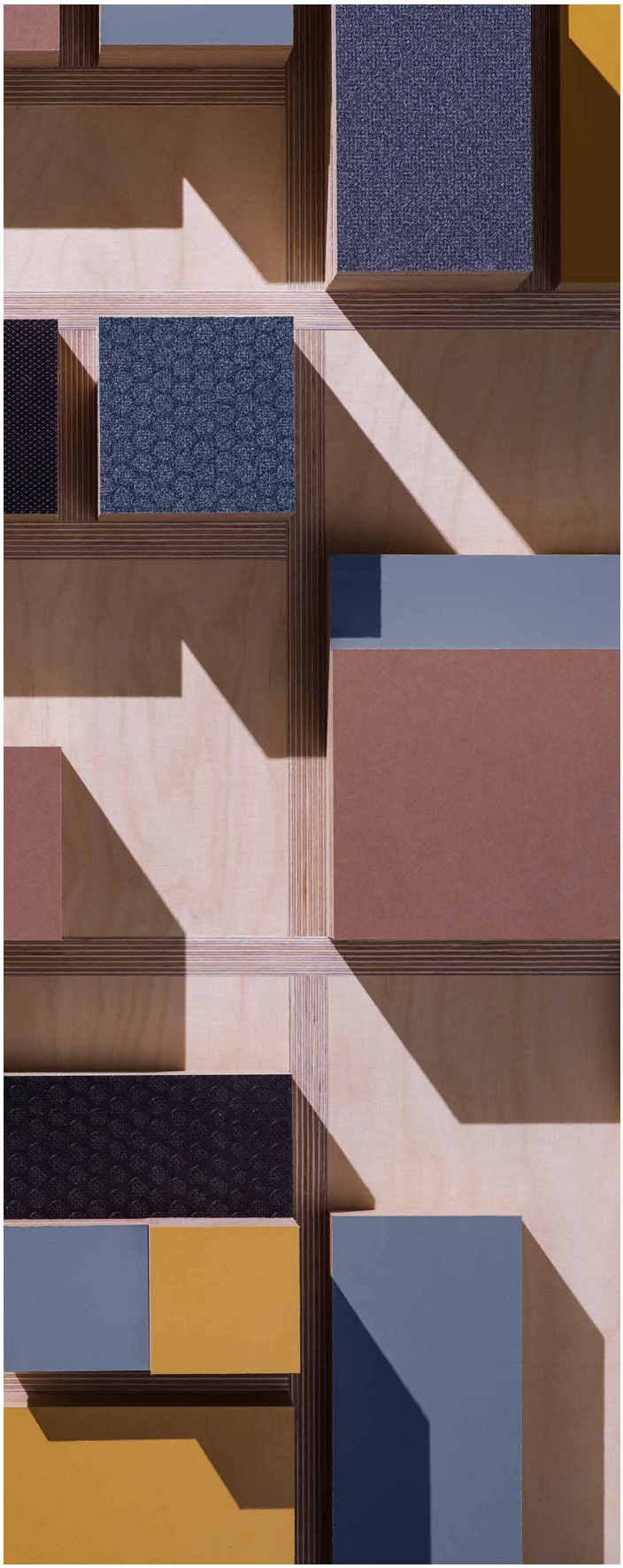
Birch Ply



METSÄ WOOD BIRCH PLYWOOD PRODUCTS

CONTENTS

Birch Ply

Birch
Birch L

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**
- **Excellent strength-to-weight ratio**
- **Dimensionally stable**
- **Smooth, hard and durable surface**
- **High quality visual surface**
- **Easy to machine and fasten using conventional woodworking tools and fasteners**
- **Weather- and boil-proof bonding**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply

Birch
Birch L

BASE PLYWOOD

Metsä Wood Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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.

PANEL SIZES

		WIDTH (mm)						
	LENGTH (mm)	2400	2440	2500	3000	3050	3660	4110
Birch	1200*	■	■	■	■	■	■	
	1220*	■	■	■	■	■	■	
	1250*	■	■	■	■	■	■	
	1500*	■	■	■	■	■	■	■
	1525*	■	■	■	■	■	■	■
Birch L	1870	■	■	■	■	■	■	■
	2020	■	■	■	■	■	■	■

* The measurement indicates the orientation of the surface veneer grain.
■ = standard panel size

Larger size scarf-jointed XL and King Size 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
< 1 000 mm	± 1 mm
1 000 - 2 000 mm	± 2 mm
>2 000 mm	± 3 mm
Squareness	± 0.1 % or ±1 mm/m
Edge straightness	± 0.1 % or ±1 mm/m

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

The thickness tolerances fulfil the requirements of standard EN 315 and are in part more stringent than the official requirements.

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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

* The moisture content of the product affects its dimensions
* Average density of Metsä Wood birch plywood is 680 kg/m³ (at a relative humidity of 65%)
* Special structures and thicknesses are available on request
* Customised tolerances are possible but must be agreed separately
* Birch L is available up to thickness of 30 mm

BONDING CLASSES

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

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood 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.

Metsä

Birch Ply

Birch
Birch L

APPROVALS AND DESIGN PROPERTIES

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

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

MACHINING

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

PACKAGING

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

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS								
PANEL SIZE (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 UK Declaration of Conformity (www.metsawood.com/ukdoc)
- Metsä Wood Birch XL Product Data Sheet
- Metsä Wood KingSize Product Data Sheet

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PEFC/02-31-03

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 6 000mm x 2 200mm.

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**
- **Weather- and boil-proof bonding**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Birch XL

BASE PLYWOOD

The base plywood of Metsä Wood Birch XL is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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
< 1 000 mm	± 1 mm
1 000 - 2 000 mm	± 2 mm
>2 000 mm	± 3 mm
Squareness	± 0.1 % or ±1 mm/m
Edge straightness	± 0.1 % or ±1 mm/m

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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

* The moisture content of the product affects its dimensions
* Average density of Metsä Wood birch plywood is 680 kg/m³ (at a relative humidity of 65%)
* Special structures and thicknesses are available on request
* Customised tolerances are possible but must be agreed separately

BONDING CLASSES

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

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.

Metsä

Birch Ply
Birch XL

APPROVALS AND DESIGN 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.

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

MECHANICAL PROPERTIES*

THICKNESS* (mm)	MEAN MODULUS OF ELASTICITY** (N/mm²)		CHARACTERISTIC BENDING STRENGTH** (N/mm²)	
	II	⊥	II	⊥
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

* Moisture content 12%
** Properties determined according to EN 789 standard

MACHINING

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

PACKAGING

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

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS						
PANEL SIZE (mm)	9	12	15	18	21	24	27
3000 x 2200	80	60	45	40	30	30	25
4000 x 2200	60	45	35	30	25	20	20
5400 x 2200	45	30	25	25	20	15	15
6000 x 2200	35	25	20	20	15	15	15

FURTHER INFORMATION

- Metsä Wood Plywood for transport industry 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. KingSize panels are available uncoated or overlaid with phenolic film.

