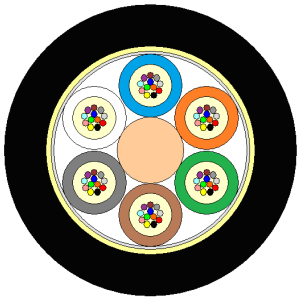
WWW.CABLEJOINTS.CO.UK
THORNE & DERRICK UK
TEL 0044 191 490 1547 FAX 0044 477 5371
TEL 0044 117 977 4647 FAX 0044 977 5582
WWW.THORNEANDDERRICK.CO.UK

Optical fibre cables for aerial installation (short span)

Cable Design

Acc. to IEC 60794



- Figure : 72 fibres cable (not to scale) -

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

Technical data

No. of Fibres		**12**	**24**	**36**	**48**	**72**	**96**	**144**	**216**	**288**
Design		1 x 12	2 x 12	3 x 12	4 x 12	6 x 12	8 x 12	12 x 12	9 x 24	12 x 24
Loose tube / filler - Ø	mm	2.5							3.0	
CSM – Ø	mm	2.6					3.0	3.5	3.5	3.5
CSM upjacketing Ø	mm	-					4.2	7.5	6.1	9.1
Outer sheath thickness	mm	1.5								
Cable diameter	mm	11.1					12.6	15.7	15.5	18.5
Cable weight	kg / km	95					125	195	185	260
Modulus of elasticity	kN/mm^2	65.9					59.7	52.0	57.0	57.0
Effective area	mm^2	7.7					8.4	10.2	11.0	11.0
Thermal expansion coefficient	$\cdot 10^{-6}$ $^oC^{-1}$	16.3					23.6	30.4	25.8	32.1
Max. working tension	kN	3.0								
Breaking strength	kN	9.1					8.6	9.5	10.0	10.0

Minimum Bending Radius	mm	Without Tension 15 x Cable-Ø		Under Maximum Tension 20 x Cable-Ø
Temperature Range	°C	Installation - 5 to + 50	Transport & Storage - 40 to + 70	Operation -30 to + 70

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

Main characteristics

Test	**Test Standard**	**Specified Value**	**Acceptance Criteria**
Max. working tension	IEC 60794-1-2-E1	See configuration table	$\Delta\alpha \leq 0.05$ dB/100 m fibre strain ≤ 0.05 %
Crush	IEC 60794-1-2-E3	2,000 N / 100 mm	$\Delta\alpha \leq 0.05$ dB
Impact	IEC 60794-1-2-E4	5 Nm, 3 impacts, r = 10 mm	$\Delta\alpha \leq 0.05$ dB
Cable bend	IEC 60794-1-2-E11	R=20 x D, 5 turns, 3 cycles (dynamic) R=15 x D, 5 turns, 3 cycles (static)	$\Delta\alpha \leq 0.05$ dB
Temperature cycling	IEC 60794-1-2-F1	-30°C to +70°C	$\Delta\alpha \leq 0.05$ dB/km
Water penetration	IEC 60794-1-2-F5	sample =3 m, water column =1 m, 24 hours	no water leakage

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	slate	white	red	black	yellow	violet	pink	aqua

No.	13	14	15	16	17	18	19	20	21	22	23	24
Colour	blue[1]	orange[1]	green[1]	brown[1]	slate[1]	white[1]	red[1]	natural[2]	yellow[1]	violet[1]	pink[1]	aqua[1]

<colour>[1] with black ring marks in 50mm intervals

<colour>[2] with black ring marks in 25mm interval

Buffer Tube 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

Fillers colour : natural

Sheath Colour

The 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

Standard wooden drums with protection.

Delivery Lengths

Standard delivery lengths are 4 km