

TYPE EXAMINATION CERTIFICATE

This is to certify:

That the Adhesive Materials for use in Insulation of Gas Carriers

with type designation(s)
Epoxy Adhesives; UEA100/200 and UEA 100/300

Manufactured by
Uni-Tech Co., Ltd.
ANSAN KYONGGI-DO, Republic of Korea

is found to comply with
**Gaztransport & Technigaz Specification Nr. M3006, Adhesive for Secondary Barrier, Rev. C,
Feb 2010**

Application :

For use in MARK III type LNG carriers built under GTT's license.

This Certificate is valid until **2021-01-18**.

Issued at **Høvik** on **2016-01-18**

DNV GL local station: **Seoul**

Approval Engineer: **Helene Bjerke**

for **DNV GL**

Martin Strande
Head of Section

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 Examination Certificate and not to the approval of equipment/systems installed.

Product description

UEA100/200 and **UEA100/300**; Structural two-component epoxy adhesives.

UEA 100: Resin

UEA 200 and **UEA 300**: Hardener

Application/Limitation

UEA100/200 and UEA100/300; Two-component epoxy adhesive used to bond the secondary barrier scab to the secondary barrier, and to bond the top bridge pads to the insulation.

The material is only approved for use in MARK III type LNG carriers built under licence from GAZTRANSPORT & TECHNIGAZ SAs (GTT). Deliveries to actual shipbuilding projects shall be in compliance with the "Adhesive for Secondary Barrier" specification, GTT document no. M3006, Rev. C, Feb 2010, and the product shall have a valid approval from GTT.

Type Examination documentation

Tests carried out

Type Testing carried out according to **Type Examination documentation**, including test results for shearing strength, chemical compatibility, etc.

The Type Test results on which this Type Examination is based are found in the test report:

- "Additional Testing Report for Epoxy Adhesives, Referenced UEA-100/ UEA-200 / UEA-300", issued April 2007 (ref. GTT Internal Document n° 930, Rev. 0).

Marking of product

Product shall be marked with *manufacturer's name*; **Uni-Tech Co., Ltd., Ansan, Korea** 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 GL Type Examination Certificate.

Periodical assessment

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

Periodical Assessment to be performed after 2.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

The main elements of the Periodical Assessment are to:

- Ensure that **Type Examination documentation** is available.
- Review design, materials, production process, and performance with respect to possible changes, in order to ensure compliance with **Type Examination documentation** and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and the DNV GL Type Examination Certificate.

END OF CERTIFICATE