Certificate No:
**TAK0000209**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Protective Coating Systems - Seawater Ballast Tanks**

with type designation(s)
**SIGMAPRIME 700 & SIGMAPRIME 700 LT (Koeran version)**

Issued to
## PPG Coatings Europe B.V.
**Amsterdam, Noord-Holland, Netherlands**

is found to comply with
**DNV GL class programme DNVGL-CP-0108 – Type approval – Protective coating systems for seawater ballast tanks and double-side skin spaces**
**IMO Resolution MSC.215(82) Performance Standard for Protective Coatings (PSPC)**
**IACS Unified Interpretations SC223. For Application of SOLAS Regulation II-1/3-2 Performance Standard for Protective Coatings (PSPC) for Dedicated Seawater Ballast Tanks in All Types of Ships and Double-side Skin Spaces of Bulk Carriers.**

## Application :

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

Issued at **Hamburg** on **2021-03-22**
This Certificate is valid until **2026-03-21**.
DNV local station: **Netherlands**

Approval Engineer: **Enno Brück**

for **DNV**

**Thorsten Lohmann**
**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 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

**SIGMAPRIME 700 & SIGMAPRIME 700 LT (Korean version),** 2-component epoxy based coatings for corrosion protection of steel surfaces.

## Manufactured by

**PPG SSC Co., Ltd.,** 190-9 Yeochun-dong Nam-gu, 680-090 Ulsan, Korea

DNV GL 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.

**SIGMAPRIME 700 & SIGMAPRIME 700 LT (Korean version)** 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. / Sigma Coatings |
| - Cerabond 2000 | Chugoku Marine Paints, Ltd. |
| - KCC Galvany IZ182 (S) | KCC Corporation |
| - Interplate 8010 | International Paint Limited |
| - KCC Galvany IZ182 (K) | KCC Corporation |
| - KCI Zinc 1000 | Kangnam Jevisco Co., Ltd. |
| - KCC Galvany IZ 182 (J) | KCC Corporation |

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 **SIGMAPRIME 700 & SIGMAPRIME 700 LT (Korean version)** is changed to a degree deemed significant by DNV GL. If the formulation of the listed pre-qualified shop primer is changed to a degree deemed significant by DNV GL the shop primer cannot be used as part of the Protective Coating System.

## Tests carried out

Type Testing carried out in accordance with DNV GL CP-0108. The tests are carried out according to the procedures in IMO Resolution MSC.215(82) Performance Standard for Protective Coatings (PSPC), ref. IACS UI SC223:

- COT Report Number, LAB19-0466-REP, "Ballast Tank Coating Test SIGMARPRIME 700 over SIGMAWELD 165", dated 2020-07-13.
- COT Report Number, LAB19-0467-REP, "Ballast Tank Coating Test SIGMARPRIME 700 LT over SIGMAWELD 165", dated 2020-01-31.
- COT Report Number, LAB19-0569-REP, Cross-Over Test "Ballast "Ballast Tank Coating Test 2x160µm SIPMAPRIME 700 on Cerabond 2000", dated 2020-02-14.
- COT Report Number, LAB19-0568-REP, Cross-Over Test "Ballast Tank Coating Test 2x160µm SIPMAPRIME 700 LT on Cerabond 2000", dated 2020-02-14.
- COT Report Number, LAB19-0579-REP, Cross-Over Test "Ballast Tank Coating Test 2x160µm SIPMAPRIME 700 on KCC Galvany IZ 182(S)", dated 2020-01-30.
- COT Report Number, LAB19-0578-REP, Cross-Over Test "Ballast Tank Coating Test 2x160µm SIPMAPRIME 700 LT on KCC Galvany IZ 182(S)", dated 2020-01-30.
- COT Report Number, LAB19-0584-REP, Cross-Over Test "Ballast Tank Coating Test 2x160µm SIPMAPRIME 700 on Interplate 8010", dated 2020-01-30.

- COT Report Number, LAB19-0580-REP, Cross-Over Test “Ballast Tank Coating Test 2x160µm SIPMAPRIME 700 LT on Interplate 8010”, dated 2020-02-14.
- COT Report Number, LAB19-0585-REP, Cross-Over Test “Ballast Tank Coating Test 2x160µm SIPMAPRIME 700 on KCC Galvany IZ 182(k)”, dated 2020-01-30.
- COT Report Number, LAB19-0582-REP, Cross-Over Test “Ballast Tank Coating Test 2x160µm SIPMAPRIME 700 LT on KCC Galvany IZ 182(k)”, dated 2020-01-30.
- COT Report Number, LAB19-0586-REP, Cross-Over Test “Ballast Tank Coating Test 2x160µm SIPMAPRIME 700 on KCI Zinc 1000”, dated 2020-01-30.
- COT Report Number, LAB19-0583-REP, Cross-Over Test “Ballast Tank Coating Test 2x160µm SIPMAPRIME 700 LT on KCI Zinc 1000”, dated 2020-01-30.
- COT Report Number, LAB19-0588-REP, Cross-Over Test “Ballast Tank Coating Test 2x160µm SIPMAPRIME 700 on KCC Galvany IZ 182(J)”, dated 2020-01-31.
- COT Report Number, LAB19-0587-REP, Cross-Over Test “Ballast Tank Coating Test 2x160µm SIPMAPRIME 700 LT on KCC Galvany IZ 182(J)”, dated 2020-01-31.

## Marking of product

Product/package shall be marked with *manufacturer’s name and address*; **PPG SSC Co., Ltd.,** Ulsan, Korea, *type designation* **SIGMAPRIME 700 & SIGMAPRIME 700 LT (Korean version)**, 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 GL 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 GL CP-0338.

END OF CERTIFICATE