



Certificate no.:
TAK00002DG

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Protective Coating Systems - Seawater Ballast Tanks

with type designation(s)
NOA 60 HS-LTSQ

issued to

Nippon Paint Marine Coatings Co., Ltd.
Osaka-city, Osaka, Japan

is found to comply with

DNV class programme DNV-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.
DNV rules for classification – Ships

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.

Issued at **Hamburg** on **2024-07-16**

This Certificate is valid until **2029-07-15**.

for **DNV**

DNV local unit: **Japan CMC**

Approval Engineer: **Gisle Hersvik**

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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: 2023-09

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Product description

NOA 60 HS-LTSQ; 2-component epoxy-based coating for corrosion protection of steel surfaces.

Manufactured by

Dongjin Industry Co., Ltd., 21-2, Sanmakgongdannam 1-gil, Yangsan-si, Gyeongsangnam-do, Republic of Korea

DNV local station: Gimhae

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.

Dongjin Industry Co., Ltd. has a written toll manufacturing agreement with **Nippon Paint Marine Korea Co., Ltd.**, that is an authorized licensee of **Nippon Paint Marine Coatings Co., Ltd.** (the Company).

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.

NOA 60 HS-LTSQ are approved for application on blast cleaned surfaces and on prequalified shop primed surfaces. The following shop primers have been prequalified:

- NIPPON CERAMO	[Nippon Paint Marine Coatings]
- Cerabond 2000	[Chugoku Marine Paints]
- CMP CERAZEUS	[Chugoku Marine Paints Ltd.]
- CERAZINC	[Kobe Paints, Ltd.]
- SD Zinc 1000HA(S)	[NKM Coatings]
- Hempel's Shopprimer ZS 15890	[Hempel A/S]
- Galvany Shopprimer IZ182(J)	[KCC Corp.]
- KCI Zinc 1000	[Kangnam Jevisco Co, Ltd.]
- SigmaWeld 165 (Sigma Proferral MC)	[PPG / Sigma Coatings]
- Muki Z 2001	[Jotun A/S]
- Muki Z 2008	[Jotun A/S]
- E06-2	[Jiangsu Lanling Polymer Material Co., Ltd.]
- TH-2	[Jiangsu Yejian Anti-corrosion Material Co., Ltd.]
- Interplate 937	[International Paint Limited]

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 **NOA 60 HS-LTSQ** is changed to a degree deemed significant by DNV. If the formulation of any of the listed pre-qualified shop primers is changed to a degree deemed significant by DNV 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** and in accordance with DNV-CP-0108. The tests are carried out in accordance with the procedures in IMO Resolution MSC.215(82) Performance Standard for Protective Coatings (PSPC), ref. IACS UI SC223:

- DNV Technical Report No. 2010/5179, Rev. 01 "Ballast Tank Test of NOA 60 HS-LTSQ epoxy paint on NIPPON CERAMO shop primer" of 2011-01-17.
- JPIA Test Report No. 101398 "Ballast Tank Coating Test of 2x 160µm NOA60HS-LTSQ on CERABOND 2000 Shop Primer" of 2010-11-30.
- JPIA Test Report No. 101400 "Ballast Tank Coating Test of 2x 160µm NOA60HS-LTSQ on SD ZINC 1000HA(S) Shop Primer" of 2010-11-30.

- JPIA Test Report No. 101402 "Ballast Tank Coating Test of 2x 160µm NOA60HS-LTSQ on HEMPEL ZS 15890 Shop Primer" of 2010-11-30.
- JPIA Test Report No. 101404 "Ballast Tank Coating Test of 2x 160µm NOA60HS-LTSQ on GALVANY SHOP PRIMER IZ 182(J) Shop Primer" of 2010-11-30.
- JPIA Test Report No. 101406 "Ballast Tank Coating Test of 2x 160µm NOA60HS-LTSQ on KCI ZINC 1000 Shop Primer" of 2010-11-30.
- JPIA Test Report No. 101408 "Ballast Tank Coating Test of 2x 160µm NOA60HS-LTSQ on SIGMAWELD 165 Shop Primer" of 2010-11-30.
- JPIA Test Report No. 101410 "Ballast Tank Coating Test of 2x 160µm NOA60HS-LTSQ on MUKI Z 2001 Shop Primer" of 2010-11-30.
- JPIA Test Report No. 101412 "Ballast Tank Coating Test of 2x 160µm NOA60HS-LTSQ on MUKI Z 2008 Shop Primer" of 2010-11-30.
- CCS-DNV Technology Institute, Technical Report No. CDTI-CL-11B087, Rev. 03 "Ballast Tank Coating Test of Epoxy-based NOA HS-LTSQ on E06-2 Inorganic Zinc Silicate Shop Primer" of 2011-11-16
- CCS-DNV Technology Institute, Technical Report No. CDTI-CL-11B089, Rev. 03 "Ballast Tank Coating Test of Epoxy-based NOA HS-LTSQ on TH-2 Inorganic Zinc Silicate Shop Primer" of 2011-11-16.
- GLP-Report 106244HH (2), 04.07.2011.
- DNV Technical Report No. 2021-5346, Rev. 01 "Crossover coating test of NOA 60 HS-LTSQ on CMP CERAZEUS shop primer" of 2021-10-08.

Marking of product

Product/package shall be marked with *manufacturer's name and address*: **Dongjin Industry Co., Ltd., Korea**, *type designation*: **NOA 60 HS-LTSQ**, 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 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 assessments (for Certificate Retention / Certificate Renewal) shall be performed according to DNV-CP-0338.

This certificate is only valid if required Periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

END OF CERTIFICATE