DNV·GL

Certificate No:
TAK000009B

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Protective Coating Systems - Seawater Ballast Tanks

with type designation(s)
Penguard EXA II

Issued to
Jotun A/S
SANDEFJORD, Norway

is found to comply with
DNV GL class programme CP-0108 – Type Approval of non-metallic materials – 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 **2021-03-14**.

Issued at **Høvik** on **2016-03-15**

for **DNV GL**

DNV GL local station: **Sandefjord**

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: **262.1-021916-1**
Certificate No: **TAK000009B**

Product description

Penguard EXA II, 2-component polyamine cured pure epoxy coating for corrosion protection of steel surfaces.

Manufactured by

Jotun Coatings (Zhangjiagang) Co. Ltd., Jiangsu Yangtze River Internat., Chemical Industry Park, Zhangjiagang Free Trade Zone, Jiangsu 215634, P.R. China

DNV GL local office: Nanjing

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.

Penguard EXA II 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]

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 **Penguard EXA II** 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 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 of 2015-06-29.

- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15162 of 2015-06-25.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15166 of 2015-07-25.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15165 of 2015-07-05.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15167 of 2015-07-05.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15161 of 2015-07-05.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15163 of 2015-07-05.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15168 of 2015-07-05.
- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15169 of 2015-07-05.

Marking of product

Product/package shall be marked with *manufacturer's name and address*; **Jotun Coatings (Zhangjiagang) Co. Ltd., Zhangjiagang, Jiangsu, China**, *type designation*; **Penguard EXA II**, 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 2.5 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