

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Penetrations through "A" class divisions: pipe, duct, trunk, etc penetrations

with type designation(s)
Marine Flex System

Issued to
FireSeal AB
Kista, Stockholms Län, Sweden

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2019/1397**,
item No. MED/3.26b. SOLAS 74 as amended, Regulation II-2/9, IMO MSC.1/Circ.1276 and
IMO 2010 FTP Code

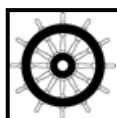
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2024-12-05**.

Issued at **Høvik** on **2019-12-06**

DNV GL local station:
Stockholm

Approval Engineer:
Thorvald Furuseth



Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005.

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.



Product description

"Marine Flex System",

is a steel or copper, single or multi-pipe penetration system composed of a 200 mm long steel sleeve welded to the bulkhead or deck. The sleeve is filled with Marine Blanket (length 170 mm, nominal density 96 kg/m³ manufactured by FireSeal) tightly folded/rolled and packed inside the sleeve. Both ends are sealed with 15 mm thick layer of Marine Flex (manufactured by FireSeal).

Steel sleeve is fitted symmetrically in bulkhead with 100 mm on either side and asymmetrically in deck with 25 mm on the underside and 175 mm on top.

For further details, see drawing mentioned under Type Examination documentation below.

Application/Limitation

Approved for use as pipe penetration system in steel bulkheads/decks according to below. Other applications are subject to case-by-case approval.

Pipe	Sleeve Shape	Pipe Diameter** [mm]	Sleeve Diameter** [mm]	Sleeve Thickness [mm]	Bulkhead rating	Deck rating
Copper (Cu)	Round	ø10 – ø18	ø30 – ø48	1.5	A-0 A-15*	A-0 A-60
Multi-tube tube (CU)	Round	ø18 – ø46	ø70 – ø100	6	A-0 A-60	A-0 A-60
Multi-tube tube (CU)	Oval	ø18 – ø48	100x100 - 328x100	6	A-0 A-60	A-0 A-60
Stainless steel (SS)	Round	ø5 – ø23	ø30 – ø60	1.5	A-0 A-60	A-0 A-60
Multi-tube tube (SS)	Round	ø18 – ø25	ø70 – ø80	6	A-0 A-60	A-0 A-60
Multi-tube tube (SS)	Round	ø25 – ø46	ø70 – ø100	6	A-60	A-60
Multi-tube tube (SS)	Oval	ø18 – ø48	100x100 - 328x100	6	A-60	A-60
* Class A-15 shall be insulated as class A-60.						
** Minimum distance between pipe and sleeve is 8 mm and between multitube and sleeve is 18 mm						

A-0 penetrations (bulkhead and deck) may be uninsulated.

A-60 bulkhead penetrations are to be fully insulated on one side.

A-60 deck penetrations are to be fully insulated on the underside.

The insulation materials used have to be approved according to the Marine Equipment Directive and bear the Mark of Conformity.

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

Type Examination documentation

Test Report 6P10357-1 Rev. 1, dated 2017-08-14, from RISE, Borås, Sweden.

Test Report 6P10357-2 Rev. 1, dated 2017-08-14, from RISE, Borås, Sweden.

Test Report 7P02955-1 Rev. 1, dated 2017-08-14, from RISE, Borås, Sweden.

Test Report 7P02955-2 Rev. 1, dated 2017-08-14, from RISE, Borås, Sweden.

Document FS-TP1812-01, dated 2019-03-14, from FireSeal, Kista, Sweden

Tests carried out



Job Id: **344.1-008365-1**
Certificate No: **MEDB000049W**

Tested according to IMO 2010 FTP Code Part 3.

Marking of product

The product or packing is to be marked with name and address of manufacturer, type designation, fire technical rating, the Mark of Conformity and USCG approval (see first page).