Electronically published by ABS Gdansk.
Reference WO0721459, dated 04-Nov-2026

CERTIFICATE NUMBER	26-0721459-PDA
EFFECTIVE DATE	22-Oct-2026
EXPIRY DATE	19-Jun-2028
ABS TECHNICAL OFFICE	Gdynia Engineering Department

This is to certify that a representative of this Bureau did, at the request of

HALTON MARINE OY

located at

PULTTIKATU 2, , LAHTI, Finland, 15700

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product:	**Fire Damper**
Model:	**FDO, Marine Fire Dampers**
Endorsements:	
Tier:	**2 - PDA Issued**

This Product Design Assessment (PDA) Certificate remains valid until 19/Jun/2028 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

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Terms & Conditions of
ABS Design Assessment

1. Agreement

Unless otherwise agreed in writing, all services rendered and certificates issued are governed by the terms and conditions of the "Request for Product Type Approval and Agreement" (the "Agreement") which are hereby incorporated by reference.

2. Representations as to Design Assessment

A certificate of design assessment represents that the product design meets the ABS, statutory, industrial or manufacturer's standard described on the reverse hereof and that the manufacturer has established a systematic quality monitoring system sufficient to show its capacity to consistently manufacture a product which meets the designated standards. ABS is not a substitute for the independent judgment of professional designers or engineers nor a substitute for the quality control procedures of constructors, steel makers, suppliers, manufacturers and vendors of marine structures, materials, machinery or equipment. ABS represents solely to the manufacturer or other client of ABS that it will use due diligence in developing Rules, Guides and standards and in surveying the plant as called for by ABS criteria for type approval.

3. Suspension of Certification

Any of the following events will cause immediate suspension of the certificate of design assessment unless the change is submitted to ABS for a new review and audit.

a) Redesign of the product or products covered by this certificate;

b) Change in production methods;

c) Substantial change in management

any report issued in contemplation of this certificate shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied, nor create any interest, right, claim or benefit in any third party. It is understood and agreed that nothing expressed herein is intended or shall be construed to give any person, firm or corporation other than the parties hereto, any right, remedy, or claim hereunder or under any of the provisions herein contained; all of the provisions hereof are for the sole and exclusive benefit of the parties hereto.

5. Limitation

ABS makes no representations beyond those contained herein and in the provisions of the Agreement regarding its reports, statements, plan review, surveys, certificates or other services.

6. Hold Harmless

The party to whom this certificate is issued, and his assignee and successor in interest, agree to indemnify and hold harmless ABS from and against any and all claims, demands, lawsuits, or actions for damages, including legal fees, to persons or other legal entities and property, tangible, intangible, or otherwise which may be brought against ABS incidental to, arising out of or in connection with the work done, services performed or material to be furnished under this certificate, except for those claims caused solely and completely by the negligence of ABS, its agents, employees, officers, directors or subcontractors.

7. Arbitration

Any and all differences and disputes of whatsoever nature arising out of this

which they, or a majority of them, deem just and equitable and within the scope of the agreement of the parties, including, but not limited to, specific performance. Awards made in pursuance to this clause may include costs including a reasonable allowance for attorney's fees and judgment may be entered upon any award made hereunder in any court having jurisdiction. ABS and client hereby mutually waive any and all claims to punitive damages in any forum.

Client shall be required to notify ABS within thirty (30) days of the commencement of any arbitration between it and third parties which may concern ABS's work in connection with this Agreement and shall afford ABS an opportunity, at ABS's sole option, to participate in the arbitration.

8. Time Bar to Legal Action

Any statutes of limitation notwithstanding, Client expressly agrees for itself and its affiliated companies that its right to bring or to assert against ABS any and all claims, demands or proceedings whether in arbitration or otherwise shall be waived unless (a) notice is received by ABS within thirty (30) days after Client or its affiliates had notice of or should reasonably have been expected to have had notice of the basis for such claims; and (b) arbitration or legal proceedings, if any, based on such claims or demands of whatever nature are commenced within one (1) year of the date of such notice to ABS.

9. Limitation of Liability

The combined liability of American Bureau of Shipping, its officers, employees, agents or subcontractors for any loss, claim, or damage arising from negligent performance

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Tier: 2 - PDA Issued

Product: **Fire Damper**
Model: **FDO, Marine Fire Dampers**
Endorsements:

Intended Service:
Ventilation ducting which penetrates "A" Class divisions up to and including A-60.

Description:
Circular single blade automated fire dampers size up to dia 500.
Electrical with fusible link (FDO-EL); Pneumatic with fusible link (FDO-PN); Spring loaded with fusible link (FDO-SP)
The connections between the coaming and the damper frame and the extension duct are connected by means of flanges and are fastened with bolts and nuts and with a gasket between the flanges.
Mineral wool insulation A60 (80 mm thickness, density 100 kg/m3) is to be provided on both sides of the bulkhead coaming.

