



MARINE DIVISION

Certificate number: 13781/C0 BV

File number: ACI 4020/032/006

Product code: 5270H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

HALTON Oy
Lahti - FINLAND

for the type of product

FIRE DAMPERS

H-class fire dampers type FEX

Requirements:

- Bureau Veritas Rules for the Classification of Offshore Units - Part C, Chapter 4
- Fire Test Procedure Code (IMO Resolution MSC.61(67)) / IMO Resolution A.754(18) Annex A.II
- UK Department of Energy / Fire Research Station document "The Hydrocarbon Fire Resistance Test for Elements of Construction for Offshore Installations (Test Specification - Issue 1 : January 1990)"

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 01 Jul 2015

For BUREAU VERITAS,

At BV HELSINKI, on 01 Jul 2010,

Tommy Andersson



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. 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. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division 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 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 :

H-class fire dampers type FEX

Spring operated single or multi-blades rectangular fire dampers with automatic mechanical release.

Dimensions from 100 x 100 mm to 1200 x 1200 mm.

Coaming length: 900 mm minimum.

The frame of the damper is to be at least at 111 mm from the structural core.

The coaming is insulated with 2 layers of rockwool "Fire Batt 150" (thickness: 65 + 65 mm) on the fire damper side.

The number of layers and length of insulation to be installed on the other side shall be in accordance with the table in § 4.4.

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

The dampers shall be used with one of the following actuators:

Fire damper type	Actuator type
FEX-PNR	Pneumatic actuator :Air Torque AT100 S10 B
	Pneumatic actuator : Festo DRE-4-F05
	Pneumatic actuator : Prisma P05S
FEX-PNL	Pneumatic actuator : Roder 245N
FEX-EL	Electric actuator : Belimo BF24-2-HL, BF230-2-HL
	Electric actuator : Schischek Ext 1524-F1, ExMax 5.10-F, InMax 5.10-F
	Electric actuator : Siemens GCA 321.1E
FEX-SP	Spring

2. DOCUMENTS AND DRAWINGS :

As per the manufacturer's drawings N° PKY03064, JpM10806, LH-5942, LH-5943, LH-5944, LH-5945, LH-5947, LH-5954, LH-5988, LH-5987, LH-5989, LH-5990, LH-5795, LH-5796, LH-5797.

3. TEST REPORTS :

3.1- Test reports N° RTE 3411/03 dated November 28, 2003 as per IMO Resolution A.754(18) from VTT, Finland.

Test reports N° VTT-S-4280-07 dated May 21, 2007 as per IMO Resolution A.754(18) from VTT, Finland.

Technical statement N° VTT-S-6035-07 dated June 27, 2007 from VTT, Finland.

Technical statement N° VTT-S-4871-10 dated 09.06.2010 from VTT, Finland.

3.2- Non-combustible rockwool "Fire Batt 150" (nominal density 141 kg/m³) manufactured by Rockwool A/S, Denmark. Test report No. H11078 Serial No. 6974 dated October 19, 1998, as per FTP Code Part 1, from DIFT, Denmark.

3.3- Electric actuators : Belimo "BF24-2 HL" and "BF230-2-HL", manufactured by Belimo Oy, Schichkek "EXT-1524", "ExMax 5.10-F", "InMax 5.10-F" manufactured by Schichkek GmbH & "Siemens GCA 321.1E" manufactured by Siemens.

3.4- Pneumatic actuator : "Air Torque AT 100", manufactured by Air Torque S.p.A., "Festo DRE-4-F05" manufactured by Festo, "Prisma P05S" manufactured by Prisma.

3.5- Spring loaded "Spring", manufactured by Teräjousi Oy.

4. APPLICATION / LIMITATION :

4.1- The FEX fire dampers may be regarded as meeting the H-120, H-60 or H-30 class when the following insulation layers are fitted:

Class	Damper size [mm x mm]	Required insulation length of the first layer (1 x 65 mm)	Required insulation length of the second layer (2 x 65 mm)	Required insulation length of the third layer (3 x 65 mm)
H-120	100 x 100	1000 mm	450 mm	100 mm
	400 x 400	1200 mm	450 mm	-
	800 x 800	1400 mm	450 mm	-
	1200 x 1200	1700 mm	450 mm	-
H-60	100 x 100	500 mm	100 mm	-
	400 x 400	800 mm	300 mm	-
	800 x 800	1200 mm	300 mm	-
	1200 x 1200	1700 mm	300 mm	-
H-30	100 x 100	450 mm	-	-
	400 x 400	800 mm	-	-
	800 x 800	1200 mm	-	-
	1200 x 1200	1600 mm	-	-

4.2- Based on VTT-S-4871-10 technical statement dated 09.06.2010, and following § 1 and § 4.1 guidelines of this certificate, modular FEX fire dampers assemblies may be accepted within the following limits :

- in A-60 class divisions : maximum overall dimensions 1800 x 2100 mm with maximum 4 FEX fire dampers 850 x 1000;
- in H-120 class divisions : maximum overall dimensions 2000 x 400 mm with maximum 2 FEX fire dampers 950 x 400.

4.3- The fire damper is to be provided with an indicator which shows whether the damper is open or closed. The damper is to be capable of being closed manually from both sides of the division

4.4- The fitting aboard to be the same as used for the test.

5. PRODUCTION SURVEY REQUIREMENTS :

The "*FEX Marine Fire Dampers*" are to be manufactured, examined and tested by "HALTON Oy" in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end "HALTON Oy" has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

"HALTON Oy" has declared to Bureau Veritas that the type of product described in this certificate are manufactured at the following production sites :

HALTON Oy
Pulttikatu 2
FIN 15700 Lahti
FINLAND

6. MARKING OF PRODUCT :

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

7. OTHERS :

7.1- This approval is given on the understanding that the manufacturer will accept full responsibility for informing shipbuilders or their sub-contractors of the proper methods of fitting and general maintenance of the approved equipment and the conditions of this approval.

7.2- This certificate supersedes the Type Approval Certificate N°13781/B0 BV issued on 12.02.2008 by Bureau Veritas.

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