

METSÄ WOOD BIRCH PLYWOOD PRODUCTS

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Birch Ply

Form Form L



Metsä Wood Form is birch plywood, in which both sides are overlaid with phenol film and the edges are sealed. Form plywood is the formwork panel of choice for smooth surfaced concrete elements. It can also be used as a multi-purpose, maintenance-free sheathing panel for various other uses. Metsä Wood Form is available in various sizes: standard, L, XL and KingSize.

APPLICATIONS

Concrete Formwork:

Metsä Wood Form is a smooth surface maintenance-free panel for different concrete formwork uses: System shuttering, girder formwork, regeneration panels, element industry and concrete block industry.

The durable overlays ensure smooth concrete cast finish and multiple uses. The number of uses can rise up to 30 –100 but is highly dependent on the used overlay, site practice, requirements of concrete finish, the quality of release agent and the maintenance, handling and storage practices.

Use high quality release agent to ensure easier and cleaner release. Make sure that the release agent is suitable with the panel overlay. Clean panels after each use to remove all concrete debris. Seal scratches with water proof paint and fill holes with water resistant filler. Afterwards, apply a fresh coat of release agent prior to each subsequent use.

Other applications:

Metsä Wood Form is a general panel used in variety of applications

- Transport industry: Transport equipment containers, trailer side boards, sliding doors, vehicle and flight cases and other transport boxes, bus floor constructions etc.
- Building applications: Agricultural structures, general interior and exterior building applications
- Other applications: Packaging applications, sport arenas and equipment

MAJOR ADVANTAGES

- Smooth durable overlay
- Light and dimensionally stable
- Strong and rigid
- Easy to clean and re-use
- Easy to machine and fasten using conventional woodworking tools and fasteners
- Can withstand impacts and other forms of bruising
- Environmentally friendly
- Weather and boil proof bonding

BASE PLYWOOD

The base plywood of Metsä Wood Form is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

Designed and tailor-made to serve in demanding applications, birch plywood can be ordered with special oriented veneer structures to provide even higher strength and stiffness properties.

OVERLAY

A smooth and durable phenolic film is hot-pressed onto the panel surface. The film consists of special base papers impregnated with phenolic resin. A film with a basis weight of 120 g/m² is normally used. With Form L minimum film weight is 220g/m². Thicker overlays are available by order. Standard film colours are dark brown, light brown, yellow and black. Other colours are available by order. The phenol film is not UV resistant and the colour may change exposed to sunlight over prolonged periods.

SURFACE PROPERTIES

The film surface is semi-glossy, smooth, hard and slippery. It withstands abrasion, is moisture resistant and can tolerate commonly used chemicals as well as diluted acids and alkalis. The surface is easy to clean with water or steam. Moisture absorption is minimal.

ABRASION RESISTANCE OF METSÄ WOOD FORM (VALUES ARE INDICATIVE AND VALID FOR NEW UNUSED PANELS)

	OVERLAY WEIGHT	TABER REVOLUTIONS*
Form	120 g / m ²	350
Form	220 g / m ²	700
Form	440 g / m ²	1500

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

EDGE SEALING

Panel edges are sealed against moisture absorption with acrylic edge sealing paint. The standard colour of the edge sealing is dark brown. Even though edge sealing slows down the absorption of moisture into the wood, it does not eliminate it completely.

PANEL SIZES

Metsä Wood Form is available in sizes:

- 1200 / 1220 / 1250 mm x 2400 / 2440 / 2500 / 3000 / 3050 / 3660 mm
- 1500 / 1525 mm x 2500 / 3000 / 3050 / 3660 / 4110 mm

Metsä Wood Form L is available in sizes:

- 2020 x 4110 mm
- 1870 x 4110 mm
- 1870 x 1870 mm, 2020 x 2020 mm

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

Other sizes are available on request. Larger size scarf-jointed XL and KingSize panels are also available by special order.

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

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 (pcs)	THICKNESS TOLERANCE		WEIGHT kg/m ²
		min. (mm)	max. (mm)	
6.5	5	6.1	6.9	4.4
9	7	8.8	9.5	6.1
12	9	11.5	12.5	8.2
15	11	14.3	15.3	10.2
18	13	17.1	18.1	12.2
21	15	20.0	20.9	14.3
24	17	22.9	23.7	16.3
27	19	25.2	26.8	18.4
30	21	28.1	29.9	20.4
35	25	33.5	35.5	23.8

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

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 Form 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 Form is approximately 0,017 ppm.

PANEL STRENGTH PROPERTIES

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

The Concrete formwork design data (permissible concrete pressure tables, design nomograms) for all Metsä Wood formwork panels can be found in Metsä Wood Concrete Formwork technical data.

MACHINING

Metsä Wood Form plywood panels can be machined according to customer specification on special request.

PACKING

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

PACKING QUANTITIES

PANEL SIZE mm	NUMBER OF PANELS PER PALLET BY THICKNESS									
	6.5	9	12	15	18	21	24	27	30	
1500 / 1525 x 2400 – 3660 1200/1220/1250 x 2850 – 3660	90	65	50	40	35	30	25	25	20	
1500/1525 x 1500 – 2135 1200/1220/1250 x 1200 – 2800	140	100	75	60	50	45	40	35	30	
1500/1525 x 3670 – 4110 1870/2020 x 1870 – 4110	70	50	35	30	25	20	15	15	15	
1870 / 2020 x 1870 / 2020	140	100	70	60	50	40	30	30	30	

FURTHER INFORMATION

- Metsä Wood Form Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Concrete Formwork brochure
- Metsä Wood Concrete Formwork technical data
- Metsä Wood Form XL Product Data Sheet
- Metsä Wood KingSize Product Data Sheet

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Birch Ply

FormPLUS



Metsä Wood FormPLUS plywood is the phenolic film overlaid panel choice for all formwork uses with high concrete surface quality requirements. FormPLUS plywood surface has a special treatment to resist the surface rippling, which ensures the smooth high quality concrete surface from the first use.

APPLICATIONS

Metsä Wood FormPLUS is a smooth surface, maintenance-free birch plywood panel for different concrete formwork applications: System shuttering, girder formwork, regeneration panels, element industry and concrete block industry.

The durable overlays ensure smooth concrete finish and multiple uses. The number of uses can rise up to 30 – 100 but is highly dependent on the used overlay, site practice, requirements of concrete finish, the quality of release agent and the maintenance, handling and storage practices.

Use high quality release agent to ensure easier and cleaner release. Make sure that the release agent is suitable with the panel overlay. Clean panels after each use to remove all concrete debris. Seal scratches with water proof paint and fill holes with water resistant filler. Afterwards, apply a fresh coat of release agent prior to each subsequent use.

MAJOR ADVANTAGES

- Surface resists rippling
- Smooth durable overlay
- Light and dimensionally stable
- Strong and rigid
- Easy to clean and re-use
- Easy to machine and fasten using conventional woodworking tools and fasteners
- Can withstand impacts and other forms of bruising
- Environmentally friendly
- Weather and boil proof bonding

BASE PLYWOOD

The base plywood of Metsä Wood FormPLUS is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

Designed and tailor-made to serve in demanding applications, birch plywood can be ordered with special oriented veneer structures to provide even higher strength and stiffness properties.

OVERLAY

A smooth and durable phenolic film is hot-pressed onto the panel surface. The film consists of special base papers impregnated with phenolic resin. A film with a basis weight of 220 g/m² is normally used. On the backside of the panel, the overlay has Metsä Wood FormPLUS logo imprinted into the panel surface. The overlay can also be ordered with customized logo. Standard film colour is dark brown. The phenol film is not UV resistant and the colour may change if exposed to sunlight over prolonged periods.

SURFACE PROPERTIES

The Metsä Wood FormPLUS plywood panel surface has a special treatment which makes the surface moisture repellent. Hence the FormPLUS panel surface is able to remarkably reduce surface rippling and provides a smooth concrete cast surface from the first use. The treatment is applied to the concrete side only, which normally has dark brown phenolic film without a logo. The backside of the panel has a film overlay with imprinted Metsä Wood FormPLUS logo.

The phenolic film surface is semi-glossy, smooth, hard and slippery. It withstands abrasion, is moisture resistant and can tolerate commonly used chemicals as well as diluted acids and alkalis. The surface is easy to clean with water or steam. Moisture absorption is minimal.

ABRASION RESISTANCE OF METSÄ WOOD FormPLUS (VALUES ARE INDICATIVE AND VALID FOR NEW UNUSED PANELS)

	OVERLAY WEIGHT	TABER REVOLUTIONS*
FormPLUS	220 g/m ²	700

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

EDGE SEALING

Panel edges are sealed against moisture absorption with acrylic edge sealing paint. Even though edge sealing slows down the absorption of moisture into the wood, it does not eliminate it completely.

PANEL SIZES

Metsä Wood FormPLUS is available in sizes:

- 1200 / 1220 / 1250 mm x 2400 / 2440 / 2500 / 3000 / 3600 / 3650 / 3660 mm
- 1500 / 1525 mm x 2500 / 3000 / 3050 / 3600 / 3660 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 (mm)	NUMBER OF PLYS (pcs)	THICKNESS TOLERANCE		WEIGHT kg/m ²
		min. (mm)	max. (mm)	
12	9	11.5	12.5	8.2
15	11	14.3	15.3	10.2
18	13	17.1	18.1	12.2
21	15	20.0	20.9	14.3

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680kg/m³ (at relative humidity of RH 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 (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 717-2, the formaldehyde emitted by Metsä Wood FormPLUS falls far below the Class E1 requirement of ≤ 3,5 mg/(m²·h). The formaldehyde emission of Metsä Wood FormPLUS is approximately 0,2-0,3 mg/(m²·h).

PANEL STRENGTH PROPERTIES

Metsä Wood FormPLUS strength and elasticity properties are identical with the Metsä Wood Birch standard plywood properties. The properties are specified according to standards EN 789 and EN 1058 and can be found in the Metsä Wood Birch Declaration of Performance (DoP). DoP documents can be downloaded from www.metsawood.com/dop.

The Concrete formwork design data (permissible concrete pressure tables, design nomograms) for all Metsä Wood formwork panels can be found in Metsä Wood Concrete Formwork technical data.

MACHINING

Metsä Wood FormPLUS plywood panels can be machined according to customer specification on special request.

PACKING

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

PACKING QUANTITIES

PANEL SIZE mm	NUMBER OF PANELS PER PALLET BY THICKNESS			
	12	15	18	21
1500 /1525 x 2400-3660 1200/1220/1250 x 3000-3660	50	40	35	30
1500 /1525 x 1500-2135 1200/1220/1250 x 1200-2750	70	60	50	45

FURTHER INFORMATION

- Metsä Wood Birch Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Concrete Formwork brochure
- Metsä Wood Concrete Formwork technical data

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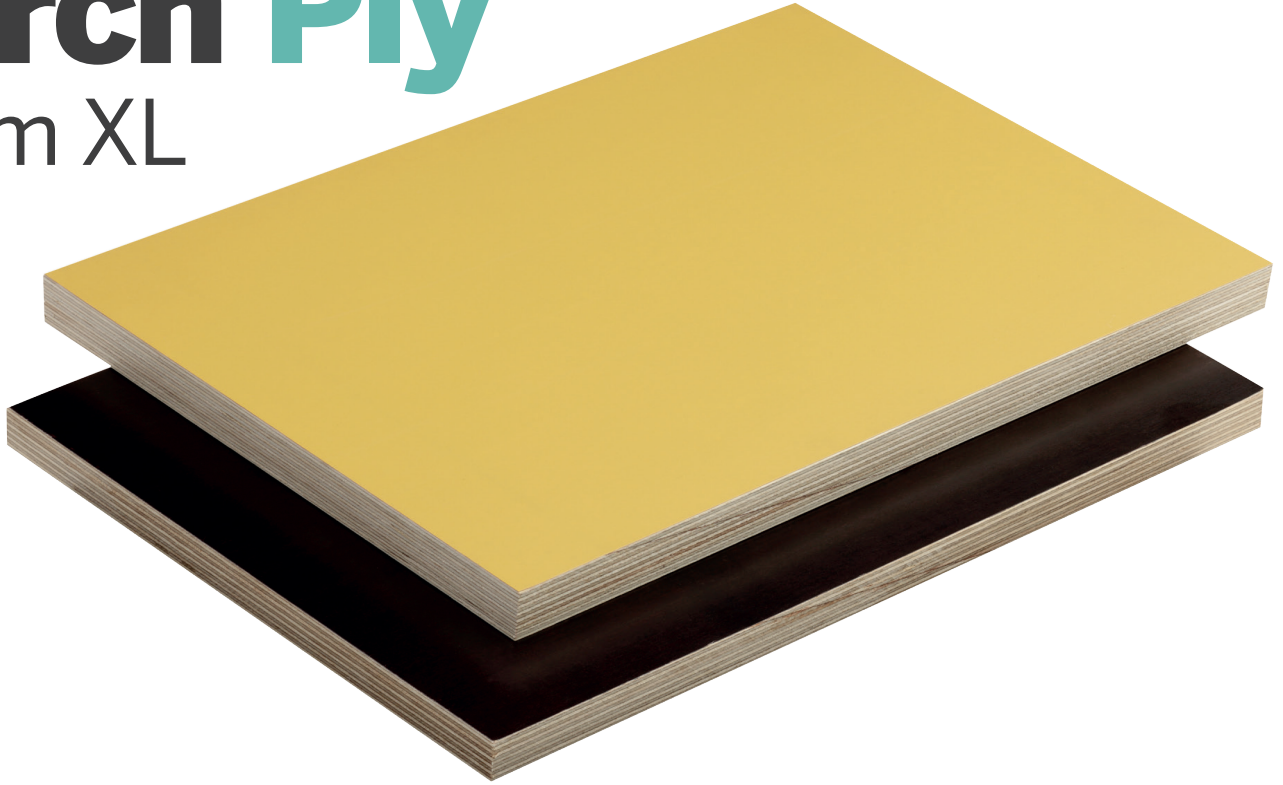
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Birch Ply

Form XL



Metsä Wood Form XL is a larger size birch plywood panel with smooth phenolic overlay. Form XL is a tough-surfaced, durable shuttering panel for demanding formwork applications. The durable overlays and large panel size ensure multiple uses and a high quality concrete finish with fewer joints. XL panels enable larger one piece components.

APPLICATIONS

Concrete formwork

Metsä Wood Form XL is suitable for highly demanding concrete formwork applications:

- Shuttering systems
- Concrete element industry
- Girder formwork

Transport industry

High quality large size Form XL panels can be used in various transport industry applications:

- Trailer bulkheads, side panels and back boards, agricultural trailers
- Trailer floors
- Bus floor constructions, luggage area floors

MAJOR ADVANTAGES

- Durable and weather resistant overlay
- Larger sizes with invisible joints
- Strong and rigid
- Easy to clean and re-use
- Good chemical resistance
- Dimensionally stable
- Easy to machine and fasten using conventional woodworking tools and fasteners
- Withstands impacts and other forms of bruising
- Environmentally friendly
- Weather and boil proof bonding

BASE PLYWOOD

The base plywood of Metsä Wood Form XL is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

The core panel of the large size Form XL is scarf-jointed from standard size birch plywood panels using weather resistant melamine or resorcinol adhesive.

OVERLAY

The panel is overlaid with durable and hard phenolic overlay. Standard overlay colours are yellow and dark brown. The reverse side is normally overlaid with similar overlay than the top face.

The durable overlays ensure smooth concrete cast finish and multiple uses. The number of uses can rise up to 30 – 100 but is highly dependent on the used overlay, site practice, requirements of concrete finish, the quality of release agent and the maintenance, handling and storage practices.

