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Plywood — Classification by surface appearance —

Part 2: Hardwood

Contreplaqué — Classification selon l'aspect des faces —

Partie 2: Bois feuillus

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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 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 89, *Wood-based panels*, Subcommittee SC 3, *Plywood*.

This second edition cancels and replaces the first edition (ISO 2426-2:2000), which has been technically revised.

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

— It is precised that hardwood species includes tropical and temperate hardwood.

A list of all parts in the ISO 2426 series can be found on the ISO website.

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.

Plywood — Classification by surface appearance —

Part 2: Hardwood

1 Scope

This document specifies the nature and limits of characteristics inherent in wood and manufacturing defects enabling the visual assessment of the plywood for allocation to an appearance class.

This document applies to plywood, the surface veneers of which are made from hardwood species[1)] including tropical and temperate hardwood.

It does not apply to overlaid panels.

2 Normative reference

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 2426-1, *Plywood — Classification by surface appearance — Part 1: General*

3 Terms and definitions

No terms and definitions are listed in this document.

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/

4 Classification by surface appearance

4.1 Appearance classes

Assessment of characteristics and defects for determination of appearance class shall be carried out in accordance with ISO 2426-1. Surface classification shall be based on the permissible characteristics and defects within each of the appearance classes as specified in 4.2.

4.2 Permissible characteristics and defects

4.2.1 General

Each surface shall be individually assigned to one of the appearance classes E, I, II, III or IV, as defined by the permissible characteristics according to Table 1 and permissible defects according to Table 2.

1) Conventionally, broadleaved species.

4.2.2 Characteristics inherent in wood

Classification according to characteristics inherent in wood is given in Table 1.

Table 1 — Surface appearance classification of hardwood veneer

<table>
<tr><th colspan="2" rowspan="2">Category of characteristics</th><th colspan="5">Appearance class</th></tr>
<tr><th>E</th><th>I</th><th>II</th><th>III</th><th>IV</th></tr>
<tr><td colspan="2">Pin knots[a]</td><td rowspan="11">Practically absent</td><td>3/m² permitted</td><td colspan="2">Permitted</td><td></td></tr>
<tr><td colspan="2" rowspan="3">Sound intergrown knots</td><td colspan="3">Permitted up to an individual diameter of:</td><td rowspan="3">Permitted, but see Note</td></tr>
<tr><td>15 mm provided their cumulative diameter does not exceed 30 mm/m²</td><td>35 mm</td><td>50 mm</td></tr>
<tr><td colspan="3">Such knots may have splits provided they are
very slight | slight</td></tr>
<tr><td colspan="2" rowspan="2">Unsound or non-adhering knots and knot holes</td><td colspan="3">Permitted up to an individual diameter of:</td><td rowspan="2">Permitted, but see Note</td></tr>
<tr><td>6 mm if filled and up to a number of 2/m²</td><td>5 mm if unrepaired 10 mm if filled and up to a number of 3/m²</td><td>40 mm</td></tr>
<tr><td rowspan="6">Splits</td><td rowspan="5">Open</td><td colspan="3">Permitted if less than:
1/10 | 1/5 | 1/3
of panel length up to an individual width of:</td><td rowspan="6">Permitted, but see Note</td></tr>
<tr><td>3 mm</td><td>5 mm</td><td>20 mm</td></tr>
<tr><td colspan="3">and up to a number of:</td></tr>
<tr><td>3/m</td><td>3/m</td><td>3/m</td></tr>
<tr><td colspan="3">of panel width</td></tr>
<tr><td colspan="2">if properly filled</td><td>if unrepaired or unlimited if all filled</td></tr>
<tr><td>Closed</td><td colspan="3">Permitted</td><td></td></tr>
<tr><td colspan="2">Abnormalities due to insects, marine borers and parasitic plants</td><td rowspan="2">Not permitted</td><td>Not permitted</td><td>Marks of parasitic plants not permitted. Insects and marine borer holes permitted up to a:
diameter of 3 mm vertically to the plane of the panel up to a number of 10/m² | width of 15 mm and length of 60 mm up to a number of 3/m²</td><td></td><td>Permitted, but see Note</td></tr>
<tr><td colspan="2">Inbark</td><td>Not permitted</td><td>Permitted up to a width of:
5 mm if properly filled | 25 mm</td><td></td><td>Permitted, but see Note</td></tr>
<tr><td colspan="7">NOTE Characteristics inherent to wood are permitted provided that they do not impair the serviceability of the panel.
[a] Pin knots: sound intergrown knots of no more than 3 mm diameter.</td></tr>
</table>

Table 1 *(continued)*

Category of characteristics	Appearance class				
	E	I	II	III	IV
Irregularities in the structure of the wood	Practically absent	Permitted if very slight	Permitted if slight	Permitted	
Discoloration which is not wood-destroying		Permitted if low contrast		Permitted	
Fungal decay which is wood-destroying	Not permitted				
Other characteristics	Pratically absent	To be considered under the category which they most closely resemble			
NOTE Characteristics inherent to wood are permitted provided that they do not impair the serviceability of the panel.					
[a] Pin knots: sound intergrown knots of no more than 3 mm diameter.					

4.2.3 Manufacturing defects

Classification according to manufacturing defects is given in Table 2.

Table 2 — Surface appearance classification of hardwood plywood

Category of defect	Appearance class				
	E	I	II	III	IV
Open joints	Not permitted	Not permitted	Permitted up to a width of: 3 mm; and up to a number of: 1/m; of panel width with joints: filled if more than 1 mm in width	Permitted up to a width of: 5 mm; and up to a number of: 2/m; of panel width with joints: unfilled	Permitted up to a width of: 25 mm; and up to a number of: unlimited; of panel width with joints: unfilled
Overlaps		Not permitted	Permitted up to a number of $1/m^2$ and up to 100 mm length	Permitted up to a number of $2/m^2$	Permitted but see Note
Blisters		Not permitted			
Hollows, imprints and bumps		Not permitted	Permitted if slight	Permitted	
Roughness		Not permitted	Permitted if slight	Permitted	
Sanding through		Not permitted		Permitted up to an extent of panel surface of: 1 %	5 % but see Note
Glue penetration		Not permitted	Permitted if slight and occasional	Permitted up to an extent of 5 % of panel surface	Permitted, but see Note
Foreign particles	Not permitted	Not permitted	Ferrous particles not permitted		
NOTE Manufacturing defects are permitted provided that they do not impair the serviceability of the panel.					

Table 2 *(continued)*

Category of defect	Appearance class				
	E	I	II	III	IV
Repairs: a) Patches b) Shims	Practically without defects	Permitted if properly made and tightly filled up to number of:			
		$3/m^2$	$6/m^2$	unlimited	
c) Synthetic fillers	Not permitted	Not permitted	Permitted within the limits specified in the categories		unlimited
Defects at the edges of the panel due to sanding or sawing	Practically without defects	2 mm	Permitted up to 5 mm from the edge		Permitted, but see Note
Other characteristics or defects		To be considered under the category which they most closely resemble			
NOTE Manufacturing defects are permitted provided that they do not impair the serviceability of the panel.					

Bibliography

[1] ISO 1096, *Plywood — Classification*

[2] ISO 2074, *Plywood — Vocabulary*

[3] ISO 2426-3, *Plywood — Classification by surface appearance — Part 3: Softwood*