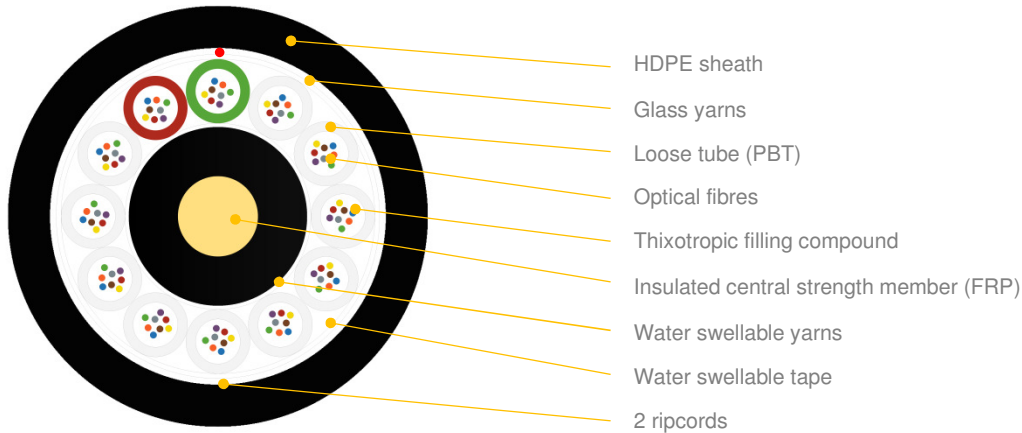


BDCVM 96F External Cable



*schematic drawing, not to scale

DESIGN:

FRP strength and anti-buckling element
 Dry yarns to prevent moisture ingress into the cable
 SZ stranded cable core
 Loose tubes (PBT Ø 2.0mm) with thixotropic filling compound and ITU-T G.652D optical fibres
 Yellow PE fillers (when applicable)
 Water-swellable tape
 Glass yarns as strain relief
 Red polyester ripcords (2)
 UV stabilized black HDPE sheath (nominal thickness 1,3mm / min 1,25mm)

Variant	Quantity [pcs]				Ø nominal (-0,4/+0,4)	Nominal weight (±10%)	Max allowed tension	Max static tension
	Fibres	Fibres per tube	Total elements	Active tubes				
	[mm]	[kg/km]	[N] / ε=0,4%	[N] / ε=0,25%				
12T x 8F	96	8	12	12	13,2	130	2700	1400

FIBRES COLOUR CODE

Fibre number	1	2	3	4	5	6	7	8
Fibre colour	Blue	Orange	Green	Brown	Grey	Yellow	Red	Violet

TUBES COLOUR CODE

First tube: Green **Other tubes:** Natural (containing G.652D)
Last tube: Red

OPTICAL FIBRES AND LOOSE TUBES COLOUR IDENTIFICATION

Fibres and tubes identification information see **DSH_Colors_CODE_XXXX** document.

FIBRES PARAMETERS

Optical fibres parameters see **DSH_OFP** document.

MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

Temperature range:

Installation: -5... +50 [°C]
 Operation: -10... +70 [°C]
 Transport & Storage: -40... +70 [°C]

Cable bending radius:

12 x cable diameter (during operation)
 20 x cable diameter (during installation)

