Technical Data Sheet

Cable Description	**12F CENTRAL TUBE (UNITUBE - FIG8 DIELECTRIC) AERIAL OFC**
Type of Fibre	**Single Mode, G.652D**

Introduction

Central Loose tube, Aerial (FIG 8 - Dielectric) fibre optic cable containing LWP-SMF, in full compliance with ITU-T G652D. The offered cables are fully compliant to the relevant IEC specifications.

Cable Design

* Enhance low water peak single mode fibers in full compliance with ITU-T-G652D
* Loose buffer tubes fully filled
* Peripheral Strength Member - Glass Yarn
* HDPE outer sheath, Black
* Messanger (Strength Member) FRP ROD
* Rip Cord to open the sheath

Application

* Suitable for Aerial Application
* Span length upto 60 Meters (NESC LIGHT)

Special Features

* Flexible buffer tubes provide easy fibre routing inside closure
* Rodent Protection
* Dielectric Construction

Cable Physical Characteristics

Fibre Count	**12**
Number of Fibres in Loose Tube	12
Number of Loose Tube in cable	1
Cable Diameter (mm)	7.2 x 16.0
Tolerance ± (mm)	1.0
Nominal Cable Weight (kg/km)	85.0
Standard Length (meters)	2000 ± 3%

Cable Mechanical & Environmental Characteristics

Test	Standard	Product Performance
Temperature Range (°C)	[IEC 60794-1-22-F1]	-40 °C to +70 °C
Cable Bending Radius (mm)	[IEC 60794-1-21-E11 A & B]	Dynamic - 20 X D , Static - 15 D (D= Cable diameter)
Repeated Bending	[IEC 60794-1-21-E6]	1500 N
Tensile Force (N)	[IEC 60794-1-21-E1]	5 Nm, 3 Impacts
Crush Resistance (N)	[IEC 60794-1-21-E3]	2000 N (100 X 100 mm)
Torsion Resistance	[IEC 60794-1-21-E7]	10 Cycle (± 180°),

Note: After the Test, Change in Attenuation shall be ≤ 0.05 dB/Km. No Fibre Break & Damage or Crack on the Cable

Cable Transmission Characteristics

Fibre Type		Attenuation Coefficient (dB/Km)					PMD	Cable Cut-Off	MFD
		850	1300	1310	1550		ps/sqrt.km	nm	µm
Single Mode	G.652D	-	-	≤ 0.36	≤ 0.22		≤ 0.2	≤ 1260	9.2 ± 0.4

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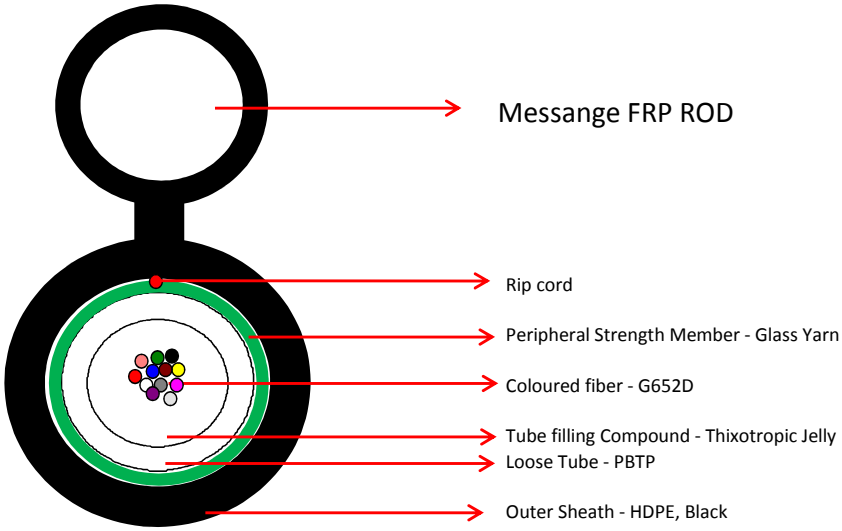
Cable Constructional Details

Cable Cross Sectional Diagram of 12F Cable [Drawing not to scale]



Indentification Fibre & Loose Tube

Fibre Colour	Red	Green	Blue	Yellow	White	Grey	Brown	Violet	Aqua	Black	Orange	Pink
Loose Tube Colour	White											

