# **Fiber Optic Cable Outdoor, rodent protect**

#### **Application:**

# LAN backbones

- Telecom access lines
- CATV trunk lines

## **Key Features:**

- Water blocked acc. to IEC 60794
- Robustness
- Rodent protection •
- High tensile strength (3000 N installation capability)
- Installation: Pulled, directly buried, in cable trays and in tunnels.

### General

This specification covers GARPE 4 optical cables with 2 - 24 optical fibres. This cable has a central loose tube with up to 24 fibres, a heavy layer of glass yarns for added robustness, tensile strength and rodent protection, a 1.8 mm black MDPE sheath completes the cable construction. The cables have the following type designation according to DIN/VDE: A - D (ZN = B) 2Y n, n is 2 to 24.

# **Cable Construction**

# **OPTICAL FIBRES**

The cable can be supplied with multi mode fibres as well as SM fibre. The fibres are individually coloured for easy identification. The coding is given in "General Information: Fibre colours and colour coding": IEC60304

# **Cable Core**

The cable core consists of a central, jelly filled, green polyester tube with the fibres contained within. The tube is water blocked. The tube has an outer diameter of 2.8 mm for cables with up to 16 fibres and 3.5 mm for cables with 18-24 fibres NON METALLIC ARMOURING A 2 mm thick layer of specially treated glass fibre yarns protects the cable core. The glass yarns contributes to the general robustness of the cable. It gives the cable its high tensile strength and functions as rodent protection, effective in most cases.

#### Sheath

The cable sheath consists of a 1.8 mm thick black PE, MDPE and HDPE sheath. The black MDPE is stabilised using 2.5 % carbon black.

#### CABLE PROPERTIES

The physical properties of the cables are given in the table below.

Table : Physical prope	tie
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Property	Reference	Reference	Value
	according	according	
	to	to	
	IEC 794-1	EN 187 000	
Nominal outer diameter	-	-	11 mm
Nominal weight	-	-	2 - 16 fibers: 90 kg/km
			18 - 24 fobres: 100 kg/km
Maximum installation tensile	E1	501	3000 N (fibre strain less than 1/2 of proof test
strength			level)
Short term tensile strength	E1	501	2000 N (fibre strain less than 1/3 of proof test
Permanent tensile strength	F1	501	1000 N (no attenuation change fibre strain less
i officiation considered gain		001	than 1/4 of proof test level)
Compressive strength	E3	504	3000N
(crush)			
Impact	E4	505	25 Nm (no attenuation change, no broken cable
			elements)
Torsion	E7	508	5 cycles 1 tum
Kink	E10	511	The cables do not form a kink when a loop is
			drawn together to a diameter of 200 mm
Min. Bending radius,	E11	513	R = 100  mm
unloaded			
Min . Bending radius, loaded	-	-	R = 100 mm
Temperature range	F1	601	Storage: -40 C to +40 C (short term up to 70
			C)
			Installation: -15 C to +40 C
			Operation: -40 C to +70 C
Water penetration	F5B	605	No water on free end

Central Tube

**Glass Fibre** 

MDPE sheath

# **Applications**

Fiber Optic cable in	ntended fo	or all hight	ORT	04	SM	9	
speed data applications, including :					Τ	9 = 9/125µm	
IEEE 802.3		10Mb/s					5= 50/125μm
IEEE 802.3 10Base	e-F	10Mb/s					6= 62.5/125µm
IEEE 802.3 1000B	ase-SX/L>	< 1000Mb/s					
FDDI		100Mb/s					SM= Single Mode
ATM		155Mb/s				_	MM= Multi Mode
		622/Mb/s					
		1.2/2.4 Gb/s					04- Core Fiber Optic
Fibre Channel FC-PH 1.062 Gb/		1.062 Gb/s					
					_	_	
Standards							12= Core Fiber Optic
International	ISO/IEC	11801					24= Core Fiber Optic
European	EN 501	73					
North American ANSI/T		A/EIA-568-B3				-	ORT= Out door Cable
	Telcord	ia GR-20					(rodent protect)
	ANSI/IC	EA S-87-640					

DESCRIPTION
4 Fiber Single Mode
6 Fiber Single Mode
12 Fiber Single Mode
24 Fiber Single Mode
4 Fiber 50/125µm Multi Mode
6 Fiber 50/125µm Multi Mode
12 Fiber 50/125µm Multi Mode
24 Fiber 50/125µm Multi Mode
4 Fiber 62.5/125µm Multi Mode
6 Fiber 62.5/125µm Multi Mode
12 Fiber 62.5/125µm Multi Mode
24 Fiber 62.5/125µm Multi Mode