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Small craft — Principal data

Petits navires — Données principales

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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 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 third edition cancels and replaces the second edition (ISO 8666:2016), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

— the document has been aligned to the latest edition of the ISO/IEC Directives, Part 2, resulting in the addition of Clause 2, Normative references, and the renumbering of the remaining clauses; all cross-references have been accordingly updated;

— the "allowance for the maximum mass of optional equipment and fittings not included in the manufacturer's basic outfit" has been moved from 6.6 (Maximum load, former 5.6) to 7.8 (Maximum load condition, former 6.8).

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.

Small craft — Principal data

1 Scope

This document establishes definitions of main dimensions and related data and of mass specifications and loading conditions. It applies to small craft having a length of the hull (L_H) of up to 24 m.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

NOTE For units, see Clause 4.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
waterline
WL
intersection line of the water's surface with the craft's hull when the *craft* (3.15) is afloat

3.2
maximum load waterline
reference waterline
WL_{ref}
waterline (3.1) of the *craft* (3.15) when upright in the maximum *loaded displacement* (3.6)

3.3
sheerline
intersection between deck and hull, for rounded deck edges the natural intersection, or, where no deck is fitted or the hull extends above the deck (bulwark), the upper edge of the craft's hull

Note 1 to entry: The upper position of the sheerline depends on the inclination between the hull/deck intersection and the actual deck.

3.4
transom beam
B_T
maximum width of the hull at the transom at or below the *sheerline* (3.3), excluding extensions, handles and fittings

Note 1 to entry: Where spray rails act as chines or part of the planing surface, they are included in the transom beam measurement.

Note 2 to entry: For *craft* (3.15) with a rounded or pointed stern or with a transom beam of less than half the maximum beam of the craft, the transom beam, B_T, is the widest beam at or below the sheerline at the aft quarter length of the hull.

3.5
displacement
mass of water displaced by the *craft* (3.15), including all appendages

3.6
loaded displacement
m_{LDC}
mass of water displaced by the *craft* (3.15), including all appendages, when in the fully loaded ready-for-use condition

Note 1 to entry: Fully loaded ready-for use condition is described in 7.3.

3.7
displacement volume
V_D
volume of water displaced by the *craft* (3.15) that corresponds to the *displacement* (3.5)

Note 1 to entry: Where the density of water used to calculate the volume of displacement is not salt water at a density of 1 025 kg/m^3, the density of water used to calculate the volume of displacement is specified.

3.8
tank capacity
net usable volume of the tank(s) for the *craft* (3.15) in *design trim* (3.13) at rest at the *maximum load waterline* (3.2)

3.9
wing mast
spar characterized by its cross-section which shows a smooth transition at the aft end into the sail, thus, contributing to its driving force

3.10
non-sailing boat
craft (3.15) for which the primary means of propulsion is other than by wind power, having *reference sail area* (3.12) $(A_S) < 0{,}07\ (m_{LDC})^{2/3}$

3.11
sailing boat
craft (3.15) for which the primary means of propulsion is by wind power, having *reference sail area* (3.12) $(A_S) \geq 0{,}07\ (m_{LDC})^{2/3}$

3.12
reference sail area
A_S
actual profile area of sails set abaft a mast, plus the maximum profile areas of all masts, plus reference triangle area(s) forward of each mast

3.13
design trim
longitudinal attitude of the *craft* (3.15) when upright, with crew, fluids, stores, and equipment in the position(s) and load condition(s) designated by the designer or builder

3.14
underway
not at anchor, or made fast to the shore, or aground

3.15
craft
small craft
recreational boat, and other watercraft using similar equipment, of up to 24 m length of hull (L_H)

4 Symbols, designations and units

Unless specifically otherwise defined, the symbols, designations and units used in this document are given in Table 1.

Table 1 — Symbols, designations and units

Symbol	Designation	Unit	Clause
A_{lV}	Windage area	m^2	5.5.4
A_S	Reference sail area	m^2	5.5.2
A'_S	Standard sail area	m^2	5.5.3
B_{CB}	Beam between hull centres	m	5.3.6
B_H	Beam of hull	m	5.3.3
B_{max}	Maximum beam	m	5.3.2
B_{WL}	Beam, waterline	m	5.3.4
B_{WLmax}	Maximum beam, waterline	m	5.3.5
B_T	Transom beam	m	3.4
D_{max}	Maximum depth	m	5.4.1
$D_{LWL/2}$	Midship depth	m	5.4.2
F	Freeboard	m	5.4.3
F_A	Freeboard, aft	m	5.4.3.2
F_F	Freeboard, forward	m	5.4.3.4
F_M	Freeboard, amidships	m	5.4.3.3
H_a	Draught, air	m	5.4.5
L_H	Length of the hull	m	5.2.3
L_{max}	Maximum length	m	5.2.2
L_{WL}	Waterline length	m	5.2.4
m_G	Gross shipping mass	kg	6.2
m_{LDC}	Loaded displacement	kg	3.6
m_{LC}	Light craft mass	kg	6.3
m_N	Net shipping mass	kg	6.1
m_P	Performance test mass	kg	6.4
m_T	Mass of craft when towed on trailer	kg	6.5
m_{ML}	Maximum load	kg	6.6
T	Draught	m	5.4.4
T_C	Draught, canoe body	m	5.4.4.4
T_{max}	Draught, maximum	m	5.4.4.2
T_{min}	Draught, minimum	m	5.4.4.3
V_D	Displacement volume	m^3	3.7
V	Volume of the craft	m^3	5.5.5
V_H	Volume of the hull	m^3	5.5.5.2
V_S	Volume of the superstructure	m^3	5.5.5.3
WL	Waterline		3.1
WL_{ref}	Maximum load waterline		3.2
β	Deadrise angle	degrees	5.5.1

5 Measurements

5.1 General

Measurements shall be established with the craft at rest at the maximum load waterline/reference waterline, WL_{ref}, unless otherwise stated.