Use high quality release agent to ensure easier and cleaner release. Make sure that the release agent is suitable with the panel overlay. Clean panels after each use to remove all concrete debris. Seal scratches with water proof paint and fill holes with water resistant filler. Afterwards, apply a fresh coat of release agent prior to each subsequent use.

SURFACE PROPERTIES

Metsä Wood Form XL surface is smooth, hard and scratch resistant and withstands abrasion. The surface is moisture resistant and can tolerate commonly used chemicals as well as diluted acids and alkalis. The surface is easy to clean with water or steam.

ABRASION WEAR RESISTANCE OF METSÄ WOOD FORM XL (VALUES ARE INDICATIVE AND VALID FOR NEW UNUSED PANELS).

	TABER REVOLUTIONS*
Form XL (dark brown)	700
Form XL 450 (yellow)	1000

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

Birch Ply

Form XL

EDGE SEALING

Panel edges are sealed against moisture absorption with acrylic edge sealing paint. The standard colour of the edge sealing is transparent. Even though edge sealing slows down the absorption of moisture into the panel, it does not eliminate it completely.

PANEL SIZES

Metsä Wood Form XL is available in sizes:

- 6000 mm x 2000 / 2200 mm
- 5400 mm x 2000 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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE FORM XL PANELS *

NOMINAL THICKNESS (mm)	NUMBER OF PLYS (pcs)	THICKNESS TOLERANCE		WEIGHT (kg/m ²)
		min. (mm)	max. (mm)	
15	11	13.7	15.3	10.2
18	13	16.5	18.1	12.2
21	15	19.4	20.9	14.3
24	17	22.3	23.7	16.3
27	19	24.6	26.8	18.4

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood Form XL plywood is 680 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

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

The scarf joint is glued with weather resistant melamine or resorcinol adhesive.

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood Form XL 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 Form XL is approximately 0,017 ppm.

PANEL STRENGTH PROPERTIES

Due to the scarf jointed core plywood, the strength values of Metsä Wood Form XL in the longitudinal direction of the panel are ca. 65% of standard Metsä Wood Birch plywood values. In the cross direction of the panel the strength values are similar to standard Birch plywood. Stiffness values in both directions are similar to standard Birch plywood.

MECHANICAL PROPERTIES OF METSÄ WOOD FORM XL. MOISTURE CONTENT 12%. THE VALUES ARE EN 789 VALUES.

THICKNESS (mm)	MEAN MODULUS OF ELASTICITY (N/mm ²)		CHARACTERISTIC BENDING STRENGTH (N/mm ²)	
		⊥		⊥
15	10316	7184	26.8	33.8
18	10048	7452	26.1	34.1
21	9858	7642	25.6	34.3
24	9717	7783	25.3	34.4
27	9607	7893	25.0	34.5

The Concrete formwork design data (permissible concrete pressure tables, design nomograms) for all Metsä Wood formwork panels can be found in Metsä Wood Concrete Formwork technical data.

MACHINING

Metsä Wood Form XL plywood panels can be machined according to customer specification on special request.

PACKING

Metsä Wood Form XL 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
5400 x 2000		25	25	20	15	15
6000 x 2200		20	20	15	15	15

FURTHER INFORMATION

- Metsä Wood Concrete Formwork brochure
- Metsä Wood Concrete Formwork technical data
- Metsä Wood Deck XL Product Data Sheet
- Metsä Wood KingSize Product Data Sheet

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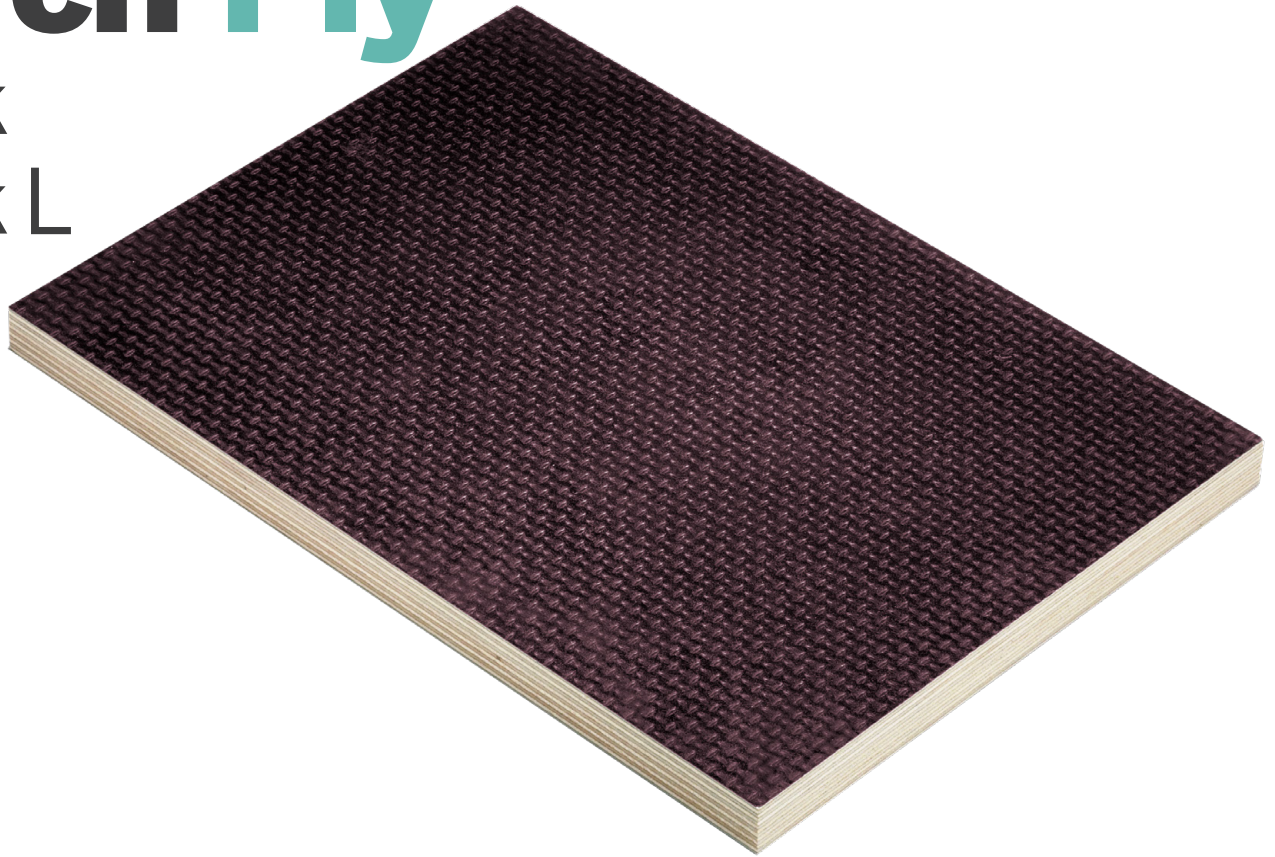
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Birch Ply

Deck

Deck L



Metsä Wood Deck is phenol film overlaid birch plywood with a rough wire mesh pattern. The rough-surfaced Deck is durable, multipurpose flooring panel. Metsä Wood Deck is available in various sizes: standard, L, XL and KingSize.

APPLICATIONS

Metsä Wood Deck is an ideal panel for applications that require highly wear-resistant and rough surfaces:

- **Transport industry:** Vehicle floors (trailers, trucks, lorries, busses, vans etc.), railway wagon floors, ship decking, transport platforms etc.
- **Building applications:** Warehouse and factory hall floors, loading docks, pedestrian bridges, piers, parking facilities, warehouse shelves, scaffolding etc.

MAJOR ADVANTAGES

- Durable and weather resistant overlay
- Slip resistant wire mesh surface
- Light and dimensionally stable
- Strong and rigid
- Withstands impacts and other forms of bruising
- Easy to machine and fasten using conventional woodworking tools and fasteners
- Easy to clean
- Good chemical resistance
- Environmentally friendly
- Weather and boil proof bonding

BASE PLYWOOD

The base plywood of Metsä Wood Deck is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

Designed and tailor-made to serve in demanding applications, birch plywood can be ordered with special oriented veneer structures to provide even higher strength and stiffness properties.

OVERLAY

The panel is overlaid with a durable phenolic film, and a rough wire mesh pattern is pressed into the surface during hot-pressing. A smooth phenolic film is normally applied to the reverse side. A film with a basis weight of 120g/m² is generally used, but standard panel sizes are available also with 220g/m² film. Metsä Wood Deck L is available only with 220 g/m² film.

Standard film colours are dark brown and black. Other colours can be available by order. The phenol film is not UV resistant and the colour may change if exposed to sunlight over prolonged periods.

SURFACE PROPERTIES

Metsä Wood Deck surface is wire mesh patterned. The surface is hard, rough and highly resistant to abrasion and rolling wear. The surface is also moisture resistant and can tolerate commonly used chemicals as well as diluted acids and alkalis. The surface is easy to clean with water or steam.

ABRASION AND ROLLING WEAR RESISTANCE OF METSÄ WOOD DECK (VALUES ARE INDICATIVE AND VALID FOR NEW UNUSED PANELS)

	OVERLAY WEIGHT	TABER REVOLUTIONS*	ROLLING WEAR*
Deck	120 g / m ²	350	3500
Deck	220 g / m ²	700	5000

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

** Rolling wear resistance is determined by method corresponding to SS 923508. Rolling wear is an average calculated from the random rolling movements with a load of 200 kg, before the first signs of breakdown occur

Birch Ply

Deck

EDGE SEALING

Panel edges are sealed against moisture absorption with acrylic edge sealing paint. The standard colour of the edge sealing is dark brown. Even though edge sealing slows down the absorption of moisture into the wood, it does not eliminate it completely.

PANEL SIZES

Metsä Wood Deck is available in sizes:

- 1200 / 1220 / 1250 mm x 2400 / 2440 / 2500 / 3000 / 3050 / 3660 mm
- 1500 / 1525 mm x 2500 / 3000 / 3050 / 3660 / 4110 mm

Metsä Wood Deck L is available in sizes:

- 2020 x 4110 mm
- 1870 x 4110 mm
- 1870 x 1870 mm, 2020 x 2020 mm

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

Other sizes are available on request. Larger size scarf-jointed XL and KingSize panels are also available by special order.

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

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 (pcs)	THICKNESS TOLERANCE		WEIGHT (kg/m ²)
		min. (mm)	max. (mm)	
6.5	5	6.1	6.9	4.4
9	7	8.8	9.5	6.1
12	9	11.5	12.5	8.2
15	11	14.3	15.3	10.2
18	13	17.1	18.1	12.2
21	15	20.0	20.9	14.3
24	17	22.9	23.7	16.3
27	19	25.2	26.8	18.4
30	21	28.1	29.9	20.4
35	25	33.5	35.5	23.8

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

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 Deck 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 Deck is approximately 0,017 ppm.

PANEL STRENGTH PROPERTIES

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

MACHINING

Metsä Wood Deck plywood panels can be machined according to customer specification on special request.

PACKING

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

PACKING QUANTITIES

PANEL SIZE	mm	NUMBER OF PANELS PER PALLET BY THICKNESS									
		6.5	9	12	15	18	21	24	27	30	
1500 / 1525 x 2400 – 3660 1200/1220/1250 x 2850 – 3660		90	65	50	40	35	30	25	25	20	
1500/1525 x 1500 – 2135 1200/1220/1250 x 1200 – 2800		140	100	75	60	50	45	40	35	30	
1500/1525 x 3670 – 4110 1870/2020 x 1870 – 4110		70	50	35	30	25	20	15	15	15	
1870 / 2020 x 1870 / 2020		140	100	70	60	50	40	30	30	30	

FURTHER INFORMATION

- Metsä Wood Deck Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Transport brochure
- Metsä Wood Deck XL Product Data Sheet
- Metsä Wood KingSize Product Data Sheet

METSÄ WOOD

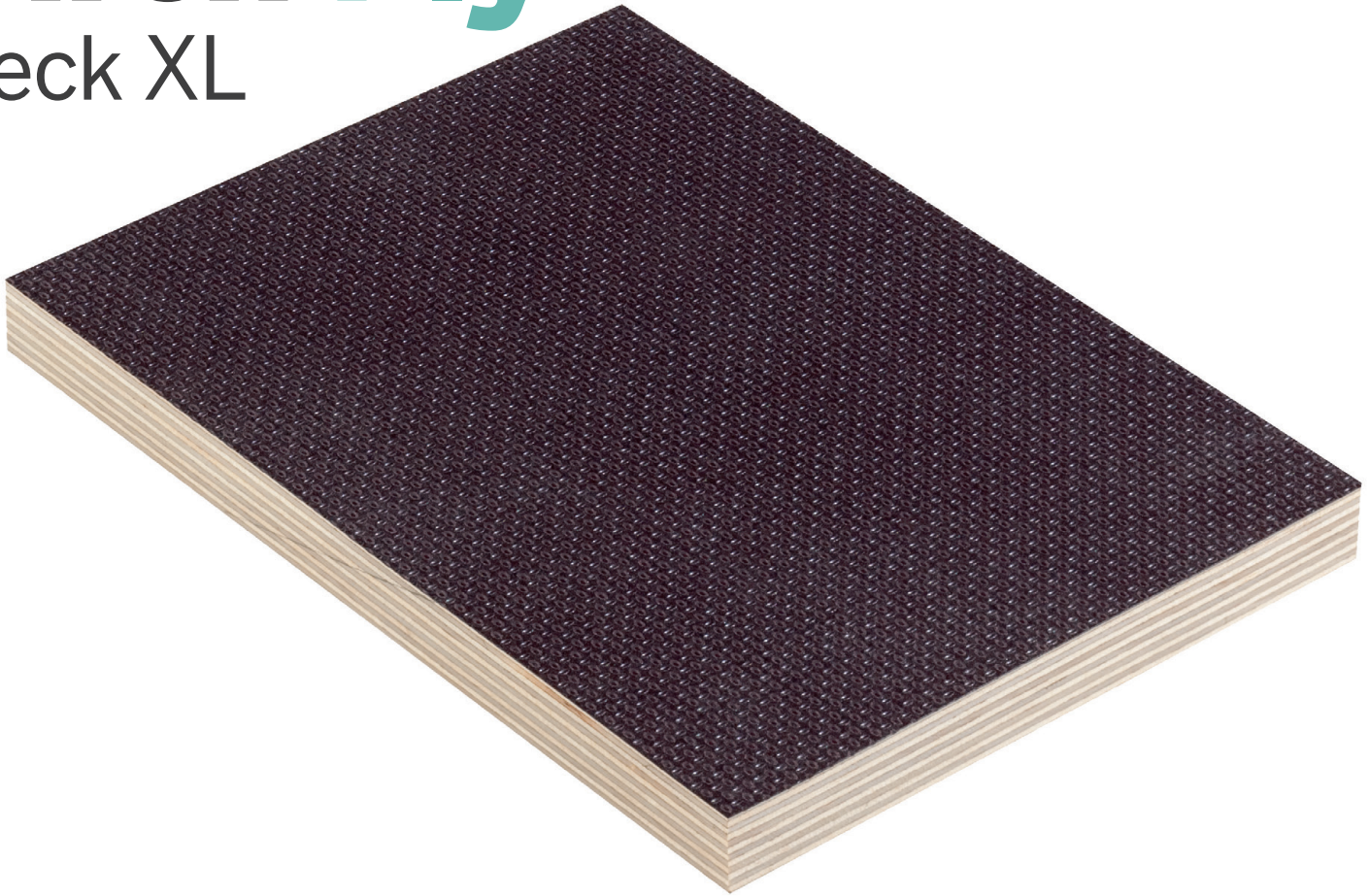
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Birch Ply

Deck XL



Metsä Wood Deck XL is a larger size birch plywood panel with a wire mesh phenolic overlay. Deck XL is a slip resistant flooring panel for demanding transport applications. XL panels enable larger one piece components.

