



# SLOVENSKI STANDARD

## SIST EN ISO 8848:2022

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Nadomešča:

SIST EN ISO 8848:2021

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### Mala plovila - Daljinski mehanski sistemi krmiljenja (ISO 8848:2022)

Small craft - Remote mechanical steering systems (ISO 8848:2022)

Kleine Wasserfahrzeuge - Steueranlagen (ISO 8848:2022)

Petits navires - Appareils à gouverner commandés à distance (ISO 8848:2022)

Ta slovenski standard je istoveten z: **EN ISO 8848:2022**

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47.020.70	Navigacijska in krmilna oprema	Navigation and control equipment
47.080	Čolni	Small craft

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NORME EUROPÉENNE  
EUROPÄISCHE NORM

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English Version

**Small craft - Remote mechanical steering systems (ISO  
8848:2022)**

Petits navires - Appareils à gouverner commandés à  
distance (ISO 8848:2022)

Kleine Wasserfahrzeuge - Steueranlagen (ISO  
8848:2022)

This European Standard was approved by CEN on 20 April 2022.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents	Page
European foreword.....	3
Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2013/53/EU aimed to be covered.....	4

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## European foreword

This document (EN ISO 8848:2022) has been prepared by Technical Committee ISO/TC 188 "Small craft" in collaboration with Technical Committee CEN/TC 464 "Small Craft" the secretariat of which is held by SIS.

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of an identical text or by endorsement, at the latest by January 2023, and conflicting national standards shall be withdrawn at the latest by January 2023.

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 8848:2021.

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

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

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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 8848:2022 has been approved by CEN as EN ISO 8848:2022 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 1-8	The scope of this standard addresses remote mechanical cable steering systems only. It does not address the requirements for steering wheels, hydraulic steering systems and electrical/electronic steering control systems which are covered elsewhere. This Standard does not address propulsion control systems or emergency steering arrangements.
Annex II, Components of watercraft (3) -Steering wheels, steering mechanisms and cable assemblies.	Clauses 1 - 8	In respect of push-pull cable steering systems and their major component items only. Steering Wheels supplied as components are not covered by this Standard.

**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  
8848**

Third edition  
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## Small craft — Remote mechanical steering systems

*Petits navires — Appareils à gouverner commandés à distance*

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# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Constructional requirements</b> .....	<b>3</b>
<b>5 Outboard engine and inboard-sterndrive design requirements</b> .....	<b>6</b>
<b>6 Steering system requirements</b> .....	<b>8</b>
6.1 Craft-mounted steering systems.....	8
6.2 Steering systems.....	8
6.3 Steering cables.....	8
6.4 Steering mechanisms.....	9
<b>7 Installation</b> .....	<b>11</b>
<b>8 Test requirements</b> .....	<b>14</b>
8.1 General.....	14
8.2 As-installed tests.....	14
8.3 Components test.....	15
8.3.1 Steering cable and output assembly tests.....	15
8.3.2 Steering mechanism assembly tests.....	16
<b>9 Markings, owner's manual and installation manual</b> .....	<b>19</b>
9.1 Markings.....	19
9.2 Owner's manual.....	19
9.3 Installation manual.....	19
<b>Bibliography</b> .....	<b>20</b>

## 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 third edition cancels and replaces the second edition (ISO 8848:2020), of which it constitutes a minor revision. Changes have been made to align the document with other ISO/TC 188 standards and to avoid circularity of normative references.

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).

# Small craft — Remote mechanical steering systems

## 1 Scope

This document specifies design, construction, installation and test requirements for remote mechanical cable steering systems and the output ram interface point to rudders, jet drives, outboard and sterndrive engines for small craft.

It is applicable to three distinct classes of steering systems for use on various types of craft:

- standard duty steering systems, for small craft with single and twin installations of outboard engines with a total over 15 kW power, and with rudders, sterndrives and water-jet drives;
- light duty steering systems, for small craft with a single outboard engine of 15 kW to 40 kW power;
- mini-jet steering systems, excluding personal watercraft.

**NOTE** Standard and light duty steering systems are mechanically interchangeable. A standard duty steering system can be used on a craft designed for a light duty system. However, a light duty steering system cannot be used on a craft that requires a standard duty steering system. Mini-jet steering systems are mechanically differentiated from the previously mentioned systems and can only be used on mini-jet craft as defined in this document.

This document does not address emergency means for steering the 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 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 12217-2:2015, *Small craft — Stability and buoyancy assessment and categorization — Part 2: Sailing boats of hull length greater than or equal to 6 m*

ISO 12217-3:2015, *Small craft — Stability and buoyancy assessment and categorization — Part 3: Boats of hull length less than 6 m*

## 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

#### **craft-mounted steering system**

assembly including all components necessary to transmit remote manual effort to the end of the *output ram* (3.20) and a means to secure an output ram guide tube to the *craft* (3.16)

## ISO 8848:2022(E)

## 3.2

**interface point**

point of mechanical interface in the *steering system* (3.11) where a connection is made between the *output ram* (3.20) and the craft components that are not supplied as part of the same assembly

## 3.3

**control element**

device connected to the *steering mechanism* (3.6) that allows the operator to apply manual steering effort to the *steering system* (3.11)

EXAMPLE *Steering wheel* (3.13), *handlebar* (3.5), *joystick* (3.7).

## 3.4

**drag link**

device in an *engine-mounted steering system* (3.10) by which the linear force of the *output ram* (3.20) is transmitted to the engine steering arm

## 3.5

**handlebar**

mechanical means for applying a manual steering effort to the *steering mechanism* (3.6) in a horizontal configuration, with hand grips at each end and the helm connected at the middle

## 3.6

**steering mechanism**

device, to which a *control element* (3.3) is attached for manual application of a controlling force, and by which the controlling force is fed into a *steering system* (3.11)

## 3.7

**joystick**

operator input device for the simultaneous control of thrust, steering and propulsion

## 3.8

**mini-jet craft**

*craft* (3.16) weighing less than 1 000 kg, with an inboard engine powering a water-jet pump as its primary method of propulsion, designed to be operated with one or more persons within the confines of a hull

## 3.9

**minimum retained system performance**

system performance after test(s), such that at least 90 % of the steering arc normally available each side of the mid-position can be obtained by exertion of no more than 27 N·m of torque at the *steering mechanism* (3.6), through the *control element* (3.3)

Note 1 to entry: This criterion does not define the *steering system* (3.11) performance while a *craft* (3.16) is underway, but is rather intended to provide quantitative limits for design and test purposes.

## 3.10

**engine-mounted steering system**

assembly including all components necessary to transmit a remote manual effort to the end of the *output ram* (3.20) which is affixed to an engine mounted steering tube and a *drag link* (3.4) supplied by the engine manufacturer

## 3.11

**steering system**

assembly including all components necessary to transmit a remote manual effort to the rudder, outboard engine, sterndrive or water-jet drive

## 3.12

**two-cable steering system**

two independent cables attached at the *interface point(s)* (3.2) of the *output ram(s)* (3.20) and at the helm and driven by a common steering shaft, generally used to minimize steering backlash or lost motion