

Paged

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Interior and
exterior
plywood
grades

Surface appearance classification of hardwood plywood according to European norm PN-EN 635-2



The standard gives general classification rules for the surface appearance of hardwood plywood according to both: defects inherent to wood characteristics and defects resulting from the manufacturing process. The standard covers hardwood plywood only. Plywood class is determined on the basis of the appearance of the surface. The plywood class description specifies the class of the right side first and then the class of the left side, e.g. Class II /III.

In the case of imported products described with B, S, BB and WG in accordance with SFS 2413, the following class relationship shall be noted: Class B (I), Class S (II), CLASS BB (III) and Class WG (IV).

Class I

Surface appearance classification determined by **wood characteristics**

ALLOWED

- ✓ Pin knots
Allowed with diameter of 3 mm; up to 3 pcs./m²
- ✓ Knots: sound, intergrown, light and dark
Allowed up to 15 mm in diameter, with shake, 5 pc/m²
- ✓ Black knots, intergrown knots, loose knots, knot holes
Allowed up to 6mm in diameter, 2 pcs/ m²
- ✓ Open shakes, open splits in spliced veneer
Allowed up to 1/10 of the sheet's length and up to 3mm width, 3 pcs/m when filled
- ✓ Close shakes
- ✓ Timber structure flaws (diagonal grain, swirly grain, burls, bud traces)
- ✓ Sound discoloration
Allowed light-coloured

NOT ALLOWED

- ✗ Inbark, light and dark

Surface appearance classification determined by **manufacturing process**

ALLOWED

- ✓ Knotting and patching:
 - a) Wooden inserts
 - b) WedgesAllowed when filled and complete, 3 pcs/m²
- ✓ Edge defects caused by sanding, cutting (fringe), veneer shortage
Allowed: up to 5 mm wide along the edge

NOT ALLOWED

- ✗ Overlap ridges
- ✗ Air pockets
- ✗ Scratches, grooves, ridges
- ✗ Uneven sanding
- ✗ Face veneer oversanding
- ✗ Glue stains
- ✗ Metal inclusions

Class I



Class I

Shake and insert



width $\leq 3\text{mm}$
length $\leq 1/10$
of the panel

Allowed ≤ 3 pcs / m^2

Sound intergrown knot



Allowed with
diameter up to
 ≤ 15 mm

Wood discoloration



Pin knots



Allowed with
diameter
 ≤ 3 mm,
 ≤ 3 pcs / m^2

Class II

Surface appearance classification determined by **wood characteristics**

ALLOWED

- ✓ Pin knots
- ✓ Knots: sound, intergrown, light and dark
Allowed up to 35 mm in diameter, with shakes.
- ✓ Black knots, intergrown knots, loose knots, knot holes
Allowed up to 6 mm in diameter without filling and up to 10 mm with filling, 3 pcs/ m²
- ✓ Open shakes
Allowed up to 1/5 of the sheet's length and up to 5mm width, 3 pcs/m when filled
- ✓ Closed shakes
- ✓ Inbark, light and dark
Allowed up to 5mm in width when filled
- ✓ Timber structure flaws (diagonal grain, swirly grain, burls, bud traces)
- ✓ Sound discoloration
Allowed light-coloured

Surface appearance classification determined by **manufacturing process**

ALLOWED

- ✓ Overlap ridges
Allowed with length of up to 100mm. 1 pc/m²
- ✓ Glue stains
Allowed when moderate
- ✓ Knotting and patching
 - a) Wooden inserts
 - b) Wedges
Allowed when filled and complete, 6 pcs/m²
- ✓ Edge defects caused by sanding, cutting (fringe), veneer shortage
Allowed: up to 5 mm wide along the edge
- ✓ Scratches, grooves, ridges
Allowed when moderate

