



DET NORSKE VERITAS TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. F-18880

This Certificate consists of 3 pages

This is to certify that the

Class A and B Penetration

471.19

with type designation(s)

3M MARINE FIRE WRAP PENETRATION SYSTEM

Manufactured by

3M Fire Protection Products

STILL WATER, United States

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 as a cable penetration system in class A-0 to A-60 bulkheads and decks for approved ship cables.

Place and date

Høvik, 2009-01-09

for Det Norske Veritas AS

This Certificate is valid until

2012-12-31

Petter Langnes
Head of Section

Local Office
DNV New York

Rolf Emilsen
Surveyor

Product description

"3M MARINE FIRE WRAP PENETRATION SYSTEM - Double Layer Method"

A double layer cable penetration system composed of steel sleeves, min size Ø50 mm, max size 210 x 510 mm, welded to the bulkhead/deck plate. Length of sleeves to be min. 200 mm in bulkhead and min. 100 mm for Ø50 mm sleeves in deck and min 150 mm for 210 x 510 mm sleeves installed 100 mm on unexposed side in deck. Two layers of 3.2 mm thick 3M Marine Fire Wrap placed along the inner surface of the sleeve.

The cavity between sleeve and cables to be filled with friction fitted mineral wool of density 110 kg/m³. The sleeve is sealed in both ends of a bulkhead and on the topside of a deck with 10 mm of FB2000+, FB 1000 N/S or CP25WB+ Caulk. (CP25WB+ should only be used for non-watertight applications)

Minimum distance between cables and between cables and frame is to be 5 mm. Max cable fill of transit 40%.

The penetration is to be partially insulated. (Ref. IMO Res. A.754(18) A.IV)

For A-0, the bulkhead and deck have to be insulated with A-60 insulation 200 mm around the penetration.

Application/Limitations

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 reports SwRI No. 01-2102-001b, d and e with summary dated 5 October 1999 and No. 01-2102-001j dated June 2002 from SwRI, Texas, USA

Test reports 125109 dated 13 January 2003 and 126014 dated 15 December 2003 from Warrington Fire Research, Warrington, UK.

Type Approval Survey Report dated 1 August 2008 from DNV New York.

Tested according to IMO FTPC Part 3, 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.

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

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

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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