5.2 Longitudinal

5.2.1 General

The lengths of a craft shall be measured parallel to the maximum load waterline/reference waterline and craft centreline as the distance between two vertical planes, perpendicular to the centreplane of the craft.

5.2.2 Maximum length, L_{max}

The maximum length (L_{max}) shall be measured in accordance with 5.2.1, one plane tangent through the foremost part and the other through the aftermost part of the craft.

This length includes all structural and integral parts of the craft, such as stems or sterns, bulwarks, and hull/deck joints.

This length includes parts which are normally fixed, such as fixed spars, bowsprits, pulpits at either end of the craft, stemhead fittings, rudders, outboard motor brackets, outdrives, waterjets, and any propulsion units extending beyond the transom, diving and boarding platforms, rubbing strakes, and permanent fenders.

Outdrives, waterjets, other propulsion units, and all movable parts shall be measured in their normal operating condition to their maximum lengthwise extension when the craft is underway.

This length excludes the following:

— outboard motors;

— any other type of equipment that can be detached without the use of tools.

See Figure 1 for monohull measurements and Figure 2 for multihull measurements.

5.2.3 Length of the hull, L_H

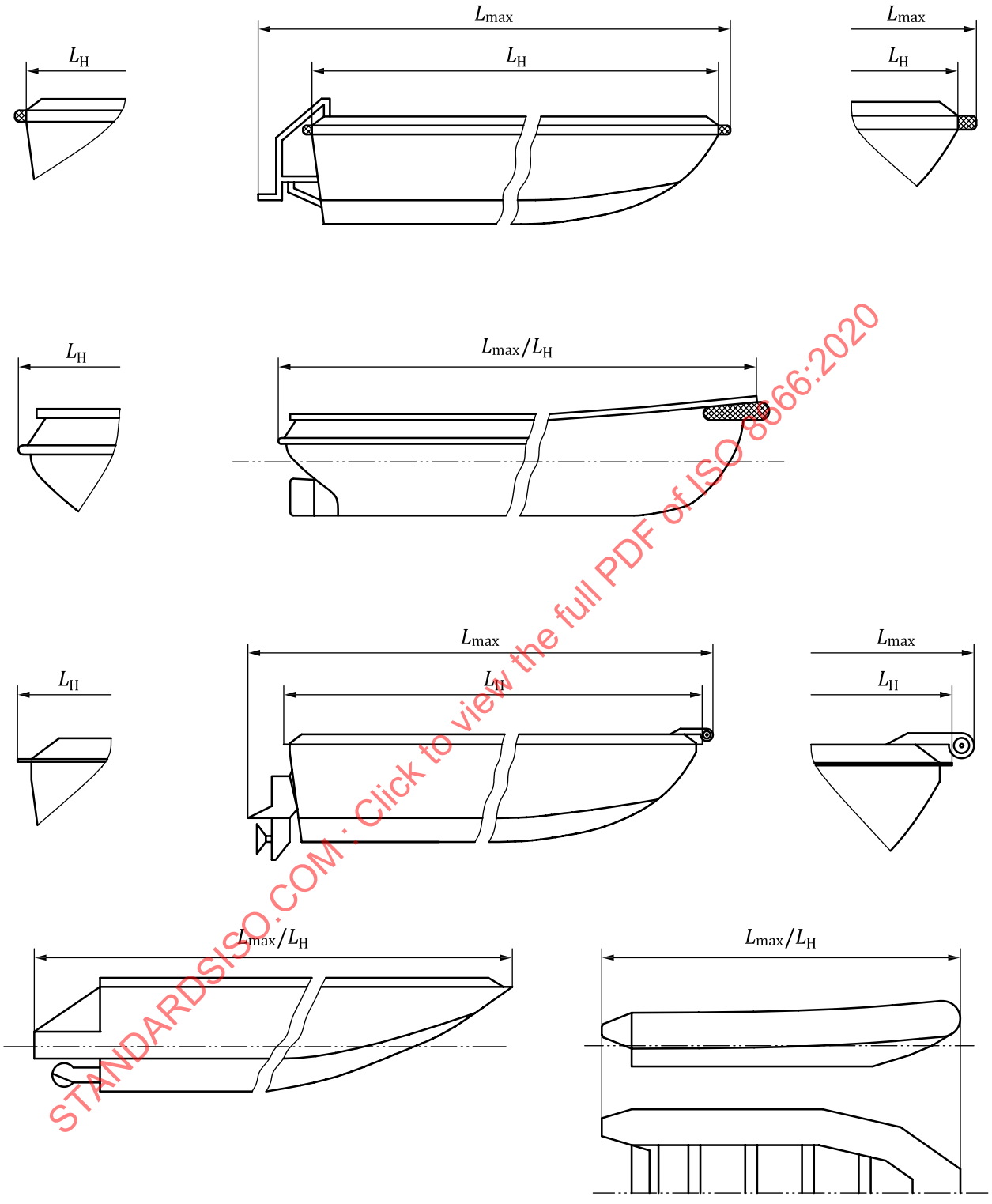
The length of the hull (L_H) shall be measured in accordance with 5.2.1, one plane passing through the foremost part of the craft and the other through the aftermost part of the craft.

This length includes all structural and integral parts of the craft, such as stems or sterns, bulwarks, and hull/deck joints.

