

**Stemco Columns: Two Engineered Lumber Beams Spliced Over the Center of a Column**

**Table Usage:**

1) Determine the following **UN-FACTORED** reactions:

- Total Load reaction from the larger of two beam reactions (R1)
- Dead Load reaction from the smaller of two beam reactions (R2)

2) Using the Stemco Column Selection Table, confirm that the Total Load reaction from the larger of the two beam reactions (R1) does not exceed 1/2 the allowable column capacity for the height of column required

3) Using the Stemco Top Plate Capacity Table and the top plate sizes available for the column selected, confirm that the Total Load reaction from the larger of the two beam reactions (R1) does not exceed 1/2 the top plate bearing capacity

4) Calculate the Load Ratio R2/R1. Confirm that the Total Load reaction from the larger of the two beam reactions (R1) does not exceed the value in Table 1 for the Load Ratio calculated and top plate type used

**Table 1:**

Product Code	Connection Type	Beam Width (inches)	Maximum Total Load Reaction From Either Beam (R1) lbs					
			Load Ratio R2/R1 (refer to table usage notes)					
			0.00	0.10	0.20	0.30	0.40	0.50
STL	4"x6" Flat Plate	3.5	2020	2730	3600	4540	5430	6180
	4"x6" Flat Plate (rotated)	5.25	1600	2290	3210	4200	5140	5940
	5"x7" Flat Plate	5.25	2970	4280	5910	7620	8000	8000
	5"x7" Flat Plate (rotated)	7	2450	3760	5470	7260	8000	8000
	3.50" Saddle	3.5	1700	2110	2590	3110	3620	4010
	5.25" Saddle	5.25	2250	2930	3750	4630	5470	6200
	7.00" Saddle	7	2720	3680	4870	6130	7310	8000
STM1	4"x8" Flat Plate	3.5	2520	3520	4770	6090	7310	8350
	6"x8" Flat Plate	5.25	3220	4840	6890	9030	10960	12500
	3.50" Saddle	3.5	3790	4960	6260	7550	8700	9630
	5.25" Saddle	5.25	4640	6440	8520	10580	12400	12500
	7.00" Saddle	7	5360	7790	10690	12500	12500	12500
STM2	4"x8" Flat Plate	3.5	2520	3520	4770	6090	7310	8350
	6"x8" Flat Plate	5.25	3220	4840	6890	9030	10960	12570
	3.50" Saddle	3.5	3790	4960	6260	7550	8700	9630
	5.25" Saddle	5.25	4640	6440	8520	10580	12400	13890
	7.00" Saddle	7	5360	7790	10690	13550	15750	15750
STH	7"x10" Flat Plate	5.25 / 7	6550	8760	11260	13740	15950	17750
	3.50" Saddle	3.5	5350	6780	8360	9900	11280	12390
	5.25" Saddle	5.25	6550	8760	11260	13740	15950	17750
	7.00" Saddle	7	7560	10570	14050	17510	20570	22370
STXH	7"x12" Flat Plate	7	8740	12370	16590	20780	23640	23640
	5.25" Saddle	5.25	7570	11290	15680	20030	23880	27000
	7.00" Saddle	7	8740	12370	16590	20780	24500	27520

**Example:**

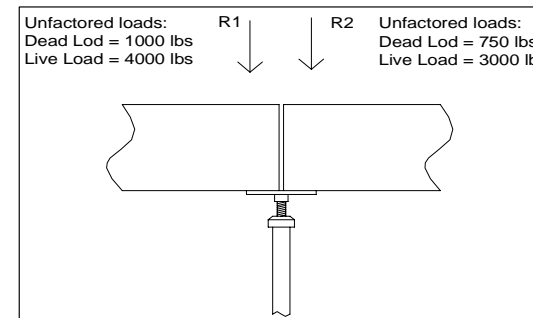


Figure 1:

3-ply 1.75" x 11.875" 1.55E TimberStrand beam, 8 ft column height, reactions as per Figure 1  
 Total load reaction from larger of two beam reactions (R1) = (1000+4000) = 5000 lbs  
 Dead load reaction from smaller of two beam reactions (R2) = 750 lbs  
 $R2/R1 = 750/5000 = 0.15$   
 Try a STL-8.5 column c/w 5" x 7" top plate

**Check the column capacity:**

From Stemco literature: 1/2 column capacity = 14000/2 = 7000 lbs  
 $R1 = 5000 \text{ lbs} < 7000 \text{ lbs O.K.}$

**Check the top plate for bearing:**

From Stemco literature: 1/2 top plate bearing capacity = 16000/2 = 8000 lbs  
 $R1 = 5000 \text{ lbs} < 8000 \text{ lbs O.K.}$

**Check the eccentric moment on the column assembly:**

$R2/R1 = 0.15$ ,  
 From Table 1, R1 (maximum) = (4280+5910)/2 = 5095 lbs (by interpolation)  
 5000 lbs < 5095 lbs, OK

STL-8.5 column is acceptable

**Table Notes:**

1. Install all lag bolts into top plate connections as per Stemco's column assembly instructions.
2. Table values are valid for engineered lumber beams only, do not use for dimensional lumber beams.