

TABLE 2306.3
ALLOWABLE SHEAR (POUNDS PER FOOT) FOR WOOD STRUCTURAL PANEL SHEAR WALLS WITH
FRAMING OF DOUGLAS FIR-LARCH OR SOUTHERN PINE^a FOR WIND OR SEISMIC LOADING^{b, h, i, j, l}

PANEL GRADE	MINIMUM NOMINAL PANEL THICKNESS (inch)	MINIMUM FASTENER PENETRATION IN FRAMING (inches)	PANELS APPLIED DIRECT TO FRAMING				PANELS APPLIED OVER 1/2" OR 5/8" GYPSUM SHEATHING					
			NAIL (common or galvanized box or staple size ^a)	Fastener spacing at panel edges (inches)				NAIL (common or galvanized box or staple size ^a)	Fastener spacing at panel edges (inches)			
				6	4	3	2 ^e		6	4	3	2 ^e
Structural I sheathing	3/8	3/8	8d (2 1/2" x 0.131" common, 2 1/2" x 0.113" galvanized box)	230 ^d	360 ^d	460 ^d	610 ^d	10d (3" x 0.148" common, 3" x 0.128" galvanized box)	280	430	550 ^f	730
		1	1 1/2 16 Gage	155	235	315	400	2 16 Gage	155	235	310	400
	7/16	3/8	8d (2 1/2" x 0.131" common, 2 1/2" x 0.113" galvanized box)	255 ^d	395 ^d	505 ^d	670 ^d	10d (3" x 0.148" common, 3" x 0.128" galvanized box)	280	430	550 ^f	730
		1	1 1/2 16 Gage	170	260	345	440	2 16 Gage	155	235	310	400
	15/32	3/8	8d (2 1/2" x 0.131" common, 2 1/2" x 0.113" galvanized box)	280	430	550	730	10d (3" x 0.148" common, 3" x 0.128" galvanized box)	280	430	550 ^f	730
		1	1 1/2 16 Gage	185	280	375	475	2 16 Gage	155	235	300	400
Sheathing, plywood siding ^g except Group 5 Species	5/16 ^c or 1/4 ^c	1 1/4	6d (2" x 0.113" common, 2" x 0.099" galvanized box)	180	270	350	450	8d (2 1/2" x 0.131" common, 2 1/2" x 0.113" galvanized box)	180	270	350	450
		1	1 1/2 16 Gage	145	220	295	375	2 16 Gage	110	165	220	285
	5/16 ^c	1 1/4	6d (2" x 0.099")	140	210	275	360	8d (2 1/2" x 0.113")	140	210	275	360
		3/8 ^c	1 3/8	8d (2 1/2" x 0.113")	160	240	310	410	10d (3" x 0.128")	160	240	310 ^f
	5/16 ^c	1 1/4	6d (2" x 0.099")	140	210	275	360	8d (2 1/2" x 0.113")	140	210	275	360
		3/8 ^c	1 3/8	8d (2 1/2" x 0.113")	160	240	310	410	10d (3" x 0.128")	160	240	310 ^f

For SI: 1 inch = 25.4 mm, 1 pound per foot = 14.5939 N/m.

- For framing of other species: (1) Find specific gravity for species of lumber in AF&PA NDS. (2) For staples find shear value from table above for Structural I panels (regardless of actual grade) and multiply value by 0.82 for species with specific gravity of 0.42 or greater, or 0.65 for all other species. (3) For nails find shear value from table above for nail size for actual grade and multiply value by the following adjustment factor: Specific Gravity Adjustment Factor = [1 - (0.5 - SG)], where SG = Specific Gravity of the framing lumber. This adjustment factor shall not be greater than 1.
- Panel edges backed with 2-inch nominal or wider framing. Install panels either horizontally or vertically. Space fasteners maximum 6 inches on center along intermediate framing members for 3/8-inch and 7/16-inch panels installed on studs spaced 24 inches on center. For other conditions and panel thickness, space fasteners maximum 12 inches on center on intermediate supports.
- 3/8-inch panel thickness or siding with a span rating of 16 inches on center is the minimum recommended where applied directly to framing as exterior siding. For grooved panel siding, the nominal panel thickness is the thickness of the panel measured at the point of nailing.
- Allowable shear values are permitted to be increased to values shown for 15/32-inch sheathing with same nailing provided (a) studs are spaced a maximum of 16 inches on center, or (b) panels are applied with long dimension across studs.
- Framing at adjoining panel edges shall be 3 inches nominal or wider, and nails at all panel edges shall be staggered where panel edge nailing is specified at 2 inches on center or less.
- Framing at adjoining panel edges shall be 3 inches nominal or wider, and nails at all panel edges shall be staggered where both of the following conditions are met: (1) 10d (3" x 0.148") nails having penetration into framing of more than 1 1/2 inches and (2) panel edge nailing is specified at 3 inches on center or less.
- Values apply to all-veneer plywood. Thickness at point of fastening on panel edges governs shear values.
- 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 at adjoining panel edges and nails at all panel edges shall be staggered.
- In Seismic Design Category D, E or F, where shear design values exceed 350 pounds per linear foot, all framing members receiving edge nailing from abutting panels shall not be less than a single 3-inch nominal member, or two 2-inch nominal members fastened together in accordance with Section 2306.1 to transfer the design shear value between framing members. Wood structural panel joint and sill plate nailing shall be staggered at all panel edges. See Sections 4.3.6.1 and 4.3.6.4.3 of AF&PA SDPWS for sill plate size and anchorage requirements.
- Galvanized nails shall be hot dipped or tumbled.
- Staples shall have a minimum crown width of 7/16 inch and shall be installed with their crowns parallel to the long dimension of the framing members.
- 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.