

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Power Cable**

with type designation(s)
RTFRO

Issued to

Habia Cable AB
SÖDERFORS, Sweden

is found to comply with

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

Application :

Use of this special cable is to be considered in each case.

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

Rated voltage (kV) 0,3/0,5

Temp. class (°C) 95

Issued at **Høvik** on **2019-08-22**

This Certificate is valid until **2023-12-31**.

DNV GL local station: **Sweden CMC**

for **DNV GL**

Approval Engineer: **Ivar Bull**

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Trond Sjøvåg
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.



Job Id: **262.1-004622-4**
Certificate No: **TAE00003GE**

Product description

Type: RTFRO 300/500 V

Conductor: Tinned, stranded copper
Core insulation: Ethylenetetrafluorethylene (ETFE)
Metallic cover: Braid of tinned annealed copper wires.
Outer sheath: Ethylenetetrafluorethylene (ETFE)

No of Elements:	Cross sectional area [mm ²]
3, 4, 8, 9, 12 single cores	0,5 mm ²
3, 5, 15, 20 pairs	0,5 mm ²
4, 13, 15, 20 triples	0,5 mm ²
2, 3, 4, 5, 7, 8, 12, 14, 19, 20, 25, 27, 40, 50 single cores	0,75 mm ²
2, 4, 7, 8, 12, 15 pairs	0,75 mm ²
4, 15, 20 triples	0,75 mm ²
2, 3, 4 single cores	1,0 mm ²
2, 3, 4, 5, 7, 10, 12 single cores	1,5 mm ²

Application/Limitation

The requirements of SOLAS Amendments 1981 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

Flame retardance test IEC 60332-3. Cat C.
Kockums PM 3553.

Marking of product

Habia Cable AB- RTFRO - size - 300/500V - IEC 60332-3-24 - Lot no.

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