

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pourable Compound for Foundation Chocking

with type designation(s)
DURASIN

Issued to

Daemmstoff Industrie Korea Ltd.
Busan 11, Republic of Korea

is found to comply with
DNV GL class programme DNVGL-CP-0432 – Type Approval – Pourable compounds for foundation chocking

Application :

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

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Max service temperature: 90 °C
Max total surface pressure: 3.9 N/mm²
Max pressure/weight: 0.9 N/mm²

This Certificate is valid until **2021-12-21**.

Issued at **Høvik** on **2016-12-22**

DNV GL local station: **Busan**

Approval Engineer: **Gisle Hersvik**

for **DNV GL**

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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.

Product description

DURASIN; Two-component epoxy-based pourable compound for foundation chocking.

Application/Limitation

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

For various service temperatures the maximum loading limits are as following:

Max. Service Temperature [°C]	20	30	40	50	60	70	80	90	100
Max. Total Surface Pressure [N/mm ²]	12.5	11.4	10.3	9.1	7.8	6.4	5.0	3.9	3.2

Other conditions;

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

The tightening-up 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 to casting and curing of the compound are to be followed.

After hardening of the chocks and prior to tightening of the holding-down bolts a Barcol hardness test has to be performed with a result of at least 40.

Type Approval documentation

Tests carried out

Type testing carried out according to **Type Approval documentation**.

Marking of product

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

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 Assessment to be performed after 2 and 3.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

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.

END OF CERTIFICATE