Cables de Fibra Óptica para Redes FTTH

TM

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Cables de Fibra Óptica para Redes FTTH

Como elegir los cables adecuados para una red FTTH

?

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Cables de Fibra Óptica para Redes FTTH

Lo primero es contar con un diseño de la red de acceso

Topología

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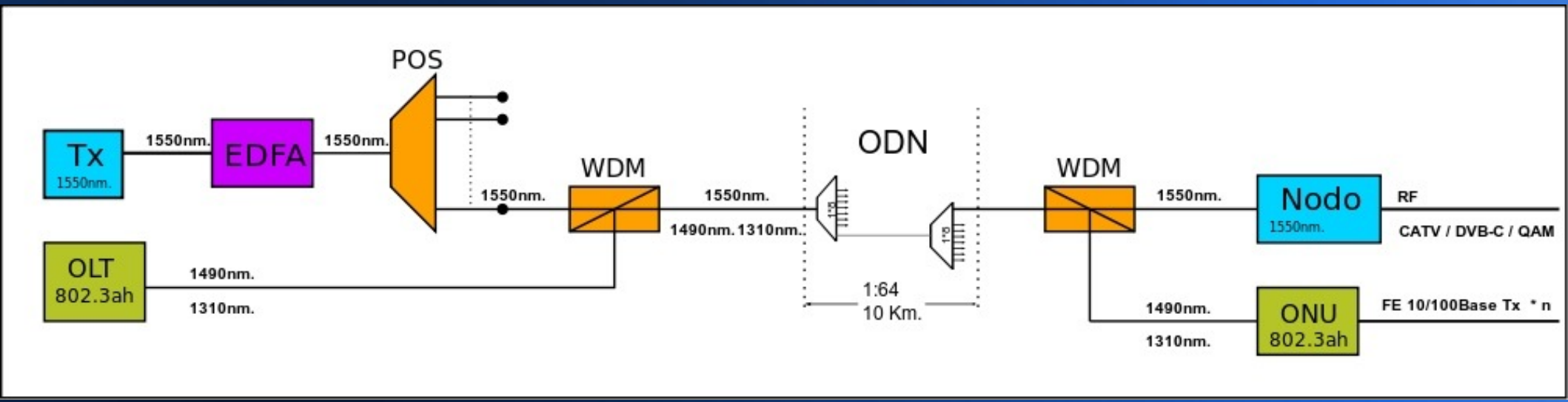
Cables de Fibra Óptica para Redes FTTH

Ejemplo de un Esquema reducido de red PON para FTTH



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Cables de Fibra Óptica para Redes FTTH

Elegir entre las diferentes técnicas de tendido de acuerdo al escenario planteado

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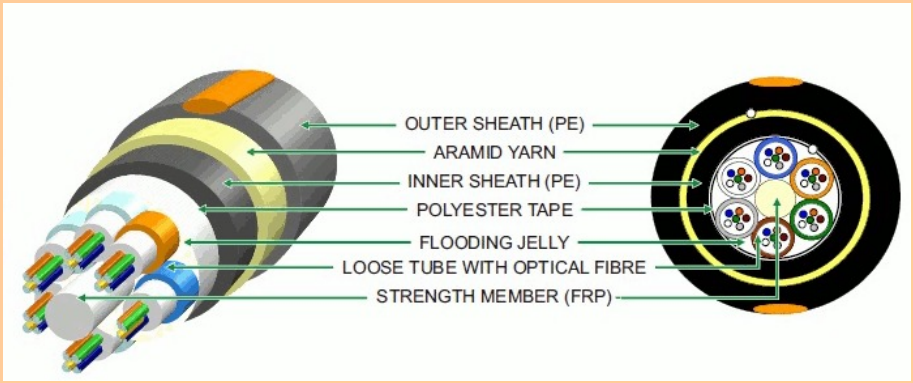
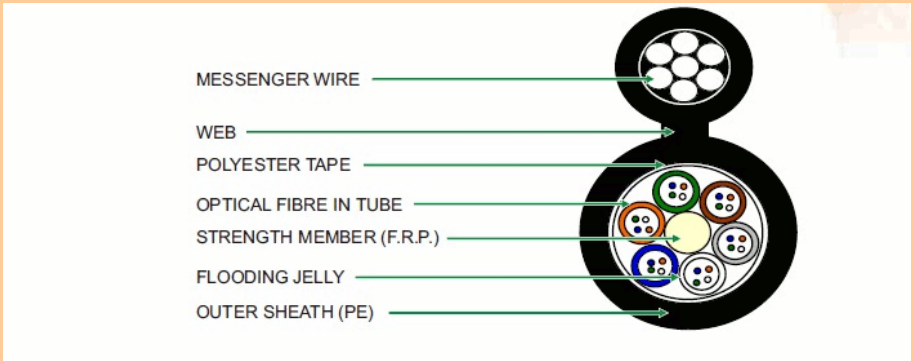
- Troncales - Tendido Aéreo

ADSS - Multitubo



Aérea Fig. 8



Cable ADSS

1. FIBRE PROPERTIES: ITU.T-G.652.D

CHARACTERISTICS	UNIT	VALUE
ATTENUATION @ 1310 nm	dB/km	≤ 0.38 Max & ≤ 0.35 Average
@ 1550 nm		≤ 0.25 Max & ≤ 0.22 Average
CHROMATIC DISPERSION 1285-1330 nm	ps/nm.km	≤ 3.5
At 1550 nm		≤ 18.0
ZERO DISPERSION WAVELENGTH	nm	1300 to 1324
ZERO DISPERSION SLOPE	ps/nm2.km	≤ 0.092
CUT OFF WAVELENGTH	nm	≤ 1320
POLARISARION MODE DISPERSION	ps/root km	≤ 0.2
MODE FIELD DIAMETER at 1310 nm	um	9.3 ± 0.5
CORE- CLAD CONCENTRICITY ERROR	um	≤ 0.8
CLADDING NON CIRCULARITY	%	≤ 1.0
CLADDING DIAMETER	um	125 ± 1.0
COATING DIAMETER	um	245 ± 10

