

TYPE APPROVAL CERTIFICATE

This is to certify:**That the TBT-Free Anti-Fouling Systems**with type designation(s)
Navilux 4100

Issued to

Berger Paints Singapore Pte Ltd
SINGAPORE, Singapore

is found to comply with

DNV GL class programme DNVGL-CP-0110 – Type approval – Anti-fouling systems**Application :****Organo-tin free 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 **2021-09-04**.Issued at **Høvik** on **2016-09-05**for **DNV GL**DNV GL local station: **Certification of Materials - Singapore**Approval Engineer: **Stefan Marion****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:
Certificate No: **TAK00000FZ**

Product description

A organo-tin free single component, high solids, rosin-based conventional anti-fouling designed for tropical waters; **Navilux 4100**

Colours:

This product may be available in various colours. Please contact your local Berger Paint Representative for details.

Active Ingredients:

CAS No. 1317-39-1 Cuprous Oxide

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.

Type Approval documentation

Tests carried out

Type Testing carried out according to **Type Approval documentation**, with the following test results (ref. Test Report from TÜV SÜD PSB Pte. Ltd, Singapore of 2010-07-06):

- **Navilux 4100:** <0.001 % tin (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.

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:

- 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