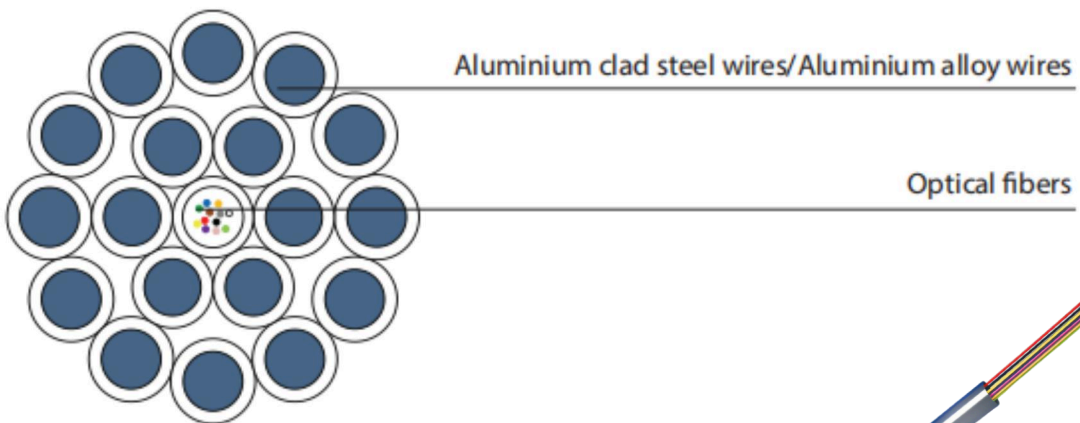
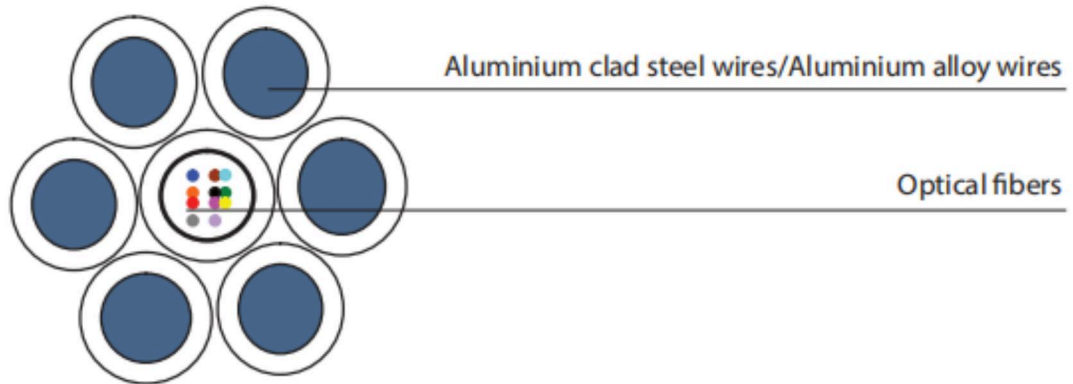


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OPGW Typical Designs of Central Stainless Steel Tube

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.

