DNV·GL

Certificate No:
TAK000004B

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Protective Coating Systems - Seawater Ballast Tanks

with type designation(s)
HilonUprimer 3200

Issued to
Shanghai Hilong Shine New Material Co., Ltd.
Shanghai, China

is found to comply with
Det Norske Veritas' Type Approval Programme 1-602.1, 2011, Protective Coating Systems - 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.

This Certificate is valid until **2019-11-10**.

Issued at **Høvik** on **2015-11-11**

for **DNV GL**

DNV GL local station: **Shanghai**

Approval Engineer: **Gisle Hersvik**

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: **262.1-017874-1**
Certificate No: **TAK000004B**

Product description

HilonUprimer 3200; two-component, epoxy based, coatings for corrosion protection of steel surfaces.

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.

HilonUprimer 3200 is approved for application on blast cleaned surfaces and on prequalified shop primed surfaces. The following shop primers have been prequalified:

HilonShop 1100	[Shanghai Hilong Shine New Material Co., Ltd.]
W53-02	[Taicang City Lanyan Deck Covering & Coating Co., Ltd.]
CD-SG906	[Ningbo Haidun Coating Co., Ltd.]
TH-2	[Yejian New Material Co., Ltd.]
F-6001	[Jiangxi Jingcheng Industrial 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 coating **HilonUprimer 3200** is 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 in accordance with **Type Approval documentation**. The tests reported in the CCS-DNV Technology Institute Test Reports are carried out according to the procedures in IMO Resolution MSC.215(82)) Performance Standard for Protective Coatings (PSPC), ref. IACS UI SC223;

- Technical Report from CCS-DNV Technology Institute No. CDTI-CL-15A004, Rev. 04 "Ballast Tank Coating Test of 2x160 µm Epoxy-based HilonUprimer 3200 on HilonShop 1100 Inorganic Zinc Shop Primer" of 2015-05-26.
- Technical Report from CCS-DNV Technology Institute No. CDTI-CL-15A010, Rev. 04 "Ballast Tank Coating Test of 2x160 µm Epoxy-based HilonUprimer 3200 on W53-02 Inorganic Zinc Shop Primer" of 2015-07-06.
- Technical Report from CCS-DNV Technology Institute No. CDTI-CL-15B012, Rev. 04 "Ballast Tank Coating Test of 2x160 µm Epoxy-based HilonUprimer 3200 on CD-SG906 Inorganic Zinc Shop Primer" of 2015-05-28.
- Technical Report from CCS-DNV Technology Institute No. CDTI-CL-15B022, Rev. 04 "Ballast Tank Coating Test of 2x160 µm Epoxy-based HilonUprimer 3200 on TH-2 Inorganic Zinc Shop Primer" of 2015-05-22.
- Technical Report from CCS-DNV Technology Institute No. CDTI-CL-15B015, Rev. 04 "Ballast Tank Coating Test of 2x160 µm Epoxy-based HilonUprimer 3200 on F-6001 Inorganic Zinc Shop Primer" of 2015-05-28.

Marking of product

Product/package shall be marked with *manufacturer's name and address*; **Shanghai Hilong Shine New Material Co., Ltd., China**, and *type designation*; **HilonUprimer 3200**, 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 two (2) years (Certificate Retention) and at renewal after four (4) 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