DNV·GL

Certificate No:
TAK00001X0

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Protective Coating Systems - Cargo Oil Tanks

with type designation(s)
Hempadur 15460

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

is found to comply with
DNV GL class programme DNVGL-CP-0139 – Type approval – Protective coating systems for cargo oil tanks
IMO Resolution MSC.288(87) Performance Standard for Protective Coatings (PSPC)
IACS Unified Interpretations SC259. For Application of SOLAS Regulation II-1/3-11 Performance Standard for Protective Coatings for Cargo Oil Tanks of Crude Oil Tankers (PSPC-COT), adopted by Resolution MSC.288(87).

Application :

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

Issued at **Hamburg** on **2020-07-07**
This Certificate is valid until **2025-07-06**.
DNV GL local station: **Denmark**

Approval Engineer: **Enno Brück**

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.

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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Product description

Hempadur 15460 is an amine adduct curing epoxy coating.

Application/Limitation

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

DNV GL local office: Guangzhou

Responsibility

The holder of 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

This approval is solely connected to the corrosion prevention properties of the coating material. The approval does not include any evaluation of toxicity, contamination, pollution, or fire technical properties.

Hempadur 15460 is approved for application on blast cleaned surfaces and on prequalified shop primed surfaces. The following shop primer has been prequalified:

- ZS 15820	Hempel A/S
- ZS 15890	Hempel A/S
- Sigmaweld 165	PGG Coatings Europe B.V.
- Galvany Shop Primer IZ 182(K)	KCC (Kunshan Co., Ltd.)

Surface preparation and coating application according to PSPC or manufacturer's recommendations, whichever is stricter.

The durability of the applied coating system will depend on the steel surface preparation, coating application and the environmental conditions.

The Type Approval Certificate is invalid if the formulation of the epoxy coating **Hempadur 15460** is changed to a degree deemed significant by DNV GL. If the formulation of the listed pre-qualified shop primer is changed to a degree deemed significant by DNV GL, the shop primer cannot be used as part of the Protective Coating System.

Tests carried out

Type Testing carried out in accordance with DNV GL CP-0139. The tests are carried out according to the procedures in IMO Resolution MSC.288(87) Performance Standard for Protective Coatings (PSPC), ref. IACS UI SC259:

- COT bv Test Report No. LAB16-0354-REP issue: 01 "CRUDE OIL TEST HEMPADUR 15460 on Sa 2½ blasted steel" of 2016-07-04.
- COT bv Test Report No. LAB16-0351 REB issue: 01 "CRUDE OIL TEST HEMPADUR 15460 on Hempel's shop primer ZS 15820" of 2016-07-04
- COT bv Test Report No. LAB16-0352 REB issue: 01 "CRUDE OIL TEST HEMPADUR 15460 on Hempel's shop primer ZS 15890" of 2016-07-04
- COT bv Test Report No. LAB16-0353 REB issue: 01 "CRUDE OIL TEST HEMPADUR 15460 on Sigmaweld 165" of 2016-07-04
- Korea Testing & Research Institute Report No. KTR-PSPC-223 Rev.0 "Ballast Tank Protective Coating Test of 320 µm HEMPADUR 15460 on IZ 182(K)" of 08-2018

Marking of product Product/package shall be marked with; Hempel (Guangzhou) Coatings Ltd., China and HEMPADUR 15460, 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 Assessment (Certificate Retention) and renewal after 5 years (Certificate Renewal) shall be performed acc. DNV GL CP-0338.

END OF CERTIFICATE