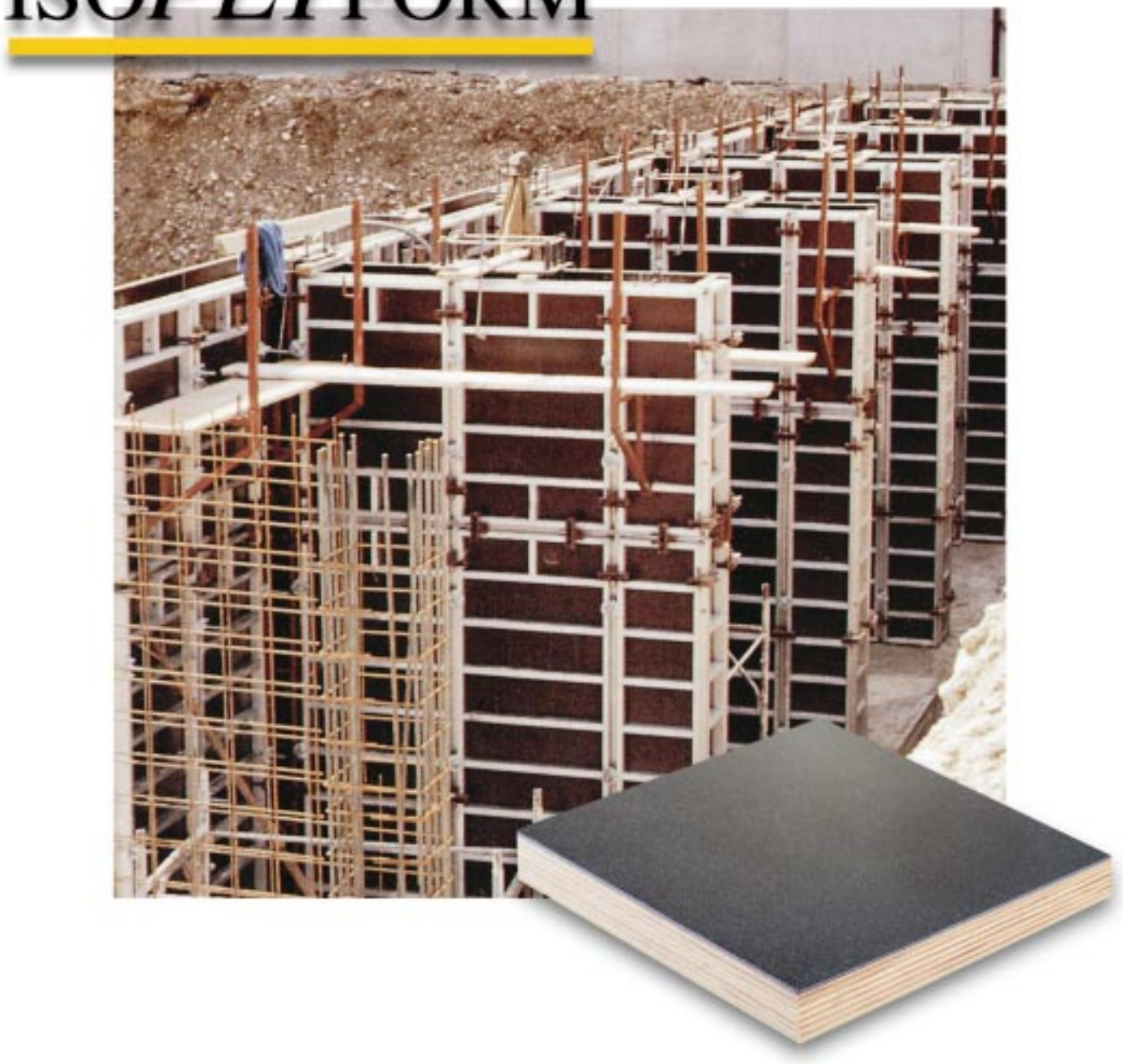
JAVOR

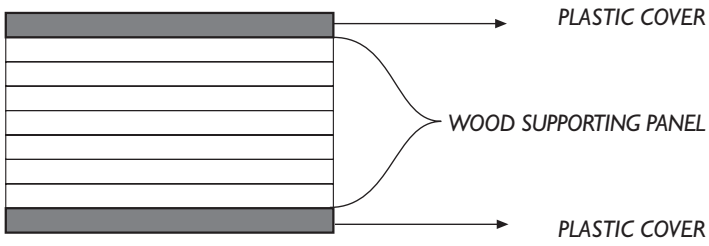
ISOPLYFORM®



CONSTRUCTION BOARDS FOR FORMWORK

ISOPLYFORM® *is a construction board made of plywood and coated with polypropylene. It is used in formwork and represents an excellent substitute for plywood boards with phenolic films.*

The supporting board is made of beech or birch water-resistant plywood. The two external layers are of modified polypropylene suitable for concreting and are glued with the water-resistant adhesives to the supporting board.



USE - more than 200 reuses possible

ISOPLYFORM ® *boards are designed for use in concrete formworks. They substitute plywood boards with phenolic films. Their special structure enables achievement of a better quality of the concrete surface. At the same time the plastic cover protects the supporting wooden board from water and concrete and prolongs the lifetime of the board. In case of careful handling and storage* ***more than 200 reuses*** *are possible.*

The excellence of ISOPLYFORM ® ***is in:***

- *long lifetime*
- *polypropylene cover that protects the board from water absorption and maintains unchanged technical characteristics of the board through the whole period of use*
- *easier separation from the concrete and thus easier and quicker cleaning*
- *constant quality of the concrete surface during the whole period of use*
- *mat concrete surface that enables colouring of the concrete*
- *low sensitivity to damages*

DESCRIPTION

Standard sizes: *1250x1500 mm, 1500x2500 mm, 900/1000/1200/1350/1500 x 2700/3000/3300 mm*
Maximum sizes: *1500x4000 mm and 2000x3000 mm*

THICKNESS AND TOLERANCE

Standard thickness: *12, 15, 18, 21 and 24 mm*
Actual thickness with tolerances: *12,0±0,3 mm, 15,0±0,4 mm, 18,0±0,4mm, 20,7±0,4mm, 23,8±0,4 mm*

COMPOSITION OF SUPPORTING BOARD

