FIBER OPTIC CABLE · ADSS-D

ADSS-D

All-Dielectric Self-Supporting Aerial Cable — Double Jacket

G.652D / G.655 · 2–288 cores · long span aerial

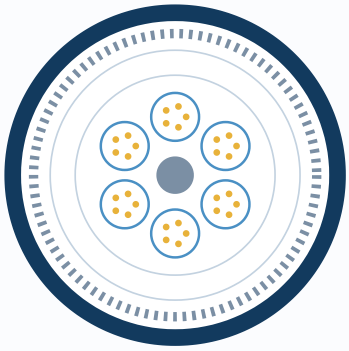
PRODUCT DESCRIPTION

ADSS-D adds a second sheath for the long-span end of the range. The stranded loose tube core runs on an FRP member inside a PE inner sheath; heavier aramid yarn layers are wound over it, and a PE or track-resistant AT outer sheath protects the yarn from abrasion, UV and electrical tracking. The double jacket carries the higher tensions needed for spans beyond roughly 500 m and for 110–220 kV lines where the AT sheath is mandatory.

KEY FEATURES

- Double jacket protects the aramid layer from abrasion and UV on long spans
- AT (track-resistant) sheath option for 110–220 kV circuits
- Span capability to 1180 m depending on cable OD and load zone
- No metal: installable on live lines without outage or earthing
- Aramid volume and sheath compound selected per project specification

Other fibre types, core counts and sheath compounds are available on request — see the ordering information on page 2.



Cross-section — schematic, not to scale

- Outer sheath, PE / AT
- Aramid yarn layers
- Inner PE sheath / loose tube
- 250 µm fibre

GENERAL SPECIFICATIONS

CABLE TYPE	**ADSS-D**
APPLICATION	**Long span aerial · 110–220 kV lines · Water crossings**
STANDARDS	**YD/T 980 · IEC 60794-4 · IEEE 1222**
TEMPERATURE	**-40 °C to +60 °C**
SHEATH OPTIONS	**PE · AT**

CABLE CONSTRUCTION

Central strength member	FRP rod, non-metallic
Loose tube	PBT, gel-filled, max. 12 fibres per tube
Core assembly	Tubes and fillers stranded around the FRP rod
Inner sheath	PE over the stranded core
Reinforcement	Heavy aramid yarn layers, sized per span
Outer sheath	PE or track-resistant AT, second jacket over the yarn

Options: AT (track-resistant) sheath · dry core · core counts above 144 built to order · matched aramid design for non-standard spans.

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STRUCTURE AND DIMENSIONS

Cable OD (mm)	Weight, PE sheath (kg/km)	Weight, AT sheath (kg/km)	Daily average tension (kN)	Max. working tension (kN)	RTS (kN)	Aramid area (mm²)	E (kN/mm²)	CTE (×10⁻⁶/K)
12.5	125	136	1.5	4	10	4.6	7.6	1.8
13.0	132	142	2.25	6	15	7.6	8.3	1.5
13.3	137	148	3.0	8	20	10.35	9.45	1.3
13.6	145	156	3.6	10	24	13.8	10.8	1.2
13.8	147	159	4.5	12	30	14.3	11.8	1.0
14.5	164	177	5.4	15	36	18.4	13.6	0.9
14.9	171	185	6.75	18	45	22.0	16.4	0.6
15.1	179	193	7.95	22	53	26.4	18.0	0.3
15.5	190	204	9.0	26	60	32.2	19.1	0.1
15.6	194	208	10.5	28	70	33.0	19.6	0.1
16.3	211	226	12.75	34	85	40.0	20.1	0.1
16.8	226	242	15.45	41	103	48.0	24.0	-0.4
17.2	236	253	16.2	45	108	51.0	25.1	-0.5
17.9	249	266	18.0	50	120	58.8	26.1	-0.8

CORE COUNT	TEMPERATURE	SHEATH
2–288	**-40 to +60**	**PE / AT**
cores	°C	by line voltage

SUITABLE SPAN BY LOAD ZONE (M)

Cable OD (mm)	Zone A 25 m/s, 0 mm ice	Zone B 35 m/s, 0 mm ice	Zone C 10 m/s, 5 mm ice	Zone D 10 m/s, 10 mm ice
12.5	160	100	140	100
13.0	230	150	200	150
13.3	300	200	290	200
13.6	370	250	350	250
13.8	420	280	400	280
14.5	480	320	460	320
14.9	570	380	550	380
15.1	670	460	650	460
15.5	750	530	750	510
15.6	800	560	800	560
16.3	880	650	880	650
16.8	1000	750	1000	760
17.2	1100	800	1100	830
17.9	1180	880	1180	900

Zone A
Wind 25 m/s
Ice 0 mm
Load 0.7 N/m

Zone B
Wind 35 m/s
Ice 0 mm
Load 0.7 N/m

Zone C
Wind 10 m/s
Ice 5 mm
Load 2.5 N/m

Zone D
Wind 10 m/s
Ice 10 mm
Load 4.4 N/m

> Suitable span is set by cable OD, not core count. The OD is fixed on the order drawing — confirm it before applying this table.
> Values assume equal tower heights and 1 % installation sag. Other spans on request.

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OPTICAL CHARACTERISTICS

Fibre type	Attenuation 1310 nm (dB/km) typ. / max	Attenuation 1550 nm (dB/km) typ. / max	Cut-off λcc (nm)	Remark
G.652D	0.36 / 0.50	0.22 / 0.40	≤ 1260	Low water peak, full band 1260–1625 nm
G.655	0.40 / 0.50	0.23 / 0.40	≤ 1450	Non-zero dispersion shifted, for DWDM backbone
G.657A1/A2	0.36 / 0.50	0.22 / 0.40	≤ 1260	Bend insensitive, min. bend radius 10 mm

> Attenuation measured at +20 °C on cabled fibre, before splicing. Multimode fibre (OM1–OM4) available on request.

INSTALLATION GUIDELINES

- String under tension control with a dynamometer; never exceed the daily average tension listed above.
- Minimum sheave diameter 40 × cable OD; line sheaves every 30–40 m on straight runs.
- Fit anti-twist devices at every tower and every 300–500 m to stop the aramid layers untwisting.
- Use a cable stocking for pulling — never clamp a wire rope directly onto the sheath.
- Set sag from the installation chart at the prevailing temperature; the span table assumes 1 % sag.
- AT sheath is mandatory above 110 kV. The attachment side is fixed by the field-strength calculation.

TYPE TESTS

Test	Method	Acceptance
Tensile strength	IEC 60794-1-21 E1	Rated load applied, no fibre strain, Δα ≤ 0.05 dB
Crush	IEC 60794-1-21 E3	Rated load applied, Δα ≤ 0.05 dB after recovery
Impact	IEC 60794-1-21 E4	10 impacts, 4.5 J, R300 mm, Δα ≤ 0.05 dB
Temperature cycling	IEC 60794-1-22 F1	−40 °C to +70 °C, 2 cycles, Δα ≤ 0.05 dB/km
Water penetration	IEC 60794-1-22 F5B	1 m head, 24 h, no water at the far end

ORDERING INFORMATION

Order code: **ADSS-[cores]Xn-[fibre type]-[sheath]-[OD].** Example: ADSS-48Xn-G652D-AT-Ø15.6. State the line voltage, span, ice and wind load, sag limit and attachment height so the aramid lay length and sheath compound can be matched. Standard drum length 2 km, 3 km or 4 km.

> Nominal values, subject to normal manufacturing tolerances.
>
> Core counts and fibre types outside the table are built to order — weight, tensile and bending data confirmed on the order drawing.

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