

# American Institute of Timber Construction

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

Combination 47\*\* (SP N2M)

Duration of Load ( $C_D$ ) = 1.15

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	9370	15080	16130	28160	36490	38140	49780	60940	77000	4
5	8030	11940	14950	26240	34630	35670	47680	59010	74740	5
6	6620	9450	13560	24020	32270	32860	45230	56680	72070	6
7	5420	7580	12040	21580	29400	29830	42480	53970	69040	7
8	4470	6200	10540	19150	25590	26740	39510	50860	65690	8
9	3740	5150	9170	16900	22220	23810	36390	47410	62090	9
10	3160	4330	8000	14930	19360	21170	33270	43760	58310	10
11	2710	3700	7000	13220	16960	18860	30290	40120	54420	11
12	2340	3190	6170	11760	14950	16860	27540	36170	50540	12
13	--	--	5470	10570	13260	15120	25060	32660	46800	13
14	--	--	4870	9440	11830	13620	22850	29570	43270	14
15	--	--	4370	8480	10610	12320	20880	26860	40020	15
16	--	--	3930	7650	9560	11190	19130	24470	37030	16
17	--	--	3560	6930	8660	10200	17570	22370	34320	17
18	--	--	--	6300	7870	9340	16180	20510	31850	18
19	--	--	--	5750	7170	8570	14940	18870	29620	19
20	--	--	--	5270	6590	7890	13840	17410	27590	20
21	--	--	--	--	--	7290	12840	16110	25750	21
22	--	--	--	--	--	6750	11950	14940	24070	22
23	--	--	--	--	--	--	11140	13900	22540	23
24	--	--	--	--	--	--	10410	12950	21140	24
25	--	--	--	--	--	--	9740	12090	19860	25
26	--	--	--	--	--	--	9140	11320	18690	26
27	--	--	--	--	--	--	8590	10620	17620	27
28	--	--	--	--	--	--	8090	9980	16630	28
29	--	--	--	--	--	--	--	--	15720	29
30	--	--	--	--	--	--	--	--	14890	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.

AITC MAKES NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, THAT THE INFORMATION CONTAINED HEREIN IS SUITABLE FOR ANY GENERAL OR SPECIFIC USE OR IS FREE FROM INFRINGEMENT OF ANY PATENT OR COPYRIGHT. ANY USER OF THIS INFORMATION ASSUMES ALL RISK AND LIABILITY ARISING FROM SUCH USE.