2. MECHANICAL & ENVIRONMENTAL PROPERTIES

A. MAX. OPERATING TENSION -- LONG TERM	:	2750 Newton
MAX INSTALLATION TENSION -- SHORT TERM	:	5500 Newton
B. CRUSH RESISTANCE	:	2000 Newton/100 mm
C. MINIMUM BENDING RADIUS -- TEMPORARY	:	135 mm
PERMANENT	:	270 mm
D. MAX. OPERATING/ INSTALLATION TEMPERATURE	:	- 30 °C to + 70 °C

3. PHYSICAL & DIMENSIONS PROPERTIES

NO. OF FIBRES	24F	48F	72F
NO OF TUBES/NO OF FILLER	2/4	4/2	6/0
TYPE OF FIBRE	SM G652 D		
LOOSE TUBE DIAMETER	2.1 mm Nominal		
STRENGTH MEMBER	FRP & ARAMID YARN REINFORCEMENT		
SEQUENCE OF TUBE	BLUE, ORANGE, GREEN, BROWN, SLATE & WHITE		
COLOUR OF FIBRE	BLUE, ORANGE,GREEN & BROWN	BLUE, ORANGE,GREEN, BROWN, SLATE, WHITE, RED & BLACK	BLUE, ORANGE,GREEN, BROWN, SLATE, WHITE, RED, BLACK YELLOW, VIOLET, PINK & AQUA
SHEATH MATERIAL	HDPE		
INNER SHEATH THICKNESS	≥ 1.0 mm		
OUTER SHEATH THICKNESS	≥ 1.8 mm		
OUTER CABLE DIAMETER	13.5 ± 0.8 mm		
CABLE WEIGHT	140 ± 14 Kg/Km		
PRINTING ON CABLE	AKSH SM NO. OF FIBRE O.F. CABLE 2008 SLM in meters		
STANDARD LENGTH	2,3,4 ± 10 % KMS		

Cable Fig.8 - 48F

CHARACTERISTICS (ITU.T-G.652.D)	UNIT	VALUE
ATTENUATION @ 1310 nm	dB/km	≤ 0.38 Max & ≤ 0.35 Average
@ 1550 nm		≤ 0.25 Max & ≤ 0.22 Average
CHROMATIC DISPERSION 1285-1330 nm	ps/nm.km	≤ 3.5
At 1550 nm		≤ 18.0
ZERO DISPERSION WAVELENGTH	nm	1300 to 1324
ZERO DISPERSION SLOPE	ps/nm2.km	≤ 0.092
CUT OFF WAVELENGTH	nm	≤ 1320
POLARISARION MODE DISPERSION	ps/root km	≤ 0.2
MODE FIELD DIAMETER at 1310 nm	um	9.3 ± 0.5
CORE- CLAD CONCENTRICITY ERROR	um	≤ 0.8
CLADDING NON CIRCULARITY	%	≤ 1.0
CLADDING DIAMETER	um	125 ± 1.0
COATING DIAMETER	um	245 ± 10

2. MECHANICAL & ENVIRONMENTAL PROPERTIES

A. MAX. OPERATING TENSION -- LONG TERM	:	7000 Newton
MAX INSTALLATION TENSION -- SHORT TERM	:	14000 Newton
B. CRUSH RESISTANCE	:	2000 Newton/100 mm
C. MINIMUM BENDING RADIUS -- TEMPORARY	:	191 mm
PERMANENT	:	382 mm
D. MAX. OPERATING/ INSTALLATION TEMPERATURE	:	- 30 °C to + 70 °C

3. PHYSICAL & DIMENSIONS PROPERTIES

NO. OF FIBRES	48F
TYPE OF FIBRE	SM G652 D
LOOSE TUBE DIAMETER	2.1 mm Nominal
STRENGTH MEMBER	FRP & 7x0.8 mm Stranded Steel Wire
SEQUENCE OF TUBE	BLUE, ORANGE, GREEN, BROWN, FILLER-1, FILLER-2
COLOUR OF FIBRE	BLUE, ORANGE, GREEN, BROWN SLATE , WHITE, RED, BLACK, YELLOW, VIOLET, PINK & AQUA
OUTER SHEATH MATERIAL	HDPE
OUTER SHEATH THICKNESS	1.8 mm Nominal
CABLE DIAMETER	10.5 ± 0.6 mm
CABLE DIAMETER INCLUDING MESSENGER WIRE & WEB	19.1 ± 0.8 mm
CABLE WEIGHT	139 ± 15 Kg/Km
PRINTING ON CABLE	AS PER CUSTOMER REQUIREMENT
STANDARD LENGTH	2 ± 10% KMS

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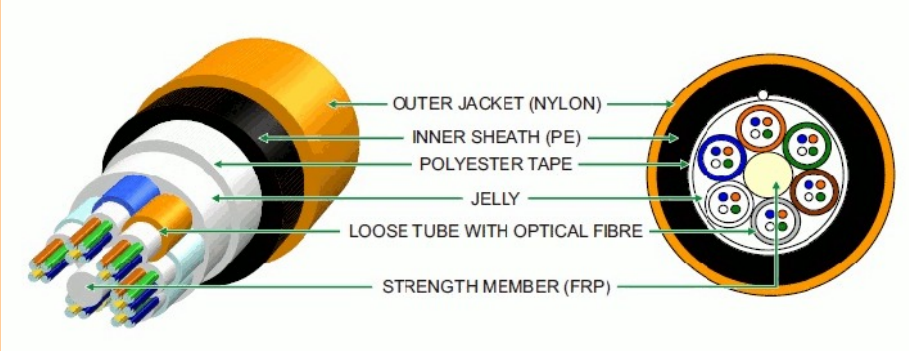
Tendido Troncal Subterránea por Ductos

ADSS - Multitubo



ADSS - Unitubo

Cable para Ducto – 48F.