APPLICATIONS

Metsä Wood Deck XL is suitable for applications that require large size panels with highly wear-resistant and rough surface. Larger panels facilitate and accelerate installation and provide structures with a high degree of rigidity.

- **Transport industry:** Trailer, bus, truck and van floors; passenger car floors, railway wagon floors, container floors and ship decking
- **Building applications:** Warehouse and factory hall floors, parking facilities, loading docks, piers, stages and sport stands

MAJOR ADVANTAGES

- Durable and weather resistant overlay
- Slip resistant wire mesh surface
- Larger sizes with invisible joints
- Strong and rigid
- Light and dimensionally stable
- Withstands impacts and other forms of bruising
- Easy to machine and fasten using conventional woodworking tools and fasteners
- Easy to clean
- Good chemical resistance
- Environmentally friendly
- Weather and boil proof bonding

BASE PLYWOOD

The base plywood of Metsä Wood Deck XL is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

The core panel of the large size Deck XL is scarf-jointed from standard size birch plywood panels using weather resistant melamine or resorcinol adhesive.

OVERLAY

A durable phenolic film is hot-pressed onto the panel surface. Standard colour is dark brown 220 g/m². The reverse side is a smooth phenolic film.

SURFACE PROPERTIES

Metsä Wood Deck XL surface is wire mesh patterned. The surface is hard and withstands abrasion and rolling wear, is moisture resistant and can tolerate commonly used chemicals as well as diluted acids and alkalis. The surface is easy to clean with water or steam.

ABRASION AND ROLLING WEAR RESISTANCE OF METSÄ WOOD DECK XL (VALUES ARE INDICATIVE AND VALID FOR NEW UNUSED PANELS).

	OVERLAY WEIGHT	TABER REVOLUTIONS*	ROLLING WEAR*
Deck XL	220 g / m ²	700	5000

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

** Rolling wear resistance is determined by method corresponding to SS 923508. Rolling wear is an average calculated from the random rolling movements with a load of 200 kg, before the first signs of breakdown occur.

Birch Ply

Deck XL

EDGE SEALING

Panel edges are sealed against moisture absorption with acrylic edge sealing paint. Standard colour is dark brown. Even though edge sealing slows down the absorption of moisture into the panel, it does not eliminate it completely.

PANEL SIZES

Metsä Wood Deck XL length 4110 to 6000 and/or width 2020 to 2200 mm. Smaller panel sizes without scarf joint are available in standard and L sizes.

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE DECK XL PANELS*

NOMINAL THICKNESS (mm)	NUMBER OF PLYS (pcs)	THICKNESS TOLERANCE		WEIGHT kg/m ²
		min. (mm)	max. (mm)	
12	9	10.9	12.5	8.2
15	11	13.7	15.3	10.2
18	13	16.5	18.1	12.2
21	15	19.4	20.9	14.3
24	17	22.3	23.7	16.3
27	19	24.6	26.8	18.4
30	21	27.5	29.9	20.4

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

The scarf joint is glued with weather resistant melamine or resorcinol adhesive.

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood Deck XL 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 Deck XL is approximately 0,017 ppm.

PANEL STRENGTH PROPERTIES

Due to the scarf jointed core plywood, the strength values of Metsä Wood Deck XL in the longitudinal direction of the panel are ca. 65% of standard Metsä Wood Birch plywood values. In the cross direction of the panel the strength values are similar to standard Birch plywood. Stiffness values in both directions are similar to standard Birch plywood.

MECHANICAL PROPERTIES OF METSÄ WOOD DECK XL. MOISTURE CONTENT 12%. THE VALUES ARE EN 789 VALUES.

THICKNESS (mm)	MEAN MODULUS OF ELASTICITY (N/mm ²)		CHARACTERISTIC BENDING STRENGTH (N/mm ²)	
		⊥		⊥
12	10719	6781	27.9	33.2
15	10316	7184	26.8	33.8
18	10048	7452	26.1	34.1
21	9858	7642	25.6	34.3
24	9717	7783	25.3	34.4
27	9607	7893	25.0	34.5
30	9519	7981	24.8	34.6

MACHINING

Metsä Wood Deck XL plywood panels can be machined according to customer specification on special request.

PACKING

Metsä Wood Deck XL panels are packed in moisture resistant plastic wrapping. The panel wear face is facing up in the packing.

PACKING QUANTITIES

PANEL SIZE	mm	NUMBER OF PANELS PER PALLET BY THICKNESS						
		12	15	18	21	24	27	30
3000 x 2200		60	45	40	30	30	25	20
4000 x 2200		45	35	30	25	20	20	15
5400 x 2200		30	25	25	20	15	15	10
6000 x 2200		25	20	20	15	15	15	10

FURTHER INFORMATION

- Metsä Wood Transport brochure

METSÄ WOOD

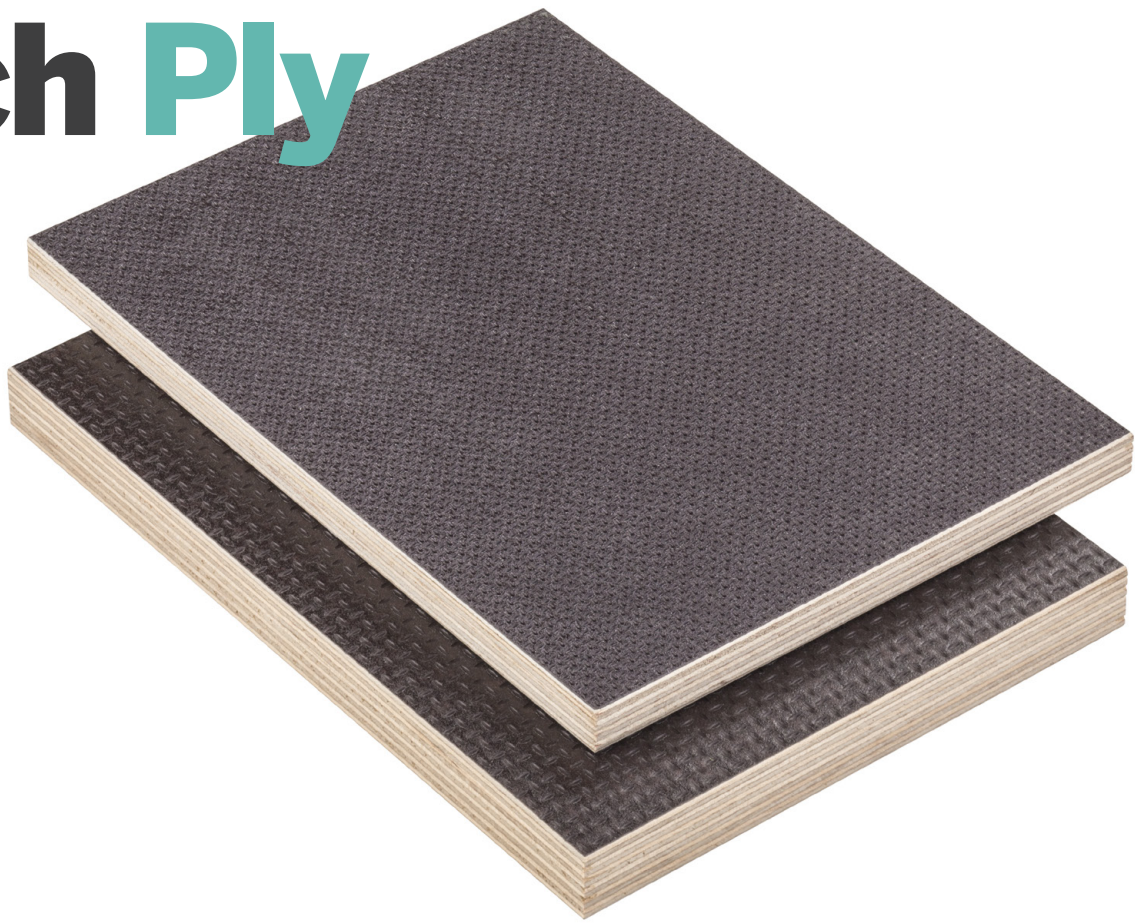
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Birch Ply

Floor Floor L



Metsä Wood Floor is multilayer phenol film overlaid birch plywood with a rough wire mesh pattern. The rough-surfaced Floor is a heavy-duty, multipurpose plywood flooring panel for applications requiring a reliable, long-lasting anti-slip surface. Metsä Wood Floor is available in various sizes: standard, L and XL.

APPLICATIONS

Metsä Wood Floor is an ideal panel for transport applications that require highly wear-resistant and rough surfaces:

- Vehicle floors (trailers, trucks, lorries, vans etc.)
- Railway wagon floors
- Ship decking
- Transport platforms

Metsä Wood Floor can also be used in other heavy-duty flooring applications.

MAJOR ADVANTAGES

- Extremely durable and weather resistant overlay
- Highly slip resistant wire mesh surface which ensures excellent loading safety
- Light and dimensionally stable
- Strong and rigid
- Withstands impacts and other forms of bruising
- Easy to machine and fasten using conventional woodworking tools and fasteners
- Easy to clean
- Good chemical resistance
- Environmentally friendly
- Weather and boil proof bonding

BASE PLYWOOD

The base plywood of Metsä Wood Floor is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

Designed and tailor-made to serve in demanding applications, birch plywood can be ordered with special oriented veneer structures to provide even higher strength and stiffness properties.

OVERLAY

The panel is overlaid with a durable phenolic film, and a rough wire mesh pattern is pressed into the surface during hot-pressing.

There are two different overlay thicknesses and wire mesh patterns available:

- Tight wire mesh Floor 500
- Coarse wire mesh Floor 700

The phenolic film is also applied to the reverse side and this side is normally smooth. Standard film colour is dark brown. The phenol film is not UV resistant and the colour may change if exposed to sunlight over prolonged periods.

SURFACE PROPERTIES

The panel has a rough and hard surface. Thick multi-layer overlay can withstand highly abrasive and rolling wear. The surface is also moisture resistant and can tolerate commonly used chemicals as well as diluted acids and alkalis. The surface is easy to clean with water or steam.

ABRASION AND ROLLING WEAR RESISTANCE OF METSÄ WOOD FLOOR (VALUES ARE INDICATIVE AND VALID FOR NEW UNUSED PANELS).

	TABER REVOLUTIONS*	ROLLING WEAR*
Floor 500	3200	7000
Floor 700	4300	9000

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

** Rolling wear resistance is determined by method corresponding to SS 923508. Rolling wear is an average calculated from the random rolling movements with a load of 200 kg, before the first signs of breakdown occur

Birch Ply

Floor

EDGE SEALING

Panel edges are sealed against moisture absorption with acrylic edge sealing paint. The standard colour of the edge sealing is dark brown. Even though edge sealing slows down the absorption of moisture into the wood, it does not eliminate it completely.

PANEL SIZES

Metsä Wood Floor is available in sizes:

- 1200 / 1220 / 1250 mm x 2400 / 2440 / 2500 / 3000 / 3050 / 3660 mm
- 1500 / 1525 mm x 2500 / 3000 / 3050 / 3660 / 4110 mm

Metsä Wood Floor L is available in sizes:

- 2020 x 4110 mm
- 1870 x 4110 mm
- 1870 x 1870 mm, 2020 x 2020 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

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
		min. (mm)	max. (mm)	
(mm)	(pcs)			kg/m ²
9	7	8.8	9.5	6.1
12	9	11.5	12.5	8.2
15	11	14.3	15.3	10.2
18	13	17.1	18.1	12.2
21	15	20.0	20.9	14.3
24	17	22.9	23.7	16.3
27	19	25.2	26.8	18.4
30	21	28.1	29.9	20.4

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

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 Floor 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 Floor is approximately 0,017 ppm.

PANEL STRENGTH PROPERTIES

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

MACHINING

Metsä Wood Floor plywood panels can be machined according to customer specification on special request.

PACKING

Metsä Wood Floor 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
1500 / 1525 x 2400 – 3660 1200/1220/1250 x 2850 – 3660		65	50	40	35	30	25	25	20
1500/1525 x 1500 – 2135 1200/1220/1250 x 1200 – 2800		100	75	60	50	45	40	35	30
1500/1525 x 3670 – 4110 1870/2020 x 1870 – 4110		50	35	30	25	20	15	15	15
1870 / 2020 x 1870 / 2020		100	70	60	50	40	30	30	30

FURTHER INFORMATION

- Metsä Wood Floor Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Transport brochure

METSÄ WOOD

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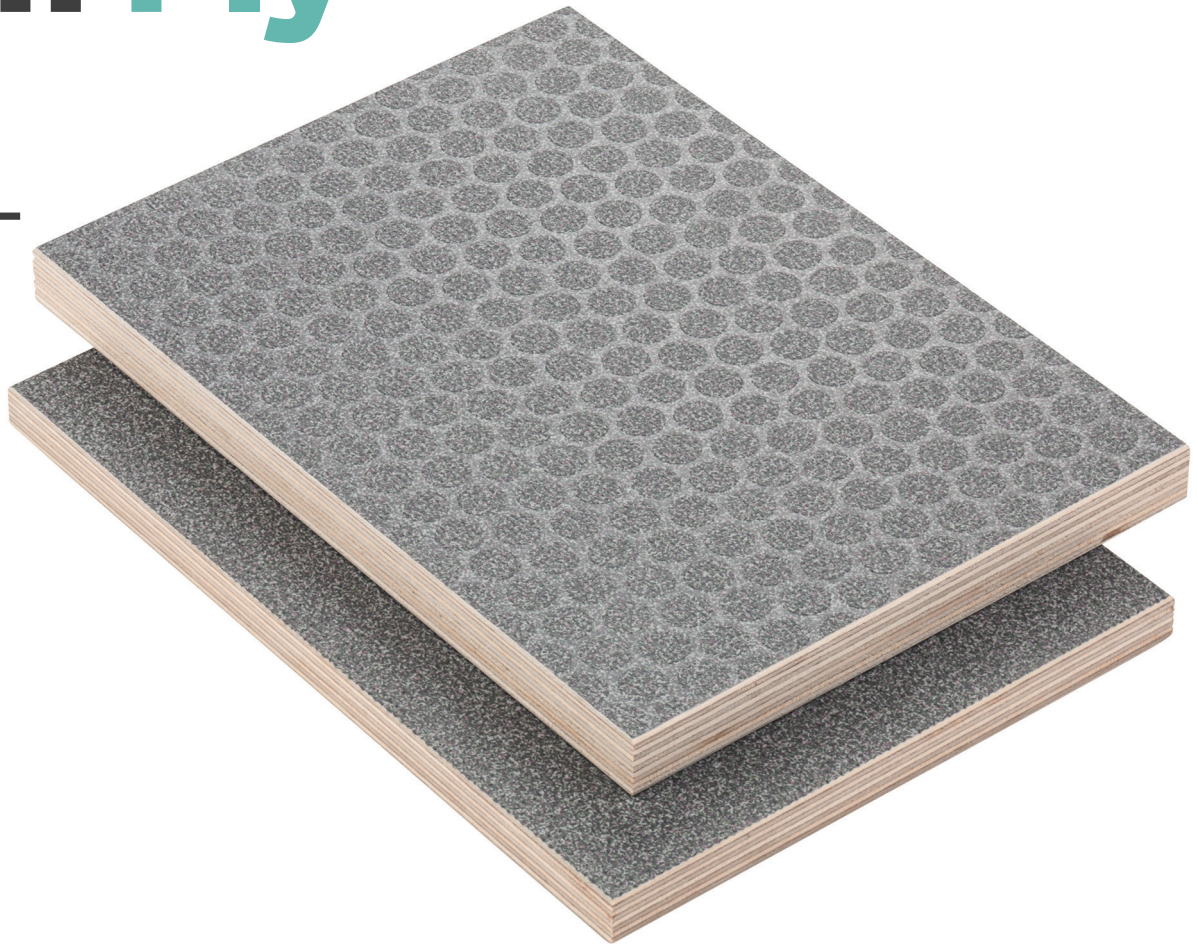
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Birch Ply

Granit

Granit L



Metsä Wood Granit is birch plywood panel overlaid with special decorative overlay. The panel surface has wire mesh or raised Top pattern. High visual quality and wear-resistant surface makes Granit durable, multipurpose plywood flooring panel. Metsä Wood Granit is available in standard, Large and XL sizes.