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**
- **Weather- and boil-proof bonding**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply KingSize

BASE PLYWOOD

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

KingSize panels are scarf-jointed from standard size birch plywood panels using weather-resistant 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 (220 g/m^2, smooth surface)
- Metsä Wood Deck KingSize (220 g/m^2, wire mesh surface)

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 13 500 mm x 2 500 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
< 1 000 mm	± 1 mm
1 000 - 2 000 mm	± 2 mm
>2 000 mm	± 3 mm
Squareness	± 0.1 % or ±1 mm/m
Edge straightness	± 0.1 % or ±1 mm/m

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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

* The moisture content of the product affects its dimensions
* Average density of Metsä Wood birch plywood is 680 kg/m^3 (at a relative humidity of 65%)
* Special structures and thicknesses are available on request
* Customised tolerances are possible but must be agreed separately

BONDING CLASSES

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

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).

Metsä

Birch Ply KingSize

APPROVALS AND DESIGN 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.

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

MECHANICAL PROPERTIES*

THICKNESS* (mm)	MEAN MODULUS OF ELASTICITY** (N/mm²)		CHARACTERISTIC BENDING STRENGTH** (N/mm²)	
	II	⊥	II	⊥
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

* Moisture content 12%
** Properties determined according to EN 789 standard

The Concrete formwork design (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 request.

PACKAGING

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 Plywood for transport industry brochure
- Metsä Wood Concrete Formwork brochure
- Metsä Wood Concrete Formwork technical data

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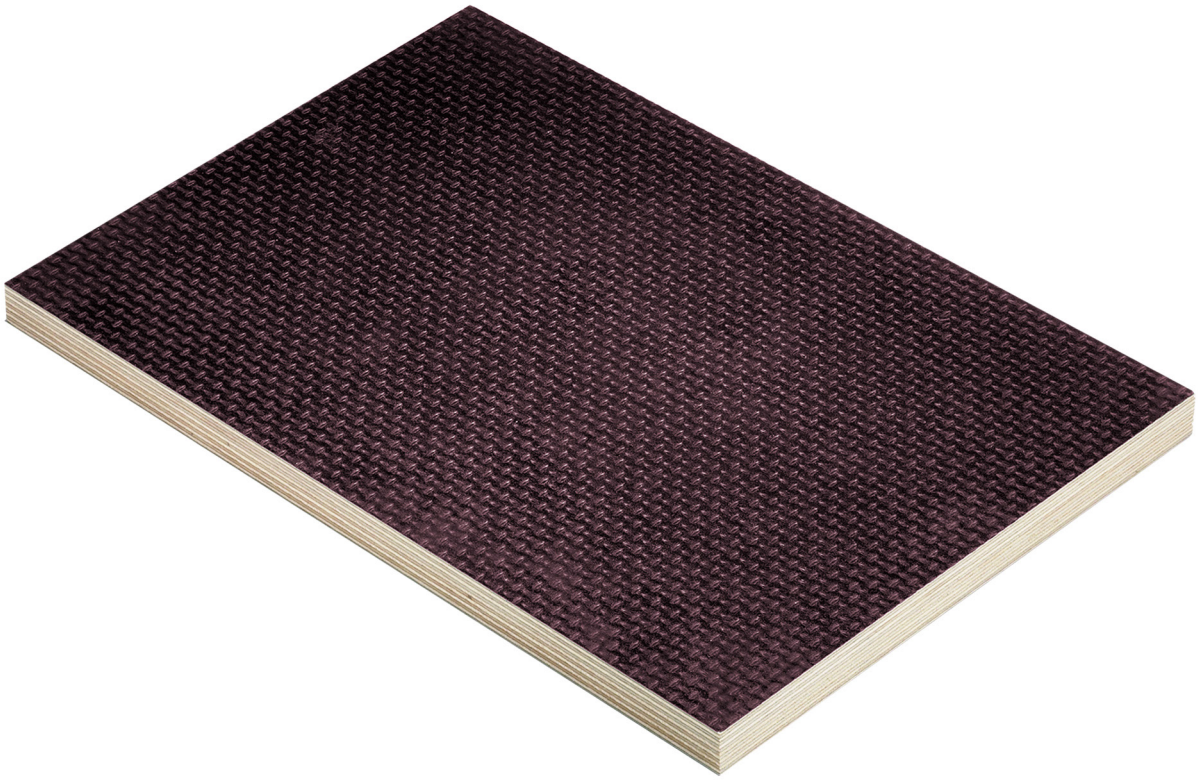
Birch Ply

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

- **Slip resistant wire mesh surface**
- **Durable and weather-resistant overlay**
- **Excellent strength-to-weight ratio**
- **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**
- **Weather- and boil-proof bonding**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Deck
Deck L

BASE PLYWOOD

The base plywood of Metsä Wood Deck is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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 120 g/m² is generally used, but standard panel sizes are available also with 220 g/m² film. Metsä Wood Deck L is available only with 220 g/m² film.

Standard film colour for Deck and Deck L is dark brown. The phenol film is not UV resistant and the colour may change when 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*

	OVERLAY WEIGHT	TABER REVOLUTIONS**	ROLLING WEAR***
Deck (dark brown)	120 g/m²	350	3500
Deck (dark brown)	220 g/m²	700	5000

* Values are indicative and valid for new unused panels
** 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

WIDTH (mm)		2400	2440	2500	3000	3050	3660	4110
	LENGTH (mm)							
Deck	1200*	■	■	■	■	■	■	
	1220*	■	■	■	■	■	■	
	1250*	■	■	■	■	■	■	
	1500*	■	■	■	■	■	■	■
	1525*	■	■	■	■	■	■	■
Deck L	1870	■	■	■	■	■	■	■
	2020	■	■	■	■	■	■	■

* The measurement indicates the orientation of the surface veneer grain.
■ = standard panel size with dark brown overlay
■ = available on request

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

The thickness tolerances fulfil the requirements of standard EN 315 and are in part more stringent than the official requirements.

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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

BONDING CLASSES

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

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood 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.