OPGW Typical Designs of Central Stainless Steel Tube

Typical Parameters

Single Layer

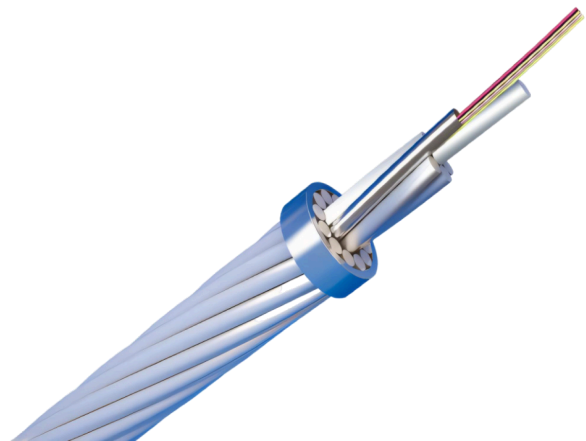
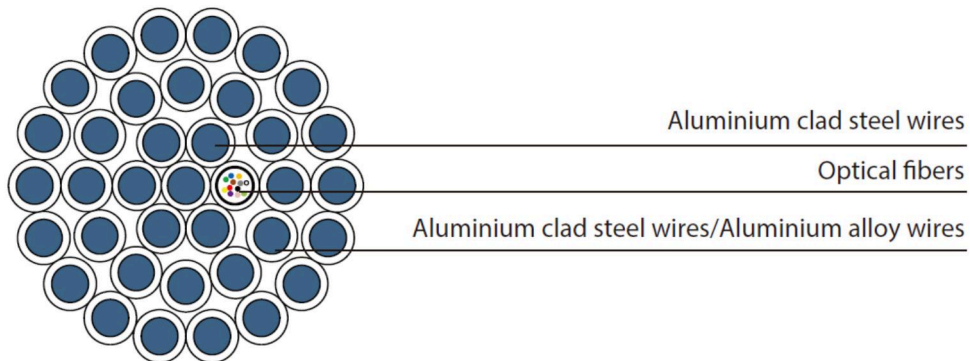
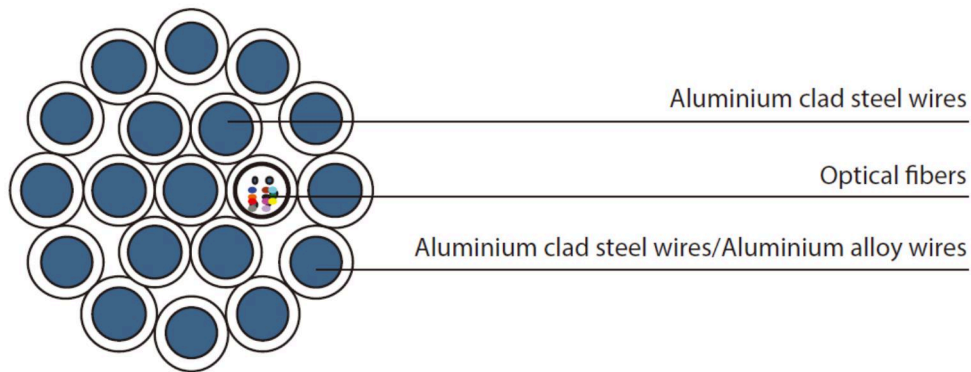
Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA2s)
OPGW-32[40.6;4.7]	12	7.8	243	40.6	4.7
OPGW-42[54.0;8.4]	24	9.0	313	54.0	8.4
OPGW-42[43.5;10.6]	24	9.0	284	43.5	10.6
OPGW-54[67.8;13.9]	36	10.2	394	67.8	13.9
OPGW-54[55.9;17.5]	36	10.2	356	55.9	17.5
OPGW-61[73.7;17.5]	48	10.8	438	73.7	17.5
OPGW-61[55.1;24.5]	48	11.4	358	55.1	24.5
OPGW-68[80.8;21.7]	54	12.0	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

Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA2s)
OPGW96121.7;42.2	12	13.0	671	121.7	42.2
OPGW127141.0;87.9	24	15.0	825	141.0	87.9
OPGW12777.8;128.0	24	15.0	547	77.8	128.0
OPGW145121.0;132.2	28	16.0	857	121.0	132.2
OPGW163138.2;183.6	36	17.0	910	138.2	183.6
OPGW16399.9;213.7	36	17.0	694	99.9	213.7
OPGW183109.7;268.7	48	18.0	775	109.7	268.7
OPGW183118.4;261.6	48	18.0	895	118.4	261.6

OPGW Typical Designs of Stranded Stainless Steel Tube

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.

