

INTERNATIONAL STANDARD

ISO
24681

First edition
2023-05

Ships and marine technology — Fibre-reinforced plastic gratings



Reference number
ISO 24681:2023(E)
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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 8, *Ship design*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Ships and marine technology — Fibre-reinforced plastic gratings

1 Scope

This document specifies the structure, technical requirements and test methods of gratings for fibre-reinforced plastics (FRP) in the marine industry. It also defines terms related to FRP gratings.

This document is applicable to the design, manufacture and inspection of self-support FRP gratings used for pedestrian pathways and platforms on ships or offshore platforms.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4892-3:2016, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 14125, *Fibre-reinforced plastic composites — Determination of flexural properties*

IMO, *International Code for Application of Fire Test Procedures (FTP Code)*, 2010

IMO, *International Convention for the Safety of Life at Sea (SOLAS)*, 1974 and amendment

ASTM D2047, *Test method for static coefficient of friction of polish-coated flooring surfaces as measured by the James machine*

ASTM E84, *Standard test method for surface burning characteristics of building materials*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

fibre reinforced plastic

FRP

composite material made of resin reinforced with fibre

Note 1 to entry: Glass fibres are widely used as reinforced fibre.

3.2

skid resistance

property of the trafficked surface which limits the relative movement between the contact patch of pedestrian footwear or a vehicle tyre and the surface

4 Classification

4.1 Types

4.1.1 General

Fibre reinforced plastic (FRP) grating is a kind of composite panel material with a certain aperture ratio, which is based on thermosetting resin and reinforced with fibreglass roving, and processed by special technology. The raw materials shall meet recognized standards and be specified in the technical specification, so as to ensure its continuous and stable performance.

FRP gratings are generally divided into two types, moulded or pultruded FRP gratings. For typical examples, see [Figure 1](#) and [Figure 2](#).

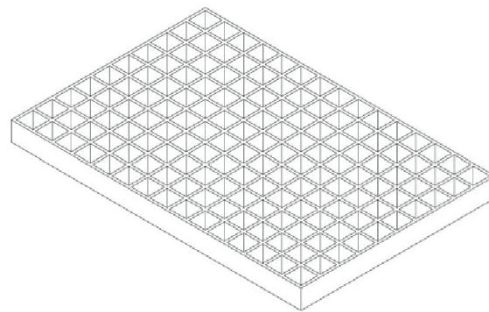


Figure 1 — Moulded grating

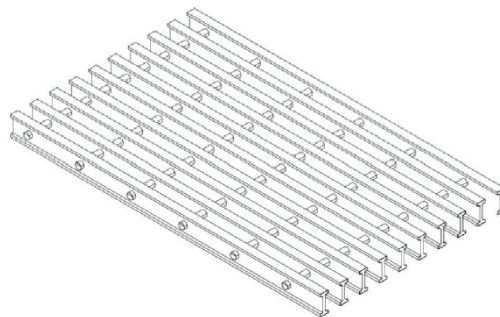


Figure 2 — Pultruded grating

4.1.2 Moulded grating

Moulded FRP gratings are produced by the open mould process in which thermosetting resin and dry glass fibre are placed in the mould in cross directions. After filling the mould with the designated amount of material, the resin is allowed to cure in the open mould. Moulded grating is usually manufactured in square mesh or rectangular mesh configurations. Square mesh moulded grating has nearly equal strength in longitudinal and transverse directions. Rectangular mesh has better strength along longitudinal direction. For the common mesh configuration, see [Table 1](#).