Metsä

Birch Ply
Deck
Deck L

APPROVALS AND DESIGN PROPERTIES

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

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

MACHINING

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

PACKAGING

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

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS								
PANEL SIZE (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 Deck Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Deck UK Declaration of Conformity (www.metsawood.com/ukdoc)
- Metsä Wood Transport brochure
- Metsä Wood Deck XL Product Data Sheet
- Metsä Wood KingSize Product Data Sheet

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Birch Ply
Deck XL

Metsä Wood Deck XL is a larger size phenolic film overlaid birch plywood panel with a wire mesh pattern. Deck XL is a slip resis-tant 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: Van, truck, bus and passanger car floors, railway wagon floors, container floors and ship decking
- Building applications: Warehouse and factory hall floors, parking facilities, loading docks, piers and stages

MAJOR ADVANTAGES

- **Larger sizes with unvisible joints**
- **Slip resistant wire mesh surface**
- **Durable and weather-resistant overlay**
- **Strong and rigid**
- **Excellent strength-to-weight ratio**
- **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**
- **Weather- and boil-proof bonding**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Deck XL

BASE PLYWOOD

The base plywood of Metsä Wood Deck XL is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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 adhesive.

OVERLAY

The panel is overlaid with a durable phenolic film, and a rough wire mesh pattern is pressed onto the surface during hot-pressing. Standard colour is dark brown 220 g/m^2. The reverse side is a 220 g/m^2 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*

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

* Values are indicative and valid for new unused panels
** 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. Even though edge sealing slows down the absorption of moisture into the wood, 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
< 1 000 mm	± 1 mm
1 000 - 2 000 mm	± 2 mm
>2 000 mm	± 3 mm
Squareness	± 0.1 % or ±1 mm/m
Edge straightness	± 0.1 % or ±1 mm/m

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

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

* Moisture content of the product affects its dimensions
* Average density of Metsä Wood birch plywood is 680 kg/m^3 (at relative humidity of RH 65 %)

BONDING CLASSES

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

The 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.

Metsä

Birch Ply
Deck XL

APPROVALS AND DESIGN 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.

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

MECHANICAL PROPERTIES*

THICKNESS* (mm)	MEAN MODULUS OF ELASTICITY** (N/mm²)		CHARACTERISTIC BENDING STRENGTH** (N/mm²)	
	II	⊥	II	⊥
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

* Moisture content 12%
** Properties determined according to EN 789 standard

MACHINING

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

PACKAGING

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

PACKING QUANTITIES

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

FURTHER INFORMATION

- Metsä Wood Plywood for transport industry brochure

02/2023

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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 heavyduty, multipurpose plywood flooring panel for applications requiring a reliable, long-lasting anti-slip surface. Metsä Wood Floor is available in standard and L sizes.

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**
- **Excellent strength-to-weight ratio**
- **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**
- **Weather- and boil-proof bonding**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Floor
Floor L

BASE PLYWOOD

The base plywood of Metsä Wood Floor is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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 Floor 500 panel is overlaid with a durable phenolic film, and a tight rough wire mesh pattern is pressed into the surface during hot-pressing. Coarse wire mesh patterned Floor 700 panels available on request. A smooth phenolic film is normally applied to the reverse side. Standard film colour is dark brown. The phenol film is not UV resistant and the colour may change when 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 moistureresistant 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*

	TABER REVOLUTIONS**	ROLLING WEAR***
Floor 500 (tight wire mesh)	3200	7000
Floor 700 (coarse wire mesh)	4300	9000

"* Values are indicative and valid for new unused panels
** 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. Even though edge sealing slows down the absorption of moisture into the wood, it does not eliminate it completely.

PANEL SIZES

WIDTH (mm)		2400	2440	2500	3000	3050	3660	4110
	LENGTH (mm)							
Floor	1200*	▮▯	▮▯	▮▯	▮▯	▮▯	▮	
	1220*	▮▯	▮▯	▮▯	▮▯	▮▯	▮	
	1250*	▮▯	▮▯	▮▯	▮▯	▮▯	▮	
	1500*	▮▯	▮▯	▮▯	▮▯	▮▯	▮	▮
	1525*	▮▯	▮▯	▮▯	▮▯	▮▯	▮	▮
Floor L	1870	■	■	■	■	■	▮	▮
	2020	■	■	■	■	■	▮	▮

* The measurement indicates the orientation of the surface veneer grain.
▮ = standard panel size with wire mesh pattern
▯ = standard panel size with coase wire mesh pattern
■ = available on request

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

The thickness tolerances fulfil the requirements of standard EN 315 and are in part more stringent than the official requirements.

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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. The gluing meets the requirements of the standard EN 314-2 / Class 3 (exterior).

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood 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.

Metsä

Birch Ply
Floor
Floor L

APPROVALS AND DESIGN PROPERTIES

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

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

MACHINING

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

PACKAGING

Metsä Wood Floor panels are packed in moisture-resistant plastic wrapping.

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS							
PANEL SIZE (mm)	9	12	15	18	21	24	27	30
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 Floor UK Declaration of Conformity (www.metsawood.com/ukdoc)
- Metsä Wood Transport brochure

02/2023

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PEFC/02-31-03

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 an ideal formwork panel for smooth surfaced concrete elements. It can also be used as a multipurpose, maintenance-free panel for various other uses. Metsä Wood Form is available in 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, sliding doors, vehicle and flight cases and other transport boxes, bus floor constructions etc.
- Building applications: Agricultural structures, general interior and covered exterior building applications
- Other applications: Packaging applications, sport arenas and equipment

MAJOR ADVANTAGES

- **Smooth durable overlay**
- **Excellent strength-to-weight ratio**
- **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**
- **Weather- and boil-proof bonding**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Form
Form L

BASE PLYWOOD

The base plywood of Metsä Wood Form is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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 220 g/m². Thicker overlays are available on request. Standard film colour for Form and Form L is dark brown. Light brown, yellow and black colours are available for Form on request. The phenol film is not UV resistant and the colour may change when 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*

	OVERLAY WEIGHT	TABER REVOLUTIONS**
Form (dark brown)	120 g/m²	350
Form (dark brown)	220 g/m²	700
Form (dark brown)	440 g/m²	1500

* Values are indicative and valid for new unused panels
** 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

WIDTH (mm)		2400	2440	2500	3000	3050	3660	4110
	LENGTH (mm)							
Form	1200*	▮	▮	▮	▮	▮	▮	
	1220*	▮	▮	▮	▮	▮	▮	
	1250*	▮	▮	▮	▮	▮	▮	
	1500*	▮	▮	▮	▮	▮	▮	▮
	1525*	▮	▮	▮	▮	▮	▮	▮
Form L	1870	■	■	■	■	■	▮	▮
	2020	■	■	■	■	■	▮	▮

* The measurement indicates the orientation of the surface veneer grain.
▮ = standard panel size with dark brown overlay
■ = available on request

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

The thickness tolerances fulfil the requirements of standard EN 315 and are in part more stringent than the official requirements.

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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. The gluing meets the requirements of the standard EN 314-2 / Class 3 (exterior).

