

OPTICAL GROUND WIRES (OPGW)

STRANDED STAINLESS STEEL TUBE OPGW

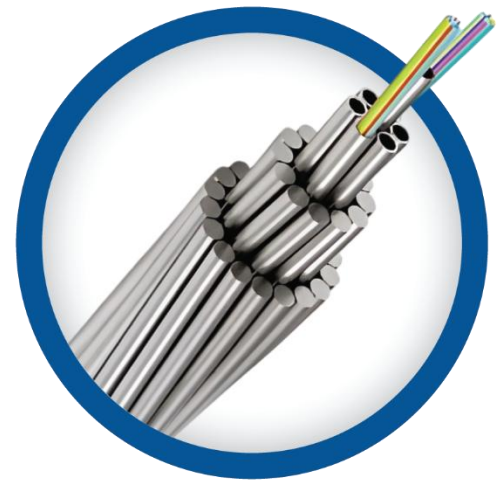
APAR OPGW cable constructed with a stainless-steel loose buffer tube in the inner layer and an outer layer composed of a suitable combination of Aluminum-Clad Steel (ACS) and All-Aluminum (AA) wires can be engineered to meet the end user's required mechanical and electrical ratings. An OPGW design with the stainless-steel tube placed laterally allows for greater cable elongation and sag without increasing fiber strain. This configuration is best suited for applications where the existing ground wire must be replaced with a cable of identical dimensions due to tower limitations. As this design includes exposed components made of both stainless steel and aluminum, it is not recommended for high-corrosion environments.

FEATURES

Stranded stainless steel tube – Wire strands are replaced with fiber-filled stainless-steel tubes, and these tubes are helically stranded alongside the metallic wires. This design increases fiber strain margin compared to central core tube constructions and allows greater loaded sag without placing additional strain on the fibers.

Compact design – Offers reduced overall weight, increased flexibility, and a smaller minimum bend radius. The lighter, more flexible construction makes handling and installation easier, while lower wind and ice loads reduce structural stress on towers.

Fiber availability – Offered in fiber counts ranging from 12F to 144F.



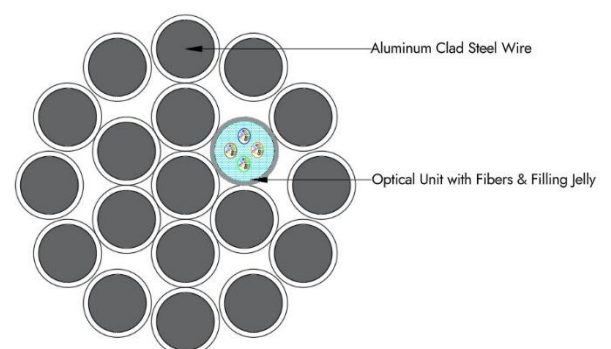
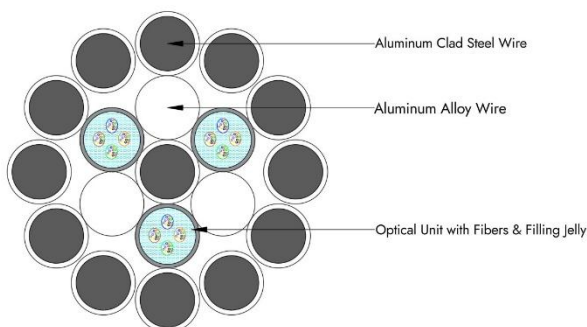
APPLICATIONS

Integrated Transmission and Communication Lines: Designed for installation on overhead high-voltage transmission structures with voltage levels ranging from 132 kV to 765 kV, where the OPGW serves both as a grounding (shield) wire and a high-capacity fiber optic communication link.

Lightning Protection: Installed along the tops of transmission towers to shield phase conductors from lightning strikes and other atmospheric discharges.

Smart Grid and Utility Applications: Enables simultaneous data transmission for a variety of real-time applications, including Dynamic Line Rating (DLR), Dynamic Monitoring Systems (DMS), data center connectivity, SCADA, and smart grid operations.

CABLE COMPONENTS*



Stranded Stainless steel Tube OPGW

* Indicative combination, available in variety of permutation and combinations

STRANDED DOUBLE LAYER CONSTRUCTION

TYPICAL DESIGNS

FIBRES (MAX)	OPGW SIZE	FAULT CURRENT (KA) ²	TOTAL CONDUCTOR AREA		OVER ALL DIAMETER		WEIGHT		APPROXIMATE RBS	
			IN ²	MM ²	IN	MM	LBS/FT	KG/M	LBS	KGF
12	12FSSAS[54,8.4]	8.4	0.0657	42.41	0.354	9.00	0.205	0.305	12140	5506
24	24FSSAS[56,40]	40	0.1083	69.85	0.455	11.55	0.259	0.385	12679	5751
24	24FSSASAA[106,400]	400	0.3788	244.39	0.810	20.58	0.599	0.891	23830	10809
36	36FSSAS[144.6,38.5]	38.5	0.1522	98.17	0.524	13.30	0.462	0.688	32507	14745
36	36FSSAS[160,59]	59	0.1841	118.79	0.579	14.70	0.551	0.820	35969	16315
48	48FSSAS[73,40]	40	0.1169	75.40	0.472	12.00	0.285	0.424	16411	7444
48	48FSSASAA[87,112.5]	112.5	0.1854	119.64	0.591	15.00	0.364	0.541	19558	8872
48	48FSSASAA[125,380]	380	0.3516	226.83	0.791	20.10	0.638	0.950	28101	12746
72	72FSSASAA[55.2,125.2]	125.2	0.1760	113.53	0.579	14.70	0.295	0.439	12409	5629
96	96FSSASAA[88,149.6]	149.6	0.2131	137.47	0.630	16.00	0.416	0.619	19783	8974
96	96FSSASAA[111,316.3]	316.3	0.2998	193.40	0.752	19.10	0.538	0.801	24954	11319
144	144FSSASAA[114,140.4]	140.4	0.2113	136.34	0.646	16.40	0.542	0.807	25628	11625
144	144FSSAS[218,124]	124	0.2500	161.28	0.706	17.93	0.775	1.154	49008	22230

NOTES:

The data presented in this table are approximations. The designs shown above represent only a sample of the configurations. **For a cable engineered to your exact requirements, please contact our Sales team and refer to the customized cable data sheet for the most accurate and up-to-date specifications.**

REFERENCE STANDARDS		
IEEE	1138	Cable
IEC	60794	Cable
EIA/TIA	598-D	Fiber
ASTM	B415 B398	ACS Wires AA Wires

TEMPERATURE RANGE	
Operation	-40 °C to +85 °C
Storage	-50 °C to +85 °C
Installation	-30 °C to +85 °C

QUALIFICATIONS

APAR's OPGW -Type tested and validated by international, independent test laboratory according to IEC 60794 and IEEE 1138 standards