DNV·GL

Certificate No:
TAK00000VD

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Protective Coating Systems - Seawater Ballast Tanks

with type designation(s)
SD ZINC 100QD + CMP NOVA 2000 and SD ZINC 100QD + CMP NOVA 2000 QD,
SD ZINC 100QD + NOVA 2000 and SD ZINC 100QD + NOVA 2000 QD

Issued to
Chugoku Marine Paints, Ltd. (Hiroshima Head Office)
OTAKE CITY, HIROSHIMA, 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 **Høvik** on **2017-09-18**
This Certificate is valid until **2022-09-17**.
DNV GL local station: **Hiroshima**

Approval Engineer: **Gisle Hersvik**

for **DNV GL**

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.

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Job Id: **262.1-007440-9**
Certificate No: **TAK00000VD**

Product description

SD ZINC 100QD + CMP NOVA 2000/NOVA 2000 and **SD ZINC 100QD + CMP NOVA 2000 QD/NOVA 2000 QD**; 2-component zinc epoxy anticorrosive primer, plus 2-component epoxy based, light coloured coating for corrosion protection of steel surfaces.

Manufactured by

Chugoku Marine Paints (Shanghai) Ltd., 4677, Jiasong Road (North), Jiading, Shanghai, China.

DNV GL local station: 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.

SD ZINC 100QD + CMP NOVA 2000/NOVA 2000 and **SD ZINC 100QD + CMP NOVA 2000 QD/NOVA 2000 QD** are approved for application on blast cleaned surfaces and on prequalified shop primed surfaces. The following shop primers are prequalified:

CERABOND 2000	[Chugoku Marine Paints]
SD Zinc Primer 1000HA(S)	[COSCO Kansai Paint & Chemicals (Tianjin) Co., Ltd.]

(The epoxy primer SD ZINC 100QD is manufactured by COSCO Kansai Paint & Chemicals (Tianjin) 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 **SD ZINC 100QD**, **CMP NOVA 2000/NOVA 2000** and **CMP NOVA 2000 QD/NOVA 2000 QD** 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 according to **Type Approval documentation**. The tests reported in CCS-DNV Technology Institute Reports are in accordance with procedures in IMO Resolution MSC.215(82) Performance Standard for Protective Coatings (PSPC), ref. IACS UI SC 223;

- CCS-DNV Technology Institute Technical Report No. CDTI-CL-12B008 "Ballast Tank Coating Test of Epoxy SD ZINC 100QD Primer & 2*160 µm Epoxy-Based NOVA 2000 on SD Zinc Primer 1000HA(S) Inorganic Zinc Shop Primer" of 2012-03-06.

— CCS-DNV Technology Institute Technical Report No. CDTI-CL-12A001 "Ballast Tank Coating Test of Epoxy SD ZINC 100QD Primer & 2*160 µm Epoxy-Based NOVA 2000QD on SD Zinc Primer 1000HA(S) Inorganic Zinc Shop Primer" of 2012-03-06.
— CCS-DNV Technology Institute Technical Report No. CDTI-CL-12A003 "Ballast Tank Coating Test of Epoxy SD ZINC 100QD Primer & 2*160 µm Epoxy-Based NOVA 2000 on Cerabond 2000 Inorganic Zinc Shop Primer" of 2012-05-08.
— CCS-DNV Technology Institute Technical Report No. CDTI-CL-12B040 "Ballast Tank Coating Test of Epoxy SD ZINC 100QD Primer & 2*160 µm Epoxy-Based NOVA 2000QD on Cerabond 2000 Inorganic Zinc Shop Primer" of 2012-05-08.

Marking of product

Product/package shall be marked with *manufacturer's name and address*; **Chugoku Marine Paints (Shanghai), Ltd., Jiading, Shanghai, China**, and *type designation*; **CMP NOVA 2000/NOVA 2000** or **CMP NOVA 2000 QD/NOVA 2000 QD**, 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).

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 DNV GL Type Approval Certificate.

END OF CERTIFICATE