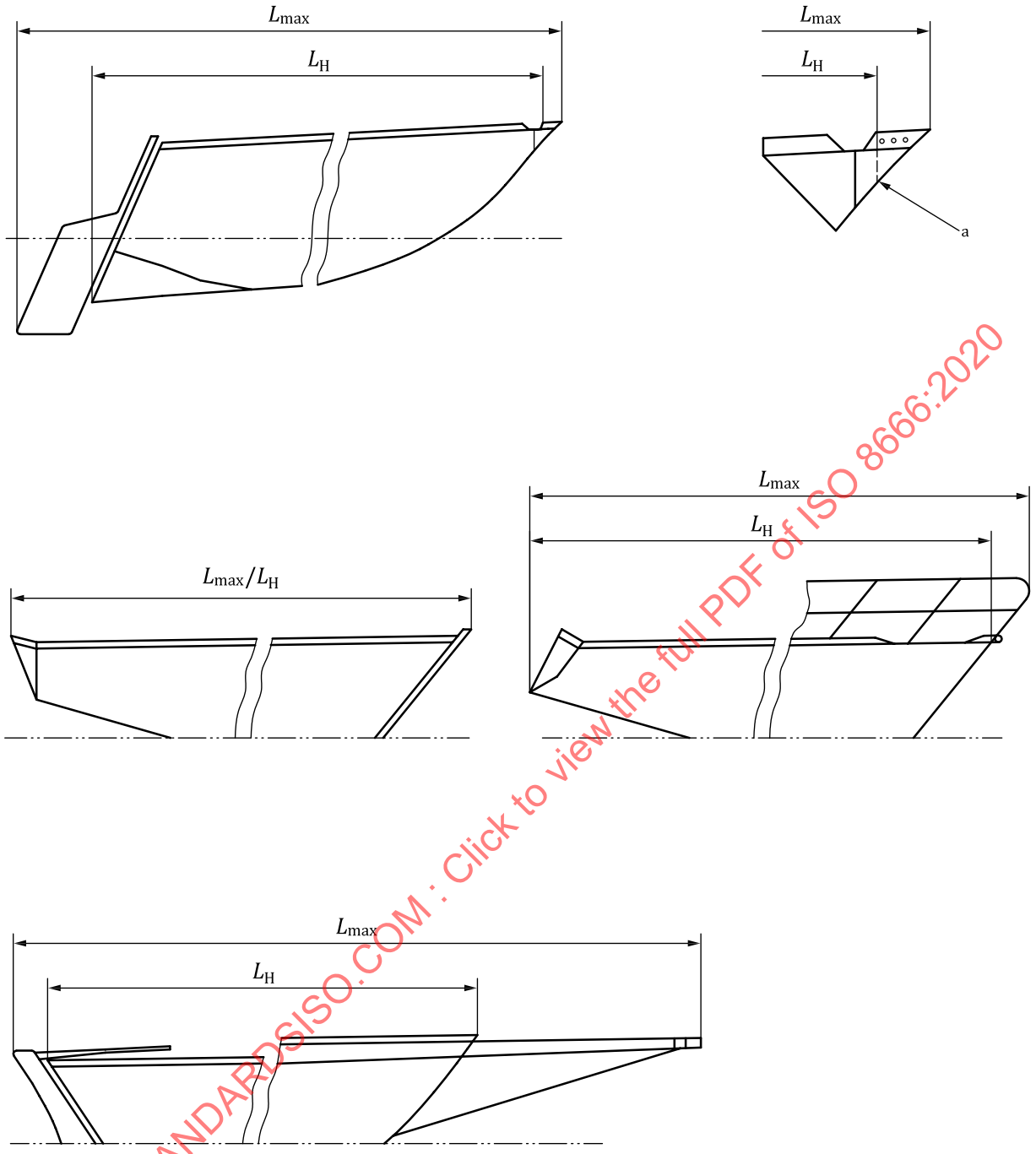
This length excludes removable parts that can be detached in a non-destructive manner and without affecting the structural integrity of the craft, e.g. spars, bowsprits, pulpits at either end of the craft, stemhead fittings, rudders, outdrives, outboard motors and their mounting brackets and plates, diving platforms, boarding platforms, rubbing strakes, and fenders if they do not act as hydrostatic support when the watercraft is at rest or underway.

With multihull craft, the length of each hull shall be measured individually. The length of the hull, L_H, shall be taken as the longest of the individual measurements.

See Figure 1 for monohull measurements and Figure 2 for multihull measurements.



a) Determination of L_{max} and L_H for monohull non-sailing boats



b) Determination of L_{max} and L_H for monohull sailing boats

a Hull ends here.