OPGW Typical Designs of Stranded Stainless Steel Tube

Typical Parameters

Double Layers

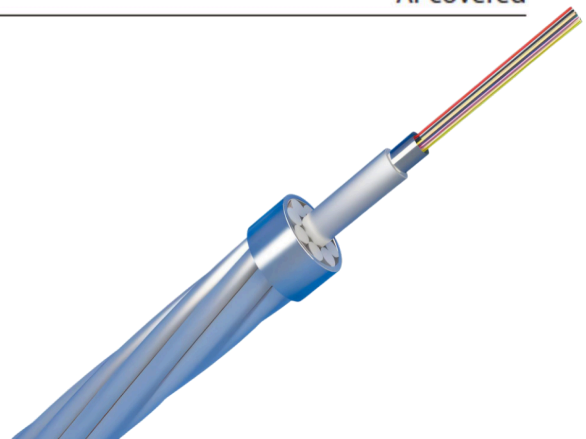
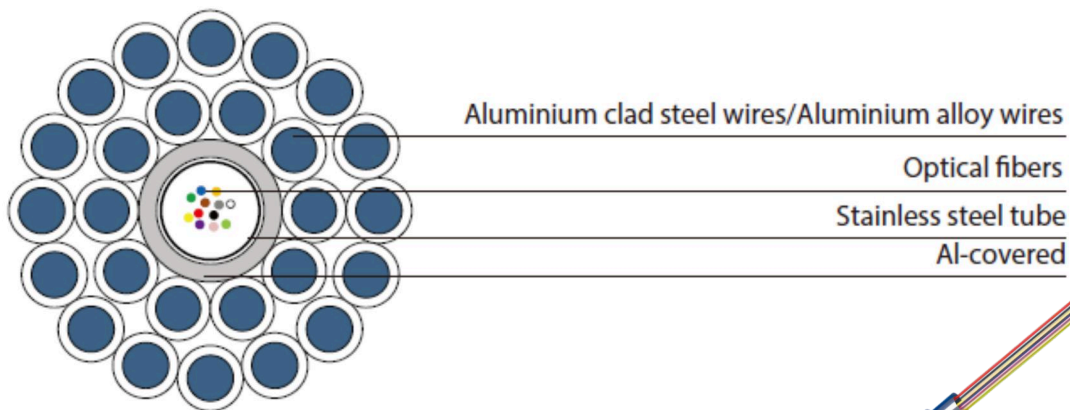
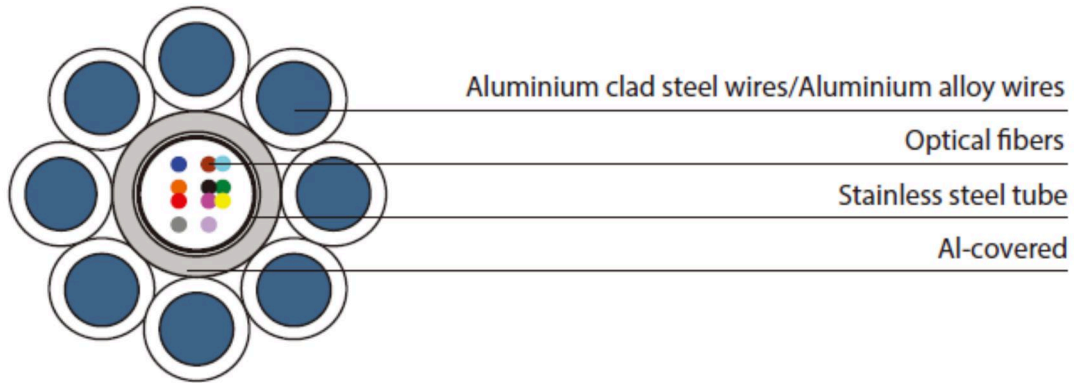
Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA2s)
OPGW-89[55.4;62.9]	24	12.6	381	55.4	62.9
OPGW-91[53.6;66.4]	24	12.7	377	53.6	66.4
OPGW-110[90.0;86.9]	24	14.0	600	90.0	86.9
OPGW-104[64.6;85.6]	28	13.6	441	64.6	85.6
OPGW-127[79.0;129.5]	36	15.0	537	79.0	129.5
OPGW-137[85.0;148.5]	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

Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA2s)
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

OPGW Typical Designs of Central Al-covered Stainless Steel Tube

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.

