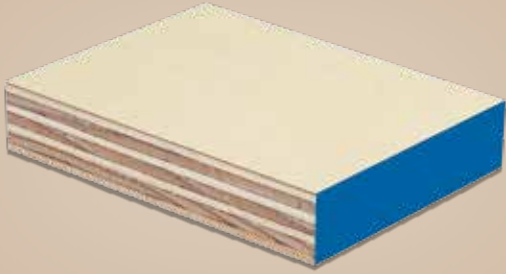


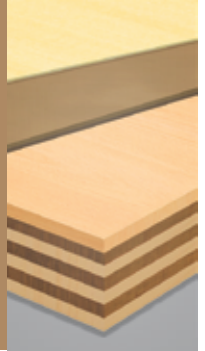


BASIC HDO™

Concrete Form



- Standard 100/30 performance
- Smooth finish & tough, anti-abrasion face
- Marginal wood grain transfer
- Balanced construction ensures panel stability
- Increased # of pours & reduced cost/pour



Product Description:

Basic HDO™ is standard, 100, high-density, buff over laid plywood for semi-gloss finishes on smooth or coated concrete. It is an economical panel that balances cost, multiple reuse and concrete appearance.

Panel Construction/Moisture Resistance:

Basic HDO™ is high-density, 100 overlay on plywood with Doug Hem construction. It is manufactured with a one-step layup, has a waterproof glue bond and meets APA PS 1-09. All Olympic products are made in the USA.

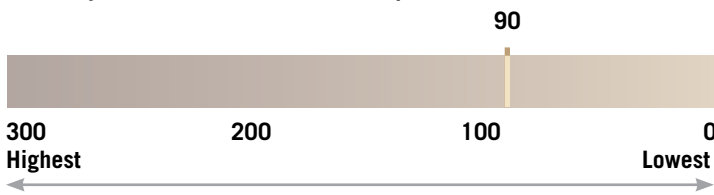
Working Faces/Treatment:

- Basic HDO™ is available with one working face and an HDO backer sheet
- Gloss level of concrete surface: semi-gloss
- Wood grain transfer to concrete surface: moderate
- Wood defect transfer to concrete: slight
- Sugaring: none
- Maintenance: very little

Working Edges/Treatment:

- Factory sawn and sealed with special blue, styrene acrylic sealer
- Seal all exposed wood (edges and holes) with Edge Flex 235 by Nox-Crete, Olympic Form Seal by Willamette Valley Co. or equivalent to prevent concrete staining from the wood sugars

Alkalinity Resistance After Chemical Exposure



The Abrasion and Chemical Resistance Test reflects the expected panel life in the field. The higher the index number, the more resistant to alkalinity/abrasion.

Structural/Load Performance Summary

Basic HDO™ is available in Class 1 only. Allowable pressure $\ell/270$ 3/4" @ 12" OC (face gain across supports): Class 1- 885 PSF

Typical Pour Ranges:

- Engineered systems: not recommended
- Gang forms: up to 30 pours
- Job built: up to 20 pours
- Pour ranges are not guaranteed because the number of pours will vary due to jobsite handling and panel maintenance, vertical or horizontal use, form release agent, concrete mix design/strength, alkalinity, pour rate and other factors

Other Applications:

- Pallets, bins, totes, crates, reels
- Tanks, vats, freezer liners, storage lockers, trunks and shelving
- Animal enclosures, farm buildings & equipment

Release Coating:

- Release agent: not factory treated
- Coating required: light before first and each subsequent pour
- Recommended release agent: Nox-Crete PCE/PCS or equivalent. Avoid release agents containing fuel oils, recycled oils or solvents

Limitations:

Do not exceed design limitations imposed by the load span table. Conform to concrete form design procedures based on American Concrete Institute (ACI) standard 347-04. Release agents are required. Do not employ used concrete form for structural applications. Do not coat or laminate this panel without surface preparation. For coating or laminating information, ask Olympic for technical assistance.

Thicknesses & Sizes:

Basic HDO™ is available in 1/2", 5/8" & 3/4". Standard panel sizes are 4' X 8'. Non standard thicknesses, widths and lengths meeting volume requirements are available.

