

## MULTITUBE FIBRE-OPTIC CABLES (FOR LONG HAUL TELEPHONE NETWORK)

### DESCRIPTION AND APPLICATION

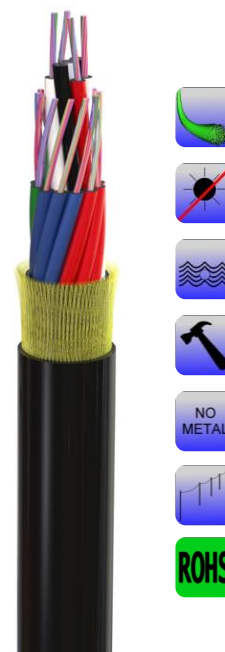
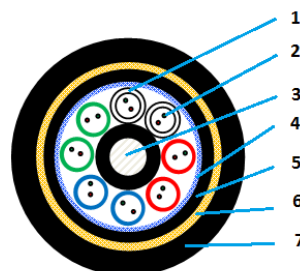
8 to 128 single-mode optical fiber attenuation cables, offering characteristics improved of PMD and networks for use in long-distance transport. These cables are totally dielectric, with PKP sheath for outside plant installation in underground ducts both as overhead lines.

### CONSTRUCTION

1. Loose Tubes: PBT loose tubes filled up to 8 optical fibres with thixotropic compound and containing single mode optical.
2. Optical fibres: single mode optical fibres according to ITU-T G.652 D.
3. Central Element: Fibre-glass reinforced plastic central element.
4. Core formation: Loose tubes stranded in SZ. Swellable yarns and tapes to avoid water penetration and make the cable waterproof.
5. Inner sheath: Polyethylene.
6. Mechanical reinforcement: Aramid yarns as traction resistant
7. Outer jacket: Black polyethylene sheath.

Sheath marking: The cables will be marked with the following information

- CABLESCOM / Year / Fibres Num / Fibre Type / Sheath Type / Length markings
- Other marks are available on request



### OPTICAL FIBRE CHARACTERISTICS

The parameters of the optical fibres used in these cables meet the ITU-T recommendation G 652D.

See our fibre product sheet for the characteristics of the fibre.

#### Optical transmission characteristics of cabled fibre:

Attenuation coefficient:

Maximum at 1310 nm: 0.34 dB/km

Maximum at 1550 nm: 0.20 dB/km

PMD link  $\leq 0.10$  ps/km<sup>1/2</sup>

PMD Q  $\leq 0.06$  ps/km<sup>1/2</sup>

Cut-off wavelength ( $\lambda_{cc}$ )  $\leq 1260$ nm

### LOOSE TUBES COLOUR CODE

# Tube	Fibres in cable				
	8	16	32	64	128
1	White	White	White	White	White
2	Red	Red	White	White	White
3	Black	Black	Red	Red	Red
4	Blue	Blue	Red	Red	Red
5	Green	Green	Blue	Blue	Blue
6	Black	Black	Blue	Blue	Blue
7			Green	Green	Green
8			Green	Green	Green
Fibres per tube	2	4	4	8	16

\* Note: The black tubes are passive elements (no fibre)

### OPTICAL FIBRES COLOUR CODE

Fibre Colour Abrev.	1	2	3	4	5	6	7	8	9	10	11	12
	Green	Red	Blue	Yellow	Grey	Violet	Brown	Orange	White	Black	Pink	Turquoise
	Gr	Rd	Bl	Ye	Gy	Vi	Br	Or	Wh	Bl	Tq	Rs
Fibre Colour Abrev.	13	14	15	16								
	White*	Yellow*	Orange*	Pink*								
	W	Ye	Or	P								

(\*): The fibres 13 to 16 are marked with black rings separated up to 50 mm apart.

All drawings, weights and dimensions details, as well as tube and fibre colours in this document are only indicative and must not be considered contractual.

### PRODUCT INFORMATION

Code	Num. Fibres	Nominal weight (kg/km)	Nominal OD (mm)
EE6102A000008RWN	8	155	14.3
EE6102A000016RWN	16	155	14.3
EE6102A000032RWN	32	155	14.3
EE6102A000064RWN	64	180	16.0
EE6102A000128RWN	128	190	16.4

Mechanical characteristics	Standard	Test conditions
Tensile strength ( $\Delta\epsilon_f=0.05\%$ , $\Delta\alpha\leq 0.05$ dB)	EN 187000 Met. 501	4200 N (8,16,24 y 48 fo) 4600 N (32 y 64 fo) 4800 N (128 fo)
Impact resistance ( $\Delta\alpha\leq 0.05$ dB)	EN 187000 Met. 505	5 J, 10 mm, 3 impact
Curvature ( $\Delta\alpha\leq 0.05$ dB)	EN 187000 Met. 513	R=15 x $\varnothing$ cable; r $\geq$ 250 mm
Temperature cycling (operation, $\Delta\alpha\leq 0.05$ dB)	EN 187000 Met. 601	-25°C / 70°C
Water penetration	EN 187000 Met. 605B	LPwater $\leq$ 1 m (14 days)
Crush resistance ( $\Delta\alpha\leq 0.05$ dB)	EN 187000 Met. 504	3000 N