1. FIBRE PROPERTIES:

ITU.T-G.652.D

CHARACTERISTICS	UNIT	VALUE
ATTENUATION @ 1310 nm	dB/km	≤ 0.38 Max & ≤ 0.35 Average
@ 1550 nm		≤ 0.25 Max & ≤ 0.22 Average
CHROMATIC DISPERSION 1285-1330 nm	ps/nm.km	≤ 3.5
At 1550 nm		≤ 18.0
ZERO DISPERSION WAVELENGTH	nm	1300 to 1324
ZERO DISPERSION SLOPE	ps/nm2.km	≤ 0.092
CUT OFF WAVELENGTH	nm	≤ 1320
POLARISARION MODE DISPERSION	ps/root km	≤ 0.2
MODE FIELD DIAMETER at 1310 nm	um	9.3 ± 0.5
CORE- CLAD CONCENTRICITY ERROR	um	≤ 0.8
CLADDING NON CIRCULARITY	%	≤ 1.0
CLADDING DIAMETER	um	125 ± 1.0
COATING DIAMETER	um	245 ± 10

2. MECHANICAL & ENVIRONMENTAL PROPERTIES

A. MAX. OPERATING TENSION -- LONG TERM	:	800 Newton
MAX INSTALLATION TENSION -- SHORT TERM	:	1600 Newton
B. CRUSH RESISTANCE	:	2000 Newton/100 mm
C. MINIMUM BENDING RADIUS -- TEMPORARY	:	112 mm
PERMANENT	:	224 mm
D. MAX. OPERATING/ INSTALLATION TEMPERATURE	:	- 30 °C to + 70 °C

3. PHYSICAL & DIMENSIONS PROPERTIES

NO. OF FIBRES	48F
NO OF TUBES/NO OF FILLER	4/2
TYPE OF FIBRE	SM G652 D
LOOSE TUBE DIAMETER	2.1 mm Nominal
STRENGTH MEMBER	FRP & GLASS YARN REINFORCEMENT
SEQUENCE OF TUBE	BLUE, ORANGE,GREEN, BROWN, FILLER-1, FILLER-2
COLOUR OF FIBRE	BLUE, ORANGE,GREEN, BROWN, SLATE, WHITE, RED, BLACK YELLOW, VIOLET, PINK & AQUA
OUTER SHEATH MATERIAL	HDPE
OUTER SHEATH THICKNESS	1.8 mm NOMINAL
OUTER CABLE DIAMETER	11.2 ± 0.6 mm
CABLE WEIGHT	98 ± 10 Kg/Km
PRINTING ON CABLE	AS PER CUSTOMER REQUIREMENT
STANDARD LENGTH	2,3,4 ± 10 % KMS

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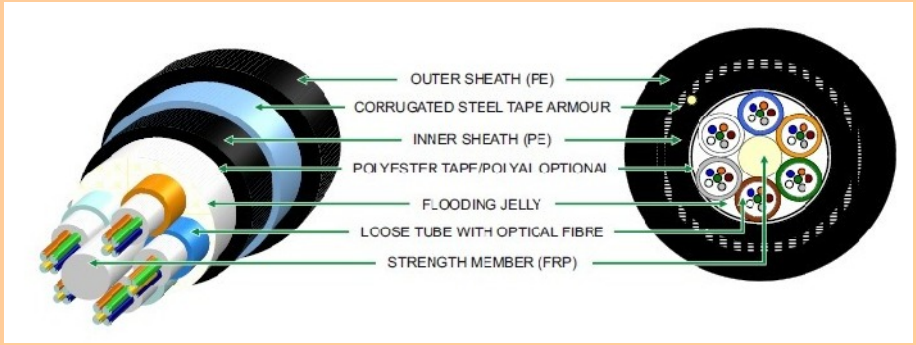
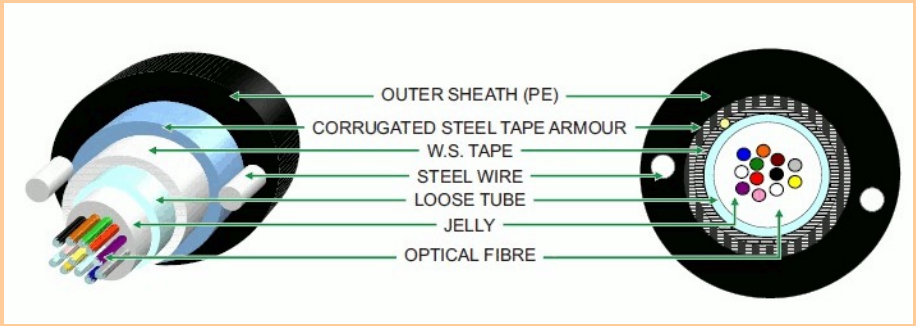
Tendido Troncal
Enterrada directo

