DNV·GL

Certificate No:
**TAF00000JC**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Structural Fire Protection**

with type designation(s)
**Chartek 8E - I sections**

Issued to
**International Paint Limited**
**GATESHEAD TYNE AND WEAR, United Kingdom**

is found to comply with
**DNV GL offshore standards**

## Application :

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

This Certificate is valid until **2017-12-31**.

Issued at **Høvik** on **2017-02-21**
DNV GL local station: **Newcastle-upon-Tyne** for **DNV GL**

Approval Engineer: **Helge Bjørnarå**

**Petter Langnes**
**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.


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## Product description

Chartek 8E - I sections
composed of a system for fire protection of structural steel elements, I sections, consisting of an epoxy based intumescent coating system reinforced with HK-1 carbon composite mesh. Mesh is not required for material thicknesses up to and including 7.2 mm.

The materials are manufactured at the following locations:

- Akzo Nobel Coatings BV, Wapenveld, The Netherlands
- International Paint LLC, Houston, Texas, USA
- International Paint (Korea) Ltd., Haman, Korea
- AkzoNobel Saudi Arabia Ltd., Dammam, Saudi Arabia

## Application/Limitation

The thickness of Chartek 8E system to be applied to avoid temperatures to rise on the steel substrate less than 400°C, 500°C, 600°C and 700°C for I sections are given in appendix table 1 to 4.

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

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

The application 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 manufacture.

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, October 2015.

Test reports No. 144444 dated 21 January 2005 from Warrington Fire Research Ltd., Warrington, UK.
Test reports No. 144445 dated 7 February 2005 from Warrington Fire Research Ltd., Warrington, UK.
Test reports No. 134536 dated 23 February 2004 from Warrington Fire Research Ltd., Warrington, UK.
Test reports No. 137110 dated 8 March 2004 from Warrington Fire Research Ltd., Warrington, UK.
Test reports No. 142592 dated 26 April 2005 from Warrington Fire Research Ltd., Warrington, UK.
Test reports No. 137200 dated 20 March 2005 from Warrington Fire Research Ltd., Warrington, UK.

Assessment report No. WF341159 dated 15 April 2014 from Exova Warringtonfire Warrington, UK.

## Tests carried out

Tested according to BS 476: Part 20 and 21:1987 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 GL'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 TAF00000JC**

**Table 1:** Thickness of Chartek 8E system for fire protection of I sections for a critical temperature rise of **400 °C:**

| Hp/A [$m^{-1}$] | Fire resistance time in minutes, Thickness in mm | | | | | |
|---|---|---|---|---|---|---|
| | 30 | 60 | 90 | 120 | 180 | 240 |
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The maximum thickness of protection 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 TAF00000JC**

**Table 2:** Thickness of Chartek 8E system for fire protection of I sections for a critical temperature rise of **500 °C:**

| Hp/A [$m^{-1}$] | Fire resistance time in minutes, Thickness in mm | | | | | |
|---|---|---|---|---|---|---|
| | 30 | 60 | 90 | 120 | 180 | 240 |
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The maximum thickness of protection 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 TAF00000JC**

**Table 3:** Thickness of Chartek 8E system for fire protection of I sections for a critical temperature rise of **600 °C:**

| Hp/A [$m^{-1}$] | Fire resistance time in minutes, Thickness in mm | | | | | |
|---|---|---|---|---|---|---|
| | 30 | 60 | 90 | 120 | 180 | 240 |
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The maximum thickness of protection 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 TAF00000JC**

**Table 4:** Thickness of Chartek 8E system for fire protection of I sections for a critical temperature rise of **700 °C:**

| Hp/A [$m^{-1}$] | Fire resistance time in minutes, Thickness in mm | | | | | |
|---|---|---|---|---|---|---|
| | 30 | 60 | 90 | 120 | 180 | 240 |
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The maximum thickness of protection 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, [$m^{-1}$]