

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000072X

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)
KFN

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) 2020/1170,

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

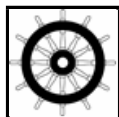
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2026-05-17**.

Issued at **Høvik** on **2021-05-18**

DNV local station:
Ningbo FIS

Approval Engineer:
Helge Bjørnara



Notified Body
No.: **0575**

for **DNV AS**

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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 1/2019 dated February 22nd, 2019.



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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

"KFN"

consists of circular or rectangular 60 mm long mild steel coaming fitted symmetrically to the division. The coaming 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. The coaming is fully welded to the division.

The distance between cable and cable frame 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-0 and A-60 steel bulkheads and decks. Other applications are subject to case-by-case approval.

Class 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.

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

Type	Size [mm]	Max. cable diameter (OD) [mm]	Filling ratio [%]	Coaming length [mm]	Coaming thickness [mm]	Coaming position	Coaming insulation
KFN circular	Ø18 – Ø436	80	0 – 51	60	2 – 3	Symmetrical	Partly insulated on one side
KFN rectangular	30 x 30 – 1056 x 416	120	0 – 50	60	3	Symmetrical	Partly insulated on one side

Table 2: Approved cable penetration in A-0 steel bulkhead.

Type	Size [mm]	Max. cable diameter (OD) [mm]	Filling ratio [%]	Coaming length [mm]	Coaming thickness [mm]	Coaming position	Coaming insulation
KFN circular	Ø18 – Ø436	80	0 – 51	60	2 – 3	Symmetrical	None
KFN rectangular	30 x 30 – 1056 x 416	120	0 – 50	60	3	Symmetrical	None

Table 3: Approved cable penetration in A-60 steel deck.

Type	Size [mm]	Max. cable diameter (OD) [mm]	Filling ratio [%]	Coaming length [mm]	Coaming thickness [mm]	Coaming position	Coaming insulation
KFN circular	Ø18 – Ø436	80	0 – 51	60	2 – 3	Symmetrical	Partly insulated on underside
KFN rectangular	30 x 30 – 1056 x 416	120	0 – 50	60	3	Symmetrical	Partly insulated on underside

Table 4: Approved cable penetration in A-0 steel deck.

Type	Size [mm]	Max. cable diameter (OD) [mm]	Filling ratio [%]	Coaming length [mm]	Coaming thickness [mm]	Coaming position	Coaming insulation
KFN circular	Ø18 – Ø436	80	0 – 51	60	2 – 3	Symmetrical	None
KFN rectangular	30 x 30 – 1056 x 416	120	0 – 50	60	3	Symmetrical	None

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

Type Examination documentation

Test report No. FT20393 dated 23 November 2020 from FEFTC, Shanghai, China.

Test report No. FT20394 dated 23 November 2020 from FEFTC, Shanghai, China.

Test report No. FT20395 dated 2 December 2020 from FEFTC, Shanghai, China.

Test report No. FT20396 dated 2 December 2020 from FEFTC, Shanghai, China.

Drawing No. LY-2020-KFN11 dated 17 January 2020 from maker.

Drawing No. LY-2020-KFN17 dated 17 January 2020 from maker

Drawing No. LY-2020-KFN39 dated 17 January 2020 from maker

Drawing No. LY-2020-KFN47 dated 17 January 2020 from maker

Tests carried out



Job Id: **344.1-011053-1**
Certificate No: **MEDB000072X**

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

"KFN"

consists of circular or rectangular 60 mm long mild steel coaming fitted symmetrically to the division. The coaming 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. The coaming is fully welded to the division.

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

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

Application/Limitation

KFN circular ($\varnothing 18 - \varnothing 436$) and KFN rectangular ($30 \times 30 - 1056 \times 416$):

Approved for penetration in steel bulkheads or decks limited to a pressure of 2.67 bar watertightness and 2.67 bar gastightness (test pressure 4 bar).

Penetration systems are generally not to be used for penetrating boundaries of tanks.

Type Approval documentation

Test report No. ZJLY2021042902 dated 29 April 2021.

Tests carried out

Pressure tested according to Class Programme DNVGL-CP-0165.