DNV·GL

Certificate No:
**TAE00000HV**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Low Voltage Cable**

with type designation(s)
**CHJ86/NSC & CHJ86/NSC-I 250 V**

Issued to
**Jiangsu Hengtong Wire & Cable Technology Co., Ltd**
**Suzhou, China**

is found to comply with
**DNV GL rules for classification – Ships and offshore units**

## Application :

**Control & Instrumentation**

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

**Voltage class (V)** **250**
**Temp. class (°C)** **90**

This Certificate is valid until **2020-10-13**.

Issued at **Høvik** on **2015-10-14**

for **DNV GL**

DNV GL local station: **Shanghai**

Approval Engineer: **Georgy Abramenko**

**Marit Laumann**
**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.


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Job Id: **262.1-009480-2**
Certificate No: **TAE00000HV**

## Product description

Type: CHJ86/NSC & CHJ86/NSC-I 250 V

Construction:

| | |
|---|---|
| Conductors: | Tinned or plain, stranded copper class 2 |
| Core insulation: | Mica tape + XLPE |
| Individual screen (-I types) | Alu/Polyester tape with copper drain wire |
| Inner covering: | PET tape |
| Screen: | Tinned copper wire braid |
| Outer sheath: | SHF1 |

| Number of cores | Cross sectional area | |
|---|---|---|
| | Pairs | triads |
| 1 2 4 7 10 14 19 24 30 37 | 0,75 1,0 1,5 2,5 | 0,75 1,0 1,5 2,5 |

## Application/Limitation

This type of cable is fire resistant in accordance with IEC Publication 60331.

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 60092-350 | 2014-08 | General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications | |
| 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 60092-376 | 2003-05 | Cables for control and instrumentation circuits 150/250 V (300 V) | |
| IEC 60331-1/2 | 2009-05 | Fire resistance / Circuit integrity – Test for method for fire with shock at temperature of at least 830ºC for cables rated up to and including 0,6/1 kV | Minimum 90 min |
| 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 – Determination of the amount of halogen acid gas | Low Halogen |
| IEC 60754-2 | 2011-11 | Test on gases evolved during combustion of materials from cables – Determination of the degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH and condctivity | Halogen free |
| IEC 61034-1/2 | 2005-04 | Measurement of smoke density of cables burning under defined conditions – Test apparatus, procedure and requirements | Low smoke |

## Marking of product

JIANGSU HENGTONG WIRE & CABLE TECHNOLOGY– CHJ86/NSC or CHJ86/NSC-I, – size – 150/250V – IEC 60331 – IEC 60332-3-22 – Batch number.

## Periodical assessment

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

- Inspection on factory samples, selected at random from the production line (where practicable)
- Check test reports from Production Sample Tests (PST) and Routine tests (RT)
- If test reports are not available, tests according to PST and RT 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.

Survey shall be performed at least every second year.

END OF CERTIFICATE