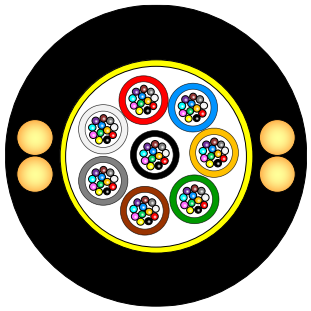
FlexTube®

ADSS optical fibre cable

TC09376



-96FO- not to scale -

CABLE DESIGN — According to IEC/EN 60794-3-20

- Micromodule: thin wall flexible tubing, FlexTube®, filled with a suitable compound, housing the single-mode optical fibres. The fibres inside the tubes can be accessed without the need of any specific tool.
- Longitudinal Water Tightness: water swellable materials (dry core).
- Peripheral Strength Member: aramid yarns.
- Strength Members: glass fibre reinforced plastic material (GRP).
- Outer Sheath: UV resistant HDPE.

CABLE APPLICATION

These FlexTube® outdoor All Dielectric Self-Supported (ADSS) optical fibre cables are optimized for aerial installation and for blowing or pulling into ducts. Please contact your sales representative for ordering guides and installation information.

TECHNICAL DATA

No. of Fibres (grouped by 12) (1)		48	72	96	144	192	288
Material Code	-	60113052	60114659	60114675	60114658	60113104	60113026
Configuration (Tubes x Fibres/Tube)	-	4x12	6x12	8x12	12x12	16x12	24x12
Fibre Primary Coating Diameter	µm	250	250	250	250	200	200
Micromodule - Ø	mm	1.3	1.3	1.3	1.3	1.1	1.1
Cable Diameter - Ø	mm	$11.1^{\pm 0.3}$	$11.1^{\pm 0.3}$	$12.4^{\pm 0.3}$	$12.4^{\pm 0.3}$	$12.7^{\pm 0.3}$	$15.3^{\pm 0.3}$
Cable Weight	kg / km	92	97	111	118	118	170
CTE (2)	1E-6/°C	10.7	10.7	12	12	12	8.4
Effective Area	mm^2	14.2	14.2	14.2	14.2	14.2	20.2
Modulus of Elasticity	daN / mm^2	6510	6510	6510	6510	6510	7650
MIT / TL (2)	daN	109	109	110	110	110	142
MAT (2)	daN	319	319	334	334	334	537
RTS (2)	kN	12.9	12.9	12.9	12.9	12.9	21.6
Aramid Yarns	dTex	≥ 20000	≥ 20000	≥ 20000	≥ 25000	≥ 45000	≥ 45000

Minimum Bending Radius	mm	Under Maximum Tension: 20 x Cable Ø		Without Tension: 10 x Cable Ø
Temperature Range	°C	Transport & Storage: -40 → +70	Installation: -10 → +50	Operation: -30 → +60

(1) other configurations upon specific request

(2) aerial parameters. CTE: thermal elongation coefficient, MIT / TL: maximum tension at installation or long term, MAT: maximum allowable tension, RTS: no optical consideration, non-reversible damages.

INSTALLATION CONDITIONS

Climatic Conditions	Sag (%)	Maximum Span (m) (3)
NESC Medium	1.0	75

(3) examples of computed values.

OPTICAL CHARACTERISTICS

See the attached cabled optical fibre data sheet.

MAIN CHARACTERISTICS

Test	Standard	Specified Value	Acceptance Criteria (4)
Tensile Performance (MAT)	IEC 60794-1-21-E1	see above table, 5 min	Δl/l ≤ 0.2 %, Δα ≤ 0.5 dB/km reversible
Crush	IEC 60794-1-21-E3A	2000 N / 100 mm, 10 min	Δα ≤ 0.05 dB reversible no damage
Impact	IEC 60794-1-21-E4	10 J, 3 impacts, R = 300 mm	Δα ≤ 0.05 dB reversible no damage
Repeated Bending	IEC 60794-1-21-E6	R = 20 x OD, 50 cycles	Δα ≤ 0.05 dB, reversible
Torsion	IEC 60794-1-21-E7	±180°, 2 m, 100 N, 5 cycles	Δα ≤ 0.05 dB, reversible
Cable Bend	IEC 60794-1-21-E11	R = 10 x OD, 5 turns, 3 cycles	Δα ≤ 0.05 dB, reversible
Temperature Cycling	IEC 60794-1-22-F1	-15 °C to +60 °C -30 °C to +70 °C	Δα ≤ 0.05 dB/km Δα ≤ 0.01 dB/km
Water Penetration	IEC 60794-1-22-F5C	3 m sample, 1 m water, 24 h	no water penetration
Sheath Marking Abrasion	IEC 60794-1-22-E2B Method 1	needle Ø = 1mm, 4N, 60 cycles	After the test the marking shall be legible
Drip Test	IEC 60794-1-22-E14	75 °C, 300 mm	No drip
Sheath Abrasion	IEC 60794-1-22-E2A	0.75 m sample, 55 ± 5 cycles/min, 300 cycles, 4 N load, 4 abrasions, 100 mm distance between successive abrasions with 90° rotation	No penetration of sheath

(4) values for single-mode fibres, all optical measurements performed at 1550nm in accordance with ITU-T G650 recommendation.

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	rose	aqua

Micromodule 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	rose	aqua
No.	13	14	15	16	17	18	19	20	21	22	23	24
Colour	blue	orange	green	brown	slate	white	red	light green	yellow	violet	rose	aqua

Sheath Colour

The outer sheath colour is black.

Sheath Marking

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

PRYSMIAN SA OPTICAL CABLE TOL<number of tubes>D <number of fibres>(<number of fibres/tube>SMR)T/E ΔEH <third party certification initials> Fca <month>/<year> <length marking>

LOGISTICS

Packing	Wooden drums with protection.
Standard Delivery Length	4000 m ± 200 m.