

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Data transmission cables and systems**

with type designation(s)

**Coaxial cable RF400 - 50 Ohm,
Coaxial cable RF600 - 50 Ohm,
Coaxial cable RF600 - 75 Ohm,
Coaxial cable RF900 - 50 Ohm**

Issued to

Tecnikabel Asia Pte Ltd

,

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Coaxial cables 50 Ohm and 75 Ohm. SHF1****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2019-01-02**This Certificate is valid until **2024-01-01**.DNV GL local station: **Singapore**for **DNV GL**Approval Engineer: **Ivar Bull****Marta Alonso Pontes**
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.



Product description

Coaxial cable RF400 - 50 Ohm,
Coaxial cable RF600 - 50 Ohm,
Coaxial cable RF600 - 75 Ohm,
Coaxial cable RF900 - 50 Ohm

C Coaxial cable RF400 - 50 Ohm, SHF1

Construction	
Inner Conductor	Solid Copper Clad Aluminum (CCA)
Insulation	Foam PE
Shield	-
Outer conductor	Bonded Aluminium foil
Inner Sheath	-
Overall braid	Tinned Copper Wire Braid
Outer sheath	SHF1

Coaxial cable RF600 - 50 Ohm, SHF1

Construction	
Inner Conductor	Solid Copper Clad Aluminum (CCA)
Insulation	Foam PE
Shield	-
Outer conductor	Bonded Aluminium foil
Inner Sheath	-
Overall braid	Tinned Copper Wire Braid
Outer sheath	SHF1

Coaxial cable RF600 - 75 Ohm, SHF1

Construction	
Inner Conductor	Solid Bare Copper Clad Aluminum (BCCA)
Insulation	Foam PE
Shield	-
Outer conductor	Bonded Aluminium tape
Inner Sheath	-
Overall braid	Tinned Copper Wire Braid
Outer sheath	SHF1

Coaxial cable RF900 - 50 Ohm, SHF1

Construction	
Inner Conductor	Bare Copper tube
Insulation	Foam PE
Shield	-
Outer conductor	Aluminium tape
Inner Sheath	-
Overall braid	Tinned Copper Wire Braid
Outer sheath	SHF1

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

Manufactured by

DNV GL id: 10625356

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	Applicable for cable design and electrical performance test requirements.
IEC 61196-1-108	2011-11	Coaxial communication cables - Part 1-108: Electrical test methods - Test for characteristic impedance, phase and group delay, electrical length and propagation velocity	Electrical test methods
IEC 61196-1-112	2006-03	Coaxial communication cables - Part 1-112: Electrical test methods - Test for return loss (uniformity of impedance)	Electrical test methods
IEC 61196-1-113	2018-01	Coaxial communication cables - Part 1-113: Electrical test methods - Test for attenuation constant	Electrical test methods
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.	Applicable for SHF1 sheath
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 60754-1	2011-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	Low Halogen: <0,5% Halogen
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

Marking of product

Tecnikabel Asia – RF400 or RF600 or RF600-75 or RF900 - DNV GL –<batch no.> - IEC 60332-3-22
– <meter marking>

Job Id: **262.1-030223-1**
Certificate No: **TAE00003A7**

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