

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Protective Coating Systems - Seawater Ballast Tanks**

with type designation(s)

NOA 60 HS-N and NOA 60 HS-LTSQ

Issued to

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

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 **Hamburg** on **2018-04-27**This Certificate is valid until **2023-04-26**.for **DNV GL**DNV GL local station: **Kobe**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.



Product description

NOA 60 HS-N and **NOA 60 HS-LTSQ**; 2-component epoxy based, light coloured coating for corrosion protection of steel surfaces.

Manufactured by

Wilckens Farben GmbH, Schmiedestrasse 10 D, 25348 Glückstadt / Germany

DNV GL local station: Hamburg

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.

Wilckens Farben GmbH has a written toll manufacturing agreement with **Nippon Paint Marine (Europe) GmbH**, that is an authorized licensee of **Nippon Paint Marine Coating 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-N and **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]
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]
W53-02 (on NOA HS-N only)	[Taicang Lanyan Deck Covering & Coating Co. Ltd.]
SP-09, Cathozinc Shop Primer Type-2 (on NOA 60 HS-N only)	[Yung Chi Paint & Varnish Mfg. Co., Ltd.]

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 **NOA 60 HS-N** and **NOA 60 HS-LTSQ** 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

Tests carried out

Type Testing carried out according with DNV GL CP-0108. The tests reported in the below listed 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;

- DNV Technical Report No. 2010/5178, Rev. 01 "Ballast Tank Test of NOA 60 HS-N epoxy paint on NIPPON CERAMO shop primer" of 2011-01-17.
- JPIA Test Report No. 101397 "Ballast Tank Coating Test of 2x 160µm NOA60HS-N on CERABOND 2000 Shop Primer" of 2010-11-30.
- JPIA Test Report No. 101399 "Ballast Tank Coating Test of 2x 160µm NOA60HS-N on SD ZINC 1000HA(S) Shop Primer" of 2010-11-30.
- JPIA Test Report No. 101401 "Ballast Tank Coating Test of 2x 160µm NOA60HS-N on HEMPEL ZS 15890 Shop Primer" of 2010-11-30.
- JPIA Test Report No. 101403 "Ballast Tank Coating Test of 2x 160µm NOA60HS-N on GALVANY SHOP PRIMER IZ 182(J) Shop Primer" of 2010-11-30.
- JPIA Test Report No. 101405 "Ballast Tank Coating Test of 2x 160µm NOA60HS-N on KCI ZINC 1000 Shop Primer" of 2010-11-30.
- JPIA Test Report No. 101407 "Ballast Tank Coating Test of 2x 160µm NOA60HS-N on SIGMAWELD 165 Shop Primer" of 2010-11-30.
- JPIA Test Report No. 101409 "Ballast Tank Coating Test of 2x 160µm NOA60HS-N on MUKI Z 2001 Shop Primer" of 2010-11-30.
- JPIA Test Report No. 101411 "Ballast Tank Coating Test of 2x 160µm NOA60HS-N on MUKI Z 2008 Shop Primer" of 2010-11-30.
- CCS-DNV Technology Institute, Technical Report No. CDTI-CL-11B088, Rev. 03 "Ballast Tank Coating Test of Epoxy-based NOA HS-N on E06-2 Inorganic Zinc Silicate Shop Primer" of 2011-11-16.
- CCS-DNV Technology Institute, Technical Report No. CDTI-CL-11B090, Rev. 03 "Ballast Tank Coating Test of Epoxy-based NOA HS-N on TH-2 Inorganic Zinc Silicate Shop Primer" of 2011-11-16.
- GLP-Report 106244HH (1), 04.07.2011.
- CCS-DNV Technology Institute, Technical Report No. CDTI-CL-11B092, Rev. 03 "Ballast Tank Coating Test of Epoxy-based NOA HS-N on W53-02 Inorganic Zinc Silicate Shop Primer" of 2011-11-16.
- DNV GL Technical Report No. 2015-5361, Rev. 01 "Crossover coating test of NOA 60 HS-N on SP-09 shop primer" of 2015-10-05.

- 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.

Marking of product



Job Id: **262.1-028334-1**
Certificate No: **TAK000017D**

Product/package shall be marked with *manufacturer's name and address*; **Wilckens Farben GmbH, Germany**, and *type designation*; **NOA 60 HS-N** and **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 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 and 3.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

END OF CERTIFICATE