Spruce Ply
FireResist

Metsä Wood Spruce FireResist is a surface impregnated softwood plywood with enhanced fire performance. The European reaction to fire classification for SpruceFireResist 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 which 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. Bearing and stiffening structures.
- In general: applications which 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_{fl}-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 by 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

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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 weather and boil-resistant phenol formaldehyde adhesive.

SURFACE PROPERTIES
Metsä Wood Spruce FireResist panels have a light yellow color. Surface is always sanded on both sides and visual properties are similar to normal Spruce Plywood. The surface can be treated with solvent-based paints and vanishes applicable on wood products. The compatibility of the surface treatment is recommended to be confirmed from 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 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 Metsä Wood Spruce surface grade meets EN 635 requirements.

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 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 are 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
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 Metsä Wood 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

PERFORMANCE AGAINST FIRE
Metsä Wood Spruce FireResist is surface impregnated with fire retardant. The product is available in following fire classification (EN 13501-1):
- B-s1,d0 (ceiling and wall structures)
- B-s2, d0 (ceiling and wall structures)
- B_{fl}-s1 (floor structures)

Reaction to fire class B product has very limited contribution to fire and there is 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 of the classifications can be found from 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 fulfils also the most stringent requirements in the world (≤ 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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PANEL STRENGTH PROPERTIES
Metsä Wood Spruce FireResist is a CE marked product and its strength and elasticity properties are identical with the Metsä Wood Spruce standard plywood properties. 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). DoP documents can be downloaded from www.metsawood.com/dop.

MACHINING
Metsä Wood Spruce FireResist plywood can be delivered with tongue-and-groove edge machining either on two sides or on 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

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

WASTE HANDLING
Metsä Wood Spruce FireResist can be considered as biofuel (EN 14961-1) and it can be safely burnt when the combustion temperature is at least 850°C and correct combustion conditions are maintained. Due to fire retardant character of the product, panels are recommended to be chipped and mixed with easily combustible material to confirm favorable 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 Plywood Manual
- Metsä Wood Spruce Plywood for Construction brochure
- Metsä Wood Spruce Plywood Fire Solutions brochure

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