Figure 1 — Determination of L_{max} and L_H for monohull craft

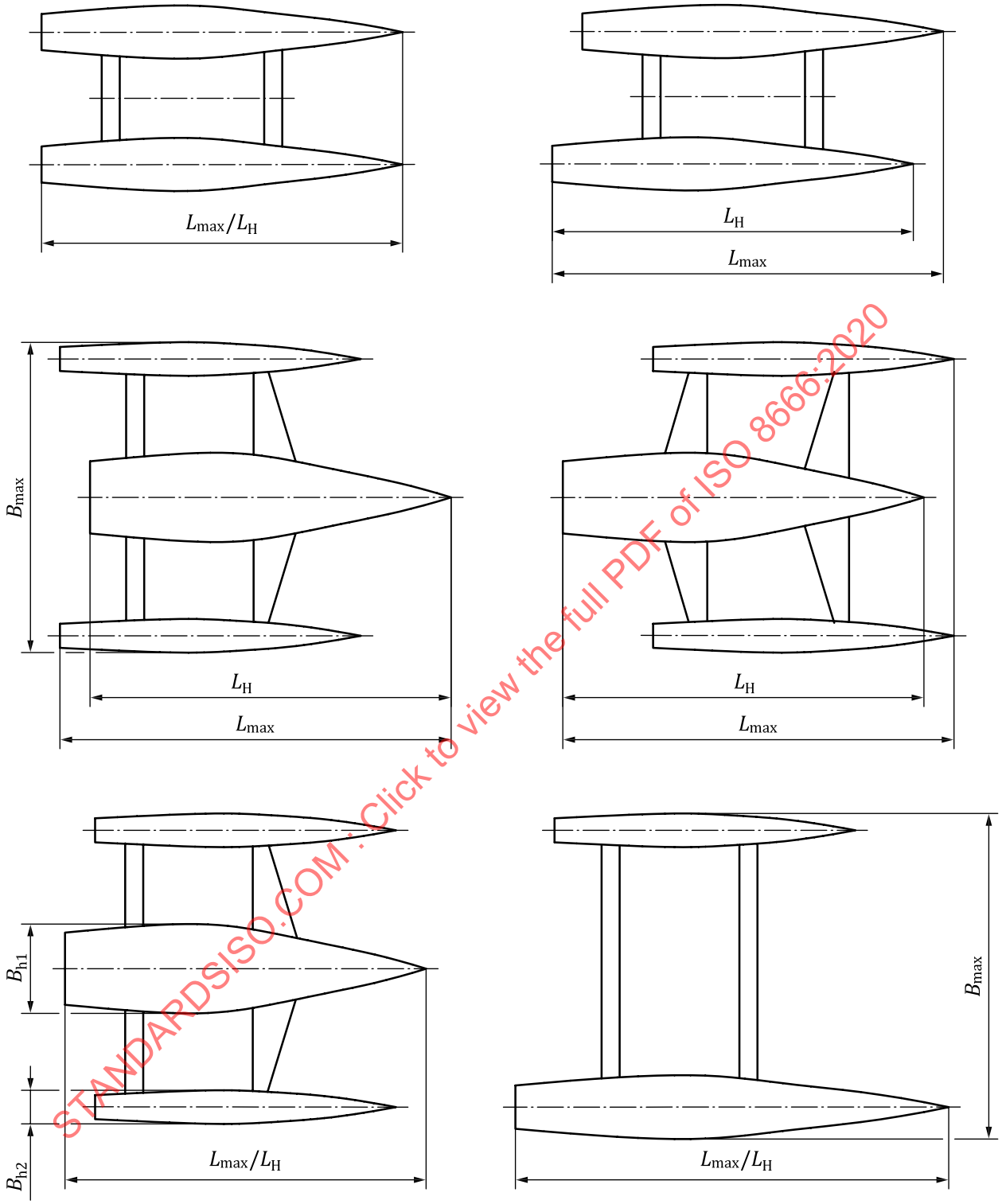


Figure 2 — Determination of L_{max}, L_H, B_{max} and B_H for multihulls

5.2.4 Waterline length, L_{WL}

The waterline length (L_{WL}) for a designated load condition and its corresponding design trim shall be measured in accordance with 5.2.1, one plane passing through the foremost intersection of the stem with the flotation plane and the other through the aftermost intersection of the hull and the flotation plane.

NOTE For multihull craft, L_{WL} relates to that of the longest individual hull.

5.3 Athwartship

5.3.1 General

Athwartship dimensions shall be measured as the distance between two vertical planes parallel to the centreplane of the craft when upright.

5.3.2 Maximum beam, B_{max}

The maximum beam (B_{max}) shall be measured in accordance with 5.3.1 between planes tangent through the outermost parts of the craft.

The maximum beam includes all structural or integral parts of the craft, such as extensions of the hull, hull/deck joints, extensions such as doublings, sheer planks, chain plates, rubbing strakes, permanent fenders, and liferails extending beyond the craft's side.

For multihulls, B_{max} shall be measured as the beam across the outer hulls.

5.3.3 Beam of hull, B_H

The beam of the hull (B_H) shall be measured in accordance with 5.3.1 between the outermost permanently fixed parts of the hull.

The beam of the hull includes all structural or integral parts of the craft such as extensions of the hull, hull/deck joints, and bulwarks.

The beam of the hull excludes removable parts that can be detached in a non-destructive manner and without affecting the integrity of the craft, e.g. rubbing strakes, fenders, liferails and stanchions extending beyond the craft's side, and other similar equipment.

For multihulls, B_H shall be measured as the beam across the outer hulls.

See Figure 1 for monohull measurements and Figure 2 for multihull measurements.

5.3.4 Beam, waterline, B_{WL}

The beam at waterline (B_{WL}) shall be measured in accordance with 5.3.1 as the maximum distance between the intersection of the hull surface and the flotation plane for a specific loading condition.

For multihulls, the beam at waterline shall be established for each hull individually.

5.3.5 Maximum beam, waterline, B_{WLmax}

For multihulls only, the maximum beam at waterline (B_{WLmax}) shall be measured as the waterline beam across the outer hulls.

5.3.6 Beam between hull centres, B_{CB}

For catamaran and trimaran, the beam between hull centres (B_{CB}) shall be measured as the transverse distance between the centres of buoyancy of the outer hulls.