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood 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.

Metsä

Birch Ply
Form
Form L

APPROVALS AND DESIGN PROPERTIES

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

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.

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

MACHINING

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

PACKAGING

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

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS								
PANEL SIZE (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 Form Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Form UK Declaration of Conformity (www.metsawood.com/ukdoc)
- Metsä Wood Concrete Formwork brochure
- Metsä Wood Concrete Formwork technical data
- Metsä Wood Form XL and KingSize Product Data Sheets

03/2023

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PEFC/02-31-03

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**
- **Excellent strength-to-weight ratio**
- **Dimensionally stablele**
- **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**
- **Weather- and boil-proof bonding**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
FormPLUS

BASE PLYWOOD

The base plywood of Metsä Wood FormPLUS is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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 when exposed to sunlight over prolonged periods.

SURFACE PROPERTIES

The Metsä Wood FormPLUS plywood panel surface has a special treatment which makes the surface moisture-resistant. 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*

	OVERLAY WEIGHT	TABER REVOLUTIONS**
FormPLUS	220 g/m²	700

* Values are indicative and valid for new unused panels
** 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

		WIDTH (mm)					
	LENGTH (mm)	2400	2440	2500	3000	3050	3660
Form PLUS	1200*	■	■	■	■	■	■
	1220*	■	■	■	■	■	■
	1250*	■	■	■	■	■	■
	1500*	■	■	■	■	■	■
	1525*	■	■	■	■	■	■

* The measurement indicates the orientation of the surface veneer grain.
■ = standard panel size

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

The thickness tolerances fulfil the requirements of standard EN 315 and are in part more stringent than the official requirements.

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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. The gluing meets the requirements of the standard EN 314-2 / Class 3 (exterior).

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood FormPLUS 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.

Metsä

Birch Ply FormPLUS

APPROVALS AND DESIGN PROPERTIES

Metsä Wood FormPLUS strength and elasticity properties are identical with the Metsä Wood Birch standard plywood properties. The properties are specified according to standard EN 13986 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.

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

MACHINING

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

PACKAGING

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

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS			
PANEL SIZE (mm)	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

03/2023

METSÄ WOOD
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Birch Ply

Metsä Wood DURAForm®

Metsä Wood DURAForm is a high performance formwork panel choice for smooth surfaced concrete elements. Metsä Wood DURAForm plywood has a special treatment to resist the surface rippling that ensures smooth high quality concrete finish from the first pour. Metsä Wood DURAForm panel surface is a multi-material composite that is harder and more scratch and wear-resistant than standard formwork panels.

APPLICATIONS

Metsä Wood DURAForm 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 hard composite surface of Metsä Wood DURAForm ensures smooth concrete finish and multiple uses. The number of uses can rise up to 200 but is highly dependent on the 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

- **Extra hard and wear-resistant surface**
- **Surface resists rippling**
- **Smooth durable multi-material composite surface**
- **Easy to clean and re-pour up to 200 times**
- **Can withstand impacts and other forms of bruising**
- **Dimensionally stable**
- **Strong and rigid**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Metsä Wood DURAForm®

BASE PLYWOOD

The base plywood of Metsä Wood DURAForm is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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

The outermost smooth and durable surface of the multi-material composite is created by hot pressing special impregnated paper onto the panel surface. The composite is moisture-resistant and therefore reduces surface rippling and provides a smooth concrete cast from the first use. The composite structure for casting is applied only to the concrete side of the panel.

On the backside of the panel, the overlay has Metsä Wood DURAForm logo imprinted into the panel surface. Film colour is dark brown. The phenol film is not UV resistant and the colour may change when exposed to sunlight over prolonged periods.

ABRASION RESISTANCE*

	TABER REVOLUTIONS**
DURAForm	1750

* Values are indicative and valid for new unused panels
** 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

		WIDTH (mm)				
	LENGTH (mm)	2440	2500	3000	3050	3660
DURAForm	1200*	■	■	■	■	■
	1220*	■	■	■	■	■
	1250*	■	■	■	■	■
	1500*	■	■	■	■	■
	1525*	■	■	■	■	■

* The measurement indicates the orientation of the surface veneer grain.
■ = standard panel size

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

The thickness tolerances fulfil the requirements of standard EN 315 and are in part more stringent than the official requirements.

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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. The gluing meets the requirements of the standard EN 314-2 / Class 3 (exterior).

Metsä

Birch Ply
Metsä Wood DURAForm®

APPROVALS AND DESIGN PROPERTIES

Metsä Wood DURAForm strength and elasticity properties are identical with the Metsä Wood Birch standard plywood properties. The properties are specified according to standard EN 13986 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.

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

MACHINING

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

PACKAGING

Metsä Wood DURAForm panels are packed in moisture-resistant plastic wrapping.

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS			
PANEL SIZE (mm)	12	15	18	21
1500/1525 x 2440-3660 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

02/2023

METSÄ WOOD
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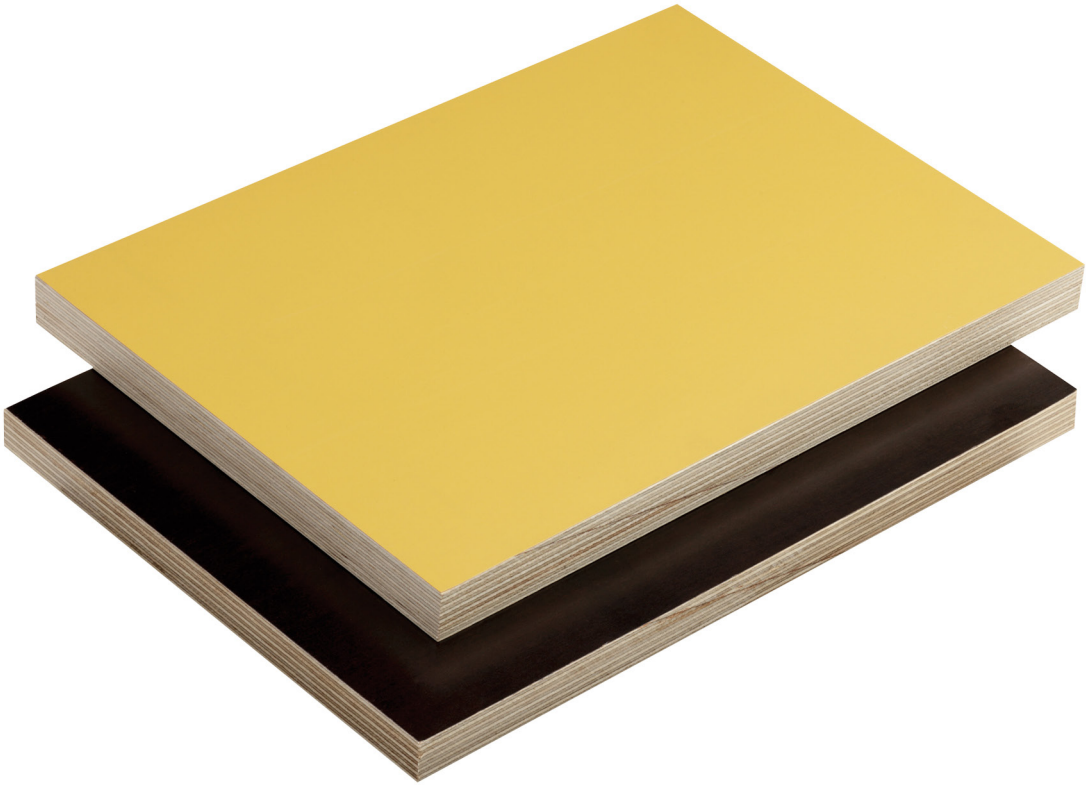
Birch Ply
Form XL



