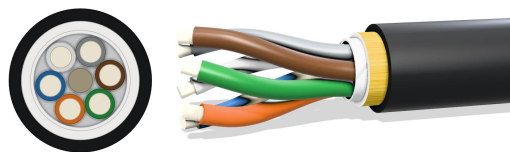


Application

ADSS (all-dielectric self-supporting) is an overhead aerial fibre optic cable designed to span between poles or pylons and carry its own weight without a separate messenger wire. It is built entirely from dielectric materials - there is no metal in the cable - so it can be strung on the same structures as power lines without picking up induced voltage and without special earthing. The 9/125 μm single-mode fibres (ITU-T G.652.D, category OS2) sit with excess length in gel-filled loose tubes SZ-stranded around a central non-metallic strength member; a layer of torque-balanced aramid yarns (or glass rovings) around the core carries the tensile span load, and a black UV-stabilised polyethylene (PE) outer sheath protects against weather and sunlight. For spans within high-voltage electric fields a track-resistant (AT) sheath is used, rated for space potentials up to about 25 kV, to resist dry-band arcing. It is supplied in fibre counts from 4 up to 144 fibres, with span capability up to roughly 1000 m depending on the design and loading.



CONSTRUCTION

Optical fibre	Single-mode 9/125 μm to ITU-T G.652.D, fibre category OS2 (bend-tolerant G.657.A1 optionally); 250 μm coloured coating.
Loose tube	Gel-filled loose buffer tubes, up to 12 fibres per tube, colour-coded, SZ-stranded with fibre excess length.
Central strength member	Non-metallic glass-reinforced plastic (FRP/GRP) central element - fully dielectric core.
Strength layer	Torque-balanced aramid yarns (or glass rovings) around the core - carry the self-supporting span load; no metallic messenger.
Water blocking	Gel-filled / water-swellaable water-blocking design against moisture ingress along the core.
Outer sheath	Black UV-stabilised polyethylene (PE); a track-resistant (AT) sheath is used on high-voltage spans (space potential up to approx. 25 kV).
Construction	All-dielectric, self-supporting - no metal, no messenger wire, no induced voltage; single- or dual-jacket variants.

OPTICAL & MECHANICAL PROPERTIES

Fibre type / standard	Single-mode OS2, ITU-T G.652.D (IEC 60793-2-50 B-652.D).
Attenuation	$\leq 0.40 \text{ dB/km @ } 1310 \text{ nm}$; $\leq 0.30 \text{ dB/km @ } 1550 \text{ nm}$ (OS2 category).
Fibre count	4 to 144 fibres (up to 12 fibres per tube).
Max. span length	up to approx. 1000 m (design- and loading-dependent; short-span designs typ. 100-365 m).
Max. rated cable load / tensile	approx. 4000 N during installation; approx. 1700 N in operation (MRCL is span- and count-dependent per the maker sag/tension table).
Crush resistance	$\geq 3000 \text{ N/10 cm}$ (IEC 60794-1-21 E3).
Min. bending radius	approx. 265 mm during installation; approx. 225 mm in operation (count-dependent, approx. $20 \times /15 \times \text{OD}$).
Temperature range	Operation -40 to +70 °C; installation -30 to +70 °C; storage -40 to +70 °C.
Sheath / HV	PE (standard) or track-resistant AT sheath for high-voltage spans (space potential up to approx. 25 kV); all-dielectric, non-metallic.
Reaction to fire (CPR)	Outside the scope of EN 50575 (aerial / outdoor optical cable); Fca if tested.

KEY FIGURES

Nominal outer diameter	approx. 11-12 mm (24F); approx. 15.1 mm (72F)
Nominal weight	approx. 110 kg/km (24F); approx. 161 kg/km (72F)
Maximum fibre count	144 fibres (12 fibres per tube)

Optical values (attenuation) are the ITU-T G.652.D single-mode (OS2) category maxima, not vendor-specific guarantees; span length, maximum rated cable load, mechanical values, outer diameter and weight are nominal leading-source references and depend on span, loading and fibre count per the maker sag/tension tables. All values are indicative and non-binding.