

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 the Kingdom of Norway.

This is to certify:

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

with type designation(s)
FS-Flex D (180) Pipe

Issued to

ESSVE Produkter AB
Kista Stockholms Län, Sweden

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2015/559**,
Annex A.1, item No. A.1/3.26b and Annex B, Module B in the Directive; SOLAS 74 as amended,
Regulation II-2/9, IMO MSC/Circ.1276 and IMO 2010 FTP Code

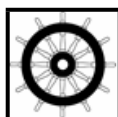
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2020-10-15**.

Issued at **Høvik** on **2017-03-15**

DNV GL local station:
Stockholm

Approval Engineer:
Tomasz Werchowicz



Notified Body
No.: **0575**

for **DNV GL AS**

Vidar Dolonen
Head of Notified Body



Job Id: **344.1-003432-6**
Certificate No: **MEDB00002G2**

Product description

"F S-Flex D (180) Pipe"

composed of a minimum 180 mm long, rectangular/circular steel sleeve welded to the deck or bulkhead. The void between pipes and the sleeve is filled with calcium silicate blankets of type "Blanket D-24 B", nominal density 96 kg/m³, compressed density approximately 161 - 240 kg/m³. A 15 mm thick layer of "Firestop Sealant 3000" is applied outside the blankets on both sides of the sleeve, flush with the ends of the sleeve.

Type	Cross sectional size of sleeve	Thickness of sleeve	Sizes of steel pipes
Rectangular Multiple steel pipe	100x100 – 700x400 mm	minimum 4,5 – 3,0 mm	maximum OD 273 mm
Circular Single steel pipe	Ø48 - Ø400 mm	minimum 3,0 mm	maximum OD 273 mm

For further details see drawings under Type Examination documentation below.

Application/Limitation

The penetration is approved for installation in steel bulkhead/deck of class A-0. Other applications are subject to case-by-case approval.

Minimum distance between pipes and minimum distance from sleeve to pipe is 10 mm.

The penetration system is not to be used for penetrating boundaries of tanks.

Watertightness and gastightness is not covered in this certificate.

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

Type Examination documentation

Test Reports:

- No. 103070.69A dated 27th January 2014, (deck)
 - No. 103070.69B dated 27th January 2014, (bulkhead)
- both from SINTEF NBL, Trondheim, Norway.

Assessment Reports:

- No. 103205.30 dated 10th April 2014,
 - No. 150101-7 dated 28th August 2015,
- both from SP Fire Research AS, Trondheim, Norway.

Drawing No. FSI-O-611-15A dated 1st September 2015 from ESSVE Produkter AB.

Tests carried out

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).