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 sizes 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
- Bus floor constructions, luggage area floors

MAJOR ADVANTAGES

- **Larger sizes with unvisible joints**
- **Durable and weather resistant overlay**
- **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**
- **Weather- and boil-proof bonding**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Form XL

BASE PLYWOOD

The base plywood of Metsä Wood Form XL is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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 adhesive.

OVERLAY

The panel is overlaid with durable and hard phenolic overlay. Standard overlay are 450 g/m² yellow and 220 g/m² dark brown. The reverse side is 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 RESISTANCE*

	TABER REVOLUTIONS**
Form XL 220 (dark brown)	700
Form XL 450 (yellow)	1000

* Values are indicative and valid for new unused panels
** 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 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
< 1 000 mm	± 1 mm
1 000 - 2 000 mm	± 2 mm
>2 000 mm	± 3 mm
Squareness	± 0.1 % or ±1 mm/m
Edge straightness	± 0.1 % or ±1 mm/m

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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

* 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. The gluing meets the requirements of the standard EN 314-2 / Class 3 (exterior).

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.

Metsä

Birch Ply
Form XL

APPROVALS AND DESIGN 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.

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

MECHANICAL PROPERTIES*

THICKNESS* (mm)	MEAN MODULUS OF ELASTICITY** (N/mm²)		CHARACTERISTIC BENDING STRENGTH** (N/mm²)	
	∥	⊥	∥	⊥
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

* Moisture content 12%
** Properties determined according to EN 789 standard

The Concrete formwork design (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 request.

PACKAGING

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

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS			
PANEL SIZE (mm)	15	18	21	24
5400 x 2000	25	25	20	15
6000 x 2200	20	20	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

02/2023

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Birch Ply
Top

Metsä Wood 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**
- **Excellent strength-to-weight ratio**
- **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**
- **Weather- and boil-proof bonding**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Top

BASE PLYWOOD

The base plywood of Metsä Wood Top is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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 when 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 stream.

ABRASION AND ROLLING WEAR RESISTANCE*

OVERLAY WEIGHT	TABER REVOLUTIONS**	ROLLING WEAR***
220 g/m²	700	5000
440 g/m²	2100	7000

* Values are indicative and valid for new unused panels
** 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. Even though edge sealing slows down the absorption of moisture into the wood, it does not eliminate it completely.

PANEL SIZES

WIDTH (mm)		2400	2440	2500	3000	3050
	LENGTH (mm)					
Top	1200*	■	■	■	■	■
	1220*	■	■	■	■	■
	1250*	■	■	■	■	■
	1500*	■	■	■	■	■
	1525*	■	■	■	■	■

* The measurement indicates the orientation of the surface veneer grain.
■ = standard panel size with dark brown overlay

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

The thickness tolerances fulfil the requirements of standard EN 315 and are in part more stringent than the official requirements.

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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. The gluing meets the requirements of the standard EN 314-2 / Class 3 (exterior).

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood 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.

Metsä

Birch Ply
Top

APPROVALS AND DESIGN PROPERTIES

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

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

MACHINING

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

PACKAGING

Metsä Wood Top panels are packed in moisture-resistant plastic wrapping.

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS							
PANEL SIZE (mm)	9	12	15	18	21	24	27	30
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 (www.metsawood.com/dop)
- Metsä Wood Top UK Declaration of Conformity (www.metsawood.com/ukdoc)
- Metsä Wood Transport brochure

02/2023

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Birch Ply
Integra

Metsä Wood Integra is an 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 gluable floor components and concrete formwork panels. Integra panels are available in a wide range of thicknesses and sizes.

- Transport: Bus floors constructions (UN/ECE Regulation No. 118 certificate), 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**
- **Surface can be painted or glued**
- **Excellent strength-to-weight ratio**
- **Dimensionally stable**
- **Strong and rigid**
- **Easy to clean and re-use**
- **Easy to machine and fasten using conventional woodworking tools and fasteners**
- **Weather- and boil-proof bonding**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Integra

BASE PLYWOOD

The base plywood of Metsä Wood Integra is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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

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.

SURFACE 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
Test method: 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 TO TEKNOS

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

		WIDTH (mm)					
	LENGTH (mm)	2400	2440	2500	3000	3050	3660
Integra	1200*	■	■	■	■	■	■
	1220*	■	■	■	■	■	■
	1250*	■	■	■	■	■	■
	1500*						
	1525*						

* The measurement indicates the orientation of the surface veneer grain.
■ = standard panel size

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

The thickness tolerances fulfil the requirements of standard EN 315 and are in part more stringent than the official requirements.

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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

Birch Ply
Integra

BONDING CLASSES

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

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood Integra 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 Integra is approximately 0.017 ppm.

APPROVALS AND DESIGN PROPERTIES

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

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.

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

PACKAGING

Metsä Wood Integra panels are packed in moisture-resistant plastic wrapping.

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS							
PANEL SIZE (mm)	9	12	15	18	21	24	27	30
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 Integra Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Integra UK Declaration of Conformity (www.metsawood.com/ukdoc)
- Metsä Wood Concrete Formwork brochure
- Metsä Wood Concrete Formwork technical data
- Metsä Wood Plywood for transport industry brochure

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PEFC/02-31-03

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 anddisplays, 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

- **Suitable for most commercial paint types**
- **Painted and edge sealed panel is weather and UV resistant**
- **Excellent strength-to-weight ratio**
- **Dimensionally stable**
- **Strong and rigid**
- **Easy to machine and fasten using conventional woodworking tools and fastener**
- **Can withstand impacts and other forms of bruising**
- **Weather- and boil-proof bonding**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
SP

BASE PLYWOOD

The base plywood of Metsä Wood SP is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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*

	TABER REVOLUTIONS**
SP	1000

* Values are indicative and valid for new unused panels
** 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.

