Certificate no.:
TAK00002EN

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Insulation Materials for Gas Carriers

with type designation(s)
Low Density Foam (LDF): DH-D45

issued to
Dehe Technology Group Co., Ltd.
Zhejiang, **China**

is found to comply with
Gaztransport & Technigaz Specification Nr. M3009, Low Density Foam (LDF), Rev. 02, December 2015

Application:

For use in MARK III/Flex type Cargo Containment Systems (CCS) of gas carriers built under GTT's license.

Issued at **Hamburg** on **2024-10-11**
This Certificate is valid until **2029-10-10**.
DNV local unit: **Shanghai**

for **DNV**

Approval Engineer: **Joachim Rehbein**

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
DH-D45: Low density polyurethan foam.
Blowing agent: HFC-245fa

Place of manufacture
Dehe Technology Group Co., Ltd.,
998, Rui Bo, Xiuzhou District, Jiaxing,
Zhejiang Province,
China

Application/Limitation
The material is only approved for use in MARK III/Flex type Cargo Containment Systems (CCS) of LG carriers built under licence from GAZTRANSPORT & TECHNIGAZ SA (GTT).

Deliveries to actual shipbuilding projects shall follow the GTT Specification Nr. M3009 “Low Density Foam (LDF)”, Rev. 02 dated December 2015, and the product shall have a valid approval from GTT.

Any significant changes in design and / or quality of the material will render the approval invalid.

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*, or *manufacturer’s identification letter(s)*, *Lot No.*, *Size*, *Quantity* and *type designation*.

The marking is to be carried out in such a way that it is visible, legible and indelible.

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