

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Class H Penetration

with type designation(s)
GPG Marine

Issued to

Firesafe Energy AS
Lørenskog, Norway

is found to comply with
DNV GL offshore standards

Application :

Approved for use as cable penetration system in H-Class bulkheads and decks.

Restricted application: Fire hazard from the insulated side only

See Applications/Limitations on page 2.

Issued at **Høvik** on **2017-10-23**

for **DNV GL**

This Certificate is valid until **2022-10-22**.

DNV GL local station: **Oslo Maritime and CAP**

Approval Engineer: **Piotr Orzechowski**

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Mårten Schei-Nilsson
Head of Section

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.



Job Id: **262.1-022788-1**
Certificate No: **TAF00000SK**

Product description

"GPG Marine"

Cable penetration composed of a 10 mm thick steel sleeve fitted with "GPGM Mortar" seal. The steel sleeve is symmetrically welded to the bulkhead/deck.

For further details see test report listed under Type Approval documentation below.

Application/Limitation

Approved for use as a cable penetration system in class H-0 and H-60 bulkheads and H-0, H-60 and H-120 decks. Other applications are subject to case-by-case approval.

The penetrations installed in H-60 and H-120 divisions are to be partially insulated with division insulation on insulated side (restricted application).

The minimum steel sleeve length is:

- 250 mm for H-120 deck
- 200 mm for H-60 bulkhead/deck
- 250 mm for H-0 bulkhead/deck

Maximum sleeve size: 532 mm x 240 mm (w x h)
Minimum sleeve size: 116 mm x 116 mm (w x h)
Maximum filling rate: 0% - 35%
Maximum cable diameter: Ø 55 mm

Minimum distance between cables/cable and cables/sleeve: 16 mm and 20 mm (see drawings)

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

Watertightness and gastightness is not covered in this certificate.

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

Type Approval documentation

Certification in accordance with Class Programme DNVGL-CP-0338, October 2015.

Test report 150072-05 Version 1 dated 12 June 2017 from RISE Fire Research, Norway.

Test report 150072-03 Version 1 dated 6 January 2017 from RISE Fire Research, Norway.

Drawings: CG-10 H0 Deck, CG-15 H120 Deck, CG-19 H-60 Deck, CG-23 H0 Bulkhead, CG-25 H-60 Bulkhead from manufacturer.

Tests carried out

Tested according to IMO 2010 FTP Code part 3 with the hydrocarbon time-temperature curve specified in ISO 834-3.

Marking of product

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

Periodical assessment

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Class Programme DNVGL-CP-0338, Section 4.