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RUSSIAN BIRCH FILM FACE SHUTTERING PLYWOOD

Birchply™ Russian Birch Film Face Shuttering Plywood is ultimate in Plywood having excellent physical and mechanical properties. The rigid laminated surface not only prevents moisture absorption but also ensures excellent abrasion resistance in aggressive conditions and smooth finish to concrete formwork.

Birch Plywood has been designed to suit any and every application needs of construction industry where durability, versatility, high bending strength, rigidity, stability, accuracy and tolerance to humidity parameters of performance values are critical.

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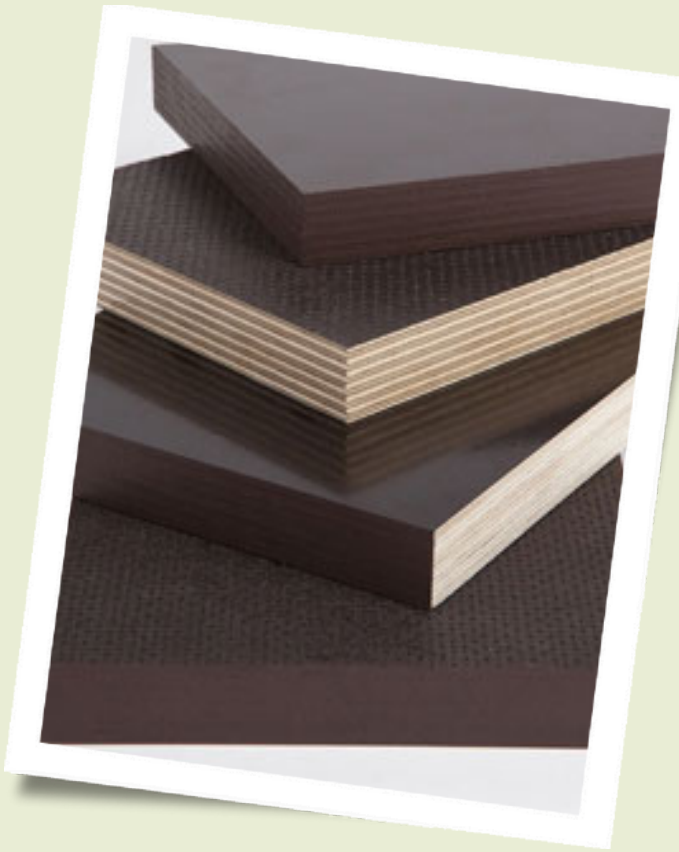

KEY BENEFITS OF RUSSIAN BIRCH FILM FACE SHUTTERING PLYWOOD

- Uniform and homogenous surface
- Waterproof, dimensionally accurate & stable.
- Strong and medium density
- 100% natural whole piece or spliced Birch Veneers of 1.4mm thickness throughout the plywood,
- Meets European E1 formaldehyde emission requirements (EN 120:1992) and also California ARB regulation P2
- Seamless fair finish concrete surface without any joints in the large concreted areas,
- Highly wear resistant,
- Impact resistant
- High elastic modulus and bending strength
- High flexural strength
- Resists commonly used chemicals (alkali, diluted acids, organic solvent)
- Additional surface protection in concrete block production
- Free from delamination risks,
- No need for secondary putty repairs of concreted surface and grinding
- Resistance to temperature variation: through a range of -40°C to +50°C (-40°F to +122°F), comes in a variety of thicknesses and sizes.

