

1½" 1.5E Engineered Framing Lumber (EFL) Studs

Columns - Lateral Loads (plf) / Vertical Load (lbs)

Deflection Ratio	Column Height (ft)	Maximum Defl. (in.)	3.5" Wall Thickness			5.5" Wall Thickness			7.25" Wall Thickness		
			(2) Studs	(3) Studs	(4) Studs	(2) Studs	(3) Studs	(4) Studs	(2) Studs	(3) Studs	(4) Studs
L/360	8	0.27	66 / 2948	99 / 6657	132 / 8876	257 / 4162	300 / 10461	300 / 13948	300 / 6167	300 / 13789	300 / 18386
	10	0.33	34 / 2893	51 / 6332	68 / 8443	132 / 4376	198 / 10446	264 / 13928	300 / 5180	300 / 13770	300 / 18360
	12	0.40		29 / 4770	39 / 6349	76 / 4466	114 / 10432	152 / 13909	175 / 5471	262 / 13751	300 / 18335
	14	0.47			24 / 4931	48 / 4458	72 / 10417	96 / 13890	110 / 5642	165 / 13732	220 / 18309
	16	0.53				32 / 4382	48 / 9333	64 / 12498	73 / 5731	110 / 13713	147 / 18284
	18	0.60				22 / 5104	33 / 7815	45 / 10408	51 / 5741	77 / 13694	103 / 18259
	20	0.67					24 / 6590	33 / 8762	37 / 5689	56 / 12989	75 / 17359
	22	0.73						24 / 7509	28 / 5555	42 / 11273	56 / 15078
	24	0.80							21 / 6425	32 / 9867	43 / 13171
	26	0.87								25 / 8679	34 / 11554
	28	0.93								20 / 7668	27 / 10223
	30	1.00									22 / 9073
L/240	8	0.40	99 / 2613	149 / 6657	199 / 8876	300 / 3864	300 / 10461	300 / 13948	300 / 6167	300 / 13789	300 / 18386
	10	0.50	51 / 2601	76 / 5640	102 / 7502	198 / 3650	297 / 10078	300 / 13928	300 / 5180	300 / 13770	300 / 18360
	12	0.60	29 / 2819	44 / 4310	59 / 5736	114 / 3860	171 / 10432	229 / 13909	262 / 4310	300 / 13751	300 / 18335
	14	0.70		27 / 3396	37 / 4496	72 / 3919	108 / 9758	144 / 13103	165 / 4664	247 / 12771	300 / 18309
	16	0.80			24 / 3621	48 / 3892	72 / 8210	96 / 11012	110 / 4870	166 / 13713	221 / 18284
	18	0.90				33 / 4532	50 / 6965	67 / 9318	77 / 4960	116 / 12767	155 / 17102
	20	1.00				24 / 3872	37 / 5902	49 / 7923	56 / 4966	85 / 11185	113 / 15009
	22	1.10					27 / 5111	37 / 6790	42 / 4895	63 / 9896	85 / 13190
	24	1.20					21 / 4407	28 / 5899	32 / 5628	49 / 8700	65 / 11668
	26	1.30						22 / 5136	25 / 5012	38 / 7746	51 / 10342
	28	1.40							20 / 4469	30 / 6919	41 / 9185
	30	1.50								25 / 6130	33 / 8225
L/180	8	0.53	132 / 2264	199 / 6335	265 / 8454	300 / 3864	300 / 10461	300 / 13948	300 / 6167	300 / 13789	300 / 18386
	10	0.67	68 / 2312	102 / 4952	136 / 6603	264 / 2828	300 / 10008	300 / 13928	300 / 5180	300 / 13770	300 / 18360
	12	0.80	39 / 2519	59 / 3877	78 / 5189	152 / 3213	229 / 9367	300 / 12860	300 / 3736	300 / 13751	300 / 18335
	14	0.93	24 / 2027	37 / 3085	49 / 4123	96 / 3365	144 / 8238	192 / 11094	220 / 3563	300 / 10846	300 / 18309
	16	1.07		24 / 2516	33 / 3323	64 / 3406	96 / 7134	128 / 9589	147 / 3942	221 / 11459	295 / 15420
	18	1.20				45 / 3939	67 / 6160	90 / 8239	103 / 4148	155 / 10527	207 / 14134
	20	1.33				33 / 3405	49 / 5306	66 / 7086	75 / 4235	113 / 9502	151 / 12739
	22	1.47				24 / 3006	37 / 4591	49 / 6172	56 / 4243	85 / 8517	113 / 11446
	24	1.60					28 / 4028	38 / 5362	43 / 4870	65 / 7657	87 / 10243
	26	1.73					22 / 3528	30 / 4690	34 / 4369	51 / 6866	68 / 9200
	28	1.87							27 / 3951	41 / 6149	55 / 8213
	30	2.00							22 / 3559	33 / 5553	44 / 7435

- Based on design provisions of the 2024 National Design Specification for Wood Construction. Load duration factor = 1.6, Ke = 0.85.
- Table assumes structural sheathing on one side of wall, gypsum wallboard on other.
- Full depth blocking at 8" on-center maximum.
- Deflection limits based on the Component & Cladding pressures multiplied by 0.7 (2024 IRC Table R301.7) & 0.42 (2024 IBC Table 1604.3).
- Axial loads are applied eccentrically at a distance 1/6 the wall thickness dimension of the column, measured from the column centerline.
- Compression perpendicular to grain stress of 425 psi (adjusted per NDS 2024 3.10.4) is assumed for bearing.
- For column heights in between those shown, check that both the next shorter column and the next longer column have adequate lateral & vertical capacity.
- Column studs may not be notched. They are permitted to have two 3/4" diameter holes, located in the center third of the stud width. The holes must be a minimum of 12" center to center from each other (measured vertically) and may be no closer than 8" to the ends of the column stud.
- The tabulated loads may be applied in addition to the weight of the column.
- EFL is composed of LVL (laminated veneer lumber).

Multiple-Piece Member Fastening Recommendations (minimum 0.128" x 3" nails)

2-Ply All depths

Two rows 9" o.c. staggered. Offset the rows half the required spacing. Nail from one side.
Edge distance for 3.5" width = 1". Edge distance for 5.5" width = 1.5". Edge distance for 7.25" width = 2.5".

3-Ply 3.5" depth

Two rows 8" o.c. staggered. Offset the rows half the required spacing. Nail from both sides.

5.5" & 7.25" depths

Three rows 8" o.c. staggered. Offset the rows half the required spacing. Nail from both sides.

4-Ply 3.5" depth

Nail each ply in turn with two rows 9" o.c. staggered. Each additional ply nailing must be offset 3" from the previous ply.

5.5" & 7.25" depths

Nail each ply in turn with three rows 9" o.c. staggered. Each additional ply nailing must be offset 3" from the previous ply.

Alternate 4-ply 5.5" & 7.25" depths fastening: attach together with two rows 1/2" diameter bolts & washers 8" o.c., 1.5" from edges.

General fastening notes (all depths and plies)

- End distance for nails to be 2". End distance for bolts to be 4".
- Nail rows for three and four ply members to be 1" from edges of 2x4 & 2x6 depths and 1.5" from edges of 2x8.