



APA RATED SHEATHING & STRUCTURAL 1 SHEATHING

MATERIALS AND FABRICATION

- LP OSB sheathing panels are of a consistent composition and manufactured to be free of knots, grain defects, core voids, splits and other irregularities. The wood strands are mixed with resins, arranged in layers for design strength and stability and bonded under heat and pressure. The panels are sealed on all four edges for added moisture resistance and dimensional stability.
- LP OSB sheathing roof panels have a course-textured top surface that helps provide safe footing on pitched roofs.
- The panels should be fastened with conventional nailing techniques. Consult your local building authorities regarding acceptability of fastenings techniques.
- The panels may be sawn cleanly, and may be routed or drilled with standard woodworking tools.

SIZES AND PERFORMANCE CATEGORIES

- LP OSB Sheathing panels are sized to 3' 11-7/8" x 7' 11-7/8" dimensions (reduced 1/8" from 4' x 8' to allow for proper spacing during installation).
- Panels are available in performance categories ranging from 3/8 to 1-1/8.
- Extended length and oversized panels are subject to availability.

LIMITATIONS

- LP OSB SHEATHING PANELS ARE NOT FOR UNPROTECTED EXTERIOR USE. They must be covered with siding panels or other type of exterior wall cladding or roofing material. Normal exposure to weather during ordinary construction delays will not damage the panels. ADDITIONAL PROTECTIVE MEASURES ARE RECOMMENDED FOR EXTENDED ADVERSE WEATHER CONDITIONS. EXCEPTION: Panels identified as Exposure 1 may be used for roof sheathing where exposed on the underside such as on eaves.
- Slight surface flaking or thickness swell caused by moisture exposure will not affect the panels' structural performance.

PHYSICAL PROPERTIES

- LP OSB sheathing wall panels provide sufficient racking strength to meet corner bracing requirements.
- Panels are stiff and strong and have a low coefficient of lineal expansion.
- For further technical and engineering information and Material Safety Data Sheets, contact your LP sales representative

ENVIRONMENTAL IMPACT

LP Building Products are manufactured in accordance with the company's policy on protection of the environment which includes:

- Use of environmental control technology and energy efficient equipment to conserve resources.
- Use of wood by-products to produce energy, thereby conserving nonrenewable resources.

- Use of third-party certified wood from well managed forests to produce all of LP's wood-based products.
- Use of raw material more efficiently to produce these engineered wood products resulting in more consistent performance and strength than non-strand-based sheathing products.

INSTALLATION - GENERAL REQUIREMENTS

- Comply with local safety regulations when installing roof, wall, or subfloor sheathing.
- Comply with the following manufacturer's instructions and with APA's Engineered Wood Construction Guide Form E30U (September 2007) or the current equivalent. To obtain installation instruction information from the APA, call (253) 565-6600 or visit www.apawood.org.

STORAGE AND HANDLING

- Store panels in clean, dry areas off the ground. If possible, store indoors. If stored outside, cover with plastic sheets or tarps. Keep cover open and away from the sides and bottom of panels to allow for air circulation.
- Additional protective measures may be necessary during extended adverse weather conditions.

ROOF INSTALLATION

- Place the skid-resistant side up with the APA trademark stamp facing down and wear skid-resistant shoes when installing the roof sheathing.
- Install with the long dimension or strength axis of the panel across supports and with the panel continuous over two or more spans.
- Provide 1/8" minimum space at panel ends and edges. Use a spacer tool (i.e. 10d box nail) to assure accurate and consistent spacing.
- Panel end joints shall occur over framing. Stagger end joints in each succeeding row.
- Provide additional panel stiffness by installing panel edge clips mid-span on all un-supported edges.
- Nail 6" o.c. along supported panel ends and edges and 12" o.c. at intermediate supports. Fasten panels 3/8" from panel edges. Use 8d common nails for panels up to 1" thickness. For panels over 1" use 8d ring-shank or 10d common nails. Other code-approved fasteners may be used.
- Cover roof sheathing as soon as possible with roofing felt or shingle underlayment for protection against excessive moisture prior to roofing. If any edge swelling occurs prior to roof underlayment installation, all raised joints should be sanded flat.
- Allow sheathing to adjust to humidity and moisture conditions before shingle installation.

- Remove wrinkles and flatten surface of shingle underlayment before installing shingles. High performance shingle underlayment is recommended for better results.
- Heavier weight and/or textured shingles are recommended to better mask imperfections in roofing assembly.

NOTE: Check with your local building department before deciding on an installation method.

