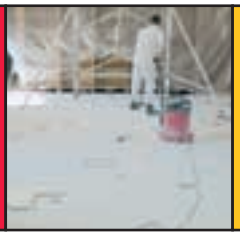

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UPM

WISA®-Sprucefloor

WISA-Sprucefloor is a plywood flooring panel especially for use in domestic, light industrial and commercial applications

PEFC
PEFC/02-34-05

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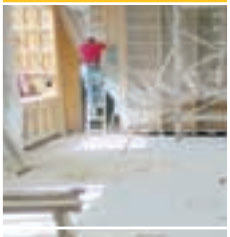

Product Description

Construction

WISA-Sprucefloor is constructed of thick (2.6-3.2 mm) spruce veneers throughout. The face veneers are long grained

Bonding

WISA-Sprucefloor is manufactured using phenolic resin adhesive fulfilling the requirements of BS EN 314-2, Class 3, exterior (WBP)

Hazard class

WISA-Sprucefloor plywood is intended for use in Hazard Classes 1 & 2 - 'dry conditions' and 'risk of wetting/humid conditions' respectively, as defined in BS EN 335-3:1996. Its durability can be enhanced through preservative treatment for applications in Hazard Class 3 'exterior conditions'

Structural properties

WISA-Sprucefloor construction is as listed in BS5268-2:2002.
For normal domestic loadings to BS 6399:Part 1:1996, 18mm thickness can be used at up to 600mm joist centres.

CE Marking

WISA-Sprucefloor is CE marked in accordance with the Harmonized standard EN13986:2002 Wood-based panels for use in construction - internal use as structural components in humid conditions (temporary wetting).

Face grades/finish

Grade II/III to BS EN 635-3:1995 fully sanded finish both sides

Dimensions/packing/weights

	WISA-Sprucefloor 1220 TG2		WISA-Sprucefloor 600 TG4	
	18 mm	22 mm	18 mm	22 mm
Nominal size	2400x1220 mm	2400x1220 mm	2400x600 mm	2400x600 mm
Laid measure	2400x1213 mm	2400x1213 mm	2400x600 mm	2400x600 mm
Edge profile	TG 2 LE	TG 2 LE	TG4	TG4
Weight per board (at 10% m.c)	25 kgs	30 kgs	12 kgs	15 kgs
Boards per pack	55	45	68	56
Laid per pack	160 m^2	131 m^2	97.92 m^2	80.64 m^2
Volume per pack	2.9 m^3	2.9 m^3	1.76 m^3	1.77 m^3
Weight per pack	1400 kgs	1400 kgs	800 kgs	805 kgs

Environment & Forest Certification

The raw material used for WISA-Sprucefloor originates from forests that are managed according to the principals of sustainable forestry. UPM were granted the chain of custody certificate and the right to use the PEFC logo in 2000.

Design considerations

This general guide to selection of the correct span for use in domestic/light industrial and commercial applications must be read in conjunction with the notes below the table. Prior to specification or use, a chartered structural engineer or other suitably qualified person should be consulted to ensure suitability for purpose.

Key considerations:

- Site/atmospheric conditions, during construction and the operational life of the building in which the floor is to be incorporated.
- Performance/loading requirements for the floor both in terms of load duration and type.
- Requirements for fire protection, which will vary in accordance with government/local authority regulations and the opinions of local fire officers

Domestic applications

WISA-Sprucefloor, laid to standard practice as a suspended floor at spans in the 300-600 mm range, will meet the loading requirements set by BS 6399:Part 1:1996 'Code of Practice for dead and imposed loads' for domestic flooring.

	Recommended design load capacity					
Span not exceeding(mm)		300	375	400	500	600
Maximum long term UDL (kN/m2)	18 mm	43	31	24	17	11
	22 mm	63	46	35	25	16
Deflection at max long term UDL (mm)	18 mm	1.6	1.9	2.2	2.6	3.2
	22 mm	1.4	1.7	2.1	2.3	2.8
Max point load area 50 x 50mm (kN)	18 mm (long term)	1.6	16	1.6	1.6	1.6
	22 mm (long term)	1.96	1.96	1.96	1.96	1.96
	18 mm (short term)	2.9	2.9	2.9	2.9	2.9
	22 mm (short term)	3.5	3.5	3.5	3.5	3.5

Notes

Loadings based on the following

- Plywood will have a service life moisture content of 15%
- Plywood is laid with the face grain parallel to the span direction
- Every panel spans a minimum of two bays
- None of the tabulated loads in this chart give rise to deflections in excess of the criteria set by the Storage Equipment Manufacturers Association in their Guideline No. 3

