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Third edition
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Small craft — Field of vision from the steering position

Petits navires — Champ de vision depuis le poste de pilotage

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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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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 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 188, *Small craft*.

This third edition cancels and replaces the second edition (ISO 11591:2011), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the document has been revised to include sailing craft;

— the document has been revised to include human-powered craft;

— the text for power craft has been improved for easier application.

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 — Field of vision from the steering position

1 Scope

This document specifies requirements for the field of vision from the steering position, forward (horizontally and vertically) and astern, for small craft up to 24 m length of hull (L_H) in accordance with ISO 8666.

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 7010:—[1], *Graphical symbols — Safety colours and safety signs — Registered safety signs*

ISO 8666:2016, *Small craft — Principal data*

ISO 10240:—[2], *Small craft — Owner's manual*

ISO 11192:2005, *Small craft — Graphical symbols*

3 Terms and definitions

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

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
steering position
steering area (3.2) or *steering location* (3.3)

3.2
steering area
area on board a *sailing craft* (3.11) from which the *operator* (3.14) steers the craft

3.3
steering location
location on board a *power-driven craft* (3.12) or a *human-powered craft* (3.10) in which the *operator* (3.14) steers the craft and controls the propulsion

3.4
main steering position
steering position (3.1) as defined by the manufacturer and specified in the owner's manual that meets the field of vision requirements of this document

1) Under preparation. (Revision of ISO 7010:2011). Stage at the time of publication: ISO/FDIS 7010:2019.

2) Under preparation. (Revision of ISO 10240:2004). Stage at the time of publication: ISO/DIS 10240:2018.

3.5
high eye position
<standing operator> eye position 1 730 mm above the surface on which the *operator* (3.14) stands, 400 mm from the centre of the steering wheel rim

3.6
high eye position
<seated operator> eye position 840 mm above the intersection of the compressed seat and the seat back, 400 mm from the centre of the steering wheel rim

3.7
low eye position
<standing operator> eye position 1 480 mm above the surface on which the *operator* (3.14) stands, 400 mm from the centre of the steering wheel rim

3.8
low eye position
<seated operator> eye position 690 mm above the intersection of the compressed seat and the seat-back, 400 mm from the centre of the steering wheel rim

3.9
level reference line
designated waterline of the craft determined for its operating conditions

3.10
human-powered craft
craft for which the primary means of propulsion is human power

3.11
sailing craft
craft for which the primary means of propulsion is wind power

3.12
power-driven craft
craft for which the primary means of propulsion is an engine

3.13
planing mode
mode of running of a craft in the sea such that its mass is significantly supported by forces coming from dynamic lift due to speed in the water

3.14
operator
person steering the craft

3.15
normal condition of use
mode with regards to speed and load in which a craft is typically operated

4 Requirements for all craft

4.1 General requirements

The following requirements shall be fulfilled under normal condition of use.

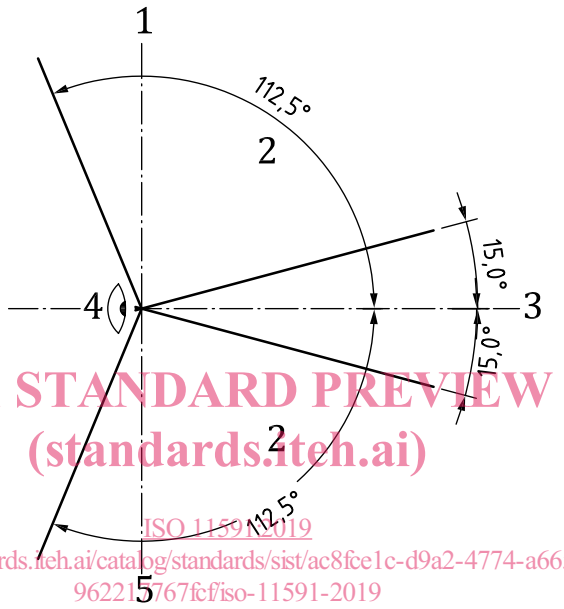
For craft having more than one steering position, at least one steering position shall meet the requirements of this document and be designated ‘main steering position’. Other steering positions that do not meet the requirements of this document shall display a sign at these positions, in clear view of the operator, with the ISO symbol for warning in accordance with 19.1 of ISO 11192:2005 or symbol

W001 of ISO 7010 together with warning information (see Clause 8) in a language acceptable to the country of intended use.

