DNV·GL

TYPE APPROVAL CERTIFICATE

Certificate No:
TAF000003X
Revision No:
1

This is to certify:

That the FRP Grating

with type designation(s)
Intergrate PH-XFR-B, Intergrate VE-FR and moulded ISO-FR GRP

Issued to
Fiberstruct, s.r.o.
STRAŽSKÉ, Slovakia (Slovak Republic)

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 **2020-02-13**

This Certificate is valid until **2025-02-12**.
DNV GL local station: **Site Office Komarno**

Approval Engineer: **Helge Bjørnarå**

for **DNV GL**
Digitally Signed By: Hoff, Øyvind
Location: DNV GL Høvik, Norway
on behalf of

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: **262.1-002392-4**
Certificate No: **TAF000003X**
Revision No: **1**

Product description

Intergrate® PH-XFR-B, Intergrate® VE-FR and moulded ISO-FR GRP,
glass fibre reinforced plastic square mesh gratings.

This certificate covers the following grating types with achieved structural fire integrity level according to ASTM F3059-18:

Grating type	Resin	Structural Fire Integrity Level
Intergrate® PH-XFR-B	Phenolic	L0
Intergrate® VE-FR	Vinylester	L0
Moulded ISO-FR GRP grating	Isophthalic Polyester	L0

The products are manufactured by:

- Fiberstruct, s.r.o., STRAŽSKÉ, Slovakia (Slovak Republic).

Application/Limitation

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

With reference to below Structural Fire Integrity Matrix (ASTM F3059-18) the grating is only approved for use in locations where L0 is acceptable.

Structural Fire Integrity Matrix (ASTM F3059-18):

Location	Service	Structural Fire Integrity Matrix
Machinery Spaces	Walkways or areas which may be used for escape, or access for fire fighting, 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 fire fighting, 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	$L2_C$
	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)	$L2_D$

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 mot 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. Tested according to 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 is to be supplied with its manual for installation and maintenance.

Type Approval documentation

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

Test report No. 3091933SAT-002 dated 30 June 2006 from Intertek, Texas, USA. (PH-XFR)
Test report No. 103736887SAT-001B dated 2 September 2019 from Intertek, Texas, USA. (VF-FR)
Test report No. 191224009SHF-001 dated 7 January 2020 from Intertek, Shanghai, China. (ISO-FR)

Tests carried out

Tested according to ASTM F3059 and ASTM E84.

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.