

TYPE APPROVAL CERTIFICATE

This is to certify:

That the TBT-Free Anti-Fouling Systems

with type designation(s)
SeaForce 30 M and SeaForce 60 M

Issued to

Jotun A/S
SANDEFJORD, Norway

is found to comply with
Det Norske Veritas' Type Approval Programme 1-602.3, 2012, Anti-Fouling Systems

Application :

Organotin-free self-polishing anti-fouling system.

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: **262.1-019982-1**
Certificate No: **TAK0000050**

Product description

Organotin-free self-polishing hydrolysing anti-fouling paints; **SeaForce 30 M and SeaForce 60 M**

Colours:

The product may be available in various colours. Please contact the local Jotun representative for details.

Active ingredients:

CAS No. 1317-39-1 Cuprous oxide
CAS No. 12122-67-7 Zineb

Manufactured by

Chokwang Jotun Ltd., 30th Block Jisa Science Park, 1205 Jisa-dong, Gangseo-gu, Busan 606-063, South Korea.

DNV GL local office: Pusan

Jotun Coatings (Zhangjiagang) Co. Ltd., No. 15 Zhangjiagang Road, Jiangsu Yangtze River Int. Chemical Industry Park, Zhangjiagang Free Trade Zone, Jiangsu 215634, China

DNV GL local office: Nanjing

Jotun Paints (Europe) Ltd., Stather Road, Flixborough, Scunthorpe, North Lincolnshire, DN15 8RR, England, United Kingdom

DNV GL local office: Manchester

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

DNV GL local office: Kuala Lumpur

Jotun Boya San. ve Ticaret A.S., Yeni Camlik Caddesi, Ayaz Sokat No:2 Kat:4, 34418 4. Levent-Istanbul, Turkey

DNV GL local office: Istanbul

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

The issuance of this certificate is solely connected to the control of the Anti-Fouling System, AFS, with regard to compliance with the International Convention on the Control of Harmful Anti-Fouling Systems on Ships.

It does not cover verification of surface preparation, corrosion protection, fire, health and safety precautions, durability of the AFS or environmental properties other than regulated by the Convention.

Type Approval documentation

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Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**, with the following test results (ref. Test Report from Molab as, Norway of 2015-06-26):

- **SeaForce 30 M:** 0.013 wt% tin
- **SeaForce 60 M:** 0.011 wt% tin

Marking of product

Product shall be marked with *manufacturer's name; place of production and type designation*.

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