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NSAI Standards

Irish Standard
I.S. EN ISO 16147:2021

# Small craft - Inboard diesel engines - Engine-mounted fuel, oil and electrical components (ISO 16147:2020)

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**I.S. EN ISO 16147:2021**

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN ISO 16147

January 2021

ICS 47.080

Supersedes EN ISO 16147:2018

English Version

# Small craft - Inboard diesel engines - Engine-mounted fuel, oil and electrical components (ISO 16147:2020)

Petits navires - Moteurs intérieurs diesels - Éléments des circuits d'alimentation, des systèmes de lubrification et des systèmes électriques fixés sur le moteur (ISO 16147:2020)

Kleine Wasserfahrzeuge - Eingebaute Dieselmotoren - Am Motor befestigte Kraftstoff-, Öl- und Elektrikbauteile (ISO 16147:2020)

This European Standard was approved by CEN on 3 November 2020.

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# European foreword

This document (EN ISO 16147:2021) 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of an identical text or by endorsement, at the latest by July 2021, and conflicting national standards shall be withdrawn at the latest by July 2021.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 16147:2018.

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 16147:2020 has been approved by CEN as EN ISO 16147:2021 without any modification.

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# 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 Annex I of Directive 2013/53/EU**

| Essential requirements (ERs) of EU Directive 2013/53/EU | Clauses/subclauses of this European Standard | Qualifying remarks/Notes |
|---|---|---|
| Annex I, Part A, 5.1.1 - Installation requirements; inboard engine | 4, 5, 6 | In respect of inspection of fuel, oil and electrical components fitted to diesel inboard-mounted engines. |
| Annex I, Part A, 5.2.1 - Fuel system; general | 4, 5, 7 | In respect of minimising the risk of fuel leakage and risk/spread of fire from fuel components that are engine mounted. |
| Annex I, Part A, 5.3 - Electrical system | 4, 6 | Only in respect of minimising the risk/spread of fire from electrical components that are engine mounted. |
| Annex I, Part A, 5.6.1 Fire protection - General | 4, 5, 6, 7 | In respect of the design and installation arrangements for engine mounted fuel, oil and electrical components on inboard diesel engines. |

**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.

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INTERNATIONAL STANDARD

# ISO 16147

Third edition
2020-12

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

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

Reference number
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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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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.

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 of ISO 16147 cancels and replaces the second edition (ISO 16147:2018), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

— clarification in the Scope that the length of hull is as defined in ISO 8666, and reference added in a new Bibliography;

— all references have been dated.

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.


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

## 1 Scope

This document establishes requirements for the design and installation of engine-mounted fuel, oil and electrical components on diesel inboard-mounted engines for minimizing fuel leakage, risk of electric shock and the risk of and/or the spread of fire on small craft of hull length up to 24 m 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 7840:2013, *Small craft — Fire-resistant fuel hoses*

ISO 10088:2013, *Small craft — Permanently installed fuel systems*

ISO 13297:2020, *Small craft — Electrical systems — Alternating and direct current installations*

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

IEC 60529:1989+A1:1999+A2:2013, *Degrees of protection provided by enclosures (IP CODE)*

IEC 60092-507:2014, *Electrical Installations in Ships — Part 507: Small vessels*

## 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**
**engine-mounted**
component fixed to the marine inboard engine and which remains while the engine is in operation

**3.2**
**diesel fuel**
hydrocarbon fuel or blends of hydrocarbon fuels including bio-fuel which are liquids at atmospheric pressure and are used in compression-ignition engines

**3.3**
**diesel engine**
internal combustion engine that uses the heat of highly compressed air to ignite a spray of *diesel fuel* (3.2) introduced after the start of the compression stroke

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