DNV·GL

Certificate No:
TAF000008N

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Structural Fire Protection

with type designation(s)
ENERGY Firecover

Issued to
KAEFER ENERGY AS
Stavanger, Norway

is found to comply with
Det Norske Veritas' Offshore Standards

Application :

Approved for use as a system for hydrocarbon fire protection of valves and flanges.

This Certificate is valid until **2021-04-28**.
Issued at **Høvik** on **2016-04-29**

DNV GL local station: **Stavanger**

Approval Engineer: **Helge Bjørnarå**

for **DNV GL**

Digitally Signed By: Langnes, Petter
Location: DNV GL Høvik, Norway
Signing Date: 2016-05-02

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.

Product description

ENERGY Firecover®
Is a box mounted over a valve or flange consisting of two halfs fitted together with steel latches maximum 190 mm apart. The box is made of 0.7 mm steel and insulated on the inside with PittChar XP (ENERGY Fireboard®).

The box may be fitted with an inspection hatch (maximum 530 mm x 265 mm).

The box may also incorporate a Ø15 mm drain plug type ENERGY Drainplug®.

Alternative A:
The box is insulated on the inside with 6 mm PittChar XP (ENERGY Fireboard®)

Alternative B:
The box is insulated on the inside with 22 mm PittChar XP (ENERGY Fireboard®)

Application/Limitation

Filling ratio "Volume of valve or flange" / "Volume of box" not to exceed 41 % (alternative A) and 15 % (alternative B).

Ratio "Surface area of box" / "mass of valve or flange" to be maximum 0.013 m^2/kg (alternative A) and 0.022 m^2/kg (alternative B).

Time to reach temperatures on the steel valve or flange

Time [min]	Critical temp rise [ºC]	
	Alternative A	Alternative B
15	80	50
30	185	75
60	355	100
90	475	125
120	555	165

The effect of unprotected valve spindles penetrating the protection box is not accounted for, and must be evaluated for each case.

The intumescent coating is not defined as non-combustible. The protection box should not be used in accommodation or in enclosed areas.

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

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 Report No. 2011-Efectis-R0774 dated September 2011 from Efectis Nederland BV
Test Report No. 2011-Efectis-R0775 dated September 2011 from Efectis Nederland BV

Drawings No. KE-FTHC-0007, Rev.00, KE-FTHC-0009, Rev.00 and KE-FTHC-0013, Rev.00 from Manufacturer.

Tests carried out

Tested according to IMO Res. A.754(18) with the hydraocarbon time-temperature curve specified in EN 1362-2.

Marking of product

The product or packing shall be marked with the name of the manufacturer, type designation and fire technical rating, as applicable.

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 DNVGL-CP-0338 Section 4.