INTERNATIONAL STANDARD

**ISO 17959**

First edition
2014-12-15

# General requirements for solid wood flooring

*Exigences générales pour revêtements de sol en bois massif*



Reference number
ISO 17959:2014(E)



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

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# Foreword

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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 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 218, *Timber*.



# General requirements for solid wood flooring

## 1 Scope

This International Standard specifies the requirements and test methods of characteristics of solid wood flooring boards for internal (interior) use as flooring. It also specifies packaging and marking requirements.

It is applicable to both finished and unfinished solid wood flooring board. Solid wood parquet is not covered.

## 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 2409, *Paints and varnishes — Cross-cut test*

ISO 3130:1975, *Wood — Determination of moisture content for physical and mechanical tests*

ISO 15184, *Paints and varnishes — Determination of film hardness by pencil test*

ISO 24294, *Timber — Round and sawn timber — Vocabulary*

ISO 16415, *Non-structural timber grading requirements*



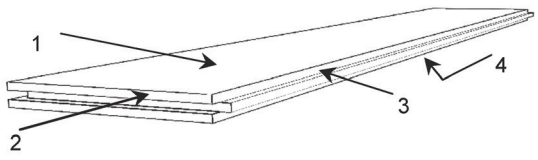
## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 24294 and the following apply.

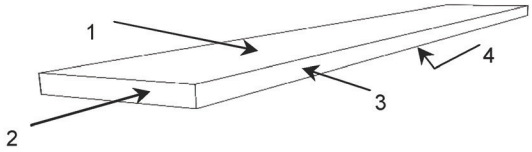
**3.1**
**solid wood flooring**
assembly of individual solid wood boards installed either on the primary structure or on the sub-floor

**3.2**
**solid wood flooring board**
long solid (single-layer) wood piece with parallel sides prepared to a regular thickness and constant profile(s) with or without profiled edges and/or ends, capable of being assembled with other analogous wood pieces

Note 1 to entry: See Figure 1.




**a) With profiled edges and/or ends**




**b) Without profiled edges and/or ends**

**Key**

1 face
2 end

3 edge
4 back

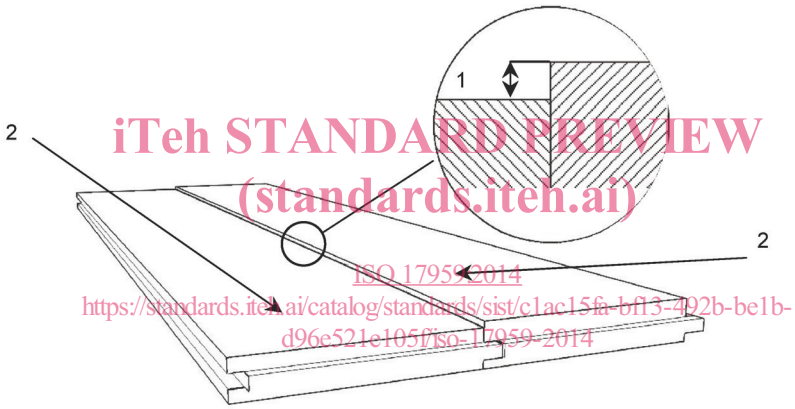
**Figure 1 — Example of solid wood flooring board**

**3.3**
**finished solid wood flooring board**
flooring board that has been surface-coated with lacquer, wax, oil, etc.

**3.4**
**unfinished solid wood flooring board**
flooring board without any surface coating

**3.5**
**lipping**
**mismatch**
difference in height between two adjacent faces of assembled flooring boards when laid on a flat surface

Note 1 to entry: See Figure 2



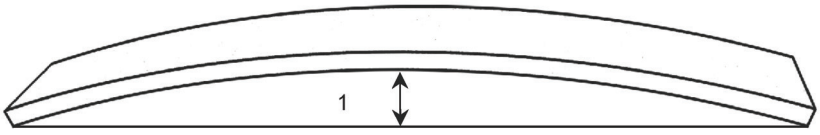


**Key**
1 lipping
2 face

**Figure 2 — Example of lipping**

**3.6**
**bow**
lengthwise curvature of a flooring board perpendicular to the face

Note 1 to entry: See Figure 3.

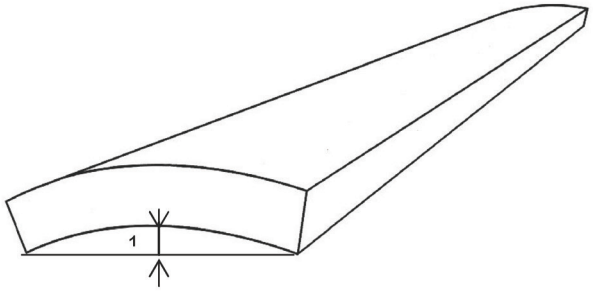



**Key**
1 bow

**Figure 3 — Example of bow**

**3.7**
**cup**
curvature of a flooring board across the width of the face

Note 1 to entry: See Figure 4.