WALL INSTALLATION

- LP OSB sheathing wall panels may be installed vertically or horizontally. In horizontal installations, stagger joints a minimum of one stud space.
- Provide 1/8" minimum space between panel ends and edges. Use a spacer tool (i.e. 10d box nail) to assure accurate and consistent spacing.
- Nail 6" o.c. along supported panel ends and edges and 12" oc at intermediate supports. Fasten panels 3/8" from panel edges. Use 6d common nails for panels up to 1" thickness. For panels over 1" use 8d ring-shank or 8d common nails. Other code-approved fasteners may be used. For additional fastening requirements, refer to Figure 2.

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- In interior installation – garages or interior wall paneling – 3/8 Category panels may be applied to studs installed 24" o.c. Provide a minimum 1/8" spacing between panel ends and edges.

AVAILABILITY

- OSB sheathing panels are available directly from LP's manufacturing plants by railcar, as well as piggyback and truckload shipment.

Call LP customer service or visit our web site for more information on OSB structural panels and other LP products.

Customer Service: 800.648.6893 www.lpcorp.com

Sales Office:
Conroe, Texas 800.964.6310

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APA RATED SHEATHING

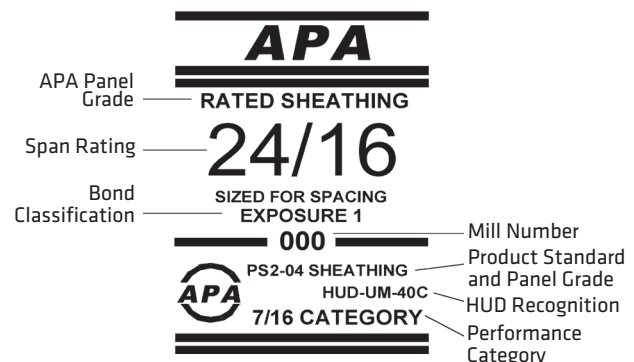
PRODUCT DESCRIPTION

LP OSB sheathing panels are designed for use in roof, wall and subfloor systems in commercial and residential projects, maintenance, remodeling or new construction.

STANDARDS & CERTIFICATIONS

OSB sheathing panels comply with the following industry standards and certifications.

- LP OSB Structural panels are quality verified by APA, and are manufactured in conformance with U.S. Voluntary Product Standard PS2, which is recognized in the Uniform Building Code, the International Building Code and the International Residential Code, or by International Code Council Evaluation service (ICC-ES) Evaluation Report ESR-2586 and by HUD Use of Materials Bulletin No. 40c.



- Performance category replaces the fractional nominal thickness used in PS2. The Performance Category is consistent with the panel thickness used in the U.S. model building codes.
- Wall panels 7/16 Category may be used on studs spaced up to 24" o.c.
- 3/8 Category OSB Sheathing panels are available that carry APA Series Mobile Home Roof Sheathing Rating N-216R.
- LP OSB panels sold in Canada are also manufactured in conformance with CSA-0325, which is recognized in the National Building Code of Canada.

MANUFACTURED HOME INSTALLATION

- Panels are available that carry APA Series Mobile Home Roof Sheathing Rating N-216R. Sheathing panels 3/8 Category may be installed perpendicular or parallel to supports, spaced a maximum of 16" o.c., and will support a 30 psf live load without exceeding a deflection limit of 1/180. No edge support is required when applied with strength axis perpendicular to supports.

APA Rated OSB Sheathing Roof Panels

Performance Category*	APA Span Rating	Allowable Live Load for Roofs (psf)**
3/8	24/0	30
7/16	24/16	40
15/32	32/16	70
1/2	32/16	70
19/32	40/20	130
23/32	48/24	175
1-1/8	48 oc	290

* Performance Category replaces the nominal panel thickness

** Live load for 24" oc span conditions. 10 psf dead load assumed.

STRUCTURAL 1 SHEATHING

PRODUCT DESCRIPTION

- LP OSB Structural 1 sheathing panels are designed to perform as roof, sidewall and floor systems, where high wind or earthquake conditions may occur.
- LP OSB Structural 1 sheathing panels are equally suited for pitched or flat roof applications.
- LP OSB Structural 1 sheathing panels can be used in commercial and residential projects, such as industrial buildings, mobile and modular home construction or in any application requiring high strength and superior shear values.

