

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Protective Coating Systems - Seawater Ballast Tanks**with type designation(s)
Jotaprime 510

Issued to

Jotun A/S
SANDEFJORD, Norway

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 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 **2021-08-14**.Issued at **Høvik** on **2016-08-15**DNV GL local station: **Sandefjord**Approval Engineer: **Stefan Marion**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.

Product description

Jotaprime 510, 2-component polyamine cured pure epoxy 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, High-tech Industrial Development Zone, Qingdao City, Shandong Province, China

DNV GL local office: Qingdao

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.

Jotaprime 510 is approved for application on blast cleaned surfaces and on shop primed surfaces. The following shop primers are prequalified:

MUKI Z 2008	[Jotun A/S]
TH-2	[Jiangsu Yejian Anti-Corrosion Co., Ltd.]
E06-2	[Changzhou Tian-an Special Coatings Materials Co., Ltd.]
SD Zinc 1000 HA(S)	[COSCO Kansai Paints]
Cerabond 2000	[Chugoku Marine Paints]
725-E47	[Xiamen Sunrui Ship Coatings Co., Ltd.]
F-6001	[Jiang Xi Jing Cheng Industrial Co., Ltd.]
CD-SG906	[Haidun Coating (Ningbo) Co., Ltd.]
W53-02	[Taicang Lanyan Paint]
Hempel's Shopprimer ZS 15890	[Hempel Coatings 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 **Jotaprime 510** 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

1.

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2.

3.

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**. The tests reported in the Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Reports are carried out in accordance with the procedures in IMO Resolution MSC.215(82) Performance Standard for Protective Coatings (PSPC), ref. IACS UI SC223;

- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15164, "Jotaprime 510 on Muki Z 2001 shop primer "of 2015-06-29.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15162, "Jotaprime 510 on 725-E47 inorganic zinc silicate shop primer "of 2015-06-25.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15166, "Jotaprime 510 on CD-SG906 inorganic zinc silicate shop primer "of 2015-07-25.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15165, "Jotaprime 510 on Cerabond 2000 inorganic zinc silicate shop primer "of 2015-07-05.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15167, "Jotaprime 510 on E06-2 inorganic zinc silicate shop primer "of 2015-07-05.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15161, "Jotaprime 510 on F-6001 inorganic zinc silicate shop primer "of 2015-07-05.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15163, "Jotaprime 510 on SD Zinc 1000 HA(S) inorganic zinc silicate shop primer "of 2015-07-05.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15168, "Jotaprime 510 on TH-2 inorganic zinc silicate shop primer "of 2015-07-05.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15169, "Jotaprime 510 on W53-02 inorganic zinc silicate shop primer "of 2015-07-05.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX16164, "Jotaprime 510 on Hempel ZS 15890 inorganic zinc silicate shop primer "of 2016-07-12

Marking of product

Product/package shall be marked with *manufacturer's name and address*; **Jotun COSCO Marine Coatings (Qingdao) Co., Ltd. China**, *type designation*; **Jotaprime 510**, 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 five (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