Spruce Ply
WeatherGuard®

BASE PLYWOOD
The base plywood of Metsä Wood Spruce WeatherGuard 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 WeatherGuard panels can be unsanded or sanded on both sides. The WeatherGuard treatment is transparent and gives temporary protection against rain.

The surface can be further treated with standard paints, lacquers and protection treatments applicable to wood products. Compatibility of the surface treatment must be confirmed from the supplier. Before treating large areas, it is recommended to test with small sample.

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.

Primary grade combination is III/III.

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

PANEL SIZES
Metsä Wood Spruce WeatherGuard 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 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	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	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

* 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

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

PANEL STRENGTH PROPERTIES
Metsä Wood Spruce WeatherGuard 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 WeatherGuard Declaration of Performance (DoP). The DoP documents can be downloaded from www.metsawood.com/dop.

MACHINING
Metsä Wood Spruce WeatherGuard plywood can be delivered with tongue-and-groove edge machining on either two sides or four sides. Tongue-and-groove panels are always sanded. Tongue-and-groove machining decreases net panel size by 10 mm. Tongue-and-groove machining is available for panel thicknesses ≥ 12 mm.

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Metsä

Spruce Ply
MouldGuard

BASE PLYWOOD

The base plywood of Metsä Wood Spruce MouldGuard 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 MouldGuard panels have a light brown colour.

The surface can be unsanded or sanded on both sides. Additional coatings are not recommended for Metsä Wood Spruce MouldGuard.

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.

Primary grade combination is III/III.

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

PANEL SIZES

Metsä Wood Spruce MouldGuard 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 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	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	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

* 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 MOULD GROWTH

Metsä Wood Spruce MouldGuard is surface impregnated with a wood preservative. Spruce MouldGuard has been tested by VTT Technical Research Centre of Finland. According to the test results, the mould and blue stain resistance is significantly better (4-5 times) than standard Metsä Wood Spruce plywood.

The preservative is classified for hazard class 3 (EN 599-1). The efficiency of the chemical has been verified according to the EN 113 (decay) and EN 152-1 (blue stain) tests.

Production of Spruce MouldGuard is controlled by VTT.

Biocidal Products Regulation (EU) No 528/2012

Spruce MouldGuard is treated with biocide:

- preservative surface treatment reduces the risk of mould growth and blue stain
- active substances: propiconazole, 3-iodo-2-propynyl butylcarbamate
- direct contact to foodstuffs or animal feed should be avoided.

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.

The MouldGuard treatment does not contain any formaldehyde.

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Metsä

Spruce Ply
MouldGuard

PANEL STRENGTH PROPERTIES
Metsä Wood Spruce MouldGuard 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 MouldGuard Declaration of Performance (DoP). The DoP documents can be downloaded from www.metsawood.com/dop.

MACHINING
Metsä Wood Spruce MouldGuard panels can be delivered with tongue-and-groove edge machining on either two sides or four sides.
Tongue-and-groove panels are always sanded. Tongue-and-groove machining decreases net panel size by 10 mm. Tongue-and-groove machining is available for panel thicknesses ≥ 12 mm.

PACKING
Metsä Wood Spruce MouldGuard 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**
2400/2440/2500 x 1200/1220/1250	110	85	65	55	45	40	35	30

WASTE HANDLING
Metsä Wood Spruce MouldGuard 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 preservative treatment, the correct combustion conditions and suitable waste-burning plants should be checked locally.

FURTHER INFORMATION
- Metsä Wood Spruce MouldGuard Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Spruce Plywood Manual
- Metsä Wood Spruce Plywood for Construction brochure

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PEFC/02-31-03
09/2022

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_{fl}-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

Metsä

Spruce Ply
FireResist

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
< 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)	(no.)	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

* 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_{fl}-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.

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

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 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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Metsä

Spruce Ply
FireResist

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.

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

	NUMBER OF PANELS PER PALLET BY THICKNESS					
PANEL SIZE mm	**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)
- Metsä Wood Spruce Plywood Manual
- Metsä Wood Spruce Plywood for Construction brochure
- Metsä Wood Spruce Plywood Fire Solutions brochure

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Spruce Ply
Flex

Metsä Wood Spruce Flex is a softwood plywood overlaid with a coloured thermoplastic overlay. The panel is suitable for interior applications, such as wall and ceiling panels for agricultural constructions and warehouses.

APPLICATIONS

Metsä Wood Spruce Flex is a multi-purpose construction panel that can be used, for example, in ceilings, interior walls, packaging and other applications where a ready-finished surface solution is needed. Easy to clean, it is well suited for use as, for example, interior cladding for cattle housing.

MAJOR ADVANTAGES

- Ready-finished surface
- Excellent impact and crack resistance
- Lightweight, strong and dimensionally stable
- Easy to fix and cut
- Good wear resistance
- Easy to clean
- Good resistance against most chemicals
- Weather- and boil-proof bonding

BASE PLYWOOD

The base plywood of Metsä Wood Spruce Flex 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.

OVERLAY

Metsä Wood Spruce Flex has a thermoplastic overlay on both sides, which provides a ready-finished surface. The overlay is bonded to the plywood with a water-resistant glue. The overlay colour is white on one side and grey on the other.

Metsä

Spruce Ply
Flex

SURFACE PROPERTIES
The surface of the overlay is slightly structured to improve wear and scratch resistance. The overlay is elastic, tough and does not crack easily.
The overlay is safe to use and free of chlorine, halogens, plasticizers, formaldehyde and heavy metals.

The surface is easy to clean with water and normal detergents. Strong acids, alkalis and e.g. acetone may cause visual changes on the surface.

Metsä Wood Spruce Flex has a ready-finished surface that is susceptible to scratches due to its softer appearance. Due to the structure of the coniferous veneers, some structures may be visible on the overlaid surface. Extra caution has to be taken in handling and storing the panels to prevent damage. Extreme moisture penetration may cause visible changes to the appearance of the product.

Technical properties of the surface
- Taber value is approx. 2000 R*
- Colour stability 6-7 according to DIN 54404
- Colour change ΔE < 1 according to ISO 4892-2 (600 h)
- Crack resistance EN13696 no cracks
- Impact resistance Class IC3 according to EN438-2

* Abrasion resistance is tested according to EN 438-2 / DIN 53799

EDGE SEALING
Panel edges are sealed against moisture absorption with transparent edge sealing paint. Even though edge sealing hinders the absorption of moisture into the panel, it does not eliminate it completely.

PANEL SIZES
Metsä Wood Spruce Flex is available in sizes:
- 2400 x 1200 mm

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

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
9	3	7	9	4.1
12	4	10	12	5.5
15	5	13	15	6.9
18	6	16	18	8.3
21	7	19	21	9.7

* 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

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).

The overlay is bonded to plywood with a weather-resistant adhesive EN 204 class D4).

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 thermoplastic overlay does not contain any formaldehyde.

PANEL STRENGTH PROPERTIES
Metsä Wood Spruce Flex 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 Flex Declaration of Performance (DoP). The DoP documents can be downloaded from www.metsawood.com/dop.

PACKING
Metsä Wood Spruce Flex panels are packed either in moisture resistant plastic wrapping or covered pallets.

PACKING QUANTITIES

		NUMBER OF PANELS PER PALLET BY THICKNESS				
PANEL SIZE	mm	9	12	15	18	21
1200 x 2400		100	75	60	50	45

FURTHER INFORMATION
- Metsä Wood Spruce Flex Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Spruce Plywood Manual
- Metsä Wood Spruce Plywood for Construction brochure

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