



TYPE APPROVAL CERTIFICATE

Certificate No:
TAE00002Y8
Revision No:
1

This is to certify:

That the **Data transmission cables and systems**

with type designation(s)

**Coaxial cable Type RG 6 Marin SHF1 , SHF2 or SHF2 MUD,
Coaxial cable Type RG 11 Marin SHF1, SHF2 or SHF2 MUD,
Coaxial cable Type RG 59 Marin SHF1 , SHF2 or SHF2 MUD,
Coaxial cable Type RG 59 Flex Marin SHF1 , SHF2 or SHF2 MUD**

Issued to

NEK Kabel AS
LØRENSKOG, Norway

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Coaxial cable 75 Ohm. Armoured or unarmoured.

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2023-07-03**

This Certificate is valid until **2028-06-30**.

for **DNV**

DNV local unit: **Oslo Maritime and CAP**

Approval Engineer: **Ivar Bull**

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Frederik Tore Elter
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Coaxial cable Type RG 6 Marin SHF1 , SHF2 or SHF2 MUD
 Coaxial cable Type RG 11 Marin SHF1, SHF2 or SHF2 MUD
 Coaxial cable Type RG 59 Marin SHF1 , SHF2 or SHF2 MUD
 Coaxial cable Type RG 59 Flex Marin SHF1, SHF2 or SHF2 MUD

Type RG 6 Marin Armoured MIL-C-17F standard

Construction	
Inner Conductor	Copper weld 0,72+0,025mm
Insulation	Low density polyethylene
Shield	Aluminium + Polyester + Aluminium tape 100%
1st outer conductor	Silvered copper braid 96%
2 nd outer conductor	Plain copper braid 96%
Inner sheath	SHF1
Armour (optional)	Braid made of Galvanized Steel Wire, Tinned Copper Wire or Bronze Wire
2 nd sheath	SHF1, SHF2 or SHF2 MUD

Type RG 11 Marin Armour MIL-C-17F std. Type RG11 MUD Navy

Construction		
Inner Conductor	Tinned copper conductor 7x0,40mm	Plain Cu 1,65
Insulation	Low density polyethylene	Low density polyethylene
Shield	Aluminium + Polyester + Aluminium tape	Aluminium + Polyester + Aluminium tape
1st outer conductor	Plain copper braid 96%	Tinned copper wire braid 91%
Inner sheath	Halogen free thermoplastic SHF1	SHF2 MUD
Armour (optional)	Braid made of Galvanized Steel Wire, Tinned Copper Wire or Bronze Wire	
2 nd sheath	SHF1, SHF2 or SHF2 MUD	

Type RG 59 Marin MIL-C-17F Standard Type RG 59 Flex Marin MIL-C-17F standard

Construction		
Inner Conductor	Copper weld 0,58 mm	Plain copper 7 x 0,20mm
Insulation	Low density polyethylene	Low density polyethylene
Shield	Aluminium + Polyester + Aluminium tape	Aluminium + polyester + Aluminium tape
1st outer conductor		
2 nd outer conductor	Plain copper braid 93%	Plain copper braid 91%
Inner sheath	SHF1	Halogen free thermoplastic SHF1
Armour (optional)	Braid made of Galvanized Steel Wire, Tinned Copper Wire or Bronze Wire	Braid made of Galvanized Steel Wire, Tinned Copper Wire or Bronze Wire
2 nd sheath	SHF1 , SHF2 or SHF2 MUD	SHF1 , SHF2 or SHF2 MUD

For electrical data and transmission properties, please refer to relevant datasheets.

Manufactured by:

DNV Id. 10310952
 SHF2 or SHF2 MUD applied by DNV Id. 10024443.

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.

Type Approval documentation

Tests carried out

Standard	Release	General description	Limitation
IEC 60096-0-1 Ed 3	2012	Radio frequency cables Part 0-1: Guide to the design of detail specifications Coaxial cables	

Standard	Release	General description	Limitation
IEC 60092-360	2014-04	Electrical installations in ships - Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables.	
IEC 60332-3-22	2009-02	Tests on electric and optical fibre cables under fire conditions – Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category A	Bunch test Category A
IEC 60332-3-24	2009-02	Tests on electric and optical fibre cables under fire conditions – Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category C	Bunch test Category C
IEC 60754-2	2011-11	Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity	Halogen free: pH > 4,3 Conductivity < 10µS/mm
IEC 61034-1/2	2013-07 2013-09	Measurement of smoke density of cables burning under defined conditions – Test apparatus, procedure and requirements	Low smoke Light transmittance >60%
NEK TS606 Ed6	2022-03	Cables for offshore installations - halogen-free low smoke flame-retardant / fire-resistant (HFFR-LS). Technical specification.	Mud resistance test: IRM903 100°C 7d. Calcium Bromide 70°C 56d. EDC 95/11 70°C 56d
EN ISO 4892-2	2013-06	Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps (ISO 4892-2:2013)	720h. Max decay 30% in tensile strength and elongation@break

Marking of product

NEK kabel –RG 6 AU Marine SHF1, SHF2 or SHF2 MUD ARMoured – DNV – IEC 60332-3-22/24 – <batch no.> - <meter marking>

NEK kabel –RG11 AU Marine SHF1, SHF2 or SHF2 MUD ARMoured – DNV– IEC 60332-3-22/24 – <batch no.> – <meter marking>

NEK kabel – RG59 BU Marine SHF1, SHF2 or SHF2 MUD ARMoured – DNV – IEC 60332-3-22/24 – <batch no.> – <meter marking>

NEK kabel – RG59 Flex Marine SHF1, SHF2 or SHF2 MUD ARMoured – DNV – IEC 60332-3-22/24 – <batch no.> – <meter marking>

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