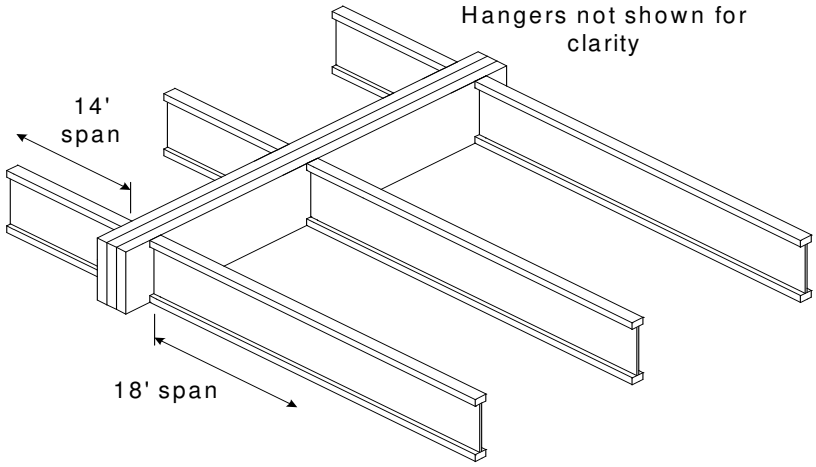
Connecting Multiple-Ply Versa-Lam® Beams

When using multiple ply Versa-Lam beams to create a wider member, 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. The following is an example of how to size and connect a multiple ply Versa-Lam floor beam.

Given: Beam shown below is supporting residential floor load (40 psf live load, 10 psf dead load) and is spanning 16'-0". Beam depth is limited to 14".



Find: A multiple 1 3/4" ply Versa-Lam that is adequate to support the design loads and the member's proper connection schedule.

1) Calculate the tributary width that beam is supporting: 14'/2 + 18'/2 = 16'.
2) Use PLF tables in *Boise Cascade's Specifier Guide* or enter the loads and span in BC Calc and run Best Beam for 2, 3 & 4 ply beams: A Triple 1 3/4" x 14" Versa-Lam 2.0 2800 is found to adequately support the design loads.
3) Calculate the maximum plf load from one side (the right side in this case).
   Max. Side Load = (18'/2) x (40 + 10 psf) = 450 plf
4) Go to the Multiple Member Connection Table in the Boise Cascade's *Specifier Guide*. Side-Loaded Applications, 1 3/4" Versa-Lam, 3 members
5) The proper connection schedule must have a capacity greater than the max. side load:
   Nailed: 3 rows 16d sinkers @ 12" o.c: 525 plf > 450 plf OK
   Bolts: 1/2" diameter 2 rows @ 12" staggered: 755 plf > 450 plf OK