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Bamboo-wood composite for container flooring

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Contents

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This document was prepared by Technical Committee ISO/TC 296, *Bamboo and rattan*.

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.

Bamboo-wood composite for container flooring

1 Scope

This document specifies the classification, technical requirements, inspection methods, inspection rules, marking, packaging, transportation and storage of bamboo-wood composite for container flooring.

This document is ~~for~~ applicable to the types of freight containers specified in ~~the~~ ISO 1496-1:2013~~, where applicable~~.

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 668:2020, *Series 1 freight containers — Classification, dimensions and ratings*~~

ISO 1496-1:2013, *Series 1 freight containers — Specification and testing — Part 1: General cargo containers for general purposes*

ISO 2074, *Plywood — Vocabulary*

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 9426:2003, *Wood-based panels — Determination of dimensions of panels*

ISO 9427, *Wood-based panels — Determination of density*

ISO 16979, *Wood-based panels — Determination of moisture content*

ISO 21625:2020, *Terminology of bamboo products*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2074, ISO 21625:2020 ~~and ISO 2074~~ and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
bamboo-wood composite for container flooring
bamboo-wood composite made from bamboo and a wood element by gluing, hot pressing, used for container flooring

Note 1 to entry: A ~~larger~~large range of raw materials for making bamboo-wood composite is included. ~~Bamboo~~The bamboo element is processed using a mechanical method with bamboo as the raw material~~, such as~~ (e.g. bamboo interlaced mat, bamboo curtain, flattened bamboo board, bamboo fibre bundle sheet and bamboo strand~~.~~). "Wood element" refers to a sheet-like material processed from wood~~, for example,~~ (e.g. wood veneer ~~and,~~ wood strand).

[SOURCE: ISO 21625:2020, 3.3.4.9, modified — ~~The word "~~"for" added in the term. "bamboo and wood element" replaced "wood veneer and bamboo curtain~~" has been replaced by "bamboo and wood element" in the term;~~" in the definition ~~has been modified;~~ Note 1 to entry ~~has been~~ added.]

3.2
unfinished bamboo-wood composite for container flooring
bamboo-wood composite board without coating or special material applied to any exposed sides

3.3
finished bamboo-wood composite for container flooring
bamboo-wood composite board with coating or special material applied to any exposed sides or both sides

4 Classification

Bamboo-wood composite for container flooring shall be classified based on the surface treatment, as follows:

a) unfinished bamboo-wood composite for container flooring;

b) finished bamboo-wood composite for container flooring.

5 Technical requirements

5.1 Specifications

5.1.1 Size and tolerance

Product size and tolerance shall meet the requirements of Table 1.

Table 1 — Size and tolerance of bamboo-wood composite for container flooring

Items	Size ~~(~~mm~~)~~	Tolerance ~~(~~mm~~)~~
~~Length~~Length[a]	~~1010, 1388, 1626, 1967, 2224, 2400~~1 010, 1 388, 1 626, 1 967, 2 224, 2 400	+0, ~~–~~1,0
~~Width~~Width[a]	636, ~~1160~~1 160	+0, ~~–~~1,0
Thickness	28	±0,8
~~NOTE~~ [a] Alternative length and width dimensions may be agreed between the buyer and seller.		

5.1.2 Diagonal difference

The diagonal difference shall not be greater than 2 mm.

5.1.3 Edge straightness

The edge straightness shall not be greater than 0,5 mm/m.

5.1.4 Degree of warping

The degree of warping in the length and width directions shall not be greater than 0,3 %, see 6.4.

NOTE Bamboo-wood composite for container flooring has been chamfered during the manufacturing process, therefore no additional requirements are necessary in this document.

5.2 Appearance quality

The appearance quality requirements for unfinished bamboo-wood composite for container flooring shall be in accordance with Tables 2 and 3. The appearance quality requirements for finished bamboo-wood composite for container flooring shall be in accordance with Table 4.

Table 2 — Appearance quality requirements for unfinished bamboo-wood composite for container flooring with wood veneer as surface layer

