

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Power Cable**with type designation(s)
ECY-SEC(FLEX)

Issued to

Kukdong Electric Wire Co., Ltd.
Jincheon-gun, Chungcheongbuk-do, Republic of Korea

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft
IEC 60092-353 (2016-09)**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Rated voltage (kV) 0.6/1****Temp. class (°C) 90**Issued at **Busan** on **2018-12-13**This Certificate is valid until **2023-12-12**.for **DNV GL**DNV GL local station: **Seoul**Approval Engineer: **Eun Jin Lee**

Andreas Kristoffersen
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: **262.1-028702-1**
Certificate No: **TAE000038Z**

Product description

Type : 0.6/1kV ECY-SEC(FLEX)

Conductor: Stranded tinned annealed copper, Class 5
Fire proof layer: Mica/glass tape
Insulation: HEPR
Inner covering: High modulus PVC
Amour: Glvanized steel wire braid
Outer sheath: Polyvinyl chloride compound, ST2

Number of cores x conductor cross- section
mm ²
3 x 50
3 x 70
3 x 95
3 x 120
3 x 150
3 x 185

Application/Limitation

This cable is fire resistant according to IEC 60331.

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 60092-353	2016-09	Power cables for rated voltages 1kV and 3kV	
IEC 60092-360	2014-04	Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation, telecommunication cables	
IEC 60331-21	1999-04	Fire with shock-Electric cables under fire conditions-Circuit integrity	@750°C (90min)
IEC 60331-1	2009-05	Fire with shock-Electric cables under fire conditions	@830°C(120min) with shock
IEC 60332-3-22	2009-02	Test for vertical flame spread of vertically mounted bunched wires or cables	Cat. A
IEC 60811-505	2012-03	Elongation at low temperature for insulations and sheaths	@ -30°C
IEC 60811-506	2012-03	Impact test at low temperature for insulations and sheaths	@ -30°C

Marking of product

0.6/1 kV – ECY-SEC(FLEX) - Size – KUKDONG – IEC 60331(120) - IEC 60332-3 A - Year - Length

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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