

STANDARDS

TSC6 Rev.2 Optical Indoor Cables
IEC 60794

DESCRIPTION AND APPLICATION

Indoor fiber optic cables, from 24 to 96 fibers. Totally dielectric LSZH sheath with peripheral fiberglass reinforcements that allow installation in conduit for pulling or blowing.

Designed for telecommunication connections in a medium-or long-distance with single-mode fiber according to ITU-T G 657A2 (EN 60793-2 - Class B 50 B6_a2).

CONSTRUCTION

- **Micromodules:** Fibers are grouped into a micro-structure (group of fibers inside of a thin-skinned tube) 12 fiber with filling compound inside and nominal diameter of 1.40 mm. The identification of the fibers and the micromodule is made by means of colors in accordance with Tables 1 and 2.
- **Core:** The micromodules are laid loosely inside the sheath in order to facilitate the micromodule extraction, 5 m.
- **Reinforcing elements:** Glass fiber reinforcement elements (FRP) embedded in the outer sheath.
- **Outer sheath:** White color LSZH compound, UV resistant. Two rip cords underneath the cable sheath, 180° opposite by the reinforcing elements.
- **Sheath marking :** The cable sheath will be marked with white ink at regular intervals with the following information

Length markers / Year(YYYY)-Batch nº / Manufacturer / CPR Code / Telenor Code / Four Letter Code

For G24 cables: XXXX / YYYY-NNNNN / CABLESCOM / CE CLASS Fca / FO/A-24/SM/B6_a2-INDOOR-D/FRLSZH/ QXAI

For G48 cables: XXXX / YYYY-NNNNN / CABLESCOM / CE CLASS Fca / FO/A-48/SM/B6_a2-INDOOR-D/FRLSZH/ QXAI

For G96 cables: XXXX / YYYY-NNNNN / CABLESCOM / CE CLASS Fca / FO/A-96/SM/B6_a2-INDOOR-D/FRLSZH/ QXAI

OPTICAL FIBER CHARACTERISTICS

The parameters of the optical fibres are compliant with the ITU-T G.657.A2 recommendation and ,IEC 60793-2-50 [2].

PARAMETER	VALUE	UNITS
Ave./Max. Individual fibre Attenuation at 1310 nm (*)	≤0.33 / ≤0.34	dB/km
Ave./Max. Individual fibre Attenuation at 1550 nm (*)	≤0.20 / ≤0.21	dB/km
Ave./Max. Individual fibre Attenuation at 1625 nm (*)	≤0.21 / ≤0.22	dB/km
Max. Chromatic Dispersion at 1550 nm (nominal/typical)	≤ 18.0 /≤ 16.7	ps/nm·km
Max. Chromatic Dispersion at 1625 nm (nominal/typical)	≤ 22.0 /≤ 21.0	ps/nm·km
Polarization Mode Dispersion (PMD) (*)	0.1	ps/Vkm
Link Design Value (PMD ₀) (Q=0.01% , N=20))	0.06	ps/Vkm
Cut-off Wavelength (cabled fibre)	λ _{cc} ≤ 1260	nm
Mode Field Diameter at 1310 nm	8.8 ± 0.4	μm
Installation and Operation Fibre bending diameter	1 Turn	Ø 32mm



TABLE 1 : OPTICAL FIBERS COLOUR CODE

Fibre number	Colour	Fibre Number	Colour
1	White	7	Brown
2	Red	8	Black
3	Yellow	9	Violet
4	Green	10	Turquoise
5	Blue	11	Orange
6	Grey	12	Pink

TABLE 2: MICROMODULE COLOUR CODE

# fibers	Structure	Micromodule nº							
		1	2	3	4	5	6	7	8
24	ISP_2TX2fo	White	Red						
48	ISP_4TX12fo	White	Red	Yellow	Green				
96	ISP_8TX12fo	White	Red	Yellow	Green	Blue	Grey	Brown	Black

MECHANICAL REQUIREMENTS

Mechanical characteristics	Standard	Test conditions
Installation Tensile strength	IEC 60794-1-21 Met.1	1.2 Kn
Operation Tensile Strength	IEC 60794-1-21 Met.1	700 N
Crush	IEC 60794-1-21 Met. E3B	750 N/250 mm
Bend	IEC 60794-1-21 Met E11A	15 x Ø
Impact resistance	IEC 60794-1-21 Met. E4	10 J
Temperature cycling	IEC 60794-1-2 F1	-40°C / 70°C
Fire propagation	IEC 60332-3-25	< 2,5 m burned
Corrosive gases	IEC 60754-2	Ph<4.3 ; <10mS/mm
Smoke density	IEC 61034-2	>60%

OTHER CHARACTERISTICS

Characteristics	Test conditions
Cable bending diameter, Installation/Operation	10xOD / 25xOD
Minimum bending diameter for Loose Tubes, Installation/Operation	30 mm
Installation temperature	-15°C/60°C
Operation Temperature	-40°C/70°C
Storage Temperature	-40°C/70°C

SIZE AND WEIGHT

Number of fibres	Cablescom Code	Number of fibres per tube	Cable Nominal diameter (mm)	Nominal weight (kg/km)
24	EE3I53H00002400N	24	9.0	90
48	EE3I53H00004800N	48	10.5	97
96	EE3I53H00009600N	96	11.8	135

All drawings, weights and dimensions details, as well as tube and fibre colours in this document are only indicative and must not be considered contractual.