

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

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 GL 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)
KVM Sealing Compound

Issued to
Daemmstoff Industrie Korea Ltd.
Busan, Republic of Korea

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2019/1397**,
item No. MED/3.26a. SOLAS 74 as amended, Regulation II-2/9, IMO 2010 FTP Code and IMO MSC.1/1488

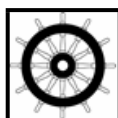
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2024-11-04**.

Issued at **Høvik** on **2019-11-05**

DNV GL local station:
Gimhae Station

Approval Engineer:
Tessa Biever



Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
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.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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



Product description

"KVM Sealing Compound"

composed of a 160 mm long steel sleeve symmetrically fitted in steel bulkhead/deck, totally filled with 160 mm "KVM Sealing Compound".

The penetration sleeve is welded to the steel bulkhead/deck.

See below table 1 (deck) and table 2 (bulkhead) for penetration details.

Table 1: Penetration details for deck:

Fire rating	Outer Sleeve Dimensions (w x l) [mm]	Sleeve thickness [mm]	Filling* [%]	Max. cable Ø [mm]	Sleeve Insulation**
A-0	100 x 100 - 700 x 300	4.5	0.1 – 37.5	84	none
A-0	Ø50 - Ø350	3.9 – 11.1	0.2 – 39.8	49.6	none
A-60	100 x 100 - 700 x 300	4.5	0.1 – 37.5	84	Partially with A-60 insulation
A-60	Ø50 - Ø350	3.9 – 11.1	0.1 – 37.2	49.6	Partially with A-60 insulation

* Minimum distance between the cables and between the cables and the coaming is 4 mm.

** Underside of deck

Table 2: Penetration details for bulkhead:

Fire rating	Outer Sleeve Dimensions (w x l) [mm]	Sleeve thickness [mm]	Filling* [%]	Max. cable Ø [mm]	Sleeve Insulation
A-0	100 x 100 - 700 x 300	4.5	0.1 – 37.3	84	none
A-0	Ø50 - Ø350	3.9 – 11.1	0.2 – 39.8	49.6	none
A-60	100 x 100 - 700 x 300	4.5	0.1 – 35.5	84	Partially with A-60 insulation
A-60	Ø50 - Ø350	3.9 – 7.9	0.1 – 35.5	44.5	Fully with A-60 insulation

* Minimum distance between the cables and between the cables and the coaming is 4 mm.

Application/Limitation

Approved for use as penetration system in Class A-0 to A-60 in steel bulkheads/decks.

For A-15 and A-30 the penetration is to be insulated as A-60, and in addition the division is to be insulated at least 200 mm around the penetration. Other applications are subject to case-by-case approval.

The insulation material used has to be approved according to the Marine Equipment Directive and bear the Mark of Conformity.

Each product is to be supplied with its manual for installation and maintenance.

Type Examination documentation

Basis for approval:

Test report nos. :

- AK2013-0449 dated 2014-04-09 from FILK , Korea (A-0 deck)
- KOMERI-0402-18T1906 dated 2018-06-20 from KOMERI, Korea (A-0 deck)
- KOMERI-0402-17T2670 dated 2019-03-12 from KOMERI, Korea (A0-deck)
- AK2013-0387 dated 2014-01-08 from FILK, Korea (A60 deck)
- KOMERI-0402-17T3358 dated 2017-12-20 from KOMERI, Korea (A60 deck)
- AK2013-0382 dated 2013-12-11 from FILK, Korea (A0 bulkhead)
- KOMERI-0402-17T2671 dated 2017-12-20 from KOMERI, Korea (A0 bulkhead)
- AK2013-0386 dated 2014-01-08 from FILK, Korea (A60 bulkhead)
- KOMERI-0402-18T4191 dated 2019-03-14 from KOMERI, Korea (A60 bulkhead)
- KOMERI-0402-18T1909 dated 2019-03-14 from KOMERI, Korea (A60 bulkhead)
- KOMERI-0402-19T1313 dated 2019-05-02 from KOMERI, Korea (A60 bulkhead)
- KOMERI-0402-18T1905 dated 2019-03-13 from KOMERI, Korea (A60 bulkhead)

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, the Mark of Conformity and USCG approval (see first page).