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Inflatable boats —

Part 4:

Boats with a hull length of between 8 m and 24 m with a motor power rating of 15 kW and greater

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Bateaux pneumatiques —

Partie 4: Bateaux d'une longueur de coque comprise entre 8 m et 24 m et d'une puissance moteur nominale supérieure ou égale à 15 kW

ISO 6185-4:2011

<https://standards.iteh.ai/catalog/standards/sist/28ea4715-5b38-4938-a56d-77959aa39e69/iso-6185-4-2011>



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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 188, *Small craft*.

This first edition, together with ISO 6185-1, ISO 6185-2 and ISO 6185-3, cancels and replaces ISO 6185:1982, which has been technically revised.

ISO 6185 consists of the following parts, under the general title *Inflatable boats*:

- *Part 1: Boats with a maximum motor power rating of 4,5 kW*
- *Part 2: Boats with a maximum motor power rating of 4,5 kW to 15 kW inclusive*
- *Part 3: Boats with a maximum motor power rating of 15 kW and greater*
- *Part 4: Boats with a hull length of between 8 m and 24 m with a motor power rating of 15 kW and greater*

This corrected version of ISO 6185-4:2011 incorporates the following corrections:

- A cross-reference to [5.2.2.7](#) has been added in [Table 1](#), row 3.
- The formula in [5.2.2.7](#) has been replaced and the unit for d in [Table 1](#) has been changed to mm.

In addition, [Figure A.1](#) has been rotated through 90°.

Introduction

ISO 6185 is subdivided into four parts as shown in [Figure 1](#).

It excludes

- a) single-chamber boats,
- b) boats of less than 1 800 N buoyancy, and
- c) boats made from unsupported materials of more than 12 kN inflated buoyancy and powered by motors of power $P > 4,5$ kW.

It is not applicable to aquatic toys, nor to inflatable liferafts which are specified in ISO 9650.

ISO 6185-1:

- Type I Boats with $L_H < 8$ m propelled exclusively by manual means.
- Type II Powered boats with $L_H < 8$ m with a power $P \leq 4,5$ kW.
- Type III Canoes and kayaks with $L_H < 8$ m.
- Type IV Sail boats with $L_H < 8$ m with a sail area less than or equal to 6 m^2 .

ISO 6185-2:

- Type V Powered boats with $L_H < 8$ m with a power $4,5 \text{ kW} < P \leq 15 \text{ kW}$.
- Type VI Sail boats with $L_H < 8$ m with a sail area greater than 6 m^2 .

ISO 6185-3:

- Type VII Powered boats with $L_H < 8$ m with a power $P \geq 15 \text{ kW}$.
- Type VIII Powered boats with $L_H < 8$ m with a power $P \geq 75 \text{ kW}$.

ISO 6185-4:

- Type IX Powered boats (design categories C and D) with $8 \text{ m} < L_H \leq 24 \text{ m}$ with power $P \geq 15 \text{ kW}$.
- Type X Powered boats (design category B) with $8 \text{ m} < L_H \leq 24 \text{ m}$ with power $P \geq 75 \text{ kW}$.

