



Certificate no.:
TAF00001ZD

TYPE APPROVAL CERTIFICATE

This is to certify:

that the FRP Grating

with type designation(s)

FRP gratings series: M, P, MP

issued to

Jiangsu Golden Composites Co., Ltd.

Jingjiang City, Jiangsu Province, China

is found to comply with

DNV statutory interpretations DNV-SI-0364 – SOLAS interpretations, Edition July 2021

DNV offshore standards

DNV rules for classification – Ships

Application:

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

Application is to be considered and accepted for each case/project.

Product approved by this certificate is accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2025-06-29**

This Certificate is valid until **2030-06-28**.

for **DNV**

DNV local unit: **Jiangyin NB & CMC**

Approval Engineer: **Izabela Misztal**

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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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

"FRP gratings series: M, P, MP"

Grating Type	Resin	Fire Integrity	Flame Spread Index	Smoke Developed Index
Golden molded (M) Bearing bar (height (H); mesh size (C); thickness): 38 mm; 38 x 38 mm; 7 mm (for details, see drawing No. Pul-0017)	Unsaturated polyester resin	L0	10	70
Golden pultruded (P) Bearing bar (height (H); spacing (C); flange width (W); flange thickness; web thickness: 38 mm; 38.1 mm; 15 mm; 4 mm. Cross bar (spacing; thickness): 152.4 mm; 12 mm (for details, see drawing No. Pul-0016)	Unsaturated polyester resin	L0	20	300
Golden molded phenolic (MP) Bearing bar (height (H); mesh size (C); thickness): 38 mm; 38 x 38 mm; 7 mm (for details, see drawing No. Pul-0018)	Phenolic resin	L0	15	85

Application/Limitation

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

With reference to below Structural Fire Integrity Matrix (ASTM F3059-24) the gratings are only approved for use in locations where L0 is acceptable.

Structural Fire Integrity Matrix (ASTM F3059-24):

Location	Service	Fire Integrity
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 _C
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 _D
	Walkways or areas that may be used for escape or access for fire-fighting, 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 _E
Footnote:		

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| 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/m ² 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-CP-0070 "Fibre reinforced thermosetting plastic piping systems - Non-metallic materials" |
| C. | Also required to be tested according to IMO 2010 FTP Code Part 5 and 2 for floor covering (IMO MSC.1/Circ.1504). |
| D. | Tested with furnace temperature curve according to ASTM E119 (i.e. not tested for hydrocarbon or jet fire exposure). |
| E. | For passenger ships required to meet the safe return to port regulations, MSC.1/Circ.1369 Interpretation No. 8 to be specially considered to determine if it is a space in which the risk of a fire originating is negligible or not. |

This certificate does not cover testing of the FRP grating subjected to hydrocarbon or jet fire exposure. DNV recommends 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 Program DNV-CP-0338, September 2021.

Golden molded (M):

Test report No. 241014008SHF-011-R1, dated 19 November 2024 from Intertek, Shanghai, China.
 Test report No. 241014008SHF-012-R1, dated 19 November 2024 from Intertek, Shanghai, China.
 Test report No. AJFS2409011361FF, dated 9 December 2024 from SGS-CSTC, Anji, China.
 Test report No. AJFS2409011364FF, dated 9 December 2024 from SGS-CSTC, Anji, China.
 Drawing No. Pul-0017 dated 19 October 2021 from manufacturer.

Golden pultruded (P):

Test report No. 241014008SHF-005, dated 15 November 2024 from Intertek, Shanghai, China.
 Test report No. 241014008SHF-006, dated 15 November 2024 from Intertek, Shanghai, China.
 Test report No. AJFS2409011367FF, dated 9 December 2024 from SGS-CSTC, Anji, China.
 Test report No. AJFS2409011368FF, dated 9 December 2024 from SGS-CSTC, Anji, China.
 Drawing No. Pul-0016 dated 19 October 2021 from manufacturer.

Golden molded phenolic (MP):

Test report No. 241014008SHF-003-R1, dated 19 November 2024 from Intertek, Shanghai, China.
 Test report No. 241014008SHF-004-R1, dated 19 November 2024 from Intertek, Shanghai, China.
 Test report No. AJFS2409011365FF, dated 9 December 2024 from SGS-CSTC, Anji, China.
 Test report No. AJFS2409011366FF, dated 9 December 2024 from SGS-CSTC, Anji, China.
 Drawing No. Pul-0018 dated 19 October 2021 from manufacturer.

Tests carried out

Tested according to ASTM E84-23 and IMO 2010 FTP Code part 2 and 5.

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'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 DNV-CP-0338, Section 4.

Manufactured by:

Jiangsu Golden Composites Co., Ltd., No. 3 Xinxing Road, Jingjiang Economic Technology Development Area, Jingjiang City, China.