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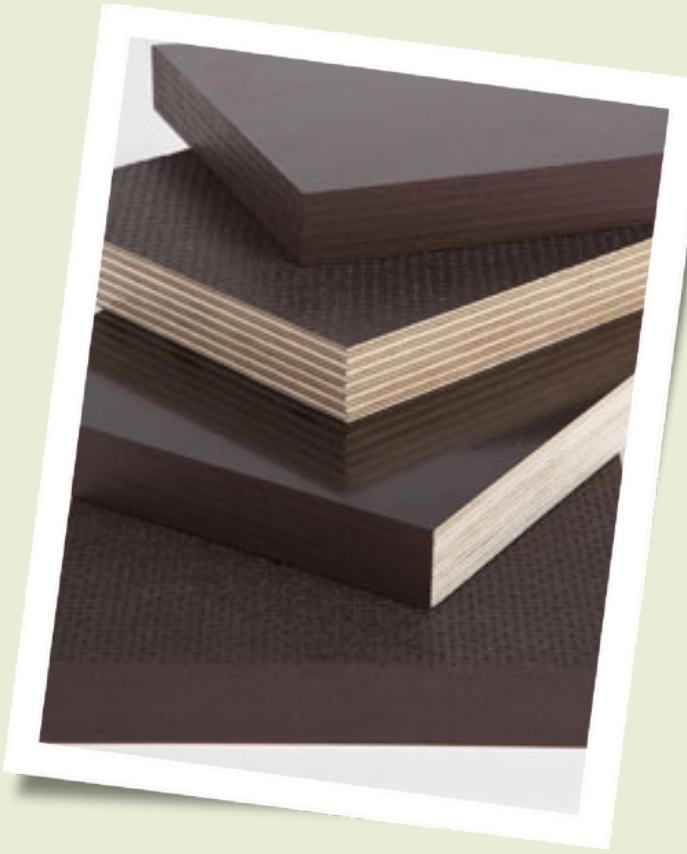
WHAT DOES OUR PROMISE OF EFFICIENCY MEAN TO YOU

- Products that improve your cost, material and energy efficiency
- Reliable and timely deliveries
- Local knowledge, support and service
- Solutions for every application
- Proven and documented technical data and environmental statements



AVAILABILITY OPTIONS:

Birchply™ Film face Birch Plywood is made in a range of thickness from 9mm, 12mm, 15mm, 18mm, 21mm & 24mm

However, the commonly available Ex-Stock thickness is

9mm x 7 ply in 120 GSM & 220 GSM
12mm x 9 ply in 120 GSM & 220 GSM
15mm x 11 ply in 220 GSM
18mm x 13 ply in 120 GSM & 220 GSM
21mm x 15 ply in 220 GSM
24mm x 17 ply in 120 GSM & 220 GSM

TECHNICAL SPECIFICATIONS AND DECLARATION OF PERFORMANCE CONSISTENT WITH REGULATION (EU) NO. 305/2011 FOR CONSTRUCTION PRODUCTS.

Thickness, mm	9 x 7ply, 12 x 9ply, 15 x 11ply, 18x 13ply, 21x15ply, 24 x 17ply		
Tolerances			
Nominal thickness, mm	Number of plies	Tolerance on nominal thickness, mm	Thickness tolerance within one panel, max mm
9 12 15 18 21 24	7 9 11 13 15 17	+ 0.4 / - 0.6 + 0.5 / - 0.7 + 0.6 / - 0.8 + 0.7 / - 0.9 0.0 / - 1.1 0.0 / - 1.5	0.6
Surface type	Smooth (F/F)		
Glue	Phenolic resin according to EN 314-2 class 3 exterior		
Film	120/220 GSM on both side of Plywood with option to double or triple the films coating in multiple of 120/220 GSM		
Water resistance	Boiling Water Proof (EN – 314-2) Class 3		
Edges protection	Coated with water borne PU or acrylic paint on all 4 sides		
Density, kg/m3	660 - 680		
Moisture content, %	5-14		
Fire Rating			
Reaction to fire	Depending on thickness and end use conditions but not less than Class D-s2, dO		EN 13986, Table 8
Thermal Conductivity	0, 17 W/mK		
Formaldehyde class	E1 EN-16516:2018		
Mechanical Properties			
Flexural modulus of elasticity Em,	N/mm2	EM I - 7642 N/mm2	
		EM II-9858 N/mm2	
Characteristic flexural stiffness fm,	N/mm2	fm I - 34.3 N/mm2	
		fm I - 39.4 N/mm2	
Ultimate static bending strength, min MPa	along the grain of face veneers		60
	against the grain of face veneers		30
Static bending elasticity modulus, min MPa	along the grain		6000
	across the grain		3000
Average value of shear strength through adhesive layer (MPa)	Percentage of destruction in wood		
Above 0.2 up to 0.4 inclusively	Greater than or equal to 80		
Above 0.4 up to 0.6 inclusively	Greater than or equal to 60		
Greater than 0.6 but less than 1.0	Greater than or equal to 40		
1.0 and more	-		
Note 1 : The above properties are declared by the producer Mills in Russia and is believed to be correct and fair view of the products. Note 2 : The above characteristics are subject to prior agreement. Note 3: The above properties are consistent with Regulation (EU) No. 305/2011 for construction products.			

