



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 9093:2021

# Small craft - Seacocks and through-hull fittings (ISO 9093:2020)

## I.S. EN ISO 9093:2021

*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:*

EN ISO 9093:2021

*Published:*

2021-01-27

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

2021-02-15

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 9093:2021 is the adopted Irish version of the European Document EN ISO 9093:2021, Small craft - Seacocks and through-hull fittings (ISO 9093:2020)

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

EUROPEAN STANDARD

EN ISO 9093

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2021

ICS 47.080

Supersedes EN ISO 9093-1:1997, EN ISO 9093-1:2018,  
EN ISO 9093-2:2002, EN ISO 9093-2:2018

English Version

## Small craft - Seacocks and through-hull fittings (ISO 9093:2020)

Petits navires - Vannes de coque et passe-coques (ISO  
9093:2020)

Kleine Wasserfahrzeuge - Seeventile und  
Außenhautdurchführungen (ISO 9093:2020)

This European Standard was approved by CEN on 29 November 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.



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN ISO 9093:2021 (E)**

<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 Directive 2013/53/EU aimed to be covered.....</b>	<b>4</b>

## **European foreword**

This document (EN ISO 9093:2021) 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 9093-1:1997, EN ISO 9093-2:2002, EN ISO 9093-1:2018 and EN ISO 9093-2:2018.

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 9093:2020 has been approved by CEN as EN ISO 9093:2021 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 Annex I of Directive 2013/53/EU**

Essential Requirements of Directive 2013/53/EU	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
Annex I, Clause 2.5, Owner's manual	Clause 11	In respect of information to be included in the Owner's Manual
Annex I, Clause 3.4, Openings in hull, deck and superstructure	Clause 3, 4, 5, 6, 7, 9	This standard do not address windows, portlights, doors and hatch covers and point loads applied by the weight of persons on the deck.

**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 9093

First edition  
2020-12

---

---

## **Small craft — Seacocks and through-hull fittings**

*Petits navires — Vannes de coque et passe-coques*



Reference number  
ISO 9093:2020(E)

© ISO 2020

**ISO 9093:2020(E)**



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# 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 Material requirements</b> .....	<b>2</b>
4.1 General.....	2
4.2 Material combinations.....	2
4.3 Resistance to deterioration/corrosion tests.....	2
4.4 Strength requirements.....	3
4.5 Range of operating temperatures.....	3
4.5.1 General operating requirements.....	3
4.5.2 Storage temperature requirement.....	3
4.5.3 High temperature operating test.....	3
4.5.4 Low temperature operating test.....	3
<b>5 Through-hull fittings</b> .....	<b>3</b>
5.1 Thread identification.....	3
5.2 General design requirements.....	4
5.3 Detailed design requirements.....	4
5.3.1 Stem.....	4
5.3.2 Flange diameter.....	5
5.3.3 Finish.....	5
<b>6 Seacocks — Design requirements</b> .....	<b>5</b>
6.1 General.....	5
6.2 Thread length requirements.....	5
<b>7 Hose fittings</b> .....	<b>6</b>
7.1 Design requirements.....	6
7.2 Hose connection.....	6
<b>8 Water scoops and outboard water strainers</b> .....	<b>7</b>
<b>9 Installation</b> .....	<b>7</b>
9.1 Hull reinforcements.....	7
9.2 Installation requirements.....	7
<b>10 Device installation information</b> .....	<b>8</b>
<b>11 Owner's manual</b> .....	<b>8</b>
<b>Annex A (normative) Strength test</b> .....	<b>9</b>
<b>Annex B (normative) Corrosion resistance test</b> .....	<b>10</b>
<b>Annex C (normative) UV stabilisation test</b> .....	<b>11</b>
<b>Bibliography</b> .....	<b>12</b>

## ISO 9093:2020(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 9093 cancels and replaces ISO 9093-1:1994 and ISO 9093-2:2002, which have been technically revised.

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

- the previous 2 parts have been combined into a single-part standard;
- the definition of corrosion resistance has changed;
- an installed strength test has been added ([Annex A](#));
- a test for corrosion resistance has been added ([Annex B](#));
- a test for UV stabilisation has been added ([Annex C](#)).

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 — Seacocks and through-hull fittings

## 1 Scope

This document specifies requirements for through-hull fittings, seacocks, hose connections, their fittings and their installation in small craft with a length of hull,  $L_H$ , as defined in ISO 8666:2020, of up to 24 m.

This document is not applicable to engine and heater exhaust fittings, and sail drive through-hull fittings.

## 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 4892-3:2016, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps*

ISO 6509-1:2014, *Corrosion of metals and alloys — Determination of dezincification resistance of copper alloys with zinc — Part 1: Test method*

ISO 6509-2:2017, *Corrosion of metals and alloys — Determination of dezincification resistance of copper alloys with zinc — Part 2: Assessment criteria*

ISO 14993:2018, *Corrosion of metals and alloys — Accelerated testing involving cyclic exposure to salt mist, dry and wet conditions*

## 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

#### **through-hull fitting**

device fitting designed to permit passage of liquids including suspended solids or gases through the hull

### 3.2

#### **seacock**

shut-off device intended to prevent the ingress of water, normally directly fitted to a hull or a through-hull fitting

### 3.3

#### **accessible**

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

### 3.4

#### **readily accessible**

capable of being reached quickly and safely for effective use under emergency conditions without the use of tools

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](#)
-