DNV·GL

Certificate No:
TAK00000DY

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Protective Coating Systems - Cargo Oil Tanks

with type designation(s)
PHENGUARD™ 930 + PHENGUARD™ 935 + PHENGUARD™ 940

Issued to
PPG Coatings Europe B.V.
Amsterdam, Netherlands

is found to comply with
DNV GL class programme DNVGL-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 :

For use in cargo oil tanks of crude oil tankers. 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.

This Certificate is valid until **2021-07-04**.

Issued at **Høvik** on **2016-07-05**

for **DNV GL**

DNV GL local station: **Rotterdam**

Approval Engineer: **Gisle Hersvik**

Arnstein Gloppen
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.

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Job Id: **262.1-023232-1**
Certificate No: **TAK00000DY**

Product description

PHENGUARD™ 930 (100 µm)+ PHENGUARD™ 935 (100 µm) + PHENGUARD™ 940 (120 µm), Epoxy based coating system for corrosion protection of steel surfaces.

PHENGUARD™ 930; Two-component, amine adduct-cured novolac phenolic epoxy holding primer.
PHENGUARD™ 935; Two-component, amine adduct-cured novolac phenolic epoxy coating.
PHENGUARD™ 940; Two-component, amine adduct-cured novolac phenolic epoxy finish.

Manufactured by

PPG Coatings (Kunshan) Co., Ltd., 53 Jin Yang Road, Mail Box no. 218, Kunshan, Jiangsu 215331, PR China

DNV GL local office: Shanghai

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.

The **PHENGUARD™** system, **PHENGUARD™ 930 + PHENGUARD™ 935 + PHENGUARD™ 940,** is approved for application on blast cleaned surfaces only.

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 **PHENGUARD™ 930, PHENGUARD™ 935, PHENGUARD™ 940** are changed to a degree deemed significant by DNV GL.

Type Approval documentation

1.
2.
3.
4.

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**. The tests reported in the EXOVA Test Report are carried out according to the procedures in IMO Resolution MSC.288(87) Performance Standard for Protective Coatings (PSPC), ref. IACS UI SC259;

- EXOVA Test Report No. N964663, Issue No. 1, "Cargo Oil Tank Coating test of PHENGUARD 930/PHENGUARD 935/PHENGUARD 940" of 2014-08-06.

Marking of product

Product/package shall be marked with *manufacturer's name*, *place of production*, *type designation* 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 to be performed after 2 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

The main elements of the Periodical Assessment are to:

- 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 the DNV GL Type Approval Certificate.

END OF CERTIFICATE