**Key**
1 cup

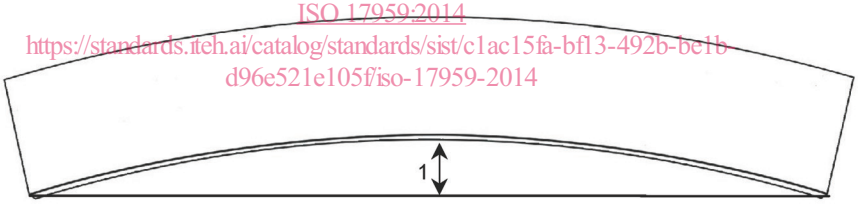
**Figure 4 — Example of cup**

**3.8**
**spring**
lengthwise curvature of a flooring board perpendicular to the edge



Note 1 to entry: See Figure 5.






**Key**
1 spring

**Figure 5 — Example of spring**

**3.9**
**twist**
distortion of a solid wood flooring board in which one corner is out of the plane of the other three corners

Note 1 to entry: See Figure 6.


**Key**
1 twist

**Figure 6 — Example of twist**

# 4 Requirements

## 4.1 Moisture content

Unless otherwise agreed on the order between buyer and supplier, individual solid wood flooring board shall have moisture content before the shipment of the first delivery between 6 % and the average equilibrium moisture content of the wood found in the customer's local climate.

NOTE For instance, the moisture content in France is between 7 % and 11 %.

## 4.2 Geometrical characteristics

### 4.2.1 General

Unless otherwise agreed on the order between buyer and supplier, all dimensions of solid wood flooring board shall be given at a reference moisture content of 9 %. Unless there is evidence to the contrary, it shall be assumed that the thickness and width of a piece of timber increase by 0,25 % for every 1 % of moisture content above the reference moisture content, and decrease by 0,25 % for every 1 % of moisture content below the reference moisture content.

### 4.2.2 Dimensions and tolerance

#### 4.2.2.1 Dimensions



The common dimensions are given in Table 1.

**Table 1 — Dimensions for solid wood flooring board**



Dimensions in millimetres

| Thickness | Width | Length |
|---|---|---|
| ≥10 | ≥90 | ≥ 400 |

NOTE The length and width of the solid wood flooring board refer to face size of the solid wood flooring board.

#### 4.2.2.2 Tolerances

Unless otherwise agreed on the order between buyer and supplier, solid wood flooring board shall have the tolerances of dimensions at the time of the first delivery given in Table 2.

**Table 2 — Tolerances**

Dimensions in millimetres

| Dimension | Tolerance |
|---|---|
| Length | ±2,0 |
| Width | ±1,0 |
| Thickness | ±1,0 |
| Lipping (mismatch) | ≤0,5 |

### 4.2.3 Deformation

#### 4.2.3.1 General

Unless otherwise agreed on the order between buyer and supplier, the deformation limitations shall meet the requirements in 4.2.3.2 to 4.2.3.5.

#### 4.2.3.2 Cup

The cup shall not exceed 0,7 % of the width at the time of the first delivery.

#### 4.2.3.3 Bow

The bow shall be evaluated taking into account the length and the method of laying.

If the flooring boards are to be installed by gluing only, this shall be stated when ordering. For such flooring boards, the bow shall not exceed 0,5 % of the length at the time of the first delivery.

If the flooring boards are to be installed by nailing, the limit for the bow shall be determined by their suitability to be laid using commercially available equipment.

#### 4.2.3.4 Spring

The spring shall be evaluated taking into account the length.

For lengths not exceeding 1 m, the spring shall not exceed 0,1 % of the considered length at the time of the first delivery.

For lengths more than 1 m, the spring shall not exceed 0,2 % of the considered length at the time of the first delivery.

#### 4.2.3.5 Twist



The twist shall be evaluated taking into account the length and the method of laying.

If the flooring boards are to be installed by gluing only, this shall be stated when ordering. For such flooring boards, the twist shall not exceed 0,15 % of the length at the time of the first delivery.



If the flooring boards are to be installed by nailing, the limit for the twist shall be determined by its suitability to be laid using commercially available equipment.

### 4.2.4 Squareness and other angular deviations

The deviation from all the 90° angles and from required angles for specific patterns shall not exceed 0,2 % measured across the width.

## 4.3 Paint film performance

**4.3.1** This subclause is only applicable to finished solid wood flooring board coated with paint sand; it is not applicable to finished solid wood flooring board coated with oil, wax and unfinished solid wood flooring board.

**4.3.2** The performance requirements of the paint film shall comply with Table 3.

**Table 3 — Performance requirements of paint film**

| Performance | Requirements |
|---|---|
| Adhesion (class) | ≤3 |
| Hardness | ≥H |

## 4.4 Grading

The grading requirements of solid wood flooring boards shall comply with ISO 16415.