DNV·GL

Certificate No:
TAF000014C

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Class A and B Penetration

with type designation(s)
A-0 Class cable penetration through circular sleeve with GPG Marine Mortar sealing system

Issued to
Firesafe Energy AS
Lørenskog, Norway

is found to comply with
DNV GL rules for classification – Ships
DNV GL offshore standards
DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations

Application :

Approved for use as cable penetration system in A-0 in steel bulkheads.

This certificate is recognized by Transport Canada.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2019-04-26**
This Certificate is valid until **2024-04-25**.
DNV GL local station: **Oslo Maritime and CAP**

Approval Engineer: **Tessa Biever**

for **DNV GL**

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.

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Job Id: **262.1-029917-1**
Certificate No: **TAF000014C**

Product description
'A-0 Class single cable pentrations through circular sleeve with GPG Marine Mortar sealing system'

Penetration composed of a 10 mm thick circular steel sleeve symmetrically welded to steel bulkhead.

The bulkhead penetrations are sealed 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 701 kg/m^3.

See below table for penetration details:

Name	Sleeve length [mm]	Sleeve size [mm]	Filling	Sleeve insulation	Remarks
PG85 PG86	60	Ø56	Single cable Ø10- Ø20 mm	None	- Min. 20 mm additional GPGM Mortar on both sleeve ends - Min. 8 mm between cable and sleeve

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

Application/Limitation
Approved for use as single cable penetration system in A-0 steel bulkheads. Other applications are subject to case-by-case approval.

Watertightness and gastightness is not covered by this certificate.

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

Type Examination documentation
Certification in accordance with Class Programme DNVGL-CP-0338, September 2018.

Test report No. 150072-08A (A-0, steel bulkhead) dated 2018-09-14 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 of manufacturer, type designation and fire technical rating.

Transport Canada Approval
Based on the procedures laid down in the Transport Canada Publication entitled "Approval Procedures for, Life Saving Equipment and Structural Fire Protection Products (TP 14612)", DNV GL confirms that the product/s listed in this certificate is/are in accordance with Transport Canada's requirements.

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.