4.2 Field of vision — Forward

4.2.1 Horizontal

4.2.1.1 A field of vision from the eye position at the steering position shall be provided throughout a horizontal arc of at least 112,5° on the starboard side to 112,5° on the port side of the craft (see Figure 1). For port side, starboard side or centreline steering positions, these angles of vision to port and starboard are required without the operator leaving the steering position.



Key

1	port	4	eye position at steering position
2	forward field of vision	5	starboard
3	centre line of forward field of vision		

Figure 1 — Field of vision, forward, horizontal

4.2.1.2 Permanent and removable obstructions to vision shall be such that clear vision from the eye position can be maintained with normal movement of the operator while maintaining control of the craft.

4.2.2 Vertical

4.2.2.1 The vertical field of vision forward to the horizon and water surface shall be determined with the craft at an attitude established by the level reference line determined with the craft in the loaded condition (m_{LDC}) in accordance with ISO 8666.

4.2.2.2 Obstructed vertical vision distance to the water surface in the horizontal field of vision from the stem or point of visual obstruction on the craft, as determined by the level reference line, shall not exceed four times the length of hull, L_H, defined in ISO 8666, and in no case shall exceed 50 m.

4.3 Field of vision — Astern

If permanent obstructions to vision exist, astern unobstructed visibility shall be provided to the operator while maintaining control of the craft by:

— normal movement of the operator; or

— mirrors; or

— other means.

5 Additional requirements for human-powered craft

5.1 General requirements

If the operator of a human-powered craft kneels, sits or stands with his back to the course, it shall be ensured that the superstructure of the craft gives the operator enough room to turn around frequently into the direction of travel to comply with this document (see Clause 4).

6 Additional requirements for power-driven craft with steering wheel or equivalent fixed installed direction control

6.1 General requirements

A forward field of vision shall be provided directly in front of the operator's eye position throughout the vertical field of vision and extending to at least 15° on either side of a line forward from the eye position (see Figure 1) to the obstructed vision distance as specified in 4.2.2. This may be achieved with normal movement of the operator's head while maintaining control of the craft.

6.1.1 The requirements for low eye position can be met by an operator's seat with vertical height adjustment.

6.1.2 From the designated main steering position, standing or seated, the minimum vertical field of vision shall extend from the horizontal with respect to the relevant high eye position to the unobstructed line of vision from the relevant low eye position (see Figures 2 and 3), while ensuring the horizontal arc of vision specified in 4.2.1.

7 Additional requirements for sailing craft under sail or auxiliary power

7.1 General requirements

Fixed obstructions to vision shall be such that the field of vision requirements as defined in Clause 4 during normal conditions of use can be maintained with normal movement of the operator in the main steering position.

