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Standards

Irish Standard  
I.S. EN ISO 23411:2021

# Small craft - Steering wheels (ISO 23411:2020)

I.S. EN ISO 23411:2021

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN ISO 23411:2021 is the adopted Irish version of the European Document EN ISO 23411:2021, Small craft - Steering wheels (ISO 23411:2020)

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EUROPEAN STANDARD

EN ISO 23411

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2021

ICS 47.080

Supersedes EN ISO 15652:2017, EN ISO 8848:2017,  
EN ISO 9775:2017

English Version

## Small craft - Steering wheels (ISO 23411:2020)

Petits navires - Barres à roues (ISO 23411:2020)

Kleine Wasserfahrzeuge - Steuerräder (ISO  
23411:2020)

This European Standard was approved by CEN on 30 July 2020.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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## European foreword

This document (EN ISO 23411:2021) has been prepared by Technical Committee ISO/TC 188 "Small craft" in collaboration with CCMC.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2021, and conflicting national standards shall be withdrawn at the latest by July 2021.

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

This document supersedes EN ISO 15652:2017, EN ISO 8848:2017 and EN ISO 9775:2017.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Endorsement notice

The text of ISO 23411:2020 has been approved by CEN as EN ISO 23411:2021 without any modification.

## Annex ZA (informative)

### Relationship between this European Standard and the essential requirements of Directive 2013/53/EU aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/542/C (2015) 8736 final to provide one voluntary means of conforming to essential requirements of Directive 2013/53/EU.

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

**Table ZA.1 — Correspondence between this European Standard and Directive 2013/53/EU**

Essential Requirements of Directive 2013/53/EU	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
Annex I.A.5.4.1 – Steering system, General	Clauses 1 - 6	This scope of this standard addresses the design, and testing of steering wheels for recreational craft as defined in Directive 2013/53/EU, Article 3(2) only.
Annex II, Components of watercraft (3) - Steering wheels, steering mechanisms and cable assemblies.	Clauses 1 - 6	This scope of this standard addresses the design, and testing of steering wheels supplied as components for recreational craft as defined in Directive 2013/53/EU, Article 3(2) only.

**WARNING 1** — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

**WARNING 2** — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.



**INTERNATIONAL  
STANDARD**

**ISO  
23411**

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**Small craft — Steering wheels**

*Petits navires — Barres à roues*



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## ISO 23411:2020(E)

### 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](http://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](http://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](http://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 first edition of ISO 23411, together with ISO 8848:2020, cancels and replaces ISO 8848:1990, ISO 9775:1990 and ISO 15652:2003, which have been technically revised.

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

- the steering wheel requirements from ISO 8848:1990, ISO 9775:1990 and ISO 15652:2003 have been consolidated into this document;
- the requirements have been updated to meet current industry practices.

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](http://www.iso.org/members.html).

## **Introduction**

Previously, steering wheels were addressed in ISO 8848:1990, ISO 9775:1990 and ISO 15652:2003. A review of the steering standards for a merge project found that updates were needed for consistency and to meet current industry practices. This document thus provides a consistent approach for the design and testing of steering wheels for small craft.

Steering wheel size and application was considered in the development of this document for small craft under foreseeable operating conditions. It is recognized that high speed craft experience additional impact loads and these are addressed in the document.



# Small craft — Steering wheels

## 1 Scope

This document specifies design and testing requirements for steering wheels for small craft.

## 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 25197:2020, *Small craft — Electrical/electronic control systems for steering, shift and throttle*

## 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 mechanism**

device, to which a control element is attached for manual application of a controlling force, and by which the controlling force is fed into a steering system

### 3.2

#### **minimum retained system performance**

system performance after testing, such that at least 90 % of the engine steering arm travel normally available to each side of the mid-position is obtained by exertion of no more than 27 Nm of torque at the *steering mechanism* (3.1) through the wheel or other normal control

Note 1 to entry: This criterion does not define the steering system performance while the craft is underway, but is rather intended to provide qualitative limits for design and test purposes.

### 3.3

#### **steering wheel diameter actual diameter**

$D_a$

diameter of the circle formed by the outermost sections of the steering wheel

Note 1 to entry: See [Figure 1](#).

### 3.4

#### **steering wheel dish**

distance between the two parallel planes formed by the aft rim surface and the forward hub surface of a steering wheel

Note 1 to entry: See [Figure 1](#).

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