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USCG Module B number: 164.139 / EC2690

This certificate is not valid when presented without the full attached schedule composed of 7 sections. Full certificate is to be requested to the manufacturer www.veristar.com

Notified Body 2690 - MARINE EQUIPMENT DIRECTIVE 2014/90/EU

EC TYPE EXAMINATION CERTIFICATE

as per Module B of Directive 2014/90/EU of the European Parliament and of the Council of 23 July 2014 as transposed in the French Regulations and Commission Implementing Regulation (EU) 2026/1434 of 30 June 2026

This certificate is issued to:

Halton Marine Oy

Pulttikatu 2, FIN 15700, Lahti, FINLAND

for the type of product

FIRE DAMPERS

Single and Multiblade A-class Fire Damper Type "FDB2"

Requirements:

Row 1 of 1 of Regulation (EU) 2026/1434:

SOLAS 74 convention as amended, Regulations II-2/9
IMO Res. MSC.307(88) -(2010 FTP Code)-, as amended
IMO Res. MSC.1/Circ.1655

This certificate is issued on behalf of the French Maritime Authorities to attest that Bureau Veritas Marine & Offshore did undertake the relevant type-examination procedures for the product identified above which was found to comply with the relevant requirements of the Directive 2014/90/EU of the European Parliament and of the Council of 23 July 2014 as transposed in the French Regulations.

This certificate will expire on: 12 Jul 2029

For Bureau Veritas Marine & Offshore Notified Body 2690,

At BV TURKU (ABO), on 08 Oct 2026,

Miika KOKKO

This certificate was created electronically and is valid without signature



This certificate does not allow to issue the Declaration of Conformity and to affix the mark of conformity (wheelmark ) to the products corresponding to this type. To this end, the production-control phase module (D, E or F) of Annex II of the Directive is to be complied with and controlled by a written inspection agreement with a notified body.

This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. Bureau Veritas Marine & Offshore is designated by the French Maritime Authority as a "notified body" under the terms of the French Regulations Division 140 Chapter 140-2. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

Single/Multiblade Fire Damper Type "FDB2" for use in A-class bulkheads and decks

Rectangular steel fire dampers with sizes from 100x100 mm to 1200x1600 mm, and
to 2000x1900 mm (composed of 2 units of 970x1900 mm).

Coaming length: 900 mm minimum including the damper

Coaming thickness: refer to table below

Coaming and fire damper casing have to be fully insulated (only actuators need not to be insulated) except when installed in uninsulated A-0 class steel bulkhead/deck.

Length of fire damper frame: 210 to 300 mm (depending on size)

Thickness of the fire damper frame: from 3 to 10 mm.

The joint between the coaming and the frame of the damper is a flange joint with bolts and nuts.

Following to the tested configurations, it may fitted either:

- without gasket, or
- with a PVC single side foam gasket (with low flame spread characteristics), or
- with a Fire Secure Mastic Adhesive (Tetrakem 1027) or as alternative, a non-combustible type approved gasket (as per IMO FTP Code Annex 1 Part 1), or
- with a 31x7.5 mm sealant "HKO Feuerschutzprofil Shipseals" (manufactured by HKO Isolier- und Textiltechnik GmbH) used together with the silicone sealant "Sika Firesil Marine N" (from Sika Services AG) or the silicone sealant "Nordsil P" (from NKF Dichtstoffe EG).

Following to the tested configurations, all damper types may be fitted with or without Intumex LSK, Thermosil FireX (silicone), Silicon LTC or FF102 (Firefly 102 - intumescent) gasket as blades sealing material.

Class of "FDB2" fire damper:

Position of the fire damper frame from the structural core	Minimum damper frame and steel coaming thickness (mm)	Min. length of insulation of coaming + fire damper (mm)	Fire class	As per Manufacturer's drawings
at least 225 mm	3	980 to 1105*	100x100 to 1200x1600 mm: A-60 (in deck) A-60 (in bulkhead)	JpM210070 JpM210016
	5	1058 1136	Max. 1200x1600 mm: A-60 (in deck) Max. 1200x1600 mm: A-60 (in bulkhead)	ITM0001010673 ITM0001009918
at least 240 mm	3	900	Max. 250x250 mm: A-60 (in deck + bulkhead)	LH-5355
at least 240 mm	3 to 5*	1300	100x100 to 1200x1600 mm: A-60 (in deck + bulkhead) 2 units 970x1900 mm: A-60 (in bulkhead)	LH-5223 LH-5242

* depending on size

Fire damper main characteristics:

Fire Damper Dimensions (width x height)	100x100 mm	250x250 mm	1200x1600 mm	970x1900 mm
Fire Damper Type	single blade	single blade	multi-blade	multi-blade
Maximum height of one blade (mm)	159	250	259	259

Types of "FDB2":

