



Certificate no.:
TAK00002FH

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Insulation Materials for Gas Carriers

with type designation(s)

Flexible Secondary Barrier (FSB): TRIPLEX

issued to

HUTCHINSON SNC

CHALETTE SUR LOING, France

is found to comply with

Gaztransport & Technigaz Specification Nr. M3101, Secondary Barrier, Rev. C, February 2010

Application:

For the use in Gaztransport & Technigaz (GTT) MARKIII Cargo Containment Systems (CCS) technologies of Liquefied Gas (LG) carriers.

Issued at **Hamburg** on **2024-12-13**

This Certificate is valid until **2029-12-12**.

for **DNV**

DNV local unit: **France CMC**

Approval Engineer: **Gisle Hersvik**

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.

Product description

TRIPLEX: Flexible Secondary Barrier (FSB). Aluminium foil sandwiched between two glass clothes.

Application/Limitation

This Type Approval certificate is not valid for designs, components, equipment, systems or products which are subject to classification by DNV.

The material is only approved for use in Gaztransport & Technigaz (GTT) MARKIII Cargo Containment Systems (CCS) technologies of Liquefied Gas (LG) carriers.

Deliveries to actual shipbuilding projects shall be in compliance with the GTT Specification Nr. M3101 "Secondary Barrier", Rev. C, February 2010.

The product shall have a valid approval from GTT.

Type Approval documentation

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**.

Marking of product

Product/package shall be marked with the *manufacturer's name*: **Hutchinson SNC, France**, or *manufacturer's identification letter(s)*, and *type designation*.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV Type Approval Certificate.

Periodical Assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical assessments (for Certificate Retention / Certificate Renewal) shall be performed according to DNV-CP-0338.

This certificate is only valid if required Periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

END OF CERTIFICATE