Armadura - Multitubo



Armadura - Unitubo



Cable con Armadrura 24F a 48F

1. FIBRE PROPERTIES:

ITU.T-G.652.D

CHARACTERISTICS	UNIT	VALUE
ATTENUATION @ 1310 nm	dB/km	≤ 0.38 Max & ≤ 0.35 Average
@ 1550 nm		≤ 0.25 Max & ≤ 0.22 Average
CHROMATIC DISPERSION 1285-1330 nm	ps/nm.km	≤ 3.5
At 1550 nm		≤ 18.0
ZERO DISPERSION WAVELENGTH	nm	1300 to 1324
ZERO DISPERSION SLOPE	ps/nm2.km	≤ 0.092
CUT OFF WAVELENGTH	nm	≤ 1320
POLARISARION MODE DISPERSION	ps/root km	≤ 0.2
MODE FIELD DIAMETER at 1310 nm	um	9.3 ± 0.5
CORE- CLAD CONCENTRICITY ERROR	um	≤ 0.8
CLADDING NON CIRCULARITY	%	≤ 1.0
CLADDING DIAMETER	um	125 ± 1.0
COATING DIAMETER	um	245 ± 10

2. MECHANICAL & ENVIRONMENTAL PROPERTIES

A. MAX. OPERATING TENSION -- LONG TERM	:	1500 Newton
MAX INSTALLATION TENSION -- SHORT TERM	:	3000 Newton
B. CRUSH RESISTANCE	:	4000 Newton/100 mm
C. MINIMUM BENDING RADIUS -- TEMPORARY	:	130 mm
PERMANENT	:	260 mm
D. MAX. OPERATING/ INSTALLATION TEMPERATURE	:	- 30 °C to + 70 °C

3. PHYSICAL & DIMENSIONS PROPERTIES

NO. OF FIBRES	24F	48F	72F
NO OF TUBES/NO OF FILLER	2/4	4/2	6/0
TYPE OF FIBRE	SM G652 D		
LOOSE TUBE DIAMETER	2.4 mm Nominal		
STRENGTH MEMBER	FRP & GLASS YARN REINFORCEMENT		
SEQUENCE OF TUBE	BLUE, ORANGE, FILLER-1, FILLER-2, FILLER-3 & FILLER-4	BLUE, ORANGE, GREEN, BROWN, FILLER-1 & FILLER-2	BLUE, ORANGE, GREEN, BROWN, SLATE & WHITE
COLOUR OF FIBRE	BLUE, ORANGE,GREEN, BROWN, SLATE, WHITE, RED, BLACK YELLOW, VIOLET, PINK & AQUA		
OUTER SHEATH MATERIAL	HDPE		
OUTER SHEATH THICKNESS	≥ 1.8 mm		
OUTER CABLE DIAMETER	13 ± 0.8 mm		
CABLE WEIGHT	160 ± 16 Kg/Km		
PRINTING ON CABLE	AKSH SM NO. OF FIBRE O.F. CABLE 2009 SLM in meters		
STANDARD LENGTH	2,3,4 ± 10% KMS		

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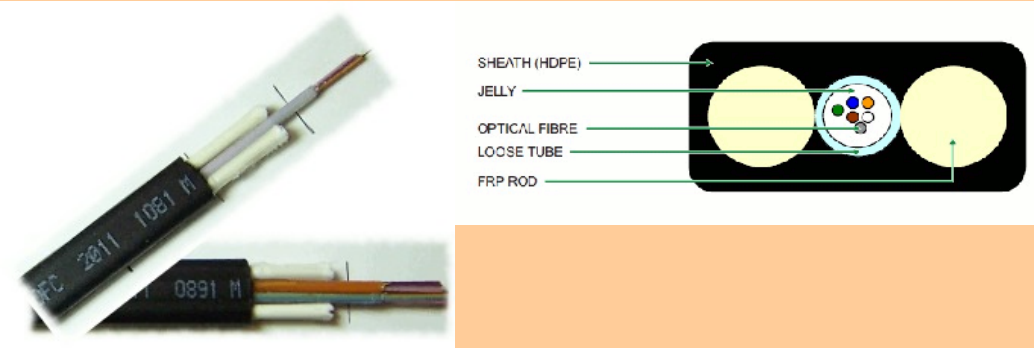
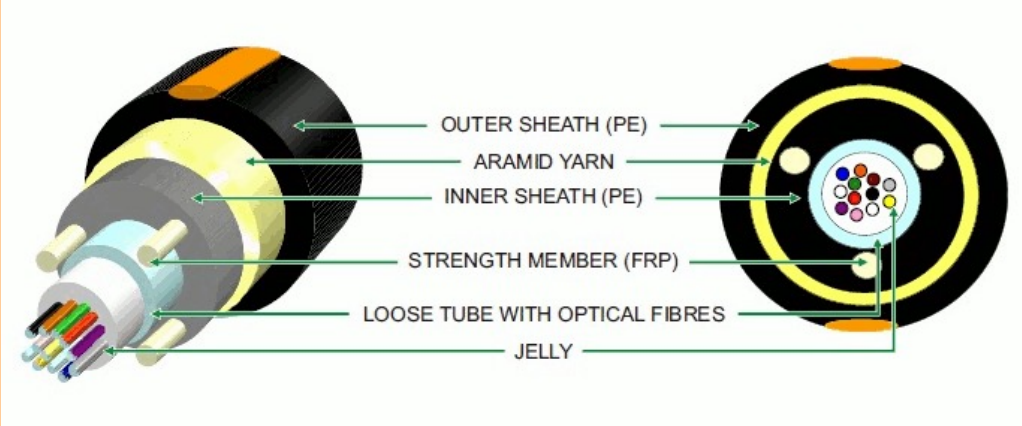
Distribución Tendido Aereo

Cable Flat – 2 a 24 fibras



Unitubo – Aerea ADSS hasta 24F.



