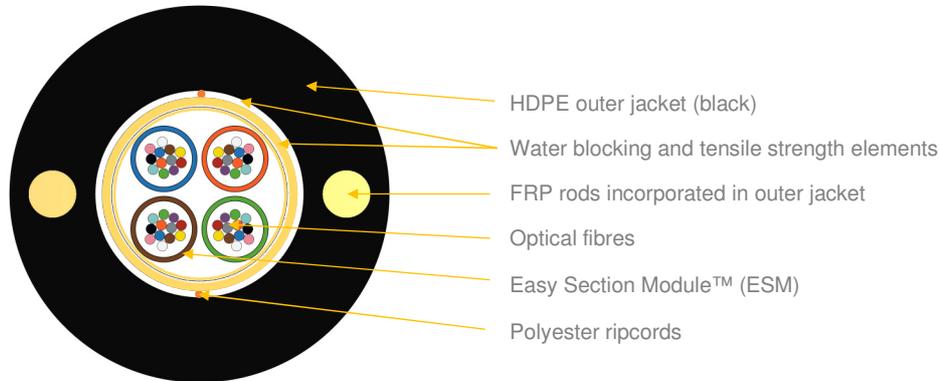


Type:	AERO-FM	REV: 1.7
Issued:	25/03/2019	PB
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Project:	5-19	RTM

Single HDPE jacket outdoor distribution aerial and duct cable with Easy Section Modules™ AERO-FM (up to 90m) (modulo 6)



*schematic drawing of 48F configuration, not to scale

APPLICATION:

Duct cable
Aerial cable
FTTH networks
Fully dielectric
For installation along power lines with an operation voltage below 150 kV and producing space potential below 4 kV.

DESIGN:

1,0mm ESM™ modules with 6 fibres in each module
Dry design, no filling compound inside ESM™
Water swellable and tensile strength (aramid) elements
FRP rods as strength and anti-buckling elements (incorporated in outer jacket)
UV resistant black HDPE sheath
Polyester ripcord

DESIGNS:

Variant	Quantity [pcs]				Ø nominal (typ. ±0,3, up to 0,5) [mm]	Nominal weight (±10%) [kg/km]	Max allowed tension [N]	Max operating tension [N]
	Fibres	Fibres per module	Total elements	Active modules				
1M x 6F	6	6	1	1	5,9	29	550	300
2M x 6F	12	6	2	2	7,2	38	800	450
4M x 6F	24	6	4	4	8,0	45	900	600
6M x 6F	36	6	6	6	8,5	48	900	600
8M x 6F	48	6	8	8	10,2	70	1300	700
12M x 6F	72	6	12	12	11,5	95	1600	950
16M x 6F	96	6	16	16	11,5	108	1800	1100
24M x 6F	144	6	24	24	13,5	127	2000	1300

Other variants, designs, mechanical and environmental properties available on demand

MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

Bending performance:	10 x D (10 cycles)	IEC 60794-1-21-E6, Δα reversible
Temperature range:		IEC 60794-1-22-F1,
Installation	-5... +40 [°C]	
Operation	-30... +60 [°C]	Δα≤0,1 dB/km
Transport & Storage	-40... +70 [°C]	Δα reversible

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SUGGESTED MAXIMUM SPAN VALUES

Suggested max span [m]	Fibre count / modulo 6							
	6	12	24	36	48	72	96	144
Ice 6,5 [mm]; wind 190 [Pa]	50	50	60	60	60	70	70	80
Wind 430 [Pa]	80	80	80	80	80	90	90	95

Test	Specification	Method	Requirements
Tensile strength	IEC60794-1-21 Method E1	Mandrel diameter: $\geq 30 \times OD$ Max load: as provided in table above	Fibre strain: < 0.6%(during test) $\leq 0.05\%$ (after test) $\Delta\alpha$ reversible (after test)
		Mandrel diameter: $\geq 30 \times OD$ Operating Load: as provided in table above	Fibre strain: $\leq 0.2\%$
Crush resistance	IEC60794-1-21 Method E3	Load: 1500 N / 10 cm / 5 minutes Plate size: 100 mm x 100mm Number of pts: 3 (500mm apart)	$\Delta\alpha \leq 0.05dB @ 1550nm$ (after test) No jacket cracking and fibre breakage
Impact resistance	IEC60794-1-21 Method E4	Impact energy: 10J Radius: 300 mm Distance: 1m No. of impacts: 3 at different points 500mm apart	$\Delta\alpha \leq 0.1dB @ 1550nm$ (after test) No jacket cracking and fibre breakage
Torsion	IEC60794-1-21 Method E7	Cable length to be twisted: 1m No. of cycles: 5 Twist angle: $\pm 180^\circ$ Load: 50N	$\Delta\alpha \leq 0.1dB @ 1550nm$ (after test) No jacket cracking and fibre breakage
Bending	IEC60794-1-21 Method E11	Mandrel radius: $10 \times OD / 5$ turns (wrapped and unwrapped) / 10 flexing cycles <i>All fibres to be monitored</i>	$\Delta\alpha \leq 0.05dB @ 1550nm$ (after test) No jacket cracking and fibre breakage
Water penetration	IEC 60794-1-22 Method F5A	Water head: 1m Sample length: 3m (3 samples of each cable) Time: 24 hrs	No water leakage

OPTICAL FIBRES AND MODULES COLOUR IDENTIFICATION

For optical fibres and modules colour identification information please see **DSH_Colors_CODE_XXXX** document.

FIBRES PARAMETERS

For selected optical fibres post-production parameters please see **DSH_OFFP** document.

MARKING

The following print (white inkjet, laser printing or other suitable method) is applied at 1-meter intervals:

- Supplier: FIBRAIN
- Standard code (product type, fibre type, fibre count)
- Year of manufacture: xxxx
- Length marking in meters
- Cable ID / Drum No

Example: FIBRAIN AERO-FM 48F SM G652D 8M6F "YEAR OF MANUFACTURE" "LASER SYMBOL" "LENGTH MARKING" "BATCH NUMBER"

The accuracy of marking is $\pm 0,5\%$. Remarking is in accordance with Bellcore GR 20 and supersedes earlier markings. Occasional loss of marking is possible. Cables can be supplied with a range of single mode or multimode fibres and customized print.

PACKING

Cables will be shipped on disposable wooden or treated wooden drums. Both ends of the cable will be capped and accessible for testing. Identification information will be placed on the drum.

DELIVERY LENGTH

2000 – 8000 meters $\pm 5\%$, with possibility of supplying up to 5% of total contract quantity as short length cables which should be above 1000 meters long. Tolerance of 5 % of order quantity shall be allowed.

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