

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Protective Coating Systems - Seawater Ballast Tanks**with type designation(s)
BANNOH 500 and BANNOH 500 QD

Issued to

CHUGOKU PAINTS BV
Heijningen, Noord-Brabant, Netherlands

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 **2017-10-31**This Certificate is valid until **2022-10-30**.DNV GL local station: **Rotterdam**for **DNV GL**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.



Product description

BANNOH 500 and **BANNOH 500 QD**, 2-component epoxy based, light coloured, coating 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.

BANNOH 500 and **BANNOH 500 QD** are approved for application on blast cleaned surfaces and on shop primed surfaces. The following shop primers have been prequalified:

CERABOND 2000	[Chugoku Marine Paints]
KCI ZINC 1000	[Kunsul Chemical Ind.]
SIGMAWELD 165 (Sigma Proferral MC)	[PPG / Sigma Coatings]
GALVANY SHOPPRIMER IZ182J	[KCC Corp.]
HEMPEL'S SHOPPRIMER ZS 15890	[Hempel A/S]

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 **BANNOH 500** and **BANNOH 500 QD** 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 carried out at DNV Bergen are in compliance with procedures in IMO Resolution MSC.215(82) Performance Standard for Protective Coatings (PSPC), ref. IACS UI SC223:

- DNV Bergen Technical Report No. 2008-5163, Rev. 01 "Ballast Tank Coating Test of 2 x 160 µm BANNOH 500 on CERABOND 2000 Shop Primer" of 2008-06-13.
- DNV Bergen Technical Report No. 2008-5165, Rev. 01 "Ballast Tank Coating Test of 2 x 160 µm BANNOH 500 QD on CERABOND 2000 Shop Primer" of 2008-06-13.
- DNV Bergen Technical Report No. 2009-5057 of 2009-03-30.
- DNV Bergen Technical Report No. 2009-5061 of 2009-03-30.
- DNV Bergen Technical Report No. 2009-5058, Rev. 00 "Crossover test of BANNOH 500 (M2-41000A) on Galvany Shopprimer IZ182(J)" of 2009-04-03.
- DNV Bergen Technical Report No. 2009-5059 of 2009-04-03.
- DNV Bergen Technical Report No. 2009-5063 of 2009-04-03.
- DNV Bergen Technical Report No. 2009-5060 of 2009-03-25.
- DNV Bergen Technical Report No. 2009-5064 of 2009-03-25.
- DNV Bergen Technical Report No. 2009-5062, Rev. 00 "Crossover test of BANNOH 500 QD (M2-41010A) on Galvany Shopprimer IZ182(J)" of 2009-04-03.

Marking of product

Job Id: **262.1-008655-3**
Certificate No: **TAK00000ZN**

Product/package shall be marked with *manufacturer's name and address*; **Chugoku Paints B.V., The Netherlands**, *type designation*; **BANNOH 500 / BANNOH 500 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.

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 the DNV GL Type Approval Certificate.

END OF CERTIFICATE