

TYPE APPROVAL CERTIFICATE

This is to certify:**That the FRP Grating**

with type designation(s)

**Reinforced Plastic Molded Grating (Vi-Corr), Reinforced Plastic Molded Grating (ELS),
Fibergrate Safe-T-Span I 6015-P Phenolic Grating**

Issued to

**Fibergrate Composite Structures Inc.
STEPHENVILLE, TX, USA**

is found to comply with

DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations**DNV GL rules for classification – Ships****DNV GL offshore standards****Application :****For use in locations according to enclosed Structural Fire Integrity Matrix.****Application is to be considered and accepted for each case/project.**Issued at **Høvik** on **2019-03-10**for **DNV GL**This Certificate is valid until **2024-03-09**.DNV GL local station: **Houston**Approval Engineer: **Helge Bjørnarå****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: **262.1-001599-6**
 Certificate No: **TAF000003C**
 Revision No: **1**

Product description

Reinforced Plastic Molded Grating (Vi-Corr),
 molded fiberglass grating using vinyl ester resin.

Weight: 12.2 - 24.4 Kg/m²

Structural Fire Integrity Level: L0 (may be used where fire integrity L0 is acceptable)

Reinforced Plastic Molded Grating (ELS),
 molded fiberglass grating using acrylic-modified polyester resin.

Weight: 12.2 - 24.4 Kg/m²

Structural Fire Integrity Level: L0 (may be used where fire integrity L0 is acceptable)

Fibergate Safe-T-Span I 6015-P Phenolic Grating,
 pultruded fiberglass grating using phenolic resin.

Max length of unsupported grating: 1120 mm

Weight: 13.8 Kg/m²

Structural Fire Integrity Level: L2 (may be used where fire integrity L2, L3 and L0 are acceptable)

Manufactured at the premises of Fibergate Mexico, El Marques, Querretaro, CP. 76246 Mexico.

Application/Limitation

The FRP grating is only evaluated in accordance with fire technical requirements. Other requirements such as strength etc. has to be evaluated in each case.

The FRP grating is for use in locations according to the below Structural Fire Integrity Matrix.

Structural Fire Integrity Matrix (ASTM F3059-15)

Location	Service	Fire Integrity
Machinery Spaces	Walkways or areas which may be used for escape, or access for firefighting, emergency operation or rescue	L1 _A
	Personnel walkways, catwalks, ladders, platforms or access areas other than those described above	L3
Cargo Pump Rooms	All personnel walkways, catwalks, ladders, platforms or access areas	L1
Cargo Holds	Walkways or areas which may be used for escape, or access for firefighting, emergency operation or rescue	L1
	Personnel walkways, catwalks, ladders, platforms or access areas other than those described above	L0
Cargo Tanks	All personnel walkways, catwalks, ladders, platforms or access areas	L0 _B
Fuel Oil Tanks	All personnel walkways, catwalks, ladders, platforms or access areas	L0
Ballast Water Tanks	All personnel walkways, catwalks, ladders, platforms or access areas	L0
Cofferdams, void spaces, double bottoms, pipe tunnels, etc.	All personnel walkways, catwalks, ladders, platforms or access areas	L0
Accommodation, service, and control spaces	All personnel walkways, catwalks, ladders, platforms or access areas	Not permitted
Lifeboat embarkation or temporary safe refuge stations in open deck areas	All personnel walkways, catwalks, ladders, platforms or access areas	L2
Open Decks or semi-enclosed areas	Operational areas and access routes for deck foam firefighting systems on tank vessels	L2
	Walkways and areas that may be used for escape, or access for firefighting systems and AFFF hose reels, emergency operation, or rescue on MODUs and production platforms including safe access to tanker bows	L2 _C

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	Walkways or areas that may be used for escape or access for firefighting, emergency operation or rescue other than those used above	L3
	Personnel walkways, catwalks, ladders, platforms or access areas other than those described above	L3
	Gangway for safe access to bow on tankers according to IMO MSC.62(67)	L2 _b

Footnote:

- A. If machinery space does not contain any internal combustion machinery, other oil burning, oil heating or oil pumping units, fuel oil filling stations, or other potential hydrocarbon fire sources and has not more than 2.5 kg/m² of combustible storage, gratings of L3 integrity may be used in lieu of L1.
- B. Gratings that are electrically conductive shall be required. Acceptance criteria for resistance per unit length and to earth is: < 0.1 M Ω to earth. Test standard ASTM D257-91, ref. DNV GL-CP-0070 "Fibre reinforced thermosetting plastic piping systems - Non-metallic materials
- C. Tested with furnace temperature curve according to ASTM E119 (i.e. not tested for Hydrocarbon or Jet fire exposure).
- D. IMO 2010 FTP Code Part 5 and 2 to be separately documented.

This Certificate does not cover testing of the FRP grating subjected to Hydrocarbon or Jet fire exposure. DNV GL recommend that for any area where FRP grating is arranged and with possible exposure to Hydrocarbon or Jet fire, Risk Assessment is conducted to ensure that the use of FRP does not have any negative effect with respect to Escape, Safe Evacuation, Firefighting and Escalation of the original fire incident.

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

Type Approval documentation

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

Test report No. 14-06425 dated 27 June 2014 from Commercial Testing Company, Georgia. (Vi-Corr)
Test report No. 14-09144 dated 15 September 2014 from Commercial Testing Company, Georgia. (ELS)
Test report No. 101892438SAT-001A dated 6 November 2014 from Intertek, USA. (Phenolic)
Test report No. 3181395SAT-015 Rev. 1 dated 22 January 2010 from Intertek, USA. (Phenolic)

Tests carried out

Tested according to ASTM E84 and USCG 2-98.

Structural fire integrity was tested with furnace temperature curve according to ASTM E119.

Marking of product

Each FRP grating shall be marked as a minimum with the brand and the appropriate fire rating (L1, L2, L3 or L0). The label shall be moulded into the grating or included on a permanently attached label.

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.