NOT ALLOWED

- ✗ Air pockets
- ✗ Face veneer oversanding
- ✗ Metal inclusions

Class II

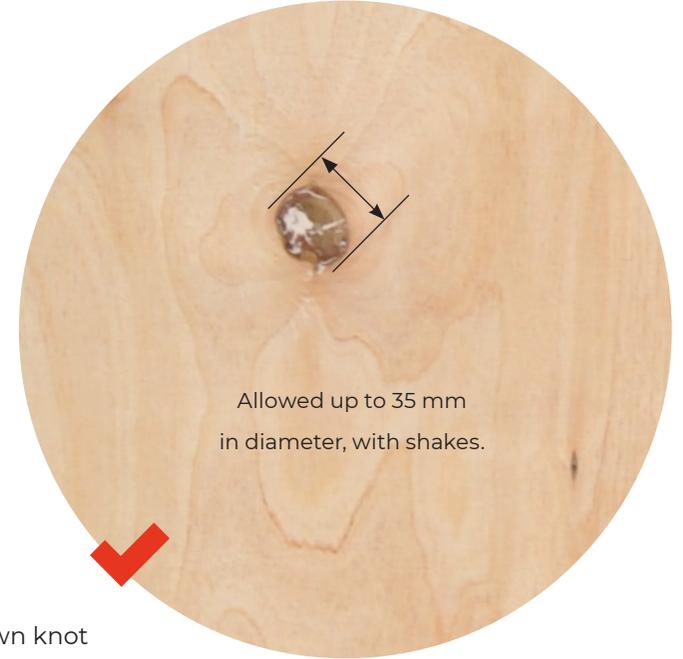


Class II

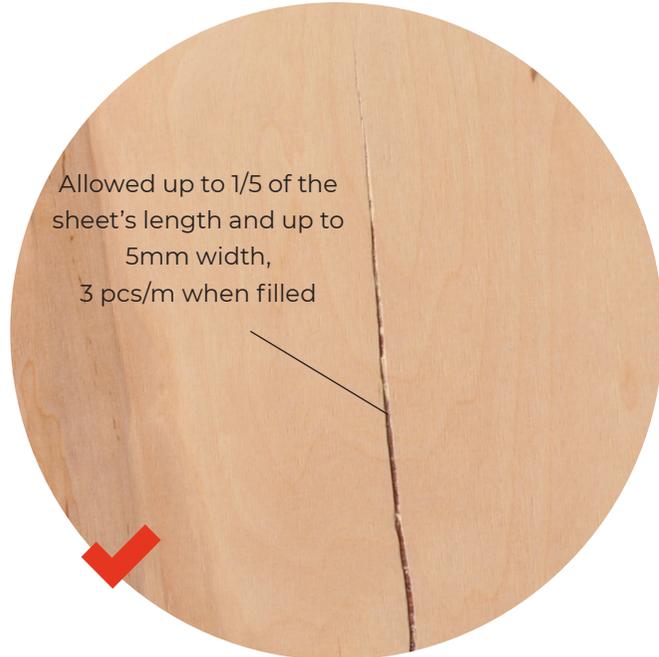
Wood discoloration



Sound and intergrown knot



Open shake



Sound and intergrown knot



Class II

Insert



Insert



Overlap ridge



Class II

Open shake



Filled shake



Filling



Class III

Surface appearance classification determined by **wood characteristics**

ALLOWED

- ✓ Pin knots
Allowed without restrictions
- ✓ Sound, ingrown knots
Allowed up to 50 mm in diameter, with shake.
- ✓ Black knots, intergrown knots, loose knots, knot holes
Allowed up to 40mm in diameter
- ✓ Open shakes, open splits in spliced veneer
Allowed up to 1/3 of the sheet's length and up to 20mm width, 3 pcs/m.
Allowed without restrictions when all shakes are filled.
- ✓ Closed shakes
Allowed without restrictions
- ✓ Inbark, light and dark
Allowed up to 25mm in width
- ✓ Timber structure flaws (diagonal grain, swirly grain, burls, bud traces)
- ✓ Sound discoloration

Surface appearance classification determined by **manufacturing process**

ALLOWED

- ✓ Overlap ridges
Allowed, 2pcs /m2
- ✓ Scratches, grooves, ridges
- ✓ Uneven sanding
- ✓ Face veneer oversanding
Allowed up to 10% of the panel's total surface
- ✓ Glue stains Allowed up to 5% of the panel's total surface
- ✓ Knotting and patching:
 - a) Wooden inserts
 - b) WedgesAllowed without restrictions
- ✓ Edge defects caused by sanding, cutting (fringe), veneer shortage
Allowed: up to 10 mm wide along the edge

