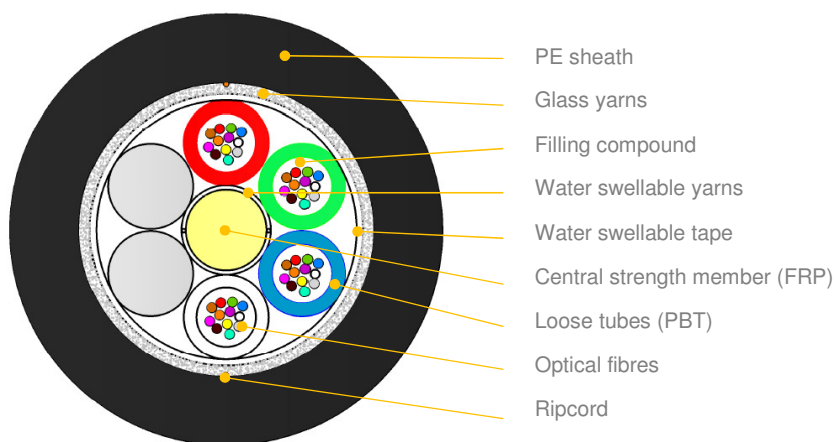


Type:	BDC5-C027B	REV: 1.3
Issued:	11/03/2020	KP
Modified:	24/06/2020	AM
Project:	029-20	

Basic duct cable with multitube structure and glass yarn reinforcement BDC5-C027B



*schematic drawing, not to scale

APPLICATION:

For installation into existing duct
Fully dielectric cable

DESIGN:

FRP strength member
Water swellable yarns and tape
Loose tube (PBT Ø 2.0mm) with filling compound
Optical fibres
Fillers (if applicable)
Fibreglass yarns as strain relief and rodent protection
UV stabilized PE sheath
Nominal sheath thickness > 1mm

CABLE DESIGNS:

Variant	Quantity [pcs]				Ø nominal (±0,2mm)	Nominal weight (±10%)	Max short term tensile load	Max long term tensile load
	Fibres	Fibres per tube	Total elements	Active tubes	[mm]	[kg/km]	[N]	[N]
1-5T x 6F	6-30	6	5	1-5	8,7	58	2700	1000
1-5T x 12F	12-60	12	5	1-5	8,7	61	2700	1000

Other designs on demand

MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

Test	Specification	Method	Requirements
Tensile strength	IEC60794-1-21 Method E1	Sustained load: 1000N	Fibre strain: ≤ 0.1%(during test) ≤ 0.05%(after test) Attenuation increment: Δα≤0.05dB @ 1550nm (after test) No significant damage to fibre unit
		Extended load: 2700N	Fibre strain: ≤ 0.35%(during test) ≤ 0.05%(after test) Attenuation increment: Δα≤0.05dB @ 1550nm (after test) No significant damage to fibre unit
Crush resistance	IEC60794-1-21 Method E3	Load: 1500 [N/10 cm], Time: 5min No. of points: 3 (distance between successive points - minimum 500mm)	Δα ≤ 0.1dB @ 1550nm (after test)
Impact resistance	IEC60794-1-21 Method E4	Impact energy: 10J Radius: 300 mm No. of impacts: 3 (distance between successive points - minimum 500mm)	Δα ≤ 0.1dB @ 1550nm (after test) No jacket cracking and fibre breakage

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Repeated Bending	IEC60794-1-21 Method E6	Radius: 20xD No. of cycles: 10 Load: 150N; Radius: 10xD No. of cycles: 10 Load: 0N	$\Delta\alpha \leq 0.05\text{dB @ } 1550\text{nm}$ (after test) No jacket cracking and fibre breakage
Torsion	IEC60794-1-21 Method E7	Cable length to be twisted: 2m No. of cycles: 5 Twist angle: $\pm 180^\circ$ Load: 100N	$\Delta\alpha \leq 0.05\text{dB @ } 1550\text{nm}$ (after test) No jacket cracking and fibre breakage
Bending	IEC60794-1-21 Method E11	Mandrel radius: 15xD mm / 5 turns	$\Delta\alpha \leq 0.05\text{dB @ } 1550\text{nm}$ (after test) No jacket cracking and fibre breakage
Water penetration	IEC 60794-1-22 Method F5	Water head: 1m Sample length: 2m Time: 24 hrs	No water leakage
Temperature cycling	IEC 60794-1-22 Method F1	1st cycle: +23°C → -30°C(Ta1) → +60°C(Tb1) → -40°C(Ta2) → +70°C(Tb2) 2nd cycle: -30°C(Ta1) → -40°C(Ta2) → +60°C(Tb1) → +70°C(Tb2) → +23°C Soak time: 8h	For T_{A2} and T_{B2} $\Delta\alpha \leq 0,1\text{dB/km}$ For T_{A1} and T_{B1} $\Delta\alpha \leq 0,05\text{dB/km}$ Test wavelength: 1550nm
		Temperature range: - Installation: -5°C — +55°C - Operation: -30°C — +60°C - Transport & Storage: -40°C — +70°C	$\Delta\alpha \leq 0.05\text{dB @ } 1550\text{nm}$

LOOSE TUBES COLOUR IDENTIFICATION

Tube 01-12	1	2	3	4	5	6	7	8	9	10	11	12
Tube colour	Red	Green	Blue	White	Violet	Orange	Gray	Yellow	Brown	Pink	Black	Aqua

OPTICAL FIBRES COLOUR IDENTIFICATION

Fibre number	1	2	3	4	5	6	7	8	9	10	11	12
Fibre colour	Red	Green	Blue	White	Violet	Orange	Gray	Yellow	Brown	Pink	Black	Aqua

FIBRES PARAMETERS

Fibre type: G.652D or G.657A1 according to ITU-T standards

Attenuation requirements for cabled fibre:

1310nm $\leq 0,34\text{ dB/km}$

1383nm $\leq 0,37\text{ dB/km}$

1550nm $\leq 0,22\text{ dB/km}$

1625nm $\leq 0,24\text{ dB/km}$

MARKING

The following print (laser printing) 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 BDC5-C027B T20 144F SM G652D 12T12F "YEAR OF MANUFACTURE" "LASER SYMBOL" "LENGTH MARKING" "BATCH NUMBER"

The accuracy of marking is $\pm 1\%$. 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. Rotation direction arrow will be marked on the drum together with identification information.

DELIVERY LENGTH

Delivery length is 4000 meters per spool. Tolerance of 5 % of nominal length shall be allowed.