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

		WIDTH (mm)				
	LENGTH (mm)	2400	2440	2500	3000	3050
SP	1200*	■	■	■	■	■
	1220*	■	■	■	■	■
	1250*	■	■	■	■	■

* The measurement indicates the orientation of the surface veneer grain.
■ = standard panel size

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

The thickness tolerances fulfil the requirements of standard EN 315 and are in part more stringent than the official requirements.

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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. The gluing meets the requirements of the standard EN 314-2 / Class 3 (exterior).

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood SP falls far below the Class E1 requirement of ≤ 0.100 ppm. The formaldehyde emission of Metsä Wood SP is approximately 0.050 ppm.

Metsä

Birch Ply
SP

APPROVALS AND DESIGN PROPERTIES

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

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

MACHINING

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

PACKAGING

Metsä Wood SP panels are packed in moisture-resistant plastic wrapping.

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS							
PANEL SIZE (mm)	9	12	15	18	21	24	27	30
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)
- Metsä Wood SP UK Declaration of Conformity (www.metsawood.com/ukdoc)

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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, L and XL sizes.

APPLICATIONS

Metsä Wood Granit is an ideal flooring panel for applications that require good slip resistance and good visual quality. Granit has been developed especially for light transport end uses.

MAJOR ADVANTAGES

- **Slip resistant wire mesh or raised pattern surface**
- **Special decorative surface**
- **Excellent strength-to-weight ratio**
- **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**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Granit
Granit L

BASE PLYWOOD

The base plywood of Metsä Wood Granit is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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. 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*

	TABER REVOLUTIONS**
Granit	800

* Values are indicative and valid for new unused panels
** 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

WIDTH (mm)		2400	2440	2500	3000	3050	3660	4110
	LENGTH (mm)							
Granit	1200*	▮	▮	▮	▮	▮		
	1220*	▮	▮	▮	▮	▮		
	1250*	▮	▮	▮	▮	▮		
	1500*	▮	▮	▮	▮	▮	▮	▮
	1525*	▮	▮	▮	▮	▮	▮	▮
Granit L	1860	■	■	■	■	■	■	▮

* The measurement indicates the orientation of the surface veneer grain.
▮ = standard panel size
■ = available on request

Other sizes are available on request. Larger size scarf-jointed XLpanels 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
< 1 000 mm	± 1 mm
1 000 - 2 000 mm	± 2 mm
>2 000 mm	± 3 mm
Squareness	± 0.1 % or ±1 mm/m
Edge straightness	± 0.1 % or ±1 mm/m

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

The thickness tolerances fulfil the requirements of standard EN 315 and are in part more stringent than the official requirements.

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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 boilresistant phenol formaldehyde adhesive. The gluing meets the requirements of the standard EN 314-2 / Class 3 (exterior).

FORMALDEHYDE EMISSIONS

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood Granit falls below the Class E1 requirement of ≤ 0.100 ppm. The formaldehyde emission of Metsä Wood Granit is approximately 0.041 ppm.

Metsä

Birch Ply
Granit
Granit L

APPROVALS AND DESIGN PROPERTIES

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

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

MACHINING

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

PACKAGING

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

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS				
PANEL SIZE (mm)	9	12	15	18	21
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 1860 x 1860 - 4110	50	35	30	25	20

FURTHER INFORMATION

- Metsä Wood Granit Declaration of Performance (www.metsawood.com/dop)
- Metsä Wood Granit Declaration of Conformity (www.metsawood.com/ukdoc)
- Metsä Wood Plywood for transport industry brochure

02/2023

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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**
- **Colourless glueline**
- **Strong and rigid**
- **Excellent strength-to-weight ratio**
- **Dimensionally stable**
- **Easy to work with using conventional woodworking tools and fasteners**
- **Easy maintenance film surface**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Laser

BASE PLYWOOD

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

OVERLAY

Metsä Wood Laser is available as sanded and uncoated product and as overlaid product with transparent 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.

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.

EDGE SEALING

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

PANEL SIZES

		WIDTH (mm)					
	LENGTH (mm)	2400	2440	2500	3000	3050	3300
Laser	1200*	■	■	■	■	■	■
	1220*	■	■	■	■	■	■
	1250*	■	■	■	■	■	■
	1500*			■	■	■	■
	1525*			■	■	■	■

* The measurement indicates the orientation of the surface veneer grain.
■ = standard panel size

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

The thickness tolerances fulfil the requirements of standard EN 315 and are in part more stringent than the official requirements.

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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 %)
* 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 standard EN 314-2 / Class 1 (interior).

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.

Metsä

Birch Ply
Laser

APPROVALS AND DESIGN PROPERTIES

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

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

MACHINING

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

PACKAGING

Metsä Wood Laser panels are packed in moisture-resistant plastic wrapping.

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS				
PANEL SIZE (mm)	9	12	15	18	21
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

INSTALLATION INFORMATION AND STORAGE

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)
- Metsä Wood Laser UK Declaration of Conformity (www.metsawood.com/ukdoc)

03/2023

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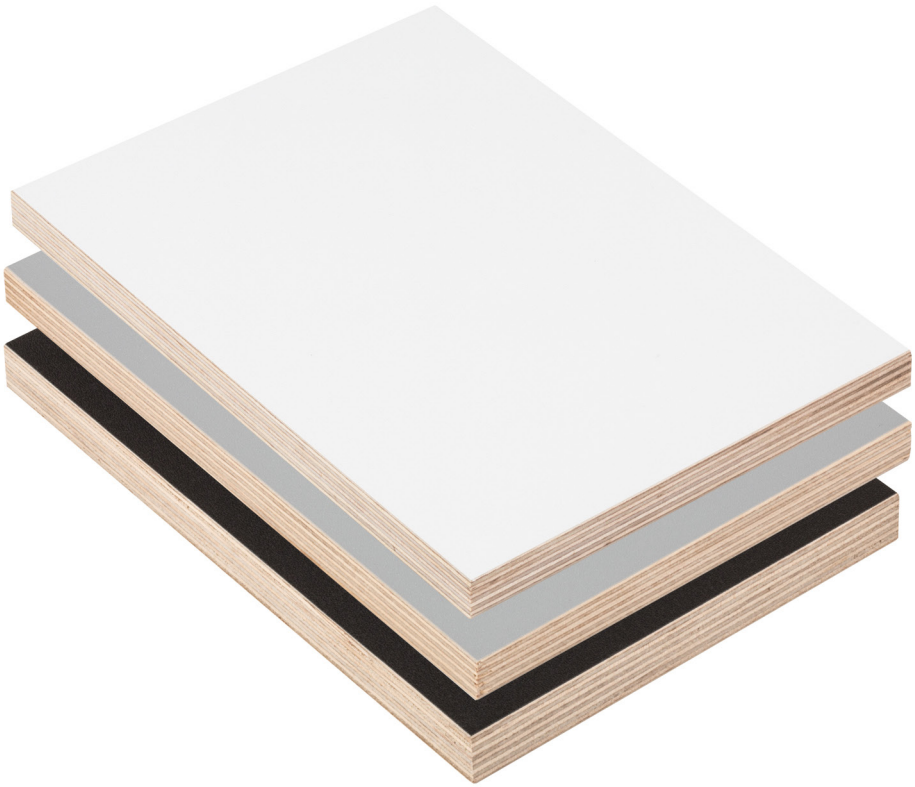
Birch Ply
Flex



