LTC ADSS-80

24x SM G.657.A1 (2x12)

Article number: 77652

Date: 12-05-2020

The ACE outdoor optical fibre cables are available from low fibre up to very high fibre count, in all types like loose tube cable (LTC), loose tube mini cable (LTMC) and central tube cable (CTC). We offer solutions for sub soiled duct systems, direct burial cables and a full range of self-supporting aerial cables. Besides the standard cables we can fulfil all requests for various environmental situations like rodent protection and steel wire armoured.

Product characteristics

Cable type	ADSS
Fibre type	Single mode 9/125
Optical fibre standard	ITU-T G.657.A1
Number of fibers	24
Number of fibers per optical element	12
Number of cores	2
Optical element	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.	11,6 mm
Marking	ACE - TKF LTC ADSS-80 24x SM G.657.A1 (2x12) A-DQ(ZN)2Y 77652 {Batch} {Year} {Length}

Application

Standardization	EN IEC 60794-3-20
Test procedures	EN IEC 60794-1-2
Application	Outside
Euro fire class according to EN 13501-6	Fca

Mechanical specification

Tensile load short term (Tm)	4800 N
Cable strain by Tm	0,8 %
Max. fiber strain at Tm	0,09 %
Tensile load Long Term (Tl)	4200 N
Max. operational tension (MOT)	4200 N
Max. allowable tension (MAT)	6300 N
Min. bending radius during installation	230 mm
Min. bending radius after installation	170 mm
Crush resistance acc. meth.E3A	1500 N/dm
Impact strength	5 J
Torsion resistance	360 °/m

Optical specification

Category according to EN 50173	OS2
Max. attenuation @ 1310 nm	0,35 dB/km
Max. attenuation @ 1550 nm	0,21 dB/km
Max. attenuation @ 1625 nm	0,24 dB/km

Environmental specification

Longitudinal water blocking cable	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

Other specification

Halogen free (acc. EN 60754-1/2)	Yes
Effective E-modulus	5,7 GPa
Effective CTE	19 10^-6/°C
Cross sectional area	106 mm^2

Logistical specifications

Unit	meter
Weight (kg)	0.098
Default packaging	H X 4000/200

Fibre specification G.657.A1

ACE-DS-OT-VSP-SM-G657A1-v02-e date : 04-12-2019

Technical product information

Product characteristics - optical fibers

Fibre

Type of fibre	Hydrogen passivated, dispersion unshifted, matched cladding bending loss insensitive single mode fibre 9/125 µm Full 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, B-657.A1
Standard	ITU-T G.657.A1

Characteristics

Parameter		Properties	Unit
Mode field diameter: 1310 nm		9.0 ± 0.3	µm
Mode field diameter: 1550 nm		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.	0.7	%
Coating diameter		242 ± 5	µm
Coating/cladding concentricity error	max.	8	µm
Temperature sensitivity: -60 to +85 ºC	max.	0.05	dB/km
Bending sensitivity - 100 turns around Ø50 mm - 1550 mm	max.	0.05	dB
Bending sensitivity - 100 turns around Ø60 mm - 1625 mm	max.	0.05	dB
Bending sensitivity - 10 turns around Ø30 mm - 1550 mm	max.	0.1	dB
Bending sensitivity - 10 turns around Ø30 mm - 1625 mm	max.	0.3	dB
Bending sensitivity - 1 turn around Ø20 mm - 1550 mm	max.	0.75	dB
Bending sensitivity - 1 turn around Ø20 mm - 1625 mm	max.	1.5	dB
Proof test level	min.	0.70	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	$ps/nm^2 \cdot km$
Chromatic dispersion: 1285 nm – 1330 nm	max.	|3.2|	ps/nm·km
Chromatic dispersion: 1550 nm	max.	17	ps/nm·km
Chromatic dispersion: 1625 nm	max.	21	ps/nm·km
Polarisation mode dispersion: max. individual fibre	max.	0.1	ps/nm·km
PMD_Q	max.	0.06	ps/√km
Max. attenuation at 1383 nm (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

Revision date: 19-12-2019

TECHNICAL PRODUCT INFORMATION

Catenary calculations

LTC ADSS-80

Based on the following installation conditions
Installation temperature 15 ºC
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 ºC	Temperature		-10 ºC	Temperature		-20 ºC
		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 & fibers	max. span	max. tension	max. sag	max. span	max. tension	max. sag	max. span	max. tension	max. sag
	n x m	(m)	(kN)	(%)	(m)	(kN)	(%)	(m)	(kN)	(%)
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.

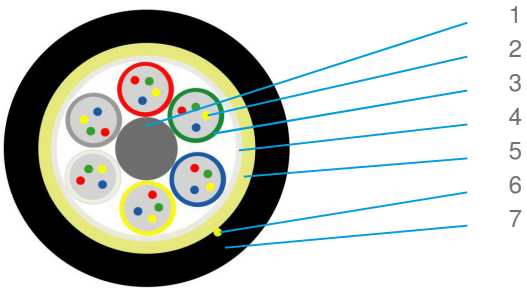
Revision date: 4-12-2019

TECHNICAL PRODUCT INFORMATION

Cable construction and colour code

LTC ADSS -30 / -80 / -150

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



Description

1	Central element (FRP)
2	Optical fibres
3	Loose tube with optical fibres
4	Binders & waterblocking tape
5	Waterblocking aramid
6	Ripcord
7	Outer sheath

Standard colours

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

note +t: indicates a black tracer