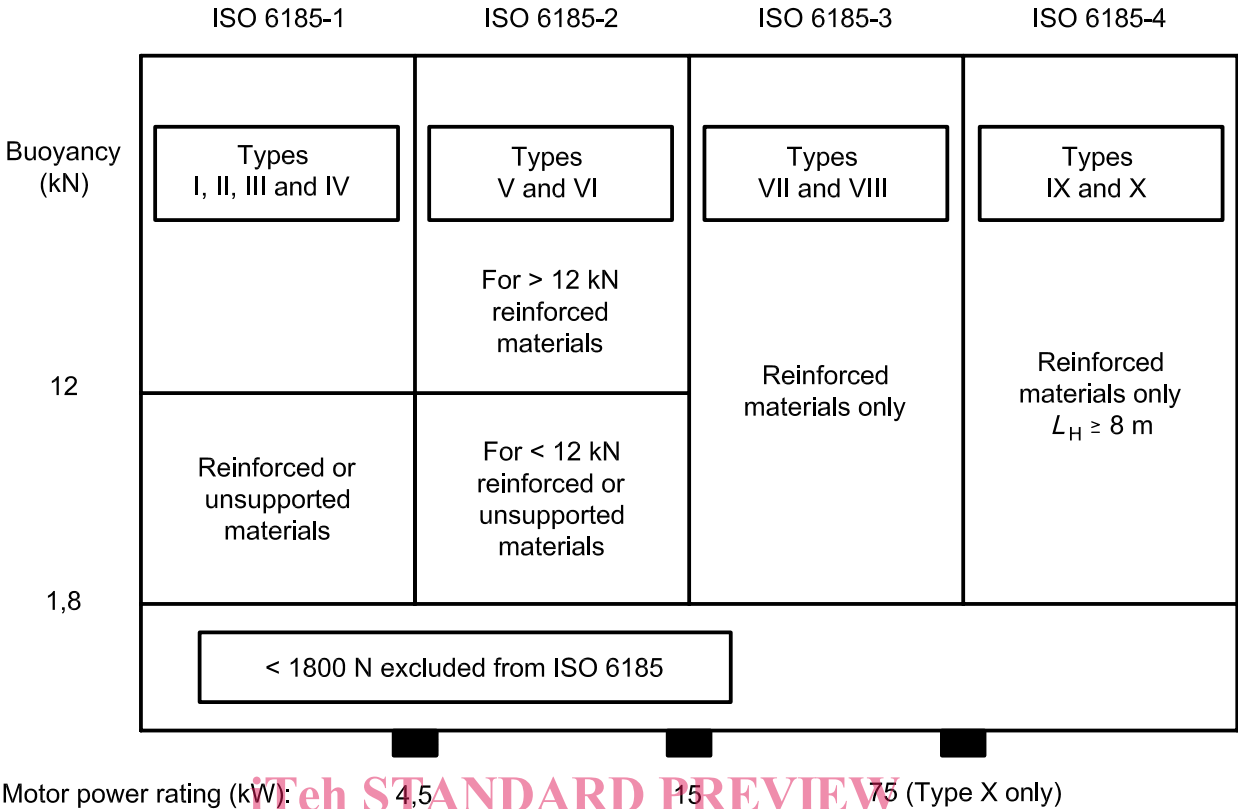


Figure 1 — Illustration of how ISO 6185 is subdivided

This part of ISO 6185 enables the boat to be assigned to a design category appropriate to its design and maximum load. The 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.

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Inflatable boats —

Part 4:

Boats with a hull length of between 8 m and 24 m with a motor power rating of 15 kW and greater

WARNING — Attention is drawn to the completion process whereby structural items, for example steering consoles, seats and superstructures, are installed by parties other than the manufacturer of the boat. These items should be installed to comply with the relevant clauses of this part of ISO 6185 so it can be ensured that any such installations do not invalidate the original assessment.

1 Scope

This part of ISO 6185 specifies the minimum safety characteristics required for the design, materials, manufacture and testing of rigid inflatable boats (RIBs) with a hull length of between 8 m and 24 m and with a motor power rating of 15 kW and greater.

This part of ISO 6185 is applicable to Type IX and Type X RIBs intended for use within the operating temperatures of $-20\text{ }^{\circ}\text{C}$ to $+60\text{ }^{\circ}\text{C}$.

- Type IX: Powered boats, fitted with a buoyancy tube covering at least 85 % of the port and starboard sides, suitable for navigation in inshore and sheltered waters, up to and including wind force 6 Beaufort and significant wave heights up to 2 m (design categories C and D), with a hull length of between 8 m and 24 m and with a motor power rating of 15 kW and greater.
- Type X: Powered boats, fitted with a buoyancy tube covering at least 85 % of the port and starboard sides, suitable for navigation in waters, up to wind force 8 Beaufort and significant wave heights up to 4 m (design category B), with a hull length of between 8 m and 24 m and with a motor power rating of 75 kW and greater.

