EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB00004W8
Revision No:
1

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 AS under the authority of the Government of Norway.

This is to certify:

that the Penetrations through "A" class divisions: electric cable transits

with type designation(s)
A-0 Class cable penetrations through rectangular sleeve with GPG Marine Mortar sealing

issued to
Firesafe Energy AS
Lørenskog, **Norway**

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2023/1667,**
item No. MED/3.26a. SOLAS 74 as amended, Regulation II-2/9, IMO 2010 FTP Code and IMO MSC.1/1488

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

This Certificate is valid until **2029-08-29**.

Issued at **Høvik** on **2024-08-30**

DNV local unit:
East & South Norway CMC

Approval Engineer:
Tessa Biever

Notified Body
No.: **0575**

for **DNV AS**

Digitally Signed By:
Christine Mydlak-Röder
Location: DNV Høvik, Norway

Mydlak-Röder, Christine
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, and amended by Decision No 1/2023 dated August 21st, 2023.

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 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees (“DNV”) arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

'A-0 Class cable penetrations through rectangular sleeve with GPG Marine Mortar sealing system'
Penetration composed of a square steel sleeve symmetrically welded to a steel bulkhead or deck. The sleeve is filled with 'GPG Marine Mortar' (GPGM Mortar) which is a powder mainly consisting of plaster, perlite and glass fibre. To be mixed with water to obtain desired consistency (see data sheet for correct mixing ration for application). The density of 'GPGM Mortar' is 0.7 kg/dm^3. 20 mm of 'GPGM Mortar' is added on both sleeve ends for bulkheads and on top of sleeve end for decks.

Application/Limitation

Approved for use as single and multi cable penetration system in A-0 steel bulkheads and decks for approved ship cables. Other applications are subject to case-by-case approval.

Table 1: Approved single and multi cable penetration in A-0 bulkhead.

Type	Size (W x L) [mm]	Cable Type	Max. cable diameter (OD) [mm]	Filling ratio [%]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Penetration insulation
OPH1	1020 x 70	-	-	0	60	10	Symmetrically	None
OPV1	70 x 1020	-	-	0	60	10	Symmetrically	None
CG70 CG71 CG83 CG85	240 x 532	Marine	52	0 – 28 [1)]	60 – 90	10	Symmetrically	None
CG70 CG74 CG83	240 x 532	Bundle	90 [2)]	0 – 28 [1)]	60 – 90	10	Symmetrically	None
CG70 CG83	240 x 532	Conduit	32 – 78 [3)]	0 – 28 [1)]	60 – 90	10	Symmetrically	None

1) Minimum 20 mm between cable and sleeve.
2) Maximum cable bundle diameter is 90 mm. Firesafe FT Graphite 10 mm wide and 25 mm deep around the cable bundle on each side.
3) FS-steel cable conduit outside diameter is 32 mm to 78 mm. Length is 330 mm. The conduit is made of steel and lined at both ends with 2.5 mm thick, 50 mm wide Intumex L and filled with 100 mm insulation in the centre.

Table 2: Approved single and multi cable penetration in A-0 deck.

Type	Size (W x L) [mm]	Cable type	Max. cable diameter (OD) [mm]	Filling ratio [%]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Penetration insulation
CG42 CG44 CG46	240 x 532	Marine	52	0 – 35 [1)]	60 – 90	10	Symmetrically	None

1) Minimum 20 mm between cable and sleeve.

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

Type Examination documentation

Test report No. 150072-06A dated 18 December 2017 from RISE, Trondheim, Norway.
Test report No. 150072-08A dated 14 September 2018 from RISE, Trondheim, Norway.
Test report No. 150072-08B dated 14 September 2018 from RISE, Trondheim, Norway.

Tests carried out

Tested in 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, MED Mark of Conformity and USCG approval number if applicable (see first page).