NOT ALLOWED

- ✗ Air pockets
- ✗ Metal inclusions

Class III

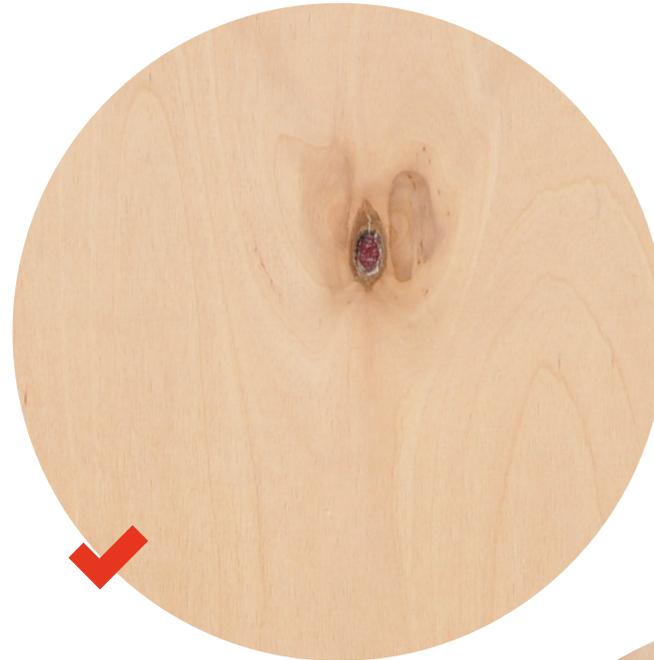


Class III

Sound ingrown knot



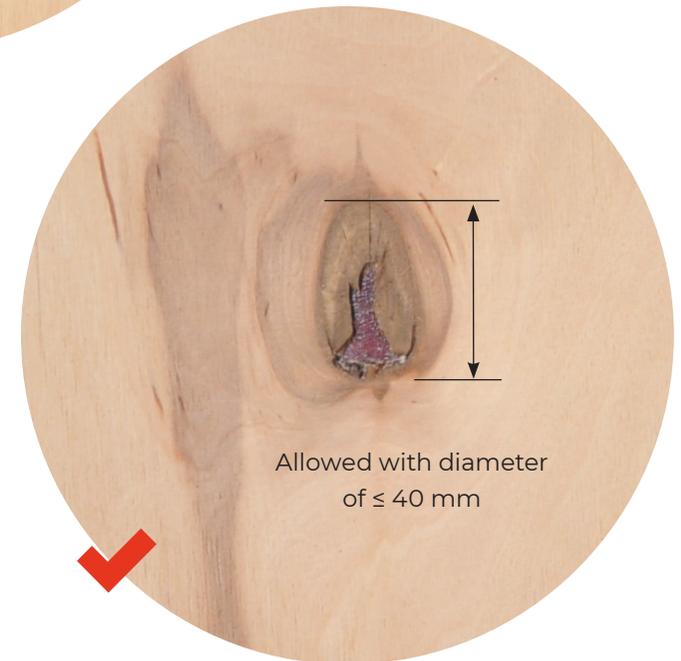
Open shake



Sound knot



Black knot

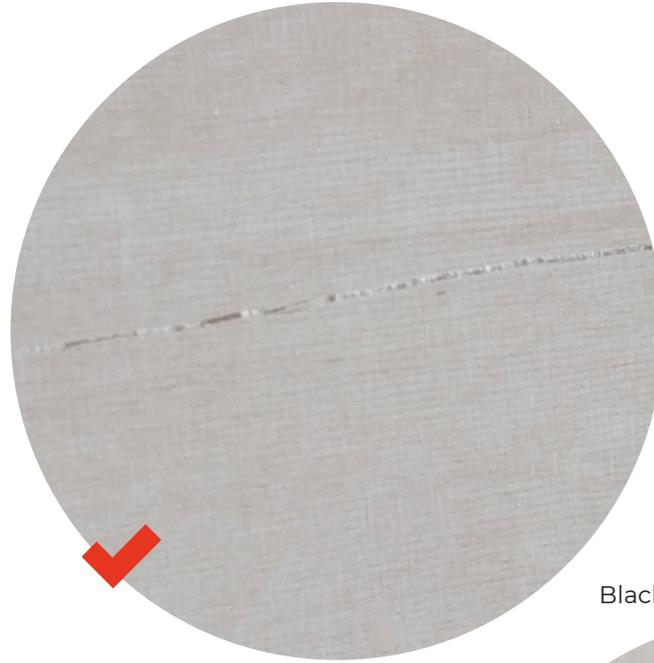


Class III

Shake with filling



Open shake



Overlap ridge



Black knots, intergrown knots



Class IV

Surface appearance classification determined by **wood characteristics**

ALLOWED

- ✓ Pin knots
- ✓ Sound, intergrown knots
Allowed without restrictions
- ✓ Black knots, intergrown knots, loose knots, knot holes
Allowed without restrictions
- ✓ Open shakes
Allowed without restrictions
- ✓ Closed shakes
- ✓ Inbark, light and dark
Allowed without restrictions
- ✓ Timber structure flaws (diagonal grain, swirly grain, burls, bud traces)
- ✓ Sound discoloration

