

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Protective Coating Systems - Seawater Ballast Tanks**with type designation(s)
SIGMACOVER™ 280 (1 x 75 µm) and SIGMAGUARD 425 (1 x 250 µm)

Issued to

PPG Protective and Marine Coatings 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 :****For use in ballast tanks, double-skin spaces, cofferdams and similar areas. Surface preparation and coating application as per PSPC or manufacturer's recommendations, whichever is stricter.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2017-10-31**This Certificate is valid until **2022-10-30**.DNV GL local station: **Rotterdam**for **DNV GL**Approval Engineer: **Gisle Hersvik**

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



Job Id: **262.1-027131-1**
Certificate No: **TAK00000ZR**

Product description

SIGMACOVER™ 280 (1 x 75 µm, epoxy primer) + **SIGMAGUARD 425** (1 x 250 µm, epoxy coating).
The system consists of a 2-component epoxy based coating on an epoxy primer, for corrosion protection of steel surfaces.

Manufactured by

PPG Coatings SPRL/BVBA, Tweemonstraat 104, BE-2100 Deurne, Belgium.

DNV GL local office: Antwerp

Responsibility

The Company (stated on the front page of this 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.

SIGMACOVER™ 280 (1 x 75 µm, epoxy primer) + **SIGMAGUARD 425** (1 x 250 µm, epoxy coating) is approved for application on blast cleaned surfaces and on prequalified shop primed surfaces. The following shop primers have been prequalified:

SIGMAWELD™ 190
SIGMAWELD™ 199

[PPG Protective & Marine Coatings]
[PPG Protective & Marine Coatings]

Surface preparation and coating application as per 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 coatings **SIGMACOVER™ 280** and **SIGMAGUARD 425** are changed to a degree deemed significant by DNV GL. If the formulation of any of the listed pre-qualified shop primers is changed to a degree deemed significant by DNV GL that shop primer cannot be used as part of the Protective Coating System.

Type Approval documentation

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**.

The tests reported in the Exova Reports are carried out according to the procedures in IMO Resolution MSC.215(82) Performance Standard for Protective Coatings (PSPC), ref. IACS UI SC 223;

- Exova Test Report No. N 802 378, Issue 5, "BALLAST TANK COATING TEST SIGMACOVER 280 & SIGMAGUARD 425 EPOXY PAINT OVER SIGMAWELD 190" of 2010-07-13. (f)
- Exova Test Report No. N802402, Issue 05, "BALLAST TANK COATING TEST SIGMACOVER 280 / SIGMAGUARD 425 on SIGMAWELD 199" of 2010-07-14. (c)

Marking of product

Product/package shall be marked with manufacturer's name and *type designation*; **SIGMACOVER™ 280** and **SIGMAGUARD 425**, and *date of production/batch number*.

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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.

Assessment to be performed after 2 and 3.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

The main elements of the Periodical Assessment are:

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

END OF CERTIFICATE