OPGW Typical Designs of Central Al-covered Stainless Steel Tube

Typical Parameters

Single Layer

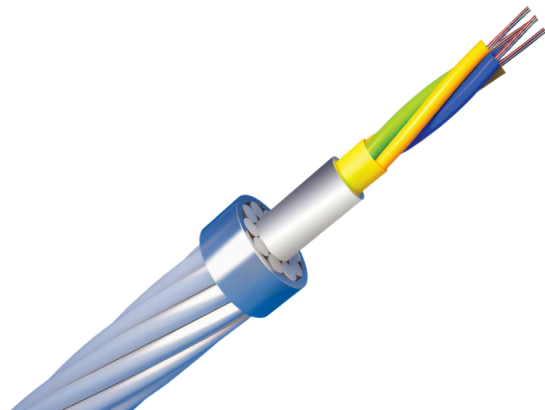
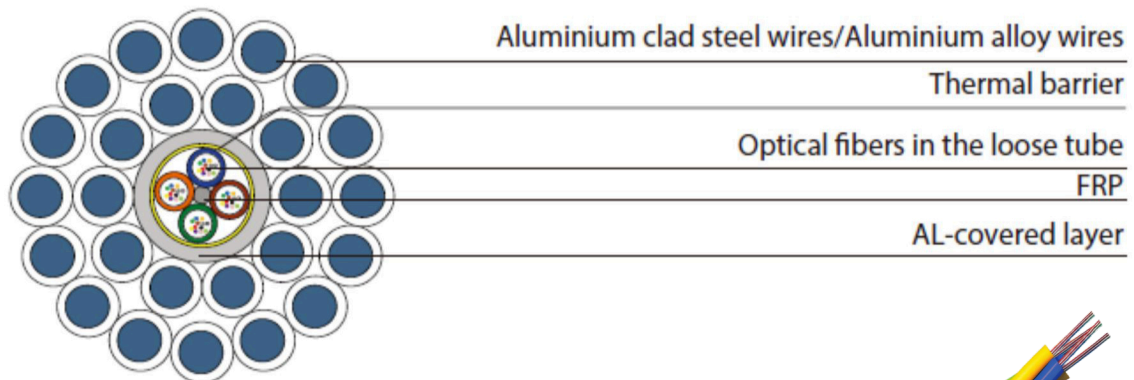
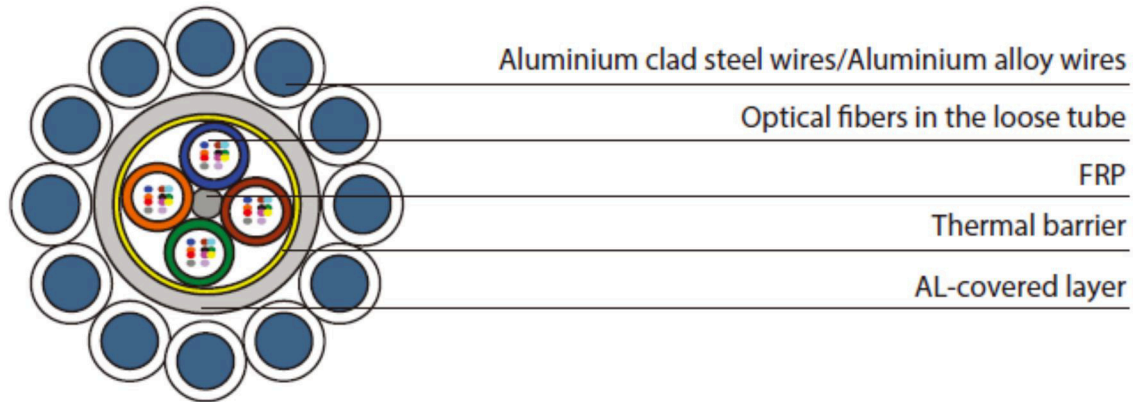
Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA2s)
OPGW-78[78.7;37.6]	24	11.6	498	78.7	37.6
OPGW-77[63.6;41.6]	28	11.6	451	63.6	41.6
OPGW-77[78.6;36.2]	28	11.6	496	78.6	36.2
OPGW-111[58.9;103.7]	48	13.8	511	58.9	103.7
OPGW-187[75.3;308.2]	48	18.0	679	75.3	308.2
OPGW-81[63.2;46.7]	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
OPGW-95 [95.8;54.8]	72	13.2	597	95.8	54.8
OPGW-131 [65.9;146.4]	72	15.2	593	65.9	146.4
OPGW-90 [90.0;50.6]	96	13.0	563	90.0	50.6
OPGW-144 [110.3;150.8]	96	15.8	781	110.3	150.8

Double Layers

Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA2s)
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
OPGW-166 [96.2;224.8]	72	17.1	778	96.2	224.8
OPGW-203 [118.7;336.1]	96	19	959	118.7	336.1

OPGW Typical Designs of Aluminum Tube

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.

