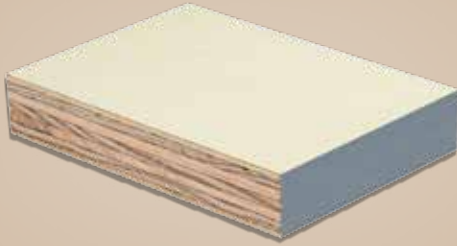


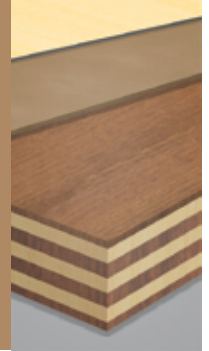


CLASSIC™ HDO

Concrete Form



- Excellent for engineered systems
- Enhanced Alkalinity resistance vs. Douglas Fir faced HDO
- Dense hardwood face produces uniform concrete surface/color
- Controlled hydration reduces Tuger Striping
- Minimal wood grain & no patch transfer
- Increased # of pours & reduced cost/pour



Product Description:

Classic™ HDO is a high-density overlaid plywood with good surface durability for gloss concrete finishes. It produces a smooth finish with minimal grain transfer and high number of uses.

Panel Construction/Moisture Resistance:

Classic™ HDO is constructed of proprietary, two-part, high-density overlay on dense hardwood faced plywood with Douglas Hemlock inner plys. It is produced 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:

- Classic™ HDO is available with one or two working faces. Panels with a single working face are provided with an HDO backer sheet.
- Gloss level of concrete surface: gloss
- Wood grain transfer to concrete surface: slight
- Wood defect transfer to concrete: minimal—no football patches
- Sugaring: none
- Maintenance: very little

Working Edges/Treatment:

- Factory sawn and sealed with special gray, 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

221



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

Classic™ HDO is available in the equivalent of Struct 1 or Class 1. Allowable pressure $\frac{2}{270} \frac{3}{4}$ " @ 12" OC (face gain across supports): Struct 1 - 1105 PSF, Class 1 - 885 PSF

Typical Pour Ranges:

- Engineered systems: up to 225 pours
- Gang forms: up to 100 pours
- Job built: up to 75 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

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

Other Applications:

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

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.

Thicknesses & Sizes:

Classic™ HDO is available in 1/2", 5/8", 3/4" & 1-1/8". Standard panel sizes are 2' & 4' X 8' & 10'. 10' HDO is only available with a fir face. Properties shown apply to 8' Classic HDO™ only. Please inquire for availability and specific 10' properties. 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	2.3 mm	2.3 mm
Moisture Resistance (Cobb) 8-hour Soak	2.78 g/sq. ft.	2.78 g/sq. ft.
Alkalinity Resistance After Chemical Exposure D/T	221	221
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.

Standard Packaging:

Thickness	Classic™ HDO 1 Face, HDO Back Average Weight* lbs./SF	Classic™ HDO 2 Face, HDO Back Average Weight* lbs./Panel	Pieces per Unit
1/2"	1.665	1.740	66
5/8"	1.960	1.990	50
3/4"	2.444	2.340	44
1-1/8"	3.450	3.685	30

*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 Fir 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 Wet Design Capacities – 4' X 8' Only					
Nominal Thickness	Struct 1		Class 1		Wet Adjust Factor
	1/2"	3/4"	1/2"	3/4"	
Number of Pls	5	7	5	7	
Table 1: Face Grain Perpendicular to Supports¹					
Bending Stiffness ¹	142,562	429,452	142,310	423,697	.85
Bending Resistance ²	525.6	1,034.7	524.6	1,024.8	.75
Planar Shear ³	277.8	363.3	207.6	275.0	.75
Table 2: Face Grain Parallel to Supports¹					
Bending Stiffness ¹	56,820	247,726	48,022	208,310	.85
Bending Resistance ²	266.6	667.7	194.8	486.9	.75
Planar Shear ³	159.2	311.1	159.7	311.2	.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, F_sS and F_vlb/Q.

Load Span Tables: Tables 3 through 6 are based on standard APA and PS-1 criteria.

Struct 1 LOAD SPAN TABLES – WET CONDITIONS								
Recommended Maximum PSF on Struct 1 Panels or Equivalent (V405)								
Table 3: Face Grain Perpendicular to Supports ¹								
Support Spacing	Plywood Thickness – Allowable Pressure (PSF)							
	1/2"		5/8"		3/4"		1-1/8"	
(in.)	ℓ/360	ℓ/270	ℓ/360	ℓ/270	ℓ/360	ℓ/270	ℓ/360	ℓ/270
8"	1,405	1,405	1,970	1,970	2,050	2,050	3,095	3,095
12"	485	620	745	875	1,060	1,105	1,845	1,845
16"	205	275	350	450	505	575	1,335	1,335
19.2"	120	160	195	265	305	405	1,015	1,015
24"			100	135	160	210	625	650
Table 4: Face Grain Parallel to Supports¹								
Support Spacing	Plywood Thickness – Allowable Pressure (PSF)							
	1/2"		5/8"		3/4"		1-1/8"	
(in.)	ℓ/360	ℓ/270	ℓ/360	ℓ/270	ℓ/360	ℓ/270	ℓ/360	ℓ/270
8"	550	640	1,115	1,115	1,685	1,685	2,525	2,525
12"	155	210	430	575	715	810	1,560	1,560
16"			180	240	310	415	1,000	1,000
19.2"			125	170	220	250	555	555
24"					110	150	355	355

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.

Class 1 LOAD SPAN TABLES – WET CONDITIONS								
Recommended Maximum PSF on Class 1 Panels or Equivalent (V412)								
Table 5: Face Grain Perpendicular to Supports ¹								
Support Spacing	Plywood Thickness – Allowable Pressure (PSF)							
	1/2"		5/8"		3/4"		1-1/8"	
(in.)	ℓ/360	ℓ/270	ℓ/360	ℓ/270	ℓ/360	ℓ/270	ℓ/360	ℓ/270
8"	1,000	1,000	1,970	1,970	2,050	2,050	3,095	3,095
12"	455	495	745	875	1,060	1,105	1,845	1,845
16"	195	275	350	450	505	575	1,335	1,335
19.2"	110	160	195	265	305	405	1,015	1,015
24"			100	135	160	210	625	650
Table 4: Face Grain Parallel to Supports¹								
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(in.)	ℓ/360	ℓ/270	ℓ/360	ℓ/270	ℓ/360	ℓ/270	ℓ/360	ℓ/270
8"	550	640	1,115	1,115	1,685	1,685	2,525	2,525
12"	155	210	430	575	715	810	1,560	1,560
16"			180	240	310	415	1,000	1,000
19.2"			125	170	220	250	555	555
24"					110	150	355	355

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, four or five spacers for longer panels

Jobsite Care and Handling

- 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.
- Pouring and Vibrating:** 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.
- 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.
- 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.
- 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 state 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 requirements 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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