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 and transportation 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: Side walls for horse and box trailers, side walls for light and medium size trucks, doors bulk heads, van linings and 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**
- **Easy to fix and cut**
- **Good wear resistance**
- **Easy to clean**
- **Good resistance against most chemicals**
- **Strong and rigid panel**
- **Excellent strength-to-weight ratio**
- **Dimensionally stable**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Flex

BASE PLYWOOD

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

OVERLAY

Flex 02 overlay
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 02 overlay is not recommended for exterior use.

Flex 06 overlay
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.

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

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

EDGE SEALING

Panel edges are sealed against moisture absorption with 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

		WIDTH (mm)					
	LENGTH (mm)	2400	2440	2500	3000	3050	4100
Flex 02	1200*	■	■	■	■	■	
	1220*	■	■	■	■	■	
	1250*	■	■	■	■	■	
	1500*	▮	▮	▮	▮	▮	▮
	1525*	▮	▮	▮	▮	▮	▮
Flex 06	1500*	▮	▮	▮	▮	▮	▮
	1525*	▮	▮	▮	▮	▮	▮

* The measurement indicates the orientation of the surface veneer grain.
▮ = standard panel size
■ = available on request

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

The thickness tolerances fulfil the requirements of standard EN 315 and are in part more stringent than the official requirements.

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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

* 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 boilresistant phenol formaldehyde adhesive. The gluing meets the requirements of the standard EN 314-2 / Class 3 (exterior).

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 Flex 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.

Metsä

Birch Ply
Flex

APPROVALS AND DESIGN PROPERTIES

Metsä Wood Flex strength and elasticity properties are identical with the Metsä Wood Birch standard plywood properties. The properties are specified according to standard EN 13986 and can be found in the Metsä Wood Birch Declaration of Performance (DoP). DoP documents can be downloaded from www.metsawood.com/dop.

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

PACKAGING

Metsä Wood Flex panels are packed in moisture-resistant plastic wrapping.

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS					
PANEL SIZE (mm)	9	12	15	18	21	24
1500/1525 x 2400-3660 1200/1220 x 3000-3660	65	50	40	35	30	25
1500/1525 x 1500-2135 1200/1220/1250 x 1200-2750	100	75	60	50	45	40

FURTHER INFORMATION

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

02/2023

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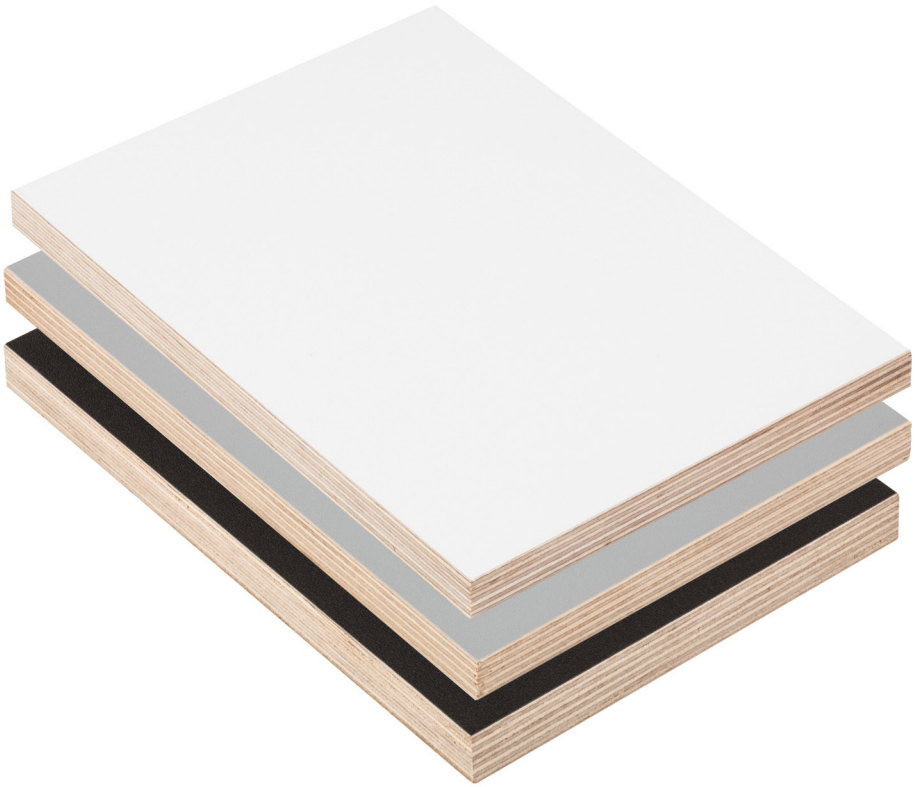
Birch Ply
Flex L



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

APPLICATIONS

Metsä Wood Flex L provides an easy ready finished surface solution.

- Transport industry: Side walls for horse and box trailers, side walls for light and medium size trucks, doors bulk heads, van linings and 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**
- **Easy to fix and cut**
- **Good wear resistance**
- **Easy to clean**
- **Good resistance against most chemicals**
- **Strong and rigid panel**
- **Excellent strength-to-weight ratio**
- **Dimensionally stable**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Flex L

BASE PLYWOOD

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

OVERLAY

Flex 06 overlay
The panel is overlaid with white 0.6 mm thick structured (burl) polypropylene overlay. Flex 06 is available in colour White06 (RAL 9016). Light grey06 (RAL 7001) overlay is available on request.

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 L 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 10 000 R*
- Colour stability 6-7 according to DIN 54404
- Colour change ΔE < 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 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 L 06 is available in sizes:
- 1 850 mm x 4 100 mm
- 2 000 mm x 4 100 mm

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES

The thickness tolerances fulfil the requirements of standard EN 315 and are in part more stringent than the official requirements.

