

# EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

## This is to certify:

**That the Fixed fire detection and fire alarm systems components for control stations, service spaces, accommodation spaces, cabin balconies, machinery spaces and unattended machinery spaces: Cables**

with type designation(s)  
**CHJ85/NSC, CHJP85/NSC, CHJ86/NSC, CHJP86/NSC,**

Issued to

**Changzhou Marine Cable Co., Ltd. (CMC)**  
**CHANGZHOU, JIANGSU, China**

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2018/773,**

**item No. MED/3.51i. SOLAS 74 as amended, Regulation II-2/7 & X/3, 1994 HSC Code 7, 2000 HSC Code 7, FSS Code 9 and IMO MSC.1/Circ.1242**

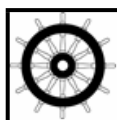
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2024-04-01.**

Issued at **Hamburg** on **2019-04-02**

DNV GL local station:  
**Nanjing**

Approval Engineer:  
**Carsten Hunsalz**



Notified Body  
No.: **0098**

for **DNV GL SE**

**Gerhard Aulbert**  
**Head of Notified Body**

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU. This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL SE of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled. Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.



Job Id: **344.1-008609-1**  
Certificate No: **MEDB00004HY**

## Product description

Fire resistant, XLPE insulated and SHF1 or SHF2 sheathed shipboard control and instrumentation cables.

Type: CHJ85/NSC, CHJP85/NSC, CHJ86/NSC, CHJP86/NSC,  
Rated voltage: 150/250 V  
Maximum operating conductor temperature: 90° C  
Conductor: Tinned or plain stranded copper  
Insulation: Mica tape + XLPE  
Individual screen: Copper wire braid or taped screen (CHJP85/NSC, CHJP86/NSC only)  
Inner covering: Tape  
Screen: Copper wire braid  
Outer sheath: 5 - SHF2, 6 - SHF1

| Number of Pairs                             | Conductor cross section [mm <sup>2</sup> ] |  |
|---------------------------------------------|--------------------------------------------|--|
| 1, 2, 3, 4, 5, 7, 8, 10, 12, 14, 16, 19, 24 | 0.5, 0.75, 1, 1.5                          |  |

## 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.

Control and Instrumentation.  
Fire resistant. Flame retardant Cat. A. Low smoke.

## Type Examination documentation

Test report: No. (2017)GJYDX-WT5504 / -WT5505 / -WT5506 / -WT7474  
No. CT14-4163-1, CT14-4163-2, (2019)GJYDX-WT0925, (2019)GJYDX-WT0926  
Changzhou Marine Cable Co., Ltd. (CMC) dated 2005-05-02  
Data sheet: Changzhou Marine Cable Co., Ltd. (CMC) TAC7 & TAC8 (Amend. 2005-4)

## Tests carried out

-IEC/EN 60332-1-2:2004+A1:2015  
-IEC 60092-376:2017  
-IEC 60331-1:2009  
-IEC 60331-2:2009

The following standards are fulfilled in addition:

| 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 cables under fire conditions.<br>Test for vertical flame propagation for a single insulated wire or cable.                                                                                                                                |                                                                             |
| IEC 60332-3-22 | 2018-07 | 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. |
| IEC 60331-1    | 2018-03 | Tests for electric cables under fire conditions - Circuit integrity - Part 1: Test method for fire with shock at a temperature of at least 830°C for cables of rated voltage up to and including 0,6/1,0 kV and with an overall diameter exceeding 20 mm    |                                                                             |
| IEC 60331-2    | 2018-03 | Tests for electric cables under fire conditions - Circuit integrity - Part 2: Test method for fire with shock at a temperature of at least 830°C for cables of rated voltage up to and including 0,6/1,0 kV and with an overall diameter not exceeding 20mm |                                                                             |
| IEC 60331-21   | 1999-04 | Tests for electric cables under fire conditions Circuit integrity Part 21: Procedures and requirements. Cables of rated voltage up to and including 0,6/1,0 kV                                                                                              |                                                                             |
| 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:<br><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:<br>pH > 4,3<br>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<br>Light<br>transmittance >60%                                    |



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## Marking of product

For identification to this type examination certificate the product or packing is to be marked with:

- Manufacturer's name
- Type designation and fire-technical rating

Changzhou Marine Cable Co., Ltd. (CMC) - CHJPJ85/NSC - 150/250V - size - IEC 60332-3-22 - IEC 60331-1/21

- Mark of Conformity According to Article 10 of the Council Directive (MED)

END OF CERTIFICATE