Surface appearance classification determined by **manufacturing process**

ALLOWED

- ✓ Overlap ridges
Allowed without restrictions
- ✓ Scratches, grooves, ridges
- ✓ Uneven sanding
- ✓ Face veneer oversanding
Allowed up to 20% of the panel's total surface
- ✓ Glue stains
Allowed without restrictions
- ✓ Knotting and patching:
 - a) Wooden inserts
 - b) WedgesAllowed without restrictions when filled and complete
- ✓ Edge defects caused by sanding, cutting (fringe), veneer shortage
Allowed: up to 10 mm wide along the edge

NOT ALLOWED

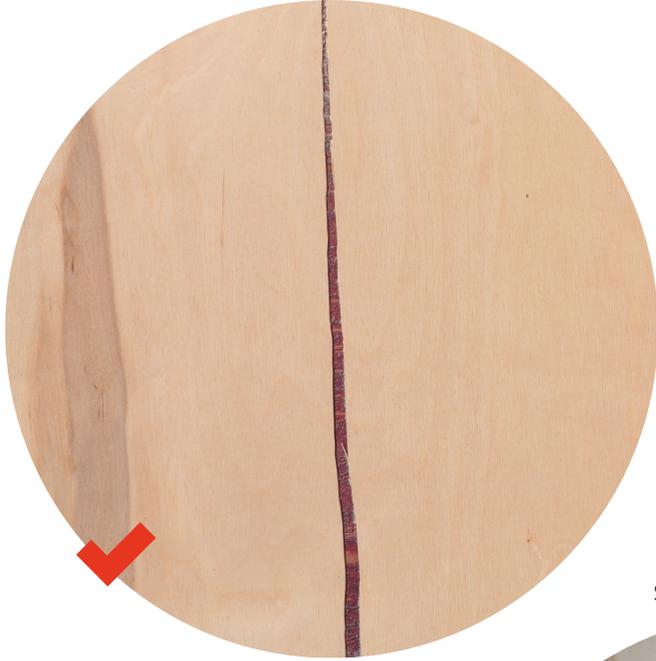
- ✗ Air pockets
- ✗ Metal inclusions

Class IV



Class IV

Open shakes



Sound knots



Black knots, intergrown knots, loose knots

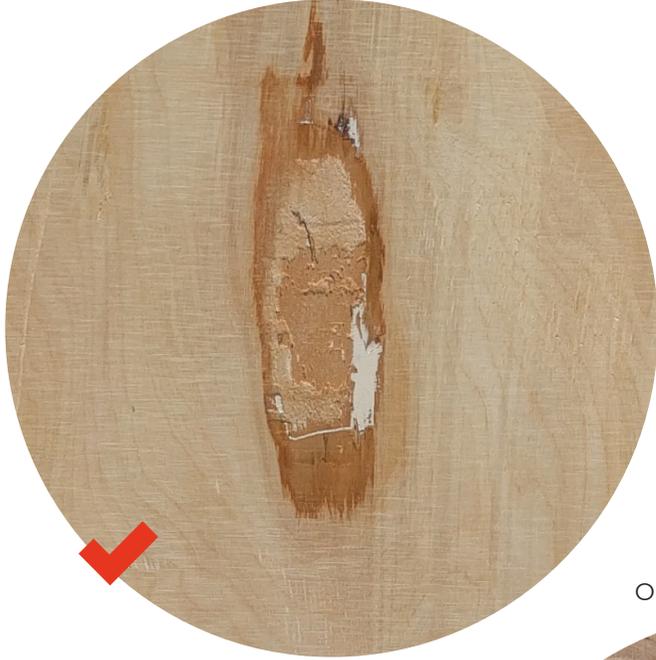


Sound discoloration



Class IV

Inbark



Sound discoloration



Open shake with filling



Knot hole

