



Certificate no.:
TAK00002BK

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Protective Coating Systems - Cargo Oil Tanks**

with type designation(s)
SIGMAGUARD 720

issued to

PPG Coatings Europe B.V.
Amsterdam, Netherlands

is found to comply with

DNV rules for classification – Ships

DNV class programme DNV-CP-0139 – Type approval – Protective coating systems for cargo oil tanks

IMO Resolution MSC.288(87) Performance Standard for Protective Coatings (PSPC)

IACS Unified Interpretations SC259. For Application of SOLAS Regulation II-1/3-11 Performance Standard for Protective Coatings for Cargo Oil Tanks of Crude Oil Tankers (PSPC-COT), adopted by Resolution MSC.288(87).

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Hamburg** on **2024-02-14**

This Certificate is valid until **2029-02-13**.

DNV local unit: **Netherlands CMC**

for **DNV**

Approval Engineer: **Enno Brück**

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

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Product description

SIGMAGUARD 720 is a two-component epoxy based coating for corrosion protection of steels surface.

Manufactured by

PPG SSC Co., Ltd. 190-9 Yeochun-dong Nam-gu, 680-090 Ulsan, Korea (Republic of)

DNV local office: Ulsan

Responsibility

The holder of certificate takes the responsibility that both design and production are in compliance with Rules, Standards and/or Regulations listed on page 1 of this certificate.

Application/Limitation

This approval is solely connected to the corrosion prevention properties of the coating material. The approval does not include any evaluation of toxicity, contamination, pollution, or fire technical properties.

SIGMAGUARD 720 is approved for application on blast cleaned surfaces and on prequalified shop primed surfaces. The following shop primer has been prequalified:

- | | |
|--------------------------|---|
| - SIGMAWELD 165 | [PPG Coatings Europe B.V.] |
| - KCC Galvany IZ 182 (J) | [KCC Corporation, Ulsan Plant] |
| - KCC Galvany IZ 182 (S) | [KCC Corporation, Ulsan Plant] |
| - TH-2 | [Yejian New Material Co., Ltd] |
| - F-6001 | [Jiangxi JingCheng Zhibang Paint Co., Ltd.] |
| - Cerabond 2000 | [Chugoku Marine Paints (Shanghai) Ltd] |
| - 725-E47 | [Xiamen SunRui Ship Coating Co., Ltd.] |

Surface preparation and coating application according to PSPC or manufacturer's recommendations, whichever is stricter.

The durability of the applied coating system will depend on the steel surface preparation, coating application and the environmental conditions.

The Type Approval Certificate is invalid if the formulation of the epoxy coating **SIGMAGUARD 720** is changed to a degree deemed significant by DNV. If the formulation of the listed pre-qualified shop primer is changed to a degree deemed significant by DNV the shop primer cannot be used as part of the Protective Coating System.

Tests carried out

Type Testing carried out in accordance with DNV CP-0139. The tests are carried out according to the procedures in IMO Resolution MSC.288(87) Performance Standard for Protective Coatings (PSPC), ref. IACS UI SC259:

- COT by Report No. LAB20-0440-Rep, "CRUDE OIL TEST, system 1, 160µm SigmaGurad 720-x, off white and 160µm SigmaGurad 720-X, grey over SigmaWeld 162", dated 2020-12-08.
- Technical Report No. KTR-COT PSPC-431, "CARGO OIL TANK PROTECTIVE COATING TEST OF 2*160µm SIGMAGUARD 720 ON IZ 182(J)", dated 2022-08-18.
- Technical Report No. KTR-COT PSPC-432, "CARGO OIL TANK PROTECTIVE COATING TEST OF 2*160µm SIGMAGUARD 720 ON IZ 182(S)", dated 2022-08-18.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Report No. JX2270119, "SIGMAGUARD 720 (2*160µm) on TH-2", dated 2022-06-16.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Report No. JX2270118, "SIGMAGUARD 720 (2*160µm) on F-6001", dated 2022-06-16.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Report No. JX2270117, "SIGMAGUARD 720 (2*160µm) on Cerabond 2000", dated 2022-06-16.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Report No. JX2270116, "SIGMAGUARD 720 (2*160µm) on 725 E47", dated 2022-06-16.

Marking of product

Product/package shall be marked with manufacturer's name and address; **PPG SSC Co., Ltd** Ulsan, Korea (Republic of), type designation; SIGMAGUARD 720, and date of production/batch number.

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 Assessment (Certificate Retention) and renewal after 5 years (Certificate Renewal) shall be performed acc. DNV CP-0338.

END OF CERTIFICATE