Fibre optic cable

STAC

Article number: 79889 02-11-2017

Description

4 x SM G.657.A2 (2x1)

STAC – Soft Tube Access Cable
This special indoor/outdoor drop cable with bend-insensitive fibre G.657.A2, protected by easy strippable soft tube, meets all requirements for FTTH access network:
a small diameter, low weight, high tensile force and easily strippable features.
The STAC is designed to connect the outside branch to customer's termination box without splicing, resulting in reduced installation-time.
This cable consist of a double jacket design, with a 90° bend radius inner subunit (STIC) perfectly suitable for indoor application, a robust outer sheath for outdoor installation and tensile strength members between both jackets. The outer sheath can be easily removed, when entering the building.
Due to its (semi-)dry construction, this cable is highly safe and can be used in any human habitation.
The dry soft tube makes also easier its installation into the vertical riser shafts of MDU's.
This multi-purpose cable can be installed by pulling in ducts, on external walls, or aerial between poles.
The STAC cable is designed for maximum spans of 50m (or longer, varying per item), according to French Standard NF C 11-201A1.
For further information, please consult document Sag & Tension Calculations under characteristic 'Specification'.

Trading information

Product group	Fibre optic cable
Series	Fibre optic cable Single mode
Type	STAC
Net. Weight	29 kg/km
Sheath marking	ACE - TKF STAC 4x SM G.657.A2 (2x1) A-DQ(ZN)2Y 79889 {Batch} {Year} {Length}

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Trade lengths

	(79889 / 8713182259914)
Reel à 500	(79889H X 500/25 / 8713182298326)
Reel à 1000	(79889H X 1000/50 / 8713182262389)
Reel à 2000	(79889H X 2000/100 / 8713182298333)

Construction characteristics

Cable type	STC
Fibre type	Single mode 9/125
Optical fibre standard	ITU-T G.657.A2
Number of fibres	2
Number of fibres per tube	1
Number of cores	2
Type of tube	Soft tube
Stripability optical element	> 100mm, down to primary coating
Cable metal free	Yes
Strip method	2 Rip cords
Stripability outer sheath	1000 mm
Strain relief	Yes
Type of strain relief	Aramid fibre
Material inner sheath	LSZH
Inner sheath thickness	0.85 mm
Diameter over inner sheath (nom.)	4.0 mm
Material outer sheath	PE (polyethylene)
Colour outer sheath	Black
Outer sheath thickness	0.8 mm
Outer diameter approx.	6.0 mm

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Properties

Application	Outside

Technical characteristics

Standardization	EN IEC 60794-3
Test procedures	IEC 60794-1-2
Longitudinal water blocking	Yes
Longitudinal watertight construction	Super Absorbing Polymer
Installation temperature	-10 / 50 °C
Transportation and storage temperature	-25 / 60 °C
Operational temperature range Ta1 - Tb1	-10 / 50 °C
Operational temperature range Ta2 - Tb2	-25 / 60 °C
UV resistant	Yes
UV-protection	ISO 4892/2
Color fastness	Blue wool scale 8

Mechanical characteristics

Tensile load short term (Tm)	700 N
Max. fiber strain at Tm	0.6 %
Tensile load long term (Tl)	200 N
Min. bending radius after installation	60 mm
Min. bending radius during installation	120 mm
Crush resistance E3A short (1min)	800 N/dm
Crush resistance E3A long	300 N/dm
Crush load E3A long application time	10 min
Impact strength	10 J
Striking surface radius	12.5 mm
Torsion resistance	360 °/m
Kink resistance	10 mm

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Optical characteristics

Fibre category	OS2
Max. attenuation @ 1310 nm	0.4 dB/km
Max. attenuation @ 1550 nm	0.3 dB/km
Max. attenuation @ 1625 nm	0.4 dB/km

Other properties

Halogen free (acc. EN 60754-1/2)	Yes
Halogen free	IEC 60754-1&2 / EN 50267-2-1&2

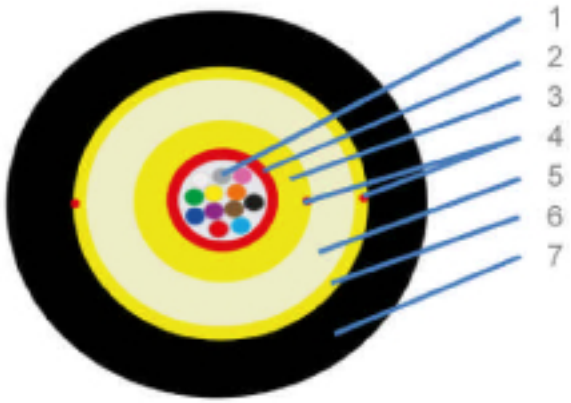
Product Information

Cable construction and colour code

STAC

Version: PM-M10J15

Color code acc. to France Telecom



Description:

1	Optical fibres
2	Soft tube
3	Strength member (waterblocking aramid yarns)
4	Ripcord
5	Inner sheath
6	Strength member (waterblocking aramid yarns)
7	Outer sheath

