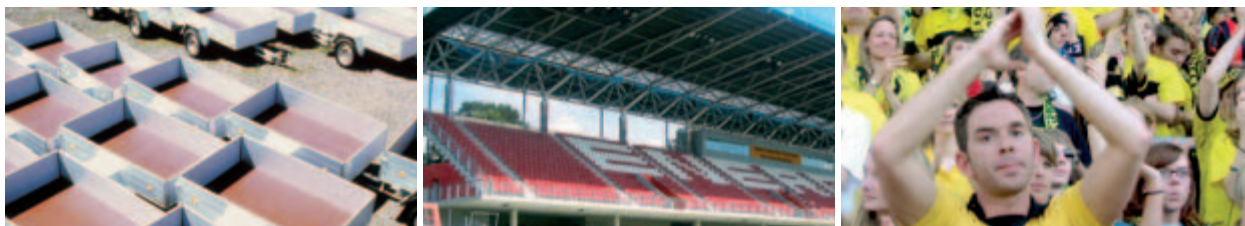


**FINNFOREST
FREIGHT**

finnforest



Finnforest Freight is a birch plywood overlaid with a durable, surface film. During overlaying special raised pattern is pressed onto the wear surface of the panel. A wire mesh or smooth, textile-like phenolic film is applied to the reverse side. Edge sealing is standard. FINNFOREST Freight is suitable for flooring applications that require visual outlook, anti-slip properties with a raised pattern and high abrasion resistance.

BASE PLYWOOD

The base plywood of FINNFOREST Freight is FINNFOREST Birch, bonded with a weather and boil-resistant phenolic resin adhesive.

OVERLAY

A durable layer overlay impregnated with a phenolic or melamine resin is pressed onto the wear surface of the panel, and a dense raised pattern (approx. 0.1 mm high) is applied onto the overlay at the same time. Overlay weight options are 220 g/m²–700 g/m², depending on the overlay materials used. The reverse film surface is 120 or 220 g/m².

COLOUR

Standard colours are dark brown and grey. Other colours are available on request. The colours of the film surface will change over the years due to UV radiation of sunlight, and will fade slightly when used outdoors.

EDGE SEALING

Panel edges are sealed against moisture absorption with acrylic paint. Standard colour is dark brown, but edge seal can also be ordered to match the surface film colour. Even though edge sealing hinders the absorption of moisture into the panel, it does not eliminate it completely.

SURFACE PROPERTIES

Finnforest Freight patterned surface is semi-glossy, hard, and resistant to impact and abrasion. Due to the multi-layer overlay, the dark brown surface is highly resistant to wheel loads, rolling loads and one-point turning. The panel surface withstands commonly used chemicals and diluted acids and alkalis. The surface is easy to clean with a brush, water or steam.

Abrasion & rolling wear resistance of overlaid plywood***			
Product	Overlay weight if optional	Taber revolutions*	Rolling wear**
Deck	120	350	3500
Deck	220	900	5000
Freight	440	2100	7000

*) Abrasion resistance is tested according to DIN 53799/EN 438 until overlay is penetrated. Taber value is an approximate number of revolutions before first signs of penetration occur.

**) Resistance to rolling wear is determined by method corresponding to SS 923508. Rolling wear is an average calculated from the random rolling movements with a load of 200 kg until the first signs of breakdown occur. The values are indicative and are valid for new unused panels.

***) Values valid only for dark brown surface / phenol film

PANEL STRENGTH PROPERTIES

Finnforest Freight strength and elastic properties are identical to standard Finnforest birch plywood. Panel strength and elastic properties can be found in the Handbook of Finnish Plywood (Finnish Forest Industries Federation 2001).

THICKNESSES, NUMBER OF PLYS AND TOLERANCES								
mm	9	12	15	18	21	24	27	30
number of plies	7	9	11	13	15	17	19	21
maximum, mm	9,5	12,5	15,3	18,1	20,9	23,7	26,8	29,9
minimum, mm	8,8	11,5	14,3	17,1	20,0	22,9	25,2	28,1

SIZES	1200x1200/2400/2650/2700/3000 mm
	1220x1220/2440/3050 mm
	1250x1250/2500 mm
	1500x1500/2400/2500/2700/3000 mm
	1525x1525/2440/3050 mm

Other sizes are available on request. The first measurement indicates the orientation of the surface veneer grain. Plywood can also be special ordered with a longitudinal grade orientation.

SIZE AND SQUARENESS TOLERANCES

Measured in accordance with standard SFS-EN 324, the plywood size and squareness tolerances meet SFS-EN 315 requirements, and in certain instances, exceed them. The maximum standard thickness is 30 mm.

	Size tolerance	Other tolerances
Length/width (mm)	mm	
<1000	±1	Squareness ±0.1% or ±1 mm/m
1000-2000	±2	Edge straightness ±0.1% ±1 mm/m
>2000	±3	

MACHINING

FINNFOREST Freight plywood can be ordered with special machining and predrilling.

FORMALDEHYDE EMISSIONS

Determined according to EN 717-2, the amount of formaldehyde emitted from Finnforest Freight panels is 0.2 mg HCHO/h.m², which is better than the Class E1 requirement of 3.5 mg HCHO/h.m². Finnforest Freight meets the Class E1 requirement.

BONDING CLASSES

Standard plywood panels are bonded with phenolic resin adhesive (WBP, BFU, AW, exterior), are resistant to weather and boiling water, and meet the following international bonding standards:

- SFS-EN 314-2/Class 3
- BS 6566 Part 8/type WBP (former)
- DIN 68705/BFU 100.

The panel also meets the requirements of standard EN 636-3.

APPLICATIONS

Finnforest Freight panel is suitable for use in applications requiring a raised pattern and high wear resistance. Examples include flooring, warehouse shelves and various horizontal structures.

QUALITY CONTROL

In addition to Finnforest's own quality control, the Technical Research Centre of Finland VTT oversees production operations and the internal quality control at Finnforest plywood mills. External plywood quality control is conducted according to standard EN 13986 and its CE-marking rules in co-operation with VTT, which is the Notified Body of CE-marking system. The EN ISO 9001:2000 Quality Management system is also applied.

All Finnforest plywood products are CE-marked. Markings are printed either on the packages or on the other side of a panel. In addition to this there are application specific approvals available.

ENVIRONMENT

Finnforest plywood is manufactured from wood, which is a renewable natural resource. Finnforest plywood has the right to use the PEFC-logo, which ensures that the raw material is sourced from sustainably managed forests.

WASTE HANDLING

Disposal of Finnforest Freight plywood can be carried out by several methods. It should be noted that the instructions for disposal may vary in different countries depending on current legislation. Recycling of plywood by utilizing it in other applications is always preferred, but Finnforest Freight plywood can be safely burnt when the combustion temperature is at least 850 °C and correct combustion conditions are maintained. The product can also be composted but the panels have to be chipped and the long duration of the composting process has to be taken into consideration. In addition, Finnforest Freight plywood can be taken to a refuse dump, although plywood products rot very slowly. Finnforest Freight plywood contains nothing classified as hazardous waste.

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Metsäliitto is the tenth biggest forest industry group in the world. Its five business areas include wood supply, wood products industry, pulp production and producing of paper and paperboard as well as tissue paper. Its sales are 8.6 billion euro. With 30,000 employees, the Metsäliitto Group parent company Metsäliitto Cooperative and subsidiaries Metsä-Botnia, M-real and Metsä Tissue have own presence in 30 countries.

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Finnforest reserves the right to change the range without notice.

