

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Fire Damper

with type designation(s)
Class H Fire Dampers CFD-01 (banked assemblies)

Issued to
Flamgard Engineering Limited
Torfaen SOUTH WALES, United Kingdom

is found to comply with
DNV GL offshore standards

Application :

Approved for use in ventilation ducts in class H bulkheads and decks.
The damper satisfies for 120 minutes the requirements to stability and integrity according to chapter II-2, reg. 3 of the SOLAS Amendments 2000.

This Certificate is valid until **2021-09-04**.

Issued at **Høvik** on **2016-09-05**

DNV GL local station: **London**

Approval Engineer: **Øyvind Hoff**

for **DNV GL**

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

"Class H Fire Dampers CFD-01 (banked assemblies)"

Spring/actuator operated square multiblade fire damper. Comprising four damper units set between transoms and mullions in one common frame (banked damper assembly).

The fire damper blades are formed by two layers of 1.5 mm thick and 150 mm high stainless steel sheets with a blade shaft in between.

The fire damper casing is 300 mm long, and formed by 3 mm thick stainless steel sheets.

All fire damper blade shafts are interlocked to the actuating device.

The fire dampers are flanged to a 5 mm thick coaming, and the coaming is seal welded to the steel deck/bulkhead. Length of coaming is min. 100 mm on exposed side for bulkhead installations and min. 200 mm on exposed side for deck installations. Length of coaming is min. 1000 mm on unexposed side for both bulkhead and deck installations. A gasket of 2 mm thick Kotherm Protect-A-Tape (KT2 tape) is fitted between the fire damper flange and the flange on the end of the steel coaming.

The assembly of banked fire dampers are fitted inside a common casing with a grid of mullions and transoms, which constitutes beams that are welded together and to the casing. Each beam is made of boxed profiles formed from 3 mm thick stainless steel sheets, including internal stiffening.

The banked damper assembly includes:

- Blade edge seal (0.25 mm thick edge seals made of curved stainless steel sheets, to be fitted between blade profiles to take up minor irregularities, thus improving the sealing between blades).
- Lipseal bearing boss (a viton lipseal to improve sealing between interior and exterior of the damper).

For further details, see the below Application/Limitation and Type Approval documentation.

Application/Limitation

Type	Size	Damper casing details	Thickness of each damper blade	Fire rating (Deck and Bulkhead)
CFD-01: Banked damper assembly	2x2 fire dampers, each of max. size 1000 x 1000 mm, assembled together as described above.	300 mm length, 3 mm thick	2 x 1.5 mm (double skin)	Class H

Min. size of 2x2 fire damper assembly: 1001 x 1001 mm.

Max size of 2x2 fire damper assembly: 2000 x 2000 mm.

Max. height of each damper blade: 150 mm. Max. number of blades in each damper unit: 6.

Insulation requirements for H-0:

- The H-0 steel deck/bulkhead to be insulated minimum 200 mm around the periphery of the damper coaming with H-120 approved insulation. The steel deck to be insulated on its stiffened, lower face, and the steel bulkhead to be insulated on its stiffened face.
- The damper coaming/ducting to be insulated with H-120 approved insulation on both exposed and unexposed side. Length of coaming insulation on exposed side is the full length between the fire damper and the deck/bulkhead. Length of coaming insulation on unexposed side to be minimum 950 mm.
- All insulation to be fastened with welded pins, wired steel mesh (if applicable) and washers.

Insulation requirements for H-60 and H-120:

- As for H-0 and in addition the arrangement of the fire damper and necessary insulation of coaming and ducting in the vicinity of the partition is subject to approval in each case.

Actuation is done automatically by bulb triggering device combined with a pneumatic spring return actuator (see below), or manually operated by handle.

Actuators that may be used:

- Pneumatic: Prisma CF8M stainless steel model PI20S. (*)
 - Pneumatic: Rotork GT stainless steel model ETKS105-SR. (*)
 - Electric: Same make as Schischek Ex Max 15 SF, but compensated with sufficient torque. (*)
- (*) Actuators of same make but with different size as mentioned above may also be used, provided that they have sufficient torque, similar installation arrangement and equivalent fire technical and functional properties.

The fire damper shall be capable of being closed from both sides of the deck/bulkhead.

Steel thickness of damper casing to be equal to or greater than thickness of coaming/duct/sleeve required by the rules if the damper casing is part of the coaming/duct/sleeve.

Each product is to be supplied with its manual for installation, use and maintenance.

Type Approval documentation

Certification in accordance with Class Programme DNVGL-CP-0338, October 2015.

Test report no. 301507 issue 1 dated 22 July 2015 from BRE Global Ltd, Watford, UK.

Test report no. P100396-1000 issue 1 dated 7 September 2015 from BRE Global Ltd, Watford, UK.

Reference testing (to qualify the above mentioned Schischek actuator type):

- Test report no. 329965 issue 2 dated 5 September 2013 from Exova Warringtonfire, Warrington, UK.

Tests carried out

Tested according to IMO 2010 FTP Code part 3 with the h/c time-temperature curve as specified in ISO 834-3.

Reference testing (to qualify the above mentioned Schischek actuator type) according to h/c curve as specified in section 4 of BS EN 1363-2: 1999.

Marking of product

The product is to be marked with name of manufacturer, type designation and fire-technical rating.

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.