



# SLOVENSKI STANDARD SIST EN ISO 10133:2017

01-oktober-2017

Nadomešča:  
SIST EN ISO 10133:2013

---

**Mala plovila - Električni sistemi - Inštalacije, napajane z enosmerno malo napetostjo (ISO 10133:2012)**

Small craft - Electrical systems - Extra-low-voltage d.c. installations (ISO 10133:2012)

Kleine Wasserfahrzeuge - Elektrische Systeme - Kleinspannungs-Gleichstrom-(DC-) Anlagen (ISO 10133:2012)

Petits navires - Systèmes électriques - Installations à très basse tension à courant continu (ISO 10133:2012)

[SIST EN ISO 10133:2017  
https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-a9e3a4791853/sist-en-iso-10133-2017](https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-a9e3a4791853/sist-en-iso-10133-2017)

**Ta slovenski standard je istoveten z: EN ISO 10133:2017**

---

**ICS:**

47.020.60	Električna oprema ladij in konstrukcij na morju	Electrical equipment of ships and of marine structures
47.080	Čolni	Small craft

**SIST EN ISO 10133:2017**

**en,fr,de**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN ISO 10133:2017](#)

<https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-a9e3a4791853/sist-en-iso-10133-2017>

EUROPEAN STANDARD

EN ISO 10133

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2017

ICS 47.080

Supersedes EN ISO 10133:2012

English Version

## Small craft - Electrical systems - Extra-low-voltage d.c. installations (ISO 10133:2012)

Petits navires - Systèmes électriques - Installations à  
très basse tension à courant continu (ISO 10133:2012)

Kleine Wasserfahrzeuge - Elektrische Systeme -  
Kleinspannungs-Gleichstrom-(DC-)Anlagen (ISO  
10133:2012)

This European Standard was approved by CEN on 10 July 2017.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

<b>Contents</b>	<b>Page</b>
<b>European foreword</b> .....	<b>3</b>
<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2013/53/EU</b> .....	<b>4</b>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN ISO 10133:2017](https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-a9e3a4791853/sist-en-iso-10133-2017)  
<https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-a9e3a4791853/sist-en-iso-10133-2017>

## European foreword

The text of ISO 10133:2012 has been prepared by Technical Committee ISO/TC 188 “Small craft” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 10133:2017.

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 February 2018, and conflicting national standards shall be withdrawn at the latest by February 2018.

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 10133:2012.

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 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Endorsement notice

The text of ISO 10133:2012 has been approved by CEN as EN ISO 10133:2017 without any modification.

## Annex ZA (informative)

### Relationship between this European Standard and the Essential Requirements of EU Directive 2013/53/EU

This European standard has been prepared under a mandate given to CEN by the European Commission to provide one means of conforming to Essential Requirements of the New Approach Directive 2013/53/EU.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one member state, 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 relevant Essential Requirements of that Directive and associated EFTA regulations.

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

Clauses/subclauses of this European Standard	Essential requirements (ERs) of EU Directive 2013/53/EU	Qualifying remarks/Notes
Annex B	Annex 1 A, 2.5 - Owner's manual	
4, 5, 6, 7, 8, 9, 10, 11, 12, Annex A	Annex 1 A, 5.3 - Electrical system  <a href="https://standards.iteh.ai/catalog/standards/sist/65582c01-9030-4534-901e-a9e3a4791853/sist-en-iso-10133-2017">https://standards.iteh.ai/catalog/standards/sist/65582c01-9030-4534-901e-a9e3a4791853/sist-en-iso-10133-2017</a>	This standard is applicable for extra low-voltage Direct Current (DC) electrical systems which operate at nominal potentials of DC 50V or less.  This standard does not give specific requirements for ventilation to prevent the accumulation of explosive gases emitted from batteries
12	Annex 1 A, 5.2.2 - Fuel system, fuel tanks  Sub-clause (a) - protection against fire from [...] all other sources of ignition.	In respect of ignition protection
4.4, 7.1, 7.13	Annex 1 A, 5.6.1 - Fire protection, general	

**WARNING:** Other requirements and other EU Directives may be applicable to the products falling within the scope of this standard.

