

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Jet Fire Protection

with type designation(s)
Chartek 7E - Jet fire

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 jet fire protection of structural sections (I and hollow sections).

This Certificate is valid until **2021-04-10**.

Issued at **Høvik** on **2016-04-11**

DNV GL local station: **Newcastle-upon-Tyne**

Approval Engineer: **Helge Bjørnara**

for **DNV GL**

Petter Langes
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

Chartek 7E – Jet fire

The system is composed of an epoxy based intumescent coating applied on the substrate.

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

Application/Limitation

The Chartek 7E system is approved for use as jet fire protection structural I and hollow sections.

Any project specific design solutions arrived at on basis of this certificate are to be further validated by project specific approvals carried out by the appointed verifying authority for each project in each case at the detail engineering stage.

Thickness of Chartek 7E for jet fire exposure may be determined by adding a "Jet fire erosion factor" as shown in Table 1-2 to the thickness required for hydrocarbon pool fire as given in the DNV GL Type approval certificates structural I sections (TAF0000080) or structural hollow sections (TAF0000081).

Table 1: Additional thickness of Chartek 7E system to be applied to account for jet fire erosion for I sections:

Core temp. [°C]	Jet fire erosion factor [mm] *)				
	0-15 minutes	16-30 minutes	31-61 minutes	61-90 minutes	91-120 minutes
350					
400					
450					
500					
550					
600					
650					

*) Total minimum thickness shall not be less than 2.1 mm

Table 2: Additional thickness of Chartek 7E system to be applied to account for jet fire erosion for hollow sections:

Core temp. [°C]	Jet fire erosion factor [mm] *)				
	0-15 minutes	16-30 minutes	31-61 minutes	61-90 minutes	91-120 minutes
350					
400					
450					
500					
550					
600					
650					

*) Total minimum thickness shall not be less than 2.1 mm

Relative density of Chartek 7E is 1.0 g/cm³.

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.

Job Id:
Certificate No: **TAF0000083**

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.

Doc. No. Ch7Ewp_uk, Rev. 0, Chartek 7E - Application Manual dated 2015-08-07 from manufacturer.

I section:

Test report No. 16367, Rev.1 dated 2015-04-27 from DNV GL Oil and Gas, Brampton, UK

Test report No. 16431, Rev.1 dated 2015-05-09 from DNV GL Oil and Gas, Brampton, UK

Test report No. 16564, Rev.0 dated 2015-05-21 from DNV GL Oil and Gas, Brampton, UK

Hollow section:

Test report No. 16389, Rev.2 dated 2015-04-25 from DNV GL Oil and Gas, Brampton, UK

Tests carried out

Tested according to ISO 22899-1:2007

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.