The supporting board is made of crosswise glued layers of the rotary cut birch or beech veneer; the thickness of birch layers is 1,4 mm and of beech layers 1,6 mm.

COMPOSITION AND PROPERTIES OF THE PLASTIC COVER

Thickness: *standard 1,6 mm, others on order*
Material: *polypropylene*
Standard colour: *grey*
Surface hardness: *Shore D 75-80*
Surface: *smooth or mat*
Nailing: *good*
Resistance to damages: *high*
Damages spreading: *very low*
Separating from concrete: *good*
Resistance to UV rays: *medium-good*
Temperature range of application: *-10°C up to 60°C*
Bending modulus of elasticity: *2500-3000 MPa (DIN 53455)*
Moisture absorption: *<1,8 %*
Linear thermal expansion coefficient: *abt. $0,5x10^{-4}$ K^{-1}*
Aging: *low*
Ecology: *cover is ecologically unobjectionable with FDA certificates and can be recycled*

To order we can:

- *fit the boards dimensions or cut them to wished sizes*
- *fit the CNC machining of the surface or edges*
- *produce the board with your company's logo*
- *seal the edges*
- *protect the edges with U - metal profiles*

MECHANICAL PROPERTIES: Values* in case of breakage

	beech or birch		
	thickness 15 mm	thickness 18 mm	thickness 21 mm
• Bending strength: longitudinal (N/mm^2)	62	62,6	56
• Bending strength: transversal (N/mm^2)	62,1	53,4	62,9
• Bending modulus of elasticity: longitudinal (N/mm^2)	5303	5935	5846
• Bending modulus of elasticity: transversal (N/mm^2)	4606	4596	5254

**The values are average for wood moisture up to 15 %. Because of the wood's variability the actual values can be different (bigger/smaller) from those given in the table. For higher moistures and for construction it is necessary to consider certain security factors.*

Explanation of longitudinal and transversal direction:
At ISOPLYFORM® boards the longitudinal direction is the direction of the external veneer layer of the supporting plywood board (it represents the shorter side of the board), a transversal direction, however, is a longer side of the board.

