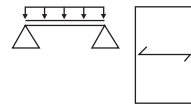


WISA-Spruce Thick Veneer 850

Section properties						Characteristic strength						Mean modulus of elasticity			
Nominal thickness	Number of plies	t _{mean} mm	A mm ² /mm	W mm ³ /mm	I mm ⁴ /mm	Bending		Compression		Tension		Bending		Tension and compression	
						f _m N/mm ²	f _{m⊥} N/mm ²	f _c N/mm ²	f _{c⊥} N/mm ²	f _t N/mm ²	f _{t⊥} N/mm ²	E _m N/mm ²	E _{m⊥} N/mm ²	E _t N/mm ²	E _{t⊥} N/mm ²
9	3	9.0	9.0	13.5	60.8	28.7	3.8	19.3	10.7	11.6	6.4	11461	539	7733	4267
12	5	12.4	12.4	25.6	159	22.8	11.4	17.4	12.6	10.5	7.5	9123	2876	6968	5032
15	5	15.4	15.4	39.5	304	23.0	11.2	17.5	12.5	10.5	7.5	9201	2799	7013	4987
18	7	17.6	17.6	51.6	454	20.4	13.0	16.7	13.3	10.0	8.0	8170	3830	6682	5318
21	7	20.6	20.6	70.7	728	18.9	14.3	16.0	14.0	9.6	8.4	7547	4453	6408	5592
24	9	24.0	22.8	86.6	988	19.4	13.1	17.0	13.0	10.2	7.8	7751	4249	6800	5200

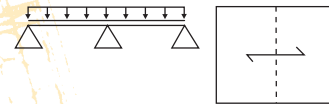
Load resistance for a uniformly distributed load on a single span plate strip. Face grain parallel to the span.

Span c/c mm	Nominal thickness (mm) / ply											
	9/3		12/5		15/5		18/7		21/7		24/9	
	q	u	q	u	q	u	q	u	q	u	q	u
300	12	3.4	21	2.5	29	2.3	31	1.7	36	1.4	42	1.3
400	7	5.6	12	4.0	16	3.6	22	3.1	27	2.7	31	2.5
500	4	8.5	8	6.0	10	5.3	14	4.5	19	4.1	22	3.8
600	3	12.0	5	8.3	7	7.3	10	6.2	13	5.6	15	5.1
750	2	18.4	3	12.7	5	11.1	6	9.2	8	8.2	10	7.4
1000	1	32.3	2	22.1	3	19.2	3	15.9	5	14.0	5	12.5
1200	1	46.3	1	31.6	2	27.3	2	22.5	3	19.7	4	17.7
1500	0	72.0	1	49.0	1	42.3	2	34.8	2	30.4	2	27.2



Load resistance for a uniformly distributed load on a double span plate strip. Face grain parallel to the span.

Span c/c mm	Nominal thickness (mm) / ply											
	9/3		12/5		15/5		18/7		21/7		24/9	
	q	u	q	u	q	u	q	u	q	u	q	u
300	12	1.8	21	1.4	24	1.2	25	0.9	29	0.8	34	0.8
400	7	2.8	12	2.1	16	2.0	19	1.6	22	1.4	25	1.3
500	4	3.9	8	2.9	10	2.7	14	2.4	17	2.2	20	2.1
600	3	5.4	5	3.9	7	3.6	10	3.1	13	2.9	15	2.8
750	2	8.1	3	5.7	5	5.1	6	4.4	8	4.0	10	3.8
1000	1	13.8	2	9.6	3	8.5	3	7.1	5	6.4	5	5.9
1200	1	19.6	1	13.5	2	11.9	2	9.9	3	8.8	4	8.0
1500	0	30.3	1	20.8	1	18.1	2	15.0	2	13.2	2	11.9



Markings

IDENTIFICATION OF NOTIFIED BODY	EUROPEAN CONSTRUCTION PRODUCTS DIRECTIVE	NUMBER OF THE PRODUCT	MANUFACTURER'S NAME	PRODUCTION YEAR	HARMONISED STANDARD FOR WOOD-BASED PANELS FOR USE IN CONSTRUCTION	PRODUCT STANDARD	FORMALDEHYDE CLASS
CE	0809-CPD-0252	UPM	05	EN 13986 - EN 636-2	E1	WISA-Spruce	STRUCTURAL 2+
PRODUCT NAME	LEVEL OF ATTESTATION	IN COMPLIANCE WITH UK BUILDING REGULATIONS	MILL NUMBER	DATE OF PRODUCTION	TIME OF PRODUCTION	78	1801 1021



