DNV·GL

Certificate No:
TAM0000118

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pourable Compound for Foundation Chocking

with type designation(s)
EPOCAST 36®

Issued to
ITW Performance Polymers
Shannon, Ireland

is found to comply with
DNV GL rules for classification – Ships
DNV GL rules for classification – High speed and light craft
DNV GL class programme DNVGL-CP-0432 – Type Approval – Pourable compounds for foundation chocking

Application :

Pourable compound for chocking of propulsion plants and auxiliary machinery.
Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Max. service temperature:	**80°C**
Max. total surface pressure:	**5.0 N/mm²**
Max. pressure/weight:	**0.9 N/mm²**

Issued at **Hamburg** on **2018-12-19**
This Certificate is valid until **2023-12-31**.
DNV GL local station: **Manchester**

Approval Engineer: **Joachim Rehbein**

for **DNV GL**

Thorsten Lohmann
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: **262.1-029703-1**
Certificate No: **TAM0000118**

Product description

EPOCAST 36® : Two component epoxy based polymer

Production place

1. ITW Performance Polymers, Bay 150, Shannon Industrial State, Co. Clare, Ireland
2. ITW Performance Polymers (Wujiang) Co., Ltd, No. 4680 Pangjin Rd, Wujiang, China

Application/Limitation

The approval is valid for foundation chocking of diesel engines, reduction gears, thrust bearings, rudder actuators, sterntubes and other auxiliary machinery.

The permitted chock stress in accordance with Manufacturer's recommendations, which include the following pressure/temperature relations:

Max. service temperature (°C):	100	90	80	70	60	50	40	30	20
Max. total surface pressure (N/mm²):	2.1	3.7	5.0	6.4	7.8	8.7	10.0	11.1	12.0

Chocking plan with boltstress-calculation to be submitted for approval in each particular case.

Surface pressure exerted on cast resin chocks caused by dead weight of machinery: ≤ 0.7 N/mm².

In exceptional cases a surface pressure caused by dead weight of machinery is permitted up to 0.9 N/mm² (e.g. low speed Two-Stroke Engines).

Operating temperature of cast resin chocks: ≤ 80°C

Barcol hardness of cast resin chocks: ≥ 40

Height of cast resin chocks: 13 to 100 mm (pouring in one layer is permitted)

The approval is also valid for offshore use with reference to DNVGL-RU-OU-0101 Rules for Classification of Offshore Drilling and Support Units.

Any significant change in design and/or quality of the material will render the approval invalid.

Type Approval documentation

Tests carried out

According Type Approval documentation

Marking of product
The product is to be marked with manufacturer's name or trademark and type number identification.

Periodical assessment for retention of the certificate
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 bi-yearly (Certificate Retention) and at renewal after five (5) years (Certificate Renewal).
Each production place shall be assessed once during the validity of the certificate.

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 DNV GL Type Approval Certificate.

Other conditions
Chocking plan with boltstress-calculation shall be submitted for approval in each particular case.

Seating of propulsion plants on cast resin chocks with the primary components as diesel engines, turbines, generators for propulsion, gear boxes, power-take-off drives, thrust bearings, shaft bearings, shaft generators, stern tubes, steering gears and windlasses is subject to approval by the Society in any case.
Drawings and calculations have to be submitted to the Society for approval exclusively by the cast resin manufacturer or an authorized representative.
Installation of rudder bearing bushes with cast resin is subject to approval by the Society. Corresponding drawings have to be submitted for approval.

The tightening of engine and reduction gear holding down bolts, controlled at installation, is to be checked after trial trip when cooled down. Information about this is to be given at the delivery of the compound.

The manufacturer's instructions for casting and curing of the compound are to be followed.
Application has to be carried out under supervision of the cast resin manufacturer or an authorized representative.
The representatives, trained and authorized staff performing foundation work, have to be stated to the Society in writing including name list of the responsible persons. Evidence for training shall be available on demand of local surveyor to the Society.

After hardening of the chocks and prior to tightening of the holding-down bolts a Barcol hardness test has to be performed.

A sample shall be taken on site. Batch number of the used material (resin and hardener) has to be recorded.

A sign plate has to be fitted near the chocks, indicating the name of the cast resin type, name of the responsible company, date of pouring, and holding-down bolts' tightening torque respectively hydraulic pressure and piston area of tensioning device.

For mounting of the components, the latest edition of CLASS GUIDELINE DNVGL-CG-0372 "Foundation and mounting of machinery" has to be observed.

END OF CERTIFICATE