Flat Cable - 12F

1. FIBRE PROPERTIES

ITU.T-G.652.D

ATTENUATION @ 1310 nm	dB/km	< 0.38 Max & < 0.35 Average
@ 1550 nm		< 0.25 Max & < 0.22 Average
CHROMATIC DISPERSION 1285-1330 nm	ps/nm.km	< 3.5
At 1550 nm		< 18.0
ZERO DISPERSION WAVELENGTH	nm	1300 to 1324
ZERO DISPERSION SLOPE	ps/nm2.km	< 0.092
CUT OFF WAVELENGTH	nm	< 1260
POLARISARION MODE DISPERSION	ps/root km	< 0.2
MODE FIELD DIAMETER at 1310 nm	um	9.3 + 0.5
CORE- CLAD CONCENTRICITY ERROR	um	< 0.8
CLADDING NON CIRCULARITY	%	< 1.0
CLADDING DIAMETER	um	125 + 1.0
COATING DIAMETER	um	245 + 10

2. MECHANICAL & ENVIRONMENTAL PROPERTIES

A. MAX. OPERATING TENSIO	:	500 Newton
MAX INSTALLATION TENSION	:	1000 Newton
B. CRUSH RESISTANCE	:	2000 Newton/10 cm
C. MINIMUM BENDING RADIUS--- TEMPERORY	:	100 mm
PERMENANT	:	200 mm
D. MAX. OPERATING/ INSTALLATION TEMPERATURE	:	- 30 °C to + 70 °C

3. PHYSICAL & DIMENSIONS PROPERTIES

NO. OF FIBRES	**12F**
COLOUR OF FIBRE	BLUE, ORANGE,GREEN, BROWN, SLATE, WHITE, RED, BLACK, YELLOW, VIOLET, PINK & AQUA
NOMINAL DIMENSIONS A) WIDTH B) HEIGHT	 7.0 ± 0.3 mm 3.6 ± 0.3 mm
DIAMETER OF EAA COATED F.R.P. ROD (2 nos.)	1.8 + 0.05 mm
DIAMETER OF LOOSE TUBE	1.6 mm Nominal
SHEATH THICKNESS	0.90 mm Nominal
WEIGHT OF CABLE	30 ± 3 Kg/Km
PRINTING ON CABLE	AKSH 12F SM G652D FLAT AERIAL OFC MMYYYY XXXX METRE
STANDARD LENGTH	2,3,4 ± 10% KMS

Unitubo ADSS – 12F – Simple Sheath

1. FIBRE PROPERTIES:

ITU.T-G.652.D

CHARACTERISTICS	UNIT	VALUE
ATTENUATION @ 1310 nm	dB/km	≤ 0.38 Max & ≤ 0.35 Average
@ 1550 nm		≤ 0.25 Max & ≤ 0.22 Average
CHROMATIC DISPERSION 1285-1330 nm	ps/nm.km	≤ 3.5
At 1550 nm		≤ 18.0
ZERO DISPERSION WAVELENGTH	nm	1300 to 1324
ZERO DISPERSION SLOPE	ps/nm2.km	≤ 0.092
CUT OFF WAVELENGTH	nm	≤ 1320
MODE FIELD DIAMETER at 1310 nm	um	9.3 ± 0.5
CORE- CLAD CONCENTRICITY ERROR	um	≤ 0.8
CLADDING NON CIRCULARITY	%	≤ 1.0
CLADDING DIAMETER	um	125 ± 1.0
COATING DIAMETER	um	245 ± 10

2. MECHANICAL & ENVIRONMENTAL PROPERTIES

A. MAX. OPERATING TENSION -- LONG TERM	:	900 Newton
MAX INSTALLATION TENSION -- SHORT TERM	:	1800 Newton
B. CRUSH RESISTANCE	:	2000 Newton/100 mm
C. MINIMUM BENDING RADIUS---TEMPORARY	:	79 mm
PERMENANT	:	158 mm
D. MAX. OPERATING/ INSTALLATION TEMPERATURE	:	- 30 °C to + 70 °C

3. PHYSICAL & DIMENSIONS PROPERTIES

NO. OF FIBRES	12F
TYPE OF FIBRE	SM G652 D
LOOSE TUBE DIAMETER	2.8 mm Nominal
STRENGTH MEMBER	FRP & ARAMID YARN REINFORCEMENT
FRP DIAMETER (2 Nos.)	1.0 mm Nominal
COLOUR OF FIBRE	BLUE, ORANGE,GREEN, BROWN, SLATE , WHITE, RED, BLACK, YELLOW, VIOLET, PINK & AQUA
OUTER SHEATH MATERIAL	H.D.P.E.
OUTER SHEATH THICKNESS	2.0 mm NOMINAL
OUTER CABLE DIAMETER	7.9 ± 0.5 mm
CABLE WEIGHT	49 ± 5 Kg/km
PRINTING ON CABLE	AS PER CUSTOMER REQUIREMENT
STANDARD LENGTH	2,3,4 KM ± 10 %

