
**Large yachts — Weathertight doors
— Strength and weathertightness
requirements**

*Grands yachts — Portes étanches aux intempéries — Exigences de
résistance et d'étanchéité aux intempéries*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO 14884:2015](https://standards.iteh.ai/catalog/standards/sist/33010b57-e94-4b7b-94af-78e1535f2b0f/iso-14884-2015)

<https://standards.iteh.ai/catalog/standards/sist/33010b57-e94-4b7b-94af-78e1535f2b0f/iso-14884-2015>



iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 14884:2015

<https://standards.iteh.ai/catalog/standards/sist/33010b57-e94-4b7b-94af-78e1535f2b0f/iso-14884-2015>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2015

All rights reserved. Unless otherwise specified, 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
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

	Page
Foreword.....	iv
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	1
4 Symbols and abbreviated terms.....	4
5 Design Criteria.....	5
5.1 General.....	5
5.2 Location.....	5
5.3 Material.....	5
5.4 Strength.....	6
5.4.1 General.....	6
5.4.2 Design Pressures.....	6
5.4.3 Scantlings.....	7
5.4.4 Doors of unconventional design.....	8
5.5 Sealing and securing.....	9
5.6 Operational requirements.....	9
5.6.1 General requirements.....	9
5.6.2 Power operated doors.....	9
6 Installation.....	9
7 Glazing.....	10
8 Testing.....	10
8.1 Weathertightness.....	10
8.1.1 Hose test.....	10
8.1.2 Allowable water ingress.....	10
8.2 Structural testing.....	10
9 Documentation for Servicing and Operation.....	10
Bibliography.....	11

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).

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: [Foreword — Supplementary information](#).

The committee responsible for this document is ISO/TC 8, *Ships and marine technology*, Subcommittee SC 12, *Large yachts*.

ISO 14884:2015

<https://standards.iteh.ai/catalog/standards/sist/33010b57-ef94-4b7b-94af-78e1535f2b0f/iso-14884-2015>

Large yachts — Weathertight doors — Strength and weathertightness requirements

1 Scope

This International Standard specifies technical requirements for weathertight hinged, sliding, and pantograph doors for manual and powered operation providing access to accommodation and service areas on large yachts, taking into account the location of the appliance.

This International Standard only considers design loads applied to the door and transmitted into the frame and the adjacent structure. Loads imparted from the yacht's structure into the door or in its associated frame are not considered in this International Standard.

Unframed glazed doors are outside the scope of this International Standard.

Forward facing multi-leaf doors on the weather deck are outside the scope of this International Standard.

Large yachts are of L greater than or equal to 24 m, in use for sport or pleasure and commercial operations.

The appliances considered in this International Standard are primarily those that are intended to achieve weathertightness as required by International Convention on Load Lines 1966 as amended by the Protocol of 1988 (ICLL), (i.e. those fitted in position 1 and position 2) as defined in this regulation.

NOTE This International Standard is based on the experience of ship door, window, and glass manufacturers, shipbuilders, and authorities who apply to ships the regulations of the ICLL, noting the provisions of Article 8 "equivalents", as agreed by the appropriate marine administration

<https://standards.iteh.ai/catalog/standards/sist/33010b57-ef94-4b7b-94af-78e1535f2b0f/iso-14884-2015>

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6345, *Shipbuilding and marine structures — Windows and side scuttles — Vocabulary*

ISO 11336-1:2012, *Large yachts — Strength, weathertightness and watertightness of glazed openings — Part 1: Design criteria, materials, framing and testing of independent glazed openings*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6345, ISO 11336-1, and the following apply.

3.1

certifying authority

flag administration or the organization delegated by the flag administration

3.2

door

closing appliance for an access opening in a vertical plane

Note 1 to entry: This is an assembly consisting of one or more opening leaves and a frame that is permanently secured to the yacht's structure.

3.2.1

hinged door

door where *leaf/leaves* (3.6) is/are fixed and pivoted on one edge and generally open(s) outwards

Note 1 to entry: See [Figures 1 to 3](#).