5.4 Vertical

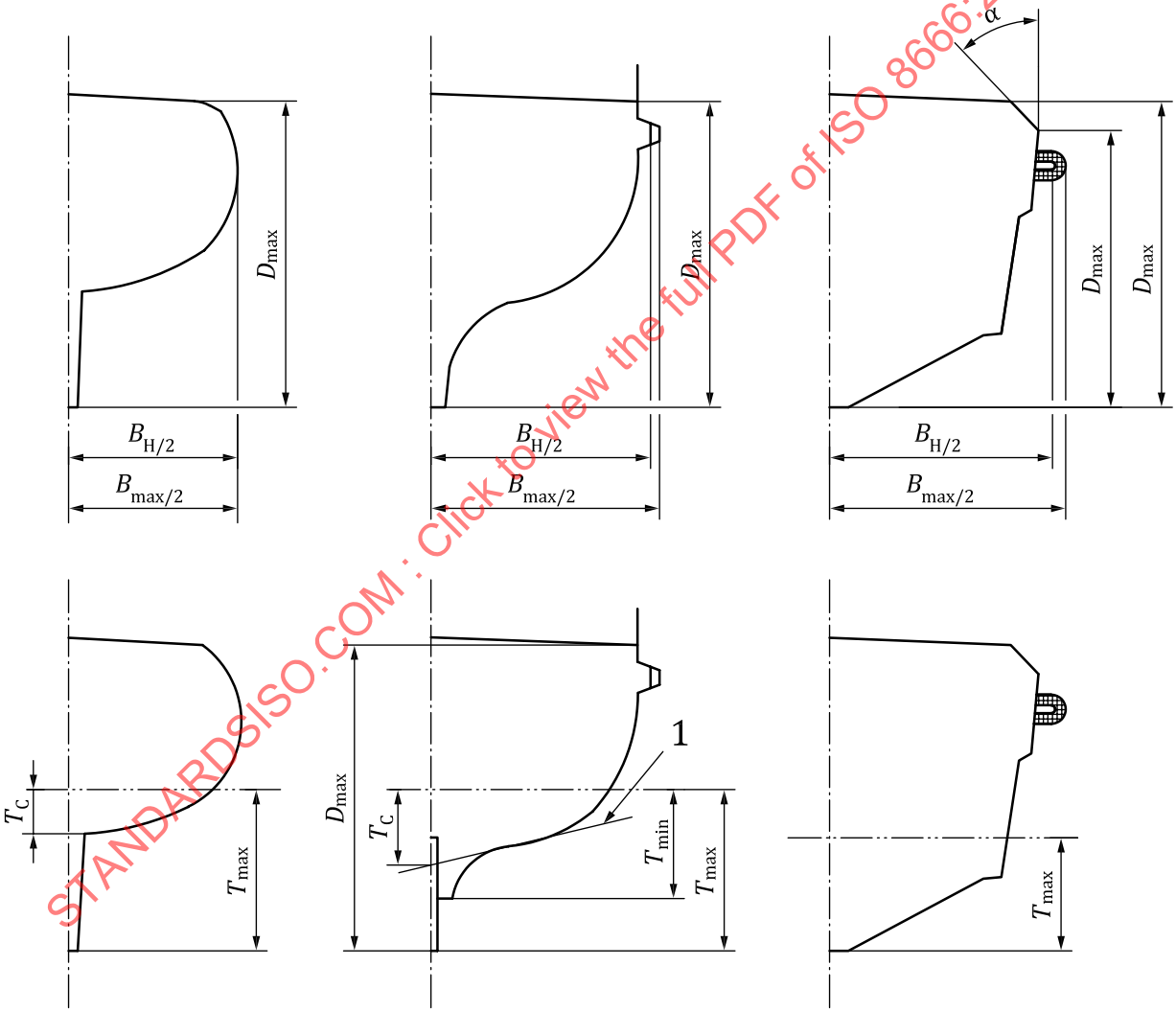
5.4.1 Maximum depth, D_{max}

The maximum depth (D_{max}) shall be measured as the vertical distance between the sheerline at half-length of the waterline (L_{WL}) and the lowest point of the keel.

NOTE With traditional long-keeled craft, the slope of the keel may result in increased draught aft which is not at half-length of the waterline or length of the hull.

5.4.2 Midship depth, $D_{LWL/2}$

The midship depth ($D_{LWL/2}$) shall be measured at half-length of the waterline (L_{WL}) as the distance between the sheerline and the lowest point of the keel at the same position.



Key

1 tangent

NOTE The upper position of D_{max} depends on the inclination between the hull/deck intersection and the actual deck. Where $\alpha \geq 45°$, the lower position applies. Where $\alpha < 45°$, the upper position applies.

Figure 3 — Determination of B_{max}, B_H, D and T

5.4.3 Freeboard, F

5.4.3.1 General

The freeboard (F) shall be measured as the vertical distance between the sheerline at the defined lengthwise location and the waterline in any specified loading condition.

5.4.3.2 Freeboard, aft, F_A

The aft freeboard (F_A) shall be measured in accordance with 5.4.3.1 at the aftermost point of the sheerline.

5.4.3.3 Freeboard, amidships, F_M

The amidships freeboard (F_M) shall be measured in accordance with 5.4.3.1 at half-length of the waterline, L_{WL}.

5.4.3.4 Freeboard, forward, F_F

The forward freeboard (F_F) shall be measured in accordance with 5.4.3.1 at the most forward point of the sheerline.

5.4.4 Draught, T

5.4.4.1 General

The draught (T) shall be measured as the vertical distance between the waterline in the fully loaded ready-for-use condition and a specific point of the underwater body (see Figure 3).

5.4.4.2 Draught, maximum, T_{max}

The maximum draught (T_{max}) shall be measured to the lowest point of the underwater body or appendage, including centreboards, in their lowest position.

5.4.4.3 Draught, minimum, T_{min}

The minimum draught (T_{min}) shall be measured to the lowest point of the craft or non-retractable appendage, whichever is lower. All movable underwater parts shall be in their uppermost possible position.

5.4.4.4 Draught, canoe body, T_C

The canoe body draught (T_C) shall be measured to the lowest point of the canoe body at the centreline of the craft. In cases where the keel form cannot be easily separated from that of the hull, the canoe body draught shall be determined by the intersection of the least steep tangent to the hull surface with the centreline plane.

NOTE Draft of canoe body excludes appendages such as rudders or skegs.

5.4.5 Draught, air, H_a

The air draught (H_a) shall be measured as the vertical distance between the flotation plane in the light craft condition and the highest point of the craft's structure or mast.

