

# American Institute of Timber Construction

## Glued Laminated Timber Columns with Eccentric End Loads\*

Combination 47\*\* (SP N2M)

Duration of Load ( $C_D$ ) = 1.25

Lamination Thickness = 1- 3/8 in.

Dry Conditions of Use

Width (in)	3	3	5	5	5	6 3/4	6 3/4	6 3/4	8 1/2	Width (in)
Depth (in)	4 1/8	5 1/2	4 1/8	5 1/2	6 7/8	5 1/2	6 7/8	8 1/4	8 1/4	Depth (in)
Length (ft)	Column Capacity (lb)									Length (ft)
4	10000	15780	17330	30280	39350	41030	53740	65910	83310	4
5	8400	12340	15940	28030	37140	38140	51280	63630	80650	5
6	6840	9690	14320	25440	34340	34890	48420	60890	77530	6
7	5560	7750	12590	22660	30680	31410	45230	57690	73980	7
8	4570	6310	10930	19950	26510	27950	41800	54040	70090	8
9	3810	5230	9450	17510	22900	24740	38240	50020	65930	9
10	3210	4400	8210	15400	19880	21900	34760	45860	61580	10
11	2750	3750	7170	13600	17370	19440	31490	41540	57160	11
12	2370	3230	6300	12070	15270	17320	28520	37310	52820	12
13	--	--	5570	10760	13520	15500	25880	33590	48710	13
14	--	--	4960	9630	12040	13940	23530	30340	44880	14
15	--	--	4440	8630	10780	12590	21450	27500	41390	15
16	--	--	3990	7770	9710	11420	19610	25010	38210	16
17	--	--	3610	7030	8780	10390	17990	22830	35340	17
18	--	--	--	6380	7980	9500	16540	20910	32740	18
19	--	--	--	5830	7280	8710	15260	19210	30390	19
20	--	--	--	5340	6670	8020	14110	17710	28270	20
21	--	--	--	--	--	7400	13080	16370	26350	21
22	--	--	--	--	--	6850	12160	15170	24610	22
23	--	--	--	--	--	--	11330	14100	23020	23
24	--	--	--	--	--	--	10580	13130	21570	24
25	--	--	--	--	--	--	9900	12260	20240	25
26	--	--	--	--	--	--	9280	11460	19040	26
27	--	--	--	--	--	--	8710	10750	17930	27
28	--	--	--	--	--	--	8200	10090	16920	28
29	--	--	--	--	--	--	--	--	15980	29
30	--	--	--	--	--	--	--	--	15120	30

**Table Specifications:** The tabulated capacities are for glued laminated timber columns of constant cross section under dry conditions of use.

Capacities have been rounded to nearest 10 lb.

Columns are limited to a maximum effective length/least dimension ( $l_e/d$ ) of 50.

**End Conditions:** Capacities are based on column ends being supported to prevent translation.

The effective buckling length factor used is  $K_e = 1.00$ .

\* **Eccentricity:** End loads are limited to a maximum eccentricity of 1/6 of either cross sectional dimension.

\*\* **Design Properties:** AITC 117-93 Design

$F_c = 1900$  psi for 4 or more lams, 1150 psi for 3 lams.

$E = 1.4 \times 10^6$  psi

$F_{by} = 1750$  psi for 4 or more lams, 1550 psi for 3 lams.

$F_{bx} = 1400$  psi.

While these capacity tables have been prepared in accordance with recognized engineering principles and are based on the most accurate and reliable technical data available, these tables should not be used or relied upon for any general or specific application without competent professional examination and verification of their accuracy, suitability, and applicability by a licensed professional engineer, designer, or architect.

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