STANDARDS & CERTIFICATIONS

LP OSB Structural Sheathing complies with the following industry standards and certifications:

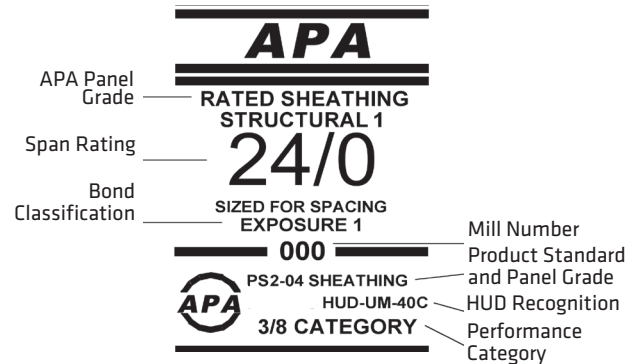
- LP OSB Structural panels are quality verified by APA, and are manufactured in conformance with U.S. Voluntary Product Standard PS2, which is recognized in the Uniform Building Code, the International-Building Code and the International Residential Code, or by International Code Council Evaluation service (ICC-ES) Evaluation Report ESR-2586 and by HUD Use of Materials Bulletin No. 40c.
- LP OSB panels sold in Canada are also manufactured in conformance with CSA-0325, which is recognized in the National Building Code of Canada.

NOTE: Material Safety Data Sheets are available from the LP website: www.lpcorp.com.

Performance Category	APA Span Rating	Allowable Live Load for Roofs (psf)**
3/8	24/0	30
7/16	24/16	40
15/32	32/16	70
1/2	32/16	70

** Live load for 24" oc span conditions. 10 psf dead load assumed.

- Wall panels 7/16 Category may be used on studs spaced up to 24" o.c.
- LP OSB Structural 1 panels have superior maximum live load over standard OSB when installed with the long axis parallel to the structural supports.



FIRE PERFORMANCE

- The surface burning characteristics of unfinished OSB panels have a Class C or Class 3 rating based on U.L. Control No. 11H7.

FIGURE 1. RECOMMENDED UNIFORM ROOF LIVE LOADS FOR APA RATED SHEATHING^(c) AND APA RATED STURD-I-FLOOR WITH STRENGTH AXIS PERPENDICULAR TO SUPPORTS^(e)

Panel Span Rating	Performance Category**	Maximum Span (in.)		Allowable Live Loads (psf) ^(b)							
		With Edge Support (a)	Without Edge Support	Spacing of Supports Center-to-Center (in.)							
APA Rated Sheathing ^(c)				12	16	20	24	32	40	48	60
12/0	5/16	12	12	30							
16/0	5/16	16	16	70	30						
20/0	5/16	19.2	19.2	120	50	30					
24/0	3/8	24	19.2 ^(b)	190	100	60	30				
24/16	7/16	24	24	190	100	65	40				
32/16	15/32, 1/2	32	28	325	180	120	70	30			
40/20	19/32, 5/8	40	32	-	305	205	130	60	30		
48/24	23/32, 3/4	48	36	-	-	280	175	95	45	35	
60/32 ^(f)	7/8	60	40	-	-	-	305	165	100	70	35
60/48 ^(f)	1-1/8	60	48	-	-	-	305	165	100	70	35
APA Rated Sturd-I-Floor ^(c)				12	16	20	24	32	40	48	60
16 oc	19/32, 5/8	24	24	185	100	65	40				
20 oc	19/32, 5/8	32	32	270	150	100	60	30			
24 oc	23/32, 3/4	48	36	-	240	160	100	50	30	25	
32 oc	7/8	48	40	-	-	295	185	100	60	40	
48 oc	1-3/32, 1-1/8	60	48	-	-	-	290	160	100	65	40

(a) Tongue and groove edges, panel edge clips (one midway* between each support, except two equally spaced between supports 48 inches on center or greater), lumber blocking, or other.

(b) 19.2 inches for 3/8-in. and 7/16-in. panels, 24 inches for 15/32-in. and 1/2-in. panels.

(c) Includes APA Rated Sheathing/Ceiling Deck.

(d) 10 psf dead load assumed

(e) Applies to panels 24 inches or wider applied over two or more spans.

(f) Check with supplier for availability.

* No established tolerance.

