



MULTIPLE MEMBER CONNECTIONS

TOP-LOADED BEAMS

1-3/4" WIDTH PIECES:

- Minimum of 2 rows 16d common wire nails (0.162 x 3-1/2 inches) at 12" o.c. for beam depths less than 14"
- Minimum of 3 rows 16d common wire nails (0.162 x 3-1/2 inches) at 12" o.c. for 14" to 18" beam depths
- Nailed connections require an additional row of nails when nail size is smaller than specified above (minimum 0.128" x 3")
- 4-PLY beams shall be attached with minimum of 2 rows 1/2-inch-diameter bolts or 1/4 x 6-inch wood screws at 24" o.c.

3-1/2" WIDTH PIECES:

- Minimum of 2 rows 1/2-inch-diameter bolts or 1/4 x 6-inch wood screws at 24" o.c. staggered.

SIDE-LOADED BEAMS

| MAXIMUM ALLOWABLE UNIFORM LOAD (plf) APPLIED TO EITHER OUTSIDE MEMBER | | | 2-PLY 1-3/4" | 3-PLY 1-3/4" | 4-PLY 1-3/4" | 1-3/4" + 3-1/2" | 1-3/4" + 3-1/2" + 1-3/4" | 2-PLY 3-1/2" |
|--|----------|--------|---------------------------------|-----------------------------------|------------------------------------|------------------------------------|-----------------------------------|------------------------------------|
| CONNECTOR | SPACING | ROWS | NAILS ONE SIDE OR THROUGH BOLTS | NAILS BOTH SIDES OR THROUGH BOLTS | SCREWS BOTH SIDES OR THROUGH BOLTS | NAILS ON ONE SIDE OR THROUGH BOLTS | NAILS BOTH SIDES OR THROUGH BOLTS | SCREWS BOTH SIDES OR THROUGH BOLTS |
| 16d Common Wire Nails | 12" o.c. | 2 Rows | 480 | 360 | N/A | 360 | 320 | N/A |
| | | 3 Rows | 720 | 540 | N/A | 540 | 480 | N/A |
| | 6" o.c. | 2 Rows | 960 | 720 | N/A | 720 | 640 | N/A |
| | | 3 Rows | 1440 | 1080 | N/A | 1080 | 960 | N/A |
| 1/2" A307 Bolts | 24" o.c. | 2 Rows | 400 | 300 | 265 | 435 | 385 | 760 |
| | 12" o.c. | 2 Rows | 800 | 600 | 530 | 870 | 770 | 1520 |
| | 6" o.c. | 2 Rows | 1600 | 1200 | 1065 | 1740 | 1545 | 3040 |
| 1/4 x 3-1/2" Screws* | 24" o.c. | 2 Rows | 400 | 300 | 330 | 300 | 265 | 400 |
| | 16" o.c. | 2 Rows | 600 | 450 | 500 | 450 | 400 | 600 |
| | 12" o.c. | 2 Rows | 800 | 600 | 665 | 600 | 530 | 800 |

NOTES:

1. Verify adequacy of beam in uniform load tables or design software prior to using values listed above.
2. Glulam beams are assumed to be full length, have adequate lateral bracing to avoid buckling, have the same stiffness and bending capacity, and have adequate bearing at supports to carry the applied load. Concentrated loads require special consideration.
3. Capacities given are for multiple-beam connections under normal (10-yr.) load duration. Increases for other load durations are permitted.
4. Nails shall conform to ASTM F1667 and have a minimum yield strength of 90,000 psi. Nails shall be located a minimum of 2 inches from the top and bottom of the member with a minimum spacing of 2 inches between rows. The end distance shall not be less than 3 inches. Multiply tabulated connection capacities by 0.83 for 12d common wire nails (0.148 x 3-1/4 inches).
5. Bolts shall conform to ASTM A307 and have a minimum yield strength of 45,000 psi. Bolt holes are recommended to be not more than 1/32 inch greater than the diameter of the bolts and shall be located a minimum of 2 inches away from the glulam end and edges. Standard cut washers shall be used between head and nut of the bolt and the glulam.
6. Screws shall have self-drilling tip and a minimum yield strength of 217,000 psi. Screws shall be located a minimum of 2 inches from the top and bottom of the member with a minimum spacing of 2 inches between rows. The end distance shall not be less than 4 inches. If 7-inch wide beams are not equally loaded on each side, the plf load from the lesser side should be at least 25% of the opposite side.
- *6-inch screws required for 4-ply 1-3/4-inch and 2-ply 3-1/2-inch members.
7. Offset connector spacing so that protruding fasteners do not interfere with intersecting side members.

