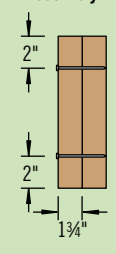
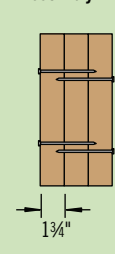
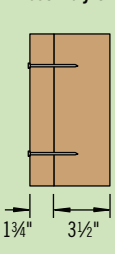

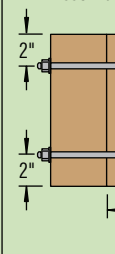
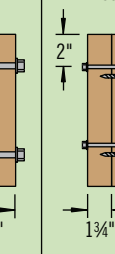


MULTIPLE-MEMBER CONNECTIONS FOR SIDE-LOADED BEAMS

Uniform Load—Maximum Uniform Load Applied to Either Outside Member (PLF)

Connector Type	Number of Rows	Connector On-Center Spacing	Connector Pattern					
			Assembly A	Assembly B	Assembly C	Assembly D	Assembly E	Assembly F
								
3 1/2" 2-ply	5 1/4" 3-ply	5 1/4" 2-ply	7" 3-ply	7" 2-ply	7" 4-ply			
10d (0.128" x 3") Nail ⁽¹⁾	2	12"	370	280	280	245		
	3	12"	555	415	415	370		
1/2" A307 Through Bolts ⁽²⁾⁽³⁾	2	24"	505	380	520	465	860	340
		19.2"	635	475	655	580	1,075	425
		16"	760	570	785	695	1,290	505
SDS 1/4" x 3 1/2" ⁽³⁾	2	24"	680	510	510	455		
		19.2"	850	640	640	565		
		16"	1,020	765	765	680		
SDS 1/4" x 6" ⁽³⁾⁽⁴⁾	2	24"				455	465	455
		19.2"				565	580	565
		16"				680	695	680
USP WS35 ⁽³⁾	2	24"	480	360	360	320		
		19.2"	600	450	450	400		
		16"	715	540	540	480		
USP WS6 ⁽³⁾⁽⁴⁾	2	24"				350	525	350
		19.2"				440	660	440
		16"				525	790	525
3 3/8" TrussLok ⁽³⁾	2	24"	635	475	475	425		
		19.2"	795	595	595	530		
		16"	955	715	715	635		
5" TrussLok ⁽³⁾	2	24"		500	500	445	480	445
		19.2"		625	625	555	600	555
		16"		750	750	665	725	665
6 3/4" TrussLok ⁽³⁾	2	24"				445	620	445
		19.2"				555	770	555
		16"				665	925	665

(1) Nailed connection values may be doubled for 6" on-center or tripled for 4" on-center nail spacing.

(2) Washers required. Bolt holes to be 3/16" maximum.

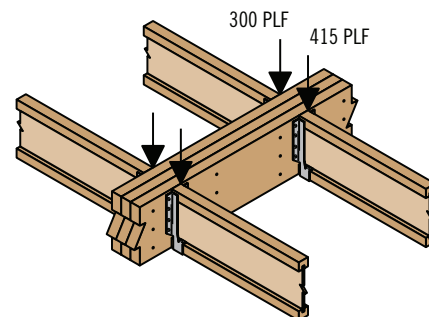
(3) 24" on-center bolted and screwed connection values may be doubled for 12" on-center spacing.

(4) 6" SDS or WS screws can be used with Parallam® PSL and Microllam® LVL, but are not recommended for TimberStrand® LSL.

General Notes

- Connections are based on NDS® 2005 or manufacturer's code report.
- Use specific gravity of 0.5 when designing lateral connections.
- Values listed are for 100% stress level. Increase 15% for snow-loaded roof conditions or 25% for non-snow roof conditions, where code allows.
- Bold Italic** cells indicate **Connector Pattern** must be installed on both sides. Stagger fasteners on opposite side of beam by 1/2 the required **Connector Spacing**.
- Verify adequacy of beam in allowable load tables on pages 16–33.
- 7" wide beams should be side-loaded only when loads are applied to both sides of the members (to minimize rotation).
- Minimum end distance for bolts and screws is 6".
- Beams wider than 7" require special consideration by the design professional.

Uniform Load Design Example



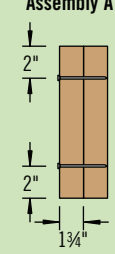
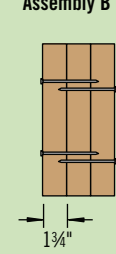
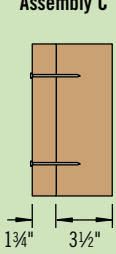

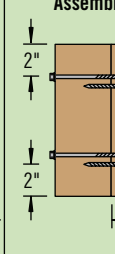
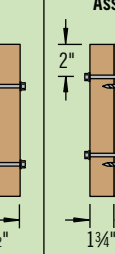
First, check the allowable load tables on pages 16–33 to verify that three pieces can carry the total load of 715 plf with proper live load deflection criteria. Maximum load applied to either outside member is 415 plf. For a 3-ply, 1 3/4" assembly, two rows of 10d (0.128" x 3") nails at 12" on-center is good for only 280 plf. Therefore, use three rows of 10d (0.128" x 3") nails at 12" on-center (good for 415 plf).