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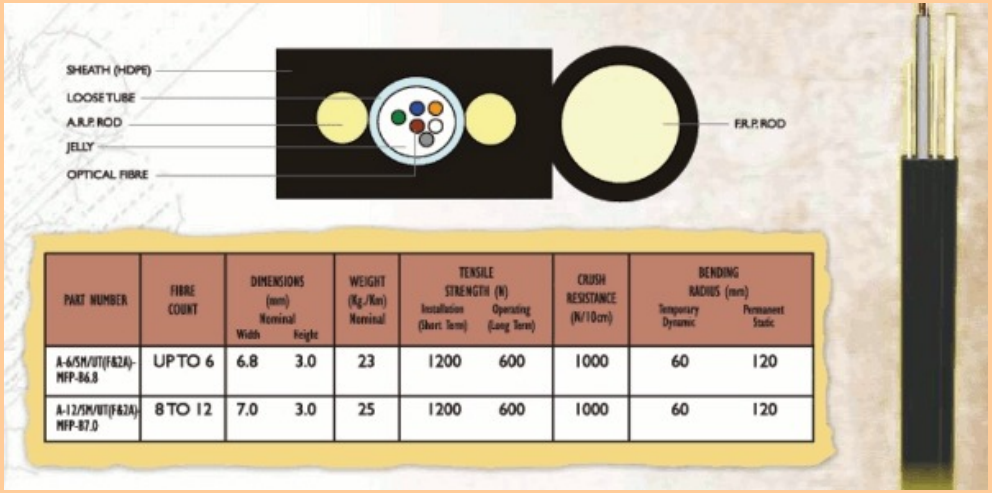
Bajada usuario Cable Drop

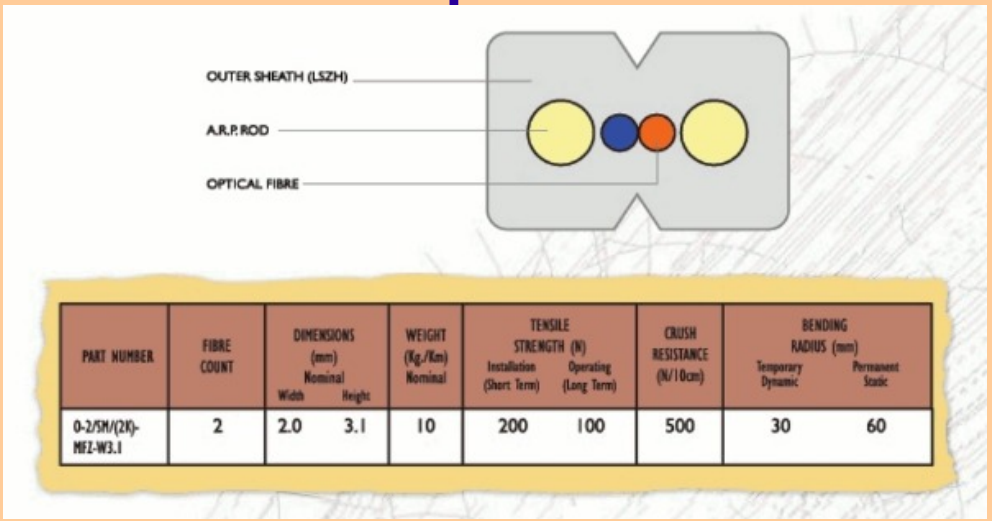
Fibra ITU.T-G.657.A

Cable Drop Autosoportado fig.8



PART NUMBER	FIBRE COUNT	DIMENSIONS (mm) Nominal Width	DIMENSIONS (mm) Nominal Height	WEIGHT (Kg./Km) Nominal	TENSILE STRENGTH (N) Installation (Short Term)	TENSILE STRENGTH (N) Operating (Long Term)	CRUSH RESISTANCE (N/10cm)	BENDING RADIUS (mm) Temporary Dynamic	BENDING RADIUS (mm) Permanent Static
A-6/SM/UT(F&2A)-MFP-B6.8	UPTO 6	6.8	3.0	23	1200	600	1000	60	120
A-12/SM/UT(F&2A)-MFP-B7.0	8 TO 12	7.0	3.0	25	1200	600	1000	60	120

Cable Drop - Interior



PART NUMBER	FIBRE COUNT	DIMENSIONS (mm) Nominal Width	DIMENSIONS (mm) Nominal Height	WEIGHT (Kg./Km) Nominal	TENSILE STRENGTH (N) Installation (Short Term)	TENSILE STRENGTH (N) Operating (Long Term)	CRUSH RESISTANCE (N/10cm)	BENDING RADIUS (mm) Temporary Dynamic	BENDING RADIUS (mm) Permanent Static
0-2/SM/(2K)-MFZ-W3.1	2	2.0	3.1	10	200	100	500	30	60

Table 4* ITU-T G.652.D attributes

Fibre attributes		
Attribute	**Detail**	**Value**
Mode field diameter	Wavelength	1310 nm
	Range of nominal values	8.6-9.5 µm
	Tolerance	±0.6 µm
Cladding diameter	Nominal	125.0 µm
	Tolerance	±1 µm
Core concentricity error	Maximum	0.6 µm
Cladding noncircularity	Maximum	1.0%
Cable cut-off wavelength	Maximum	1260 nm
Macrobend loss	Radius	30 mm
	Number of turns	100
	Maximum at 1625 nm	0.1 dB
Proof stress	Minimum	0.69 GPa
Chromatic dispersion coefficient	λ_{0min}	1300 nm
	λ_{0max}	1324 nm
	S_{0max}	0.092 ps/nm^2 × km
Cable attributes		
Attribute	**Detail**	**Value**
Attenuation coefficient (Note 1)	Maximum from 1310 nm to 1625 nm (Note 2)	0.4 dB/km
	Maximum at 1383 nm ±3 nm (Note 3)	0.4 dB/km
	Maximum at 1550 nm	0.3 dB/km
PMD coefficient (Note 4)	M	20 cables
	Q	0.01%
	Maximum PMD_Q	0.20 ps/$\sqrt{km}$

NOTE 1 – The attenuation coefficient values listed in this table should not be applied to short cables such as jumper cables, indoor cables and drop cables. For example, [IEC 60794-2-11] specifies the attenuation coefficient of indoor cable as 1.0 dB/km or less at both 1310 and 1550 nm.

