
**Small craft — Stability and buoyancy
assessment and categorization —**

Part 1:

**Non-sailing boats of hull length greater
than or equal to 6 m**

*Petits navires — Évaluation et catégorisation de la stabilité et de la
flottabilité —*

*Partie 1: Bateaux à propulsion non vélique d'une longueur de coque
supérieure ou égale à 6 m*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 12217-1 was prepared by Technical Committee ISO/TC 188, *Small craft*.

This second edition cancels and replaces the first edition (ISO 12217-1:2002), which has been technically revised. It also incorporates the Amendment ISO 12217-1:2002/Amd.1:2009.

ISO 12217 consists of the following parts, under the general title *Small craft — Stability and buoyancy assessment and categorization*:

- *Part 1: Non-sailing boats of hull length greater than or equal to 6 m*
- *Part 2: Sailing boats of hull length greater than or equal to 6 m*
- *Part 3: Boats of hull length less than 6 m*

Introduction

This part of ISO 12217 enables the determination of the limiting environmental conditions for which an individual boat has been designed.

It enables the boat to be assigned to a design category appropriate to its design and maximum load. The design categories used align with those in the Recreational Craft Directive of the European Union, EU Directive 94/25/EC as amended by Directive 2003/44/EC.

The design category given in respect of stability and buoyancy is that for which the boat satisfies all the requirements according to 5.3, as summarized in Annex I.

Small craft — Stability and buoyancy assessment and categorization —

Part 1:

Non-sailing boats of hull length greater than or equal to 6 m

CAUTION — Compliance with this part of ISO 12217 does not guarantee total safety or total freedom of risk from capsize or sinking.

IMPORTANT — The electronic file of this document contains colours which are considered to be useful for the correct understanding of the document. Users should therefore consider printing this document using a colour printer.

1 Scope

This part of ISO 12217 specifies methods for evaluating the stability and buoyancy of intact (i.e. undamaged) boats. The flotation characteristics of boats vulnerable to swamping are also encompassed.

The evaluation of stability and buoyancy properties using this part of ISO 12217 will enable the boat to be assigned to a design category (A, B, C or D) appropriate to its design and maximum total load.

This part of ISO 12217 is principally applicable to boats propelled by human or mechanical power of 6 m up to 24 m hull length. However, it can also be applied to boats of under 6 m if they do not attain the desired design category specified in ISO 12217-3 and they are decked and have quick-draining recesses which comply with ISO 11812.

In relation to habitable multihulls, this part of ISO 12217 includes assessment of vulnerability to inversion, definition of viable means of escape and requirements for inverted flotation.

This part of ISO 12217 excludes:

- inflatable and rigid-inflatable boats covered by ISO 6185, except for references made in ISO 6185 to specific clauses of ISO 12217;
- personal watercraft covered by ISO 13590 and other similar powered craft;
- gondolas and pedalos;
- sailing surfboards;
- surfboards, including powered surfboards;
- hydrofoils and hovercraft when not operating in the displacement mode; and
- submersibles.

NOTE Displacement mode means that the boat is only supported by hydrostatic forces.

It does not include or evaluate the effects on stability of towing, fishing, dredging or lifting operations, which need to be separately considered if appropriate.

2 Normative references

The following referenced documents are indispensable for the application 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 2896, *Rigid cellular plastics — Determination of water absorption*

ISO 3864-1, *Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs and safety markings*

ISO 8666, *Small craft — Principal data*

ISO 9093-1, *Small craft — Seacocks and through-hull fittings — Part 1: Metallic*

ISO 9093-2, *Small craft — Seacocks and through-hull fittings — Part 2: Non-metallic*

ISO 10240, *Small craft — Owner's manual*

ISO 11812, *Small craft — Watertight cockpits and quick-draining cockpits*

ISO 12216, *Small craft — Windows, portlights, hatches, deadlights and doors — Strength and watertightness requirements*

ISO 12217-2:2013, *Small craft — Stability and buoyancy assessment and categorization — Part 2: Sailing boats of hull length greater than or equal to 6 m*

ISO 12217-3:2013, *Small craft — Stability and buoyancy assessment and categorization — Part 3: Boats of hull length less than 6 m*

ISO 14946, *Small craft — Maximum load capacity*

ISO 15083, *Small craft — Bilge-pumping systems*

ISO 15085, *Small craft — Man-overboard prevention and recovery*

3 Terms and definitions

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

NOTE The meanings of certain symbols used in the definitions are given in Clause 4.

3.1 Primary

3.1.1

design category

description of the sea and wind conditions for which a boat is assessed to be suitable by this part of ISO 12217

NOTE See also 7.2.

3.1.2

non-sailing boat

boat for which the primary means of propulsion is other than by wind power, having reference sail area (3.3.8) $A_S < 0,07(m_{LDC})^{2/3}$, where m_{LDC} is the mass of the boat in the maximum load condition, expressed in kilograms

3.1.3

recess

volume open to the air that might retain water within the range of loading conditions and corresponding trims

EXAMPLES Cockpits, wells, open volumes or areas bounded by bulwarks or coamings.

NOTE 1 Cabins, shelters or lockers provided with closures according to the requirements of ISO 12216 are not recesses.

NOTE 2 Cockpits that are open aft to the sea are considered to be recesses. Flush decks without bulwarks or coamings are not recesses.