DISTINCTIVE PERFORMANCE PROPERTIES OF BIRCHPLY FILM FACE PLYWOOD

Performance characteristics	Thickness, mm	Values
Adhesion strength of coating	9 - 24	The coating peels off together with the outer veneer and the cut has sharp edges. A layer of wood fibers can be clearly seen on the underside of the cut edges
Steam resistance of film coating	9 - 24	No swelling. Slight loss of gloss. No bubbles.
Resistance of film coating to sodium hydroxide (NaOH)	9 - 24	The color of the solution is from colorless to light yellow. Slight gloss variation, the film coating is firm and resistant to mechanical stress, a mark from the bottle neck can be seen
Resistance of film coating against concrete	9 - 24	No staining of the concrete.No gloss variation, film coating is firm
Surface waviness of the film-faced birch plywood(Rippling test)	9 - 24	Average rippling length is not more than 20 mm
Film coating resistance to abrasion (Taber-test), revolutions, not less	9 - 24	300
Film coating resistance to cracking	9 - 24	Crack index not exceeding 80
Water permeability of film coating (Cobbtest), g/m2, not more than:	9 - 24	400
Note 1 : The above properties are declared by the producer Mills in Russia and is believed to be correct and fair view of the products. Note 2 : The above characteristics are subject to prior agreement. Note 3: The above properties are consistent with Regulation (EU) No. 305/2011 for construction products.		

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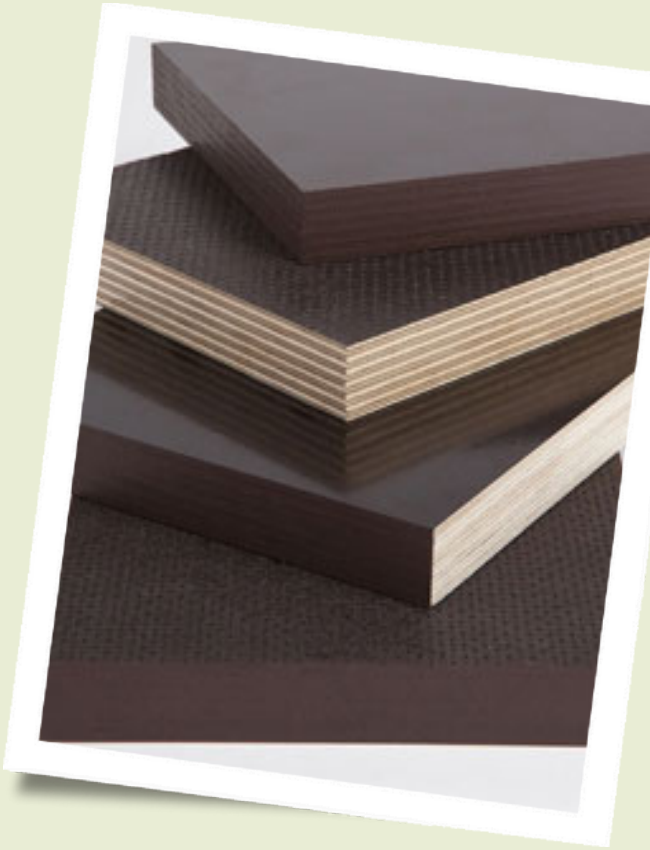
EFFECT OF HUMIDITY AND MOISTURE



- Wood veneer is a living material and is subject to moisture movement according to surrounding conditions, which affects the flatness of panels. It is important to condition the panels to reach a moisture content near to the equilibrium of their permanent environment.

