DNV·GL

Certificate No:
**TAF00000CJ**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Fire Damper**

with type designation(s)
**FDA Fire Damper**

Issued to
## Halton Marine Oy
**LAHTI, Finland**

is found to comply with
**DNV GL offshore standards**
**DNV GL rules for classification – Ships**
**DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations**

## Application :

**Approved for use in ducts penetrating bulkheads and decks of Class A-0 to A-60.**

**Maximum size of the damper 2500 x 2600 mm (W x H)**

**Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.**

This Certificate is valid until **2021-10-13**.

Issued at **Høvik** on **2016-10-14**

for **DNV GL**

DNV GL local station: **Helsinki**

Approval Engineer: **Tomasz Werchowicz**

**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.


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## Product description

"FDA Fire Damper"
is a single/multi-bladed, rectangular fire damper with manual and/or automatic (electric/pneumatic) actuation intended to use in bulkheads and decks.

The fire damper consists of steel 3 mm thick casing bolted to the 3/ 5 mm thick coaming by means of M10 bolts and nuts and sealed with Pyrocryl acrylic sealant (manufacturer: Den Braven) or Sealfire W200 (manufacturer: Neutron Fire Technologies Ltd.). Coaming is welded to the bulkhead / deck.

The blades are made of 1 mm thick steel bolted to shaft .

Total blade thickness: 21 mm
Maximum number of blades: 6
Maximum blade height: 250 mm
Maximum blade length: 1200 mm

The minimum distance between the fire damper and bulkhead / deck is 225 mm.

The coaming/casing is insulated with 60 mm thick Paroc Marine Fire Slab 100 (nominal density: 100 kg/m$^3$) on unexposed and exposed side of bulkhead/deck. For details please see table below.

| Size (W x H) | Installation on bulkheads | Installatio on decks |
|---|---|---|
| 1200 x 1600 mm | A-0 – as per dwg. LH-51502<br>A-60 – as per dwg. LH-51500 | A-0 – as per dwg. LH-51502<br>A-60 – as per dwg. LH-51500 |
| 200 x 200 mm | A-60 – as per dwg. LH-51500 | A-30 – as per dwg. LH-51501<br>A-60 – as per dwg. LH-51500 |
| 300 x 300 mm | A-60 – as per dwg. LH-51500 | A-30 – as per dwg. LH-51501<br>A-60 – as per dwg. LH-51500 |

For A-60 class bulkhead can be used modular type damper with up to four A-60 class dampers with maximum size of 1200 x 1250 mm (W x H) with the total size of installation up to 2500 x 2600 mm (W x H).

For further details see drawings attached to the approved test reports listed under Type Approval documentation below.

The fire damper may be manufactured at the premises of:
- Halton Marine Oy, Lahti, Finland,
- Halton Company, Scottsville, USA.

## Application/Limitation

The fire dampers to be automatic operated with fusible link by actuators of following type:
- Air Torque AT301
- Air Torque AT104
- Air Torque AT101U S12B
- Air Torque AT351U S12B
- Rotork GTWSM.63x90
- Rotork GTWNM.110x90
- Schischek ExMax-15-SF
- Festo DAPS-0030-090-RS4-F0305-CR
- Elodrive CSQP-15A1E
- Belimo BF-230
- Belimo BF-230-2 HL
- Belimo NF24A-SR

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 insulation used is to be regarded as minimum insulations for all fire rating and is not to be removed

if the fire damper is to be used in division with lower fire ratings.

Damper can be fitted with manual override accessory.

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

The fire dampers are to be operated automatically and manually according to SOLAS II-2, Reg. 9.7.

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 Reports from TÜV Eesti OÜ, Estonia:
- 575-16TD-IMO dated 8th April 2016
- 561-15TD-IMO dated 19th February 2016
- 552-15TD-IMO dated 3rd February 2016
- 573-16TD-IMO dated 6th April 2016
- 614-16TD-IMO dated 30th August 2016

Test Reports and Statements from VTT Expert Services Ltd, Finland:
- VTT-S-04567-15 dated 11th February 2016
- VTT-S-00639-16 dated 10th March 2016
- VTT-S-00798-16 dated 9th May 2016
- VTT-S-04439-15 dated 14th Janyary 2016
- VTT-S-00593-16 dated 5th February 2016

Drawings from the manufacturer Nos: LH-51500, LH-51501, LH-51501 dated 15th of August 2016.

## Tests carried out

Tested according to IMO 2010 FTP Code part 3.

## 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.