

# American Institute of Timber Construction

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

Combination 47\*\* (SP N2M)

Duration of Load ( $C_D$ ) = 1.00

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	8350	13900	14270	24890	32110	33690	43720	53390	67420	4
5	7410	11260	13370	23420	30710	31780	42120	51920	65700	5
6	6240	9020	12300	21700	28950	29600	40230	50160	63660	6
7	5180	7300	11100	19780	26820	27200	38100	48090	61320	7
8	4310	6000	9860	17780	24000	24700	35770	45730	58730	8
9	3620	5000	8680	15860	21050	22230	33300	43090	55930	9
10	3080	4230	7630	14110	18470	19930	30760	40210	52950	10
11	2640	3610	6720	12580	16270	17870	28250	37230	49840	11
12	2290	3120	5940	11240	14400	16050	25870	34210	46680	12
13	--	--	5280	10090	12810	14460	23680	31060	43550	13
14	--	--	4720	9090	11460	13080	21690	28250	40520	14
15	--	--	4240	8220	10300	11860	19890	25750	37670	15
16	--	--	3830	7440	9300	10800	18290	23530	35020	16
17	--	--	3470	6750	8440	9870	16850	21570	32580	17
18	--	--	--	6150	7690	9050	15560	19820	30340	18
19	--	--	--	5620	7030	8320	14400	18270	28290	19
20	--	--	--	5160	6450	7680	13360	16890	26420	20
21	--	--	--	--	--	7100	12420	15650	24710	21
22	--	--	--	--	--	6590	11580	14540	23140	22
23	--	--	--	--	--	--	10810	13540	21710	23
24	--	--	--	--	--	--	10110	12630	20390	24
25	--	--	--	--	--	--	9480	11810	19190	25
26	--	--	--	--	--	--	8900	11060	18080	26
27	--	--	--	--	--	--	8380	10390	17070	27
28	--	--	--	--	--	--	7900	9770	16130	28
29	--	--	--	--	--	--	--	--	15270	29
30	--	--	--	--	--	--	--	--	14470	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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