Alternatives:

Two rows of 1/2" bolts or 1/4" x 3 1/2" SDS screws at 19.2" on-center.

MULTIPLE-MEMBER CONNECTIONS FOR SIDE-LOADED BEAMS

Point Load—Maximum Point Load Applied to Either Outside Member (lbs)

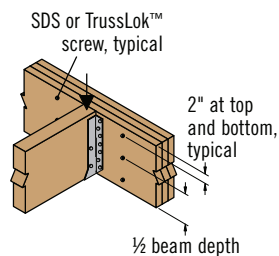
Connector Type	Number of Connectors	Connector Pattern					
		Assembly A	Assembly B	Assembly C	Assembly D	Assembly E	Assembly F
							
3 1/2" 2-ply	5 1/4" 3-ply	5 1/4" 2-ply	7" 3-ply	7" 2-ply	7" 4-ply		
10d (0.128" x 3") Nail	6	1,110	835	835	740		
	12	2,225	1,670	1,670	1,485		
	18	3,335	2,505	2,505	2,225		
	24	4,450	3,335	3,335	2,965		
SDS Screws 1/4" x 3 1/2" or WS35 1/4" x 6" or WS6 ⁽¹⁾	4	1,915	1,435 ⁽²⁾	1,435	1,275	1,860 ⁽³⁾	1,405 ⁽³⁾
	6	2,870	2,150 ⁽²⁾	2,150	1,915	2,785 ⁽³⁾	2,110 ⁽³⁾
	8	3,825	2,870 ⁽²⁾	2,870	2,550	3,715 ⁽³⁾	2,810 ⁽³⁾
3 3/8", 5", or 6 3/4" TrussLok™	4	2,545	1,910 ⁽²⁾	1,910	1,695	1,925 ⁽⁴⁾	1,775 ⁽⁴⁾
	6	3,815	2,860 ⁽²⁾	2,860	2,545	2,890 ⁽⁴⁾	2,665 ⁽⁴⁾
	8	5,090	3,815 ⁽²⁾	3,815	3,390	3,855 ⁽⁴⁾	3,550 ⁽⁴⁾

- (1) 6" SDS or WS screws can be used with Parallam® PSL and Microllam® LVL, but are not recommended for TimberStrand® LSL.
 (2) 3 1/2" and 3 3/8" long screws must be installed on both sides.
 (3) 6" long screws required.
 (4) 5" long screws required.

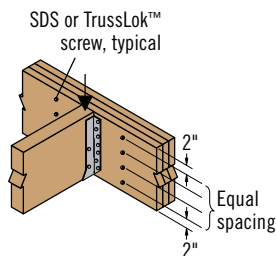
See General Notes on page 38

Point Load Connections

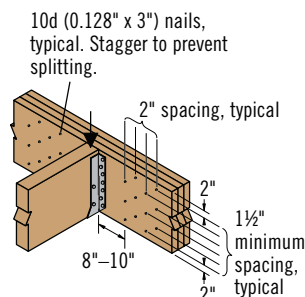
4- or 6-Screw Connection



8-Screw Connection

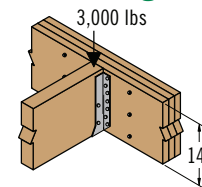


Nail Connection



There must be an equal number of nails on each side of the connection

Point Load Design Example



First, verify that a 3-ply, 1 3/4" x 14" beam can support the 3,000 lb point load as well as all other loads applied. The 3,000 lb point load is being transferred to the beam with a face mount hanger. For a 3-ply, 1 3/4" assembly, eight 3 3/8" TrussLok™ screws are good for 3,815 lbs with a face mount hanger.

MULTIPLE-MEMBER CONNECTIONS FOR TOP-LOADED BEAMS

1 3/4"-Wide Pieces

- Minimum of three rows of 10d (0.128" x 3") nails at 12" on-center.
- Minimum of four rows of 10d (0.128" x 3") nails at 12" on-center for 14" or deeper.
- If using 12d–16d (0.148"–0.162" diameter) nails, the number of nailing rows may be reduced by one.
- Minimum of two rows of SDS, WS, or TrussLok™ screws at 16" on-center. Use 3 3/8" minimum length with two or three plies; 5" minimum for 4-ply members. 6" SDS and WS screws are not recommended for use with TimberStrand® LSL. For 3- or 4-ply members, connectors must be installed

on both sides. Stagger fasteners on opposite side of beam by 1/2 of the required connector spacing.

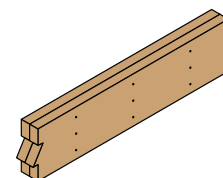
- Load must be applied evenly across entire beam width. Otherwise, use connections for side-loaded beams.

3 1/2"-Wide Pieces

- Minimum of two rows of SDS, WS, or TrussLok™ screws, 5" minimum length, at 16" on-center. 6" SDS and WS screws are not recommended for use with TimberStrand® LSL. Connectors must be installed on both sides. Stagger fasteners on opposite side of beam by 1/2 of the required connector spacing.

- Minimum of two rows of 1/2" bolts at 24" on-center staggered.

- Load must be applied evenly across entire beam width. Otherwise, use connections for side-loaded beams.



L6 Multiple pieces can be nailed or bolted together to form a header or beam of the required size, up to a maximum width of 7"