5.4.6 Headroom

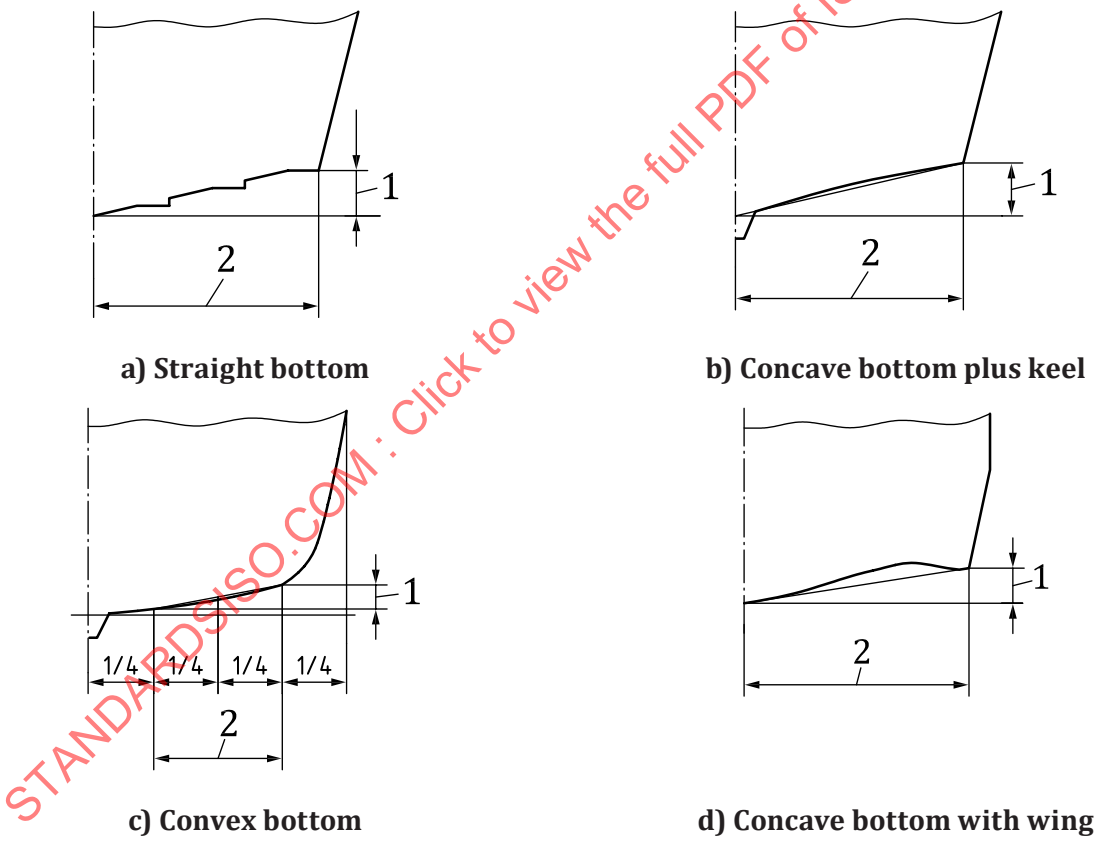
The headroom shall be measured as the vertical distance between the top of the cabin/compartment floor and the underside of the deck beam or deck head (whichever is lower) at a designated position. The manufacturer is free to state the headroom in other locations, e.g. above bunks.

5.5 Other data

5.5.1 Deadrise angle, β

The deadrise angle (β) is the angle of the bottom from the horizontal measured athwartship, at a specific position, in degrees. The measurement shall be taken as indicated in Figure 4. β is derived by Formula (1).

$$\text{ArcTan}\frac{\text{Height(1)}}{\text{Width(2)}} \tag{1}$$



a) Straight bottom

b) Concave bottom plus keel

c) Convex bottom

d) Concave bottom with wing

Key

1 height

2 width

NOTE 1 In Figure 4 a), steps and other protrusions are ignored.

NOTE 2 In Figure 4 b), deadrise is measured between keel intersection and chine.

NOTE 3 In Figure 4 c), deadrise is measured between ¼ and ¾ of $B_H/2$.

NOTE 4 In Figure 4 d), deadrise is measured between centreline and outer wing end.

Figure 4 — Determination of deadrise

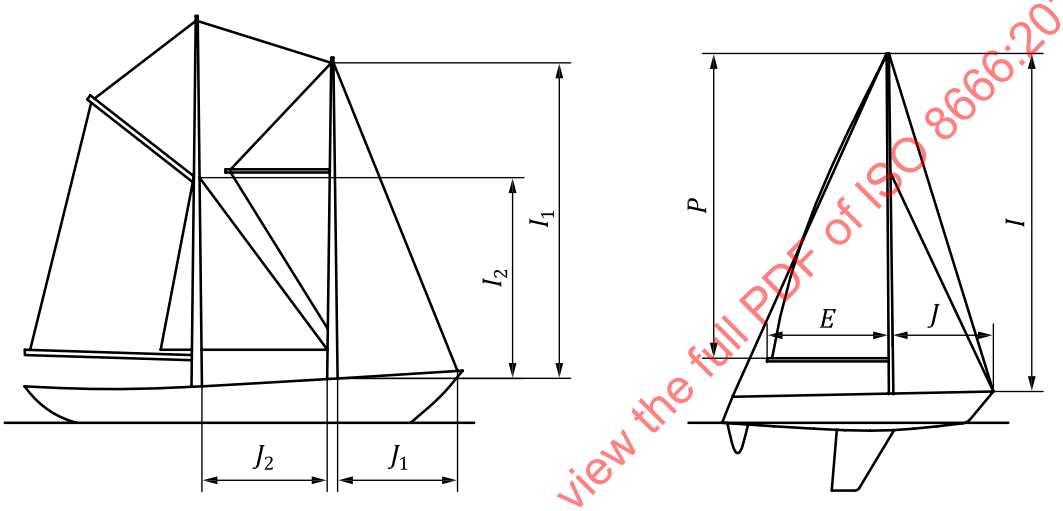
5.5.2 Reference sail area, A_S

Actual profile area of all sails set abaft a mast, plus the maximum profile areas of all masts, plus the reference triangle area(s) forward of each mast given by $IJ/2$ where I and J are measurements between the forward side of the mast, the aft side of the forestay, and the sheerline as shown in Figure 5.

Where forestays between masts do not reach the deck, the area of the fore-triangle shall be taken as illustrated (I_2 and J_2), but only if sails are carried that may be set on the stays concerned.

5.5.3 Standard sail area, A'_S

Actual profile area of the largest sail plan suitable for windward sailing, including overlaps, and supplied or recommended by the builder as standard.



Key

I height of fore triangle
J base of fore triangle
P height of mainsail
E base of mainsail

Figure 5 — Measurement of sail area

5.5.4 Windage area, A_W

Projected profile area of the hull, superstructures, deckhouses, outboard motors, and spars above the waterline at the appropriate loading condition, the craft being upright expressed in square metres.

5.5.5 Volume of the craft, V

5.5.5.1 General

The volume (V), in cubic metres, of a craft is given by Formula (2).

$$V = V_H + V_S \tag{2}$$

where

V_H is the volume of the hull, in cubic metres;

V_S is the volume of the superstructure, in cubic metres.

