



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. F-19048
This Certificate consists of 3 pages

This is to certify that the
Fire Damper
with type designation(s)
FDD MARINE FIRE DAMPER

Manufactured by
Halton Oy
LAHTI, Finland

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

Application
Approved for use in ducts penetrating bulkheads and decks of Class A-0 to A-60.
For application/limitation, see page 2.

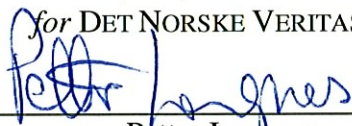
This certificate is recognized by Transport Canada.

Place and date
Høvik, 2009-06-25

This Certificate is valid until
2013-06-30

for DET NORSKE VERITAS AS





Petter Langnes
Head of Section

Local Office
DNV Helsinki



Amir Dzaferi
Surveyor

Notice: 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.



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File No.: 472.22
Case No.: 262.1-004834-4

Product description

“FDD MARINE FIRE DAMPER”

operated automatically with fusible link as electrical (FDD-EL) or linear pneumatic (FDD-PNL) or manually with fusible link as spring loaded (FDD-SP) or DOT release system (FDD-DOT) or manually without fusible link as operated with a handle (FDD-MAN) or CO₂ released (FDD-CO₂). Frames and blades are made of galvanized, painted or stainless steel. Bearings are made of brass, bronze or stainless steel.

For further insulation details, see approved drawings listed under Type Approval documentation below.

Applications/limitations

Maximum size of dampers: Ø315 mm,

Minimum size of dampers: Ø100 mm.

Coaming thickness: 3.6 mm (for Ø100 mm) and 6.3 mm (for Ø315 mm).

Blade thickness: 3 mm.

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.

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

Type Approval documentation

Certification in accordance with Certification Note No. 1.2, Type Approval, December 1996.

Test Report No RTE 10810/97 dated 8 April 1997 from Technical Research Centre of Finland (VTT).

Drawing No. LH-5199 (issue B) dated 25 June 2009 (insulation), from Halton.

Retention survey report dated 24 June 2009 from DNV Helsinki.

Tested according to IMO Res. A.754 (18).

Marking of product

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





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Transport Canada Approval

Based on the procedures laid down in the Transport Canada Publication entitled "*Approval Procedures for, Life Saving Equipment and Structural Fire Protection Products (TP 14612)*", Det Norske Veritas confirms that the product/s listed in this certificate is/are in accordance with Transport Canada's requirements.

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 item 4.3, Certification Note No. 1.2.

END OF CERTIFICATE



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