OPGW Typical Designs of Aluminum Tube

Typical Parameters

Single Layer

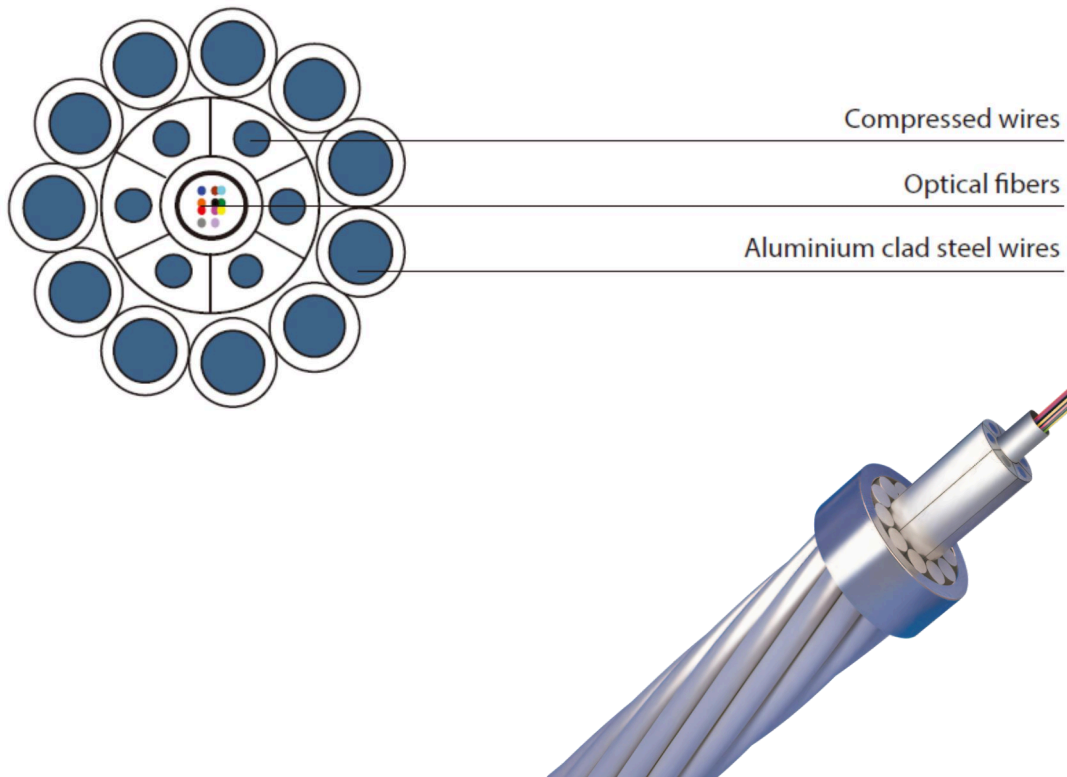
Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA2s)
OPGW-81[73.9;43.6]	24	12.5	488	73.9	43.6
OPGW-86[76.8;49.5]	24	12.8	510	76.8	49.5
OPGW-103[93.8;68.9]	24	13.8	611	93.8	68.9
OPGW-85[76.8;46.8]	32	12.8	509	76.8	46.8
OPGW-85[50.5;54.5]	32	12.8	445	50.5	54.5
OPGW-112 [106.7;80.0]	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
OPGW-135 [99.8;132.2]	72	16.3	751	99.8	132.2
OPGW-146 [109.0;154.9]	96	17.1	813	109	154.9

Double Layers

Standard	Fiber Count(Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Short Circuit (kA2s)
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
OPGW-289 [166.4;675.0]	72	22.9	1246	166.4	675
OPGW-314 [158.7;826.4]	96	24	1277	158.7	826.4

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

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.

