

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Power Cable**with type designation(s)
FMGCG

Issued to

Untel Kablolari San. ve Tic. A.S.
Dilovasi, Turkey

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Rated voltage (kV) 150/250**
Temp. class (°C) 90Issued at **Hamburg** on **2017-11-07**for **DNV GL**This Certificate is valid until **2022-11-06**.DNV GL local station: **Istanbul**Approval Engineer: **Carsten Hunsalz**

Oliver Darley
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

HEPR insulated, copper wire braided and CR sheathed shipboard control and instrumentation cable

Type: FMGCG

Rated voltage: 150/250 V
Maximum operating conductor temperature: 90° C
Conductor: Stranded copper conductor
Insulation: HEPR
Armour / screen: Copper wire braiding
Outer sheath: CR (SE1)

Number of cores: Cross-sectional area:
1 x 2 to 24 x 2 0,75 mm²

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.

Control and instrumentation.

Type Approval documentation

Test Report: Üntel Kabloari 00/02/302/1 dated 05.06.2000
Üntel Kabloari dated 23.08.2017

Tests carried out

| Standard | Release | General description | Limitation |
|----------------|---------|--|---|
| IEC 60092-350 | 2014-08 | General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications | |
| IEC 60092-376 | 2017-05 | Cables for control and instrumentation circuits 150/250 V (300 V) | |
| 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 60332-1-2 | 2015-07 | Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame | |
| 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 | Charred portion of sample does not exceed 2,5m above bottom edge of burner. |

Job Id: **262.1-026755-1**
Certificate No: **TAE00002BF**

Marking of product

Untel Kablolari San. ve Tic. A.S. - FMGCG – Size - 150/250 kV - IEC 60332 Cat. A

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) checked (if not available tests according to RT to 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