

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000087X

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV AS under the authority of the Government of Norway.

This is to certify:

That the Penetrations through "A" class divisions: electric cable transits

with type designation(s)
JFN Aluminium

Issued to

Shaoxing Lianyi Machinery & Electricity Manufacture Co., Ltd.
Zhuji, China

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

Regulation **(EU) 2023/1667**,

item No. MED/3.26a. SOLAS 74 as amended, Regulation II-2/9, IMO 2010 FTP Code and IMO MSC.1/1488

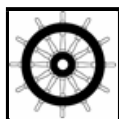
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2028-11-12**.

Issued at **Høvik** on **2023-11-13**

DNV local unit:
Ningbo FIS

Approval Engineer:
Marcin Tobiasz



for **DNV AS**

Notified Body
No.: **0575**

Sverre Olav Bergli
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005, and amended by Decision No 1/2023 dated August 21st, 2023.



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 AS 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

“JFN Aluminium”

consists of 0.8 mm thick Ω -shaped GJ-1 type fixture(s) made of aluminum produced by manufacturer of penetration system. The GJ-1 type fixture(s) is filled with 40 mm deep “NT type light fireproof stuffing” and 10 mm thick “FM type fireproof sealant” on each side of the stuffing layer working as a plugging material. The “FM type fireproof sealant” also covers the outside of the GJ-1 type fixture(s) on both sides. The exposed side of deck/bulkhead is insulated with 20 mm thick DJS type ultralight polycrystalline ceramic wool with density of 100 kg/m³ (manufactured by Zhejiang Pusen New Material Technology). The shaped GJ-1 type fixture(s) is pressed on to the division. Total thickness of the penetration is 60 mm.

The distance between cable and fixture and distance between cables shall be ≥ 2 mm.

For further details, see drawings listed under Type Examination documentation.

Application/Limitation

Approved for use as a single or multicable penetration system in class A-60 aluminium bulkheads and decks. Other applications are subject to case-by-case approval.

Class A-0, A-15 and A-30 shall be insulated as class A-60 and in addition the division is to be insulated at least 200 mm around the penetration.

Restricted application for bulkhead: fire against insulated side.

Table 1: Approved cable penetration in A-60 aluminium bulkhead.

Type	Size [mm]	Max. cable diameter (OD) [mm]	Filling ratio [%]	Fixture thickness [mm]	Penetration length [mm]	Penetration position	Penetration insulation
JFN circular	Ø25 – Ø300	80	0 – 50	0.8	60*	Symmetrical	Partly insulated on one side *)
JFN rectangular	30 x 30 – 800 x 350	120	0 – 50	0.8	60*	Symmetrical	Partly insulated on one side *)

* with in addition 20 mm thick DJS type ceramic wool produced by Zhejiang Pusen New Material Technology with density of 100 kg/m³ laid on A-60 class insulation

Table 2: Approved cable penetration in A-60 aluminium deck.

Type	Size [mm]	Max. cable diameter (OD) [mm]	Filling ratio [%]	Fixture thickness [mm]	Penetration length [mm]	Penetration position	Penetration insulation
JFN circular	Ø25 – Ø300	80	0 – 50	0.8	60*	Symmetrical	Partly insulated on one side *)
JFN rectangular	30 x 30 – 800 x 350	120	0 – 50	0.8	60*	Symmetrical	Partly insulated on one side *)

* with in addition 20 mm thick DJS type ceramic wool produced by Zhejiang Pusen New Material Technology with density of 100 kg/m³ laid on A-60 class insulation

Each product is to be supplied with installation manual, use and maintenance.

Type Examination documentation

Test report No. FT23040 dated 14 March 2023 from FEFTC, Shanghai, China.

Test report No. FT23041 dated 14 March 2023 from FEFTC, Shanghai, China.

Drawing No. LY-2022-JFN-A01 dated 12 July 2022 from maker.

Drawing No. LY-2022-JFN-A02 dated 12 July 2022 from maker.

Drawing No. LY-2022-JFN-A03 dated 12 July 2022 from maker.

Drawing No. LY-2022-JFN-A04 dated 12 July 2022 from maker.

Drawing No. LY-2022-JFN-A05 dated 12 July 2022 from maker.

Drawing No. LY-2022-JFN-A06 dated 12 July 2022 from maker.

Drawing No. LY-2022-JFN-A07 dated 12 July 2022 from maker.

Drawing No. LY-2022-JFN-A08 dated 12 July 2022 from maker.

Drawing No. LY-2022-JFN-A09 dated 12 July 2022 from maker.

Drawing No. LY-2022-JFN-A10 dated 12 July 2022 from maker.

Drawing No. LY-2022-JFN-A11 dated 12 July 2022 from maker.

Drawing No. LY-2022-JFN-A12 dated 12 July 2022 from maker.

Drawing No. LY-2022-JFN-A13 dated 12 July 2022 from maker.

Drawing No. LY-2022-JFN-A14 dated 12 July 2022 from maker.
Drawing No. LY-2022-JFN-A15 dated 12 July 2022 from maker.
Drawing No. LY-2022-JFN-A16 dated 12 July 2022 from maker.
Drawing No. LY-2022-JFN-A17 dated 12 July 2022 from maker.
Drawing No. LY-2022-JFN-A18 dated 12 July 2022 from maker.
Drawing No. LY-2022-JFN-A19 dated 12 July 2022 from maker.
Drawing No. LY-2022-JFN-A20 dated 12 July 2022 from maker.
Drawing No. LY-2022-JFN-A21 dated 12 July 2022 from maker.
Drawing No. LY-2022-JFN-A22 dated 12 July 2022 from maker.
Drawing No. LY-2022-JFN-A23 dated 12 July 2022 from maker.
Drawing No. LY-2022-JFN-A24 dated 12 July 2022 from maker.

Tests carried out

Tested according to IMO 2010 FTP Code part 3.

Marking of product

The product or packing is to be marked with name and address of manufacturer, type designation, fire-technical rating, MED Mark of Conformity and USCG approval number if applicable (see first page).

APPENDIX

Additional application/information for Watertightness/gastightness (Not part of the Marine Equipment Directive requirement)

Product description

“JFN Aluminium”

consists of 0.8 mm thick Ω -shaped GJ-1 type fixture(s) made of aluminum produced by manufacturer of penetration system. The GJ-1 type fixture(s) is filled with 40 mm deep “NT type light fireproof stuffing” and 10 mm thick “FM type fireproof sealant” on each side of the stuffing layer working as a plugging material. The “FM type fireproof sealant” also covers the outside of the GJ-1 type fixture(s) on both sides. The exposed side of deck/bulkhead is insulated with 20 mm thick DJS type ultralight polycrystalline ceramic wool with density of 100 kg/m³ (manufactured by Zhejiang Pusen New Material Technology). The shaped GJ-1 type fixture(s) is pressed on to the division. Total thickness of the penetration is 60 mm.

Application/Limitation

Approved for penetration in aluminium bulkheads or decks limited to a pressure of 2 bar watertightness (test pressure 3 bar) and 2 bar gastightness (test pressure 3 bar) for approved ship cables.

The penetration system is not to be used for penetrating boundaries of tanks.

Type Approval documentation

Pressure test report No. SXLY2022120602 dated 6 December 2022 from Manufacturer.

Tests carried out

Pressure tested with water and air according to DNV-CP-0165, September 2021.