

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.

Features and benefits of Nordic Lam columns:

- Supports heavy loads
- No need to nail or bolt individual pieces together
- Less shrinking, twisting and warping than sawn lumber
- Use of standard connectors
- Available in long lengths