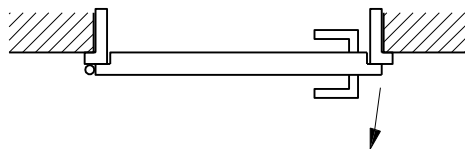


Figure 1 — Hinged door, single leaf

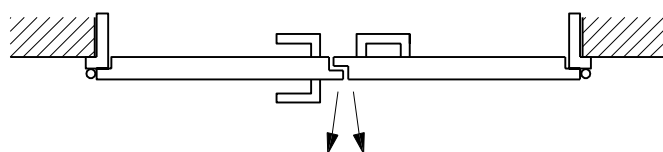
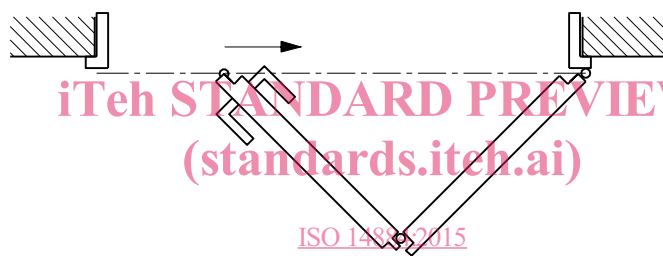


Figure 2 — Hinged door, double leaf



ISO 14884:2015
<https://standards.itech.ai/catalog/standards/sist/33010b57-ef94-4b7b-94af-78e1535f2b0f/iso-14884-2015>
Figure 3 — Sliding door, folding type

3.2.2

sliding door

door where *leaf/leaves* (3.6) is/are free to slide in a vertical plane and leaf/leaves are secured at the top and the bottom

Note 1 to entry: See [Figure 4](#).

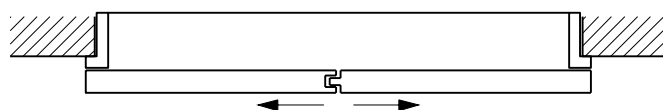


Figure 4 — Sliding door, double leaf

3.2.3

pantograph door

plug door fixed on a cantilever hinge either from the top or the side

Note 1 to entry: See [Figure 5](#).

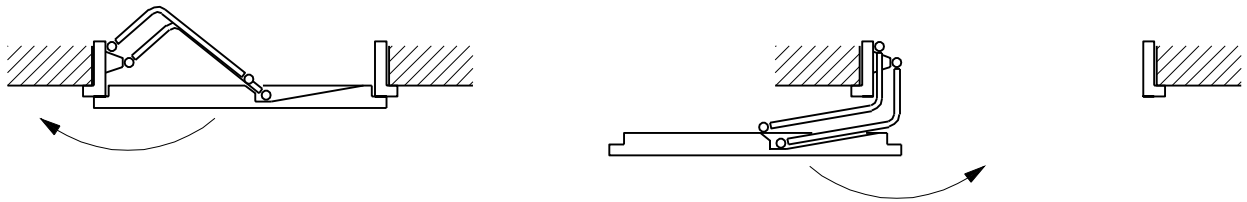


Figure 5 — Pantograph door

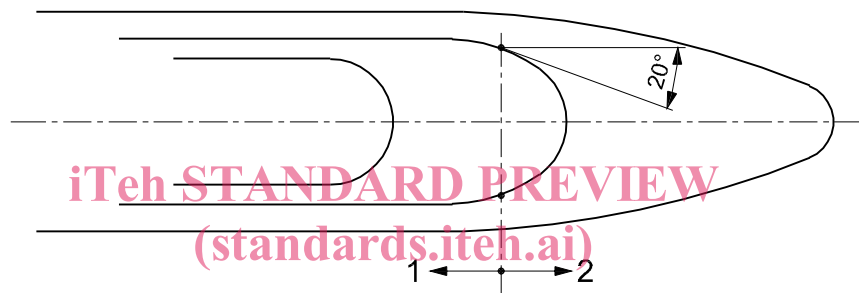
3.3**flag administration**

government of the state whose flag the yacht flies

3.4**forward facing position**

any vertical surface within 20° normal to transverse axis

Note 1 to entry: See [Figure 6](#).



ISO 14884:2015
<https://standards.iteh.ai/catalog/standards/iso-14884-2015/04-15-7b-94af-78e1535f2b0f/iso-14884-2015>
Figure 6 — Forward facing position

3.5**glazing**

transparent or translucent pane installed in door *leaf/leaves* ([3.6](#))

[SOURCE: ISO 11336-1:2012, 3.6, modified]

3.6**leaf****leaves**

opening section of a door assembly

3.7**operation mode**

allowed mode to open and close the door, manually or by a power drive mechanism

3.7.1**manually operated door**

door that is opened and closed by hand

3.7.2**power operated door**

door that is opened and closed by electrical or hydraulic motor

3.8**storm shutter**

portable protective closure fitted to the glazing and which is fitted on the outside

