Certificate no.:
TAK00002BY

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Polymer Repair System

with type designation(s)
Wencon CS Hi-Build

issued to
Wencon ApS
Bogense, Syddanmark, **Denmark**

is found to comply with
DNV rules for classification – Ships

Application:

Epoxy-based compounds suitable for repairs, maintenance and preventive maintenance tasks of steel, epoxy and epoxy compatible composites. Each repair shall be carried out in accordance with Manufacturer's instructions, approved by DNV, and under surveillance of DNV, when deemed applicable.

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

Issued at **Hamburg** on **2024-05-01**

This Certificate is valid until **2029-04-30**.
DNV local unit: **Denmark CMC**

Approval Engineer: **Gisle Hersvik**

for **DNV**

Digitally Signed By:
Christian Wildhagen
Location: DNV Hamburg, Germany

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

Wencon Hi-Build Product:
o Wencon CS Hi-Build

A high build, abrasion, impact and chemical resistant, sprayable and brush able coating.

Application/Limitation

Epoxy-based compound suitable for repairs, maintenance and preventive maintenance tasks of steel and other surfaces, such as:
- Epoxy compatible composites
- Rudder and hull
- Steel and concrete storage tanks
- Separators
- Evaporators
- Scrubbers
- Absorbers
- Heat exchangers
- Turbines
- Pipelines and pumps
- Vessel propulsion areas

Repair activities for components which affect or might affect the Class of the ship must be reported in advance to DNV.

Installation only in accordance with DNV Rules and Manufacturer's work instructions.

For limitations as to environmental conditions and exposure to chemicals, confer manufacturer's instructions.

The maximum working temperature shall be in accordance with Manufacturer's instructions / information in the relevant technical data sheet.

An adequate curing shall be proven by a Shore D test. The hardness shall be in accordance with Manufacturer's instructions / information in the relevant technical data sheet.

The lifetime and the performance of a repair is, apart from the procedure of application of the system, dependent on the service environment, imposed mechanical loads and deformations and may vary significantly from case to case. A careful assessment of the expected reliability of the repair shall always be carried out by the DNV surveyor and the manufacturer's representative with due regard to the service requirements and the requirements to the reliability of the component to be repaired.

The system has limited or no resistance to exposure to fire. Requirements to the performance of the repair under fire shall be carefully evaluated by the DNV surveyor and the manufacturer's representative.

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

Planning and execution of repair
Each repair shall be carried out in close co-operation with the DNV surveyor:
- The surveyor shall be informed about and participate in (if required by the surveyor) the planning of the repair.
- When required by the surveyor, the surface preparation shall be witnessed and/or the finally prepared surfaces shall be made available for inspection and approved by the surveyor.
- When required by the surveyor, the application of the system and curing shall be witnessed by the same.
- When required by the surveyor, other operations shall be witnessed and approved by the surveyor.
- When required by the surveyor, the final condition of the repair shall be approved by the same.

Type Approval documentation

1. Assessment Report from DNV Fredericia of 2024-02-19
2. Application for Type Approval of 2024-01-08
3. ISO 9001-certificate and ISO 14001-certificate
4. Brochure

5. Chemical Resistance List
6. Experiences (with similar system - Wencon 1088 - now phased out)

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**.

Marking of product

All components of the system are to be marked with manufacturer's name, type designation, date of fabrication and shelf life or expiry date. In addition, the following documentation shall be submitted with the product:

- Product specification.
- Specification of range of application and limitations.
- Detailed procedures for surface preparation.
- Detailed procedures for application.
- Detailed procedures for curing.
- Hazards and precautions to be taken with regard to occupational safety.

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 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 assessments (for Certificate Retention / Certificate Renewal) shall be performed according to DNV-CP-0338.

This certificate is only valid if required Periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com

END OF CERTIFICATE