- Like other wood-based panel products, Birch Plywood is also hygroscopic and its dimensions change in response to a change in humidity. A change of 1% in moisture content typically increases or decreases the length, width and thickness by 1% in dimensions and thickness. It is therefore desired that the edges are sealed with a suitable acrylic paint to prevent and/or control ingress of moisture and humidity and consequent swell in thickness and expansion in dimensions.

- The recommended stocking conditions are 20°C and a RH of air of about 60%.

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STORAGE CONDITIONS:

When first exposed to the prevailing weather conditions at Site and during the early uses of the boards, there is likely to be some localised swelling of the wood veneer caused by moisture pickup, which may leave impressions in the face of the concrete. To prevent this:

- Store the panels in dry conditions, flat on a level surface, off the ground and direct sunlight, preferably indoors or under the shed.
- Panels should be store horizontally on a firm base with enough bearers to prevent sagging.
- The stacks should be covered k to protect top and edges from moisture penetration as fluctuations in temperature and humidity may cause panels to distort.

SAFE HANDLING

Film faced plywood sheets are very slippery; sliding panels may lead a whole stack to collapse. Remember, separate sheets must be moved manually by two persons. Panels must not be pulled or pushed on the floor or ground. Handling plywood requires general safety procedures and proper equipment. Handling should be kept to a minimum, and for speed and efficiency, mechanical handling devices should be used whenever possible. When taking a panel from a pack or a stack, it must be lifted, not pulled over the surface of the bottom panel, because any hard particle (sand or film particle) between panels can lead to damage of processed or coated surfaces.

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PRESERVATIVES

Birchply Plywood is made from natural Birch wood Veneers grown and harvested in Russia and is free from any toxic chemicals except resin. As is common knowledge, all wood products are susceptible to insects or termites and/or borers present in different climatic zones in the soil or buildings. It is recommended that the users are applying the coat of suitable chemicals or insecticides on all exposed surfaces of wood in addition to treatment of masonry foundations of the building where the Wood products are required to be used. Fipronil emulsified concentrate at about 3% is one such chemical and effective deterrent against insects and pests or termites in tropical climate zones. However, the application should be in accordance with manufacturers guidelines for effective results. Users own discretion in selection of appropriate chemical and its doses or frequency of such treatment is advised for satisfactory results in the light of experience gained over the period of time.

REUSES OF RUSSIAN BIRCH FILM FACE SHUTTERING PLYWOOD

Typical number of reuses is likely to be in the range of 20-30 times. However, this will vary according to many different factors including good site practice, the required concrete finish, the amount of care taken when compacting the concrete, handling and storage of panels, type and quality of release agent used on the panels before concreting.

The number of times the plywood can be reused is only intended as an approximate guide. It does not imply any form of warranty. The actual number of reuses will depend on several factors other than the plywood.

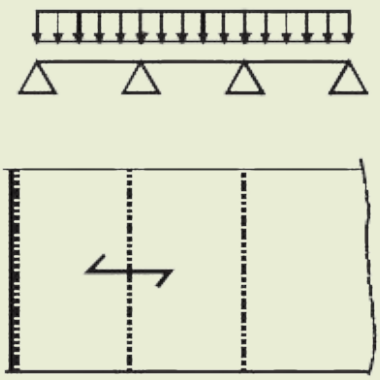
DESIGN DATA

LOAD RESISTANCE q [kN/m2] AND CORRESONDING DEFLECTION u [mm] VALUE FOR BIRCH FILM FACE PLYWOOD TO BE USED IN THE DESIGN OF CONCRETE FORMWORKS***

Load resistance for a uniformly distributed load on a continuous plate strip with three equal span lengths. Face grain parallel to span