**Performance Category replaces the fractional nominal thickness used in PS2.

FIGURE 2. ALLOWABLE SHEAR (POUNDS PER FOOT) FOR APA PANEL SHEAR WALLS WITH FRAMING OF DOUGLAS-FIR, LARCH, OR SOUTHERN PINE^(a) OR WIND OR SEISMIC LOADING^(b,h,i,j,k) (See also 2006 IBC Table 2306.4.1)

Panel Grade	Performance Category**	Minimum Nail Penetration in Framing (in.)	Panels Applied Direct to Framing				Panels Applied Over 1/2" or 5/8" Gypsum Sheathing					
			Nail Size (Common or Galvanized Box)	Nail Spacing at Panel Edge (in.)				Nail Size (common or Galvanized Box)	Nail Spacing at Panel Edges (in.)			
				6	4	3	2 ^(e)		6	4	3	2 ^(e)
APA Structural I Grades	5/16	1-1/4	6d	200	300	390	510	8d	200	300	390	510
	3/8			230 ^(d)	360 ^(d)	460 ^(d)	610 ^(d)					
	7/16	1-3/8	8d	255 ^(d)	395 ^(d)	505 ^(d)	670 ^(d)	10d	280	430	550 ^(f)	730
	15/32			280	430	550	730					
APA Rated Sheathing; APA Rated Siding ^(g) and other APA grades	5/16 or 1/4 ^(c)	1-1/4	6d	180	270	350	450	8d	180	270	350	450
	3/8			200	300	390	510		200	300	390	510
	7/16	1-3/8	8d	240 ^(d)	350 ^(d)	450	585 ^(d)	10d	260	380	490 ^(f)	640
	15/32			260	380	490	640					
	15/32			310	460	600 ^(f)	770		-	-	-	-
	19/32	1-1/2	10d	340	510	665 ^(f)	870		-	-	-	-

- (a) For framing of other species: (1) Find specific gravity for species of lumber in the AFGPA National Design Specification. (2) For common or galvanized box nails, find shear value from table above for nail size for actual grade. (3) Multiply value by the following adjustment factor: Specific Gravity Adjustment Factor = [1-(0.5 - SG)], where SG = specific gravity of the framing. This adjustment shall not be greater than 1.
 - (b) All panel edges backed with 2-inch nominal or wider framing. Install panels either horizontally or vertically. Space nails maximum 6 inches o.c. along intermediate framing members for 3/8 Category and 7/16 Category panels installed on studs spaced 24 inches o.c. For other conditions and panel thicknesses, space nails maximum 12 inches o.c. on intermediate supports. Fasteners shall be located 3/8 inch from panel edges.
 - (c) 3/8 Category 16 oc is minimum recommended when applied direct to framing as exterior siding.
 - (d) Allowable shear values are permitted to be increased to values shown for 15/32 category sheathing with same nailing provided (1) studs are spaced a maximum of 16" on center, or (2) panels are applied with long dimension across studs.
 - (e) Framing at adjoining panel edges shall be 3-inch nominal or wider, and nails shall be staggered where nails are spaced 2 inches o.c. Check local code for variations of these requirements.
 - (f) Framing at adjoining panel edges shall be 3-inch nominal or wider, and nails shall be staggered where 10d nails (3" x 0.148") having penetration into framing of more than 1-1/2 inches are spaced 3 inches o.c. Check local code for variations of these requirements.
 - (g) Values apply to all-veneer plywood APA RATED SIDING panels only. Other APA RATED SIDING panels may also qualify on a proprietary basis. APA RATED SIDING 16 oc plywood may be 11/32 inch, 3/8 inch or thicker. Thickness at point of nailing on panel edges governs shear values.
 - (h) Where panels are applied on both faces of a wall and nail spacing is less than 6 inches o.c. on either side, panel joints shall be offset to fall on different framing members. Or framing shall be 3 inch nominal or thicker and nails on each side shall be staggered.
 - (i) In Seismic Design Category D, E, or F, where shear design values exceed 350 pounds per lineal foot, all framing members receiving edge nailing from abutting panel edges shall not be less than a single 3-inch nominal member, or two 2-inch nominal members fastened together in accordance with 2006 IBC Section 2306.1 to transfer the design shear value between framing members. Wood structural panel joint and sill plate nailing shall be staggered in all cases. See 2006 IBC Section 2305.311 for sill plate size and anchorage requirements.
 - (j) Galvanized nails shall be hot dipped or tumbled.
 - (k) For shear loads of normal or permanent load duration as defined by the AFGPA NDS, the values in the table above shall be multiplied by 0.63 or 0.56 respectively.
- **Performance Category replaces the fractional nominal thickness used in PS2.