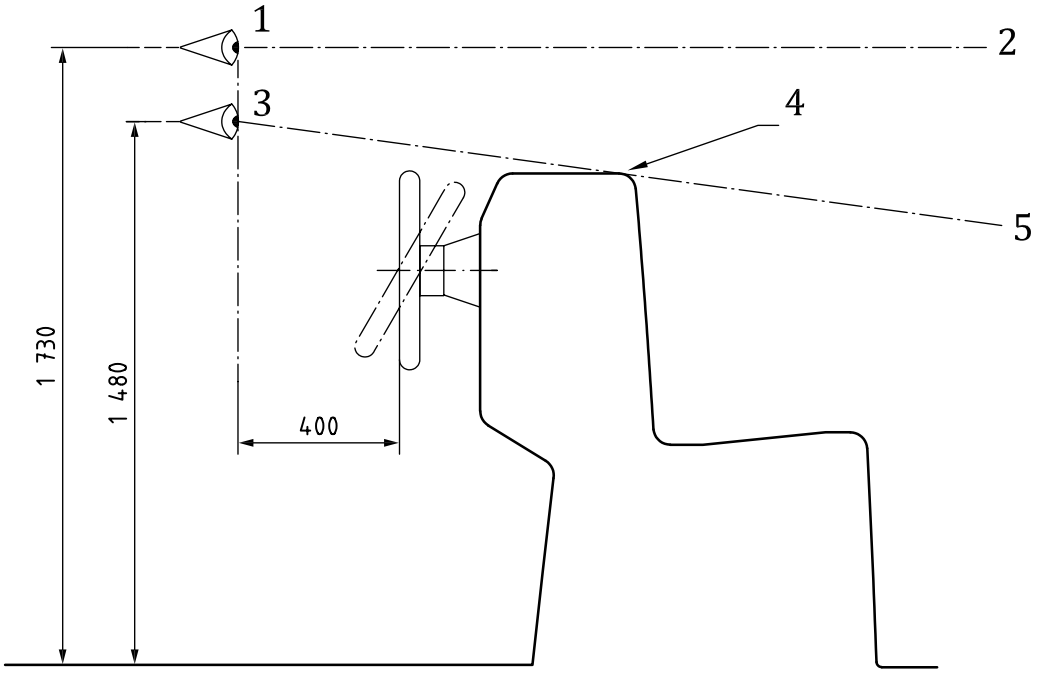
7.2 Sails

Sails or parts thereof may be transparent in order to comply with Clause 4.

7.3 Steering means

Sailing craft shall be able to be steered by one or more wheels, tillers, or other steering means. Tillers may have one or more articulating extensions.

Dimensions in millimetres

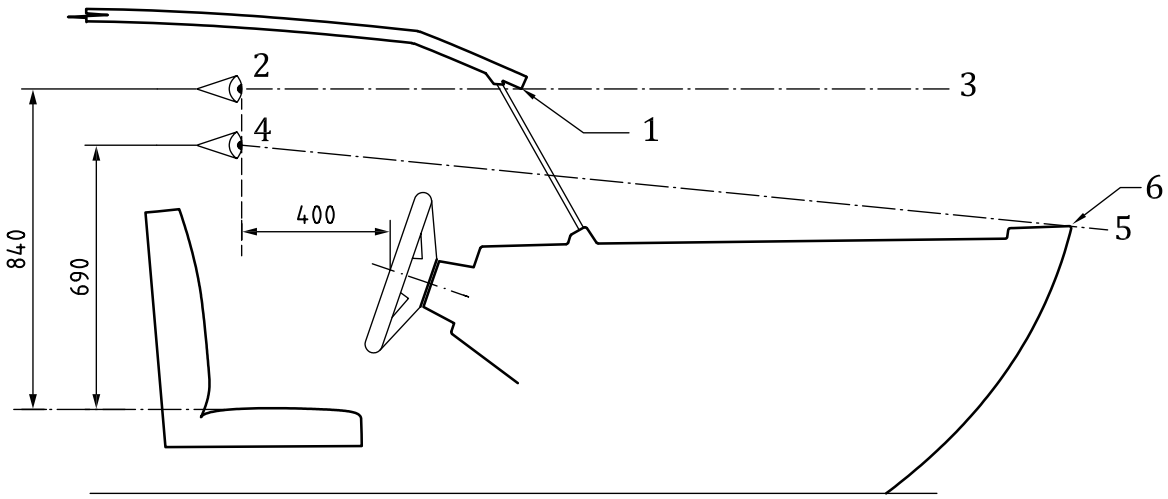


Key

1 high eye position
2 horizontal in high eye position
3 low eye position
4 point of visual obstruction
5 lowest unobstructed line of vision

Figure 2 — Eye positions and vertical field of vision — Operator in standing position

Dimensions in millimetres



Key

1 vision obstruction
2 high eye position
3 horizontal in high eye position
4 low eye position
5 lowest unobstructed line of vision
6 vision obstruction

Figure 3 — Eye positions and vertical field of vision — Operator in seated position