Test	Specification	Method	Requirements
Tensile strength	IEC60794-1-21 Method E1	Mandrel diameter: ≥ 30 x OD Sustained load: 1400N / 15 min Sample Length: 100 m 1 fibres per tube to be spliced	Fibre strain: < 0.25%(during test) ≤ 0.05%(after test) Attenuation increment: Δα≤0.05dB @ 1550nm (after test) No significant damage to fibre unit
		Mandrel diameter: ≥ 30 x OD Extended load: 2700N or ε=0.4% / 15 min Sample Length: 100 m 1 fibres per tube to be spliced	Fibre strain: < 0.4%(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: 1600 N / 10 cm / 5 minutes Plate size: 100 mm x 100mm Number of pts: 3 (500mm apart) <i>All fibres to be monitored</i>	Δα ≤ 0.1dB @ 1550nm (after test) No jacket cracking and fibre breakage
Impact resistance	IEC60794-1-21 Method E4	Impact energy: 10J Radius: 300 mm Distance: 0.5m No. of impacts: 3 at different points 500mm apart <i>All fibres to be monitored</i>	Δα≤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: starting position to -180° to starting position to +180°, and back (±360° total) Load: 100N <i>All fibres to be monitored</i>	Δα≤0.1dB @ 1550nm (after test) No jacket cracking and fibre breakage
Bending	IEC60794-1-21 Method E11	Mandrel radius: 12 x OD / 5 turns (wrapped and unwrapped) / 3 flexing cycles <i>All fibres to be monitored</i>	Δα≤0.1dB @ 1550nm (after test) No jacket cracking and fibre breakage
Repeated bending	IEC60794-1-21 Method E6	Sheave Radius: 10 x OD No. of cycles: 300 Flexing speed: 15 cycles/minute Load: 100N <i>All fibres to be monitored</i>	Δα≤0.1dB @ 1550nm (after test) No jacket cracking and fibre breakage
Abrasion resistance	IEC60794-1-21 Method E2B (Method 1)	No. of cycles: 400 Load: 4N (PE sheath)	Legend shall remain legible
Water penetration	IEC 60794-1-22 Method F5A and F5B	Water head: 1m Sample length: 1m (3 samples of each cable) Time: 24 hrs	No water leakage
Tube kink	IEC 60794-1-21 Method G7	Length(L1): 350mm Moving length: 100mm/60mm Number of cycles: 5 Number of samples: 5	No tube kink
Ripcord test	IEC 60794-1-21 Method E25	Keeping the test samples 12h @ -10°C 400mm of the cable sample should be ripped through and the cable core revealed. No. of samples: 3	The rip cord shall rip through the cable sheath and not break for the entirety of the pull
Temperature cycling	IEC 60794-1-22 Method F1	Temperature steps: 1 cycle +23°C→-10°C(T _{A1})→+60°C(T _{B1})→+23°C 2 cycle (last cycle) +23°C→-10°C(T _{A1})→-40°C(T _{A2})→+60°C(T _{B1})→+70°C(T _{B2}) →+23°C Step time: 8h	For T _{A2} and T _{B2} ≤ 0,15dB/km For T _{A1} and T _{B1} ≤ 0,05dB/km Test wavelength: 1550nm

Type:	BDCVM-0108-12-PE	REV: 0
Issued:	23/11/2021	KP
Project:	079-21	

MARKING

The following print is applied at 1-meter intervals:

“MANUFACTURER’S NAME” “NUMBER OF OPTICAL FIBRES” “FIBRE TYPE” “YEAR/MONTH” “CUSTOMER” “LASER SYMBOL” “LENGTH MARKING” “BATCH NUMBER”

Example: FIBRAIN BDCVM-0108 96F SM G652D 12T8F 2015/06 PROPERTY OF VIRGIN MEDIA “LASER SYMBOL” “LENGTH MARKING” “BATCH NUMBER”

The accuracy of marking is $\pm 0,5\%$. Remarkings 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

2000 – 8000 meters +1% / -2%, 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.

This document and the statements contained in it are not intended for customers within the meaning of the Civil Code. The information submitted in this document is to our knowledge and belief true at the time of issue, however, we do not assume any liability whatsoever for its accuracy, and completeness. This document is for informational purposes on an “as is” basis only and Fibrain reserves the right to change its contents at any time without prior notice. The specification cannot, in any case, be considered an offer within the meaning of the Civil Code and is not contractually valid unless specifically authorized by Fibrain. Before using this product, its buyer and/or user has to make sure that it is suitable for the intended use. All liability issues related to this product are subjected to the seller’s separate Terms of Sale or the terms and conditions agreed with the Fibrain representative or distributor.