Technical Data Applicable Standards

All panels are manufactured by Olympic Panel per product standard PS1-09. This standard is available at www.apawood.org.

Physical Properties	3/8" to 1/2"	5/8" to 1-1/8"
Check Resistance – APA Test #6	2.65 mm	2.65 mm
Moisture Resistance (Cobb) 8-hour Soak	3.09 g/sq. ft.	3.09 g/sq. ft.
Alkalinity Resistance After Chemical Exposure D/T	90	90
Formaldehyde Level ASTM E-1333	< 0.01 parts/million	

Panel Tolerances	3/8" to 3/4"	1" & Greater
Thickness Tolerance	+/- 1/32" (.031")	+/- 5%
Length & Width Tolerance	+0, -1/16" (.062")	+0, -1/16" (.062")
Squareness	1/16" (.062")	1/16" (.062")
Straightness	1/16" (.062")	1/16" (.062")

Note: All tolerances and specifications apply at the time of manufacture.

Note: Product averages vary for individual thicknesses. Consult sales or technical offices for exact properties.

Standard Packaging:

Thickness	Basic HDO™ 1 Face, HDO Back Average Weight* lbs./SF	Basic HDO™ 1 Face, HDO Back Average Weight* lbs./Panel	Pieces per Unit
1/2"	1.665	53.3	66
5/8"	2.093	67.0	50
3/4"	2.444	78.2	44

*Average product weights may vary +/- 10%

Product Grade

Standard product is shipped on grade only. Special product is shipped allowing up to 10% total Good One Side (G1S) and/or Shop, identified & priced separately. Shipments of G1S and shop may be available.

Stress and Load Span Tables

These stress and load span tables simulate actual wet form conditions. Dry load span values are overstated and should not be used. Canadian (COFI) design values for Douglas are 25% higher than APA.

Stress Tables: Tables 1 & 2 herein are based on standard APA and commercial standards PS-1 criteria.

Stress Table – Dry, Working Stress Design Capacities – 4' X 8' & 10'	Class 1		Wet Adjust Factor
	1/2"	3/4"	
Nominal Thickness	1/2"	3/4"	
Number of Plies	5	7	
Table 1: Face Grain <i>Perpendicular</i> to Supports¹			
Bending Stiffness ¹	137,951	421,415	.85
Bending Resistance ²	391	789	.75
Planar Shear ³	199	262	.75
Table 2: Face Grain <i>Parallel</i> to Supports¹			
Bending Stiffness ¹	34,054	160,967	.85
Bending Resistance ²	152	402	.75
Planar Shear ³	103	229	.75

¹Bending Stiffness = EI* (lb-in²/ft); ²Bending Resistance = M or F_sS (lb-in/ft); ³Planar Shear Capacity: V or F_vlb/Q (lb/ft). There is no DOL (Duration of Load) or experience factor applied to EI, FbS and Fslb/Q.

Load Span Tables: Tables 3 through 4 are based on standard APA and PS-1 criteria.

Class 1 LOAD SPAN TABLES – WET CONDITIONS Recommended Maximum PSF on Class 1 Panels						
Table 3: Face Grain <i>Perpendicular</i> to Supports¹						
Support Spacing	Plywood Thickness – Allowable Pressure (PSF)					
	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"
(in.)	ℓ/360	ℓ/270	ℓ/360	ℓ/270	ℓ/360	ℓ/270
8"	1,000	1,000	1,320	1,320	1,580	1,580
12"	455	495	710	710	885	885
16"	195	260	325	400	445	505
19.2"	110	150	190	255	270	350
24"			100	130	145	190
Table 4: Face Grain <i>Parallel</i> to Supports¹						
Support Spacing	Plywood Thickness – Allowable Pressure (PSF)					
	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"
(in.)	ℓ/360	ℓ/270	ℓ/360	ℓ/270	ℓ/360	ℓ/270
8"	392	434	747	747	1,175	1,175
12"	145	167	409	466	596	648
16"			167	213	273	364
19.2"			121	163	194	216
24"					100	135

Notes: ¹Plywood continuous across two or more spans. These are total loads (weight of panel should be considered in horizontal applications) DOL (Duration of Load) 1.25 and Experience factor of 1.30 used in load tables.

