



SLOVENSKI STANDARD
oSIST prEN ISO 6185-3:2022
01-december-2022

Napuhljivi čolni - 3. del: Čolni s trupom, krajšim od 8 m, in motorjem z močjo, večjo ali enako 15 kW (ISO/DIS 6185-3:2022)

Inflatable boats - Part 3: Boats with a hull length less than 8 m with a motor rating of 15 kW and greater (ISO/DIS 6185-3:2022)

Aufblasbare Boote - Teil 3: Boote mit einer Rumpflänge unter 8 m mit einer Motorleistung von mindestens 15 kW (ISO/DIS 6185-3:2022)

Bateaux pneumatiques - Partie 3: Bateaux d'une longueur de coque inférieure à 8 m et d'une puissance moteur assignée supérieure ou égale à 15 kW (ISO/DIS 6185-3:2022)

Ta slovenski standard je istoveten z: prEN ISO 6185-3

ICS:

47.080 Čolni Small craft

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Inflatable boats —

Part 3: Boats with a hull length less than 8 m with a motor rating of 15 kW and greater

*Bateaux pneumatiques —**Partie 3: Bateaux d'une longueur de coque inférieure à 8 m et d'une puissance moteur assignée supérieure ou égale à 15 kW*

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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).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 188, *Small craft*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 464, *Small craft*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the second edition (ISO 6185-3:2014), which has been technically revised

The main changes are as follows:

- Type VII and VIII boats now distinguished only by design category, not by power;
- Definitions updated to reflect current practice;
- Type VIII (category) boats are permitted a greater range of heel angle to achieve the minimum required righting moment;
- To reflect the increase in power and speed, in-water performance tests may be conducted at less than full power and in smaller waves;
- Crew are recommended not to sit on tubes when operating at high-speed or in waves higher than 2 m, regardless of their design category;
- Addition of requirements for design and testing of lifting points.

A list of all parts in the ISO 6185 series can be found on the ISO website.

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.

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Introduction

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

- single-chambered boats;
- boats < 1 800 N buoyancy; and
- boats made from unsupported materials > 12 kN inflated buoyancy and powered by engines > 4,5 kW.

It is not applicable to:

- aquatic toys; and
- inflatable liferafts.

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 $\leq 4,5$ kW.
- Type III Canoes and kayaks with $L_H < 8$ m.
- Type IV Sail boats with $L_H < 8$ m with a sail area ≤ 6 m².

ISO 6185-2:

- Type V Powered boats with $L_H < 8$ m with power $4,5$ kW $< P \leq 15$ kW
- Type VI Sail boats with $L_H < 8$ m with sail area > 6 m².

ISO 6185-3:

- Type VII Powered boats with $L_H < 8$ m in design category C or D with power ≥ 15 kW.
- Type VIII Powered boats with $L_H < 8$ m in design category B.

ISO 6185-4:

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

NOTE ISO 6185-4 applies only to rigid inflatable boats with 8 m $< L_H \leq 24$ m. Non-rigid inflatables in this range of hull length, should apply ISO 6185-3.

Inflatable boats —

Part 3:

Boats with a hull length less than 8 m with a motor rating of 15 kW and greater

1 Scope

This part of ISO 6185 specifies the minimum safety characteristics required for the design, materials, manufacture and testing of inflatable boats and rigid inflatable boats with a hull length L_H in accordance with ISO 8666 less than 8 m with a engine power rating of 15 kW and greater.

This part of ISO 6185 is applicable to the following types of boats intended for use within the operating temperatures of -20 °C to $+60\text{ °C}$:

- Type VII: Powered boats, fitted with a buoyancy tube on the port and starboard sides, suitable for navigation in conditions of Design Categories C and D;
- Type VIII: Powered boats, fitted with a buoyancy tube on the port and starboard sides, suitable for navigation in conditions of Design Category B.

This part of ISO 6185 excludes single-chambered boats and boats made from unsupported materials, and is not applicable to aquatic toys and inflatable liferafts.

Boats with tubes made from rigid aluminium, roto-moulded polyethylene, GRP or other rigid materials are excluded from this standard.

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.

EN 314-2:1993, *Plywood - Bonding quality - Part 2: Requirements*

ISO 1817:2022, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 2411:2017, *Rubber- or plastics-coated fabrics — Determination of coating adhesion*

ISO 3011:2021, *Rubber- or plastics-coated fabrics — Determination of resistance to ozone cracking under static conditions*

ISO 3864-1:2011, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

ISO 4674-1:2016, *Rubber- or plastics-coated fabrics — Determination of tear resistance — Part 1: Constant rate of tear methods*

ISO 4675:2017, *Rubber- or plastics-coated fabrics — Low-temperature bend test*

ISO 6185-4:2011, *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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ISO 11592-1:2016, *Small craft — Determination of maximum propulsion power rating using manoeuvring speed — Part 1: Craft with a length of hull less than 8 m, using manoeuvring speed — Part 1: craft with a length of hull less than 8 m*

ISO 11812:2020, *Small craft — Watertight or quick-draining recesses and cockpits*

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

ISO 12216:2020, *Small craft — Windows, portlights, hatches, deadlights and doors — Strength and watertightness requirements*

ISO 12217-1:2015, *Small craft — Stability and buoyancy assessment and categorization — Part 1: Non-sailing boats of hull length greater than or equal to 6 m*

ISO 15084:2003, *Small craft — Anchoring, mooring and towing — Strong points*

The Convention on the International Regulations for Preventing Collisions at Sea, 1972, as amended (COLREG)

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
small craft
recreational boat, and other watercraft using similar equipment, of up to 24 metres length of hull (L_H)

Note 1 to entry: The measurement methodology for the length of hull is defined in ISO 8666.