APPLICATIONS

Metsä Wood Granit is an ideal panel for applications that require visual high quality surfaces:

- Granit has been developed for especially light transport end uses

MAJOR ADVANTAGES

- Slip resistant wire mesh surface
- Light and dimensionally stable
- Strong and rigid
- Withstands impacts and other forms of bruising
- Easy to machine and fasten using conventional woodworking tools and fasteners
- Easy to clean
- Good chemical resistance
- Environmentally friendly

BASE PLYWOOD

The base plywood of Metsä Wood Granit is Metsä Wood Birch, which made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

OVERLAY

The film surface is semi-glossy, hard and resistant to impact and abrasion. Granit surface has grey decorative print. The smooth dark brown phenolic film is applied to the reverse side as a backer.

The surface options are:

- Metsä Wood Granit Deck: wire mesh pattern
- Metsä Wood Granit Top: raised round pattern

SURFACE PROPERTIES

The surface is hard and resistant to abrasion. The surface is also UV light and moisture resistant, and can tolerate commonly used chemicals as well as diluted acids and alkalis. The surface is easy to clean.

ABRASION RESISTANCE OF METSÄ WOOD GRANIT (VALUES ARE INDICATIVE AND VALID FOR NEW UNUSED PANELS)

	TABER REVOLUTIONS*
Granit	800

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

EDGE SEALING

Panel edges are sealed against moisture absorption with acrylic edge sealing paint. The standard colour of the edge sealing is grey. Even though edge sealing slows down the absorption of moisture into the wood, it does not eliminate it completely.

PANEL SIZES

Metsä Wood Granit is available in sizes:

- 1200 / 1220 / 1250 mm x 2400 / 2440 / 2500 / 3000 / 3050 / 3660 mm
- 1500 / 1525 mm x 2500 / 3000 / 3050 / 3660 / 4110 mm

Metsä Wood Granit L is available in sizes:

- 2020 x 4110 mm
- 1870 x 4110 mm
- 1870 x 1870 mm, 2020 x 2020 mm

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

Other sizes are available on request. Larger size scarf-jointed XL panels are also available by special order.

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

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
		min. (mm)	max. (mm)	
(mm)	(pcs)			kg/m ²
9	7	8.8	9.5	6.1
12	9	11.5	12.5	8.2
15	11	14.3	15.3	10.2
18	13	17.1	18.1	12.2
21	15	20.0	20.9	14.3

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

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 717-2, the formaldehyde emitted by Metsä Wood Granit falls far below the Class E1 requirement of ≤ 3,5 mg/(m²*h). The formaldehyde emission of Metsä Wood Granit is approximately 0,6 mg/(m²*h).

PANEL STRENGTH PROPERTIES

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

Due to the scarf jointed core plywood, the strength values of Metsä Wood Granit Deck XL in the longitudinal direction of the panel are ca. 65% of standard Metsä Wood Birch plywood values. In the cross direction of the panel the strength values are similar to standard Birch plywood. Stiffness values in both directions are similar to standard Birch plywood. Granit Deck XL strength and elasticity properties can be found in the Metsä Wood Deck XL Product Data Sheet.

MACHINING

Metsä Wood Granit plywood panels can be machined according to customer specification on special request.

PACKING

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

PACKING QUANTITIES

PANEL SIZE	NUMBER OF PANELS PER PALLET BY THICKNESS					
	mm	9	12	15	18	21
1500 / 1525 x 2400 – 3660 1200/1220/1250 x 2850 – 3660		65	50	40	35	30
1500/1525 x 1500 – 2135 1200/1220/1250 x 1200 – 2800		100	75	60	50	45
1500/1525 x 3670 – 4110 1870/2020 x 1870 – 4110		50	35	30	25	20
1870 / 2020 x 1870 / 2020		100	70	60	50	40

FURTHER INFORMATION

- Metsä Wood Granit Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Transport brochure
- Metsä Wood Deck XL Product Data Sheet

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Birch Ply

Integra



Metsä Wood Integra is a new generation overlaid plywood panel with excellent adhesion and painting properties. The durable surface allows the panel to be used in multiple end uses e.g. bonded floor constructions in vehicle frames, painted interior and exterior applications and concrete formwork.

APPLICATIONS

Metsä Wood Integra with a tailor-made overlay ensures a durable finish with excellent adhesion and painting properties. Integra has a wide application range from paint-base panel to glueable floor components and concrete formwork panels. Integra panels are available in a wide range of thicknesses and sizes.

- **Transport:** Bus floors constructions, glued trailer floors, transport boxes
- **Concrete Formwork:** Smooth and maintenance-free panel for different formwork uses.
- **Building:** General interior and exterior building applications, hoarding panels, general paint-base panel, agricultural structures, showrooms and displays, stage constructions
- **Other:** Traffic signs, sports arenas and equipment, packaging applications

MAJOR ADVANTAGES

- Versatile panel
 - Durable overlay
 - Surface can be painted or glued
 - Smooth surface formwork panel
 - Easy to machine and fasten by using conventional woodworking tools
 - Easy to clean
- Light and dimensionally stable
 - Strong and rigid
- Excellent adhesion
 - Good physical bonding for various adhesives
- Easy paintability
 - Smooth and uniform paint finish
 - Saves painting time and costs
 - Suitable for many commercial paint types
- Environmentally friendly
 - Low formaldehyde emissions
 - PEFC certified

BASE PLYWOOD

The base plywood of Metsä Wood Integra is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

Designed and tailor-made to serve in demanding applications, birch plywood can be ordered with special oriented veneer structures to provide even higher strength and stiffness properties.

OVERLAY AND SURFACE PROPERTIES

Metsä Wood Integra Form film surface is smooth, semi-matt, hard and slippery. The durable Integra Form overlay ensures matt, smooth concrete cast finish and multiple uses. Use high quality release agent to ensure easier and cleaner release.

Metsä Wood Integra Deck has a non-slippery wire mesh surface with excellent gluing properties.

Integra overlay withstands abrasion, is moisture resistant and can tolerate commonly used chemicals as well as diluted acids and alkalis. The surface is easy to clean. Moisture absorption is minimal. Colour of the overlay is red brown. There can be colour variation between the panels and different production lots. The compatibility of a surface coating or a glue type should be confirmed from the supplier. Additionally a test coating/gluing is recommended prior to use.

GLUING AND PAINTING OPTIONS

POSSIBILITIES FOR STRUCTURAL GLUE - ACCORDING TO SIKA

PRE-TREATMENT NO SANDING	ADHESIVE	METSÄ WOOD INTEGRA	
		FORM	DECK
	Sikaflex® -221	X	X
	Sikaflex® -252		X
	Sikaflex® -263		X
	Sikaflex® -265		X
Sika® Aktivator	Sikaflex® -221		X
Sika® Aktivator	Sikaflex® -252	X	X
Sika® Aktivator	Sikaflex® -263	X	X
Sika® Aktivator	Sikaflex® -265	X	X
Sika® Coating Aktivator	Sikaflex® -221	X	X
Sika® Coating Aktivator	Sikaflex® -252	X	X
Sika® Coating Aktivator	Sikaflex® -263	X	X
Sika® Coating Aktivator	Sikaflex® -265	X	X

Technical Service Report 00010-FI-00001-JJA / Oy Sika Finland Ab / Industry 6/13
Testmethod: CQP 033-1 – Bead Adhesion
Substrate: Plywood: Metsä Wood Integra Form and Deck

POSSIBILITIES FOR TRANSPORTATION FLOORING - ACCORDING TO SIKA

Metsä Wood Integra was tested with Sika products for transport applications. SikaSense® - 4335 + SikaCure® - 4935, and SikaSense® - 4600 display good adhesion and strength levels. All the products need to be checked regarding suitability for production processes. Line trials with original customer equipment are recommended.

Technical Service Report
01025-DE2-00001-AL / 27.11.2014 / MetsäWood-FIN

POSSIBILITIES FOR PAINTING - ACCORDING TEKNO

One of Europe's leading suppliers of industrial coatings Teknos recommends following painting systems with Metsä Wood Integra:

	1 C PRODUCTS	2 C PRODUCTS
TopCoat	Nordica Eco / AquaTop	Teknodur 150 / Teknodur Aqua
Primer	Teknol 3881	Teknodur Wood primer 5 / Teknodur primer 5

EDGE SEALING

Panel edges are sealed against moisture absorption with acrylic edge sealing paint. Even though edge sealing slows down the absorption of moisture into the wood, it does not eliminate it completely.

PANEL SIZES

Metsä Wood Integra is available in sizes:

- 1200 / 1220 / 1250 mm x 2400 / 2440 / 2500 / 3000 / 3050 / 3600 / 3660 mm
 - 1500 / 1525 mm x 2500 / 3000 / 3050 / 3600 / 3660 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

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 (pcs)	THICKNESS TOLERANCE		WEIGHT (kg/m ²)
		min. (mm)	max. (mm)	
9	7	8.8	9.5	6.1
12	9	11.5	12.5	8.2
15	11	14.3	15.3	10.2
18	13	17.1	18.1	12.2
21	15	20.0	20.9	14.3
24	17	22.9	23.7	16.3
27	19	25.2	26.8	18.4
30	21	28.1	29.9	20.4

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

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 Integra falls far below the Class E1 requirement of $\leq 0,100$ ppm and fulfils also the most stringent requirements in the world ($\leq 0,030$ ppm). The formaldehyde emission of Metsä Wood Integra is approximately 0,017 ppm.

PANEL STRENGTH PROPERTIES

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

The Concrete formwork design data (permissible concrete pressure tables, design nomograms) for all Metsä Wood formwork panels can be found in Metsä Wood Concrete Formwork technical data.

PACKING

Metsä Wood Integra 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
1500 /1525 x 2400–3660								
1200/1220/1250 x 3000–3660	65	50	40	35	30	25	25	20
1500 /1525 x 1500–2135	100	75	60	50	45	40	35	30
1200/1220/1250 x 1200–2750								

FURTHER INFORMATION

- Metsä Wood Integra Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Concrete Formwork brochure
- Metsä Wood Concrete Formwork technical data
- Metsä Wood Transport brochure

METSÄ WOOD

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Birch Ply

Top



Metsä Wood Birch Ply Top is a phenolic film overlaid birch plywood panel with a raised pattern. High visual quality and wear-resistant surface makes Top multipurpose plywood flooring panel.

APPLICATIONS

Metsä Wood Top is an ideal panel for applications that require high quality visual and wear resistant surface:

- **Transport industry:** Vehicle floors (trailers, trucks, lorries, busses vans, etc.), railway wagon floors, ship decking, transport platforms etc.
- **Building applications:** Working platforms, scaffolding, stages, warehouse and factory hall floors, loading docks, pedestrian bridges, warehouse shelves etc.

MAJOR ADVANTAGES

- Durable and weather resistant overlay
- Slip resistant raised pattern surface
- Light and dimensionally stable
- Strong and rigid
- Withstands impacts and other forms of bruising
- Easy to machine and fasten using conventional woodworking tools and fasteners
- Easy to clean
- Good chemical resistance
- Environmentally friendly
- Weather and boil proof bonding

BASE PLYWOOD

The base plywood of Metsä Wood Top is Metsä Wood birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

OVERLAY

The patterned phenolic film surface is dark brown, semi-glossy, hard and resistant to impact and abrasion. The phenolic film is also applied to the reverse side which is smooth.

The phenol film is not UV resistant and depending on the overlay type the colour may change if exposed to sunlight over prolonged periods.

SURFACE PROPERTIES

The surface is hard and resistant to abrasion and rolling wear. The surface is also moisture resistant and can tolerate commonly used chemicals as well as diluted acids and alkalis. The surface is easy to clean with water or steam.

Birch Ply

Top

ABRASION AND ROLLING WEAR RESISTANCE OF METSÄ WOOD TOP (VALUES ARE INDICATIVE AND VALID FOR NEW UNUSED PANELS)

OVERLAY WEIGHT	TABER REVOLUTIONS*	ROLLING WEAR*
220 g / m ²	700	5000
440 g / m ²	2100	7000
660 g / m ²	3500	9000

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

** Rolling wear resistance is determined by method corresponding to SS 923508. Rolling wear is an average calculated from the random rolling movements with a load of 200 kg, before the first signs of breakdown occur.

EDGE SEALING

Panel edges are sealed against moisture absorption with acrylic edge sealing paint. The standard colour of the edge sealing is dark brown. Even though edge sealing slows down the absorption of moisture into the wood, it does not eliminate it completely.

PANEL SIZES

Metsä Wood Top is available in sizes:

- 1200 / 1200 / 1250 mm x 2400 / 2440 / 2500 / 3000 / 3050 mm
- 1500 / 1525 mm x 2500 / 3000 / 3050 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

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.

THICKNESS STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS (mm)	NUMBER OF PLYES (pcs)	THICKNESS TOLERANCE		WEIGHT kg/m ²
		min. (mm)	max. (mm)	
9	7	8.8	9.5	6.1
12	9	11.5	12.5	8.2
15	11	14.3	15.3	10.2
18	13	17.1	18.1	12.2
21	15	20.0	20.9	14.3
24	17	23.7	23.7	16.3
27	19	26.8	26.8	18.4
30	21	29.9	29.9	20.4

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

METSÄ WOOD

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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 Top 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 Top is approximately 0,017 ppm.

PANEL STRENGTH PROPERTIES

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

MACHINING

Metsä Wood Top plywood panels can be machined according to customer specification on special request.

PACKING

Metsä Wood Top panels are packed in moisture resistance plastic wrapping.

PACKING QUANTITIES

PANEL SIZE	mm	NUMBER OF PANELS PER PALLET BY THICKNESS							
		9	12	15	18	21	24	27	30
1500/1525 x 2400-3050 1200/1220/1250 x 3000-3050		65	50	40	35	30	25	25	20
1500/1525 x 1500-2135 1200/1220/1250 x 1200-2750		100	75	60	50	45	40	35	30

FURTHER INFORMATION

- Metsä Wood Top Declaration of Performance
- Metsä Wood Transport brochure

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Birch Ply

Sonex Light



Metsä Wood Sonex Light is a birch plywood sandwich panel with good sound reduction properties. Its main end uses are in transportation industry like buses and trains. Sonex Light panels are composite structures made out of plywood and sound reduction material.

APPLICATIONS

Metsä Wood Sonex Light is an ideal solution for applications which require good sound insulation, high strength and elasticity properties. Sonex Light panel is perfectly suited for light structures where low weight is a priority.

