

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. The product is suitable for internal and protected external use in humid conditions. Panel 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 internal and protected external applications in dry and humid conditions, fully protected from the weather (service class 1 and 2, 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_{fi}-s1**
- **Very limited contribution to fire**
- **Decreased need for structural protection with gypsum board**
- **Enables load-bearing panel structures**
- **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**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-381) certified**

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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. Additional coatings are not recommended for Metsä Wood Spruce FireResist as coatings might affect the fire performance of the plywood.

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
< 1 000 mm	± 1 mm
1 000 - 2 000 mm	± 2 mm
>2 000 mm	± 3 mm
Squareness	± 0.1 % or ±1 mm/m
Edge straightness	± 0.1 % or ±1 mm/m

THICKNESSES, 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 ²
		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/m³ (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_f-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). 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.

BONDING CLASSES

Metsä Wood plywood panels are bonded with a weather- and boil-resistant phenol formaldehyde adhesive. The gluing meets the requirements of the standard EN 314-2 / Class 3 (exterior).

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 (≤ 0.030 ppm). The formaldehyde emission of Metsä Wood Spruce is approximately 0.018 ppm. FireResist treatment does not contain any formaldehyde.

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APPROVALS AND DESIGN PROPERTIES

Metsä Wood Spruce FireResist is CE and UKCA marked and the design properties are determined according to standard EN 13986. The design properties given in the Declaration of Performance (DoP) and in the UK Declaration of Conformity (UK DoC) are to be used for structural calculations with EN 1995 (Eurocode 5). The DoP documents can be downloaded from www.metsawood.com/dop and the UK DoC documents can be downloaded from www.metsawood.com/ukdoc.

Metsä Wood Spruce FireResist has also national approvals in Norway.

Spruce plywood production is managed according to the principles of standard ISO 9001. The quality and the constancy of performance of the product is controlled by regular third party inspections and audits.

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 10mm.

PACKAGING

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

PRODUCT DISPOSAL

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)
- Metsä Wood Spruce FireResist the UK Declaration of Conformity (www.metsawood.com/ukdoc)
- Metsä Wood Spruce Plywood Manual
- Metsä Wood Spruce Plywood for Construction brochure
- Metsä Wood Spruce Plywood Fire Solutions brochure

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