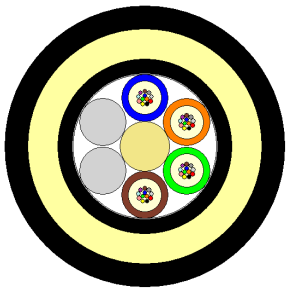
Optical fibre cables for aerial installation (ADSS)

Cable Design

IEC/EN 60794



- Figure : 48 fibres cable (not to scale) -

- **Central Strength Member (CSM):** glass fibre reinforced plastic rod (FRP), with plastic oversheathing when needed.
- **Loose tube:** thermoplastic material, containing optical fibres and filled with a suitable water tightness compound.
- **Filler elements:** thermoplastic rods (when needed).
- **Stranding:** loose tubes and fillers SZ stranded around the CSM.
- **Longitudinal water tightness:** dry core with water swellable elements.
- **Inner sheath:** polyethylene. One ripcord is laid beneath.
- **Peripheral strength elements:** aramid yarns.
- **Outer sheath:** HDPE. One ripcord is laid beneath.

Overhead installation on power lines.

Technical data

No. of Fibres		**48**	**96**
Design		4 x 12	8 x 12
Loose Tube – Ø	mm	2.8	
CSM / Oversheathing – Ø	mm	3.0 / -	3.5 / 4.8
Inner/Outer Sheath Thickness	mm	0.9 / 1.4	
Cable diameter	mm	16.8	18.2
Cable weight	kg/km	235	280
Modulus of elasticity	kN/mm^2	98.1	96.4
Effective area	mm^2	67.4	70.0
Thermal expansion coefficient	$\cdot 10^{-6}$ $^oC^{-1}$	-1.0	-0.3
MOT (maximum tension in operation)	daN	4800	5400
MAT (maximum allowable tension)	daN	5800	6400
Breaking strength	kN	120	120

Minimum Bending Radius	mm	Without Tension 15 x Cable-Ø		Under Maximum Tension 20 x Cable-Ø
Temperature Range	^oC	Installation -10 to +50	Transport & Storage -30 to +70	Operation -10 to +60
Aerial installation: maximum span	m	1000m (installation sag 2%)		
Aerial installation: supported conditions		Wind pressure 1250 Pa without ice accumulation		

Please refer to our General Installation, Safety & Handling recommendations before handling.

Main characteristics

Test	**Test Standard**	**Specified Value**	**Acceptance Criteria**
Maximum Tension	IEC 60794-1-2-E1	MOT: see table above MAT: see table above	$\Delta l/l$ fibre $\leq$ 0.05%, $\Delta\alpha \leq$ 0.05 dB $\Delta l/l$ fibre $\leq$ 0.2%, $\Delta\alpha \leq$ 0.1 dB
Crush	IEC 60794–1–2-E3	1500 N / 100 mm, max. 15 min	$\Delta\alpha \leq$ 0.05 dB, no damage
Impact	IEC 60794–1–2-E4	10 Nm, 3 impacts, R= 300 mm	$\Delta\alpha \leq$ 0.05 dB after the test
Cable Bend	IEC 60794–1–2-E11	R=20xD, 4 turns, 3 cycles	$\Delta\alpha \leq$ 0.05 dB, no damage
Temperature Cycling	IEC 60794–1–2-F1	-10°C to +60°C	$\Delta\alpha \leq$ 0.05 dB/km
Water Penetration	IEC 60794–1–2-F5B	sample=3m, water column=1m, 24h	no water leakage under 1st sheath

All optical measurements at 1550 nm.

Optical Characteristics

See the attached cabled optical fibre data sheet.

Identification

Fibre Colours

No.	1	2	3	4	5	6	7	8	9	10	11	12
Colour	blue	orange	green	brown	grey	white	red	black	yellow	violet	pink	aqua

Buffer Tube Colours

No.	1	2	3	4	5	6	7	8
Colour	blue	orange	green	brown	grey	white	red	black

Filler Elements Colours:

All filler elements are uncoloured (natural).

Sheath Colour:

The inner and outer sheath colour is black.

Sheath Marking:

The outer sheath is marked in 1 meter intervals as follows:

<Manufacturer> <year of manufacture> <no. and type of fibres> <length marking in meters>

Logistic

Packing:

Wooden drums with protection.

Delivery Lengths:

Standard delivery lengths are 4 km with a tolerance of -1% / +3%