NOTE 1 General arrangements of typical boats of Types IX and X are given in [Annexes A](#) and [B](#), respectively.

NOTE 2 For boats with power ratings of 4,5 kW and less, refer to ISO 6185-1. For boats with power ratings of 4,5 kW to 15 kW inclusive, refer to ISO 6185-2. For boats with a hull length of less than 8 m and power rating of 15 kW and greater, refer to ISO 6185-3.

Boats outside these types or outside of Type IX and Type X, as defined, are outside of the scope of ISO 6185.

NOTE 3 For inflatable boats with a hull length greater than 8 m, it is suggested to use the requirements of ISO 6185-3.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1817, *Rubber, vulcanized — Determination of the effect of liquids*

ISO 2411, *Rubber- or plastics-coated fabrics — Determination of coating adhesion*

ISO 3011, *Rubber- or plastics-coated fabrics — Determination of resistance to ozone cracking under static conditions*

ISO 4674-1, *Rubber- or plastics-coated fabrics — Determination of tear resistance — Part 1: Constant rate of tear methods*

ISO 4675, *Rubber- or plastics-coated fabrics — Low-temperature bend test*

ISO 6185-3:2001, *Inflatable boats — Part 3: Boats with a maximum motor power rating of 15 kW and greater*

ISO 7010:2011, *Graphical symbols — Safety colours and safety signs — Registered safety signs*

ISO 8099, *Small craft — Toilet waste retention systems*

ISO 8666, *Small craft — Principal data*

ISO 8847, *Small craft — Steering gear — Cable and pulley systems*

ISO 8848, *Small craft — Remote steering systems*

ISO 9093 (all parts), *Small craft — Seacocks and through-hull fittings*

ISO 9094, *Small craft — Fire protection*¹⁾

ISO 10087, *Small craft — Craft identification — Coding system*

ISO 10088, *Small craft — Permanently installed fuel systems*

ISO 10133, *Small craft — Electrical systems — Extra-low-voltage d.c. installations*

ISO 10239, *Small craft — Liquefied petroleum gas (LPG) systems*

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

ISO 10592, *Small craft — Hydraulic steering systems*

ISO 11105, *Small craft — Ventilation of petrol engine and/or petrol tank compartments*

ISO 11591, *Small craft, engine-driven — Field of vision from helm position*

ISO 11812:2001, *Small craft — Watertight cockpits and quick-draining cockpits*

ISO 12215-3:2002, *Small craft — Hull construction and scantlings — Part 3: Materials: Steel, aluminium alloys, wood, other materials*

ISO 12215-5, *Small craft — Hull construction and scantlings — Part 5: Design pressures for monohulls, design stresses, scantlings determination*

ISO 12215-6, *Small craft — Hull construction and scantlings — Part 6: Structural arrangements and details*

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

ISO 12217-1:2013, *Small craft — Stability and buoyancy assessment and categorization — Part 1: Non-sailing boats of hull length greater than or equal to 6 m*

ISO 13297, *Small craft — Electrical systems — Alternating current installations*

ISO 14945, *Small craft — Builder's plate*

ISO 14946:2001, *Small craft — Maximum load capacity*

ISO 15084, *Small craft — Anchoring, mooring and towing — Strong points*

ISO 15085:2003, *Small craft — Man-overboard prevention and recovery*

1) To be published. (Technical revision of ISO 9094-1:2003 and ISO 9094-2:2002.)

ISO 21487, *Small craft — Permanently installed petrol and diesel fuel tanks*

3 Terms and definitions

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

3.1

rigid inflatable boat

RIB

buoyant structure comprising two essential parts: a lower hull formed by a rigid structure, achieving part of its intended shape with a non-rigid buoyancy tube that is of either inflatable or foam-filled type and where the buoyant volume of the buoyancy tube comprises not less than 50 % of the total required buoyant volume of the boat (3.4)

Note 1 to entry: Tubes made from rigid aluminium, rotomoulded polyethylene, glass-reinforced plastic or other rigid materials are excluded.

