DNV·GL

Certificate No:
TAE00002N7

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Data transmission cables and systems

with type designation(s)
AICI, AIOI, AIAI

Issued to
NEK Kabel AS
LØRENSKOG, Norway

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Fiber optic cable.
Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2018-02-06**
This Certificate is valid until **2022-12-31**.
DNV GL local station: **Oslo Maritime and CAP**

Approval Engineer: **Ivar Bull**

for **DNV GL**

Andreas Kristoffersen
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Job Id: **262.1-019331-7**
Certificate No: **TAE00002N7**

Name & place of manufacturer

Tecnikabel S.p.a.
Via Rivera, 100-
10040 Almese (To)
Italy

Product description

NEK606 Type F104 AICI (steel wire braid)
AIOI (Tinned copper wire braid)
AIAI (Strength member of yarn)

Braid may also be made of Bronze Wire.

Optical fibres

TYPE OF FIBRES			Single Mode 9/125	Multimode 50/125	Multimode 50/125	Multimode 62.5/125
IEC 60793-2-50 Cat:			B.1.3	A.1a	A1a.2	A.1b
IEC 11801 Class			OS1 and OS2	OM2	OM3	OM1
ITU-T type			G.652D	G.651	G.651	G.651
Mode Field Diameter (MFD)	at 1310 nm	µm	9.2 ± 0.4	–	–	–
	at 1550 nm	µm	10.3 ± 0.5	–	–	–
Core Diameter		µm	See mode field diameter	50 ± 2.5	50 ± 2.5	62.5 ± 2.5
Cladding Diameter, loose tube		µm	125.0 ± 0,7	125.0 ± 2.0	125.0 ± 2.0	125.0 ± 2.0
Cladding Diameter, tight buffer		µm	125.0 ± 0,7	125.0 ± 2.0	125.0 ± 2.0	125.0 ± 2.0
Primary Coating Diameter		µm	242 ± 2.0	250	250	250
Numerical Aperture			0.14	0.275 ± 0.015	0.275 ± 0.015	
Attenuation	at 850 nm	dB/km (max)	–	≤ 3.5	≤ 2.8	≤ 3.5
	at 1300 nm	dB/km (max)	–	≤ 1.0	≤ 1.0	≤ 1.0
	at 1310 nm	dB/km (max)	≤ 0.40	–	–	–
	at 1550 nm	dB/km (max)	≤ 0.22	–	–	–
	at 1625 nm	dB/km (max)	–	–	–	–
Bandwidth	at 850 nm	MHz x km	–	160 to > 300	400 to > 1000	160 to > 300
	at 1300 nm	MHz x km	–	500 to > 1000	400 to > 1500	500 to > 1000
Chromatic Dispersion	at 1285 ÷ 1330 nm	ps/nm x km	≤ 3.0 x km	–	–	–
	at 1550 nm	ps/nm x km	≤ 18 x km	–	–	–
	at 1530 ÷ 1565 nm	ps/nm x km	–	–	–	–
	at 1565 ÷ 1625 nm	ps/nm x km	–	–	–	–

Crush acc IEC 60794-1-2 E3:	2000 (N/10cm)
Impact acc IEC 60794-1-2 E4:	1 impacts 25J
Torsion acc IEC 60794-1-2 E7:	±1 turns/1m
Minimum bending radius of cable(Static) :	15 x outer diameter
Cable bend acc IEC 60794-1-2 E11:	<0,5dB/±5 turn
Flexibility IEC60794-1-2E8:	1000 cycles
Water tightness acc IEC 60794-1-2 F5B:	<3m/24 hours. Not to be continously submerged in water.

Application/Limitation

The requirements of SOLAS Amendments Chapter II-1, Part D, Reg. 45, 5.2 (provision to be taken to limit Fire Propagation along Bunches of Cables or Wires) are fulfilled without any additional measures.

Temperature window	
Operation:	-40°C to +70°C
Installation:	-10°C to +70°C

Type Approval documentation

Tests carried out

Tested according to IEC 60794-1/-2, IEC 60332-3-22, IEC 60332-3-24, IEC 60754-1/2, IEC 61034-1/2.

Marking of product

NEK KABEL - AICI or AIOI or AIAI - FIBER OPTIC CABLE [Fibre type and No of fibres] –– IEC 60332-3-24 - Lot No + meter marking [A]

[A] = Almese plant

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine tests (RT) and selected type tests (ref. to applicable class programs) checked (if not available these tests shall be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE