Flexible Rubber Sheathed Fibre Optic Cable

APPLICATION

For optical signal and data transmission in open-pit mining applications, for use on material handling equipment and for fixed installation alongside conveyor belts (including mobile conveyor belts).

DESIGN

The fibres are enclosed in buffering tube filled with an EFTE natural coloured compound type: 7YI1. The fibres and buffering tube are colour coded for identification of the fibre type. Core arrangement of the six buffering tubes is one layer, specially laid-up around a GFK supporting element (GFK = Glass fibre reinforced plastic). The core arrangement is covered by a special braid consisting of Kevlar threads in a longitudinal lay to increase tensile-strength covering approx. 80% of the surface. The orange outer sheath consists of a 5GM5 PCP compound.

FIBRE-OPTICS

The fibre elements are available in the following constructions -
50/125 Micron – Graded index fibre
62.5/125 Micron – Graded index fibre
E9/125 Micron – Mono mode fibre
The inner core diameter of the fibres: 50µm, 62.5µm or 9µm,
Diameter over cladding: 125µm. Diameter over coating: 250µm.

OPTOFLEX (M)

CHEMICAL PARAMETERS

Resistance to oil - Given to DIN VDE 0473, Part 811-2-1, Para.10, EN 60811-2-1, IEC 60811-2-1

Weather resistance - Unrestricted use indoors and outdoors, resistant to ozone, UV and moisture.

ATTENUATION DATA

Fibre Transmission data	50/125	62,5/125	E9/125 Mono mode
Attenuation at 850 nm	2.8 dB/km	3.3 dB/km	-
Attenuation at 1310 nm	0.8dB/km	0.9 dB/km	0.4 dB/km
Attenuation at 1550 nm	-	-	0.3 dB km
Bandwidth at 850 nm	>=400 MHz	>=400 MHz	-
Bandwidth at 1300 nm	>1200 MHz	>600 MHz	-
Numerical aperture	0.200 +/- 0.200	0.275 +/- 0.02	0.14 +/- 0,02
Dispersion value at 1300 nm	-	-	<3.5 ps/nm km
Dispersion value 1550 nm	-	-	<18 at ps/nm km

THERMAL PARAMETERS

	Ambient temperature
• Fully flexible operation	-30°C to +60°C
• Fixed installation	-40°C to +80°C

MECHANICAL PARAMETERS

Tensile load	Max. 2000 N
Torsional stresses	Max. 100°/m
Minimum bending radius	50mm

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APPROVALS/ STANDARDS

Based on DIN VDE 0888, MSHA-SC 189-1, FDDI, (refer also to DIN VDE 0298, Part 3). Additional mechanical tests - Tensile load test, transverse pressure test, reversed bending test, roller bending test, torsional stress test, water compatibility according to HD 22.16

Selection and ordering data

Number of Fibres & Fibre Type	Part No.	Maximum overall diameter	Bending radius for fixed installation	Fibre attenuation on at 850nm	Fibre attenuation on at 1300nm	Fibre attenuation at 1550nm	Numerical aperature	Band width at 1300nm	Approx. Net Weight for 1000m	Maximum permissible tensile force
mm		mm	mm	dBb/km	dB/km	dB/km		MHz	kg	N
Multi Mode										
6x1 G50/125	**5DG8 028**	10	50	2,8	0,8	-	0,2 +/- 0,02	>1200	100	2000
6x2 G50/125	**5DG8 030**	10	50	2,8	0,8	-	0,2 +/- 0,02	>1200	100	2000
6x3 G50/125	**5DG8 027**	10	50	2,8	0,8	-	0,2 +/- 0,02	>1200	100	2000
6x1 G62,5/125	**5DG8 021**	10	50	3,3	0,9	-	0,275 +/- 0,02	>600	100	2000
6x2 G62,5/125	**5DG8 022**	10	50	3,3	0,9	-	0,275 +/- 0,02	>600	100	2000
6x3 G62,5/125	**5DG8 024**	10	50	3,3	0,9	-	0,275 +/- 0,02	>600	100	2000
Mono Mode										
6x1 E9/125	**5DG8 031**	10	50	-	0,4	0,3	-	-	100	2000
6x2 E9/125	**5DG8 032**	10	50	-	0,4	0,3	-	-	100	2000
6x3 E9/125	**5DG8 033**	10	50	-	0,4	0,3	-	-	100	2000
6x4 E9/125	**5DG8 034**	10	50	-	0,4	0,3	-	-	100	2000