

# Birch Ply

## Flex XL



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

### Applications

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

- **Transport industry:** Side walls for horse and box trailers, side walls for light and medium size trucks, doors 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
- Environmentally friendly

### 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.

### 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.

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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  $\Delta E < 1.5$  according to ISO 4892-2 (600 h)
- Crack resistance EN13696 no cracks
- Impact resistance Class IC3 according to EN 438-2

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

### Edge sealing

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

### Panel sizes

Metsä Wood Flex XL 06 is available in sizes:

- XL 3,660-6,000 mm x 1,500 / 1,525 mm
- 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

#### THICKNESSES, STRUCTURES AND THICKNESS TOLERANCES OF THE PANELS\*

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

\* Moisture content of the product affects its dimensions

\* Average density of Metsä Wood birch plywood is 680 kg/m<sup>3</sup> (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. The overlay is bonded to plywood with weather resistant adhesive (EN 204 class D4).

### Formaldehyde emissions

Determined according to EN 717-1, the formaldehyde emitted by Metsä Wood Birch falls far below the Class E1 requirement of  $\leq 0.100$  ppm and fulfils also the most stringent requirements in the world ( $\leq 0.030$  ppm). The formaldehyde emission of Metsä Wood Birch is approximately 0.013 ppm. Thermoplastic overlay does not contain any formaldehyde.

### Panel strength properties

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

#### MECHANICAL PROPERTIES

THICKNESS* (mm)	MEAN MODULUS OF ELASTICITY** (N/mm <sup>2</sup> )		CHARACTERISTIC BENDING STRENGTH** (N/mm <sup>2</sup> )	
		⊥		⊥
12	10,719	6,781	27.9	33.2
15	10,316	7,184	26.8	33.8
18	10,048	7,452	26.1	34.1
21	9,858	7,642	25.6	34.3
24	9,717	7,783	25.3	34.4
27	9,607	7,893	25.0	34.5
30	9,519	7,981	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.

### Packing

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

#### PACKING QUANTITIES

PANEL SIZE (mm)	NUMBER OF PANELS PER PALLET BY THICKNESS							
	12	15	18	21	24	27	30	
1,500 / 1,525 x 2,400-3,660	50	40	35	30	25	25	20	
1,500 / 1,525 x 1,500-2,135	75	60	50	45	40	35	30	
1,800/1,900 x 2,400-3,050	Packet sizes agreed case by case							
3,100-6,000 x 1,800/1,900	Packet sizes agreed case by case							

### Further information

- Metsä Wood Flex Product Data Sheet

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