LTC ADSS-80 - Fibre optic cable

Article number: 77650 06-02-2017

Description

12x SM G.657.A1 (6x2)

The Loose Tube Cable All Dielectric Self-Supporting (LTC ADSS) is a metalfree aerial distribution cable, with dry waterblocking and aramid yarns under the outersheath. This cable is to be used under all dielectric circumstances, for example on distribution and high voltage power lines, railway, tram, trolley bus lines and between buildings. Because of its strong tensile members it is suitable for aerial applications without using additional strenght members. This cable is designed for spans between approx. 80 and 160 mtrs, depending on installing and surroundings conditions, with the conditions from the NESC tables as a basis. 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	LTC ADSS-80
Net. Weight	85 kg/km
Sheath marking	ACE - TKF LTC ADSS 12x SM G.657.A1 (6x2) A-DQ(ZN)2Y 77650 {Batch} {Year} {Length}

Trade lengths

Reel à 1	(77650 / 8713182096373)

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Construction characteristics

Cable type	ADSS
Fibre type	Single mode 9/125
Optical fibre standard	ITU-T G.657.A1
Number of fibres	12
Number of fibres per tube	2
Number of cores	6
Type of tube	Loose tube, gel filled
Cable metal free	Yes
Number of layers	1 Layer
Strip method	1 Rip cord
Strain relief	Yes
Type of strain relief	Aramid fibre
Material outer sheath	HDPE
Colour outer sheath	Black
Outer sheath thickness	1.4 mm
Outer diameter approx.	10.6 mm

Properties

Application	Outside

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Technical characteristics

Standardization	EN IEC 60794-3-20
Test procedures	IEC 60794-1-2
Longitudinal water blocking	Yes
Longitudinal watertight construction	Super Absorbing Polymer
Installation temperature	-15 / 55 °C
Transportation and storage temperature	-40 / 70 °C
Operational temperature range Ta1 - Tb1	-40 / 70 °C
Max. attenuation increase during Ta1 - Tb1	0.05 dB
Operational temperature range Ta2 - Tb2	-40 / 70 °C
Max. attenuation increase during Ta2 - Tb2	0.15 dB
UV resistant	Yes

Mechanical characteristics

Tensile load short term (Tm)	3400 N
Cable strain by Tm	0.8 %
Max. fiber strain at Tm	0 %
Tensile load long term (Tl)	3400 N
Maximum operational tension (MOT)	3400 N
Maximum allowable tension (MAT)	5300 N
Min. bending radius after installation	155 mm
Min. bending radius during installation	210 mm
Crush resistance acc. meth.E3A	1500 N/dm
Impact strength	5 J
Torsion resistance	360 °/m

Optical characteristics

Max. attenuation @ 1310 nm	0.35 dB/km
Max. attenuation @ 1550 nm	0.21 dB/km
Max. attenuation @ 1625 nm	0.23 dB/km

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Other properties

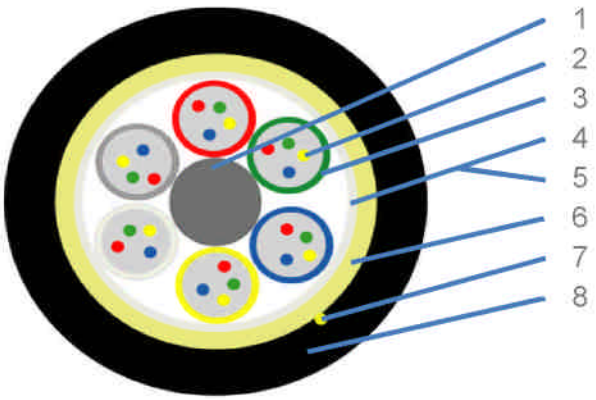
Halogen free (acc. EN 60754-1/2)	Yes
Cross sectional area	88 mm²
Effective E-modulus	5.0 GPa
Effective CTE	29 10^-6/°C

Product Information

Cable construction and colour code

LTC ADSS / -80 / -150 Version: PM-M11J15

All-dielectric self-supporting cable
FO cable with stranded loose tubes



Description:

1	Centre element, FRP
2	Optical fibres
3	Sub units (2, 4, 6, 8, 12 or 24 fibres)
4&5	Binders & Waterblocking tape
6	Waterblocking Aramide
7	Ripcord
8	Outer sheath