- electrical (FDB2-EL)
- linear pneumatic (FDB2-PNL)
- rotary pneumatic (FDB2-PNR)
- spring loaded with fusible link (FDB2-SP)
- Manual with handle without fusible link (FDB-MAN)

continued on next page

Operation of "FDB2" fire damper:

- Automatic (with fusible link):
 - electrical motor, type Belimo BF230-2 HL, Belimo SR 24/120/230, Belimo SF24ALON, Belimo SF24-A-SR-S2, Belimo BFN230-T, Belimo BF24-TN, Siemens GGA, Siemens GGA126, Schischek In Max-15-SF, Elodrive CSQP-15A1E, Petz QT.Ex-MFD03, Air Torque AT104.
 - linear pneumatic, type Air Torque AT204.
 - rotating pneumatic, type E-LO-MATIC ES 40 or Air Torque AT100 S10 B.
- Automatic (with fusible link): spring loaded.
- Manual (without fusible link): manual handle
- Remotely operated (with or without fusible link): with similar actuators as automatic dampers.

The construction of the fire damper itself is the same in these dampers, only the operation is different.

Actuators of same make but with different size as mentioned above may also be used, provided that they have similar installation arrangement and equivalent fire technical and functional properties (see §2.2).

2. DOCUMENTS AND DRAWINGS:**2.1 - As per the Manufacturer's drawings:**

- "A60 insulation": N° LH-5223 Rev.D dated 30/10/2018
- "A15/A30 insulation": N° LH-5224 Rev.C dated 01/11/2018
- "2 units A60 insulation": N° LH-5242 Rev.B dated 01/11/2018
- "A60 insulation": N° LH-5355 Rev.A dated 19/06/2019
- "A-60 Bulkhead Insulation/Installation": N° LH-55215 Rev.B dated 17/12/2019
- "A-60 Bulkhead": N° JpM1900925 Issue 3 dated 17/12/2019
- "Test specimen A-60 Deck": N° JpM210070 Issue 2 dated 16/02/2021
- "Test specimen A-60 Bulkhead": N° JpM210016 dated 04/02/2021
- new manual override: N° JpM1502780 dated 04/01/2015 (new manual override)
- additional mounting sealing material: N° ITM0001010673 Rev.0 corrected by Eurofins on 09/02/2022 (deck)
N° ITM0001009918 Rev.0 corrected by Eurofins on 09/02/2022 (bulkhead)
N° SaL210455 Rev.01 dated 14/01/2022 corrected by Eurofins on 09/02/2022

2.2 - As per the Manufacturer's documentation dated 31/12/2021:

- "Spring FDB2 - A0(A60) Fire and Gas Damper - Installation, Operation & Maintenance Manual", Rev.11
- "Pneumatic FDB2 - A0(A60) Fire and Gas Damper - Installation, Operation & Maintenance Manual", Rev.11
- "Electrical FDB2 - A0(A60) Fire and Gas Damper - Installation, Operation & Maintenance Manual", Rev.13

3. TEST REPORTS:**3.1 - Mounting in a A-Class deck:**

- Test report N° VTT-S-7447-10 dated 27/09/2010, as per IMO FTP Code Annex 1 Part 3 [test standard: IMO Resolution A.754(18)], from VTT, Finland (sizes 100x100 mm and 1200x1600 mm).
- Test reports as per IMO 2010 FTP Code Annex 1 Part 3, from VTT, Finland:
 - N° VTT-S-07638-13 dated 04/11/2013 (size 250x250 mm).
 - N° VTT-S-08754-13 dated 17/01/2014 (size 250x250 mm).
- Test report N° EUFI29-21000981-T2 dated 23/04/2021, as per IMO 2010 FTP Code Annex 1 Part 3, from Eurofins Expert Services Oy, Finland (sizes 100x100mm and 1200x1600 mm).
- Test report N° EUFI29-21006124-T1 dated 09/02/2022, as per IMO 2010 FTP Code Annex 1 Part 3, from Eurofins Expert Services Oy, Finland (size 1200x1600 mm).

3.2 - Mounting in a A-Class bulkhead:

- Test report N° VTT-S-7445-10 dated 27/09/2010, as per IMO FTP Code Annex 1 Part 3 [test standard: IMO Resolution A.754(18)], from VTT, Finland (sizes 100x100 mm, 400x100 mm and 1200x1600 mm).
- Test report N° 430-13TD-IMO dated 22/11/2013, as per IMO 2010 FTP Code Annex 1 Part 3, from TÜV Eesti OÜ, Estonia (size 250x250 mm).
- Test reports as per IMO 2010 FTP Code Annex 1 Part 3, from Far East Fire testing Centre (FEFTC), China:
 - N° FT15261 dated 19/08/2015 (sizes 100x100 mm).
 - N° FT15314 dated 09/10/2015 (size 2000x1900 mm).
 - N° FT15315 dated 09/10/2015 (size 2000x1900 mm).
- Test report N° RS-20/B-037/E dated 25/02/2020, as per IMO 2010 FTP Code Annex 1 Part 3, from Centrum Techniki Okretowej S.A. (CTO), Poland size (1200x1600 mm).
- Test report N° EUFI29-21000981-T1 dated 22/04/2021, as per IMO 2010 FTP Code Annex 1 Part 3, from Eurofins Expert Services Oy, Finland (sizes 100x100 mm and 1200x1600 mm).
- Test report N° EUFI29-21005923-T1 dated 31/01/2022, as per IMO 2010 FTP Code Annex 1 Part 3, from Eurofins Expert Services Oy, Finland (size 1200x1600 mm).

