

Certificate No:
TAK000005E
 File No:
335.30
 Job Id:
262.1-020204-1

TYPE APPROVAL CERTIFICATE

This is to certify:

That the TBT-Free Anti-Fouling Systems

with type designation(s)
SeaForce 30, SeaForce 60 and SeaForce 90

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 :

Organo-tin free self-polishing hydrating type anti-fouling system.

This Certificate is valid until **2019-12-07**.

Issued at **Høvik** on **2015-12-08**

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. If any person suffers loss or damage which is proven to have been caused by any negligent act or omission of the Society, then the Society shall pay compensation to such person for his proven direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question. The maximum compensation shall never exceed USD 2 million. In this provision the "Society" shall mean DNV GL AS as well as all its direct and indirect owners, affiliates, subsidiaries, directors, officers, employees, agents and any other person or entity acting on behalf of DNV GL AS.

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Product description

Organo-tin free self-polishing hydrating type anti-fouling paint; **SeaForce 30, SeaForce 60 and SeaForce 90.**

Colours:

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

Active ingredients:

Cuprous oxide	CAS No. 1317-39-1	
Cuprous Pyrithione	CAS No. 14915-37-8	(SeaForce 60 and SeaForce 90)
Zineb	CAS No. 12122-67-7	

Manufactured by

Jotun U.A.E Ltd. (L.L.C.), P.O.Box 3671, Al Quoz Industrial Area, Dubai, U.A.E.

DNV GL local office: Dubai

El-Mohandes Jotun S.A.E., P.O.Box 203, Ismailia Industrial Area, Egypt

DNV GL local office: Alexandria

Jotun Thailand Ltd., Amata Nakorn Ind. Estate (BIPII), 700/353 Moo 6 Tumbol Donhualoh Amphur Muang, Chonburi 20000, Thailand

DNV GL local office: Bangkok

P.T. Jotun Indonesia Paints and Chemicals, Kawasan Industri MM2100 Blok KK-1, Cikarang Barat, Bekasi 17520, Indonesia

DNV GL local office: Jakarta

Jotun Paints South Africa Pty. Ltd., Wimbledon Road, P.O. Box 187, 7581 Blackheath, Cape Town 8000, South Africa

DNV GL local office: Cape Town

Jotun India Private Ltd. – Pune, Plot no D 280, Ranjangaon MIDC, Taluka Shirur, District Pune 412 220, India

DNV GL local office: Mumbai

Jotun Ibérica SA, Poligon Industrial Santa Rita Calle Estàtica, no 3 08755 – Castellbisbal, Barcelona, Spain

DNV GL local office: Barcelona

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.

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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 Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**, with the following test results, ref. Test Report from SINTEF of 2004-08-31:

- **SeaForce 30:** 0,067% (No TBT-compounds detected)
- **SeaForce 60:** 0,063% (No TBT-compounds detected)
- **SeaForce 90:** 0,090% (No TBT-compounds detected)

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