# INTERNATIONAL STANDARD

**ISO**  
**10133**

Third edition  
2012-12-15

---

---

## Small craft — Electrical systems — Extra- low-voltage d.c. installations

*Petits navires — Systèmes électriques — Installations à très basse  
tension à courant continu*

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN ISO 10133:2017](https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-a9e3a4791853/sist-en-iso-10133-2017)

[https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-  
a9e3a4791853/sist-en-iso-10133-2017](https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-a9e3a4791853/sist-en-iso-10133-2017)



Reference number  
ISO 10133:2012(E)

© ISO 2012

## iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN ISO 10133:2017

<https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-a9e3a4791853/sist-en-iso-10133-2017>



### **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland



<b>Contents</b>	<b>Page</b>
<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 General requirements</b> .....	<b>3</b>
<b>5 Batteries</b> .....	<b>4</b>
<b>6 Battery-disconnect switch</b> .....	<b>5</b>
<b>7 Conductors</b> .....	<b>5</b>
<b>8 Overcurrent protection</b> .....	<b>7</b>
<b>9 Panel boards (switchboards)</b> .....	<b>7</b>
<b>10 Wiring connections and terminals</b> .....	<b>8</b>
<b>11 Socket outlets</b> .....	<b>9</b>
<b>12 Ignition protection</b> .....	<b>9</b>
<b>Annex A (normative) Conductor requirements</b> .....	<b>10</b>
<b>Annex B (normative) Information and instructions to be included with owner's manual</b> .....	<b>12</b>
<b>Annex C (informative) Overcurrent protection location options</b> .....	<b>13</b>
<b>Bibliography</b> .....	<b>15</b>

[SIST EN ISO 10133:2017](https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-a9e3a4791853/sist-en-iso-10133-2017)  
<https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-a9e3a4791853/sist-en-iso-10133-2017>

**ISO 10133:2012(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 10133 was prepared by Technical Committee ISO/TC 188, *Small craft*.

This third edition cancels and replaces the second edition (ISO 10133:2000), which has been technically revised.

## **iTeh STANDARD PREVIEW** **(standards.iteh.ai)**

[SIST EN ISO 10133:2017](https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-a9e3a4791853/sist-en-iso-10133-2017)

<https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-a9e3a4791853/sist-en-iso-10133-2017>

# Small craft — Electrical systems — Extra-low-voltage d.c. installations

## 1 Scope

This International Standard establishes the requirements for the design, construction and installation of extra-low-voltage direct current (d.c.) electrical systems which operate at nominal potentials of 50 V d.c. or less on small craft of hull length up to 24 m. Conductors that are part of an outboard engine assembly and that do not extend beyond the outboard engine manufacturer's supplied cowling are not included.

Additional information to be included in the owner's manual is listed in Annex B.

## 2 Normative references

The following referenced documents are indispensable for the application 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 8846, *Small craft — Electrical devices — Protection against ignition of surrounding flammable gases*

ISO 10239, *Small craft — Liquefied petroleum gas (LPG) systems*

ISO 10240, *Small craft — Owner's manual*

IEC 60529, *Degrees of protection provided by enclosures (IP code)*

<https://standards.iteh.ai/catalog/standards/sist/b8582cb1-9050-4334-90f2-a9e3a4791853/sist-en-iso-10133-2017>

## 3 Terms and definitions

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

### 3.1

#### **equipotential bonding conductor**

normally non-current-carrying conductor used to put various exposed conductive parts of electrical devices and extraneous conductive parts at a substantially equal potential

### 3.2

#### **engine negative terminal**

terminal on the engine, starter or solenoid to which the negative battery cable is connected

### 3.3

#### **main grounding earthing point**

main point or bus that provides connection to the common ground for the d.c. negative conductor, for a.c. protective grounding conductors and neutral, where relevant, and where necessary functional grounding

NOTE It may include any conductive part of the wetted surface of the hull in permanent contact with the water, depending on the overall system design.

### 3.4

#### **ignition-protected equipment**

equipment designed and constructed to give protection against ignition of surrounding flammable gases

NOTE See ISO 8846.