



Certificate No:  
**TAK0000231**

# TYPE APPROVAL CERTIFICATE

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## This is to certify:

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

with type designation(s)  
**SIGMAPRIME CSF**

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 :

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

Issued at **Hamburg** on **2021-10-12**

This Certificate is valid until **2026-10-11**.

for **DNV**

DNV local station: **Netherlands CMC**

Approval Engineer: **Enno Brück**

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**Thorsten Lohmann**  
**Head of Section**

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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 300,000 USD.



Form code: TA 251

Revision: 2021-03

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Page 1 of 3

## Product description

**SIGMAPRIME CSF**, Two-component, solvent free, multi-purpose epoxy anticorrosive primer, based upon pure epoxy technology.

## Manufactured by

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

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.

**SIGMAPRIME CSF** 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 IZ 182(J) | [KCC Corporation]             |
| - KCC IZ 182(S) | [KCC Corporation]             |
| - KCC IZ 182(K) | [KCC Corporation]             |
| - CERABOND 2000 | [Chugoku Marine Paints, 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 **SIGMAPRIME CSF** 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 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 by Report Number: LAB21-0288-Rep, "Ballast Tank Coating Test SIGMAPRIME CSF over shop primer SIGMAWELD 165", dated 2021-09-24.
- COT by Report Number: LAB21-0295-Rep, "Ballast Tank Coating Test SIGMAPRIME CSF over shop primer KCC IZ 182(J)", dated 2021-09-24.
- COT by Report Number: LAB21-0291-Rep, "Ballast Tank Coating Test SIGMAPRIME CSF over shop primer KCC IZ 182(S)", dated 2021-09-24.
- COT by Report Number: LAB21-0289-Rep, "Ballast Tank Coating Test SIGMAPRIME CSF over shop primer KCC IZ 182(K)", dated 2021-09-24.
- COT by Report Number: LAB21-0293-Rep, "Ballast Tank Coating Test SIGMAPRIME CSF over shop primer CERABOND 2000", dated 2021-09-24.

## Marking of product

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



Job Id: **262.1-036839-1**  
Certificate No: **TAK0000231**

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 GL CP-0338.

END OF CERTIFICATE