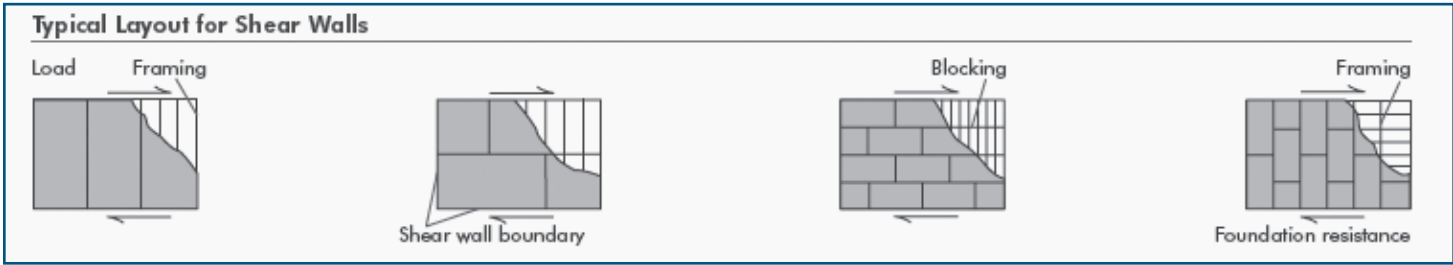


FIGURE 3. ALLOWABLE SHEAR (POUNDS PER FOOT) FOR HORIZONTAL LP PANEL DIAPHRAGMS WITH FRAMING OF DOUGLAS-FIR, LARCH OR SOUTHERN PINE^(a) FOR WIND OR SEISMIC LOADING^(b) (See also IBC Table 2306.1)

Panel Grade	Common Nail Size	Minimum Nail Penetration in Framing (in.)	Performance Category**	Minimum Nominal Width of Framing Members at Adjoining Panel Edges and Boundaries ^(e) (in.)	Blocked Diaphragms				Unblocked Diaphragms		
					Nail Spacing (in.) at diaphragm boundaries (all cases), at continuous Panel edges parallel To load (Cases 3 & 4), And at all panel Edges (Cases 5 & 6) ^(c)				Nails Spaced 6" max at Supported Edges ^(c)		
					6	4	2-1/2 ^(d)	2 ^(d)	Case 1 (No unblocked edges or continuous joints parallel to load)		All other Configurations (Case 2, 3, 4, 5 & 6)
					Nail Spacing (in.) at Other Panel Edges (Cases 1, 2, 3 & 4) ^(c)						
LP Structural 1 Grades	6d ^(f)	1-1/4	5/16	2	185	250	375	420	165	125	
				3	210	280	420	475	185	140	
	8d	1-3/8	3/8	2	270	360	530	600	240	180	
				3	300	400	600	675	265	200	
	10d ^(g)	1-1/2	15/32	2	320	425	640	730	285	215	
				3	360	480	720	820	320	240	
LP Rated Sheathing LP Rated Sturd-I-Floor and other APA Grades	6d ^(f)	1-1/4	5/16	2	170	225	335	380	150	110	
				3	190	250	380	430	170	125	
					2	185	250	375	420	165	125
					3	210	280	420	475	185	140
					2	240	320	480	545	215	160
					3	270	360	540	610	240	180
	8d	1-3/8	3/8	7/16	2	255	340	505	575	230	170
					3	285	380	570	645	255	190
					2	270	360	530	600	240	180
					3	300	400	600	675	265	200
10d ^(g)	1-1/2	15/32	15/32	2	290	385	575	655	255	190	
				3	325	430	650	735	290	215	
				2	320	425	640	730	285	215	
				3	360	480	720	820	320	240	

- (a) For framing of other species: (1) Find specific gravity for species of lumber in the AFPA National Design Specification (2) Find shear value from table above for nail size for actual grade (3) Multiply value by the following adjustment factor: Specific Gravity Adjustment Factor = [1-(0.5 - SG)], where SG = specific gravity of the framing. This adjustment shall not be greater than 1.
- (b) For shear loads of normal or permanent load duration as defined by the AF&PA NDS, the values in the table above shall be multiplied by 0.63 or 0.56, respectively.
- (c) Space nails maximum 12 inches o.c. along intermediate framing members (6 inches o.c. when supports are spaced 48 inches o.c. or greater). Fasteners shall be located 3/8" from panel edges.
- (d) Framing at adjoining panel edges shall be 3" nominal or wider, and nails shall be staggered where nails are spaced 2 inches o.c. or 2-1/2 inches o.c.
- (e) The minimum normal width of framing members not located at boundaries or adjoining panel edges shall be 2".
- (f) 8d is recommended minimum for roofs due to negative pressures of high winds.
- (g) Framing at adjoining panel edges shall be 3" nominal or wider, and nails shall be staggered where 10d nails having penetration into framing of more than 1-1/2" are spaced 3 inches o.c.

Note: Design for diaphragm stresses depends on direction of continuous panel joints with reference to load, not on direction of long dimension or strength axis of sheet. Continuous framing may be in either direction for blocked diaphragms.

**Performance Category replaces the fractional nominal thickness used in PS2.