NOTE 2 – This wavelength region can be extended to 1260 nm by adding 0.07 dB/km induced Rayleigh scattering loss to the attenuation value at 1310 nm. In this case, the cable cut-off wavelength should not exceed 1250 nm.

NOTE 3 – The average attenuation coefficient at this wavelength shall be less than or equal to the maximum value specified for the range of 1310 nm to 1625 nm, after hydrogen ageing. The hydrogen ageing is a type test that shall be done to a sampled fibre, according to [IEC 60793-2-50] regarding the B1.3 fibre category.

NOTE 4 – According to clause 6.2, a maximum PMD_Q value on uncabled fibre is specified in order to support the primary requirement on cable PMD_Q.

Table 7-1 – ITU-T G.657 category A attributes

Fibre attributes						
Attribute	**Detail**	**Value**				
Mode field diameter	Wavelength	1310 nm				
	Range of nominal values	8.6-9.5 µm				
	Tolerance	±0.4 µm				
Cladding diameter	Nominal	125.0 µm				
	Tolerance	±0.7 µm				
Core concentricity error	Maximum	0.5 µm				
Cladding non-circularity	Maximum	1.0%				
Cable cut-off wavelength	Maximum	1260 nm				
Uncabled fibre macrobending loss (Notes 1, 2)		**ITU-T G.657.A1**		**ITU-T G.657.A2**		
	Radius (mm)	15	10	15	10	7.5
	Number of turns	10	1	10	1	1
	Max. at 1550 nm (dB)	0.25	0.75	0.03	0.1	0.5
	Max. at 1625 nm (dB)	1.0	1.5	0.1	0.2	1.0
Proof stress	Minimum	0.69 GPa				
Chromatic dispersion coefficient	λ_{0min}	1300 nm				
	λ_{0max}	1324 nm				
	S_{0max}	0.092 ps/nm^2 × km				
Cable attributes						
Attenuation coefficient	Maximum from 1310 nm to 1625 nm (Note 3)	0.4 dB/km				
	Maximum at 1383 nm ±3 nm (Note 4)	0.4 dB/km				
	Maximum at 1550 nm	0.3 dB/km				
PMD coefficient	M	20 cables				
	Q	0.01%				
	Maximum PMD_Q	0.20 ps/$\sqrt{km}$				

NOTE 1 – ITU-T G.652 fibres deployed at a radius of 15 mm generally can have macrobending losses of several dB per 10 turns at 1625 nm.

NOTE 2 – The macrobending loss can be evaluated using a mandrel winding method (method A of [IEC 60793-1-47]), substituting the bending radius and the number of turns specified in this table.

NOTE 3 – This wavelength region can be extended to 1260 nm by adding 0.07 dB/km induced Rayleigh scattering loss to the attenuation value at 1310 nm. In this case, the cable cut-off wavelength should not exceed 1250 nm.

NOTE 4 – The sampled attenuation average at this wavelength shall be less than or equal to the maximum value specified for the range, 1310 nm to 1625 nm, after hydrogen ageing according to [b-IEC 60793-2-50] regarding the B1.3 fibre category.

