Certificate No:
TAF00001JY

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Structural Fire Protection

with type designation(s)
"Humidur Char" - I sections

Issued to
Acotec N.V.
Aalst, **Belgium**

is found to comply with
DNV GL offshore standards

Application :

Approved for use as a system for fire protection of structural steel I sections.

Issued at **Høvik** on **2021-09-13**
This Certificate is valid until **2026-09-12**.
DNV local station: **Belgium CMC**

Approval Engineer: **Helge Bjørnarå**

for **DNV**

Helene David-Andersen
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

"Humidur Char" – I sections
The system consists of a two-component intumescent epoxy coating applied to steel substrates prepared to ISO 8501-1 St2 or Sa2.5. The system has been tested and approved without primer.

The materials are manufactured at the following locations:

- ACOTEC N.V., Aalst, Belgium.

Application/Limitation

Approved for use as a system for fire protection of structural steel I sections.

The thickness of "Humidur Char" system to be applied to prevent steel temperature to rise more than 400 °C and 540 °C for I sections are given in Appendix Table 1 and 2.

The protective coating is not defined as non-combustible and should not be used in accommodation or in enclosed areas.

Mass density of "Humidur Char":

Spray:	1.42 g/cm^3
Trowel:	1.42 g/cm^3

The approval refers only to the fire resistance properties of the system.

All tests have been performed with nominal dry film thickness (DFT). Workmanship is subject for acceptance by the relevant authority of the project.

The application (spray and/or trowel) of the protective coating is to be performed in accordance with the manufacturer's application manual. Alternative primers and topcoats may be used provided they have been tested and approved by the manufacturer.

Each product is to be supplied with its manual for application and maintenance

Type Approval documentation

Certification in accordance with Class Programme DNVGL-CP-0338, September 2018.

Application Guide, Humidur Char, Rev. 06, dated 16 February 2021 from maker.
"Coating Procedure Specification and Application Guideline for Humidur Char" document No. Aco_2019_CPS_001 Rev. 4 from maker.

Test report No. 150080-19-1, Rev. 2, dated 29 January 2021 from RISE, Trondheim, Norway.
Test report No. 150080-19-2, Rev. 1, dated 31 January 2021 from RISE, Trondheim, Norway.
Test report No. 150080-19-3, Rev. 1, dated 31 January 2021 from RISE, Trondheim, Norway.
Test report No. 150080-19-4, Rev. 1, dated 31 January 2021 from RISE, Trondheim, Norway.

Assessment report No. F21 150101-55, Rev. 2, dated 8 February 2021 from RISE, Trondheim, Norway.

Tests carried out

Tested according to BS 476: Part 20:1987 with HC-curve according to ISO 834-3.

Marking of product

The product or packing is to be marked with name of manufacturer and type designation.

Periodical assessment

DNV's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Class Programme DNVGL-CP-0338, Section 4.

Appendix to certificate TAF00001JY

Table 1: Prediction for thickness of "Humidur Char" for fire protection of I sections for a critical temperature rise of **400 ºC**:

Hp/A	Fire resistance time in minutes. Thickness in mm.														
	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
32															
35															
40															
45															
50															
55															
60															
65															
70															
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205															
210															
215															
220															
225															
230															
235															
240															
245															
246															

The thickness of material up to the required Hp/A [m^{-1}] shall be used.
Hp/A = Ratio between Heat perimeter and cross sectional Area of the section, [m^{-1}]

Appendix to certificate TAF00001JY

Table 2: Prediction for thickness of "Humidur Char" for fire protection of I sections for a critical temperature rise of **540 ºC**:

Hp/A	Fire resistance time in minutes. Thickness in mm.														
	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
32															
35															
40															
45															
50															
55															
60															
65															
70															
75															
80															
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220															
225															
230															
235															
240															
245															
246															

The thickness of material up to the required Hp/A [m^{-1}] shall be used.
Hp/A = Ratio between Heat perimeter and cross sectional Area of the section, [m^{-1}]