Rating:
A60 horizontal (Deck) installation:
1. Up to diameter D=500 mm, stainless steel frame, with gasket "Pyrocryl", Actuator - Elodrive CSQP-15A1E (VTT-S-07638-13, 19-06-2013)
2.Up to diameter D=500 mm, stainless steel frame, with gasket "Pyrocryl", Actuator - Schischek EXMax-5.10-F (VTT-S-07638-13, 19-06-2013)
3. Up to diameter D=500 mm, stainless steel frame, without gasket, Actuator - Belimeo BF230-2 HL (VTT-S-08754-13, 22-11-2013)
4. Up to diameter D=500 mm, carbon steel frame, with gasket "Pyrocryl", Actuator - Air Torque AT051 S12 B (VTT-S-08754-13, 22-11-2013)
5. Up to diameter D=500 mm, carbon steel frame, without gasket, Actuator - Spring, Artjarven Laatujousi Oy, with galvanized cover, (VTT-S-08754-13, 22-11-2013)
A30 horizontal (Deck) installation:
6. Up to diameter D=500 mm, stainless steel frame, without gasket, Actuator - Belimeo BLF24HL (VTT-S-07638-13, 19-06-2013)
7. Up to diameter D=500 mm, carbon steel frame, with gasket "Pyrocryl", Actuator - Air Torque AT051U S8 B (VTT-S-07638-13, 19-06-2013)
8. Up to diameter D=500 mm, carbon steel frame, without gasket, Actuator - Spring, Artjarven Laatujousi Oy, without galvanized cover, (VTT-S-07638-13, 19-06-2013)
A60 vertical (Bulkhead) installation:
9. Up to diameter D=500 mm, carbon steel frame, with gasket "Pyrocryl", Actuator - AT051 Air Torque. (430-13TD-IMO, 05.09.2013)

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15-SF. (712-18TD-IMO, 19-01-2018)
17. Up to diameter D=500 mm, coaming - steel, frame - stainless steel, with gasket "Tetrakem 1027", Actuator - Petz Industries Pi QT.Ex-MFD. (712-18TD-IMO, 19-01-2018)

Service Restriction:
1) Dampers manufactured from materials other than those used in the fire tests are not covered by this Type Approval.
2) Where Administrations require the dampers to satisfy both the insulation and integrity criteria of Appendix A.II of IMO Resolution A.754(18), insulation of the damper coaming is to be appropriate for the "A" Class divisions being penetrated.
3) The details of manual closing fire damper from both sides of divisions and visible indicator device which shows the operating position of the damper are to be verified for each application.
4) The A60 coaming length in the exposed side should be at least 450 mm including Fire Damper fully insulated. The A60 coaming length in the unexposed side should be at least 650 mm fully insulated for deck application and 850mm for bulkhead application. An additional layer of insulation (length 280mm unexposed side and 200mm exposed side) should be made at the penetration of bulkhead and deck, forming a total insulation thickness of 160 mm on the coaming.
5) The damper is to be provided with an automatic closing arrangement.
6) This Type Approval is not to be considered a substitute for a Flag Administration's approval for the purpose of SOLAS (2024 Consolidated Edition), unless specifically directed by the Administration.
7) The scope of Type Approval is to comply with MSC.1/Circ.1221 dated 11 December 2006.
8) Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standards, including inspection standards and tolerance, must clearly defined.

Comments:
1) Only actuators as indicated are acceptable.
2) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
3) Automatic dampers with additionally installed "manual override system" are to be verified by ABS attending Surveyor if un-energized (disconnected) will close automatically during two (2) minutes on case by case basis.
4) All materials have been verified for compliance with IMO FTP Code Annex 1, Part 1, with exemption as noted in Annex 1, Part 3.5.1.
5) This certificate may not be used for EU and US flagged vessels (MED and/or USCG have their own specific/requirements).

Notes/Drawing/Documentation:
1. 712-18TD-IMO, 19-01-2018, Fire resistance test on "A" class fire dampers mounted in an exposed side of the bulkhead. TUV Eesti OU, Vana-Narva road 24b, 74114 Maardu, Estonia.
2. 718-18TD-IMO, 16-02-2018, Fire resistance test on "A" class fire dampers mounted in an exposed side of the bulkhead. TUV Eesti OU, Vana-Narva road 24b, 74114 Maardu, Estonia

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13. LH-5479_BF Rev. A, Assembly Electrical - VTT-S-08754-13 - deck.
14. LH-5270CSQP Rev. A Assembly - - VTT-S-07638-13 - deck.
15. LH-5272EL, BLF, Spring Rev. A Assembly - - VTT-S-07638-13 - deck.
16. JpM1700924 FDO500, Petz Industries Pi QT.Ex-MFD. 712-18TD-IMO, - bulkhead.
17. JpM1700726, DN250, Schischek InMax-15-SF. 712/718-18TD-IMO - bulkhead.
18. JpM1700867, DN160, Schischek InMax-15-SF. 712/718-18TD-IMO - bulkhead.
19. LH-5200 Rev. D, FDO, A-15 to A-60 Insulation.

Terms of Validity:
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Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

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STANDARDS

ABS Rules:
2026 ABS Rules for Conditions of Classification Part 1A: 1A-1-4/7.7, 1A-1-A3 and A4
2026 ABS Rules for Conditions of Classification – Offshore Units: Part 1B: 1B-1-4/9.7, 1B-1-A2 and A3
2026 ABS Rules for Conditions of Classification – Light and High Speed Craft: Part 1C: 1C-1-4/11.9, 1C-1-A2 and A3

National:
NA

International:
International Code for Application of Fire Test Procedure 2010, 2012 Edition, Annex 1 Part 3,
International Convention for the Safety of Life at Sea (SOLAS), 1974, Chapter II-2 Regulation 3, Chapter II-2, Regulation 9/4.1.1.9, Reg. 9 /7.1.2.1, Reg.9/ 7.1.2.2 and Reg.9/7.3.1.3 & Reg. 9/7.3.3 (2024 Consolidated Edition))