EE49N17

DIELECTRIC OPTIC FIBRE CABLE WITH RODENT PROTECTION FOR POWER SUBSTATIONS - REE


Optic fibre


Flame retardant


Fire retardant


Low smoke emission

Zero halogen


Water blocked

ROHS compliant

Dielectric


Rodent resistant

STANDARD

REE ET044 Ed.3 IEC 60794

DESCRIPCTION AND APPLICATION

Cable from 12 to 96 fibres with mechanical protection against rodents, designed to the telecommunication network of REE and to be installed in electrical stations.
Installation in trays, conduits or floor.
These cables are totally dielectric, with an inner sheath of LSZH material, rodent protection, fiber glass yarns reinforcements and an outer sheath of LSZH material.

CONSTRUCTION

- Monomode or multimode optic fibres.
- PBT loose tubes filled with thixotropic compound. Filling elements depending of the core composition. Colour coding of fibres and tubes according to tables 1 and 2.
- Central delectric element.
- Inner sheath of LSZH material.
- Fibre glass yarns as tensile strength and rodent reinforcing elements.
- Outer sheath of UV resistant LSZH material.
- ***Sheath marking*** : The cable sheath will be marked with white ink at regular intervals with the following information :
    - *CABLESCOM/Year /Cable Type/ REE / Length marking / Fibre type*
    - *Other sheath marks are available upon request.*

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Certified Company **ISO 9001** - **ISO 14001**

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OPTICAL CHARACTERISTICS MONOMODE G.652D

PARAMETER	VALUE	UNITS	TEST METHOD
Typ./Max. Individual fibre Attenuation at 1310 nm (*)	0,34 / 0,36	dB/km	UNE-EN 188000-303 IEC 60793-1-40
Typ./Max. Individual fibre Attenuation at 1383 nm (*)	0,29 / 0,33	dB/km	
Typ./Max. Individual fibre Attenuation at 1550 nm (*)	0,21 / 0,24	dB/km	
Typ./Max. Individual fibre Attenuation at 1625 nm (*)	0,22 / 0,26	dB/km	
Polarization Mode Dispersion (PMD)	≤ 0,2	ps/√km	IEC 60793-1-48
Link Design Value. (PMD_Q)	≤ 0,1	ps/√km	
Cutoff Wavelength (cabled fiber)	λ_{cc} < 1260	nm	UNE-EN 188000-313 IEC 60793-1-44

(*) This parameter is subject to change once the fiber is cabled.

OPTICAL CHARACTERISTICS MONOMODE G.655

PARAMETER	VALUE	UNITS	TEST METHOD
Typ./Max. Individual fibre Attenuation at 1310 nm (*)	0,36 / 0,42	dB/km	UNE-EN 188000-303 IEC 60793-1-40
Typ./Max. Individual fibre Attenuation at 1383 nm (*)	0,36 / 0,42	dB/km	
Typ./Max. Individual fibre Attenuation at 1550 nm (*)	0,21 / 0,25	dB/km	
Typ./Max. Individual fibre Attenuation at 1625 nm (*)	0,22 / 0,27	dB/km	
Polarization Mode Dispersion (PMD)	≤ 0,2	ps/√km	IEC 60793-1-48
Link Design Value. (PMD_Q)	≤ 0,1	ps/√km	
Cutoff Wavelength (cabled fiber)	λ_{cc} < 1260	nm	UNE-EN 188000-313 IEC 60793-1-44

(*) This parameter is subject to change once the fiber is cabled.

OPTICAL CHARACTERISTICS MULTIMODE G.651 (50/125 OM2)

PARAMETER	VALUE	UNITS	TEST METHOD
Typ./Max. Individual fibre Attenuation at 850 nm (*)	2,5 / 2,6	dB/km	UNE-EN 188000-303 IEC 60793-1-40
Typ./Max. Individual fibre Attenuation at 1300 nm (*)	0,6 / 0,7	dB/km	

(*) This parameter is subject to change once the fiber is cabled.

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DIELECTRIC OPTIC FIBRE CABLE WITH RODENT PROTECTION FOR POWER SUBSTATIONS - REE

TABLE 1: TUBE COLOUR CODE

		Number of fibre in tube									
		Fibres Monomode								Multimode	
	Nº Tube	12a	12b	24a	24b	48	42+6	96	84+12	24a	24b
1ª layer	1	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue
	2	White	White	White	White	White	White	White	White	White	White
	3	Black[f]	Red	Black[f]	Red	Red	Red	Red	Red	Black[f]	Red
	4	Black[f]	Green	Black[f]	Green	Green	Green	Green	Green	Black[f]	Green
	5	Black[f]	Black[f]	Black[f]	Black[f]	Black[f]	Black[f]	Black[f]	Black[f]	Black[f]	Black[f]
	6	Black[f]	Black[f]	Black[f]	Black[f]	Black[f]	Black[f]	Black[f]	Black[f]	Black[f]	Black[f]
	Fibres x tube	6	3	12	6	12	12	24	24	12	6
	Active Tubes	2	4	2	4	4	4	4	4	2	4
	Passive Tubes	4	2	4	2	2	2	2	2	4	2

**Note: The black tubes are fillers with no fibre inside.*

TABLE 2: FIBRE OPTIC COLOUR CODE

Fibre	1	2	3	4	5	6	7	8	9	10	11	12
Colour	Yellow	Blue	White	Grey	Brown	Orange	Black	Red	Pink	Turquoise	Green	Violet
Abrev.	Y	Bl	W	G	Br	Or	B	R	Pk	Tq	G	Vi
Fibre	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Colour	Yellow	White	Orange	Red	Pink	Turquoise	Yellow	White	Orange	Red	Pink	Turquoise
Abrev.	Y(*)	W(*)	Or(*)	R(*)	Pk(*)	Tq(*)	Y(**)	W(**)	Or(**)	R(**)	Pk(**)	Tq(**)

(*): fibres 13 ta 18 will have black rings with 50 mm between them. (**):fibres 19 to 24 will have two black rings with 50 mm between them.
G655 fibre will be always in the last tube.

MECHANICAL CHARACTERISTICS

Tensile Strength ($\Delta\varepsilon_f \leq 0{,}05\%$)	EN 187000 Mét. 501	1600 N
Crush resistance	EN 187000 Mét. 504	3000 N / 10cm
Impact resistante	EN 187000 Mét. 505	5 J, radius = 10mm
Curvature	EN 187000 Mét. 513	r = 15 x cable diameter
Temperature cycle	EN 187000 Mét. 601	-20ºC / 70ºC
Water penetration	EN 187000 Mét. 605B	$L_{Pwater} \leq 1$ m (1 hour)
Flame propagation	UNE-EN 50265-2-1	
Fire propagation	UNE-EN 50266-2-4	
Smoke density	UNE-EN 50268	Transparency > 50%
Halogen free	UNE-EN 50267-2-1	
Corrosivity	UNE-EN 50267-2-2	

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DIMENSIONS AND WEIGTHS

	Fibre									
	Monomode								Multimode	
	12a	12b	24a	24b	48	42+6	96	84+12	24a	24b
Nom Diameter(mm.)	12,9	12,9	12,9	12,9	12,9	12,9	14,0	14,0	12,9	12,9
Nom. Weigth (kg/km)	170	165	170	165	165	165	190	190	170	165

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