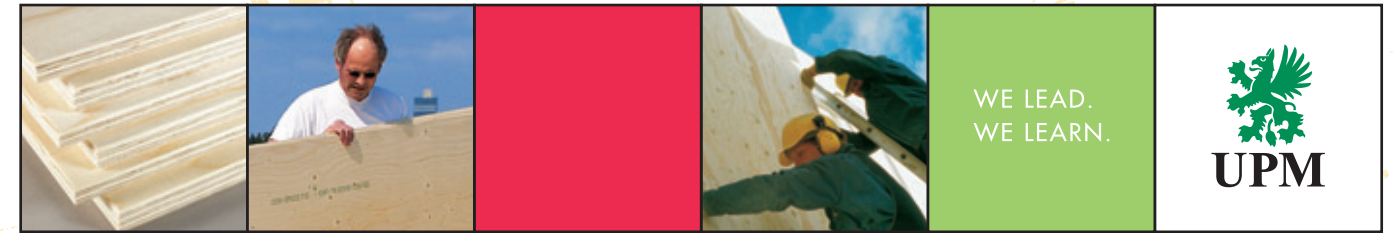
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UPM is not liable for any errors, omissions, inaccuracies or damages arising from the use of the information contained herein.



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WISA®-Spruce

Softwood Plywood at its Best

WISA-Spruce and the Environment

Procurement of raw material and environmental forest management is carried out by UPM's own Forest division. The Forest division maintains a Quality and Environmental Management System in accordance with ISO 9002 and ISO 14001.

About 95% of Finland's forests are certified within the Finnish Forest Certification Scheme which has been recognised by the Programme for the Endorsement of Forest Certification Schemes (PEFC).

UPM is committed to Forest Certification and has a Chain of Custody Certificate which covers the transport of wood from the certified forests to the producing mill. UPM also has the right to use the PEFC logo.

WISA®-Spruce

Softwood Plywood at its Best

WISA-Spruce is manufactured from selected high quality Finnish spruce raw material sourced exclusively from forests environmentally managed for sustained growth. The emphasis on selection of only the right quality of raw material, combined with the most modern and technically advanced production facilities, has given rise to WISA-Spruce's reputation as 'the World's leading coniferous plywood'.

WISA-Spruce's fundamental attributes:

- a more balanced construction,
- predictable strength properties,
- consistency in quality and lightness in weight,
- combined with fully sanded faces and an attractive aesthetic appeal, result in a panel widely used in the construction, packaging, joinery and furniture industries.

WISA-Spruce is an ideal panel for use in load-bearing applications e.g. roofing, flooring and wall sheathing.

Product Description

Construction

WISA-Spruce construction 850 is made of 2.6 and 3.2 mm spruce veneers. The face veneers are long-grained as standard.

Bonding

WISA-Spruce is manufactured using phenolic resin adhesive fulfilling the requirements of European standard EN 314-2 Class 3, Exterior (WBP).

Density

The average density of WISA-Spruce is 460 kg/m³ at 10% moisture content.

Surface

Face qualities according to EN 635 - 3:1995

II/III : II = Some small open defects allowed in the best face.

III = Open defects more generally allowed.

WISA-Spruce is fully sanded 2 sides.

Machinings

Boards can be machined tongued and grooved 2 long edges or all 4 edges.

Structural properties

WISA-Spruce construction 850 is intended for use as a structural panel within the context of the UK Building Regulations. The structural properties of WISA-Spruce 850 are listed in BS 5268-2:2002 Table 51 - Grade stresses and moduli for service classes 1 and 2 for Finnish conifer plywood thick veneer: sanded.

Panel sizes

Standard size 2440 x 1220 mm

Tolerances:

< 1000 mm	+/- 1 mm
1000 – 2000 mm	+/- 2 mm
> 2000 mm	+/- 3 mm

Nominal thickness mm	Number of plies	Minimum thickness mm	Maximum thickness mm	Weight kg/m ²	Average pallet weight kg	Pcs/pallet
9	3	8,8	9,5	4,1	1220	100
12	5	11,5	12,5	5,5	1230	75
15	5	14,3	15,3	6,9	1230	60
18	7	17,1	18,1	8,3	1240	50
21	7	20,0	20,9	9,7	1300	45
24	9	22,9	23,7	11,0	1310	40