3.9 weather deck
uppermost complete weathertight deck extending to the side shell fitted as an integral part of the vessel's structure and which is exposed to the sea and weather

4 Symbols and abbreviated terms

- a smaller side of plate panel
- AP aft end of the load line length (L)
- A_s shear area of stiffeners and frames
- α aspect ratio of single plate field
- b larger side of plate panel
- b' breadth of deckhouse at the position considered
- B' breadth of ship on the exposed weather deck at the position considered
- c_a aspect ratio coefficient of plate panel
- c_B block coefficient
- c_L factor based on vessel length
- dsw deepest seagoing waterline
- f_B factor based on the breadth of the deckhouse in relation to the breadth of the vessel
- f_L factor based on longitudinal location
- f_{pl} material factor
- γ_m safety factor for structural resistance
- h vertical distance from dsw to midpoint of plate field or stiffener
- h_f additional height above
- h_{sill} vertical distance from dsw to top of door sill
- h_{std} standard superstructure height
- k factor considering end conditions for bending
- L load line length
- l unsupported span of stiffener
- m factor considering aspect ratio of load distribution
- n factor relating to location and vessel length
- p_d design pressure
- q factor considering end conditions for shear
- R_{eH} yield strength

STANDARD PREVIEW
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/33010b57-e94-4b7b-94af-78e1535f2b0f/iso-14884-2015>

$R_{p0,2}$	offset yield strength at 0,2 % plastic deformation
R_m	tensile strength
s	spacing of stiffeners
σ_a	allowable stress
t_k	addition for corrosion or production tolerance
W_{sf}	section modulus of stiffeners
x	distance between midpoint of door considered and AP

5 Design Criteria

5.1 General

NOTE Other International Standards and regulations, e.g. dealing with stability, buoyancy, watertight and weathertight integrity, and fire safety, can have restrictions on the position of appliances which are outside the scope of this International Standard and which are, therefore, not treated here. It is, however, necessary for the builder or user to ensure that the appliances comply with other relevant International Standards.

All door leaves shall be permanently attached or retained (as applicable to door type) to the frame and/or adjacent structure in which they are fitted. All doors shall be arranged such that the external loads are transferred in compression to the door frame or to the adjacent structure.

Doors forming part of the designated escape routes shall also comply with the requirements of 5.6.

5.2 Location

<https://standards.iteh.ai/catalog/standards/sist/33010b57-ef94-4b7b-94af-78e1535f2b0f/iso-14884-2015>

The height of the lower edge of the opening above the respective deck shall not be less than the sill height specified in the applicable national or international regulations. Weathertight doors as specified in this International Standard shall not be installed in positions below the freeboard deck, in the superstructure side or if considered buoyant in the stability calculation. See Figure 7.

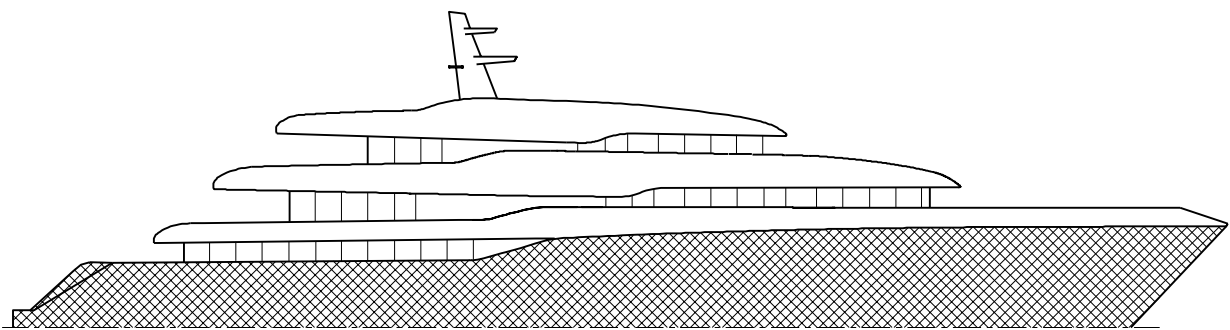


Figure 7 — Area where weathertight doors are not permitted

5.3 Material

The materials for the construction of the doors and frames made of steel or aluminium with dimensions as defined in 5.4.3 and properties appropriate for marine applications shall comply with the requirements of the certifying authority.

Where doors and/or frames are made of composite material or wood, the pressure requirements given in 5.4.2 may be applied with special considerations given to the strength and stiffness taking into account equivalent factors of safety.