Standard Colours:

Fibres				Tubes			
Group 1		Group 2		Layer 1		Layer 2	
1	Red	13	Red +t	1	Red	1	Red
2	Green	14	Green +t	2	Green	2	Green
3	Blue	15	Blue +t	3	Blue	3	Blue
4	Yellow	16	Yellow +t	4	Yellow	4	Yellow
5	White	17	White +t	5	White	5	White
6	Grey	18	Grey +t	6	Grey	6	Grey
7	Brown	19	Brown +t	7	Brown	7	Brown
8	Violet	20	Violet +t	8	Violet	8	Violet
9	Turquoise	21	Turquoise +t	9	Orange	9	Orange
10	Black	22	Natural	10	Black	10	Black
11	Orange	23	Orange +t	11	Pink	11	Pink
12	Pink	24	Pink +t	12	Turquoise	12	Turquoise

note +t: indicates a black tracer

Spinnerstraat 15 | Postbus 6 | 7480 AA Haaksbergen | Nederland | Telefoon: +31 (0)53 5732255 | E-mail: info@tkf.eu

Product Information

LTC ADSS 80 Version: PM-M11J15

Catenary Calculations **Based on the following installation conditions**

Installation Temperature 15 °C

Nominal Sag 1%

the 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 (kN)	Max Sag (%)	Max Span (m)	Max Tension (kN)	Max Sag (%)	Max Span (m)	Max Tension (kN)	Max Sag (%)
12	6 x 2	190	3,5	3,7	130	3,5	4,2	80	3,5	4,6
24	6 x 4	215	4,0	3,6	150	4,0	4,2	90	3,9	4,6
32	8 x 4	185	4,1	3,4	135	4,1	4,0	85	4,0	4,4
36	6 x 6	200	4,0	3,5	135	3,9	3,9	85	4,0	4,3
24	3 x 8	190	3,9	3,6	135	3,8	4,1	85	3,8	4,6
48	6 x 8	195	4,1	3,5	140	4,0	4,1	90	4,1	4,5
24	2 x 12	180	3,9	3,4	130	4,0	3,9	80	3,9	4,2
48	4 x 12	185	4,1	3,3	130	4,0	3,8	80	3,9	4,2
72	6 x 12	185	4,1	3,3	130	4,1	3,8	80	4,0	4,1
96	8 x 12	170	4,5	3,1	130	4,5	3,6	85	4,5	4,1
144	12 x 12	155	5,6	2,8	125	5,5	3,2	85	5,5	3,7
144	6 x 24	200	5,4	3,1	150	5,4	3,6	100	5,4	4,1
192	8 x 24	155	5,1	2,9	125	5,2	3,3	85	5,2	3,8
216	9 x 24	170	6,3	2,8	140	6,3	3,2	95	6,2	3,7

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

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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.A1
Standard	IEC-60793-2-50, B6-a1
Standard	ITU-T G.657.A1

Characteristics:	Properties	Unit
Mode field diameter; 1310nm	9.0 ± 0.3	µm
Mode field diameter; 1550nm	10.2 ± 0.4	µm
Core non-circularity	max. 6	%
Core/Cladding concentricity error	max. 0.4	µm
Cladding diameter	125.0 ± 0.5	µm
Cladding non-circularity	max. 0.6	%
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. 0.1	dB
Bending sensitivity - 10 turns around Ø30mm - 1625nm	max.0.3	dB
Bending sensitivity - 1 turn around Ø20mm - 1550nm	max.0.75	dB
Bending sensitivity - 1 turn around Ø20mm - 1625nm	max.1.5	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; 1285nm - 1330 nm	max. |3.2|	ps/nm.km
Chromatic dispersion; 1550nm	max. 17	ps/nm.km
Chromatic dispersion; 1625nm	max. 21	ps/nm.km
Polarisation mode dispersion; maximum individual fibre	max. 0.1	ps/√km
PMDq	max. 0.06	ps/√km
Max. attenuation at 1383nm (α_{1383}) [note a]	<max. α_{1310}	
Effective Group Core Refractive Index; 1310 nm	1.4671	-
Effective Group Core Refractive Index; 1550 nm	1.4675	-
Effective Group Core Refractive Index; 1625 nm	1.4680	-

note a: after hydrogen ageing