COMPARISON OF STRENGTHS ACHIEVED AT ISOPLYFORM® (SEE THE TABLE) WITH STANDARDS

Minimal requested strengths stated in standard DIN 68 792 Grossflächen-Schalungsplatten für Beton und Stahlbeton, point 5.6 Elastomechanische Eigenschaften, table 2, are the following: for thickness over 12 mm the minimal bending strength in longitudinal direction is 40 N/mm^2; in transversal direction 35 N/mm^2; the bending modulus of elasticity, however, 4500 and 4000 N/mm^2.

INSTRUCTIONS FOR USE AND HANDLING WITH PANELS

Cleaning

The boards can be easily cleaned with WAP devices. Pressure and operation times should be determined based on the preliminary tests on a small surface of the board. Use of means and procedures that could scratch the surface is not desired. Oiling with shuttering oils is recommended. Smaller abrasions can be repaired with two-components putty. At bigger damages a small hole (O 40, O 60 mm, depth 5,5 - 6,5 mm) can be cut out and replaced with a round lamella made of the same material as the board is.

Working

Best cutting results are achieved when circular saws with widia hardenings are used. The plastic cover can be very well sawed (without cracks), bored and sanded.

Packing

A pallet with a protecting packaging board above and below is recommended. The package must be tied up with a steel strap 3-times crosswise and 2-times longitudinally.

Warehousing

The ISOPLYFORM® panels are warehoused like other plywood panels: on an even grounding in a covered space with at least four supports levelled with a vertical line, avoiding direct exposure to the sunshine and rain.

Transport

The ISOPLYFORM® panels are transported like plywood boards with phenolic films. As the panels are slippery they should be tied up, the surface should also be protected against scratching and moisture.

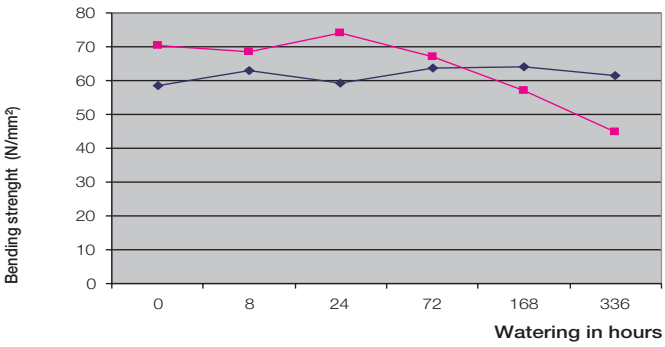
COMPARISON OF THE PHYSICAL AND MECHANICAL CHARACTERISTICS

plywood covered with fenolic film

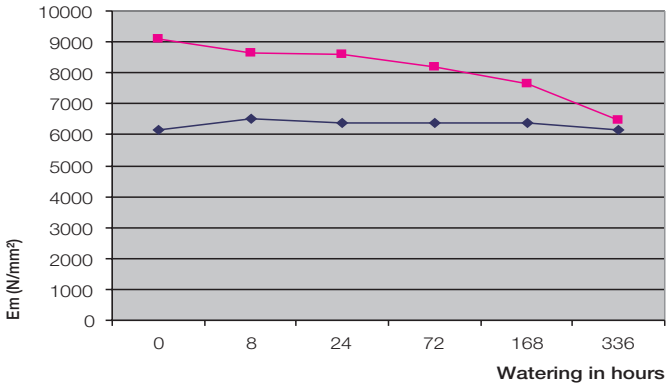
ISOPLYFORM®

Watering in hours	Phenolfilm faced birch plywood					ISOPLYFORM® plywood boards				
	fm N/mm²	Em N/mm²	a max mm	mu g	u l %	fm N/mm²	Em N/mm²	a max mm	mu g	u l %
0	70,4	9083	17,95	0	10,3	58,5	6174	20,03	0	9,0
8	68,7	8648	17,34	27,75	9,1	63	6524	19,04	0	6,3
24	74	8619	20,01	83,24	10,0	59,1	6394	16,89	0	6,8
72	66,9	8180	22,15	249,7	11,6	63,7	6359	20,71	27,75	7,0
168	56,9	7645	21,09	527,2	13,4	64	6385	20,41	55,5	6,8
336	44,9	6483	21,33	1193	18,8	61,4	6172	20,85	55,5	7,6

