

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Low Voltage Cable

with type designation(s)
CHJ85/NC, CHJP85/NC

Issued to

Zhongtian Technology Industrial Wire & Cable System Co.,Ltd.
Nantong, China

is found to comply with

Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards
IEC 60092-376 (2003-05)
IEC 60331-1/2 (2009-05)
IEC 60332-3-22 (2009-02)
IEC 60754-1/2 (2011-11)
IEC 61034-1/2 Ed. 3.1 (2013-06)

Application :

Instrumentation and control cable
Flame retardant in bunch, cat. A
Fire resistant
Halogen free
Low smoke

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

Type	Voltage class (V)	Temp. class (°C)
CHJ85/NC	150/250	90
CHJP85/NC	150/250	90

This Certificate is valid until **2019-07-06**.

Issued at **Høvik** on **2015-07-07**

DNV GL local station: **Shanghai**

Approval Engineer: **Georgy Abramenko**

for **DNV GL**

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.

Product description

Type: CHJ85/NC 150/250 V
Conductor Copper class 2 or 5
Fire resisting layer Mica tape
Insulation XLPE
Tape Non-hygroscopic binder tape
Metal covering Copper wire braid
Sheath SHF2

Type: CHJP85/NC 150/250 V
Conductor Copper class 2 or 5
Fire resisting layer Mica tape
Insulation XLPE
Tape Non-hygroscopic binder tape
Metal covering Copper wire braid
Sheath SHF2

Number x pairs x conductor cross section
CHJ85/NC
1 x 2 x 0,5
2 x 2 x 0,5
3 x 2 x 0,5
4 x 2 x 0,5
5 x 2 x 0,5
7 x 2 x 0,5
10 x 2 x 0,5
12 x 2 x 0,5
14 x 2 x 0,5
19 x 2 x 0,5
24 x 2 x 0,5
27 x 2 x 0,5
30 x 2 x 0,5

Number x pairs x conductor cross section
1 x 2 x 0,75
2 x 2 x 0,75
3 x 2 x 0,75
4 x 2 x 0,75
5 x 2 x 0,75
7 x 2 x 0,75
10 x 2 x 0,75
12 x 2 x 0,75
14 x 2 x 0,75
19 x 2 x 0,75
24 x 2 x 0,75
27 x 2 x 0,75
30 x 2 x 0,75
1 x 2 x 1,0

Number x pairs x conductor cross section
2 x 2 x 1,0
3 x 2 x 1,0
4 x 2 x 1,0
5 x 2 x 1,0
7 x 2 x 1,0
10 x 2 x 1,0
12 x 2 x 1,0
14 x 2 x 1,0
19 x 2 x 1,0
24 x 2 x 1,0
27 x 2 x 1,0
30 x 2 x 1,0
1 x 2 x 1,5
2 x 2 x 1,5

Number x pairs x conductor cross section
3 x 2 x 1,5
4 x 2 x 1,5
5 x 2 x 1,5
7 x 2 x 1,5
10 x 2 x 1,5
12 x 2 x 1,5
14 x 2 x 1,5
19 x 2 x 1,5
24 x 2 x 1,5
27 x 2 x 1,5
30 x 2 x 1,5

Number x pairs x conductor cross section
CHJP85/NC
1 x 2 x 0,5
2 x 2 x 0,5
3 x 2 x 0,5
4 x 2 x 0,5
5 x 2 x 0,5
7 x 2 x 0,5
10 x 2 x 0,5
12 x 2 x 0,5
14 x 2 x 0,5
19 x 2 x 0,5
24 x 2 x 0,5
27 x 2 x 0,5
30 x 2 x 0,5

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19 x 2 x 0,75
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27 x 2 x 0,75
30 x 2 x 0,75
1 x 2 x 1,0

Number x pairs x conductor cross section
2 x 2 x 1,0
3 x 2 x 1,0
4 x 2 x 1,0
5 x 2 x 1,0
7 x 2 x 1,0
10 x 2 x 1,0
12 x 2 x 1,0
14 x 2 x 1,0
19 x 2 x 1,0
24 x 2 x 1,0
27 x 2 x 1,0
30 x 2 x 1,0
1 x 2 x 1,5
2 x 2 x 1,5

Number x pairs x conductor cross section
3 x 2 x 1,5
4 x 2 x 1,5
5 x 2 x 1,5
7 x 2 x 1,5
10 x 2 x 1,5
12 x 2 x 1,5
14 x 2 x 1,5
19 x 2 x 1,5
24 x 2 x 1,5
27 x 2 x 1,5
30 x 2 x 1,5

Application/Limitation

Cable is considered to be fire resistant according to IEC 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	2008-02	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 830°C 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 - Part 1: Determination of the halogen acid gas content	Low Halogen: <0,5% Halogen
IEC 60754-2	2011-11	Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity	Halogen free: pH > 4,3 Conductivity < 10µS/mm
IEC 61034-1/2	2013-06	Measurement of smoke density of cables burning under defined conditions – Test apparatus, procedure and requirements	Low smoke

Marking of product

Zhongtian Technology Industrial Wire & Cable System Co.,Ltd. – CHJ85/NC or CHJP85/NC – 150/250 V – size – IEC 60332-3-22 – IEC 60331-1/2

Periodical assessment



Job Id: **262.1-010228-2**
Certificate No: **TAE000005A**

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.

The main elements of the survey are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and 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.

Survey shall be performed at least every second year.

END OF CERTIFICATE