



The Biofore Company **UPM**

GUIDE TO WISA[®]-SPRUCE Surface Appearance



GRADE G

UPM's premium WISA-Spruce grade (improved standard Grade II). Solid surface with no open defects.

Categories		Appearance Class: G
Pin knots		Allowed
Sound knots		Max 50 mm Small radial cracks inside the knot allowed
Knot holes	Open	Not allowed
	Repaired	Max 40 mm allowed
Split	Open	Not allowed
	Repaired	Max 6 mm allowed
Worm holes	Repaired	Max 3 mm holes, 10 pcs/1 m ² (vertically to the plane of the panel)
Resin pocket and inbark	Repaired	Max 3 x 30 mm (dent area)
Resin streaks		Allowed (only from wood origin)
Irregularities in the wood structure		Allowed
Discoloration		Allowed (only from wood origin)
Fungal decay		Not allowed
Colour streaks		Allowed (only from wood origin)
Overlap at surface veneer		Not allowed
Blisters		Not allowed
Dents, imprints	Repaired	Allowed
Roughness		Max 5 % of surface area allowed
Sanding through		Max 1 % of surface area allowed
Glue penetration		Max 1 % of surface area allowed
Foreign particles		Not allowed
Repairs	Synthetic filler	Max 40 mm allowed
	Spruce veneer patch	Allowed
Defects at the edges due to sanding or sawing		Max 5 mm from the edge allowed
Joints at surface veneer (length wise)		Allowed
Loose edge/missing core veneer		One layer max 5 mm from the edge allowed
Other defects		To be considered under the category which they most closely resemble.

Classification is according to characteristics inherent in the wood species.
Measuring of the defects according to EN 635-5.
Surface grade has no influence on the panel's strength properties.



GRADE II

The finest spruce standard grade (EN 635-3). Repaired with filler and plugs. Unrepaired knots with a diameter of up to 5 mm are permitted.

Categories		Appearance Class: II
Pin knots		Allowed
Sound knots		Max 40 mm allowed Small radial cracks inside the knot allowed
Knot holes	Open	Max 5 mm allowed
	Repaired	Max 60 mm allowed
Split	Open	Not allowed
	Repaired	Max 6 mm allowed
Worm holes		Max 3 mm holes 10 pcs/1 m ² allowed (vertically to the plane of the panel)
Resin pocket and inbark	Repaired	Max 3 x 30 mm (dent area) allowed
Resin streaks		Allowed (only from wood origin)
Irregularities in the wood structure		Allowed
Discoloration		Allowed (only from wood origin)
Fungal decay		Not allowed
Colour streaks		Allowed (only from wood origin)
Overlap at surface veneer		1 x 100 mm long/1 m ² allowed
Blisters		Not allowed
Dents, imprints		Max 2 x 12 mm allowed
Roughness		Max 5 % of surface area allowed
Sanding through		Max 1 % of surface area allowed
Glue penetration		Max 1 % of surface area allowed
Foreign particles		Not allowed
Patches	Synthetic filler	Max 60 mm allowed
	Spruce veneer patch	Allowed
Defects at the edges due to sanding or sawing		Max 5 mm from the edge allowed
Joints at surface veneer (length wise)		Allowed
Loose edge/missing core veneer		One layer max 5 mm from the edge allowed
Other defects		To be considered under the category which they most closely resemble.

Classification is according to characteristics inherent in the wood species.

Table according to EN 635-3 standard.

Measuring of the defects according to EN 635-5.

Surface grade has no influence on the panel's strength properties.



GRADE III

A grade which may have open splits and knot holes (EN 635-3).

Grade III offers the full technical strength of spruce plywood and it is recommended for use in applications where surface appearance is not of primary importance.

Categories		Appearance Class: III
Pin knots		Allowed
Sound knots		Max 50 mm allowed
Knot holes	Open	Max 40 mm allowed Max 500 mm/m ²
	Repaired	Max 60 mm allowed
Split	Open	½ of the panel length, max 10 mm wide allowed
	Repaired	Max 20 mm allowed
Worm holes		Max width 15 mm, length 60 mm, 3 pcs/ 1 m ² allowed
Resin pocket and inbark		Max 40 mm allowed
Resin streaks		Allowed
Irregularities in the wood structure		Allowed
Discoloration		Allowed
Fungal decay		Not allowed
Colour streaks		Allowed
Overlap at surface veneer		2 x 400 mm long/1 m ² allowed
Blisters		Not allowed
Dents, imprints		Max 40 mm allowed
Roughness		Allowed
Sanding through		Max 2 % of surface area allowed
Glue penetration		Max 5 % of surface area allowed
Foreign particles		Not allowed
Repairs	Synthetic filler	Max 60 mm allowed
	Spruce veneer patch	Allowed
Defects at the edges due to sanding or sawing		Max 5 mm from the edge allowed
Joints at surface veneer (length wise)		Allowed
Loose edge/missing core veneer		One layer max 5 mm from the edge allowed
Other defects		To be considered under the category which they most closely resemble.

Classification is according to characteristics inherent in the wood species.

Table according to EN 635-3 standard.

Measuring of the defects according to EN 635-5.

Surface grade has no influence on the panel's strength properties.



