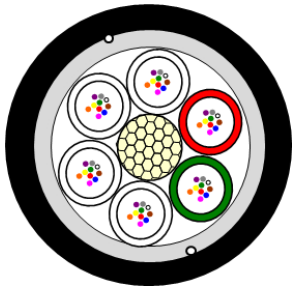
DUCT OPTICAL CABLE – A-DQ(ZN)B2Y

Cable Design

IEC/EN 60794-3-10



-72F 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 Elements:** glass yarns.
- **Outer Sheath:** HDPE, 2 ripcords beneath.

This dielectric optical cable is designed for duct installation technique.

Technical data

No. of Fibres		**4**	**8**	**12**	**16**	**20**	**24**	**6**	**12**	**18**	**24**	**30**	**36**	**48**
Design	-	1x4	2x4	3x4	4x4	5x4	6x4	1x6	2x6	3x6	4x6	5x6	6x6	8x6
Number of fillers	-	5	4	3	2	1	-	5	4	3	2	1	-	
Tube diameter - ø	mm	1.8												
CSM / Enlargement - ø	mm	1.8												2.6/3.2
Sheath thickness	mm	1.3												
Cable diameter - ø	mm	8.5												10.6
Cable weight	Kg/Km	61												86

No. of Fibres		**8**	**16**	**24**	**32**	**40**	**48**	**10**	**12**	**24**	**36**	**48**	**60**	**72**	**96**	**144**
Design	-	1x8	2x8	3x8	4x8	5x8	6x8	1x10	1x12	2x12	3x12	4x12	5x12	6x12	8x12	12x12
Number of fillers	-	5	4	3	2	1	-	5		4	3	2	1	-		
Tube diameter – ø	mm	1.8														
CSM / Enlargement - ø	mm	1.8													2.6/ 3.2	2.6/ 5.5
Sheath thickness	mm	1.3														
Cable diameter, max-ø	mm	8.5													10.6	12.7
Cable weight	Kg/Km	61													86	123

No. of Fibres		**156**	**168**	**180**	**192**	**204**	**216**	**228**	**240**	**252**	**264**	**276**	**288**
Design	-	13x12	14x12	15x12	16x12	17x12	18x12	19x12	20x12	21x12	22x12	23x12	24x12
Number of fillers	-	7	6	5	4	3	2	1	-	3	2	1	-
Tube diameter – ø	mm	1.95											
CSM / Enlargement - ø	mm	2.7/-								4.0/-			
Sheath thickness	mm	1.3											
Cable diameter, max-ø	mm	14.2								15.3			
Cable weight	Kg/Km	150								190			

Min. bending radius	mm	Under Maximum Tension: 20xCable-ø		Without Tension: 10xCable-ø
Temperature range	°C	Transport & Storage : -40 -> +70	Installation: -15 -> +60	Operation: -40 -> +70

Main characteristics

Test	Standard	Value	Requirement*
Tensile strength - Installation	IEC 60794-1-2-E1	4÷72fo 2700N 96÷288fo 3000N	Δl/l fibre ≤ 0.6%, Δα reversible
Tensile strength - Operation	IEC 60794-1-2-E1	4÷72fo 1350N 96÷288fo 1500N	Δl/l fibre ≤ 0.2%, Δα reversible
Crush	IEC 60794-1-2-E3	2000N/100mm, max. 5min	Δα ≤ 0.05 dB under test, no damage
Impact	IEC 60794-1-2-E4	10 J, 1 impacts, R=300 mm	Δα ≤ 0.05 dB after the test, no damage
Repeated Bending	IEC 60794-1-2-E6	R=20xOD, 100N, 35 cycles	Δα ≤ 0.05 dB after the test, no damage
Cable Torsion	IEC 60794-1-2-E7	±180°, 2 m, 5 cycles	Δα ≤ 0.05 dB after the test, no damage
Cable Bend	IEC 60794-1-2-E11	R=10xOD, 3 cycles, 5 turns	Δα ≤ 0.05 dB after the test, no damage
Temperature Cycling	IEC 60794-1-2-F1	-40 -> +70 °C, 2 cycles,	Δα ≤ 0.10 dB/Km, reversible
Water Penetration	IEC 60794-1-2-F5B	3 m sample, 24 h	No water penetration

** values for single-mode fibres, all optical measurements performed at 1550 nm*

Optical Characteristics

See the attached cabled optical fibre data sheet.

Identification

Fibre Colors:

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 Colors:

Fiber Count		Elements														
No. of tubes x no. of fibres per tube		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 x 4, 1 x 6, 1 x 8, 1 x 12, 1x10		RDxT	NF	NF	NF	NF	NF	-	-	-	-	-	-	-	-	-
2 x 4, 2 x 6, 2 x 8, 2 x 12		RDxT	GRxT	NF	NF	NF	NF	-	-	-	-	-	-	-	-	-
3 x 4, 3 x 6, 3 x 8, 3 x 12		RDxT	GRxT	WHxT	NF	NF	NF	-	-	-	-	-	-	-	-	-
4 x 4, 4 x 6, 4 x 8, 4 x 12		RDxT	GRxT	WHxT	WHxT	NF	NF	-	-	-	-	-	-	-	-	-
5 x 4, 5 x 6, 5 x 8, 5 x 12		RDxT	GRxT	WHxT	WHxT	WHxT	NF	-	-	-	-	-	-	-	-	-
6 x 4, 6 x 6, 6 x 8, 6 x 12		RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-	-	-	-
8 x 6, 8 x 12		RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-	-
10 x 12		RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	NF	NF	-	-	-
12 x 12		RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT			
13 x 12	1 st layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-	-	-
	2 nd layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	NF	NF	NF	NF	NF	NF	NF	-	-
14 x 12	1 st layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-	-	-
	2 nd layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	NF	NF	NF	NF	NF	NF	-	-
15 x 12	1 st layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-	-	-
	2 nd layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	NF	NF	NF	NF	NF	-	-
16 x 12	1 st layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-	-	-
	2 nd layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	NF	NF	NF	NF	-	-
17 x 12	1 st layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-	-	-
	2 nd layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	NF	NF	NF	-	-
18 x 12	1 st layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-	-	-
	2 nd layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	NF	NF	-	-
19 x 12	1 st layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-	-	-
	2 nd layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	NF	-	-
20 x 12	1 st layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-	-	-
	2 nd layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-
21 x 12	1 st layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-
	2 nd layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	NF	NF	NF
22 x 12	1 st layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-
	2 nd layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	NF	NF
23 x 12	1 st layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-
	2 nd layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	NF
24 x 12	1 st layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	-	-	-	-	-	-
	2 nd layer	RDxT	GRxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT	WHxT

Where: *RDxT=Red tube with x fibres, GRxT=Green tube with x fibres, WHxT=WHITE tube with x fibres, NF = Natural Filler.*
Note: *in case of Hybrid cable, the NZD fiber will be placed starting with first tube (the red one).*

Sheath Color:
The outer sheath color is black.

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

PRYSMIAN(S)	wwyyyy	A-DQ(ZN)B2Y	m x n	< fibre type>	mmmm

where: wwyyyy= week/year, m = no. of tubes, n = no. of fibres, mmmm = Sequential Length Mark
<fibre type> = i.e. G.652D, G.655C, G.657A2, etc.

Logistic

Packing:
Wooden drums with protection.

Delivery Lengths: 2000 ± 100 m; 4000 ± 200 m.
Other lengths available upon agreement, up to a maximum of 10% of the total number of cable lengths could be shorter than nominal values.