

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Jet Fire Protection**

with type designation(s)
ENERGY Boltcover™

Issued to

KAEFER ENERGY AS
Stavanger, Norway

is found to comply with
DNV GL offshore standards

Application :

Approved for use as jet fire protection of valves and flanges.

Issued at **Høvik** on **2017-06-15**

for **DNV GL**

This Certificate is valid until **2022-06-14**.

DNV GL local station: **Stavanger**

Approval Engineer: **Tomasz Werchowicz**

Mårten Schei-Nilsson
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.



Job Id: **262.1-025874-1**
Certificate No: **TAF00000NZ**

Product description

ENERGY Boltcover™

Is a box mounted over a flange consisting of two halves fitted together with a steel latch. The box is made of 0.7 mm steel and insulated on the inside with 13 mm thick Fire Master Marine Plus (density 128 kg/m³) from Thermal Ceramics.

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

Application/Limitation

Approved for use as jet fire protection of valves and flanges:

[Type of fire/ Type of application/ Critical temperature rise (°C) / Period of Resistance (minutes)]:

- JF / valves and flanges / 225 / 10
- JF / valves and flanges / 385 / 15
- JF / valves and flanges / 535 / 20
- JF / valves and flanges / 660 / 25
- JF / valves and flanges / 745 / 30

Filling ratio "Volume of valve or flange" / "Volume of box" not to exceed 15 %.

Ratio "Surface area of box" / "Mass of valve or flange" to be maximum 0.026 m²/kg.

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

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

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. F16 20233-01:5 version 1 dated 26th August 2016 from SP Fire Research AS.

Drawing No. K204-U-XS-00039 rev.01 dated 8th June 2016 from Kaefer Energy AS.

Tests carried out

Tested according to ISO 22899-1.

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.