Proposed Printing Details & Method at every meters

Printing Method & Colour	Hotfoil & Contrast	CABLE ID Customer/Project Name Telephone Symbol, Laser Symbol, Number of Fibres, Type of Fibre Type of Cable YYYY Manufacturer Name Sequential Meter Marking **or as agree** (**EX for 12F** - A1 Bulgaria EAD – YEAR – manufacturer – cable type – 12X1G652D – 1020m >)

Proposed Stencling on Drum

Every length will be delivered on non-returnable wooden drums. Generally the cable drum flange will be marked with following: (These details can also be customised.)	* Arrow showing the direction, the drum can be rolled. * Country of origin. * The manufacturer's name * Number of fibers. * Nominal cable length in meters * Net and gross weight. * Drum number * Customer's/Project name and destination

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Specification of Single Mode Matched Clad Type Optical fibre Conforming to ITU - T Rec. G.652D

Properties	Unit	Values
Transmission		
Attenuation at 1310 nm	dB/km	≤ 0.34
Attenuation at 1550 nm	dB/km	≤ 0.20
Attenuation at 1625 nm	dB/km	≤ 0.23
Point discontinuity at 1310 & 1550 nm	dB	≤ 0.05
Difference in maximum attenuation in the range from		
1285 to 1330 nm w.r.t attenuation at 1310 nm	dB/km	≤ 0.03
1530 to 1570 nm w.r.t attenuation at 1550 nm	dB/km	≤ 0.02
Maximum chromatic dispersion at		
1285 - 1330 nm wavelength range	ps/nm.km	≤ 3.5
1270 - 1340 nm wavelength range	ps/nm.km	≤ 5.3
1550 nm	ps/nm.km	≤ 18.0
1625 nm	ps/nm.km	≤ 22.0
Zero dispersion wavelength	nm	1302 to 1322
Zero dispersion slope	nm².km	≤ 0.092
PMD at 1310 & 1550 nm	ps/sqrt.km	≤ 0.15
PMD Link Design Value at 1310 & 1550 nm**	ps/sqrt.km	≤ 0.06
Fibre cut-off wavelength	nm	≤ 1320
Cable cut-off wavelength	nm	≤ 1260
Mode field diameter range at 1310 nm	µm	9.2 ± 0.4
Mode field diameter range at 1550 nm	µm	10.4 ± 0.5
Geometrical		
Cladding Diameter	µm	125 ± 0.7
Cladding noncircularity	%	≤ 0.7
Primary Coating Diameter (uncoloured)	µm	242 ± 5
Coating Diameter (coloured)	µm	252 ± 10
Core/Clad or Mode Field concentricity error	µm	≤ 0.5
Coating / Cladding Concentricity error	µm	≤ 12
Numerical Aperature**		0.14
Refractive Index at 1310 & 1550 nm**		1.467 & 1.468
Mechanical**		
Proof Test for minimum strain level	kpsi, Gpa, %	≥ 100, ≥ 0.69, ≥ 1
Change in Attenuation with Bending		
100 Turns on 60 mm Diameter Mandrel		
at 1310	dB	≤ 0.05
at 1550	dB	≤ 0.05
1 Turn on 32 mm Diameter Mandrel		
at 1310	dB	≤ 0.5
at 1550	dB	≤ 0.5
Strippability force to remove primary coating of fibre	Newton	1.3 ≤ F ≤ 8.9
Fibre Curl	radius of curve.	≥ 4 mtrs
Dynamic tensile strength (unaged)	kpsi	≥ 550
Dynamic tensile strength (Aged)	kpsi	≥ 440
Dynamic Fatigue		≥ 20
Environmental**		
Induced attenuation at 1310 nm, 1550 nm & 1625 nm for		
Temperature & Humidity cycle from -10°C to +85°C at 98 % humidity (min), Reference Temperature 23°C	dB/km	≤ 0.05
Temperature cycle from -60°C to +85°C, Reference Temperature 23°C	dB/km	≤ 0.05
Water Immersion at 23 ± 2°C	dB/km	≤ 0.05
Accelerated Ageing (Temperature) at 85 ± 2°C, Reference Temperature 23°	dB/km	≤ 0.05

**** Fibre Manufacturer Certificate will be provided**

Design no.	BEPB/TDS/3072
Issue no. & Date	01 DTD 31-01-2021
Rev no. & Date	00