



Certificate No:  
**TAF00001NX**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Fire Damper**

with type designation(s)  
**FDH**

Issued to

**Halton Marine Oy**  
**Lahti, Finland**

is found to comply with  
**DNV offshore standards**

## Application :

**Approved for use in ducts penetrating steel bulkheads and decks of Class H-120. Other applications are subject to case-by-case approval.**

**The fire damper satisfies for 120 minutes the requirements for stability and integrity according to SOLAS, Chapter II-2, Reg. 3.**

**Max. size of the damper (bulkhead) : 1200 mm x 1200 mm (W x H)**

**Max. size of the damper (deck): 600 mm x 600 mm (W xH)**

**This certificate is recognized by Transport Canada.**

Issued at **Høvik** on **2022-06-16**

for **DNV**

This Certificate is valid until **2027-06-15**.

DNV local station: **Finland CMC**

Approval Engineer: **Tessa Biever**

**Helene David-Andersen**  
**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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



## Product description

“FDH”

H - Class rectangular fire damper with the following sizes, details and applications:

Table 1.

	1	2	3	4	
<b>Type/size</b>	<b>FDH 1200 x 1200 mm</b>	<b>FDH 600 x 600 mm</b>	<b>FDH 300 x 300 mm</b>	<b>FDH 250 x 250 mm</b>	
Coaming length <sup>1) and 2)</sup>	900 mm	650 mm	650 mm	650 mm	
Coaming thickness	5 mm	3 mm	3 mm	3 mm	
Fire damper length (coaming + ducts)	3200 mm (bulkhead)	2150 mm (deck) 2550 mm (bulkhead)	1650 mm (deck) 2050 mm (bulkhead)	1650 mm (deck) 2050 mm (bulkhead)	
Fire damper blades	Number	6	3	1	
	Thickness	22 mm	22 mm	22 mm	
	Width	200 mm	200 /192 mm	250 /242 mm	250 /242 mm
	Blade insulation	13 mm of 'Insulfrax LT' with density 128 kg/m <sup>3</sup>	13 mm of 'Insulfrax LT' with density 128 kg/m <sup>3</sup>	13 mm of 'Insulfrax LT' with density 128 kg/m <sup>3</sup>	13 mm of 'Insulfrax LT' with density 128 kg/m <sup>3</sup>
Actuator <sup>3)</sup>	Air Torque FA SB AT 304 pneumatic actuator	Schischek InMax-15-F1, electric actuator	Schischek InMax-15-SF-VAS electric actuator	Air Torque AT101U S12 B LLT2 pneumatic actuator	
Insulation <sup>4)</sup>	2700 mm (bulkhead)	2100 mm (deck) 1900 mm (bulkhead)	1600 mm (deck) 1400 mm (bulkhead)	1600 mm (deck) 1400 mm (bulkhead)	
Class	H-120	H-120	H-120	H-120	
Application	Bulkhead	Bulkhead and Deck	Bulkhead and Deck	Bulkhead and Deck	

1) For deck applications: 450 mm of coaming above the deck, 200 mm underneath the deck

2) For bulkhead applications: 450 mm of coaming on exposed side of bulkhead.

3) 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.

4) Insulation at the unexposed side along coaming and duct

### Fire damper 1 – FDH (1200 x 1200 mm) – bulkhead only

The fire damper is consisting of a steel coaming with length of 900 mm and thickness of 5 mm. The coaming is welded to the bulkhead. A steel duct is mounted with flange joints (bolts and nut M10 x 20) to the coaming of the fire damper. The flange joints are sealed with Fire secure Mastic Adhesive 1027 (manufactured by Fintex Tetrakem Oy).

#### Insulation for fire damper installed in bulkhead:

Three layers of 38 mm 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup> near supporting construction, two layers of 38 mm 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup> around the damper (714 mm) and 38 mm 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup> (2700 mm).

### Fire damper 2 – FDH (600 x 600 mm) – deck and bulkhead

The fire damper is consisting of a steel coaming with length of 650 mm and thickness of 3 mm. The coaming is welded to the deck. Two 850 mm long and 3 mm thick steel duct parts were mounted with flange joints (bolts and nut M10 x 20) to the coaming of the fire damper. The flange joints are sealed with Fire secure Mastic Adhesive 1027 (manufactured by Fintex Tetrakem Oy).

#### Insulation for fire damper installed in deck:

The coamings and ducts are insulated with a 25 mm thick insulation layer of type 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup>. An additional 25 mm thick layer of the same insulation material is mounted at the top of the coaming. The additional insulation reaches 600 mm above the deck plating. An additional 25 mm thick layer of the same insulation material is mounted at the root of the coaming and reaches 200 mm along the deck plating in each direction. The fire dampers frame is insulated with two layers of 38 mm thick 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup>. On the exposed side an additional 38 mm thick insulation layer was mounted which spreads 210 mm along the bottom side of the deck installation.

