

Built-up Column Conversions

Sawn Lumber Built-up Column Conversions to Nordic Lam ES12

Sawn lumber built-up column S-P-F or D Fir-L No. 1/No. 2	One side fully braced – for use in stud walls ^(a)		Unbraced ^(b)	
	Bearing on other non-wood	Bearing on sawn lumber	Bearing on other non-wood	Bearing on sawn lumber
2 - 2 x 4	3-1/2 x 3-1/2	3-1/2 x 3-1/2	3-1/2 x 3-1/2	3-1/2 x 3-1/2
3 - 2 x 4	3-1/2 x 3-1/2	3-1/2 x 5-1/2	3-1/2 x 3-1/2	3-1/2 x 5-1/2
4 - 2 x 4	3-1/2 x 5-1/2	3-1/2 x 7	3-1/2 x 3-1/2	3-1/2 x 7 ^(c)
5 - 2 x 4	3-1/2 x 5-1/2	-	3-1/2 x 3-1/2	5-1/2 x 5-1/2
2 - 2 x 6	3-1/2 x 5-1/2	3-1/2 x 5-1/2	3-1/2 x 3-1/2	3-1/2 x 5-1/2
3 - 2 x 6	3-1/2 x 5-1/2	5-1/2 x 5-1/2	3-1/2 x 3-1/2	5-1/2 x 5-1/2
4 - 2 x 6	3-1/2 x 5-1/2	5-1/2 x 7	3-1/2 x 5-1/2	5-1/2 x 7
5 - 2 x 6	5-1/2 x 5-1/2	-	3-1/2 x 7 ^(c)	7 x 7
2 - 2 x 8	3-1/2 x 7-1/4	3-1/2 x 7-1/4	3-1/2 x 3-1/2	3-1/2 x 7 ^(c)
3 - 2 x 8	3-1/2 x 7-1/4	5-1/2 x 7-1/4	3-1/2 x 5-1/2	5-1/2 x 7
4 - 2 x 8	3-1/2 x 7-1/4	7 x 7-1/4	3-1/2 x 7 ^(c)	7 x 7
5 - 2 x 8	5-1/2 x 7-1/4	-	3-1/2 x 7 ^(c)	-

- a) One side fully braced – Compression members are assumed to be braced in the direction of the wall plane and unbraced in the other direction.
b) Unbraced – Compression members are assumed to be unbraced in both directions.
c) 5-1/2 x 5-1/2 column may also be used.

Notes:

- For preliminary design use only. Final design shall include a complete analysis including the verification of the bearing capacity. Smaller Nordic Lam sections may possibly be used with engineering calculations based on true conditions.
- The table is based on dry service conditions, normal duration of loading, and no treatment.
- The conversions are based on the built-up columns axial capacity, with a maximum length of 10 feet, and subjected to a maximum eccentricity of either 1/6 member width or depth, whichever is worse. Lateral loads are not considered.
- Reverse use of this table is non-conservative in all cases. Refer to NDS 2018 design properties for sawn lumber.
- Built-up compression members are assumed to be fastened together with nails as required by Clause 15.3.3 of the NDS.
- Compression members are assumed to be pinned at their ends.