

Solid Support with Parallam® PSL Free Standing Columns

Parallam® PSL Benefits

Parallam® PSL columns provide higher capacities without concerns about attaching multiple plies together. Using a patented microwave process to bond together long, thin strands of wood, Parallam® PSL is engineered to support heavy loads.

- Solid Section performance
- Consistent design properties
- Available in long lengths
- Visually appealing
- Comprehensive product warranty

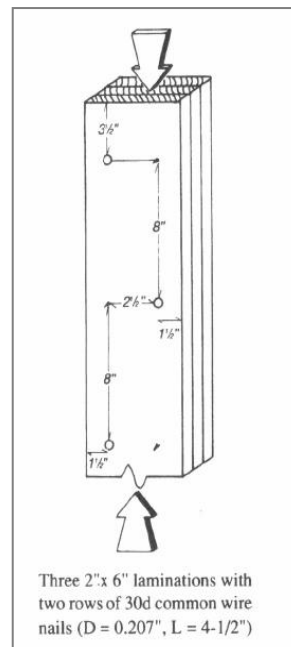


Advantages over built-up dimension lumber columns

While dimension lumber studs can be nailed together as a column to support concentrated loads, they have limited capacities and require proper connections.

- Built-up columns have roughly half the capacity compared to the equivalent Parallam® PSL solid section column.
- The National Design Specification® for Wood Construction (NDS®) requires fasteners that penetrate all laminations. For example, a 3-ply 2x6 built-up column would require two (2) rows of 30d nails with a length of 4 1/2".

Built-up columns not recommended due to difficulty of connecting all plies with one fastener (i.e. 30d nail)



Graphic from Figure 15C in 2015 NDS courtesy of American Wood Council, Leesburg, VA, USA.

ALLOWABLE AXIAL LOAD (LBS) FOR 1.8E PARALLAM® PSL^[1]

Column Bearing Type	Effective Column Length	1.8E Parallam® PSL Column Size																								
		3 1/2" x 3 1/2"			3 1/2" x 5 1/4"			3 1/2" x 7"			5 1/4" x 5 1/4"			5 1/4" x 7"			7" x 7"									
		100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%							
On Column Base	7'	8,735	9,140	9,370	13,105	13,710	14,060	17,475	18,280	18,745	30,010	32,545	34,030	40,000	40,000	40,000	40,000	40,000	40,000							
	8'	7,265	7,550	7,715	10,900	11,325	11,570	14,535	15,100	15,425	26,650	28,490	29,555	35,530	37,985	39,410	40,000	40,000	40,000							
	9'	6,115	6,320	6,440	9,170	9,480	9,660	12,225	12,640	12,880	23,475	24,835	25,620	31,300	33,115	34,165	40,000	40,000	40,000							
	10'	5,200	5,355	5,445	7,800	8,035	8,170	10,400	10,715	10,895	20,660	21,695	22,290	27,545	28,925	29,725	40,000	40,000	40,000							
	12'	3,885	3,980	4,030	5,825	5,965	6,050	7,765	7,955	8,065	16,160	16,805	17,175	21,545	22,405	22,900	40,000	40,000	40,000							
	14'	3,000	3,065	3,100	4,500	4,595	4,645	6,005	6,125	6,195	12,890	13,315	13,560	17,185	17,755	18,080	34,155	35,785	36,720							
	16'	Slenderness Ratio Exceeds 50										10,480	10,775	10,950	13,970	14,370	14,595	28,485	29,635	30,300						
	18'											8,670	8,885	9,010	11,560	11,850	12,010	24,020	24,860	25,345						
	20'											7,285	7,445	7,535	9,710	9,925	10,050	20,475	21,110	21,475						
	22'											Slenderness Ratio Exceeds 50													17,630	18,125
24'																						15,325	15,715	15,935		

[1] Parallam® PSL is based on solid, one-piece member.