Nature of defects	Quality requirements	
	Surface layer	Bottom layer
Crack	The width of an individual crack shall be no greater than 2 mm. a) When the length of the crack is not greater than 100 mm, the number of cracks per metre of board width shall be no more than six. b) When the length of the crack is between 100 mm and 200 mm, the number of cracks per metre of board width shall be no more than four. c) When the length of the crack is between 200 mm and 300 mm, the number of cracks per metre of board width shall be no more than three.	The width of an individual crack shall be no greater than 3 mm.<br~~The width of an individual crack shall be no greater than 3 mm.~~ a) ~~a)~~ When the length of the crack is not greater than 200 mm, the number of cracks per metre of board width shall be no more than six. b) ~~b)~~ When the length of the crack is between 200 mm and 300 mm, the number of cracks per metre of board width shall be no more than four. c) ~~c)~~ When the length of the crack is between 300 mm and 400 mm, the number of cracks per metre of board width shall be no more than three.
	Cracks beyond the dimensions specified in the row directly above shall be patched. The cracks shall be repaired and ~~leveled~~levelled with putty which is similar in colour to the board surface. When the cracks of multiple lengths are present simultaneously, the total number shall not exceed the maximum limit specified for each type of crack.	
Live knot	The diameter of an individual live knot shall be no greater than 30 mm and the number of live knots on the entire surface layer shall be no more than three.	The diameter of an individual live knot shall be no greater than 50 mm and the number of live knots on the entire bottom layer shall be no more than six (~~Provided~~provided that the live knot is not located within 200 mm of the edge).
Dead knot	The diameter of an individual dead knot shall be no greater than 6 mm and the number of dead knots on the entire surface layer shall be no more than five.	When the diameter of an individual dead knot is not greater than 15 mm, there is no limitation on the number of dead knots (~~Provided~~provided that the dead knot is not located within 200 mm of the edge).
Chromatic aberration	No obvious colour difference	No restrictions
Discoloration	Not allowed	Allowed
Decay	Not allowed	
	Round hole	

<table>
<tr><th rowspan="2">Nature of defects</th><th colspan="2">Quality requirements</th></tr>
<tr><th>Surface layer</th><th>Bottom layer</th></tr>
<tr><td rowspan="4">Wormhole, dog holes, hole</td><td>The diameter of an individual hole shall be less than 2 mm.
The edge of the hole shall not be discoloured.
Holes shall not be aggregated.</td><td>The diameter of an individual hole shall be less than 3 mm, and the holes shall not be aggregated;
The diameter of an individual hole shall be less than 5 mm. The total number of holes on the entire bottom layer shall be no more than ~~ten~~10, and the distance between holes shall be greater than 100 mm.</td></tr>
<tr><td colspan="2">Linear wormhole</td></tr>
<tr><td>The length shall be less than 10 mm~~, and the~~. The width shall be less than 1 mm.
Any wormholes shall not be discoloured.
Wormholes shall not be aggregated.</td><td>The length shall be less than 10 mm~~, the~~. The width shall be less than 1 mm and not located within 200 mm of the side.
Wormholes shall not be aggregated.</td></tr>
<tr><td colspan="2">Other types of holes shall not be allowed~~, and all~~. All holes shall be repaired and filled with putty.</td></tr>
<tr><td>Bark pocket, resin canal</td><td colspan="2">Not allowed</td></tr>
<tr><td>Surface plate lamination</td><td colspan="2">Not allowed</td></tr>
<tr><td>Surface plate splicing</td><td colspan="2">Not allowed</td></tr>
<tr><td>Surface plate patched with slice or strip</td><td>Not allowed</td><td>Allowed</td></tr>
<tr><td>Stacking of long and medium plates</td><td colspan="2">An individual width shall be no greater than 8 mm.
Each layer shall be staggered.</td></tr>
<tr><td rowspan="2">Cross-band veneer lamination</td><td colspan="2">An individual veneer width shall be no greater than 5 mm.</td></tr>
<tr><td colspan="2">Each layer's width per metre of board shall not exceed 3 strips.</td></tr>
<tr><td>Veneer gap</td><td colspan="2">An individual width not greater than 3 mm shall be filled with putty.
An individual width between 3 mm and 10 mm shall be repaired by inserting strips. The gaps in each layer shall be staggered.</td></tr>
<tr><td>Defects of cross-band veneer</td><td colspan="2">a) When the depth is less than 10 mm and the width is less than 200 mm, there shall be no more than two gaps on the same side.
b) When the depth is less than 5 mm, the width shall be ignored.
c) The defect of cross-band veneer in the same location on each side shall not exceed two layers of veneer~~, and defects~~. Defects in the core shall be repaired and filled with putty.</td></tr>
<tr><td>Grease</td><td>Not obvious</td><td>Slight, no obvious sticky feeling</td></tr>
<tr><td>Glitch and groove mark</td><td>Slight</td><td>~~Glitchs~~Glitches and groove marks shall not penetrate the veneer~~, and they~~. They shall be repaired and ~~leveled~~levelled with putty.</td></tr>
<tr><td>Sand through</td><td>Not allowed</td><td>Not serious</td></tr>
</table>