Thermal properties

Conductivity

WISA-Sprucefloor has a mean value of 0.14W degrees C

Capacity

WISA-Sprucefloor has a low thermal capacity and therefore will respond quickly to changes in the surrounding air temperature

Temperature change

WISA-Sprucefloor is not affected dimensionally by changes of temperature in the range 0 to 25 degrees C

Fire properties

WISA-Sprucefloor, when laid in accordance with our recommendations, will have fire resistance equivalent to T & G softwood flooring of the same thickness. Used with various ceiling materials and constructions, as detailed in the Building Regulations 1985 Approved document B, the necessary fire rating for floor constructions can be obtained. Spread of flame performance is rated as Class 3 when tested to BS 476:Part 7. However, this performance can be enhanced to Class 1/ Class 0 (BS 476:Part 6) by pressure impregnation/surface coatings.

Acoustic Properties

WISA-Sprucefloor, when used as part of a flooring system can achieve compliance with Part E of Schedule 1 of the building regulations 2000 'Resistance to the passage of sound'. Further details are available upon request.

WISA-Sprucefloor Model Specifications

Joisted & battened floors

Joists/battens up to 600mm centres.
Floors shall be WISA-Sprucefloor tongued and grooved plywood of 18/22mm thickness, 2400 x 1220/600mm.

When delivered to site boards shall be stored in dry conditions, piled flat on a level surface, clear of the ground in such a manner that they are free from warping or distortion. Boards shall be loose laid for at least 24 hours before fixing.

Boards shall be laid with long edges at right angles to the joists. Short edges shall fall centrally on a joist and shall not cantilever. The perimeter of the floor shall be fully supported. The boards shall be nailed with annular ring shank nails to each joist. Nails to be minimum 21/2 times the board thickness in length.

The boards shall be laid with the short end joints staggered and an expansion gap of 2mm per metre run of floor (min 10mm) allowed between the edge of the floor and the perimeter wall or any other solid abutment. All joints shall be tightly butted. Floor runs in excess of 15 metres shall have intermediate expansion gaps.

Traps shall be formed for services in the positions marked on the floor plan and shall be close fitting and fully supported by joists or noggins on all four edges to finish flush with the adjoining floor.

Floating floors

Floors shall be WISA-Sprucefloor tongued and grooved plywood of 18/22mm thickness, 2400 x 1220/600mm.

When delivered to site, boards shall be stored in dry conditions, piled flat on a level surface clear of the ground in such a manner that they are free from warping or distortion. Boards shall 'condition' on site by loose laying them individually in the area to be laid for at least 24 hours before fixing. The sub floor must be clean, dry, flat and free from surface water, projecting nibs and loose material.

Polythene sheet, minimum 1000 gauge thickness, or other approved vapour check, shall be laid on the subfloor. Any joints in the sheet shall be lapped and sealed on the upper side with an appropriate vapour resistant tape.

All services, pipes and ducts laid on the subfloor shall be completed and approved before laying the floor. The specified type and thickness of sound/ thermal insulant shall be laid with all joints tightly butted and closely fitted around all services, pipes and ducts. Installation of underfloor heating systems shall be done in such a manner to ensure heating pipes do not come into direct contact with the WISA-Sprucefloor.

WISA-Sprucefloor shall be laid directly onto the assembly and shall not be fixed to the subfloor. Cross joints shall be staggered. Boards shall be spot bonded to the underlying insulating material using a suitably compatible bonding agent. Wedges or other cramping pieces shall be used around the floor perimeter to keep the board joints tightly butted together until the bonding agent has cured.

An expansion gap of 2 mm per metre run of board, but not less than 10 mm, shall be allowed between the edge of the floor and perimeter walls or other abutments.This shall be maintained at all times. Floor runs in excess of 15 metres shall have intermediate expansion gaps.
At door openings, a threshold strip shall be inserted and supported by a batten resting directly on the subfloor and projecting 25 mm to form a bearing surface beneath adjacent boards. Access traps should be formed in the positions marked on the floor plan. They shall be close fitting and finish flush with the adjoining floor. Battens of appropriate thickness fixed to adjacent boards shall form a bearing for the trap which shall be fixed to them with suitable countersunk screws.

Note

Care must be taken to ensure the floor is sufficiently flat before applying any overlay. If necessary joints shall be lightly sanded prior to applying an overlay. This is particularly important in respect of vinyl coverings. The use of vinyl tiles or thin vinyl sheeting should be avoided.

Pictures: Front cover and page 2: WISA-Sprucefloor incorporated into an Instacoustic C45 cradle & batten acoustic floor system by Instagroup at The Bodleian Library, Oxford. By kind permission of The University Surveyors Office and Tuffin, Ferraby and Taylor (project managers).

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