COMPRESSION MEMBER SELECTION

Column Perpendicular and Parallel to Grain Factored Resistances for D.Fir-L (Multiple 2x Members)

Framing	Lumber (each side of ATS Rod)	Perp. to Grain, Q_r		Parallel to Grain Resistance, P_r lbs (kN)									
				Stud Height, feet [m]									
		lbs	kN	8	[2.44]	9	[2.74]	10	[3.05]	11	[3.35]	12	[3.66]
2x4 WALL	1 - 2x4	14056	62.61	9478	42.22	7386	32.90	5799	25.83	4596	20.47	3680	16.39
	2 - 2x4	24742	110.21	18955	84.43	14774	65.81	11595	51.65	9189	40.93	7361	32.79
	3 - 2x4	33738	150.28	28433	126.65	22160	98.71	17394	77.48	13784	61.40	11041	49.18
	4 - 2x4	44985	200.38	37911	168.87	29549	131.62	23191	103.30	18378	81.86	14723	65.58
	5 - 2x4	56231	250.47	47387	211.08	26935	164.52	28990	129.13	22973	102.33	18402	81.97
	6 - 2x4	67476	300.56	56866	253.30	44323	197.43	23786	154.95	27566	122.79	22082	98.36
2x6 WALL	1 - 2x6	22113	98.50	27890	124.23	24378	108.59	21123	94.09	18196	81.05	15623	69.59
	2 - 2x6	38919	173.36	55779	248.46	48757	217.18	42246	188.18	36391	162.10	31246	139.18
	3 - 2x6	53072	236.40	83669	372.69	73135	325.77	63370	282.27	54587	243.15	46869	208.77
	4 - 2x6	70762	315.20	111568	496.96	97514	434.36	84493	376.36	72783	324.20	62492	278.36
	5 - 2x6	88453	394.00	139448	621.15	121892	542.95	105616	470.45	90979	405.25	78117	347.96
	6 - 2x6	106144	472.80	167338	745.38	146271	651.54	126739	564.54	109174	486.30	93740	417.55

1. Lumber based on D.Fir-L No.1/No.2 grade. See GENERAL NOTES for additional information.

Column Perpendicular and Parallel to Grain Factored Resistances for S-P-F (Multiple 2x Members)

Framing	Lumber (each side of ATS Rod)	Perp. to Grain, Q_r		Parallel to Grain Resistance, P_r lbs (kN)									
				Stud Height, feet [m]									
		lbs	kN	8	[2.44]	9	[2.74]	10	[3.05]	11	[3.35]	12	[3.66]
2x4 WALL	1 - 2x4	10644	47.41	8421	37.51	6623	29.50	5235	23.32	4171	18.58	3356	14.95
	2 - 2x4	18732	83.44	16842	75.02	13246	59.00	10471	46.64	8342	37.16	6710	29.89
	3 - 2x4	25546	113.79	25263	112.53	19870	88.51	15706	69.96	12514	55.74	10067	44.84
	4 - 2x4	34061	151.72	33684	150.04	26493	118.01	20941	93.28	16685	74.32	13423	59.79
	5 - 2x4	42574	189.64	42105	187.55	33116	147.51	26177	116.60	20856	92.90	16779	74.74
	6 - 2x4	51089	227.57	50528	225.07	39739	177.01	31410	139.91	25027	111.48	20133	89.68
2x6 WALL	1 - 2x6	16743	74.58	23772	105.89	20973	93.42	18337	81.68	15928	70.95	13780	61.38
	2 - 2x6	29468	131.26	47545	211.78	41946	186.84	36672	163.35	31857	141.90	27560	122.76
	3 - 2x6	40183	178.99	71317	317.67	62918	280.26	55009	245.03	47783	212.84	41339	184.14
	4 - 2x6	53577	238.65	95089	423.56	83891	373.68	73344	326.70	63711	283.79	55119	245.52
	5 - 2x6	66971	298.31	118862	529.45	104864	467.10	91681	408.38	79639	354.74	68899	306.90
	6 - 2x6	80367	357.98	142634	635.34	125837	560.52	110018	490.06	95567	425.69	82679	368.28

1. Lumber based on S-P-F No.1/No.2 grade. See GENERAL NOTES for additional information.

GENERAL NOTES

- Bearing loads are perpendicular to grain values and include bearing factor K_B and size factor K_{ZCP}.
- Perpendicular and parallel to grain values include K_D = 1.15 load increase.
- Calculations based on K_e = 1.0 for parallel to grain resistance in depth direction of stud.
- Calculations assume K_H = 1.10 with wall sheathing providing lateral restraint against buckling in 38mm direction of stud.
- *Fastening of studs to wall sheathing and wall sheathing specifications to be provided by Design Professional, not by Simpson Strong-Tie Company Inc.*