



Certificate no.:
TAF00001WZ

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Class H Penetration**

with type designation(s)

Single medium voltage (MV) busbar penetration seal

issued to

Eta-com B NV

Boom, Antwerpen, Belgium

is found to comply with

DNV offshore standards

Application:

Approved for use as busbar penetration system in H-0 bulkheads.

Issued at **Høvik** on **2024-03-30**

This Certificate is valid until **2029-03-29**.

for **DNV**

DNV local unit: **Netherlands VMC**

Approval Engineer: **Helge Bjørnarå**

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.

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.



Form code: TA 251

Revision: 2023-09

www.dnv.com

Page 1 of 2

Product description

"Single medium voltage (MV) busbar penetration seal", consists of a 250 mm steel sleeve welded to the steel bulkhead. The gap between steel sleeve and busbar is filled in the middle with mineral wool Fyrewrap LT Blanket (density 70 kg/m³, manufactured by Insulcon), faced on both sides with one layers of 60 mm long Nofirno filler sleeves and sealed at both ends with 20 mm annular sealant (manufactured by Nofirno).

Manufactured at the premises of Eta-com, Antwerpen, Belgium.

Application/Limitation

Approved for use as a single busbar penetration system for Etacom Betobar (copper or aluminium) in class H-0 steel bulkheads. Other applications are subject to case-by-case approval.

Only the penetration system is covered by this type approval certificate. The busbars itself shall hold a valid type approval certificate.

Table 1: Approved busbar penetration in H-0 steel bulkhead.

Busbar casing size [mm]	Busbar conductor size [mm]	Sleeve size [mm]	Sleeve length [mm]	Sleeve Thickness [mm]	Sleeve position	Sleeve insulation
422 x 230 – 422 x 400	8 x 80 – 8 x 120	528 x 336 – 528 x 506	250	5	On insulated side.	Partially insulated* on sleeve side and 200 mm around steel sleeve.

* 40 mm Fyrewrap LT Blanket (density 70 kg/m³, manufactured by Insulcon) or approved H-60 insulation.

All insulation materials used to be approved as non-combustible material.

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

Type Approval documentation

Certification in accordance with Class Programme DNV-CP-0338, September 2021.

Test report No. 23034A dated 7 November 2023 from Warringtonfire, Gent, Belgium.

Tests carried out

Tested according to IMO 2010 FTP Code part 3 with the hydrocarbon time-temperature curve specified in ISO 834-3.

Marking of product

The product or packing is to be marked with name of manufacturer, type designation and fire technical rating.

Periodical assessment

DNV's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Class Programme DNV-CP-0338, Section 4.