



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. F-19853

This is to certify that the
Fire Damper

with type designation(s)
MULTIBLADE FIRE DAMPER TYPE FDL-EL, FDL-PNL, FDL-PNR, FDL-SP

Manufactured by
Halton Oy
LAHTI, Finland


is found to comply with
Det Norske Veritas' Interpretation of SOLAS 1974 Convention as Amended
Det Norske Veritas' Offshore Standards
Det Norske Veritas' Rules for Classification of Ships

Application

The damper is approved for use in ducts penetrating bulkhead or deck Class A-0 to A-60 as shown on page 2 under Application/Limitation. Size of each damper module: max. 1300 x 1200 mm; min. 100 x 100 mm.

Høvik, 2011-08-31
for Det Norske Veritas AS

This Certificate is valid until
2015-12-31



Petter Langnes
Head of Section


DNV local office:
Helsinki



Amir Dzaferi
Surveyor

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.
If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Certificate No.: F-19853
File No.: 472.22
Job Id.: 262.1-004383-2

Product description

MULTIBLADE FIRE DAMPER TYPE FDL-EL, FDL-PNL, FDL-PNR, FDL-SP" composed of actuator operated, rectangular fire damper with damper blades and casing made from 3 to 5 mm galvanised painted steel plates or stainless steel (AISI 304, 316 or 316L). Bearings made of brass, bronze, ball bearings or stainless steel (AISI 304, 316 or 316L). The casing to be welded or bolted to the bulkhead/deck by Ø12 mm bolts spaced 150 mm apart.

For A-0 Class:

Fire dampers of A-0 class may be installed without any insulation on damper frame and ducting.

For A-30 - A-60 Class:

The insulation used is to be regarded as minimum insulations for A-30 - A-60 Class fire rating. Insulation FDL A30 / A60 see drawings in Statement No VTT-S-7332-07 from VTT, Espoo, Finland.

Fire Class	Damper size	Required insulation length
A 60	FDL 100 x 100	650 mm
	FDL 1300 x 1200	650 mm
A 30	FDL 100 x 100	450 mm
	FDL 1300 x 1200	450 mm

Application/Limitation

The damper satisfies for 60 minutes the requirements to stability and integrity according to Chapter II-2, regulation 3 of the 1974 SOLAS Convention.

The fire dampers to be automatic operated with fusible link by actuators of following type (*):

- Belimo BF24-2HL, BF24, BF24-T, BF230, BF230-T, or any Belimo actuators with a minimum torque of 12 Nm
- Siemens GGA 3261E
- Schischek RedMax, Schischek ExMax or Schischek InMax
- Pneumatic linear actuator Roder 71/245 N
- Pneumatic rotating actuator EI-O-matic ES 40/A/N5 or Air Torque AT100 S 10 B

(* 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.

The fire dampers may also be spring loaded with fusible link or manual operated by handle without fusible link.

The fire dampers modules may be made of 2 and 4 dampers.

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

Type Approval documentation

Certification in accordance with Standard for Certification No. 1.2, Type Approval, April 2009.

Test report Nos.

RTE 11040/99 dated 29 June 1999 from VTT, Espoo, Finland (Class A-30 Fire Dampers)

VTT-S-8566-10 dated 27 October 2010 from VTT, Espoo, Finland (Class A-0 Fire Dampers FDL-EL Bulkhead)

VTT-S-8567-10 dated 27 October 2010 from VTT, Espoo, Finland (Class A-0 Fire Dampers FDL-EL Deck)

Statement Nos.

RTE 11041/99 dated 30 June 1999 from VTT, Espoo, Finland (Class A-60 Fire Dampers).

VTT-S-7332-07 dated 31 August 2007 from VTT, Espoo, Finland (Insulation).

VTT-S-3542-10 dated 28 April 2010 from VTT, Espoo, Finland (fire damper modules with 2 and 4 dampers).

RTE 3861/04 dated 17 November 2004 from VTT, Espoo, Finland (different actuator types have no influence to insulation).

Fire Test Statement dated 08 January 2007 from Shisschek GmbH, Langenzenn, Germany (Actuators).

Drawings: LH-5400 Rev. A and LH-5600 Rev. H from Halton (modules).

Certificate retention survey report dated 7 March 2011 from DNV Helsinki.

Tested according to IMO FTPC Part 3 (IMO Res. A.754 (18)).



K



Certificate No.: F-19853
File No.: 472.22
Job Id.: 262.1-004383-2

Marking of product

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

Certificate Retention Survey

Det Norske Veritas' surveyor is to be given permission to perform Certification Retention Surveys at any time during the validity period of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Standard for Certification No. 1.2 item 4.

