

# Spruce Ply

## FireResist



Metsä Wood Spruce FireResist is a surface impregnated softwood plywood with enhanced fire performance. The European reaction to fire classification for Spruce FireResist is B (according to EN 13501-1). The product is suitable for interior applications, and it must be protected from weather exposure at all times.

### APPLICATIONS

Metsä Wood Spruce FireResist is a construction panel to be used in applications that require enhanced fire performance and reaction to fire class B products. Suitable uses are interior applications in dry conditions and fully protected from the weather (service class 1, EN 1995-1-1).

- **Building applications:** wall, ceiling and flooring structures with fire performance requirements. Load-bearing and stiffening structures.
- **In general:** applications that require enhanced reaction to fire classification or improved fire performance

### MAJOR ADVANTAGES

- Enhanced fire performance
- Reaction to fire classification B-s1, d0; B-s2, d0; B<sub>fl</sub>-s1
  - very limited contribution to fire
  - decreased need for structural protection with gypsum board
  - enables load-bearing panel structures
- Can be painted with most common solvent-based paints
- Strong, rigid and lightweight
- Easy to machine and install using conventional woodworking tools and fasteners
  - panel is impact resistant and does not crumble
  - good base for fasteners
- Available with square edges and tongue-and-groove profiles

### BASE PLYWOOD

The base plywood of Metsä Wood Spruce FireResist is Metsä Wood Spruce, which is made of cross-bonded 3 mm thick coniferous veneers and bonded with a weather- and boil-resistant phenol formaldehyde adhesive.

### SURFACE PROPERTIES

Metsä Wood Spruce FireResist panels have a light yellow colour. The surface is always sanded on both sides, and the visual properties are similar to normal Spruce Plywood. The surface can be treated with solvent-based paints and vanishes applicable to wood products. It is recommended to confirm the compatibility of the surface treatment with the supplier.

The surface grades are determined by the grade of the surface veneers as follows:

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

Metsä Wood Spruce FireResist grade combination is II/III.

Classification of Metsä Wood Spruce FireResist surface grade meets the requirements of EN 635.

### PANEL SIZES

Metsä Wood Spruce FireResist is available in sizes:

- 2400 / 2440 / 2500 mm x 1200 / 1220 / 1250 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 the requirements of EN 315.

#### 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 are, in part, more stringent than the official requirements.

#### THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS\*

NOMINAL THICKNESS (mm)	NUMBER OF PLYS (no.)	THICKNESS TOLERANCE		WEIGHT (kg/m <sup>2</sup> )
		min. (mm)	max. (mm)	
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

\* The moisture content of the product affects its dimensions

\* Average density of Metsä Wood Spruce plywood is 460 kg/m<sup>3</sup> (at a relative humidity of 65%)

\* Special structures and thicknesses are available on request

\* Customised tolerances are possible but must be agreed separately

### PERFORMANCE AGAINST FIRE

Metsä Wood Spruce FireResist is surface impregnated with fire retardant.

The product is available in the following fire classifications (EN 13501-1):

- B-s1, d0 (ceiling and wall structures)
- B-s2, d0 (ceiling and wall structures)
- B<sub>f</sub>-s1 (floor structures)

Reaction to fire class B products have very limited contribution to fire and no potential for sudden spread of flames. Production of smoke is very limited (s1) or limited (s2) depending on the end use structure. No flaming droplets or particles occur (d0). More information on the classifications can be found in the Metsä Wood Spruce Plywood Manual.

Spruce FireResist is classified for permanent use in interior applications according to NT Fire 054 criteria, class INT.

Spruce FireResist is tested and classified by VTT Expert Services Ltd in Finland. The product is CE marked and VTT carries out continuous surveillance.

### BONDING CLASSES

Metsä Wood plywood panels are bonded with a weather- and boil-resistant phenol formaldehyde 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

### FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood Spruce falls far below the Class E1 requirement of ≤ 0.100 ppm and also fulfils the most stringent requirements in the world (≤ 0.030 ppm). The formaldehyde emission of Metsä Wood Spruce is approximately 0.018 ppm. The FireResist treatment does not contain any formaldehyde.

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### PANEL STRENGTH PROPERTIES

Metsä Wood Spruce FireResist is a CE marked product and its strength and elasticity properties are identical to the properties of standard Metsä Wood Spruce plywood. The properties are specified according to standards EN 789 and EN 1058 and can be found in the Metsä Wood Spruce FireResist Declaration of Performance (DoP). The DoP documents can be downloaded from [www.metsawood.com/dop](http://www.metsawood.com/dop).

### MACHINING

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

### PACKING

Metsä Wood Spruce Fire Resist panels are packed in moisture resistant plastic wrapping.

### PACKING QUANTITIES

PANEL SIZE mm	NUMBER OF PANELS PER PALLET BY THICKNESS					
	15	18	21	24	27	30
2400/2440/2500 x 1200/1220/1250	65	55	45	40	35	30

### WASTE HANDLING

Metsä Wood Spruce FireResist can be considered a biofuel (EN 14961-1) and it can be safely burnt when the combustion temperature is at least 850 °C and the correct combustion conditions are maintained. Due to the fire retardant character of the product, it is recommended to chip the panels and mix them with easily combustible material to ensure favourable combustion.

Spruce FireResist does not contain heavy metals, boron or halogenated compounds, or anything else classified as hazardous waste.

### FURTHER INFORMATION

- Metsä Wood Spruce FireResist Declaration of Performance ([www.metsawood.com/dop](http://www.metsawood.com/dop))
- Metsä Wood Spruce Plywood Manual
- Metsä Wood Spruce Plywood for Construction brochure
- Metsä Wood Spruce Plywood Fire Solutions brochure

### METSÄ WOOD

P.O Box 50, 02020 Metsä, Finland  
Tel. +358 1046 05

[www.metsawood.com/spruceplywood](http://www.metsawood.com/spruceplywood)

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