Finnforest Spruce

Finnforest Spruce is an uncoated softwood plywood manufactured from a long-grained, homogenous Nordic conifer with straight fibers. It is an excellent general purpose construction panel, ideal for both interior and exterior construction work and any other uses where strength, stability and lightweight versatility is valued.

Applications

Finnforest Spruce is an all-purpose construction panel which is also suitable for various other applications.

- Building applications: floor, wall and roof structures, renovation, agricultural structures, pedestrian bridges, construction platforms etc.
- Concrete formwork: concrete moulds for arched casting and other loose panel formwork
- Transport industry: walls of containers, coaches and trailers etc.
- Other applications: packing applications, furniture, fences, hoardings, canopies etc.

Major advantages

- Light and dimensionally stable
- Strong and rigid
- Can act simultaneously as load-bearing construction and stiffening element
- Easy to machine and install using conventional woodworking tools and fasteners
- Can withstand impacts and other forms of bruising
- Environmentally friendly
- Available with square edges and tongue-and-groove profiles
- Weather and boil proof bonding

Base plywood

Finnforest Spruce plywood is made of cross bonded 3 mm thick coniferous veneers and bonded with a weather and boil-resistant phenolic resin adhesive.

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Surface properties

Finnforest Spruce plywood panels can be unsanded or sanded on both sides. The surface can be treated with standard paints, lacquers, varnishes and protection treatments applicable on wood products. Confirm the compatibility of surface treatment from the supplier.

The surface veneer grades are determined as follows:

Spruce plywood surfaces	Typical properties
II	– sound surface, might be repaired with filler. Unrepaired defects with a ø max. 5 mm are permitted
III+	– open defects repaired with filler
III	– standard quality, with open defects such as knotholes and veneer checks

Primary grade combinations are II/III and III/III.

Classification of Finnforest Spruce surface grade meets SFS 2413 and EN 635 requirements. For more specific grade data, see Handbook of Finnish Plywood.

Panel sizes

Finnforest Spruce is available in sizes.

- 2400 / 2440 / 2500 mm x 1200 / 1220 / 1250 mm
- 2400 / 2440 mm x 600 / 610 mm

The first measurement indicates the orientation of the surface veneer grain.

Other sizes are available on request.

Size tolerances

Measured in accordance with standard EN 324, the plywood size and squareness tolerances meet EN 315 requirements.

Panel tolerances

Length / width	Tolerance
< 1000 mm	±1 mm
1000-2000 mm	±2 mm
> 2000 mm	±3 mm
Squareness	±0.1 % or ±1 mm/m
Edge straightness	±0.1 % or ±1 mm/m

Thickness, structures and thickness tolerances

The thickness tolerances fulfil the requirements of standard EN 315 and is in part more stringent than the official requirements.

Thicknesses, structures and thickness tolerances of the panels

Nominal thickness	Number of plies	Thickness tolerance		Weight
(mm)	(pcs)	min. (mm)	max. (mm)	(kg/m²)
9	3	8.8	9.5	4.1
12	4	11.5	12.5	5.5
15	5	14.3	15.3	6.9
18	6	17.1	18.1	8.3
21	7	20.0	20.9	9.7
24	8	22.9	23.7	11.0
27	9	25.2	26.8	12.4
30	10	28.1	29.9	13.8

* Moisture content of the product affects its dimensions
* Average density of Finnforest Spruce plywood is 460 kg/m³ (at relative humidity of RH 65%)
* Special structures and thicknesses are available on request
* Customised tolerances are possible but must be agreed separately

Bonding classes

Finnforest plywood panels are bonded with a weather and boil-resistant phenolic resin adhesive (WBP, BFU, AW, exterior).
The gluing meets the requirements of the following international standards:

- EN 314-2 / Class 3 (exterior)
- DIN 68705-3 / BFU 100
- BS 6566 Part 8 / WBP
- JAS / Structural plywood / Class 2

Formaldehyde emissions

Determined according to EN 717-1, the formaldehyde emitted by Finnforest Spruce panels falls far below the Class E1 requirement of ≤ 0,100 ppm and fulfils also the most stringent requirements in the world (≤ 0,030 ppm). The formaldehyde emission of Finnforest Spruce is approximately 0,018 ppm.

Panel strength properties

Finnforest Spruce strength and elastic properties are specified according to standards EN 789 and EN 1058 and can be found in the VTT certificate 4/95.

Machining

Finnforest Spruce plywood can be delivered with tongue-and-groove edge machining either on two sides or on four sides. Tongue-and-groove panels are always sanded. Tongue-and-groove machining decreases net panel size by 10 mm.

Finnforest Spruce panels can also be machined according to customer specification on special request.

Packing

Finnforest Spruce panels are packed in moisture resistant plastic wrapping.

Packing quantities

	Number of panels per pallet by thickness							
Panel size mm	9	12	15	18	21	24	27	30
2400/2440 x 2500 mm x 1200/1220/1250 mm	110	85	65	55	45	40	35	30
2400/2440/2500 mm x 600/610 mm	220	170	130	110	90	80	70	60

Further information

- VTT certificate 4/95, 2008
- Finnforest Plywood brochure, 2006
- Finnforest Concrete Formwork brochure, 2009
- Handbook of Finnish Plywood, Finnish Forest Industries Federation, 2001
- www.finnforest.com

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