



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. F-19596

This is to certify that the
FRP Grating

with type designation(s)

**Reinforced Plastic Molded Grating (Vicorr, ELS, Corvex, XFR), Rigidex I- Rigidex FR, Pultruded ISO FR Grating,
Fibergrate Safe-T-Span I 6015-P Phenolic Grating**

Manufactured by

**Fibergrate Composite Structures
STEPHENVILLE TX, United States**

is found to comply with

Det Norske Veritas' Interpretation of SOLAS 1974 Convention as Amended

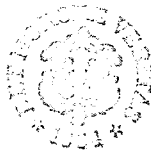
Det Norske Veritas' Offshore Standards

Det Norske Veritas' Rules for Classification of Ships

Application

For use in locations according to enclosed Structural Fire Integrity Matrix.

Høvik, 2010-12-07
for Det Norske Veritas AS



This Certificate is valid until
2014-12-31

Petter Langnes
Head of Section

DNV local office:
Houston

Rolf Emilsen
Surveyor

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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Certificate No.: F-19596
 File No.: 471.53
 Job Id.: 262.1-001599-4

Product description

“Reinforced Plastic Molded Grating (Vicorr, ELS, Corvex, XFR)”
 molded fiberglass grating using vinyl ester- or isophthalic polyester resins.

“Rigidex I- Rigidex FR”
 pultruded fiberglass grating using ISOFR resin system (isophthalic polyester).

“Pultruded ISO FR Grating”
 pultruded fiberglass grating using ISOFR resin system (isophthalic polyester).

“Fibergrate Safe-T-Span I 6015-P Phenolic Grating”
 pultruded fiberglass grating using phenolic resin.
 Max length of unsupported grating: 1120 mm

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

Application/Limitation

For use in locations according to enclosed Structural Fire Integrity Matrix.

Structural Fire Integrity Matrix.

Location	Service	Reinforced Plastic Molded Grating (Vicorr, ELS, Corvex, XFR)	Rigidex I- Rigidex FR	Pultruded ISO FR Grating	Fibergrate Safe-T-Span I 6015-P Phenolic grating
Machinery Spaces	Walkways or areas which may be used for escape, or access for fire fighting, emergency operation or rescue	NO	NO	NO	NO ⁽¹⁾
	Personnel walkways, catwalks, ladders, platforms or access areas other than those described above	NO	NO	NO	YES
Cargo Pump Rooms	All personnel walkways, catwalks, ladders, platforms or access areas	NO	NO	NO	NO
Cargo Holds	Walkways or areas which may be used for escape, or access for fire fighting, emergency operation or rescue	NO	NO	NO	NO
	Personnel walkways, catwalks, ladders, platforms or access areas other than those described above	YES	YES	YES	YES
Cargo Tanks	All personnel walkways, catwalks, ladders, platforms or access areas	YES ^(2,5)	YES ^(2,5)	YES ^(2,5)	YES ^(2,5)





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Fuel Oil Tanks	All personnel walkways, catwalks, ladders, platforms or access areas	YES ⁽²⁾	YES ⁽²⁾	YES ⁽²⁾	YES ⁽²⁾
Ballast Water Tanks	All personnel walkways, catwalks, ladders, platforms or access areas	YES ⁽³⁾	YES ⁽³⁾	YES ⁽³⁾	YES ⁽³⁾
Cofferdams, void spaces, double bottoms, pipe tunnels, etc.	All personnel walkways, catwalks, ladders, platforms or access areas	YES ⁽³⁾	YES ⁽³⁾	YES ⁽³⁾	YES ⁽³⁾
Accommodation, service, and control spaces	All personnel walkways, catwalks, ladders, platforms or access areas	NO	NO	NO	NO
Lifeboat embarkation or temporary safe refuge stations in open deck areas	All personnel walkways, catwalks, ladders, platforms or access areas	NO	NO	NO	YES
Open Decks or semi-enclosed areas	Walkways or areas which may be used for escape, or access for fire fighting, emergency operation or rescue	NO	NO	NO	YES ⁽⁴⁾
	Personnel walkways, catwalks, ladders, platforms or access areas other than those described above	YES	YES	YES	YES
	Gangway for safe access to bow on tankers according to IMO MSC.62(67)	NO	NO	NO	YES

- (1) 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.
- (2) If these spaces are normally entered when underway, gratings of L1 integrity shall be required.
- (3) If these spaces are normally entered when underway, gratings of L3 integrity shall be required.
- (4) Platforms and access serving deck foam fire fighting systems require gratings of L2 integrity.
- (5) Gratings that are electrically conductive shall be required. Acceptance criteria for resistance per unit length and to earth is: < 0,1 M Ω/m and < 1 M Ω to earth.
 Test Standard ASTM D257-91 (Ref. DNV TA 1-501-1 (Fibre reinforced Thermosetting Plastic Pipes))

Type Approval documentation

Certification in accordance with Standard for Certification No. 1.2, Type Approval, April 2009.

- Test report No.14960 -104375 dated 11 February 1997 from Omega Point Laboratory.
- Test report No.15701 -101601 dated 3 June 1997 from Omega Point Laboratory.
- Test report No.15701 -101602 dated 4 June 1997 from Omega Point Laboratory.
- Test report No. 14960 -104370 dated 10 February 1997 from Omega Point Laboratory.
- Test report No. 14960 -104371 dated 10 February 1997 from Omega Point Laboratory.
- Test report No. 14960 -100105 dated 17 June 1996 from Omega Point Laboratory.
- Test report No. 14960 -104667 dated 23 March 1999 from Omega Point Laboratory.
- Test report No. 14960 -104667 dated 23 March 1999 from Omega Point Laboratory.
- Test report No. 14960 -105033 dated 23 June 1999 from Omega Point Laboratory.
- Test report No. 3181395SAT-015 Rev. 1 dated 22 January 2010 from Intertek, USA.

Certificate Retention Survey Report dated 24 September 2010 from DNV Vera Cruz

Tested according to ASTM E-84-98 and USCG Memorandum PFM 2-98.





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Marking of product

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

Certificate retention survey

Det Norske Veritas' surveyor is to be given permission to perform Certification Retention Surveys at any time during the validity period of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Standard for Certification No. 1.2 item 4.