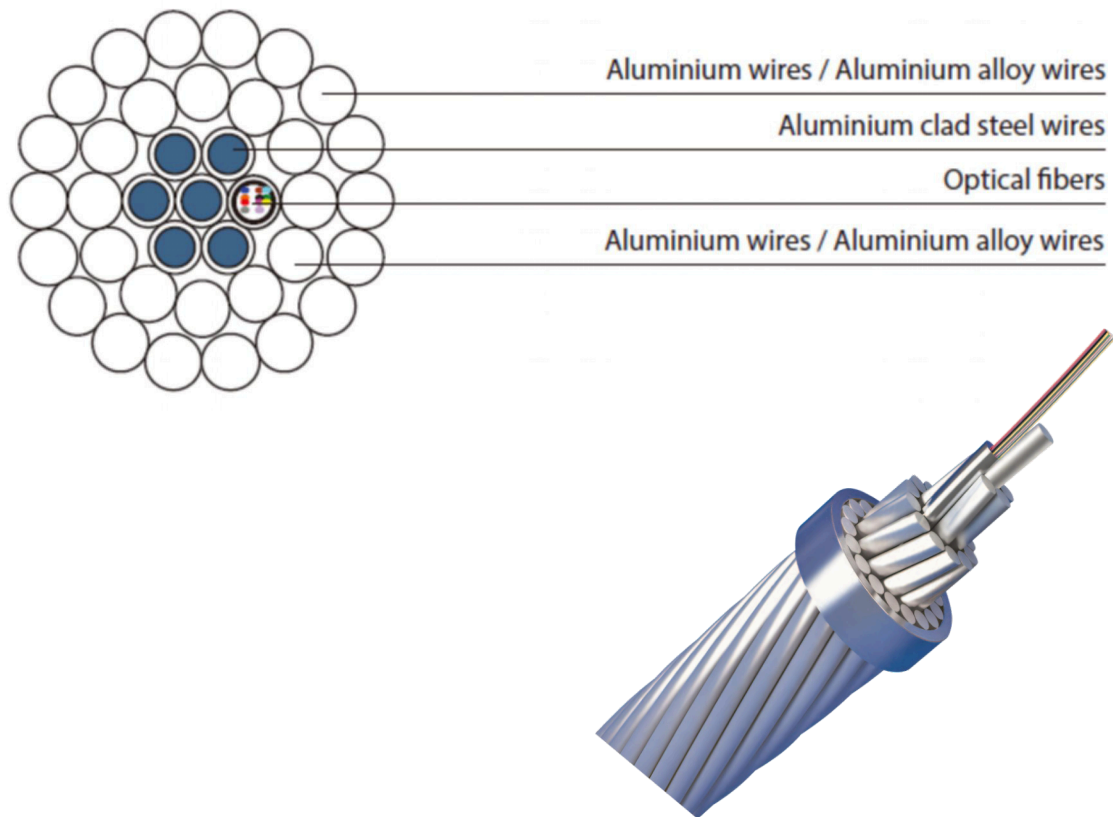
OPGW with Compressed Wires Typical Designs of Lightning Resistant Central Stainless Steel Tube

Typical Parameters

Standard	Fiber Count (Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Current Carrying Capacity(A)		
					40-70°C	40-80°C	40-90°C
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	281	344	395

OPGW 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.

OPGW Typical Designs of OPPC

Typical Parameters

Standard	Fiber Count (Max)	Diameter (mm)	Weight (kg/km)	RTS (kN)	Current Carrying Capacity(A)		
					40-70°C	40-80°C	40-90°C
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
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OPPC-150/35	24	17.6	641	64.5	348	427	492
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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	281	344	395

Packaging and Drum

Cable Sheath Marking

Unless otherwise specified, the cable sheath marking shall be as follows:

Color	White
Contents	ZION, the year of manufacture, the type of cable, cable number, length

Outer sheath marking legend can be changed according to user's requests.

Reel Length

Standard reel length: 2/3 km/reel, other length is also available.

Cable Drum

The cables are packed in fumigated wooden drums or plywood drums.

Cable Packing

Both ends of the cable will be sealed with suitable plastic caps to prevent the entry of moisture during shipping, handling and storage. The inner end is available for testing.



 GLOBAL MARKET

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