Alternate Power & Hand Driven Nailing of Multiple Ply 1 ¾" Versa-Lam® LVL Beams

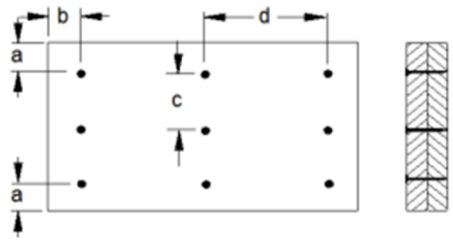
When using multiple ply 1 ¾" Versa-Lam® LVL to create wider beams, the connection of the plies is as critical as determining the beam size. When side loaded beams are not connected properly, the inside plies do not support their share of the load and thus the load carrying capacity of the full member decreases significantly.

Design reports from BC Calc® sizing software show a connection details for multiple ply 1 ¾" Versa-Lam® LVL beams. BC Calc® design reports will either show the member having no side loads or the Calculated side load. When the nails shown on the connection detail are not readily available on the job site, the following table may be used to substitute power driven nails or hand driven nails.

As Shown on BC Calc® Report		Power Driven Nails				Hand Driven Nails		
Nail	O.C. Spacing	3 ½" x 0.162"	3" x 0.148"	3 ¼" x 0.131" 3" x 0.131"	3 ¼" x 0.120" 3" x 0.120"	16d Common 3 ½" x 0.162"	16d Sinker 3 ¼" x0.148"	16d Box 3 ½" x 0.135"
16d Common 3 ½" x 0.162"	24"	24"	20"	16"	12"	24"	20"	16"
	12"	12"	10"	8"	6"	12"	10"	8"
	6"	6"	N/A	N/A	N/A	6"	N/A	N/A
16d Sinker 3 ¼ " x 0.148"	24"	24"	24"	18"	16"	24"	24"	20"
	12"	14"	12"	8"	8"	14"	12"	10"
	6"	6"	6"	N/A	N/A	6"	6"	N/A
16d Box 3 ½" x 0.135"	24"	24"	24"	22"	18"	24"	24"	24"
	12"	16"	12"	10"	8"	16"	12"	12"
	6"	8"	6"	N/A	N/A	8"	6"	6"
		Alternate On-Center Spacing						

Example:

Connection Diagram: Full Length of Member



a minimum = 2" c = 4"
b minimum = 3" d = 12"
Calculated Side Load = 500.0 lb/ft
Connectors are: 16d Sinker Nails

Connection detail on the BC Calc® report shows 16d sinker nails at 12" o.c. As an alternative, 3" x 0.131" power driven nails can be used at 8" o.c. or 16d common nails can be used at 14" o.c.

Notes:

- For multiple ply 1 ¾" Versa-Lam® LVL beams with only top load, beam may be fastened at 24" o.c. for all nails shown above (top mounted hangers shall be analyzed as side loads).
- Use end distance, edge distance, row spacing and number of rows shown on connection detail found on BC Calc® design report (see example above).
- Table is not applicable for 1 ½" wide Versa-Lam® LVL beams.

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