

Spruce Ply



METSÄ WOOD SPRUCE PLYWOOD PRODUCTS

CONTENTS

Spruce	
Spruce WeatherGuard.....	
Spruce MouldGuard.....	
Spruce FireResist.....	
Spruce Flex	

Spruce Ply



Metsä Wood Spruce is an uncoated softwood plywood manufactured from a long-grained, homogenous Nordic conifer with straight fibres. It is an excellent general purpose construction panel, ideal for both interior and exterior construction work and any other uses where strength, stability, light weight and versatility are valued.

APPLICATIONS

Metsä Wood Spruce is a multi-purpose construction panel that is also suitable for various other applications.

- Building applications: floor, wall and roof structures, renovations, agricultural structures, pedestrian bridges, construction platforms etc.
- Concrete formwork: concrete moulds for arched casting and other loosepanel formwork
- Transport industry: walls of containers, coaches and trailers etc.
- Other applications: packing applications, furniture, fences, hoardings, canopies etc.

MAJOR ADVANTAGES

- **Lightweight and dimensionally stable**
- **Strong and rigid**
- **Can act simultaneously as load-bearing construction and stiffening element**
- **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**
- **Weather- and boil-proof bonding**
- **PEFC (PEFC/02-31-03) certified**

Spruce Ply

BASE PLYWOOD

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

PANEL SIZES

Metsä Wood Spruce 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.

SURFACE PROPERTIES

Metsä Wood Spruce plywood panels can be unsanded or sanded on both sides. The surface can be treated with standard paints, lacquers, varnishes and protection treatments 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+ – 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 the requirements of EN 635.

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

APPROVALS AND DESIGN PROPERTIES

Metsä Wood Spruce 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 has also national approvals in Norway, Netherlands and Japan. Design properties for structural design outside Europe are given in the related approval documents.

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 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.

PACKAGING

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

PACKING QUANTITIES

PANEL SIZE mm	NUMBER OF PANELS PER PALLET BY THICKNESS							
	9	12	15	18	21	24	27	30
2400/2440/2500 x 1200/1220/1250	110	85	65	55	45	40	35	30
2400/2440 x 600/610	220	170	130	110	90	80	70	60

FURTHER INFORMATION

- Metsä Wood Spruce Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Spruce the UK Declaration of Conformity (www.metsawood.com/ukdoc)
- Metsä Wood Spruce Plywood Manual
- Metsä Wood Spruce Plywood for Construction brochure
- Metsä Wood Concrete Formwork brochure

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12/2022

Spruce Ply

WeatherGuard®



Metsä Wood Spruce WeatherGuard is a softwood plywood that has a hydrophobic surface. The surface rejects rainwater and therefore reduces the amount of water absorbed by the panel during construction work. At the same time, the surface allows the panel to breathe and water vapour to move freely.

APPLICATIONS

Metsä Wood Spruce WeatherGuard is a multi-purpose construction panel that is also suitable for various other applications.

- **Building applications:** floor, wall and roof structures, agricultural structures, pedestrian bridges, construction platforms etc.
- **Renovation:** repairing, improving and renovating buildings
- **Other applications:** packing applications, vehicle industry, fences, hoardings etc.

MAJOR ADVANTAGES

- **Temporary protection against rain**
- **Shorter drying period of structures**
- **Better dimensional stability under changing conditions**
- **Treatment does not block water vapour movements**
- **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**
- **Weather- and boil-proof bonding**
- **Available with square edges and tongue-and-groove profiles**
- **PEFC (PEFC/02-31-03) certified**

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
< 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)	
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.

APPROVALS AND DESIGN PROPERTIES

Metsä Wood Spruce WeatherGuard 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 WeatherGuard has also national approval 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 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.

PACKAGING

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

PACKING QUANTITIES

PANEL SIZE mm	NUMBER OF PANELS PER PALLET BY THICKNESS							
	9	12	15	18	21	24	27	30
2400/2440/2500 x 1200/1220/1250	110	85	65	55	45	40	35	30

FURTHER INFORMATION

- Metsä Wood Spruce WeatherGuard Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Spruce WeatherGuard the UK Declaration of Conformity (www.metsawood.com/ukdoc)
- Metsä Wood Spruce Plywood Manual
- Metsä Wood Spruce Plywood for Construction brochure
- Metsä Wood Concrete Formwork brochure

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12/2022

Spruce Ply

MouldGuard



Metsä Wood Spruce MouldGuard is a surface impregnated softwood plywood that significantly reduces the risk of mould growth compared to unprotected softwood plywood. The product provides a ready-to-use surface in humid conditions, with a natural visual quality.

APPLICATIONS

Metsä Wood Spruce MouldGuard is a multi-purpose construction panel for conditions where the relative humidity may exceed 75%. It can be used in the same way as standard Metsä Wood Spruce plywood, but it should be protected from direct rain and UV radiation. Direct contact with foodstuffs, animal feed or similar must be avoided.