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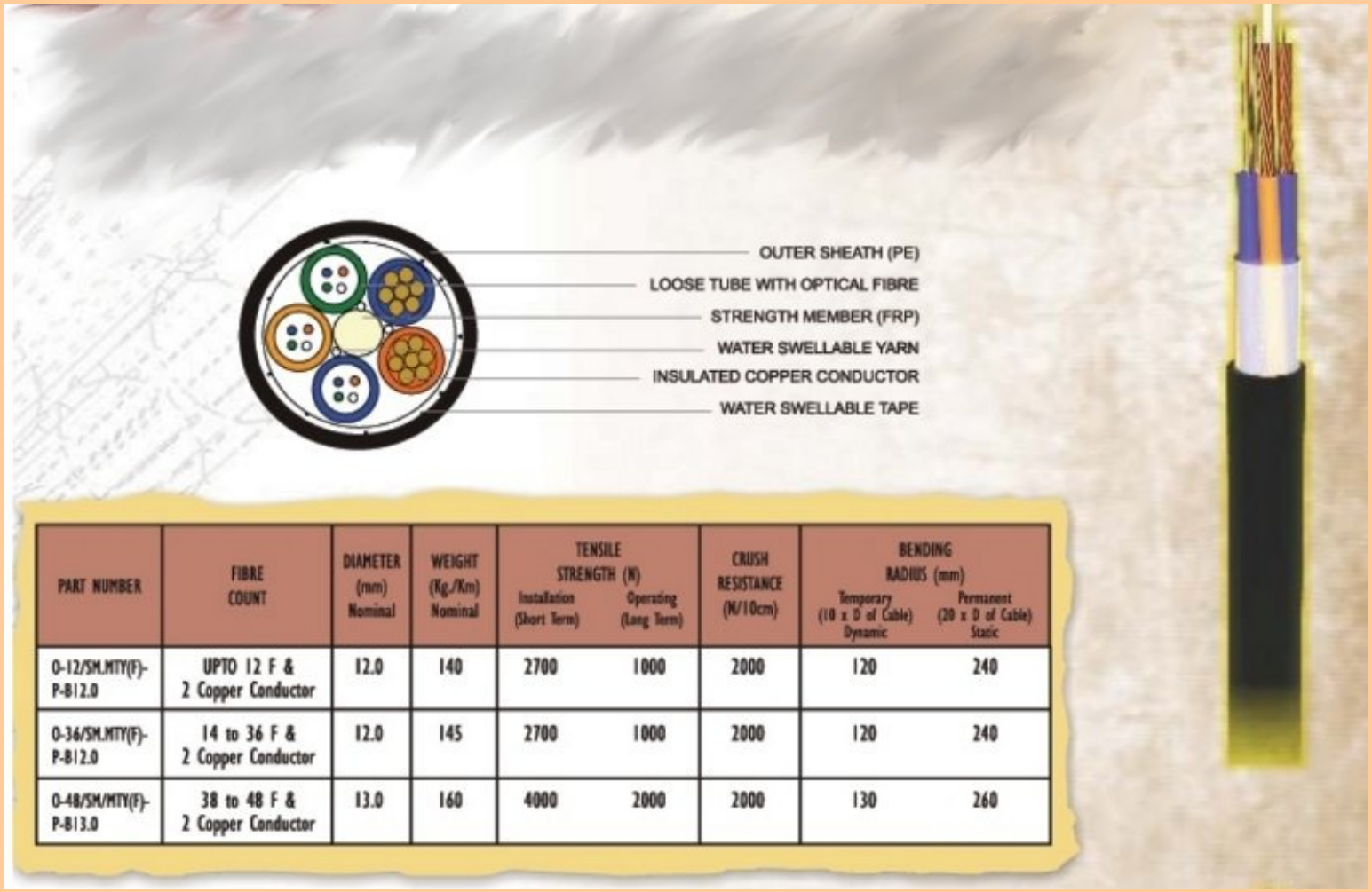
Usos Especiales

Cable Híbrido con 2 Conductores de Cobre



PART NUMBER	FIBRE COUNT	DIAMETER (mm) Nominal	WEIGHT (Kg./Km) Nominal	TENSILE STRENGTH (N) Installation (Short Term)	TENSILE STRENGTH (N) Operating (Long Term)	CRUSH RESISTANCE (N/10cm)	BENDING RADIUS (mm) Temporary (10 x D of Cable) Dynamic	BENDING RADIUS (mm) Permanent (20 x D of Cable) Static
O-12/SM.MTY(F)-P-B12.0	UPTO 12 F & 2 Copper Conductor	12.0	140	2700	1000	2000	120	240
O-36/SM.MTY(F)-P-B12.0	14 to 36 F & 2 Copper Conductor	12.0	145	2700	1000	2000	120	240
O-48/SM/MTY(F)-P-B13.0	38 to 48 F & 2 Copper Conductor	13.0	160	4000	2000	2000	130	260

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Innovación en cables de Fibra Óptica

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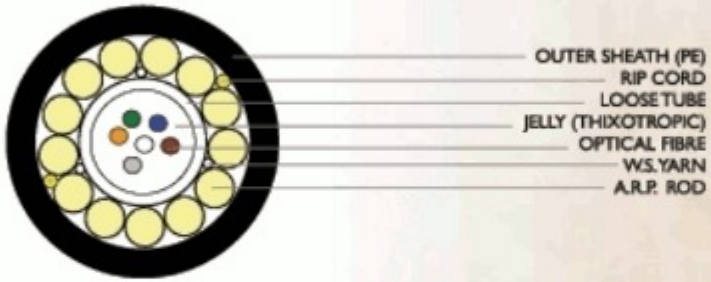
Usos Especiales

Cable para múltiples aplicaciones

Armadura con Varillas de FRP



PART NUMBER	FIBRE COUNT	DIAMETER (mm) Nominal	WEIGHT (Kg./Km) Nominal	TENSILE STRENGTH (N) Installation (Short Term)	TENSILE STRENGTH (N) Operating (Long Term)	CRUSH RESISTANCE (N/10cm)	BENDING RADIUS (mm) Temporary (10 x D of Cable) Dynamic	BENDING RADIUS (mm) Permanent (20 x D of Cable) Static
A-6/SM/UT(13K)-MFP-85.0	UPTO 6 F	5.0	20	800	400	2000	50	100

PERFIL de UNICOR S.A.

- **Integradores de Tecnologías para redes de acceso GEPON – ETHERNET Carrier Class - WDM para PyMes y Cooperativas.**
- **Soporte tecnológico respaldado por proveedores confiables.**
- **Enfoque en el Desempeño; Flexibilidad y Escalabilidad.**
- Investigación; experimentación y gestión de la innovación tecnológica desde 2005.
- Importación de componentes activos y pasivos para cada solución.
- Primer despliegue GEPON funcionando desde 2009.

- **Inspirado en el formato de Innovación Abierta**

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EL MODELO DE UNICOR

Que significa el concepto Innovación Abierta

- **Implementar la colaboración empresaria con PyMES y Cooperativas.**
- Aprovechar los recursos existentes del Cliente
- Generar una base de conocimientos re-aprovechables que facilita la creación de competencias tecnológicas en el cliente.
- Transferir conocimientos y facilitar su apropiación utilizando formas de cooperación con la educación formal (escuelas técnicas y universidades).
- Integrar los componentes de cada solución.
- Crear un entorno amigable para la interacción con los aliados estratégicos necesarios.

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Agradecemos su atención:

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