

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Protective Coating Systems - Seawater Ballast Tanks**with type designation(s)
Jotacote B10

Issued to

Jotun A/S
SANDEFJORD, Norway

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 according to 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 **2019-12-06**.Issued at **Høvik** on **2015-12-07**DNV GL local station: **Sandefjord**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.

Job Id: **262.1-020603-1**
Certificate No: **TAK000005B**

Product description

Jotacote B10 is a two-component, abrasion resistant, epoxy based coating for corrosion protection of steel surfaces.

Manufactured by

Jotun COSCO Marine Coatings (Qingdao) Co., Ltd., South of Chunyang Road and East of Huaguan Road, Qingdao National High-tech Industrial Development Zone, Qingdao, P.R.China

DNV GL local office: Qingdao

Responsibility

The Holder of 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.

Jotacote B10 is approved for application on blast cleaned surfaces and on prequalified shop primed surfaces. The following shop primers have been prequalified:

Muki Z 2001	[Jotun A/S]
Muki Z 2008	[Jotun A/S]
CD-SG906	[Ningbo Haidun Coating Co., Ltd.]
W53-02	[Taicang Lanyan Deck Dressing & Coating Co. Ltd.]
Cerabond 2000	[Chugoku Marine Paints]
SigmaWeld 165 (Sigma Proferral MC)	[PPG / Sigma Coatings]
TH-2	[Jiangsu Yejian Anticorrosion Materials Co., Ltd.]
725-E47	[Xiamen SunRui Coating Co. Ltd.]
WS-01	[Jingjiang Hengyu Chemical Machinery Co., Ltd.]
F-6001	[JiangxiSheng Jincheng Industrial Co., Ltd.]
SD Zinc Primer 1000 HA(S)	[COSCO Kansai Paints & Chemicals]

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 **Jotacote B10** 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 DNV and Test and Verifying Center for Ship Materials on Coatings and Paintings Reports are carried out in accordance with the test procedures in IMO Resolution MSC.215(82) Performance Standard for Protective Coatings (PSPC), ref. IACS UI SC223;

— DNV Report No. 2012-5028/13FNOZF-4, Rev. 00 of 2012-03-16, "Ballast Tank Coating Testing of Jotacote B10 on Muki Z 2001 Shop Primer"

- DNV Report No. 2012-5031/13FNOZF-7, Rev. 01 of 2012-03-07, "Crossover Test of Jotacote B10 on W53-02 Shop Primer"
- DNV Report No. 2012-5032/13FNOZF-8, Rev. 01 of 2012-03-07, "Crossover Test of Jotacote B10 on SigmaWeld 165 Shop Primer"
- DNV Report No. 2012-5033/13FNOZF-9, Rev. 00 of 2012-03-07, "Crossover Test of Jotacote B10 on Muki Z 2008 Shop Primer"
- Test and Verifying Center for Ship Materials on Coatings and Paintings Test Report No. JX12125 "Jotacote B10 on TH-2 zinc silicate shop primer" of 2012-04-16.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Test Report No. JX12127 "Jotacote B10 on CD-SG906 inorganic zinc silicate shop primer" of 2012-04-16.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Test Report No. JX12129 "Jotacote B10 on 725-E47 inorganic zinc silicate shop primer" of 2012-04-16.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Test Report No. JX12135 "Jotacote B10 on 1049A Cerabond 2000" of 2012-04-16.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Test Report No. JX12137 "Jotacote B10 on W53-02 inorganic zinc silicate shop primer" of 2012-04-16.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Test Report No. JX12370 "Jotacote B10 on SD Zinc PRIMER 1000HA(S)" of 2012-12-14.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Test Report No. JX12351 "Jotacote B10 on F-6001 inorganic zinc silicate shop primer" of 2012-11-05.

Marking of product

Product/package shall be marked with *manufacturer's name and address*; **Jotun COSCO Marine Coatings (Qingdao) Co., Ltd., China**, *type designation*; **Jotacote B10**, 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