Span	Nominal thickness (mm)																							
c/c	9			12			15			18			21			24								
mm	q		u	q		u	q		u	q		u	q		u	q		u						
100	123	s	0.3	166	s	0.3	193	s	0.2	234	s	0.2	263	s	0.2	303	s	0.2						
150	82	s	0.8	111	s	0.6	129	s	0.4	156	s	0.4	176	s	0.3	202	s	0.3						
200	61	s	1.6	83	s	1.1	97	s	0.8	117	s	0.7	132	s	0.6	152	s	0.5						
250	46	b	2.7	67	s	2.0	77	s	1.4	94	s	1.1	105	s	0.9	121	s	0.8						
300	32	b	3.7	51	b	3.0	64	s	2.2	78	s	1.8	88	s	1.4	101	s	1.2						
350	24	b	5.0	38	b	4.0	55	b	3.4	67	s	2.6	75	s	2.1	87	s	1.7						
400	18	b	6.4	29	b	5.0	42	b	4.2	58	b	3.7	66	s	2.9	76	s	2.4						
500	12	b	9.8	18	b	7.6	27	b	6.4	37	b	5.5	49	b	4.9	61	s	4.3						
600	8	b	13.9	13	b	10.8	19	b	8.9	26	b	7.7	34	b	6.8	43	b	6.1						

b = bending strength limitation
s = planar shear strength limitation



Short-term loading Service Class 3

k_{mod} = 0.70

k_{def} = 0.40

γ_q = 1.2

γ_m = 1.3

q given in kN/m^2

u given in mm

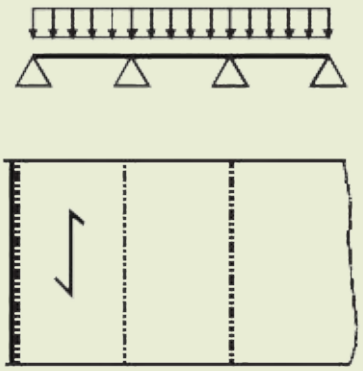
⟷ grain direction of surface veneers

*** Obtained from Handbook of Finnish Plywood covering Birch Plywood FFP (Page 54)

Load resistance for a uniformly distributed load on a continuous plate strip with three equal span lengths. Face grain perpendicular to span

Span	Nominal thickness (mm)																	
c/c	9			12			15			18			21			24		
mm	q		u	q		u	q		u	q		u	q		u	q		u
100	108	s	0.4	133	s	0.3	176	s	0.2	205	s	0.2	245	s	0.2	276	s	0.2
150	72	s	1.1	89	s	0.7	118	s	0.5	137	s	0.4	163	s	0.4	184	s	0.3
200	51	b	2.3	66	s	1.3	88	s	1.0	103	s	0.8	123	s	0.6	138	s	0.5
250	33	b	3.4	53	s	2.4	71	s	2.4	98	s	1.3	98	s	1.0	111	s	0.9
300	23	b	4.8	40	b	3.6	59	s	2.8	68	s	2.0	82	s	1.6	92	s	1.3
350	17	b	6.4	29	b	4.7	45	b	3.8	59	s	3.0	70	s	2.4	79	s	1.9
400	13	b	8.2	22	b	6.1	35	b	4.9	49	b	4.2	61	s	3.4	69	s	2.7
500	8	b	12.7	14	b	9.2	22	b	9.2	32	b	6.2	43	b	5.4	55	s	4.8
600	6	b	18.2	10	b	13.1	15	b	13.1	22	b	8.7	30	b	7.5	38	b	6.7

b = bending strength limitation
s = planar shear strength limitation



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q given in kN/m^2

u given in mm

grain direction of surface veneers

*** Obtained from Handbook of Finnish Plywood covering Birch Plywood FFP (Page 54)

DISCLAIMER:

Eximcorp India Pvt Ltd, does not assume any responsibility or admits any liability whatsoever for the number of uses or re-uses or repetitions or damages to the sheets or concrete surface quality for reasons not attributable to manufacturing defects or for several other factors affecting the performance of the product. In the event of any occasional delamination in excess of the AQL (Acceptance Quality Level) of 3% established by the trade practices and also so declared by the seller hereby, the replacement of delaminated sheets or the surface area so observed shall me made expeditiously by the Seller or refund of value thereof as soon as possible without any further or other consequential or other losses.

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