3.2

inflatable buoyancy tube

multi-chambered inflatable buoyancy tube attached to the length of both port and starboard sides of the hull when the boat is in use, and inflated with air

3.3

foam-filled buoyancy tube

buoyancy tube attached to the length of both port and starboard sides of the hull when the boat is in use, and filled with resilient closed-cell type foam

Note 1 to entry: For material requirements, see 5.7.

3.4

buoyancy of a RIB

buoyancy comprising the buoyant volumes of the buoyancy tube (3.2 and 3.3), added to the permanent inherent buoyancy (3.5), added to the permanent sealed buoyancy (3.6), added to the inherent buoyancy of the rigid parts of the boat (3.7)

3.5

permanent inherent buoyancy

buoyancy provided by non-intercellular (closed-cell) foam or other materials, contained within the hull and cockpit, which are less dense than fresh water

Note 1 to entry: For material requirements, see ISO 12217-1:2013, Annex F.

3.6

permanent sealed buoyancy

buoyancy provided by two or more sealed compartments, contained within the hull and cockpit, filled with air

Note 1 to entry: For material requirements, see column "Air containers" in ISO 12217-1:2013, Table F.1.

3.7

inherent buoyancy of the rigid parts of the boat

volume of the inherent buoyancy of the rigid parts of the boat calculated in accordance with ISO 12217-3:2013, Annex D

3.8

reinforced materials

materials which have a coated base cloth

3.9
inboard area
 internal surface area defined by a vertical plane tangential to the innermost side of the buoyancy tube and perpendicular to the cockpit sole

3.10
crew limit
CL
 maximum number of persons to be carried when the boat is underway, as displayed on the builder's plate

3.11
design category
 description of the sea and wind conditions for which a boat is assessed by this part of ISO 6185 to be suitable

Note 1 to entry: The definitions of these design categories align with those used in the Recreational Craft Directive of the European Union, EU Directive 94/25/EC as amended by Directive 2003/44/EC.

3.11.1
design category B “offshore”
 category of boats considered suitable to operate in seas with significant wave heights up to 4 m and winds of Beaufort force 8 or less

3.11.2
design category C “inshore”
 category of boats considered suitable to operate in seas with significant wave heights up to 2 m and a typical steady wind force of Beaufort force 6 or less

3.11.3
design category D “sheltered waters”
 category of boats considered suitable to operate in waters with significant wave heights of up to and including 0,3 m with occasional waves of 0,5 m height, for example from passing boats, and a typical steady wind force of Beaufort force 4 or less

4 Symbols

Unless specifically otherwise defined, the symbols and units used in this part of ISO 6185 are as given in [Table 1](#).

Table 1 — Symbols and units

| Symbol | Designation | Unit | (Sub)clause |
|-----------|--|----------------|---|
| A_{LV} | windage area of hull in profile at the appropriate loading condition | m ² | 7.4 |
| B_{max} | maximum beam, measured in accordance with ISO 8666 with the inflatable buoyancy tubes inflated to nominal pressure | m | 7.2 |
| d | maximum buoyancy tube diameter, measured within the straight sections of the buoyancy tube | mm | 5.2.2.5 and 5.2.2.7 |
| F_t | tear resistance force | N | 5.2.2.5 |
| F_s | static load force | N | 5.2.2.7 |
| L_H | length of the hull, measured in accordance with ISO 8666 with the inflatable buoyancy tubes inflated to nominal pressure | m | Introduction |
| L_{max} | maximum length, measured in accordance with ISO 8666 with the inflatable buoyancy tubes inflated to nominal pressure | m | 7.2 |
| L_{STS} | length of the sample buoyancy tube section | m | 7.14.3 |
| L_T | total length of the buoyancy tube on all sides of the boat | m | 7.14.3 |