- **Building applications:** roof, floor and wall structures, agricultural buildings, attics, roof overhangs etc.
- **Renovation:** repairing, improving and renovating buildings
- **In general:** applications with a risk of increased humidity, such as unheated buildings and structures, e.g. garages, roof panels

MAJOR ADVANTAGES

- **Improved resistance to mould and blue stain in humid conditions**
- **Ready-to-use surface saves time at the construction site**
- **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**
- **Weather- and boil-proof bonding**
- **Available with square edge and tongue-and-groove profiles**
- **PEFC (PEFC/02-31-03) certified**

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
III – standard quality, with open defects such as knotholes and veneer checks.

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
< 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	NUMBER OF PLYS	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m ²
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. According to the third party test results, the mould and blue stain resistance of Spruce MouldGuard 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 Eurofins Expert Services Oy.

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. MouldGuard treatment does not contain any formaldehyde



Spruce Ply

MouldGuard

APPROVALS AND DESIGN PROPERTIES

Metsä Wood Spruce MouldGuard 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 MouldGuard has also national approval 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 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 10mm. Tongue-and-groove machining is available for panel thicknesses ≥ 12 mm.

PACKAGING

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

PACKING QUANTITIES

PANEL SIZE mm	NUMBER OF PANELS PER PALLET BY THICKNESS							
	9	12	15	18	21	24	27	30
2400/2440/2500 x 1200/1220/1250	110	85	65	55	45	40	35	30

PRODUCT DISPOSAL

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

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12/2022

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 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_{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/02-31-03) certified**

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
< 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_{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.

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.

Spruce Ply

FireResist

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

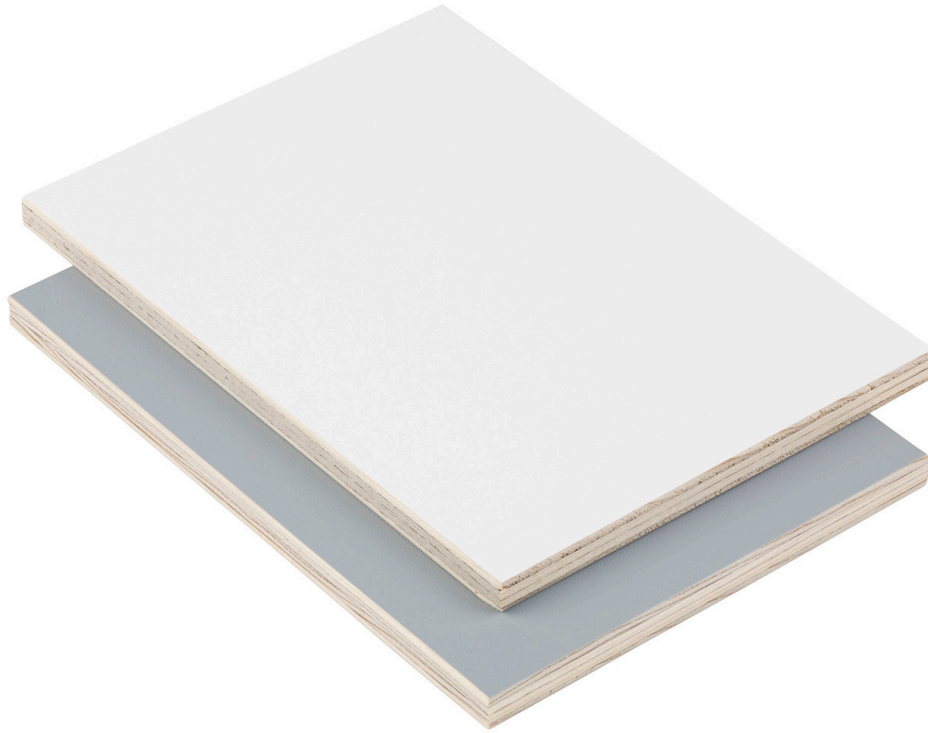
- Metsä Wood Spruce FireResist Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Spruce FireResist the UK Declaration of Conformity (www.metsawood.com/ukdoc)
- Metsä Wood Spruce Plywood Manual
- Metsä Wood Spruce Plywood for Construction brochure
- Metsä Wood Spruce Plywood Fire Solutions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

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09/2023

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
- PEFC (PEFC/02-31-03) certified

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 coloured 0.2mm thick overlay on both sides, which provides a ready-finished lightly structured (miniburl) 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.

PANEL SIZES

Metsä Wood Spruce Flex is available in sizes:

- 2400 mm x 1200 mm

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

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 $\Delta E < 1$ 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.

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

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).

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

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

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.

APPROVALS AND DESIGN PROPERTIES

Metsä Wood Spruce Flex 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.

PACKAGING

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

PACKING QUANTITIES

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

FURTHER INFORMATION

- Metsä Wood Spruce Flex Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Spruce Flex the UK Declaration of Conformity (www.metsawood.com/ukdoc)
- Metsä Wood Spruce Plywood Manual
- Metsä Wood Spruce Plywood for Construction brochure

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