3.2
inflatable boat
craft with buoyant structure (hull), achieving all or part of its intended shape and buoyancy by the medium of inflation

3.3
rigid inflatable boat
inflatable boat with buoyant structure comprising two essential parts: a lower hull formed by a rigid structure achieving part of its intended shape and a non-rigid buoyancy tube(s) that is of either inflatable or foam-filled type

3.4
buoyancy of an inflatable boat
buoyancy of all chambers which form the inflatable hull, plus any other buoyant component which is permanently fixed to it

Note 1 to entry: The term “permanently fixed” implies detachment is only possible by the use of tools.

3.5
total buoyant volume (V)
buoyancy comprising the buoyant volumes of the *inflatable buoyancy tube* (3.6) and the *foam-filled buoyancy tube* (3.7) added to the *permanent inherent buoyancy* (3.8) added to the *permanent sealed buoyancy* (3.9) added to the inherent buoyancy of the rigid parts of the boat

3.6**inflatable buoyancy tube**

tube on both port and starboard sides of the hull when the boat is in use, and inflated with air

3.7**foam-filled buoyancy tube**

buoyancy tube on both port and starboard sides of the hull when the boat is in use, and filled with closed cell foam

Note 1 to entry: For material requirements, see [5.2](#).

3.8**permanent inherent buoyancy**

buoyancy provided by materials, contained within the rigid hull and cockpit, which are less dense than fresh water

Note 1 to entry: For material requirements see ISO 12217-1.

3.9**permanent sealed buoyancy**

buoyancy provided by sealed compartments, contained within the rigid hull and cockpit, filled with air

Note 1 to entry: For requirements see ISO 12217 1.

3.10**crew limit**

maximum number of persons to be carried when the boat is underway (see [6.1](#)), as displayed on the builder's plate (see [10](#))

3.11**design category**

description of the sea and wind conditions for which a boat is assessed to be suitable

3.12**dimensional factor $F(d)$**

$F(d)$ is determined by hull length (L_H) and breadth (B_H): $F(d) = L_H \times B_H$

3.13**high-speed craft**

motor craft having a maximum speed, in knots, greater than $10 \times \sqrt{L_H}$ or 25 knots, whichever is the greater.

Hull length L_H (m)	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0
Speed	25,0			25,5		26,5	27,4	28,3	

4 Symbols

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

Table 1 — Symbols, abbreviated terms and units

Symbol	Designation	Unit	Clause
A_{LV}	windage area of the hull in profile at the appropriate loading condition	m ²	Table 4
^a	Definition provided in ISO 8666.		
^b	Definition provided in ISO 12217-1.		
^c	1 bar = 0,1 MPa = 10 ⁵ Pa; 1 MPa = 1 N/mm ² .		

Table 1 (continued)

Symbol	Designation	Unit	Clause
B_H	beam of the hull, measured with the inflatable tubes inflated to nominal pressure ^a	M	3.12 Table 4
CL	crew limit		6.1.2 7.3
d	maximum tube diameter, measured within the straight sections of the buoyancy tube section	mm	5.1.2.2.5 5.1.2.2.7
$F(d)$	dimensional factor		3.12
F_M	material factor for boats that are designed to be lifted		5.4.2 5.4.3
F_t	tear resistance force	N	5.1.2.2.5
F_s	static load force	N	5.1.2.2.7
L_H	length of the hull, measured with the inflatable tubes inflated to nominal pressure ^a	m	Introduction, 3.12
m_{LDC}	mass of the fully loaded boat ^a	kg	5.7.1.2 5.7.2.2.2 6.5.3.2 6.6.3
m_{MO}	mass of the minimum operating condition of the boat ^b	kg	5.4.2 5.4.3
m_T	mass when towed on a trailer ^a	kg	5.4.2
N	number of buoyancy compartments	Unit	6.3.3
P	nominal pressure at 20 °C	bar ^b	5.1.2.2.5 5.1.2.2.7 6.3.4
V	total buoyant volume (see 3.5) of the boat	m ³	6.3.1
V_c	volume of each compartment	m ³	6.3.3
V_T	volume of the buoyancy tube	m ³	6.3.3
^a	Definition provided in ISO 8666.		
^b	Definition provided in ISO 12217-1.		
^c	1 bar = 0,1 MPa = 10 ⁵ Pa; 1 MPa = 1 N/mm ² .		

5 Construction & Structural Requirements

5.1 Structural Materials

5.1.1 General

All materials shall be selected according to the stresses to which the boat is to be subjected (shape, dimensions, maximum load, installed power, etc.), and also to the intended service conditions. All materials used within the boat shall not be impaired when used in normal seagoing conditions and shall meet the following requirements.