DNV·GL

Certificate No:
TAE00001GH

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Low Voltage Cable

with type designation(s)
RU(C)[S106], RU(I)[S105], RU(I/C)

Issued to
Kukdong Electric Wire Co., Ltd.
Jincheon-gun Chungcheongbuk-do, Korea

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft
IEC 60092-376 (2017-05)

Application :

Instrumentation and communication. Flame retardant Cat.A. Halogen free. Low smoke. Mud resistant. Cold bending (-40°C) Cold impact (-35°C)

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.
Rated voltage (V) 250
Temp. class (°C) 90

Issued at **Busan** on **2018-03-08**
This Certificate is valid until **2023-03-07**.
DNV GL local station: **Seoul**

Approval Engineer: **Eun Jin Lee**

for **DNV GL**

Michael Jost Auf der Stroth
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: **262.1-022966-1**
Certificate No: **TAE00001GH**

Product description

Type : RU(C)[S106], RU(I)[S105], RU(I/C)

Conductors: Tinned stranded copper
Insulation: EPR
Individual screen: Cu/PS tape with drain wire('(I)' type)
Collective screen: Cu/PS tape with drain wire('(C)' type)
Outer sheath: SHF2

Number of cores	Conductor cross-section (mm^2)
1~37 Pair	0.75, 1.0, 1.5, 2.5
1~20 Triad	0.75, 1.0, 1.5, 2.5

Application/Limitation

The requirements of SOLAS Chapter II-1 Part D Reg. 45.5.2 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 60092-376	2017-05	Cables for control and instrumentation circuits 150/250V(300V)	
IEC 60092-360	2014-04	Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation, telecommunication cables	
IEC 60332-1	2015-07	Test for vertical flame propagation for a single insulated wire or cable	
IEC 60332-3-22	2009-02	Flame retardance in bunch	Cat. A
IEC 60684-2	2011-08	Flexible insulating sleeving – Part 2: Methods of test.	Fluorine content <0.1%
IEC 60754-1/2	2011-11	Determination of the amount of halogen acid gas/ Determination of degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH and conductivity	Low Halogen <0,5% Halogen free ≥4,3pH, ≤10μS/mm
IEC 61034-1/-2	2005-04	Measurement of smoke density of cables during under conditions	Low smoke >60%
NEK 606	2016	Cables for offshore installations – Technical specification	Oil & Mud resistant – Category a/b/c/d
CSA C22.2 No. 03	2009	5.11 Flexibility at any specified temperature	Cold bend(-40°C)
CSA C22.2 No. 03	2009	5.12 Abnormal low temperature – impact	Cold impact(-35°C)
UL1581	2015	UV resistance	

Marking of product

250V – Type designation – Size – IEC 60332 Cat. A - KUKDONG – Year of manufacture - Length

Periodical assessment

The scope of the retention/renewal survey is to verify that the conditions stipulated for the Type Approval Certificate are complied with and that no alterations are made to the design and/or the material of product.

The main elements of the survey are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Check of results from Production Sample Tests (PST) and Routine tests (RT) (if not available, PST and RT are to be carried out)
- Review of type approval documentation
- Review of possible changes in design, material 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