Standard Colours:

Fibres		Tubes	
Group		**Layer**	
1	Red	1	Red
2	Blue	2	Blue
3	Green	3	Green
4	Yellow	4	Yellow
5	Violet		
6	White		
7	Orange		
8	Grey		
9	Brown		
10	Black		
11	Turquoise		
12	Pink		

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Product Information

STAC Version: PM-M11J16

Catenary Calculations	**Based on the following installation conditions**
Installation Temperature	15 °C
Nominal Sag	1%

the STAC cables are suitable for the NESC-situations with spans, tensions and sags as listed in the table below

		NESC Light			**NESC Medium**			**NESC Heavy**		
		Temperature	-1 °C		Temperature	-10 °C		Temperature	-20 °C	
		Wind velocity	26,5 m/s		Wind velocity	17,7 m/s		Wind velocity	17,7 m/s	
		Ice thickness	0 mm		Ice thickness	6,5 mm		Ice thickness	12,5 mm	
Fibre count	Tubes & Fibres n x m	Max Span (m)	Max Tension (N)	Max Sag (%)	Max Span (m)	Max Tension (N)	Max Sag (%)	Max Span (m)	Max Tension (N)	Max Sag (%)
1	1 x 1	80	700	3,40	35	663	3,57	18	665	3,72
4	1 x 4									
4	4 x 1	60	647	3,22	35	693	3,55	18	689	3,72
12	2 x 6									
24	2 x 12									
2	2 x 1	50	580	3,00	35	700	3,53	18	697	3,68
6	1 x 6									
12	1 x 12									
24	4 x 6	50	591	3,04	35	700	3,55	18	695	3,72

Table: Operational conditions, max achievable span, tension and sag.

According to NF C 11-201A1 (* Temperature -5°C, ice thickness of 5mm and wind speed 80km/h) the STAC cables are suitable for maximum spans as listed in the table below

Fibre count	Tubes & Fibres n x m	Span m	Installation (15°C)		Maximum conditions*	
			nom sag %	nom tension N	vect. sag %	Max tension N
1	1 x 1	80	1,0	205	2,87	565
2	2 x 1	50	1,0	190	2,60	510
4	4 x 1	60	1,0	195	2,67	506
4	1 x 4	80	1,0	205	2,87	565
6	1 x 6	50	1,0	190	2,60	510
12	1 x 12	50	1,0	190	2,60	510
12	2 x 6	60	1,0	195	2,67	506
24	2 x 12	60	1,0	195	2,67	506
24	4 x 6	55	1,0	200	2,66	500

Fibre:	Product Characteristics - Optical fibres
Type of fibre	Hydrogen passivated, dispersion unshifted, matched cladding bending loss insensitive singlemode fibre 9/125µm. Fully compatible with G.652.D fibre. Optical and geometrical properties exceed ITU-recommendations G.652.D and G.657.A2
Standard	IEC-60793-2-50, B6-a2
Standard	ITU-T G.657.A2

Characteristics:	Properties	Unit
Mode field diameter; 1310nm	8.7 ± 0.4	µm
Mode field diameter; 1550nm	9.9 ± 0.5	µm
Core/Cladding concentricity error	max. 0.5	µm
Clading diameter	125.0 ± 0.5	µm
Cladding non-circularity	max. 0.7	%
Coating diameter	242 ± 5	µm
Coating/Cladding concentricity error	max. 8	µm
Temperature sensitivity; -60°C to +85°C	max. 0.05	dB/km
Bending sensitivity - 10 turns around Ø30mm - 1550nm	max. 0.03	dB
Bending sensitivity - 10 turns around Ø30mm - 1625nm	max. 0.1	dB
Bending sensitivity - 1 turn around Ø20mm - 1550nm	max. 0.1	dB
Bending sensitivity - 1 turn around Ø20mm - 1625nm	max. 0.2	dB
Bending sensitivity - 1 turn around Ø15mm - 1550nm	max. 0.5	dB
Bending sensitivity - 1 turn around Ø15mm - 1625nm	max. 1.0	dB
Proof test level	min. 0.69	Gpa
Fibre curl	min. 4	m
Cable cut-off wavelength	max. 1260	nm
Zero-dispersion wavelength	1300 - 1324	nm
Zero-dispersion slope	max. 0.090	ps/nm².km
Chromatic dispersion; 1550 nm	max. 18	ps/nm.km
Chromatic dispersion; 1625nm	max. 22	ps/nm.km
Polarisation mode dispersion; maximum individual fibre	max. 0.1	ps/√km
PMD_Q	max. 0.06	ps/√km
Max. attenuation at 1383nm (α_{1383}) [note a]	<max. α_{1310}	
Effective Group Core Refractive Index; 1310 nm	1.4676	-
Effective Group Core Refractive Index; 1550 nm	1.4683	-
Effective Group Core Refractive Index; 1625 nm	1.4685	-

note a: after hydrogen ageing