Benefits in transport uses are:

- Good strength / weight – ratio and high durability
- Less fuel consumption – Reduction of CO₂ emissions of a vehicle

Sonex Light applications:

- Transport industry: Bus and train walls and floors to reduce noise levels in the passenger cabin areas.
- Building applications: Partition walls requiring high acoustic insulation

MAJOR ADVANTAGES

- Good sound reduction properties
- Light and dimensionally stable
- Strong and rigid
- Easy to machine and fasten using conventional woodworking tools and fasteners
- Available with various technically and / or visually high quality overlays
- Good chemical resistance and durability of overlaid products
- Environmentally friendly

BASE PLYWOOD

Metsä Wood Sonex Light is a composite panel consisting of Metsä Wood birch plywood and Amorim Cork composite sound reduction material. The base plywood of Sonex Light is Metsä Wood Birch, which is made of cross-banded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

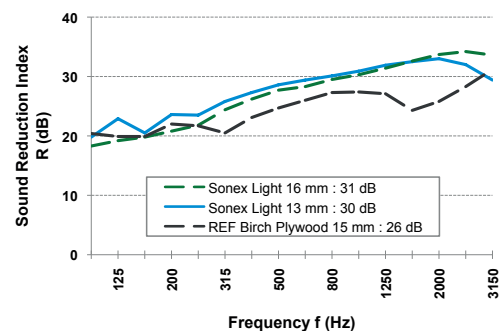
OVERLAY AND SURFACE PROPERTIES

Metsä Wood Sonex Light standard surfaces are uncoated. Surfaces are also available with variety of technically or visually high quality overlays. Generally all standard birch plywood overlays e.g. thermoset or thermoplastic overlays are available.

In addition Sonex Light is also available with Phoenix overlay which significantly enhances the fire performance of the panel. Surface properties are dependent on overlay type. For more information on the overlay selection and the surface properties of a single overlay type, please contact Metsä Wood Plywood sales or see particular Product Data Sheet (e.g. Metsä Wood Form, Metsä Wood Phoenix).

SOUND INSULATION

Sound reduction indexes of the Metsä Wood Sonex Light panels



NOMINAL THICKNESS (mm)	SOUND REDUCTION INDEX* Rw (dB)
13	30
16	31
19	31

* The sound reduction index R was measured in accordance with EN ISO 10140-2:2010 and the weighted sound reduction index Rw was determined in accordance with EN ISO 717-1:1996.

Special structures with higher sound insulation properties are available on request.

EDGES

In standard Metsä Wood Sonex Light products the edges are not painted or otherwise sealed. Edge protection with acrylic edge sealing paint is available for overlaid panels on special request.

PANEL SIZES

Metsä Wood Sonex Light is available in sizes:

- 1250 mm x 2500 mm
 - 1525 mm x 3050 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

THICKNESSES, THICKNESS TOLERANCES AND WEIGHT OF THE PANELS *

NOMINAL THICKNESS (mm)	THICKNESS TOLERANCE*		WEIGHT** kg/m ²
	min. (mm)	max. (mm)	
13	12	14	9.3
16	15	17	10.9
19	18	20	13.2

* Moisture content of the product affects its dimensions

** Weights are given at relative humidity of RH 65 %.

Special structures and thicknesses are available on request.

Customised tolerances are possible but must be agreed on separately.

BONDING CLASSES

Metsä Wood Sonex Light base 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

Sonex Light sandwich panel meets the standard EN 314-2 requirements.

METSÄ WOOD

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FIRE CLASSIFICATION

The fire performance of Metsä Wood Sonex Light has been tested according to several standards and directives.

- Approval directive 95/28/EC
- Approval FMVSS 302
- DIN 5510-2 – S3, SRT2, ST2

Other approvals for railway industry are listed in the Metsä Wood Phoenix Product Data Sheet.

FORMALDEHYDE EMISSIONS

Determined according to EN 717-2, the formaldehyde emitted by Metsä Wood Sonex Light falls far below the Class E1 requirement of ≤ 3,5 mg/(m²h). The formaldehyde emission of Metsä Wood Sonex Light is approximately 0,7 mg/(m²h).

PANEL STRENGTH PROPERTIES

MECHANICAL PROPERTIES OF METSÄ WOOD SONEX LIGHT

THICKNESS* (mm)	CHARACTERISTIC BENDING ** STRENGTH (N/mm ²)		MEAN MODULUS OF ELASTICITY ** (N/mm ²)	
	II	I	II	I
13	37,8	31,0	9440	6487
16	33,9	30,2	8977	6694
19	36,3	31,5	9070	6968

* Moisture content 12 %

** Values are EN 789 values

MACHINING

Metsä Wood Sonex Light plywood panels can be edge machined and predrilled according to customer specification on special request.

PACKING

Metsä Wood Sonex Light panels are packed in moisture resistant plastic wrapping.

PACKING QUANTITIES

PANEL SIZE	mm	NUMBER OF PANELS PER PALLET BY THICKNESS		
		13	16	19
1250 x 2500		55	50	40
1525 x 3050		45	35	35

FURTHER INFORMATION

- Metsä Wood Phoenix Product Data Sheet

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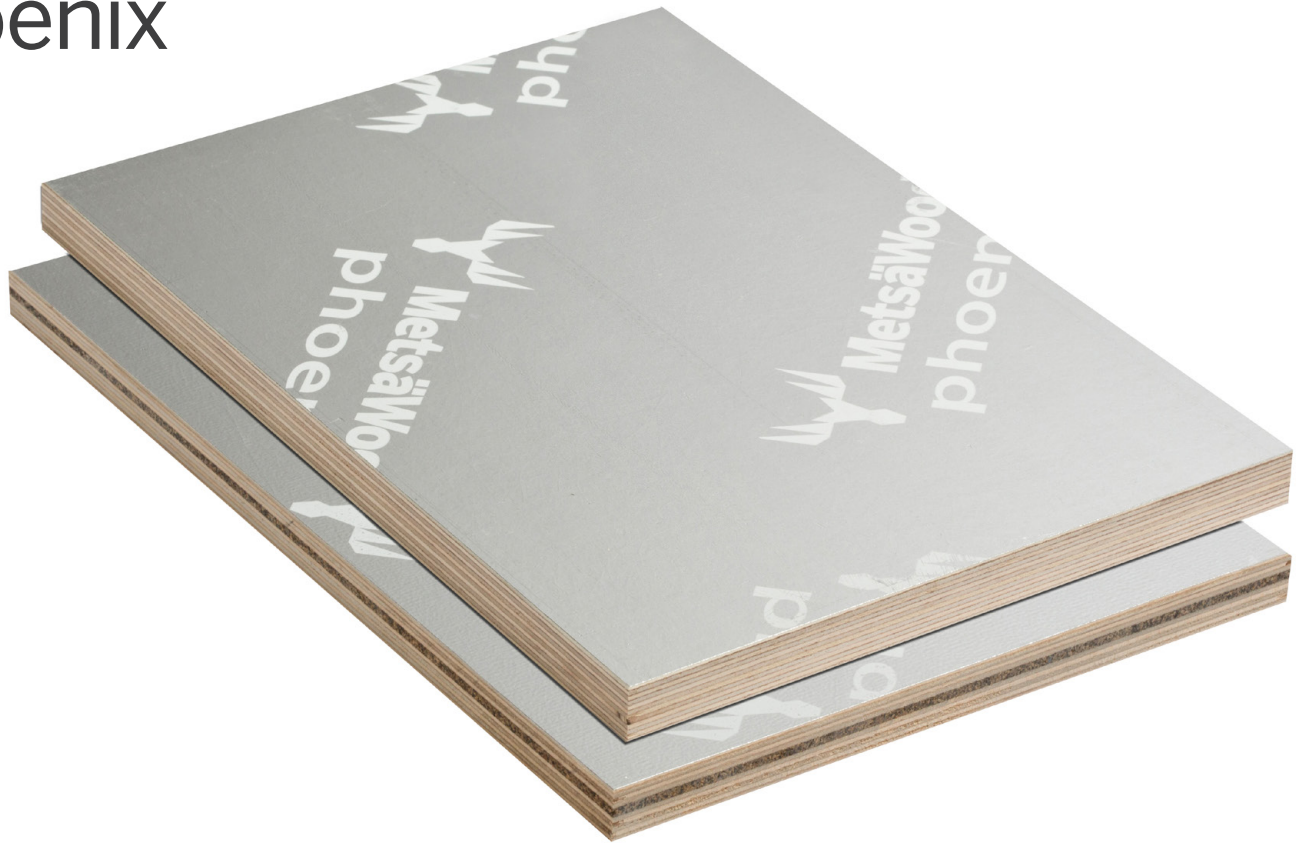


PEFC
PEFC/02-31-03

03/2019

Birch Ply

Phoenix



Metsä Wood Phoenix plywood products provide enhanced fire performance for uses in transport industry. The product range consists of birch plywood and Sonex Light sound-absorbing sandwich panels overlaid with a special aluminium overlay. Phoenix products meet the requirements of many demanding end use applications.

APPLICATIONS

The combination of fire performance, sound insulation properties and good strength-to-weight ratio make Phoenix an excellent choice for various applications in transport industry, like railway wagons and bus floors.

MAJOR ADVANTAGES

- Enhanced fire performance
- Good sound reduction properties with Phoenix Sonex Light
- Versatile uses – surface can be painted or overlaid
- High strength/weight ratio
 - Strong and rigid
 - Light and dimensionally stable
- Air tight surface
 - Water vapour barrier
- Environmentally friendly
 - No endangered wood species
 - No hazardous chemicals
 - Low formaldehyde emissions
 - PEFC certified

BASE PLYWOOD

The base plywood of Metsä Wood Phoenix Birch is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

The base plywood of Metsä Wood Phoenix Sonex Light is Metsä Wood Sonex Light, which is a composite panel consisting of Metsä Wood birch plywood and Amorim Cork composite sound reduction material.

OVERLAY AND SURFACE PROPERTIES

Metsä Wood Phoenix has a special aluminium overlay. The primed aluminium overlay allows the surface to be painted or overlaid in the customers' own process according to the end use requirements. The compatibility of a surface coating or an adhesive should be confirmed from the coating supplier. Additionally a test coating is recommended prior to use.

PANEL EDGES

Panel edges are sealed against moisture absorption with acrylic edge sealing paint. The colour of the edge sealing is transparent. Even though the edge sealing slows down the absorption of moisture into the panel, it does not eliminate it completely.

FIRE CLASSIFICATION

The fire performance of Metsä Wood Phoenix products has been tested according to several standards and directives:

	Phoenix Birch	Phoenix Sonex Light
prEN 45545-2: 2012: R10 (equal to EN 45545-2: 2013)	HL1 to HL3	HL1 to HL3
EN 45545-2: 2013: R1, R7	HL1 to HL3	-
DIN 5510-2: 2009	SF3	SF3
NFX 10702/NFX 70100, NF F 16101: 1988, NF P92-501: 1995, NF P 92-507: 2004	M1F0	M1F1
UNE 23721: 1990, UNE 23727: 1990	M1F0	M1F1
BS 6853: 1999	1a	1b
ASTM E162, ASTM E662, Bombardier SMP 800C, Boeing BSS 7239	-	meets requirements
EN 13501-1: 2007	B-s1,d0	-
CEI UNI 11170: 2010	LRI to LR4	-

SOUND INSULATION WITH SANDWICH PANELS

Metsä Wood Phoenix Sonex Light has good sound reduction properties, R_w index 30-31 dB, depending on the panel structure.

For more information please see Metsä Wood Sonex Light Product Data Sheet.

PANEL SIZES

Metsä Wood Phoenix is available in sizes:

- 1220 / 1250 / 1525 mm x 2440 / 2500 / 3050 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

BONDING CLASSES

Metsä Wood Phoenix base 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 / WBP

The aluminium overlay is bonded with a weather resistant adhesive (EN 204 class D4).

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THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

THICKNESSES, THICKNESS TOLERANCES AND WEIGHT OF THE EXAMPLE PANELS *

BASE PLYWOOD STRUCTURE***	THICKNESS	THICKNESS TOLERANCE*		WEIGHT**
	(mm)	min. (mm)	max. (mm)	kg/m ²
Phoenix Birch Plywood	12	11.5	12.5	8.2
Phoenix Birch Plywood	15	14.3	15.3	10.2
Phoenix Birch Plywood	18	17.1	18.1	12.2
Phoenix Birch Plywood	21	20	20.9	14.3
Phoenix Sonex Light	13	12	14	9.3
Phoenix Sonex Light	16	15	17	10.9
Phoenix Sonex Light	19	18	20	13.2

* Moisture content of the product affects its dimensions.

** Weights given in relative humidity RH 65 %.

*** Phoenix panels are also available with spruce plywood core. For more information please see Metsä Wood Spruce Phoenix Product Data Sheet.

Special structures and thicknesses are available on request.

Customised tolerances are possible but must be agreed on separately.

FORMALDEHYDE EMISSIONS

Determined according to EN 717-2, the formaldehyde emitted by Metsä Wood Phoenix products falls far below the Class E1 requirement of $\leq 3,5$ mg/(m²*h). The formaldehyde emission of Metsä Wood Phoenix Birch is approximately 0,1 mg/(m²*h).

PANEL STRENGTH PROPERTIES

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

Metsä Wood Phoenix Sonex Light strength and elasticity properties are identical with the Metsä Wood Sonex Light properties. Phoenix Sonex Light strength and elasticity properties can be found in the Metsä Wood Sonex Light Product Data Sheet.

PACKING

Metsä Wood Phoenix panels are packed in moisture resistant plastic wrapping. Packing quantity information is available on Metsä Wood Sonex Light and Birch Product Data Sheets.

FURTHER INFORMATION

- Metsä Wood Phoenix Birch Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Sonex Light Product Data Sheet
- Metsä Wood Birch Product Data Sheet
- Metsä Wood Spruce Phoenix Product Data Sheet

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Birch Ply



Metsä Wood Birch is a high-quality Finnish plywood product sanded on both sides. Birch plywood can be used for a wide range of applications. Metsä Wood Birch is available in various sizes: standard, L, XL and KingSize.

APPLICATIONS

Metsä Wood Birch is a multipurpose panel for different uses where a strong and rigid panel is needed.

- Transport industry: road transport and railway transport vehicle floors and walls, LNG carriers, container floors, flight cases etc.
- Building applications: floor and roof structures, interior cladding, sports hall floors, scaffolding, doors and door surfaces etc.
- Other applications: packing applications, furniture, toys etc.

MAJOR ADVANTAGES

- Strong and rigid
- Light and dimensionally stable
- Smooth, hard and durable surface
- High quality visual surface
- Easy to machine and fasten using conventional woodworking tools and fasteners
- Environmentally friendly
- Weather and boil proof bonding

BASE PLYWOOD

Metsä Wood Birch plywood is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

Designed and tailor-made to serve in demanding applications, birch plywood can be ordered with special oriented veneer structures to provide even higher strength and stiffness properties.

SURFACE PROPERTIES

Metsä Wood Birch plywood panels are sanded on both sides and their surface is smooth, hard and durable. The surface can be treated with standard paints, lacquers, varnishes and protection treatments applicable on wood products. Confirm the compatibility of surface treatment from the supplier.

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

Birch plywood surfaces	Typical properties
S (II)	– painting grade
BB (III)	– standard grade (patched)
WG (IV)	– reverse grade

Classification of Metsä Wood Birch surface grade meets EN 635 requirements. For more specific grade data, see Handbook of Finnish Plywood.

PANEL SIZES

Metsä Wood Birch is available in sizes:

- 1200 / 1220 / 1250 mm x 2400 / 2440 / 2500 / 3000 / 3050 / 3660 mm
- 1500 / 1525 mm x 2500 / 3000 / 3050 / 3660 / 4110 mm

Metsä Wood Birch L is available in sizes:

- 2020 x 4110 mm
- 1870 x 4110 mm
- 1870 x 1870 mm, 2020 x 2020 mm

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

Larger size scarf-jointed XL and KingSize panels are also available by special order.