The volume of the craft shall be established either by accepted naval architectural methods or by an approximate assessment according to 5.5.5.2 and 5.5.5.3.

The volume shall be measured as follows (see Figure 6).

5.5.5.2 Volume of the hull, V_H

Using the approximate method, the volume of the hull shall be determined as follows (see Figure 6):

$$V_H = 0{,}15\, L_H\, (B_0\, D_0 + B_{20}\, D_{20} + B_{40}\, D_{40} + B_{60}\, D_{60} + B_{80}\, D_{80} + B_{100}\, D_{100}) \quad (3)$$

5.5.5.3 Volume of the superstructure, V_S

The volume of the superstructure (V_S) shall be the sum of the volume for each part of the superstructure above the sheerline/deck at the side. Any space that is open at no more than one side shall be incorporated in the calculation. Open in this sense means that no more than 10 % of the area may be covered.

Volumes of less than 0,05 m^3 shall be omitted.

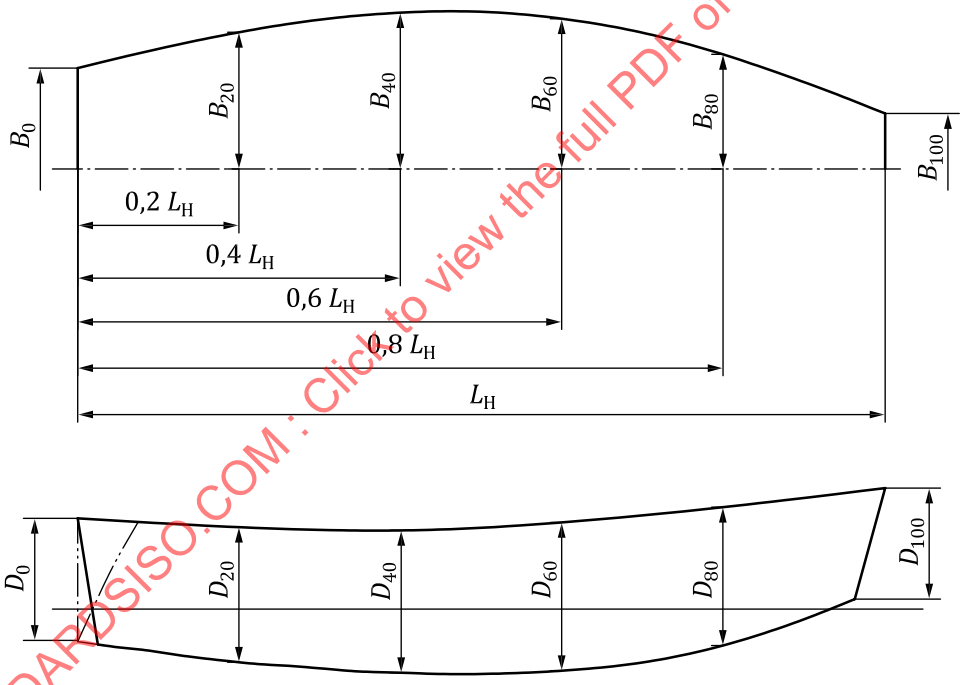


Figure 6 — Volume measurement

6 Masses

6.1 Mass, net shipping, m_N

The net shipping mass (m_N) shall include all permanent and loose equipment delivered with the craft by the manufacturer, but no shipping materials.

6.2 Mass, gross shipping, m_G

The gross shipping mass (m_G) is the net shipping mass, as defined above, plus shipping materials such as cradles, supports, fastening material, and covers.

6.3 Mass, light craft, m_{LC}

6.3.1 Items of equipment included in m_{LC}

6.3.1.1 General

The mass in the light craft condition (m_{LC}) (unladen mass of the craft) shall include items of equipment as listed below.

6.3.1.2 Structure

The structure comprises all the structural parts, including the ballast keel and/or centreboard/daggerboard(s) and rudder(s).

6.3.1.3 Ballast

The ballast comprises the removable ballast (whether solid or liquid) intended by the manufacturer to be carried when the craft is underway.

6.3.1.4 Internal structure and accommodation

The internal structure and accommodation are made up of bulkheads and partitions, insulation, lining, built-in furniture, flotation material, windows, hatches and doors, and upholstery material.

6.3.1.5 Engine and fuel system

6.3.1.5.1 Permanently installed engine and fuel systems

The permanently installed engine and fuel systems are comprised of inboard engine(s), including all supplies and controls as needed for their operation, and permanently installed fuel systems, including tanks.

6.3.1.5.2 Outboard engines

The mass of the craft shall be stated with the mass of the outboard motor(s) as follows:

— mass of the heaviest engine(s), as recommended by the craft manufacturer, irrespective of the fact that the manufacturer may have fitted a lighter engine and related equipment;

— mass of any permanently installed fuel system;

— mass of engine controls and steering system.

6.3.1.6 Internal equipment

The internal equipment includes the following:

— all items of equipment permanently attached to the craft, e.g. tanks, toilet system(s), water transfer equipment, bilge pumping system(s), cooking and heating devices, cooling equipment, ventilation system(s);

— electrical installation and equipment, including batteries;

— fixed navigational and electronic equipment;

— fire fighting equipment, where fitted;

— mattresses, curtains.

6.3.1.7 External equipment

For all craft, this includes the following:

— all permanently attached deck fittings, e.g. guardrails, pulpits and pushpits, bowsprits and their attachments, bathing platforms, boarding ladders, steering equipment, winches, sprayhood(s), awning(s), cockpit tables, gratings, signal mast(s), where fitted;

— anchor(s), anchor warps and chains;

— loose external equipment, e.g. fenders, warps, painters.

For craft with sailing rig(s), this includes the following:

— mast(s), boom(s), spinnaker poles and other pole(s), standing and running rigging, all upwind sails supplied or recommended by the builder, onboard and rigged ready for use, but not hoisted, e.g. mainsail on boom, roller furling sails furled, hanked foresails on stay stowed on foredeck.