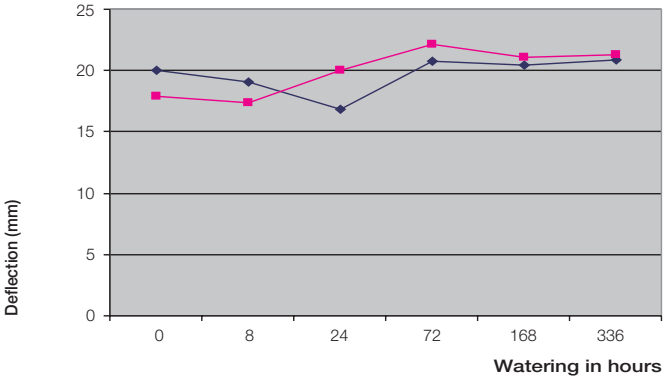
Bending strenght (fm) after watering



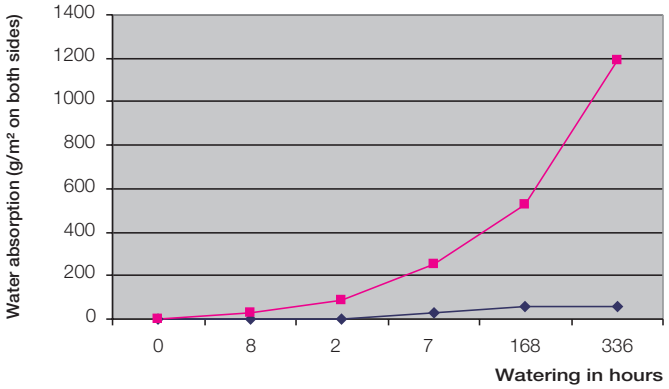
Moduls of elasticity (Em) in in bending after watering



Deflection by Fmax



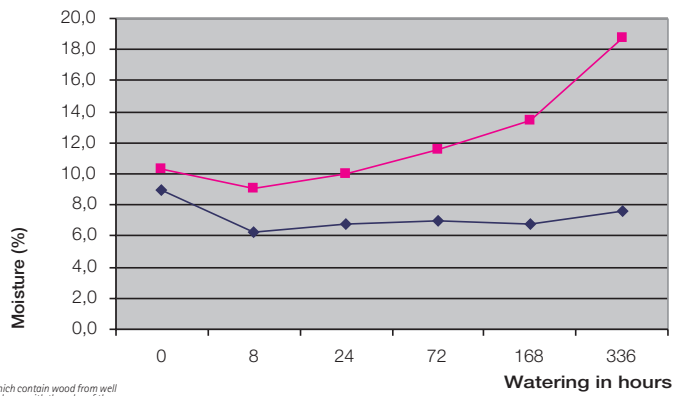
Water absorption (mu)



Legend:

fm	bending strenght - longitudinal (N/mm²)
Em	module of elasticity in bending - longitudinal (N/mm²)
a max	deflection by F max (mm)
mu	water absorption (g/m²) measured on both surfaces of the board
u l	moisture of external layers (%)

Moisture of external layers after watering



JAVOR

Javor Pivka d.d.
Kolodvorska cesta 9a, 6257 Pivka, Slovenia

PC Vezane plošče
Snežniška cesta 12, 6257 Pivka

telefon: +386 5 72 10 300, fax: +386 5 72 10 334
e-mail: vezane.plosce@javor.si, www.javor.si

Tested by: Biotechnical faculty, University of Ljubljana, Department of wood science and technology, Test laboratories, Wood based panels laboratory

Izdal: Javor Pivka d.d. • Oblikovanje in fotografija: Jože Šuštaršič • Priprava: Zdenko Rudolf • Tisk: Gorenjski tisk, d.d., 2/06