



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. K-4198

This is to certify that the
TBT-Free Anti-Fouling Systems

with type designation(s)
Supermarine AF LCL 870

Manufactured by
RENNER HERRMANN S.A.
CURITIBA PR, Brazil

is found to comply with
Det Norske Veritas' Type Approval Programme 1-602.3, 2009, Anti-Fouling Systems

Application
Organotin-free self-polishing anti-fouling system.

Høvik, 2010-05-18
for Det Norske Veritas AS



This Certificate is valid until
2014-06-30

Rikard Törnqvist
Head of Section

DNV local office:
Rio de Janeiro

Gisle Hersvik
Surveyor

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 proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Certificate No.: K-4198
File No.: 335.30
Job Id.: 262.1-009880-1

Product description

Organotin-free self-polishing anti-fouling paint: **Supermarine AF LCL 870**

Active ingredients:

Copper(1)oxide	CAS No. 1317-39-1
Ziram	CAS No. 137-30-4

The product may be available in various colours. Please contact the local Renner Herrmann Representative for details.

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

1. "Documents to be submitted, sec.3 of TAP 1-602.3" from Renner Herrmann S.A., incl. product information, Technical Data Sheet, Material Safety Data Sheets and TECPAR Test Report No. 10003322 of 2010-04-05.
2. Survey Report from DNV Rio de Janeiro of 2010-05-03.

Tests carried out

Type Testing carried out according to **Type Approval documentation**, with the following test results (Test Report from TECPAR 2010-04-05):

— Supermarine AF LCL 870 (blue): 0.0074 % tin

Marking of product

Product shall be marked with *manufacturer's name*; **Renner Herrmann S.A., Curitiba, Brazil** and *type designation*.

Certificate Retention/Renewal Survey

The scope of the Retention/Renewal Survey is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations have been made to the product design or choice of materials.

A survey is to be performed after two (2) years (Certificate Retention Survey) and at renewal after four (4) years (Certificate Renewal Survey).

The main elements of the survey 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 Type Approval Certificate.

END OF CERTIFICATE