6.3.2 Items of equipment and other items not included in m_{LC}

These items are the following:

— loose internal equipment, e.g. cutlery, crockery, kitchen utensils, linen;

— loose electronic and navigational equipment (e.g. charts);

— tools, spare parts;

— additional sails;

— personal safety and life-saving equipment;

— provisions;

— bilge water;

— waste water;

— potable water;

— fuel;

— portable fuel tanks;

— personal equipment;

— life-raft(s);

— dinghy(s);

— persons.

NOTE Liferafts are not included in essential safety equipment for design categories C and D.

6.4 Performance test mass, m_P

The performance test mass (m_P) of a craft shall include all permanently attached standard items of equipment. Further, the craft shall be fitted with all items of loose equipment needed for the safe operation of the craft, for example,

a) warps,

b) anchors/chain/ropes,

c) engine(s), and

d) batteries.

In addition, the masses of the following shall be included:

e) number of persons needed for the safe operation of the craft;

f) fuel at least at 25 %, but no more than 50 % of the tank capacity of permanently installed fuel tanks, or one portable tank per engine, which shall be at least 50 % full at the beginning of each test trial;

g) personal safety equipment for all people on board.

Excluded are the following:

— fresh water;

— waste water;

— provisions;

— loose equipment, e.g. cutlery, crockery, kitchen utensils, spare parts, etc.

6.5 Mass of the craft when towed on a trailer, m_T

6.5.1 General

The mass of the craft when towed on a trailer (m_T) shall only be established for craft advertised as trailerable to allow the owner/user to identify the mass of additional equipment that may be carried without exceeding the trailer capacity.

The mass, m_T, shall include items of equipment as listed under 6.5.2, plus fastenings to secure the craft on the trailer.

The manufacturer/dealer shall provide a list of parts, components, and equipment that are included in the mass, m_T, as defined above and shall state the total sum, in kilograms (kg). This may be in the format of general or itemized descriptions (for items included).

Any items of equipment normally supplied by the manufacturer/dealer not intended to be placed in the craft or on the trailer shall be listed separately.

6.5.2 Items of equipment included in m_T

6.5.2.1 Structure

The structure is made up of all structural parts, including ballast keel and/or centreboard/daggerboard(s) and rudder(s).

If loose ballast or parts of the ballast keel are not to be stowed on the trailer, these parts shall be specifically declared and listed under the non-included equipment (see 6.5.3).

6.5.2.2 Internal structure and accommodation

The internal structure and accommodation are made up of bulkheads and partitions, insulation, lining, built-in furniture, flotation material, windows, hatches and doors, and upholstery material.

6.5.2.3 Internal equipment

The internal equipment includes the following:

— all items of equipment permanently attached to the craft, e.g. toilet system(s), water transfer equipment, bilge pumping system(s), cooking and heating devices, cooling equipment, ventilation system(s);

— electrical installation and equipment, including batteries installed or delivered with the craft;

— fixed navigational and electronic equipment;

— fire-fighting equipment, where fitted;

— mattresses, curtains.

6.5.2.4 External equipment

For all craft, this includes the following:

— all permanently attached deck fittings, e.g. guardrails, pulpits and pushpits, bowsprits, and their attachments;

— bathing platforms, boarding ladders, steering equipment, winches, sprayhood(s), awning(s), cockpit tables, gratings;

— signal mast(s);

— anchor(s), anchor warps and chains;

— loose external equipment, e.g. fenders, warps, painters.

For craft with sailing rig(s), this includes the following:

— mast(s), boom(s), spinnaker and other pole(s), standing and running rigging, all upwind sails supplied or recommended by the builder, onboard and rigged ready for use, but not hoisted, e.g. mainsail on boom, roller furling sails furled, hanked foresails on stay stowed on foredeck.

6.5.2.5 Engine and fuel system

6.5.2.5.1 Permanently installed engine and fuel systems

The permanently installed engine and fuel systems are comprised of inboard engine(s), including all supplies and controls as needed for their operation, and permanently installed fuel systems including tanks.

6.5.2.5.2 Outboard engines

The mass of the craft shall be stated with the mass of the outboard motor(s) and related equipment as follows:

— mass of the heaviest engine(s), as recommended by the craft manufacturer, irrespective of the fact that the manufacturer may have fitted a lighter engine;

— mass of any permanently installed fuel system;

— mass of engine controls and steering system.

6.5.2.6 Tanks, tank contents

Tanks, tank contents include the following:

— contents of permanently installed fuel tanks;

— portable tanks and their contents;

— contents of fresh water tanks.

The mass of the liquids shall be calculated or measured up to the full usable tank volume.

6.5.3 Items of equipment not included in m_T

Items of equipment not included in m_T are the following:

— loose internal equipment, e.g. cutlery, crockery, kitchen utensils, linen;

— loose electronic and navigational equipment (e.g. charts);

— tools, spare parts;

— additional sails;

— personal safety and life-saving equipment;

— provisions;

— bilge water;

— ballast water;

— sewage water;

— bait tanks.

6.5.4 Exclusions, inclusions

The manufacturer/dealer may exclude items of equipment listed in 6.5.2 (inclusions) which shall then be specifically declared in the list of exclusions. These shall not include structural parts of the craft or permanently attached items of equipment needed for the safe operation of the craft.

If intending to include items listed in 6.5.3 (exclusions), the manufacturer shall amend the list of items included by adding these items of equipment.

6.6 Maximum load, m_{ML}

Load which the craft is designed to carry in addition to the light craft condition, comprised of the following:

— the crew limit at 75 kg each;

— the personal effects of the crew;

— stores and cargo (if any), dry provisions, consumable liquids;

— contents of all permanently installed storage tanks filled to 95 % of their maximum capacity including fuel, drinking water, black water, grey water, lubricating and hydraulic oil, bait tanks and/or live wells plus ballast water at 100 % capacity;

— consumable liquids in portable tanks (drinking water, fuel) filled to 95 % of the maximum capacity;

— dinghy or other craft intended to be carried aboard and any outboard motor associated with them;