

TYPE APPROVAL CERTIFICATE

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

with type designation(s)

Molded and pultruded FRP Gratings: Ortho-FR, Vinyl-FR, ISO-FR, ISO Polyester and ISO Resin Fire Resistant

Issued to

Suzhou Grating Co.,Ltd
SUZHOU JIANGSU, China

is found to comply with

DNV GL offshore standards**DNV GL rules for classification – Ships****DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations****Application :****Approved for use in locations according to enclosed Structural Fire Integrity Matrix.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Hamburg** on **2017-05-15**This Certificate is valid until **2022-05-03**.DNV GL local station: **Shanghai**for **DNV GL**Approval Engineer: **Pavel Golyshev**

Antje Fleischhauer
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.



Product description

Molded and pultruded FRP Gratings: Ortho-FR, Vinyl-FR, ISO-FR, ISO Polyester and ISO Resin Fire Resistant.

Table 1: Tests results according to E84-08a and E84-09:

Grating	Flame Spread Index	Smoke Developed Index
Molded Ortho-FR	15	500
Molded ISO-FR	15	500
Molded Vinyl-FR	15	400
Pultruded ISO-FR	10	650
Molded ISO Polyester Fire Resistant	20	350
Pultruded ISO Resin Fire Resistant	15	600

Application/Limitation

For use in locations according to the below Structural Fire Integrity Matrix (Table 2).

Table 2: Structural Fire Integrity Matrix

Location	Service	Range of use
Machinery Spaces	Walkways or areas which may be used for escape, or access for fire fighting, emergency operation or rescue	NO
	Personnel walkways, catwalks, ladders, platforms or access areas other than those described above	NO
Cargo Pump Rooms	All personnel walkways, catwalks, ladders, platforms or access areas	NO
Cargo Holds	Walkways or areas which may be used for escape, or access for fire fighting, emergency operation or rescue	NO
	Personnel walkways, catwalks, ladders, platforms or access areas other than those described above	YES
Cargo Tanks	All personnel walkways, catwalks, ladders, platforms or access areas	NO
Fuel Oil Tanks	All personnel walkways, catwalks, ladders, platforms or access areas	YES ¹⁾
Ballast Water Tanks	All personnel walkways, catwalks, ladders, platforms or access areas	YES ¹⁾
Cofferdams, void spaces, double bottoms, pipe tunnels, etc.	All personnel walkways, catwalks, ladders, platforms or access areas	YES ¹⁾
Accommodation, service, and control spaces	All personnel walkways, catwalks, ladders, platforms or access areas	NO
Lifeboat embarkation or temporary safe refuge stations in open deck areas	All personnel walkways, catwalks, ladders, platforms or access areas	NO
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
	Personnel walkways, catwalks, ladders, platforms or access areas other than those described above	YES
	Gangway for safe access to bow on tankers according to IMO MSC.62(67)	NO
¹⁾ The grating can only be used if these spaces are normally not entered when underway		

Job Id: **262.1-025890-1**
Certificate No: **TAF00000NG**

The grating shall not be installed in areas where it can be exposed to a hydrocarbon fire.

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.

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

Type Approval documentation

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

Test reports all from Intertek Testing Services NA, Inc. Elmhendorf, Texas, USA:

- 3150079SAT-001-Rev.1 (Molded Ortho-FR Grating) dated 21st of May 2008
- 3150079SAT-002-Rev.1 (Molded ISO-FR Grating) dated 21st of May 2008
- 3150079SAT-003-Rev.1 (Molded Vinyl-FR Grating) dated 6th of May 2008
- 3150079SAT-004-Rev.1 (Pultruded ISO-FR Grating) dated 6th of May 2008
- 3184308SAT-001A (FRP Molded Grating, ISO Polyester Fire Resistant) dated 10th of July 2009
- 3184308SAT-001B (FRP Pultruded Grating, ISO Resin Fire Resistant) dated 10th of July 2009

Tests carried out

Tested according to:

ASTM E84-08a (for Types Ortho-FR, Vinyl-FR and ISO-FR),

ASTM E84-09 (for Types ISO Polyester and ISO resin fire resistant).

Marking of product

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

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 products listed in this certificate 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.