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 (mm)	NUMBER OF PLYS (pcs)	THICKNESS TOLERANCE		WEIGHT kg/m ²
		min. (mm)	max. (mm)	
4	3	3.5	4.1	2.7
6.5	5	6.1	6.9	4.4
9	7	8.8	9.5	6.1
12	9	11.5	12.5	8.2
15	11	14.3	15.3	10.2
18	13	17.1	18.1	12.2
21	15	20.0	20.9	14.3
24	17	22.9	23.7	16.3
27	19	25.2	26.8	18.4
30	21	28.1	29.9	20.4
35	25	33.5	35.5	23.8
40	29	38.8	41.2	27.2
45	32	43.6	46.4	30.6
50	35	48.5	51.5	34.0

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

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 Birch 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 Birch is approximately 0,013 ppm.

PANEL STRENGTH PROPERTIES

Metsä Wood Birch is a CE marked product. The strength and elasticity properties are specified according to standards EN 789 and EN 1058 and can be found in the Metsä Wood Birch Declaration of Performance (DoP). DoP documents can be downloaded from www.metsawood.com/dop.

MACHINING

Metsä Wood Birch plywood panels can be machined according to customer specification on special request.

PACKING

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

PACKING QUANTITIES

PANEL SIZE	NUMBER OF PANELS PER PALLET BY THICKNESS									
	mm	6.5	9	12	15	18	21	24	27	30
1500 / 1525 x 2400 – 3660 1200/1220/1250 x 2850 – 3660		90	65	50	40	35	30	25	25	20
1500/1525 x 1500 – 2135 1200/1220/1250 x 1200 – 2800		140	100	75	60	50	45	40	35	30
1500/1525 x 3670 – 4110 1870/2020 x 1870 – 4110		70	50	35	30	25	20	15	15	15
1870 / 2020 x 1870 / 2020		140	100	70	60	50	40	30	30	30

FURTHER INFORMATION

- Metsä Wood Birch Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Birch XL Product Data Sheet
- Metsä Wood KingSize Product Data Sheet

METSÄ WOOD

P.O. Box 50, 02020 Metsä, Finland
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www.metsawood.com/plywood

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Birch Ply

Birch XL



Metsä Wood Birch XL is an extra large size birch plywood panel jointed from standard size panels. Birch XL panels enable larger one piece components. The largest available panel size is 6000 mm x 2200 mm.

APPLICATIONS

Metsä Wood Birch XL is suitable for applications that require large size panels and high technical properties. Larger panels facilitate and accelerate installation and provide structures with a high degree of rigidity.

- **Transport industry:** Trailer, truck, lorry, van and refrigerated trailer floors, container floors, walls and ceilings, passenger car floors, railway wagon floors and ship/boat decking
- **Building applications:** floor and roof structures, concrete element industry, etc.
- **Other applications:** packing applications, furniture, toys etc.

MAJOR ADVANTAGES

- Large sizes
- Strong and rigid
- Withstands impacts and other forms of bruising
- Available with durable and weather resistant overlays
- Dimensionally stable
- Easy to machine and fasten using conventional woodworking tools and fasteners
- Environmentally friendly
- Weather and boil proof bonding

BASE PLYWOOD

The base plywood of Metsä Wood Birch XL is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

Birch XL panels are scarf-jointed from standard size birch plywood panels using weather resistant melamine or resorcinol adhesive. The scarf-joints appear as thin, visible lines on both sides of the panel, running perpendicularly to the panel length.

SURFACE PROPERTIES

Metsä Wood Birch XL panels have the same surface properties as the original panels, possibly with slight differences in colouration and gloss between the jointed panels. The surface quality of the wood faced Birch XL panels is BB/BB. Birch XL panels are sanded on both sides.

PANEL SIZES

Metsä Wood Birch XL length 4100 to 6000 and/or width 2000 to 2200 mm. Smaller panel sizes without scarf joint are available in standard and L sizes.

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 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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS (mm)	NUMBER OF PLYS (pcs)	THICKNESS TOLERANCE		WEIGHT (kg/m ²)
		min. (mm)	max. (mm)	
9	7	8.2	9.5	6.1
12	9	10.9	12.5	8.2
15	11	13.7	15.3	10.2
18	13	16.5	18.1	12.2
21	15	19.4	20.9	14.3
24	17	22.3	23.7	16.3
27	19	24.6	26.8	18.4
30	21	27.5	29.9	20.4

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

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

The scarf joint is glued with weather resistant melamine or resorcinol adhesive.

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood Birch XL 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 Birch XL is approximately 0,013 ppm.

PANEL STRENGTH PROPERTIES

Due to the scarf jointed core plywood, the strength values of Metsä Wood Birch XL in the longitudinal direction of the panel are ca. 65% of standard Metsä Wood Birch plywood values. In the cross direction of the panel the strength values are similar to standard Birch plywood. Stiffness values in both directions are similar to standard Birch plywood.

MECHANICAL PROPERTIES OF METSÄ WOOD BIRCH XL PANELS.

MOISTURE CONTENT 12%. THE VALUES ARE EN 789 VALUES.

THICKNESS (mm)	MEAN MODULUS OF ELASTICITY (N/mm ²)		CHARACTERISTIC BENDING STRENGTH (N/mm ²)	
		⊥		⊥
9	11395	6105	29.6	32.1
12	10719	6781	27.9	33.2
15	10316	7184	26.8	33.8
18	10048	7452	26.1	34.1
21	9858	7642	25.6	34.3
24	9717	7783	25.3	34.4
27	9607	7893	25.0	34.5
30	9519	7981	24.8	34.6

MACHINING

Metsä Wood Birch XL plywood panels can be machined according to customer specification on special request.

PACKING

Metsä Wood Birch XL 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
3000 x 2200	80	60	45	40	30	30	25	20
4000 x 2200	60	45	35	30	25	20	20	15
5400 x 2200	45	30	25	25	20	15	15	10
6000 x 2200	35	25	20	20	15	15	15	10

FURTHER INFORMATION

- Metsä Wood Transport brochure
- Metsä Wood KingSize Product Data Sheet

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Birch Ply

KingSize



Metsä Wood KingSize is an extra large size birch plywood panel jointed from standard size panels. KingSize panels enable larger one piece components. The largest available panel size is 13700 mm x 2800 mm.

APPLICATIONS

Metsä Wood KingSize is suitable for applications that require large size panels and high technical properties. Larger panels facilitate and accelerate installation and provide structures with a high degree of rigidity.

- Transport industry: Trailer, truck, lorry, van and refrigerated trailer floors, container floors, walls and ceilings, passenger car floors, railway wagon floors and ship/boat decking
- Building applications: Concrete formwork, loading docks, piers, stages and sport stands

MAJOR ADVANTAGES

- Extra large sizes
- Strong and rigid
- Withstands impacts and other forms of bruising
- Available with durable and weather resistant overlays
- Dimensionally stable
- Easy to machine and fasten using conventional woodworking tools and fasteners
- Environmentally friendly
- Weather and boil proof bonding

BASE PLYWOOD

The base plywood of Metsä Wood KingSize is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

KingSize panels are scarf-jointed from standard size birch plywood panels using weather resistant melamine or resorcinol adhesive. The scarf-joints appear as thin, visible lines on both sides of the panel, running perpendicularly to the panel length.

OVERLAY

Metsä Wood KingSize panels can be either wood faced or overlaid with phenolic films.

The main King Size panel options are:

- Metsä Wood Birch KingSize (BB/WG)
- Metsä Wood Form KingSize (smooth surface)
- Metsä Wood Deck KingSize (wire mesh surface)

In the overlaid panels, the reverse side is overlaid with smooth phenolic film.

SURFACE PROPERTIES

Metsä Wood KingSize panels have the same surface properties as the original panels, possibly with slight differences in colouration and gloss between the jointed panels. The surface quality of the wood faced KingSize panels is BB/WG. The scarf-joint may cause a slight variation in the thickness.

Surface properties are dependent on the overlay type. More information on the overlay selection and the surface properties of a single overlay type, contact Metsä Wood Plywood sales or see particular Product Data Sheet (Metsä Wood Birch, Form or Deck).

EDGE SEALING

Panel edges of the overlaid panels are sealed against moisture absorption with acrylic edge sealing paint. The colour of the edge sealing is normally dark brown. Even though edge sealing slows down the absorption of moisture into the panel, it does not eliminate it completely.

PANEL SIZES

Maximum size of Metsä Wood KingSize is 13700 mm x 2800 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 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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS *

NOMINAL THICKNESS (mm)	NUMBER OF PLYS (pcs)	THICKNESS TOLERANCE		WEIGHT kg/m ²
		min. (mm)	max. (mm)	
9	7	8.6	9.5	6.1
12	9	11.3	12.5	8.2
15	11	14.1	15.3	10.2
18	13	16.9	18.1	12.2
21	15	19.8	20.9	14.3
24	17	22.7	23.7	16.3
27	19	25.0	26.8	18.4
30	21	27.9	29.9	20.4

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

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

The scarf joint is glued with weather resistant melamine or resorcinol adhesive.

FORMALDEHYDE EMISSIONS

Formaldehyde emissions are dependent on the overlay type.

More information on the formaldehyde emissions of a single overlay type, see particular Product Data Sheet (Metsä Wood Birch, Form or Deck).

PANEL STRENGTH PROPERTIES

Due to the scarf jointed core plywood, the strength values of Metsä Wood KingSize in the longitudinal direction of the panel are ca. 65% of standard Metsä Wood Birch plywood values. In the cross direction of the panel the strength values are similar to standard Birch plywood. Stiffness values in both directions are similar to standard Birch plywood.

MECHANICAL PROPERTIES OF METSÄ WOOD KINGSIZE PANELS.

MOISTURE CONTENT 12%. THE VALUES ARE EN 789 VALUES.

THICKNESS (mm)	MEAN MODULUS OF ELASTICITY (N/mm ²)		CHARACTERISTIC BENDING STRENGTH (N/mm ²)	
		⊥		⊥
9	11395	6105	29.6	32.1
12	10719	6781	27.9	33.2
15	10316	7184	26.8	33.8
18	10048	7452	26.1	34.1
21	9858	7642	25.6	34.3
24	9717	7783	25.3	34.4
27	9607	7893	25.0	34.5
30	9519	7981	24.8	34.6

The Concrete formwork design data (permissible concrete pressure tables, design nomograms) for all Metsä Wood formwork panels can be found in Metsä Wood Concrete Formwork technical data.

MACHINING

Metsä Wood KingSize plywood panels can be machined according to customer specification on special request.

PACKING

Metsä Wood KingSize panels are packed either in covered pallets or moisture resistant plastic wrapping. The packing quantities must be agreed case by case.

FURTHER INFORMATION

- Metsä Wood Transport brochure
- Metsä Wood Concrete Formwork brochure
- Metsä Wood Concrete Formwork technical data

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Birch Ply

SP



Metsä Wood SP is birch plywood panel overlaid with a weatherproof paint base paper. SP provides a reliable and crack resistant painting substrate. The ready to paint surface is suitable for both interior and demanding exterior applications.

APPLICATIONS

Metsä Wood SP is a general paint base panel for various applications:

- **Building applications:** Interior and exterior cladding, showrooms and displays, traffic noise barriers, stage constructions
- **Transport industry:** Walls and bulk heads in trailers and containers
- **Other applications:** Traffic signs, information signs, billboards, playground equipment, furniture

MAJOR ADVANTAGES

- Smooth, durable and ready to paint surface
- Suitable for most commercial paint types
- Painted and edge sealed panel is weather and UV resistant
- Light and dimensionally stable
- Strong and rigid
- Easy to machine and fasten using conventional woodworking tools and fasteners
- Can withstand impacts and other forms of bruising
- Environmentally friendly
- Weather and boil proof bonding

BASE PLYWOOD

The base plywood of Metsä Wood SP is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

OVERLAY

The overlay is lightly impregnated paper, which provides reliable painting substrate. Overlays can be applied to both sides (SP/SP), on one side (SP/BB) or with a smooth phenolic film on the reverse surface (SP/film). Film colour is light brown.

SURFACE PROPERTIES

The painting paper forms a ready-to-use, weatherproof painting substrate, which requires no additional preparation. The overlay provides excellent adhesion for an even paint finish.

ABRASION RESISTANCE OF METSÄ WOOD SP (VALUES ARE INDICATIVE AND VALID FOR NEW UNUSED PANELS)

	TABER REVOLUTIONS*
SP	1000

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

EDGE SEALING

Panel edges are sealed at the mill against moisture absorption with acrylic edge sealing paint. The standard colour of the edge sealing is dark brown. Even though edge sealing slows down the absorption of moisture into the wood, it does not eliminate it completely.

PAINTING INSTRUCTIONS

The following paint types are suitable for Metsä Wood SP plywood: epoxy, polyurethane and alkyd enamel paints as well as water-based exterior paints. In all cases the paint manufacturer's instructions should be observed. In exterior uses SP plywood should be treated with a primer and top coat paint. The edges, through holes and other machined surfaces should be treated in the similar way as the plain surfaces.

PANEL SIZES

Metsä Wood SP is available in sizes:

- 1200 / 1220 / 1250 mm x 2400 / 2440 / 2500 / 3000 / 3050 / 3600 / 3660 mm
- 1500 / 1525 mm x 2500 / 3000 / 3050 / 3600 / 3660 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

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
		min. (mm)	max. (mm)	
(mm)	(pcs)			kg/m ²
9	7	8.8	9.5	6.1
12	9	11.5	12.5	8.2
15	11	14.3	15.3	10.2
18	13	17.1	18.1	12.2
21	15	20.0	20.9	14.3
24	17	22.9	23.7	16.3
27	19	25.2	26.8	18.4
30	21	28.1	29.9	20.4

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

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 SP falls far below the Class E1 requirement of ≤ 0,100 ppm. The formaldehyde emission of Metsä Wood SP is approximately 0,050 ppm.

PANEL STRENGTH PROPERTIES

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

MACHINING

Metsä Wood SP plywood panels can be machined according to customer specification on special request.

PACKING

Metsä Wood SP 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
1500 /1525 x 2400-3660								
1200/1220/1250 x 3000-3660	65	50	40	35	30	25	25	20
1500 /1525 x 1500-2135								
1200/1220/1250 x 1200-2750	100	75	60	50	45	40	35	30

FURTHER INFORMATION

- Metsä Wood SP Declaration of Performance (www.metsawood.com/dop)

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Birch Ply

Laser



Metsä Wood Laser is interior bonded birch plywood. Laser plywood is available in two options: high quality uncoated, sanded plywood or plywood overlaid with a melamine film.

APPLICATIONS

Metsä Wood Laser is specially developed for laser cutting applications and is mostly used as die cutting plates in the packaging industry. Laser plywood is suitable also for other indoor uses and for applications requiring a colourless glue line with a protective, easy maintenance film surface. Laser is not suitable for outdoor use, because the base plywood bonding is not resistant to weather.

MAJOR ADVANTAGES

- Easy to machine with laser cutting devices
- Strong and rigid
- Light and dimensionally stable
- Easy to work with using conventional woodworking tools and fasteners
- Environmentally friendly
- Easy maintenance film surface

BASE PLYWOOD

Metsä Wood Laser plywood is made of cross-bonded 1.4 mm thick birch veneers and bonded with interior quality melamine modified urea formaldehyde adhesive.

SURFACE GRADES AND OVERLAY

Metsä Wood Laser is available as sanded and uncoated product and as overlaid product with transparent or transparent grey melamine film on both sides.

Metsä Wood Laser uncoated:

Both surfaces are sanded. The grade of surface veneer is BB quality. Uncoated Laser surface grades follow the classification presented in standard EN 635. The uncoated panel surface can be treated with standard paints, lacquers, varnishes and protection treatments applicable on wood products. Confirm the compatibility of a surface treatment from the supplier.

Metsä Wood Laser overlaid:

A smooth melamine film is hot-pressed on both panel surfaces to enhance surface durability.