ALLOWABLE AXIAL LOAD (LBS) FOR SPF#2 AND SYP#2 BUILT-UP COLUMNS^{[1][2]}

Column Bearing Type	Effective Column Length	Spruce-Pine-Fir (SPF) Column Size																									
		(2) 2x4			(3) 2x4			(4) 2x4			(2) 2x6			(3) 2x6			(4) 2x6										
		100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%	100%	115%	125%								
On Column Base	7'	2,485	2,570	2,620	5,455	5,810	6,015	7,775	8,180	8,420	3,825	3,965	4,045	9,360	10,055	10,460	14,330	15,855	16,790								
	8'	2,025	2,080	2,115	4,685	4,930	5,070	6,540	6,830	6,995	3,125	3,220	3,270	8,165	8,650	8,925	13,235	14,455	15,180								
	9'	1,675	1,710	1,735	4,025	4,200	4,300	5,545	5,760	5,885	2,590	2,655	2,690	7,085	7,425	7,620	12,080	13,030	13,585								
	10'	1,400	1,430	1,445	3,475	3,605	3,680	4,750	4,910	5,005	2,175	2,220	2,245	6,150	6,395	6,535	10,940	11,670	12,090								
	12'	1,020	1,035	1,040	2,640	2,715	2,760	3,580	3,680	3,735	1,585	1,610	1,620	4,690	4,830	4,910	8,870	9,315	9,570								
	14'	Slenderness Ratio Exceeds 50										2,060	2,110	2,140	2,785	2,850	2,885	3,660	3,745	3,790	7,215	7,495	7,660				
	16'											2,920	2,975	3,005	5,925	6,120	6,225										
	18'											2,380	2,415	2,435	4,930	5,065	5,140										
20'	Slenderness Ratio Exceeds 50														4,155	4,255	4,310										
22'															4,155	4,255	4,310										
On Column Base	7'	2,430	2,515	2,565	5,260	5,600	5,795	7,385	7,795	8,030	3,765	3,910	3,990	9,280	9,945	10,330	14,260	15,725	16,625								
	8'	1,985	2,040	2,075	4,515	4,755	4,895	6,245	6,535	6,705	3,085	3,180	3,230	8,060	8,530	8,795	13,090	14,260	14,955								
	9'	1,645	1,685	1,705	3,880	4,060	4,160	5,320	5,535	5,665	2,560	2,625	2,660	6,980	7,315	7,505	11,895	12,805	13,335								
	10'	1,380	1,405	1,425	3,355	3,490	3,565	4,570	4,740	4,835	2,150	2,195	2,220	6,055	6,300	6,440	10,735	11,440	11,845								
	12'	1,005	1,020	1,030	2,560	2,640	2,690	3,465	3,570	3,630	1,570	1,595	1,610	4,625	4,765	4,845	8,690	9,125	9,375								
	14'	Slenderness Ratio Exceeds 50										2,010	2,060	2,090	2,710	2,775	2,815	3,615	3,705	3,750	7,070	7,355	7,515				
	16'											2,890	2,945	2,980	5,820	6,010	6,120										
	18'											2,355	2,395	2,415	4,850	4,990	5,065										
	20'											Slenderness Ratio Exceeds 50													4,095	4,195	4,250
	22'																								4,095	4,195	4,250

[1] SPF and SYP stud table is based on built-up solid sawn members fastened together; K_r factor of 0.6 applies.

[2] Per NDS®, each connector must penetrate all plies of column achieve tabulated values.

- a) For example: 4 1/2" long 30d nails required for 3-ply columns, 6" long 60d nails required for 4-ply columns.
- b) Smaller fasteners may reduce allowable loads shown.

General Notes

- Table based on:
 - 2015 NDS®
 - Bracing in both directions at column ends.
 - Free Standing columns (no exterior wall applications) with axial loads only.
 - Dry use conditions.
- Allowable loads have been adjusted to accommodate the worst case of the following eccentric conditions: 1/6 of the column thickness (first dimension) or 1/6 of the column width.
- Tables are based on column sitting on steel base. If column sits on a wood plate, loads must be checked against to allow plate crushing.

If you have any questions, please feel free to contact your Weyerhaeuser representative.