Certificate no.:
TAK00002FM

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Adhesive

with type designation(s)
COATWEL SEAL 211

issued to
M.T.G. Co., Ltd.
Ulsan, **Republic of Korea**

is found to comply with
DNV class programme DNV-CP-0086 – Type approval – Adhesive systems

Application:

Flexible adhesive Class B for maritime applications

Issued at **Hamburg** on **2024-12-30**
This Certificate is valid until **2029-12-29**.
DNV local unit: **Busan, CMC Korea**

Approval Engineer: **Joachim Rehbein**

for **DNV**

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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 USD 300 000.

Product description

COATWEL SEAL 211: One-component flexible adhesive based on polyurethane

The following properties have been verified by type testing:

Material property	Test method	Unit	COATWEL SEAL 211
Hardness, Shore A	ISO 868	-	≥ 45
Fracture Strain at –35°C	ISO 37	%	≥ 50
Tensile Strength at 60°C	ISO 37	MPa	≥ 1.5
Tensile Lap Shear Strength 23°C / 50% RH[1]	EN 1465	MPa	≥ 0.7
Tensile Lap Shear Strength – long term[1]	EN 1465	MPa	0,25
Creep Test 1000h conditioning[1]	EN 1465 and ISO 6270	%	> 20

Curing condition for type testing: 28 days at 23°C / 50% RH (all specimen) and additionally acc. related test requirement.

Notes:
1: Bondline thickness 3 mm
Material of substrate: SPHC (JIS G3131)

Application/Limitation

The flexible adhesive complies with the applicable DNV requirements and manufacturer's recommendations and is compatible to the base materials.

Area of application will be evaluated during approval of classified objects.

For applications subject to dynamical loads additional testing may be required.

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

Type Approval documentation

Tests carried out

According to Type Approval documentation.

Marking of product

Product shall be marked with *manufacturer's name*, *place of production* 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.

Assessed production site

Sam Joong Co. Ltd.,
196 Gapsan-ro Soi-myeon Eumseong-gun Choongcheongbuk-do,
Rep. of Korea

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.

A production site with a valid Approval of Manufacturer (AoM) certificate for material in question is exempted from the obligation concerning retention and renewal assessments.

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