DNV·GL

Certificate No:
TAK00001UB

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Protective Coating Systems - Cargo Oil Tanks

with type designation(s)
Penguad EXA II

Issued to
Jotun A/S
SANDEFJORD, Norway

is found to comply with
DNV GL class programme DNVGL-CP-0139 – Type approval – Protective coating systems for cargo oil tanks
IMO Resolution MSC.288(87) 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 :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Hamburg** on **2019-12-12**
This Certificate is valid until **2024-12-11**.
DNV GL local station: **Sandefjord**

Approval Engineer: **Enno Brück**

for **DNV GL**

Thorsten Lohmann
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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Product description

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

Manufactured by

Jotun Paints (M) Sdn Bhd, Lot 9143, PN 38500, Kawasan Perindustrian Nilai, 71800 Nilai, Negeri Sembilan, Malaysia

DNV GL local office: Kuala Lumpur

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.

Penguad 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]
- Muki Z 2001 [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 **Penguad 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.

Tests carried out

Type testing carried out in accordance with **Type Approval documentation**. The tests are carried out according to the procedures in IMO Resolution MSC.288(87) Performance Standard for Protective Coatings (PSPC), ref. IACS UI SC259;

- Test and Verifying Center for Ship Materials on Coatings and Paintings Technical Report No. JX15182, of 2015-07-27.

- 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.
- DNV GL Technical Report No. 2015-5532, Rev. 00, of 2015-11-20.

Marking of product

Product/package shall be marked with *manufacturer's name and address***; Jotun Paints (M) Sdn Bhd Malaysia**, *type designation*; **Penguad 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 (Certificate Retention) and renewal after 5 years (Certificate Renewal) shall be performed acc. DNV GL CP-0338.

END OF CERTIFICATE