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(pcs)	min. (mm)	max. (mm)	kg/m²
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

* 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 boilresistant phenol formaldehyde adhesive. The gluing meets the requirements of the standard EN 314-2 / Class 3 (exterior).

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.

Metsä

Birch Ply
Flex L

APPROVALS AND DESIGN PROPERTIES

Metsä Wood Flex L strength and elasticity properties are identical with the Metsä Wood Birch standard plywood properties. The properties are specified according to standard EN 13986 and can be found in the Metsä Wood Birch Declaration of Performance (DoP). DoP documents can be downloaded from www.metsawood.com/dop.

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

PACKAGING

Metsä Wood Flex L panels are packed in moisture-resistant plastic wrapping.

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS					
PANEL SIZE (mm)	9	12	15	18	21	24
1850 / 2000 x 4100	50	35	30	25	20	15
1850 / 2000 x 1850 / 2050	100	70	60	50	40	30

FURTHER INFORMATION

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

02/2023

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Birch Ply
Flex Smooth

Metsä Wood Flex Smooth is a birch plywood overlaid with a smooth and glossy ABS based overlay. Flex Smooth has ready finished surface which is UV-resistant and therefore suitable for interior and exterior 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**
- **Excellent strength-to-weight ratio**
- **Dimensionally stable**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Flex Smooth

BASE PLYWOOD

The base plywood of Metsä Wood Flex Smooth is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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.

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS (MM)	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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

BONDING CLASSES

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

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.

Metsä

Birch Ply
Flex Smooth

APPROVALS AND DESIGN 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 13986 and can be found in the Metsä Wood Birch Declaration of Performance (DoP). DoP documents can be downloaded from www.metsawood.com/dop.

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

MACHINING

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

PACKAGING

Metsä Wood Flex Smooth panels are packed in moisture-resistant plastic wrapping.

PACKING QUANTITIES

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

FURTHER INFORMATION

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

02/2023

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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 which is 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 bulk heads, van linings and 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**
- **Excellent strength-to-weight ratio**
- **Dimensionally stable**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Flex XL

BASE PLYWOOD

The base plywood of Metsä Wood Flex XL is Metsä Wood Birch. Birch plywood is made of cross-bonded 1.4 mm thick birch veneers 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.

OVERLAY

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.

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 10 000 R*
- Colour stability 6-7 according to DIN 54404
- Colour change ΔE < 1.5 according to ISO 4892-2 (600 h)
- Crack resistance EN 13696 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 6 000 mm x 1 800 / 1 900 mm
- XL 6 000 mm x 2 000 / 2 150 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
< 1 000 mm	± 1 mm
1 000 - 2 000 mm	± 2 mm
>2 000 mm	± 3 mm
Squareness	± 0.1 % or ±1 mm/m
Edge straightness	± 0.1 % or ±1 mm/m

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	NUMBER OF PLIES	THICKNESS TOLERANCE		WEIGHT
(mm)	(no.)	min. (mm)	max. (mm)	kg/m²
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

BONDING CLASSES

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

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 ≤ 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.

Metsä

Birch Ply
Flex XL

APPROVALS AND DESIGN 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.

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

MECHANICAL PROPERTIES*

THICKNESS* (mm)	MEAN MODULUS OF ELASTICITY** (N/mm²)		CHARACTERISTIC BENDING STRENGTH** (N/mm²)	
	II	⊥	II	⊥
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

* Moisture content 12%
** Properties determined according to EN 789 standard

MACHINING

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

PACKAGING

Metsä Wood Flex XL panels are packed in moisture-resistant plastic wrapping.

PACKING QUANTITIES

	NUMBER OF PANELS PER PALLET BY THICKNESS						
PANEL SIZE (mm)	12	15	18	21	24	27	30
6000 x 1800 / 1900	Packet sizes agreed case by case						
6000 x 2000 / 2150	Packet sizes agreed case by case						

FURTHER INFORMATION

- Metsä Wood Flex Product Data Sheet

02/2023

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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 CO_2 emissions of a vehicle

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

MAJOR ADVANTAGES

- **Good sound reduction properties**
- **Excellent strength-to-weight ratio**
- **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**
- **Made of sustainable Nordic wood and PEFC (PEFC/02-31-03) certified**

Metsä

Birch Ply
Sonex Light

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

OVERLAY

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 are available.

Surface properties

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).

EDGE SEALING

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 request.

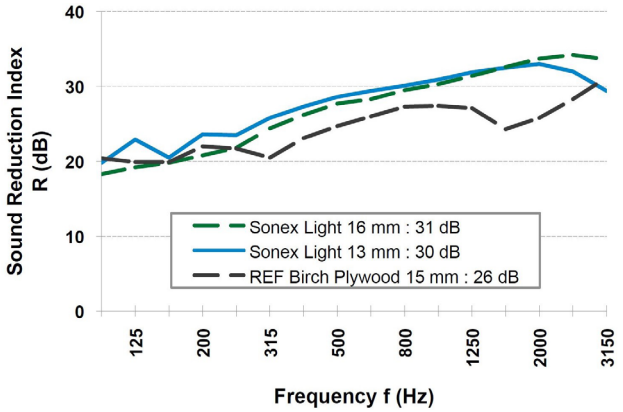
FIRE CLASSIFICATION

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

- UN/ECE Regulation No. 118, (vertical and horizontal use)
- FMVSS 571.302

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.

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

THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS*

NOMINAL THICKNESS	THICKNESS TOLERANCE		WEIGHT
(mm)	min. (mm)	max. (mm)	kg/m²
13	12	14	9.3
16	15	17	10.9
19	18	20	13.2

* The moisture content of the product affects its dimensions
** Weights are given at relative humidity of 65%.

Special structures and thicknesses are available on request.
Customised tolerances are possible but must be agreed separately.

BONDING CLASSES

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

FORMALDEHYDE EMISSIONS

Determined according to EN ISO 12460-3, the formaldehyde emitted by Metsä Wood Sonex Light falls far below the Class E1 requirement of ≤ 3.5 mg/(m²*h). The formaldehyde emission of Metsä Wood Sonex Light is approximately 0.7 mg/(m²*h).

Metsä

Birch Ply
Sonex Light

APPROVALS AND DESIGN PROPERTIES

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

MECHANICAL PROPERTIES

THICKNESS* (mm)	CHARACTERISTIC BENDING STRENGTH** (N/mm²)		MEAN MODULUS OF ELASTICITY** (N/mm²)	
	II	⊥	II	⊥
13	37.8	31.0	9440	6487
16	33.9	30.2	8977	6694
19	36.3	31.5	9070	6968

* Moisture content 12%
** Properties determined according to EN 789 standard

MACHINING

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

PACKAGING

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

PACKING QUANTITIES

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

03/2023

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