



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 16147:2017&LC:2017

Small craft - Inboard diesel engines - Engine-mounted fuel and electrical components (ISO 16147:2002, including Amd 1:2013)

© CEN 2017 No copying without NSAI permission except as permitted by copyright law.

**I.S. EN ISO 16147:2017&LC:2017**

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

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

*This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):*

*NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.*

*This document is based on:*

*Published:*

*This document was published  
under the authority of the NSAI  
and comes into effect on:*

2017-10-10

ICS number:

47.080

NOTE: If blank see CEN/CENELEC cover page

NSAI  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

Sales:  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

## National Foreword

I.S. EN ISO 16147:2017&LC:2017 is the adopted Irish version of the European Document EN ISO 16147:2017, Small craft - Inboard diesel engines - Engine-mounted fuel and electrical components (ISO 16147:2002, including Amd 1:2013)

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

**Compliance with this document does not of itself confer immunity from legal obligations.**

*In line with international standards practice the decimal point is shown as a comma (,) throughout this document.*

This page is intentionally left blank

## Correction Notice

**Reference:** EN ISO 16147:2017

**Title:** Small craft - Inboard diesel engines - Engine-mounted fuel and electrical components (ISO 16147:2002, including Amd 1:2013)

**Work Item:** CST01167

Brussels, 2017-09-20

**please include the following minor editorial correction(s) in the document related to:**

the following language version(s) :

- ☒ English
- ☒ French
- ☒ German

for the following procedure :

- ☐ PQ/UQ
- ☐ Enquiry
- ☐ 2nd Enquiry
- ☐ Parallel Enquiry
- ☐ 2<sup>nd</sup> Parallel Enquiry
- ☐ Formal Vote
- ☐ 2<sup>nd</sup> Formal Vote
- ☐ Parallel Formal Vote
- ☐ 2<sup>nd</sup> Parallel Formal Vote
- ☐ UAP
- ☐ TC Approval
- ☐ 2<sup>nd</sup> TC Approval
- ☐ Publication
- ☒ Parallel Publication

---

It has been brought to our attention that this document, issued on 2017-08-16, requires modification.

EN ISO 16147:2002/A1:2013 has been added in the European flyleaves.

Titles and Forewords have been updated accordingly.

Please find enclosed the updated English, French and German versions.

We apologise for any inconvenience this may cause.

*This page is intentionally left BLANK.*

**EUROPEAN STANDARD**  
**NORME EUROPÉENNE**  
**EUROPÄISCHE NORM**

**EN ISO 16147**

August 2017

ICS 47.080

Supersedes EN ISO 16147:2002

English Version

**Small craft - Inboard diesel engines - Engine-mounted fuel  
and electrical components (ISO 16147:2002, including  
Amd 1:2013)**

Petits navires - Moteurs intérieurs diesels - Éléments  
des circuits d'alimentation et des systèmes électriques  
fixés sur le moteur (ISO 16147:2002, y compris Amd  
1:2013)

Kleine Wasserfahrzeuge - Eingebaute Dieselmotoren -  
Am Motor befestigte Kraftstoff- und Elektrikbauteile  
(ISO 16147:2002, einschließlich Amd 1:2013)

This European Standard was approved by CEN on 16 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>



## **European foreword**

The text of ISO 16147:2002, including Amd 1:2013 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 16147:2017.

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 16147:2002.

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 16147:2002, including Amd 1:2013 has been approved by CEN as EN ISO 16147:2017 without any modification.

(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**

<b>Clauses/subclauses of this European Standard</b>	<b>Essential requirements (ERs) of EU Directive 2013/53/EU</b>	<b>Qualifying remarks/Notes</b>
4; 5; 6	I.A.5.1.1 - Installation requirements; inboard engine	In respect of fuel and electrical components fitted to diesel inboard-mounted engines.
4; 5	I.A.5.2.1 - Fuel system; general	In respect of minimising the risk of fuel leakage and risk/spread of fire from fuel components that are engine mounted.  Fire resistant fuel hoses meeting the requirements of EN ISO 7840 deal with the use of biofuels.
4; 6	I.A.5.3 - Electrical system	In respect of minimising the risk/spread of fire from electrical components that are engine mounted.  This Standard does not deal with the following elements of this essential requirement in relation to engine mounted electrical components: <ul style="list-style-type: none"> <li>— AC electrical engine-mounted components;</li> <li>— Protection from electric shock;</li> <li>— Overload and short circuit protection;</li> <li>— Interaction with electric propulsion circuits;</li> <li>— Ventilation of explosive</li> </ul>

		gases emitted from batteries; — Battery installation.
4; 5; 6	I.A.5.6.1 Fire protection - General	In respect of the design and installation arrangements for engine mounted fuel and electrical components on inboard diesel engines.

**WARNING:** Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard

This page is intentionally left blank

# INTERNATIONAL STANDARD

**ISO  
16147**

First edition  
2002-10-15

---

---

## **Small craft — Inboard diesel engines — Engine-mounted fuel and electrical components**

*Petits navires — Moteurs intérieurs diesels — Éléments des circuits  
d'alimentation et des systèmes électriques fixés sur le moteur*



Reference number  
ISO 16147:2002(E)

© ISO 2002

## **ISO 16147:2002(E)**

### **PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2002

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.ch](mailto:copyright@iso.ch)  
Web [www.iso.ch](http://www.iso.ch)

Printed in Switzerland

## **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 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 16147 was prepared by Technical Committee ISO/TC 188, *Small craft*.





# Small craft — Inboard diesel engines — Engine-mounted fuel and electrical components

## 1 Scope

This International Standard establishes requirements for the design and installation of engine-mounted fuel and electrical components on diesel inboard-mounted engines for minimizing fuel leakage and the risk of and/or the spread of fire on small craft of hull length up to 24 m.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7840:1994, *Small craft — Fire-resistant fuel hoses*

ISO 10088:2001, *Small craft — Permanently installed fuel systems and fixed fuel tanks*

ISO 10133:2000, *Small craft — Electrical systems — Extra-low-voltage d.c. installations*

## 3 Terms and definitions

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

### 3.1 engine-mounted

component fixed to the marine inboard engine and which will be in place while the engine is in operation

### 3.2 diesel fuel

hydrocarbon fuel or blends of hydrocarbon fuels which are liquids at atmospheric pressure and are used in compression-ignition engines

### 3.3 diesel engine

compression-ignition engine in which ignition is obtained by means of compressing the diesel fuel/air mixture

### 3.4 accessible

capable of being reached for inspection, removal or maintenance without removal of the permanent boat structure

NOTE Hatches are not regarded as permanent boat structures in this sense, even if tools are needed to open them.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- Looking for additional Standards? Visit Intertek Inform Infostore
  - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-