Form Panel Thickness: For more detailed design information, refer to APA publication "Plywood For Concrete Forming" and to American Concrete Institute publication "Formwork for Concrete."

Edge Support: In high moisture/sustained load conditions, edges may have a greater deflection than the panel center and may exceed calculated deflection.

Suitability for Use and Warranty

Nothing herein constitutes a warranty express or implied, including any warranty of merchantability or fitness for use, nor is protection from any law or patent to be inferred. The exclusive remedy for all claims is replacement of materials. Contact the sales office for a copy of the complete Olympic Terms and Conditions of Sale.

Warehouse Storage and Handling

- Store in a dry, clean, well-ventilated area indoors
- Avoid temperature and moisture extremes. Allow panels to equalize for 72 hours or more before use
- Pieces must not be stored in contact with the ground
- Limit the stacking height to four or five units. Separate units with clean, dry spacers of uniform thickness, aligned carefully. Use three spacers for panels 8' long

Jobsite Care and Handling

1. **Product preparation:** OPV's HDO panels are not factory release coated. Lightly coat panels prior to first use and each subsequent use with Nox-Crete PCE/PCS or equivalent agent that will not bond with, stain or adversely affect concrete surfaces. Follow the manufacturer's recommendations for application.
2. **Pouring and Vibrating:** While panels are highly resistant to abrasion and impact, they can be damaged through improper use. Follow the rate of pour to reduce excessive pressure that can cause panel damage. Use rubber tipped vibrators and exercise care not to damage form faces.
3. **Stripping:** Prolong panel life with proper stripping and handling. Use wood wedges, rather than metal bars or pries, to separate the form from the concrete. Form panels must be lowered, not thrown or dropped, to avoid face and edge damage.
4. **Cleaning:** Storage and Edge Sealing—Clean panels after each use, employing burlap or flat, non-scratching tools such as plastic or wood scrapers. Reseal cut edges or exposed wood at holes or openings with two coats of a styrene acrylic sealer. Stack panels flat and remove fasteners to prevent damage and warping. Store panels in a protected area and avoid direct sunlight.
5. **Surface Repairs:** Remove form release agent, concrete & loose wood/overlay debris. Sand the damaged surface with coarse (80 grit) disc or paper. For architectural concrete, use fine (120 grit) for the damaged perimeter area. Clean all sanding debris from the repair area. Apply: W.R. Meadows - Rezi-Weld Gel Paste State, Euclid - Euco #620 Gel Epoxy System, or Sika - Sikadur AnchorFix. Use the Rezi-Weld Gel Paste State when the air temp is above 60° F, or the Euco #620 Gel or Sikadur AnchorFix-4 when the air temp is above 33° F. Scrape off the excess repair material using a putty knife. Allow repair material to cure for 24 hours (48 hours in cold weather) before sanding, then feather sand the area.

Environmental Impact

Olympic Panel produces overlaid plywood from veneer peeled at the Olympic plant and from purchased veneer. All veneer and plywood panels are manufactured in accordance with the following principles:

- Logs and veneer originate in sustainable secondary growth forests, which are managed according to federal and state laws and regulations
- Olympic Panel uses energy-efficient environmental control technology to reduce emissions to levels below federal and law guidelines
- Olympic Panel uses process by-products to produce energy
- Olympic's products are renewable, biodegradable and recyclable

Warnings

This product contains < 0.01 parts/million of residual formaldehyde from manufacturing. This product will generate wood dust from sawing, sanding, or shaping. Material safety data sheets are available on Olympic's website at www.olypanel.com and upon request.

Structural panels (PS-1) are exempt from California Air Resources Board regulations, however, this product is below CARB limits for all uses.

There's more than one reason Olympic Panel is #1 in the concrete forming industry. Find out more at www.olypanel.com



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