DNV·GL

Certificate No:
MEDB00004F1

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Fire dampers

with type designation(s)
Class A Fire Damper CFD-02

Issued to
Flamgard Engineering Limited
Pontypool, Gwent, United Kingdom

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773,**
item No. MED/3.22. SOLAS 74 as amended, Regulation II-2/9 and IMO 2010 FTP Code

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2024-08-20**.

Issued at **Høvik** on **2019-08-21**

DNV GL local station:
Southampton

Approval Engineer:
Øyvind Hoff

Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005.

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

NORWEGIAN ACCREDITATION PROD 019

Job Id: **344.1-008522-1**
Certificate No: **MEDB00004F1**

Product description

"Class A Fire Damper CFD-02"
A single fire damper with square shape that is spring/actuator operated. The smallest size is single-bladed, while the bigger sizes are multi-bladed.

The fire damper blades are formed by two layers of 1.2 mm thick stainless steel sheets (double skin), connected to and operated by stainless steel shafts led through bronze bearings on the side of the casing. The drive blade has continuous shaft, while other blades use either continuous or stub shafts (see the referred drawings for details).
The fire damper casing is 200 mm long, and formed by 2 mm thick stainless steel sheets.
The single-bladed fire damper blade shaft is connected to the actuating device, and the blade has pivoting motion configuration.
The multi-bladed fire damper blade shafts are interlocked with link arms to the actuating device, and the blades have opposed motion configuration.

The fire damper is flanged to a coaming, and the coaming is seal welded to the steel deck/bulkhead.
A 2 mm thick gasket, type Kotherm KT2, is fitted between the fire damper flange and the coaming flange.
For bulkhead mounted fire dampers:

- Length of coaming is min. 150 mm on exposed side and 1600 mm on unexposed side.

For deck mounted fire dampers:

- Length of coaming is min. 200 mm on exposed side and 1500 mm on unexposed side.

For further details, see the below sections "Application/Limitation" and "Type Examination documentation".

Application/Limitation

The fire dampers are approved for use in ventilation ducts penetrating A-class bulkheads/decks.

Type	Size	Damper casing details	Thickness of each damper blade	Fire rating	Deck	Bulk-head
CFD-02: Single dampers	Fire dampers of min. size 150 x 150 mm and max. size 1000 x 1000 mm.	200 mm length, 2 mm thick	2 x 1.2 mm (double skin)	A-0 to A-60	X	X

CFD-02: Single dampers; damper blades:

Configuration	**Max number of blades**	**Max blade height**
Single bladed	1	138 mm
Multi bladed	6	Top and bottom blades: 210 mm
		Middle blades: 152 mm

The steel deck to be insulated to A-60 class on its stiffened, lower face, and the steel bulkhead to be insulated to A-60 class on its stiffened face. The damper coaming/ducting to be insulated 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 according to the below table, using the same specification of insulation as the protection of the division, and fully insulated for all fire ratings (A-0 to A-60). Insulation to be fastened with welded pins and washers, and also using wired steel mesh where the A-60 insulation system requires to do so.

Application and fire damper sizes	**Insulation length on unexposed coaming/ducting (L_{unexp})**
Bulkhead mounted single size 150 x 150 mm	950 mm
Deck mounted single size 150 x 150 mm	950 mm
Bulkhead mounted single size 1000 x 1000 mm	1550 mm
Deck mounted single size 1000 x 1000 mm	1450 mm

For single fire damper sizes greater than 150 mm square and less than 1000 mm square it is acceptable to interpolate the length of insulation required based on the lengths (L_{unexp}) above.

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 or electric spring return actuator (see below), or manually operated by handle.

Pneumatic or electric actuators that may be used:
- Belimo BF230T. (*)
- Belimo AF230. (*)
- Belimo BFN24-T. (*)
- Flamgard Calidair Manual Reset Mechanism spring return actuator with thermal probe. (*)
- Kinetrol spring return, Model 05. (*)
- Prisma Polyamide PP10S. (*)
- Prisma spring return, PI20 S4. (*)
- Rotork GT63. (*)
- Schischek InMax 15BF3. (*)

(*) 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 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 Examination documentation

Test report No. P111649-1000 Issue 2 dated 18 September 2018 from BRE Global Ltd, Watform, UK (bulkhead testing).
Test report No. P111649-1001 Issue 2 dated 18 September 2018 from BRE Global Ltd, Watform, UK (deck testing).

Assessment report No. P113623-1001 Issue 1 dated 24 July 2019 from BRE Global Ltd, Watford, UK (coaming insulation, and actuators).

Tests carried out

Tested according to IMO 2010 FTP Code part 3.

Marking of product

The product is to be marked with name and address of manufacturer, type designation, fire-technical rating, MED Mark of Conformity and USCG approval number if applicable (see page 1).