DNV·GL

Certificate No:
TAK00001ZF

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Protective Coating Systems - Seawater Ballast Tanks

with type designation(s)
ECO TK MARINE H

Issued to
P&C TECH CO., LTD.
161, Pungsesandan-ro, Pungse-myeon, Dongnam-gu, Cheonan-si, Chungcheongnam-do,
Korea

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 GL.

Issued at **Hamburg** on **2021-01-04**
This Certificate is valid until **2025-12-31**.
DNV GL local station: **Seoul, Korea**

for **DNV GL**

Approval Engineer: **Enno Brück**

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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.

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Job Id: **262.1-034229-1**
Certificate No: **TAK00001ZF**

Product description

ECO TK MARINE H, two component epoxy based coating for corrosion protection of steel surfaces

Manufactured by

P&C TECH CO., LTD. 161, Pungsesandan-ro, Pungse-myeon, Dongnam-gu, Cheonan-si, Chungcheongnam-do, Korea

DNV GL local office: Seoul

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.

ECO TK MARINE H is approved for application on blast cleaned surfaces and on prequalified shop primed surfaces. The following shop primer has been prequalified:

- Eco Shop Primer [P&C TECH CO, LTD.]
- Galvany Shop Primer IZ182(J) [KCC Corporation Ltd.]
- KCI Zinc 1000 [Kangnam Jevisco Co., Ltd.]
- Sigmaweld 165 (Sigma Proferral MC) [PPG Coatings Europe B.V.]
- 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 **ECO TK MARINE H** 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:

- Korea Testing & Research Institute, Report No. KTR-PSPC-031, "Ballast Tank Protective Coating Test of 2 x 160 µm Eco TK Marine H on Eco Shop Primer", 2010-10-19
- Korea Testing & Research Institute, Report No. KTR-PSPC-032, "Ballast Tank Protective Coating Test of 2 x 160 µm Eco TK Marine H on Galvany Shop Primer IZ182(J)", 2010-10-19
- Korea Testing & Research Institute, Report No. KTR-PSPC-033, "Ballast Tank Protective Coating Test of 2 x 160 µm Eco TK Marine H on KCI Zinc 1000", 2010-10-19
- Korea Testing & Research Institute, Report No. KTR-PSPC-034, "Ballast Tank Protective Coating Test of 2 x 160 µm Eco TK Marine H on Sigmaweld 165 (Sigma Proferral MC)", 2010-10-19

- Korea Testing & Research Institute, Report No. KTR-PSPC-035, "Ballast Tank Protective Coating Test of 2 x 160 µm Eco TK Marine H on Cerabond 2000", 2010-01-07

Marking of product

Product/package shall be marked with *manufacturer's name and address*; **P&C TECH CO., LTD.** Cheonan-si, Korea, *type designation* **ECO TK MARINE H**, 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