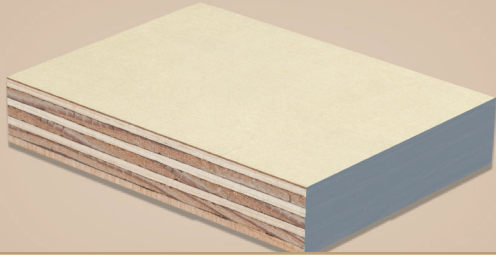




BASIC HDO®

Concrete Form



- Standard 100/30 performance
- Moderate wood grain transfer/tiger striping
- Balanced construction ensures panel stability



Swanson Group® provides the highest proven performance in conform panel solutions. Customers recognize our exceptional history of performance, exhibited in our panel solutions, including the first HDO/MDO "combi" panels in North America. Swanson works directly with customers to establish relationships based upon market needs, panel design properties, overlay technologies, and application experience. We are now enhancing our capability to provide superior panel performance. **Swanson is manufacturing in a new state-of-the-art facility which is the most sophisticated overlay panel facility in North America.**

Product Description:

Basic HDO® is a 100/30, high-density, buff overlaid plywood for semi-gloss finishes on smooth or coated concrete. It is an economical panel that balances cost, multiple reuses and concrete appearance.

Panel Construction/Moisture Resistance:

Basic HDO® is high-density, 100/30 overlay on plywood with Douglas Fir/Hemlock construction. It is manufactured with a one-step layup, has a waterproof glue bond and meets APA PS 1-19. All Swanson products are made in the USA.

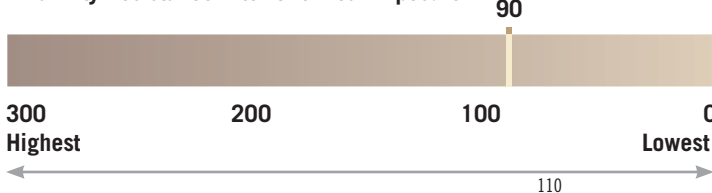
Working Faces/Treatment:

- 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: limited

Working Edges/Treatment:

- Factory sawn and sealed with special gray, styrene acrylic sealer
- Seal all exposed wood (edges and holes) with Edge-Flex 645 by Nox-Crete, Swanson 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 Struct 1 only. Allowable pressure $l/270$ $3/4"$ @ $12"$ OC (face gain across supports): Struct 1-1, 195 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

Release Coating:

- Release agent: not factory treated
- Coating required: light, before first and each subsequent pour.
- Recommended release agent: Nox-Crete Release Agent #10 (oil based), Bio-Nox (water based and readily biodegradable) or equivalent.
- Special applications or use requirements may dictate the need for alternative release agents. Contact Swanson Group Sales, Nox-Crete or alternative manufacturer for more information

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. For coating or laminating information, ask Swanson for technical assistance.

Thicknesses & Sizes:

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

Technical Data Applicable Standards

All panels are manufactured by Swanson Group® per product standard PS1-19. 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 Side/HDO Back Average Weight* lbs./Panel	Pieces per Unit
1/2"	53.3	66
5/8"	69.7	50
3/4"	75.9	44

*Average product weights may vary +/- 10%

Product Grade

Standard product is shipped on grade only.

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 – Wet, Working Stress Design Capacities	One-Step Struct 1		
	1/2"	5/8"	3/4"
Nominal Thickness	1/2"	5/8"	3/4"
Number of Plys	5	7	7
Table 1: Face Grain Perpendicular to Supports-Dry ¹			
Bending Stiffness ¹	135,558	334,834	460,439
Bending Resistance ²	605.4	1,068.8	1,314.8
Planar Shear ³	285.6	352.9	385.4
Table 2: Face Grain Parallel to Supports-Dry ¹			
Bending Stiffness ¹	39,100	143,755	207,987
Bending Resistance ²	320.3	725.3	904.8
Planar Shear ³	154.3	286.3	343.1

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

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

Struct 1 LOAD SPAN TABLES – WET CONDITIONS Recommended Maximum PSF on Struct 1 One-Step Panels						
Table 3: Face Grain Perpendicular to Supports ¹						
Support Spacing	Plywood Thickness – Allowable Pressure (PSF)					
	1/2"		5/8"		3/4"	
(in.)	ℓ/360	ℓ/270	ℓ/360	ℓ/270	ℓ/360	ℓ/270
8"	1,430	1,430	1,765	1,765	1,925	1,925
12"	490	655	990	1,090	1,195	1,195
16"	210	280	450	600	585	780
19.2"	120	160	270	360	355	470
24"			140	185	185	250
Table 4: Face Grain Parallel to Supports ¹						
Support Spacing	Plywood Thickness – Allowable Pressure (PSF)					
	1/2"		5/8"		3/4"	
(in.)	ℓ/360	ℓ/270	ℓ/360	ℓ/270	ℓ/360	ℓ/270
8"	580	770	1,430	1,430	1,715	1,715
12"	160	215	525	700	715	955
16"			220	295	310	415
19.2"			160	210	220	295
24"				105	115	150

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.
Load duration factor of 1.25 applies to FbS and F_v(lb/Q). Experience factor of 1.30 applies to FbS and F_v(lb/Q)

Form Panel Thickness: For more detailed design information, refer to APA publication "Design/Construction Guide: Concrete Forming V345" 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 Swanson 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:** Swanson Basic HDO™ panels are not factory release coated. Lightly coat panels prior to first use and each subsequent use with Nox-Crete Release Agent #10, Bio-Nox 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

- Swanson Group uses process by-products to produce energy
- Swanson products are renewable, biodegradable and recyclable

Air Quality and Safety

This product will generate wood dust from sawing, sanding, or shaping. Material Safety Data Sheets are available on the Swanson Group website at www.swansongroup.biz and upon request.

Structural panels (PS-1) are exempt from CARB regulations. However, this product contains no added urea formaldehyde and its 0.01 ppm formaldehyde level is lower than 0.05 parts per million, the lowest Phase 2 (2014) CARB formaldehyde limit, based on certified tests conducted in 2007 at an IAS accredited laboratory.

There's more than one reason Swanson Group® is #1 in the concrete forming industry. Find out more at www.swansongroup.biz



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