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Plywood — Classification by surface appearance —

Part 4: Palm-plywood

Contreplaqué — Classification selon l'aspect des faces —

Partie 4: Contreplaqué de palmier

ICS: 79.060.10

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Foreword

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The committee responsible for this document is ISO/TC 89, Wood based panels, Subcommittee SC 3, Plywood.

ISO 2426 consists of the following parts, under the general title *Plywood — Classification by surface appearance*:

- *Part 1: General*
- *Part 2: Hardwood*
- *Part 3: Softwood*
- *Part 4: Palm plywood*

Introduction

Plywood — Classification by surface appearance —

Part 4: Palm-plywood

1 Scope

This part of ISO 2426 specifies the nature and limits of characteristics inherent in palm-plywood and manufacturing defects enabling the visual assessment of the plywood for allocation to an appearance class.

This part of ISO 2426 applies to palm-plywood, the surface veneers of which are made from oil palm trunk.

2 Normative references

The following referenced documents are indispensable for the application 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 2074, *Plywood — Vocabulary*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2074, ISO 2426-1 and the following apply.

3.1

Oil palm veneer

A thin sheet of uniform thickness obtained from oil palm trunk by slicing, rotary cutting, semi rotary-cut or sawing.

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 characteristic according to [Table 1](#) and permissible defects according to [Table 2](#).

4.2.2 Characteristics inherent in palm-plywood

Classification according to characteristics inherent in palm-plywood veneer is given in [Table 1](#).

The outer veneer is usually denser, lower in moisture content, higher in fibre (also called vascular bundle) content and lower in parenchyma compared to inner veneer. These characteristics may cause irregularity in veneer surface appearance.

Table 1 — Surface appearance classification of palm veneer

| Categories of characteristics | | Appearance class | | | | |
|-------------------------------|--|--------------------|---|--|---|-------------------------|
| | | E | I | II | III | IV |
| 4.2.2.1 | Pin knots ^a (Not applicable) | Practically absent | | | | |
| 4.2.2.2 | Sound intergrown knots (Not applicable) | | | | | |
| 4.2.2.3 | Unsound or non-adhering knots and knot holes (Not applicable) | | | | | |
| 4.2.2.4 | Splits | | Open | Permitted if less than: | | |
| | | 1/10 | | 1/5 | 1/3 | |
| | Of panel length up to an individual width of: | | | | | |
| | 3 mm | 5 mm | 20 mm | | | |
| | And up to a number of: | | | | | |
| | 3/m | 3/m | 3/m | | | |
| | Of panel width | | | | | |
| | | | If properly filled | If unrepaired or unlimited if all filled | | |
| | Closed | | Permitted | | | |
| 4.2.2.5 | Abnormalities due to insects, marine borers and parasitic plants | Not permitted | Not permitted | Marks of parasitic plants not permitted. Insects and marine borer holes permitted up to a: | | Permitted, but see Note |
| | | | | Diameter of 3 mm vertically to the plane of the panel up to a number of 10/m ² | Width of 15 mm and length of 60 mm up to a number of 3/m ² | |
| 4.2.2.6 | Pin holes | | 1.5mm or less in diameter but shall not be clustered; Max 4 per sheet | Permitted if occasional and isolated | Permitted if not excessive | Permitted, but see Note |
| 4.2.2.7 | Inbark/bark pocket | Not permitted | Permitted up to a width of: | | Permitted, but see Note | |
| | | | 5 mm if properly filled | 25 mm | | |

NOTE: Characteristics inherent to palmwood 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.

^b Irregularities: Some older oil palm trees tend to develop a darker coloration and dark stripes at the lower section of the tree which is a valued feature.

Table 1 (continued)

| Categories of characteristics | | Appearance class | | | | |
|-------------------------------|--|--------------------|---|-----------|-----------|----|
| | | E | I | II | III | IV |
| 4.2.2.8 | Irregularities in the structure of the palmwood ^b | Practically absent | Permitted (natural appearance-tiger grain) | | Permitted | |
| | | | If very slight | If slight | | |
| 4.2.2.9 | Discoloration which is not palmwood-destroying | | Permitted if low contrast | | Permitted | |
| 4.2.2.10 | Fungal decay which is palmwood-destroying | Not permitted | | | | |
| 4.2.2.11 | Other characteristics | Practically absent | To be considered under the category which they most closely resemble. | | | |

NOTE: Characteristics inherent to palmwood 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.

^b Irregularities: Some older oil palm trees tend to develop a darker coloration and dark stripes at the lower section of the tree which is a valued feature.

Additional: pin holes (mention in part 1)

4.2.3 Manufacturing defects

Classification according to manufacturing defects is given in [Table 2](#).

Table 2 — Surface appearance classification of palm-plywood

| Categories of defect | | Appearance class | | | | |
|----------------------|-----------------------------|-----------------------------------|---------------------|--|--|-------------------------------------|
| | | E | I | II | III | IV |
| 4.2.3.1 | Open joints | Not permitted | Not permitted | Permitted up to a width of: | | |
| | | | | 3 mm | 5 mm | 25 mm |
| | | | | And up to a number of: | | |
| | | | | 1/m | 2/m | unlimited |
| | | | | Of panel width with joints | | |
| | | Filled if more than 1 mm in width | unfilled | unfilled | | |
| 4.2.3.2 | 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 ^a |
| 4.2.3.3 | Blisters | Not permitted | | | | |
| 4.2.3.4 | Hollows, imprints and bumps | Not permitted | Permitted if slight | Permitted | | |
| 4.2.3.5 | Roughness | Not permitted | Permitted if slight | Permitted | | |
| 4.2.3.6 | Sanding through | Not permitted | | | Permitted up to an extent of panel surface of: | |
| | | | | | 1% | 5% but see Note ^a |

Table 2 (continued)

| Categories of defect | | Appearance class | | | | |
|----------------------|--|-----------------------------|--|---|-----------|--------------------------------------|
| | | E | I | II | III | IV |
| 4.2.3.7 | Glue penetration ^b | | Not permitted | Permitted If slight and occasional | | Permitted but see Note ^a |
| | | | | Up to an extent of 5% of panel surface | | |
| 4.2.3.8 | Foreign particles | Not permitted | Not permitted | Ferrous particles not permitted | | |
| 4.2.3.9 | Repairs: | Practically without defects | Permitted if properly made and tightly filled up to number of: | | | |
| 4.2.3.10 | 1) Patches 2) Shims | | 3/m ² | 6/m ² | Unlimited | |
| | 3) 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 | Permitted up to | | | Permitted, but see Note ^a |
| | | | 2 mm from the edge | 5 mm from the edge | | |
| 4.2.3.11 | Other characteristics or defects | | To be considered under the category which they most closely resemble | | | |

^a Manufacturing defects are permitted provided that they do not impair the serviceability of the panel

^b Not applicable to resin pre-treated veneer

Annex A

(informative)

Additional terms

A.1 Oil palm trunk

Log that is obtained from a matured palm tree stem harvested during replanting activities usually after a 25-year rotation.

A.2 Outer veneer

Veneer obtained from the peripheral zone of an oil palm trunk, usually 20-30% of the trunk diameter.

A.3 Inner veneer

Veneer obtained from the intermediate zone of an oil palm trunk diameter beginning from the inner peripheral to central zone (section outside the pith).

NOTE 1 Generally, oil palm veneers are produced from the outer and inner sections of oil palm trunk which subsequently classified based on density into respectively outer and inner veneers.

NOTE 2 In a normal practice, oil palm trunk is peeled down to about 30 % of the trunk diameter to maintain panel quality.