#### Insulation for fire damper installed in bulkhead:

Three layers of 38 mm 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup> near supporting construction, two layers of 38 mm 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup> around the damper (600 mm) and 38 mm 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup> (1900 mm)

### Fire damper 3 – FDH (300 x 300 mm) – deck and bulkhead

The fire damper is consisting of a steel coaming with length of 650 mm and thickness of 3 mm. The coaming is welded to the deck. Two 600 mm long and 3 mm thick steel duct parts were mounted with flange joints (bolts and nut M10 x 20) to the coaming of the fire damper. The flange joints are sealed with Fire secure Mastic Adhesive 1027 (manufactured by Fintex Tetrakem Oy).

Insulation for fire damper installed in deck:

The coamings and ducts are insulated with 25 mm thick insulation layer of type 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup>. An additional 38 mm thick layer of the same insulation material is mounted at the top of the coaming. The additional insulation reaches 600 mm above the deck plating. An additional 25 mm thick layer of the same insulation material is mounted at the root of the coaming and reaches 200 mm along the deck plating in each direction. The fire dampers frame is insulated with two layers of 38 mm thick 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup>. On the exposed side an additional 38 mm thick insulation layer was mounted which spreads 350 mm along the bottom side of the deck installation.

Insulation for fire damper installed in bulkhead:

Three layers of 38 mm 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup> near supporting construction, two layers of 38 mm 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup> around the damper (600 mm) and 38 mm 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup> (1400 mm)

**Fire damper 4 – FDH (250 x 250 mm) – deck and bulkhead**

The fire damper is consisting of a steel coaming with length of 650 mm and thickness of 3 mm. The coaming is welded to the deck. Two 600 mm long and 3 mm thick steel duct parts were mounted with flange joints (bolts and nut M10 x 20) to the coaming of the fire damper. The flange joints are sealed with Fire secure Mastic Adhesive 1027 (manufactured by Fintex Tetrakem Oy).

Insulation for fire damper installed in deck:

The coamings and ducts are insulated with 25 mm thick insulation layer of type 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup>. An additional 25 mm thick layer of the same insulation material is mounted at the top of the coaming. The additional insulation reaches 600 mm above the deck plating. An additional 25 mm thick layer of the same insulation material is mounted at the root of the coaming and reaches 200 mm along the deck plating in each direction. The fire dampers frame is insulated with two layers of 38 mm thick 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup>. On the exposed side an additional 38 mm thick insulation layer was mounted which spreads 350 mm along the bottom side of the deck installation.

Insulation for fire damper installed in bulkhead:

Three layers of 38 mm 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup> near supporting construction, two layers of 38 mm 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup> around the damper (600 mm) and 38 mm 'Insulfrax LT Blanket' with nominal density of 128 kg/m<sup>3</sup> (1400 mm)

For further details, see the test reports and drawing in the Type Approval documentation below.

## Application/Limitation

Approved for use in ducts penetrating bulkheads and decks of Class H-120 (see table 1).

The fire damper satisfies for 120 minutes the requirements for stability and integrity according to Chapter II-2, Reg. 3 of SOLAS 1974, as amended.

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

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

The arrangement of the fire damper and necessary insulation of damper frame and ducting in the vicinity of the partition are subject to approval in each case.

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.

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

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

## Type Approval documentation

Certification in accordance with Class Program DNV-CP-0338, September 2021.

Test report No. VTT-S-06330-17 dated 20 December 2017 from VTT Expert Services Ltd., Espoo, Finland.

Test report No. 688-17TD-IMO dated 3 November 2017 from TÜV Eesti OÜ, Maardu, Estonia.

Test report No. 682-17TD-IMO dated 3 November 2017 from TÜV Eesti OÜ, Maardu, Estonia.

Drawing No. SaL1700445 Issue C dated 21 December 2017 from manufacturer.  
Drawing No. SaL1700563 Issue B dated 12 September 2017 from manufacturer.  
Drawing No. SaL1700426 Issue A dated 7 August 2017 from manufacturer.  
Drawing No. RPa1700711 Issue A dated 21 August 20217 from manufacturer.  
Drawing No. RPa1701054 Issue A dated 1 September 2017 from manufacturer.  
Drawing No. RPa1701055 Issue A dated 1 September 2017 from manufacturer.  
Drawing No. RPa1701056 Issue A dated 1 September 2017 from manufacturer.

### **Tests carried out**

Tested according to IMO 2010 FTP Code part 3 with furnace temperature following the hydrocarbon curve according to EN 1363-2.

### **Marking of product**

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

### **Transport Canada**

Based on the procedures laid down in the Transport Canada Publication entitled "Procedures for Approval of Life-Saving Appliances, Fire Safety Systems, Equipment and Products (TP14612)", DNV confirms that the product/s listed in this certificate is/are in accordance with Transport Canada's requirements.

### **Periodical assessment**

DNV'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 Program DNV-CP-0338, Section 4.