



CERTIFICADO DE APROVAÇÃO DE MODELO
TYPE APPROVAL CERTIFICATE

This is to certify that the design of :

**POURABLE COMPOUND FOR FOUNDATION CHOCKING
 EPOXY BASED RESIN CHOCKFAST ORANGE PR 610 TCF**

Manufactured by :

**PHILADELPHIA RESINS CORPORATION
 MONTGOMERYVILLE, U.S.A.**

Is found to comply with the Rules for Classification of Steel ships.

For traceability to this Type Approval Certificate the products are to be marked:

- Name of Manufacturer or Trade Mark.

The approval is valid only for the fields of application and operational limitations, as follows:

Application on board ships:

- Foundation chocking of diesel engines, reduction gears, thrust bearings, rudder actuators and other auxiliary machinery.
- The allowable chock stress versus temperature is according to the table:

T(0°C)	90	80	70	60	50	40	30	20
P(N/mm ²)	2.3	4.4	5.9	7.0	8.0	8.7	9.4	10

Any significant change in design and/or construction of the above product(s) may render this Certificate with Appendix invalid.

Certificate No.: LIS 98R005

Validity: 2003.01.16

Head of Department: J. Aguiar Ferreira



File No.: 4.010

Lisboa, 1998.01.17

Surveyor: A. Vicente Chagas

It is agreed that save as provided below RINAVE, REGISTRO INTERNACIONAL NAVAL, its subsidiaries, bodies, officers, directors, employees and agents shall have no liability for any loss, damage or expense allegedly caused directly or indirectly by their mistake or negligence, breach of warranty, or any other act, omission or error by them, including gross negligence or wilful misconduct by any such person with the exception of gross negligence or wilful misconduct by the governing bodies or senior executive officers of the Society. This applies regardless of whether the loss, damage or expenses has affected anyone with whom RINAVE, REGISTRO INTERNACIONAL NAVAL has a contract or a third party who has acted or relied on decisions made or information given by or on behalf of the Society. However if any person uses the services of RINAVE, REGISTRO INTERNACIONAL NAVAL or its subsidiaries or relies on any decision made or information given by or on behalf of them and in consequence suffers a loss, damage or expense proved to be due to their negligence, omission or default, then the Society will pay by way of compensation to such person a sum representing his proved loss. In the event RINAVE, REGISTRO INTERNACIONAL NAVAL, or its subsidiaries may be held liable in accordance with the sections above, the amount of compensation shall under no circumstances exceed the amount of the fee, if any, charged for that particular service, decision, advice or information. Under no circumstances whatsoever shall the individual or individuals who have personally caused the loss, damage or expense be held liable. In the event that any provision in this section shall be invalid under the law of any jurisdiction, the validity of the remaining provisions shall not in any way be affected.



Certificate No.: LIS 98R005

File No.: 4.010

DESIGN APPROVAL CONDITIONS

The approval is based on the following documentation:

- Manufacturer's Specification.

PRODUCT CERTIFICATION CONDITIONS

Documents, signboards, etc. which are to accompany each product/delivery:

- Manufacturer's instructions for processing the resin.
- A copy of Type Approval Certificate.

OTHER CONDITIONS

- Chocking plan with boltstress calculation to be submitted for approval in each particular case.
- Alignment of machinery prior to pouring and tightening-up of main engine holding-down bolts, controlled at installation after trial when cooled down is to be checked in the presence of RINAVE Surveyor.
- Manufacturer (or authorized representative) supervision required for mixing and pouring of resin.
- After hardening of chocks and before tightening of the holding down bolts a Barcol hardness test to be performed (min. value 40).