SURFACE PROPERTIES

With colourless and transparent film, the colour of overlaid Metsä Wood Laser is similar to natural colour of the birch surface. The film surface and BB veneer grade is sufficient for technical applications, but not for visually demanding applications such as furniture. Laser plywood is also available with a transparent grey film.

The film surface is semi glossy, smooth, hard and slippery. It withstands abrasion, is moisture resistant and can tolerate commonly used chemicals as well as diluted acids and alkalis. The Laser film surfaces are well suited for laser cutting.

EDGES

Metsä Wood Laser product edges are not painted or otherwise sealed.

PANEL SIZES

Metsä Wood Laser is available in sizes:

- 1200 / 1220 / 1250 mm x 2400 / 2440 / 2500 / 3000 / 3050 / 3300 mm
 - 1500 / 1525 mm x 2500 / 3000 / 3050 / 3300 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 (mm)	NUMBER OF PLIES (pcs)	THICKNESS TOLERANCE		WEIGHT (kg/m ²)
		min. (mm)	max. (mm)	
9	7	8.8	9.5	6.1
12	9	11.5	12.5	8.2
15	11	14.3	15.3	10.2
18	13	17.1	18.1	12.2
21	15	20.0	20.9	14.3

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

BONDING CLASSES

Melamine modified urea formaldehyde adhesive is used in the production of interior bonded Metsä Wood Laser plywood. The melamine additive improves the moisture resistance of the glue line compared to that of a standard interior bonding.

The gluing meets the requirements of the following international standards:

- EN 314-2 / Class 1 (interior)
- DIN 68705-3 / BFU 20
- BS 6566 Part 8 / type INT and type MR

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood Laser falls far below the Class E1 requirement of ≤ 0,100 ppm. The formaldehyde emission of Metsä Wood Laser uncoated is approximately 0,034 ppm and Metsä Wood Laser overlaid is approximately 0,023 ppm.

PANEL STRENGTH PROPERTIES

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

MACHINING

Metsä Wood Laser plywood panels can be machined according to customer specification on special request.

PACKING

Metsä Wood Laser 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
1500 / 1525 x 2400-3300						
1200/1220/1250 x 3000-3300		65	50	40	35	30
1500 / 1525 x 1500-2135						
1200/1220/1250 x 1200-2700		100	75	60	50	45

PANEL HANDLING INSTRUCTIONS

As wood is a hygroscopic material, the relative humidity of surrounding conditions affects the moisture content of the plywood and therefore the dimensions and flatness of the panel.

Metsä Wood Laser panels should be conditioned properly to the moisture content of the end use application before final use.

FURTHER INFORMATION

- Metsä Wood Laser Declaration of Performance (www.metsawood.com/dop)

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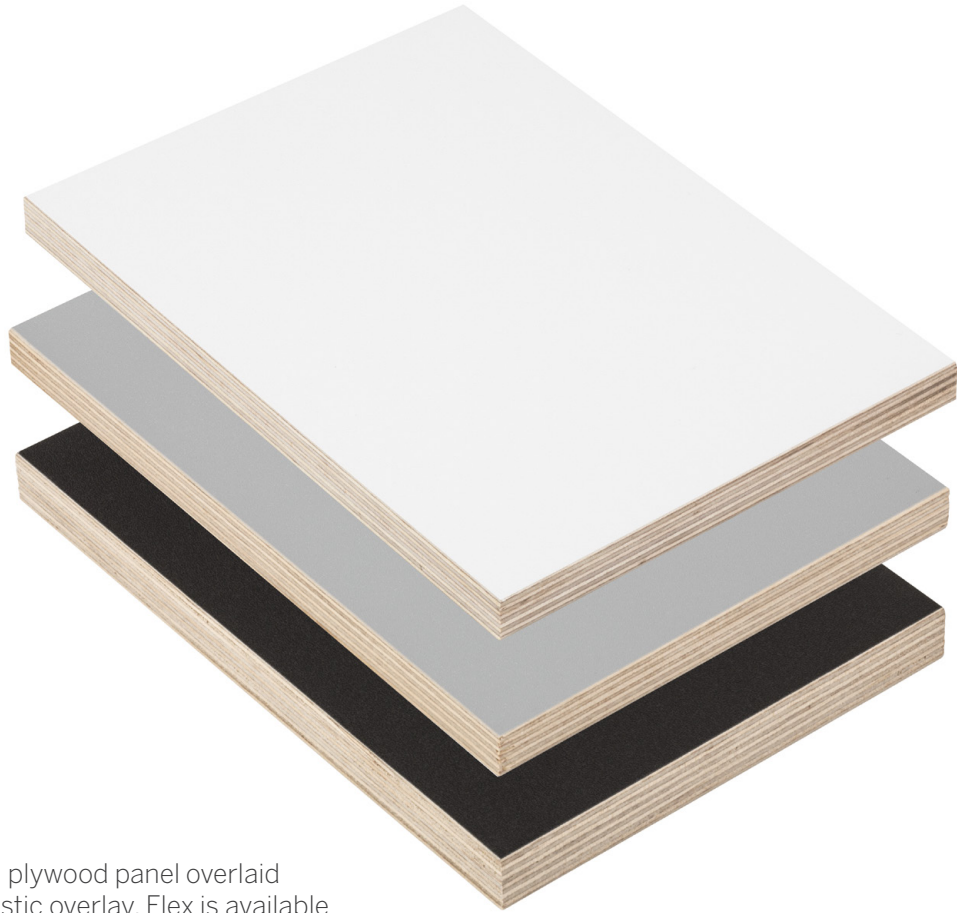
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Birch Ply

Flex



Metsä Wood Flex is a birch plywood panel overlaid with a coloured thermoplastic overlay. Flex is available in range of colours and ready finished surfaces. The combination of technical properties with high class surfaces makes Flex an excellent panel for various interior applications. Metsä Wood Flex is available in various sizes: standard, L and XL.

APPLICATIONS

Metsä Wood Flex provides an easy ready finished surface solution.

- **Transport industry:** Transit and flight cases
- **Building industry:** Furniture, shop-, kitchen- and sanitary fittings.

MAJOR ADVANTAGES

- High quality surfaces
- Excellent impact and crack resistance
- Easy to fix and cut
- Good wear resistance
- Easy to clean
- Good resistance against most chemicals
- Strong and rigid panel
- Light and dimensionally stable
- Environmentally friendly

BASE PLYWOOD

The base plywood of Metsä Wood Flex is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

FLEX 02 OVERLAY FOR INTERIOR USE

The panel is overlaid with coloured, 0,2 mm thick lightly structured (miniburl) polypropylene overlay.

The overlay is bonded to plywood with water resistant glue. Metsä Wood Flex is available in range of colours: e.g. White02 (RAL 9016), Black02 (RAL 9004), Grey02 (RAL 7040).

FLEX 06 OVERLAY FOR INTERIOR AND EXTERIOR USE

The panel is overlaid with white 0,6 mm thick structured (burl) polypropylene overlay. FLEX 06 is available in colour White06 (RAL 9016).

SURFACE PROPERTIES

The surface of the overlay is slightly structured to improve wear and scratch resistance. Overlay is elastic, tough and does not crack easily. The overlay is safe to use and it is free of chlorine, halogens, plasticizer, 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 Flex plywood products have very high surface quality and the surface is susceptible to scratches due to its softer appearance, extra caution has to be practised in handling and storing the panels to prevent damage. Extreme moisture penetration may cause visible changes on the appearance of the product.

Birch Ply

Flex

Technical properties of surface

- Taber value is approx 2000 R depending on overlay*
- 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 acrylic edge sealing paint. The colour of the edge sealing is transparent, other colours are available on request. Even though edge sealing slows down the absorption of moisture into the panel, it does not eliminate it completely.

PANEL SIZES

Metsä Wood Flex 02 is available in sizes:

- 1200 / 1220 / 1250 mm x 2400 / 2440 / 2500 / 3000 / 3050 / 3660 mm
- 1500 / 1525 mm x 2500 / 3000 / 3050 / 3660 mm

Metsä Wood Flex 06 is available in sizes:

- 1500 / 1525 mm x 2500 / 3000 / 3050 / 3660 / 4100 mm

Metsä Wood Flex L 06 is available in size 2000 x 4100 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

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)	(pcs)	min. (mm)	max. (mm)	kg/m ²
4	3	3.5	4.1	2.7
6.5	5	6.1	6.9	4.4
9	7	8.8	9.5	6.1
12	9	11.5	12.5	8.2
15	11	14.3	15.3	10.2
18	13	17.1	18.1	12.2
21	15	20.0	20.9	14.3
24	17	22.9	23.7	16.3
27	19	25.2	26.8	18.4
30	21	28.1	29.9	20.4

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

METSÄ WOOD

P.O. Box 50, 02020 Metsä, Finland

Tel. +358 1046 05

www.metsawood.com/plywood

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

The overlay is bonded to plywood with weather resistant adhesive (EN 204 class D4)

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood Birch falls far below the Class E1 requirement of $\leq 0,100$ ppm and fulfils also the most stringent requirements in the world ($\leq 0,030$ ppm). The formaldehyde emission of Metsä Wood Birch is approximately 0,013 ppm. Thermoplastic overlay does not contain any formaldehyde.

PANEL STRENGTH PROPERTIES

Metsä Wood Flex strength and elasticity properties are identical with the Metsä Wood Birch standard plywood properties. The properties are specified according to standards EN 789 and EN 1058 and can be found in the Metsä Wood Birch Declaration of Performance (DoP). DoP documents can be downloaded from www.metsawood.com/dop.

MACHINING

Metsä Wood Flex plywood panels can be machined according to customer specification on special request.

PACKING

Metsä Wood Flex panels are packed in covered pallets.

PACKING QUANTITIES

PANEL SIZE	mm	NUMBER OF PANELS PER PALLET BY THICKNESS									
		4	6.5	9	12	15	18	21	24	27	30
1500 / 1525 x 2400-3660 1200/1220/1250 x 3000-3660		150	90	65	50	40	35	30	25	25	20
1500 / 1525 x 1500-2135 1200/1220/1250 x 1200-2750		240	140	100	75	60	50	45	40	35	30
1850 / 2000 x 4100				50	35	30	25	20	15	15	15
1850 / 2000 x 1850 / 2050				100	70	60	50	40	30	30	30

FURTHER INFORMATION

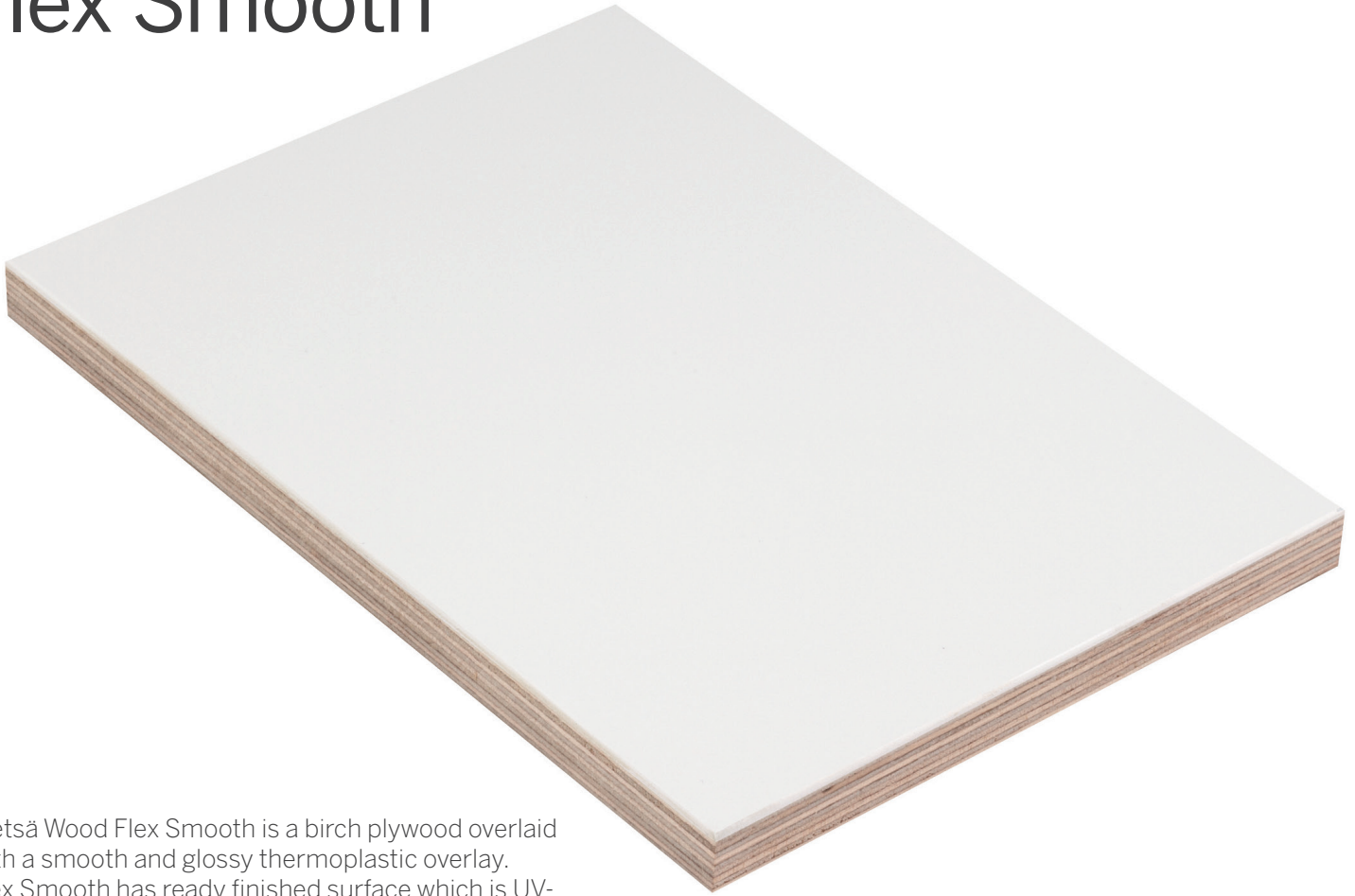
- Metsä Wood Birch Declaration of Performance (www.metsawood.com/dop)

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Birch Ply

Flex Smooth



Metsä Wood Flex Smooth is a birch plywood overlaid with a smooth and glossy thermoplastic overlay. Flex Smooth has ready finished surface which is UV-resistant and therefore suitable for interior and exterior applications. The combination of superior surface with high technical properties makes Flex Smooth an excellent panel for various applications.

APPLICATIONS

Metsä Wood Flex Smooth provides a larger size ready finished surface solution for the transport industry such as side walls for horse- and box trailers, light and medium size truck side walls, doors and bulk heads.

MAJOR ADVANTAGES

- High quality smooth and glossy surface
- Ideal surface for stickers and decals
- Excellent UV and weather resistance
- Easy to fix and cut
- Easy to clean
- Light and dimensionally stable
- Environmentally friendly

BASE PLYWOOD

The base plywood of Metsä Wood Flex Smooth is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

OVERLAY

The panel is overlaid with smooth and glossy ABS based overlay. The overlay has UV-additives to make it resistant against the sunlight.

The overlay is bonded to plywood with water resistant glue. Metsä Wood Flex Smooth is available in white colour. Flex Smooth surface is covered with blue protection foil in order to avoid damages during transportation and handling.

Birch Ply

Flex Smooth

SURFACE PROPERTIES

The surface of the overlay is smooth and glossy. Overlay is elastic and does not crack easily. It is also moisture and UV resistant. The overlay is safe to use and dispose. It is free of chlorine, halogens, plasticizer, 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 Flex Smooth plywood products have very high surface quality and the surface is susceptible to scratches due to its softer appearance, extra caution has to be practised in handling and storing the panels to prevent damage. Extreme moisture penetration may cause visible changes on the appearance of the product.

