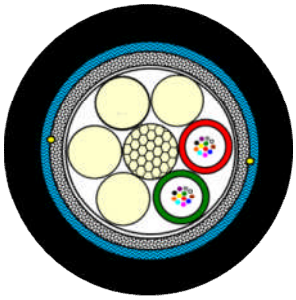
OUTDOOR DIRECT BURIED OPTICAL CABLE

Cable Design

IEC/EN 60794-3-10



-24F version illustrated, not to scale -

- **Central Strength Member (CSM):** glass fibres reinforced plastic material (GRP) oversheating when needed.
- **Loose Tubes:** thermoplastic material containing up to 12 optical fibres and filled with a suitable water tightness compound.
- **Filler Elements:** thermoplastic rods, where needed.
- **Stranding:** loose tubes, SZ stranded around the CSM.
- **Longitudinal Water Tightness:** water swellable materials (dry core).
- **Peripheral Strength Member:** glass yarns.
- **Armour**: both sides copolymer coated corrugated steel tape with overlap. Steel thickness: 0.15 mm. 2 ripcords beneath the tape.
- **Outer Sheath:** HDPE.

This optical cable is designed for outdoor direct buried installation technique.

Technical data

No. of Fibres		**6**	**12**	**18**	**24**	**30**	**36**	**8**	**16**	**24**	**32**	**40**	**48**	**12**	**24**	**36**	**48**	**60**	**72**	**96**
Number of tubes		1	2	3	4	5	6	1	2	3	4	5	6							
Number of fibers/tube		6						8						12						12
Tube diameter – ø	mm	2.2																		
Number of fillers	-	5	4	3	2	1	-	5	4	3	2	1	-	5	4	3	2	1	-	-
CSM– ø	mm	2.4																		3.0
CSM-Oversheathing – ø	mm	-																		3.8
Nominal sheath thickness	mm	1.3																		
Cable diameter - ø	mm	11.7																		13.0
Cable weight	Kg/km	140																		170

Min. bending radius	mm	Under Maximum Tension: 25 x Cable-ø		Without Tension: 20 x Cable-ø
Temperature range	°C	Transport & Storage : -40 -> +70	Installation: -5 -> +55	Operation: -40 -> +70

Main characteristics

Test	**Standard**	**Value**	**Requirement***
Max. Installation Tension	IEC 60794-1-2-E1	2.7 kN, 1 min.	$\Delta\alpha$ reversible, fibre strain$\leq$ 0.6%
Crush	IEC 60794-1-2-E3	2500N/100mm, max. 15 min.	$\Delta\alpha \leq$ 0.05 dB, no damage
Impact	IEC 60794-1-2-E4	15 Nm, 3 impacts, R=300 mm	$\Delta\alpha \leq$ 0.05 dB after the test
Repeated Bending	IEC 60794-1-2-E6	R=25xOD, 40N, 25 cycles	no damage
Cable Torsion	IEC 60794-1-2-E7	40 N, ±180°, 2 m, 3 cycles	$\Delta\alpha \leq$ 0.05 dB after the test
Cable Bend	IEC 60794-1-2-E11	R=20xOD, 4 turns, 3 cycles	$\Delta\alpha \leq$ 0.05 dB after the test
Temperature Cycling	IEC 60794-1-2-F1	-40 -> +70 °C, 2 cycles	$\Delta\alpha \leq$ 0.1 dB/Km, reversible
Water Penetration	IEC 60794-1-2-F5B	3 m sample, water column=1m	no water penetration in 24 h

All optical measurements at 1500 nm for SM fibres and 1300 nm in case of MM fibres. Acceptance criteria for MM fibres ≤ 0.2 dB for all mechanical test and ≤ 0.5 dB/km for temperature cycling, instead of 0.05 dB (SM).

Optical Characteristics

See the attached cabled optical fibre data sheet.

Identification

Fibre Colours:

No.	1	2	3	4	5	6	7	8	9	10	11	12
Color	red	green	blue	yellow	white	grey	brown	violet	aqua	black	orange	pink

Tube Colours:

Fibre Count	Elements							
	1	2	3	4	5	6	7	8
1x6, 1x8, 1x12	RDxT	NF	NF	NF	NF	NF	-	-
2x6, 2x8, 2x12	RDxT	GNxT	NF	NF	NF	NF	-	-
3x6, 3x8, 3x12	RDxT	GNxT	WHxT	NF	NF	NF	-	-
4x6, 4x8, 4x12	RDxT	GNxT	WHxT	WHxT	NF	NF	-	-
5x6, 5x8, 5x12	RDxT	GNxT	WHxT	WHxT	WHxT	NF	-	-
6x6, 6x8, 6x12	RDxT	GNxT	WHxT	WHxT	WHxT	WHxT	-	-
8x12	RDxT	GNxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT

Where: *RDxT=Red tube with x fibres, GNxT=Green tube with x fibres, WHxT=White tube with x fibres, NF = Natural Filler*

Sheath Colour:
The outer sheath colour is black.

Sheath Marking:
The outer sheath is marked in 1 meter intervals by hot print foil method as follows:

PRYSMIAN(S) yyyy OPTICAL CABLE A-DQ(ZN)B(SR)2Y m x n < fiber type> mmmm

where: yyyy= year of production, m = no. of tubes, n = no. of fibers/tube, mmmm = Sequential Length Mark

Logistic

Packing:
Wooden drums with protection.

Delivery Lengths: 2000m, 4000m, 6000m with a tolerance of -1% / + 3%
Other lengths available upon agreement.

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