DNV·GL

Certificate No:
TAK00001YZ

TYPE APPROVAL CERTIFICATE

This is to certify:

That the TBT-Free Anti-Fouling Systems

with type designation(s)
Hempel's Antifouling Oceanic Flex+ 7390W,
Hempel's Antifouling Oceanic Protect+ 7395W

Issued to
Hempel A/S
Kgs. Lyngby, Hovedstaden, Denmark

is found to comply with
DNV GL class programme DNVGL-CP-0110 – Type approval – 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.

Issued at **Høvik** on **2020-11-18**
This Certificate is valid until **2025-11-17**.
DNV GL local station: **Copenhagen FIS**

Approval Engineer: **Gisle Hersvik**

for **DNV GL**

Gustav Heiberg
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

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Job Id: **262.1-034826-1**
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Product description

Organotin free self-polishing type anti-fouling paints:
Hempel's Antifouling Oceanic Flex+ 7390W,
Hempel's Antifouling Oceanic Protect+ 7395W

Colours:
The products may be available in various colours. Please contact the local Hempel representative for details.

Active ingredients:
CAS No. 1317-39-1 Copper(I)oxide
CAS No. 12122-67-7 Zinc ethylene-1,2-bis-dithiocarbamate (Zineb)

Manufactured by

Hempel Paints (Emirates) LLC - Sharjah Showroom/Office/Trade Counter, P.O. Box 2000, Sharjah, United Arab Emirates

DNV GL local station: Abu Dhabi

Hempel Manufacturing (Malaysia) Sdn. Bhd., Batu 6, Jalan Batu Pahat, 86000 Kluang Johor, Malaysia

DNV GL local station: Kuala Lumpur

Hempel (Guangzhou) Coatings Ltd., No.3 Canghai 4th Road, Yonghe District, Guangzhou Economic Technology Development District, Guangzhou, P.R. China

DNV GL local station: Guangzhou

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

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**, with the following test results (Test Certificates from PRA, UK of 2020-09-15):

- **HEMPEL'S ANTIFOULING OCEANIC FLEX+ 7390W-51110:** 0,0395 % tin (no TBT detected)
- **HEMPEL'S ANTIFOULING OCEANIC FLEX+ 7390W-60600:** 0,0439 % tin (no TBT detected)
- **HEMPEL'S ANTIFOULING OCEANIC PROTECT+ 7395W-51110:** 0,0417 % tin (no TBT detected)
- **HEMPEL'S ANTIFOULING OCEANIC PROTECT+ 7395W-60600:** 0,0453 % tin (no TBT detected)

Marking of product

Product/package shall be marked with *manufacturer's name and address*, *type designation* 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 assessments (for Certificate Retention and Certificate Renewal) shall be performed according to DNVGL-CP-0338.

This certificate is only valid if required Periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnvgl.com

END OF CERTIFICATE