Technical properties of surface

- Colour stability 2 according to EN ISO 3668
- Colour change $\Delta E < 1,5$ according to ISO 4892-2 (600 h)

EDGE SEALING

Panel edges are sealed against moisture absorption with edge sealing paint. The colour of the edge sealing is transparent. Even though edge sealing slows down the absorption of moisture into the panel, it does not eliminate it completely.

PANEL SIZES

Metsä Wood Flex Smooth is available in sizes:

- 1500 / 1525 mm x 2500 / 3000 / 3050 / 3660 mm

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

Other sizes are available on request. Larger size scarf-jointed XL panels are also available by special order.

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLYS	THICKNESS TOLERANCE		WEIGHT
(mm)	(pcs)	min. (mm)	max. (mm)	kg/m ²
11	7	10.3	11.6	8.2
14	9	13.0	14.6	9.5
17	11	15.8	17.4	12.2

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

METSÄ WOOD

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www.metsawood.com/plywood

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

The overlay is bonded to plywood with weather resistant adhesive (EN 204 class D4)

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood Birch falls far below the Class E1 requirement of $\leq 0,100$ ppm and fulfils also the most stringent requirements in the world ($\leq 0,030$ ppm). The formaldehyde emission of Metsä Wood Birch is approximately 0,013 ppm. Thermoplastic overlay does not contain any formaldehyde.

PANEL STRENGTH PROPERTIES

Metsä Wood Flex Smooth strength and elasticity properties are identical with the Metsä Wood Birch standard plywood properties. The properties are specified according to standards EN 789 and EN 1058 and can be found in the Metsä Wood Birch Declaration of Performance (DoP). DoP documents can be downloaded from www.metsawood.com/dop.

MACHINING

Metsä Wood Flex Smooth plywood panels can be machined according to customer specification on special request.

PACKING

Metsä Wood Flex Smooth panels are packed in covered pallets.

PACKING QUANTITIES

PANEL SIZE	mm	NUMBER OF PANELS PER PALLET BY THICKNESS		
		11	14	17
1500 /1525 x 2400-3660		50	40	35
1500 /1525 x 1500-2135		75	60	50
3050-2400 x 1800/1900/2150		Packet sizes agreed case by case		
6000 x 1800/1900/2150		Packet sizes agreed case by case		

FURTHER INFORMATION

- Metsä Wood Birch Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Flex Product Data Sheet

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Birch Ply

Flex XL



Metsä Wood Flex XL is a larger size birch plywood panel overlaid with a coloured thermoplastic overlay. Flex XL is available in range of colours and ready finished surfaces which are UV-resistant. The combination of technical properties with high class surfaces makes Flex XL an excellent panel for various applications. XL panels enable larger one piece components.

APPLICATIONS

Metsä Wood Flex XL provides a larger size easy ready finished surface solution.

- **Transport industry:** Side walls for horse- and box trailers, side walls for light and medium size trucks, doors and bulk heads, van linings. Transit and flight cases
- **Building industry:** Furniture, shop-, kitchen- and sanitary fittings. Playground equipment, fencing and rebound walls.

MAJOR ADVANTAGES

- High quality surfaces
- Excellent impact and crack resistance
- Good weather resistance
- Easy to fix and cut
- Excellent wear resistance
- Easy to clean
- Good resistance against most chemicals
- Strong and rigid panel
- Light and dimensionally stable
- Environmentally friendly

BASE PLYWOOD

The base plywood of Metsä Wood Flex XL is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive. The core panel of the large size Flex XL is scarf-jointed from standard size birch plywood panels using weather resistant melamine or resorcinol adhesive.

FLEX 06 OVERLAY

The panel is overlaid with coloured, 0,6 mm thick structured (burl) polypropylene overlay.

The overlay is bonded to plywood with water resistant adhesive. Metsä Wood Flex XL is available in colour White06 (RAL 9016).

SURFACE PROPERTIES

The surface of the overlay is structured to improve wear and scratch resistance. Overlay is elastic, tough and does not crack easily. It is also moisture and UV resistant. The overlay is safe to use and it is free of chlorine, halogens, plasticizer, 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.

Birch Ply

Flex XL

Metsä Wood Flex XL plywood products have very high surface quality and the surface is susceptible to scratches due to its softer appearance, extra caution has to be practised in handling and storing the panels to prevent damage. Extreme moisture penetration may cause visible changes on the appearance of the product.

Technical properties of surface

- Taber value is approx 10000 R*
- Colour stability 6-7 according to DIN 54404
- Colour change $\Delta E < 1,5$ according to ISO 4892-2 (600 h)
- Crack resistance EN13696 no cracks
- Impact resistance Class IC3 according to EN 438-2

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

EDGE SEALING

Panel edges are sealed against moisture absorption with edge sealing paint. The standard colour of the edge sealing is transparent. Even though edge sealing slows down the absorption of moisture into the panel, it does not eliminate it completely.

PANEL SIZES

Metsä Wood Flex XL 06 is available in sizes:

- XL 3660-6000 mm x 1500 / 1525 mm
- XL 6000 mm x 1800 / 1900 mm
- XL 6000 mm x 2000 / 2150 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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS (mm)	NUMBER OF PLYS (pcs)	THICKNESS TOLERANCE		WEIGHT kg/m ²
		min. (mm)	max. (mm)	
12	9	11.5	13.1	8.7
15	11	14.3	15.9	10.7
18	13	17.1	18.7	12.7
21	15	20.0	21.5	14.8
24	17	22.9	24.3	16.8
27	19	25.2	27.4	18.9
30	21	28.1	30.5	20.9

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

METSÄ WOOD

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

www.metsawood.com/plywood

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

The scarf joint is glued with weather resistant melamine or resorcinol adhesive. The overlay is bonded to plywood with weather resistant adhesive (EN 204 class D4).

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood Birch falls far below the Class E1 requirement of $\leq 0,100$ ppm and fulfils also the most stringent requirements in the world ($\leq 0,030$ ppm). The formaldehyde emission of Metsä Wood Birch is approximately 0,013 ppm. Thermoplastic overlay does not contain any formaldehyde.

PANEL STRENGTH PROPERTIES

Due to the scarf jointed core plywood, the strength values of Metsä Wood Flex XL in the longitudinal direction of the panel are ca. 65% of standard Metsä Wood Birch plywood values. In the cross direction of the panel the strength values are similar to standard Birch plywood. Stiffness values in both directions are similar to standard Birch plywood.

MECHANICAL PROPERTIES OF METSÄ WOOD FLEX XL.

MOISTURE CONTENT 12%. THE VALUES ARE EN 789 VALUES.

THICKNESS (mm)	MEAN MODULUS OF ELASTICITY (N/mm ²)		CHARACTERISTIC BENDING STRENGTH (N/mm ²)	
		⊥		⊥
12	10719	6781	27.9	33.2
15	10316	7184	26.8	33.8
18	10048	7452	26.1	34.1
21	9858	7642	25.6	34.3
24	9717	7783	25.3	34.4
27	9607	7893	25.0	34.5
30	9519	7981	24.8	34.6

MACHINING

Metsä Wood Flex XL plywood panels can be machined according to customer specification on special request.

PACKING

Metsä Wood Flex XL panels are packed in covered pallets.

PACKING QUANTITIES

PANEL SIZE	mm	NUMBER OF PANELS PER PALLET BY THICKNESS						
		12	15	18	21	24	27	30
1500 / 1525 x 2400-3660		50	40	35	30	25	25	20
1500 / 1525 x 1500-2135		75	60	50	45	40	35	30
2400-3050 x 1800/1900/2150		Packet sizes agreed case by case						
3100-6000 x 1800/1900/2150		Packet sizes agreed case by case						

FURTHER INFORMATION

- Metsä Wood Flex Product Data Sheet

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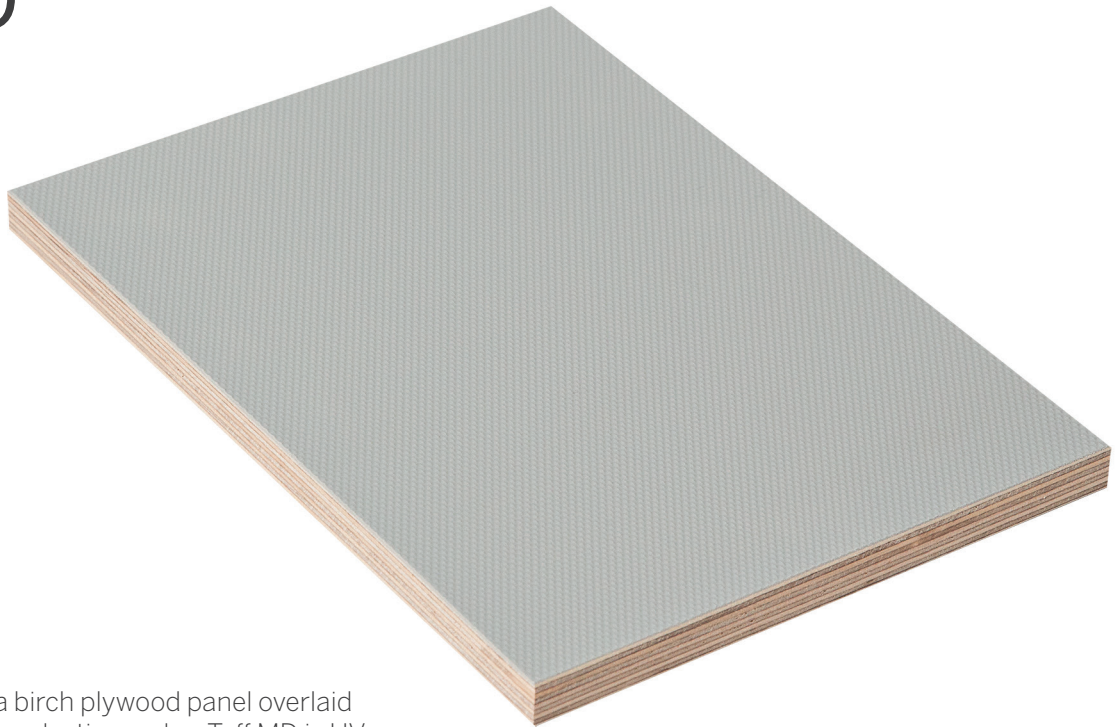


03/2019



Birch Ply

Tuff MD



Metsä Wood Tuff MD is a birch plywood panel overlaid with a high quality thermoplastic overlay. Tuff MD is UV-resistant and therefore suitable for interior and exterior flooring applications. The combination of technical properties with high class surfaces makes Tuff MD an excellent panel for various flooring applications.

APPLICATIONS

Metsä Wood Tuff MD provides an easy ready finished surface solution for interior and exterior flooring applications.

Transport industry:

- Floorings for vans and light trailers

Building industry:

- Industrial-, shop-, kitchen- and sanitary floorings
- Working platforms
- Playground furniture

MAJOR ADVANTAGES

- Excellent wear resistance
- Flexible and slip resistant surface
- Excellent impact and crack resistance
- Strong, rigid and dimensionally stable panel
- Easy to fix and cut
- Easy to clean
- Good weather resistance
- Good resistance against most chemicals
- Environmentally friendly

BASE PLYWOOD

The base plywood of Metsä Wood Tuff MD is Metsä Wood Birch, which is made of cross-bonded 1.4 mm thick birch veneers and bonded with weather and boil-resistant phenol formaldehyde adhesive.

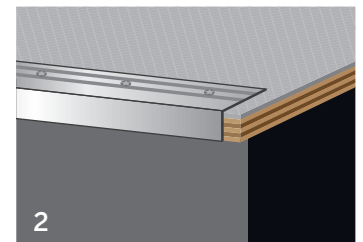
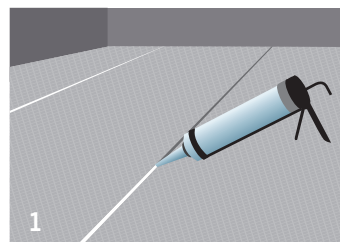
OVERLAY

Metsä Wood Tuff MD panels are overlaid with extra durable mini-diamond patterned (MD) polypropylene based overlay. The overlay provides slip resistance and has UV-additives to make it resistant against the sunlight. The overlay is safe to use and it is free of chlorine, halogens, plasticizer, formaldehyde and heavy metals. The overlay is bonded to plywood with water resistant adhesive. Tuff MD is available in grey colour.

INSTALLATION

Metsä Wood Tuff MD panels can be cut, shaped and drilled using standard wood-working tools. Raw edges and holes should be sealed with a suitable water resistant paint. Tuff MD panels can be easily fastened with conventional screws.

For maximum service life, it is recommended to seal the panel joints with elastic gap-filling sealing compound (figure 1). Panel edges which are exposed to wear are recommended to be protected with edge protection strips (figure 2).



Birch Ply

Tuff MD

SURFACE PROPERTIES

The surface of Metsä Wood Tuff MD overlay is structured and slip resistant. Overlay is elastic, tough and does not crack easily. It has extremely good wear resistance. It is also moisture and UV resistant and provides hygienic surface. 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.

Technical properties of surface

- Resistance to Surface wear according to EN 438-2 (Taber value) 7500R. Abrasion Class AC5.
- Weather resistance according to ISO 4892-3; ASTM G 154: After 6000h artificial weathering test minimal visual and no technical changes detected on the surface
- Crack resistance EN13696 no cracks
- Impact resistance Class IC3 according to EN438-2

EDGE SEALING

Panel edges are sealed against moisture absorption with edge sealing paint. The standard colour of the edge sealing is transparent. Even though edge sealing slows down the absorption of moisture into the panel, it does not eliminate it completely.

PANEL SIZES

Metsä Wood Tuff MD is available in sizes:

- 1500 / 1525 mm x 2500 / 3000 / 3050 / 3660 mm
The first measurement indicates the orientation of the surface veneer grain.

Other sizes are available on request. Larger size scarf-jointed XL panels are also available by special order.

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS *

NOMINAL THICKNESS	NUMBER OF PLYS	THICKNESS TOLERANCE		WEIGHT
(mm)	(pcs)	min. (mm)	max. (mm)	kg/m ²
9	7	9.3	10.0	6.5
12	9	12.0	13.0	8.6
15	11	14.8	15.8	10.6
18	13	17.6	18.6	12.6
21	15	20.5	21.4	14.7
24	17	23.4	24.2	16.7
27	19	25.7	27.3	18.8
30	21	28.6	30.4	20.8

* Moisture content of the product affects its dimensions

* Average density of Metsä Wood birch plywood is 680 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

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BONDING CLASSES

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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

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

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood Birch 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 Birch is approximately 0,013 ppm. Thermoplastic overlay does not contain any formaldehyde.

PANEL STRENGTH PROPERTIES

Metsä Wood Tuff MD strength and elasticity properties are identical with the Metsä Wood Birch standard plywood properties. The properties are specified according to standards EN 789 and EN 1058 and can be found in the Metsä Wood Birch Declaration of Performance (DoP). DoP documents can be downloaded from www.metsawood.com/dop.

MACHINING

Metsä Wood Tuff MD plywood panels can be machined according to customer specification on special request.

PACKING

Metsä Wood Tuff MD panels are packed in covered pallets.

PACKING QUANTITIES

PANEL SIZE	mm	NUMBER OF PANELS PER PALLET BY THICKNESS							
		9	12	15	18	21	24	27	30
1500/1525 x 2400-3660		65	50	40	35	30	25	25	20
1500/1525 x 1500-2135		100	75	60	50	45	40	35	30

FURTHER INFORMATION

- Metsä Wood Birch Declaration of Performance (www.metsawood.com/dop)

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