3.3 - Technical statements:

- N° VTT-S-3913-09 dated 16/06/2009, from VTT, Finland.
- N° VTT-S-9239-10 dated 02/12/2010, from VTT, Finland.
- N° VTT-S-02124-15 dated 13/05/2015, from VTT, Finland.
- N° VTT-S-00593-16 dated 05/02/2016 (new manual override), from VTT, Finland.
- N° VTT-S-01457-16 dated 05/04/2016 (insulation), from VTT, Finland.
- N° EUFI29-22001202-T1 dated 16/05/2022, from Eurofins, Finland.

4. APPLICATION / LIMITATION:

4.1 - Approved for use in A-0, A-15, A-30, A-60 class steel divisions with fire insulation as described in §1.

4.2 - The damper is to be:

- provided with an indicator which shows whether the damper is open or closed. This indicator is to be fitted on the damper out of the insulation coating, if any.
- capable of being closed manually from both sides of the division.

4.3 - The tests have been carried out with fire insulating material "**Paroc Marine Fire Slab 110**" (nominal density 110 kg/m³; manufactured by Paroc Group Oy) or type "**Fyrewrap LT Blanket**" (nominal density 128 kg/m³; manufactured by Unifrax) or type "**Fyrewrap Marine blanket**" (nominal density 128 kg/m³; manufactured by Unifrax (Suzhou) Co. Ltd) or type "**Paroc Marine Wired Mat 100**" (nominal density 100 kg/m³; manufactured by Paroc Group Oy) or "**ULTIMATE U SeaProtect Roll 36**" (nominal density 36 kg/m³; manufactured by Isover Saint-Gobain) or "**ISOVER-marine felt ULTIMATE U SeaProtect Roll 50**" (nominal density 36 kg/m³; manufactured by Isover Saint-Gobain); any alternative insulation material is subject to case by case approval providing that it has been approved as giving at least an equivalent insulation performance.

4.4 - Actuators of same mode (pneumatic, manual or electric) and manufacturer as tested ones but with different size may also be used, provided that they have sufficient torque, a similar installation arrangement and equivalent fire technical and functional properties.

4.5 - For mounting in bulkheads only: approved for use as modular assembly up to four units (in accordance with Statement N° EUFI29-22001202-T1 dated 16/05/2022, from Eurofins, Finland - installation conditions to be in accordance with the recommendations in this statement, i.e Halton drawings N° ITM001011058, N° ITM001011055, N° ITM001011056 all Issue 1 dated 16/02/2022).

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - This certificate alone does not allow the applicant to issue the Declaration of Conformity and to affix the mark of conformity (wheelmark) to the products corresponding to this type. To this end, the production-control phase module D Production Quality Assurance or module E Product Quality Assurance or module F Product Verification of Annex II of the Directive is to be complied with and controlled by a written inspection agreement with a Notified Body.

5.2 - For information concerning the production phase modules, **Halton Marine Oy** has declared the following manufacturing sites:

Halton Marine Oy
Pulttikatu 2
15700 Lahti
FINLAND

Halton Ventilation (Shanghai) Co., Ltd.
Building 7, No. 55 Feidu Road
Lingang New Area, 201306 Shanghai
CHINA

Halton MEI USA, Inc.
120 Exchange Logistics Park Drive
Unit D (Box #4), SC 29673, Piedmont
USA

6. MARKING OF PRODUCT:

6.1 - Reference is made to MED 2014/90/EU chapter 2.

In particular Article 10.3 specifies that the wheelmark shall be followed by the identification number of the Notified Body involved in the production control phase (module D, E or F) and by the year in which the mark is affixed (4 digits or last 2 digits).

6.2 - This equipment is covered by the scope of the Agreement between the European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Marine Equipment signed February 27th, 2004 and amended by Decision No.1/2023 dated 26 May 2023 according to U.S. Coast Guard approval category indicated on front page of this certificate.

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 MED.

7. OTHERS:

7.1 - It is **Halton Marine Oy's** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This Certificate supersedes EC Type Examination Certificate N° 13962/E2 MED issued on 03/08/2026 by the Society.

***** END OF CERTIFICATE *****