

2.0E PT-LAM LVL HEADERS & BEAMS

ICBO ES ER-5598 ■ HUD MR 1310
DSA PA-123 ■ LAC RR25448 ■ CCMC 13006-R



PRODUCT LINE



You've probably been building with traditional sawn lumber beams and headers for as long as you've been building. Now through advances

in technology and design, there is a better choice—

PT-Lam LVL headers and beams. They are simply a better alternative than traditional-sawn lumber pieces. Work with a stronger, stiffer, more consistent and more predictable building material. Compared with similar sized sections, our PT-Lam LVL headers and beams can support heavier loads and allows greater spans than conventional lumber.

Each piece of PT-Lam LVL is pressure sprayed with a UV inhibitor and sealed with emulsified wax.

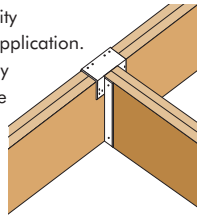
HANDLING & INSTALLATION

- PT-Lam LVL should be stored lying flat and protected from the weather.
- Keep the material above ground to minimize the absorption of ground moisture and allow circulation of air.
- PT-Lam LVL is for use in covered, dry conditions only. Protect from the weather on the job site both before and after installation.
- Except for cutting to length, PT-Lam LVL shall not be cut, drilled or notched. Heel cuts may be possible. Contact your Ply-Trim representative.
- **Do not install any damaged LVL.**

BEARING DETAILS

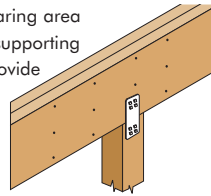
3a BEAM-TO-BEAM CONNECTION

Make sure hanger capacity is appropriate for each application. Hangers must be properly installed to accommodate full capacity.



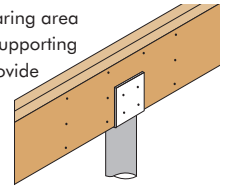
3b BEARING ON WOOD COLUMN

Verify the required bearing area and the ability of the supporting column member to provide adequate strength.



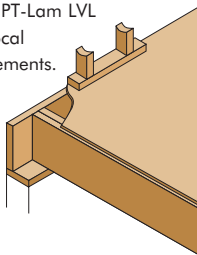
3c BEARING ON STEEL COLUMN

Verify the required bearing area and the ability of the supporting column member to provide adequate strength.



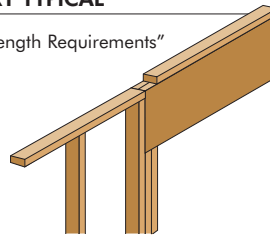
3d BEARING ON EXTERIOR WALL

Prevent direct contact of PT-Lam LVL with concrete. Consult local building code for requirements.



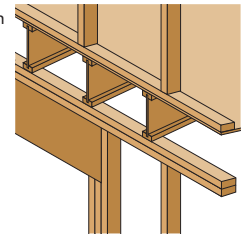
3e BEARING FOR DOOR OR WINDOW HEADER—1-STORY TYPICAL

See "Bearing Length Requirements" below.



3f WINDOW/DOOR HEADER—2-STORY TYPICAL

See "Bearing Length Requirements" below.



For multiple-ply PT-Lam LVL beam assembly conditions and fastening recommendations, see page 11.

BEARING LENGTH REQUIREMENTS

PT-LAM LVL BEARING LENGTH REQUIREMENTS

Support Material	S-P-F (South) Hem-Fir (North) ⁽⁵⁾		Hem-Fir S-P-F ⁽⁵⁾		Southern Pine Douglas Fir – Larch ⁽⁵⁾		2.0E PT-Lam LVL ⁽⁶⁾	
	335		405		565		850	
F _{cu} (psi)	335		405		565		850	
PT-Lam LVL Beam Width (in)	1 3/4"	3 1/2"	1 3/4"	3 1/2"	1 3/4"	3 1/2"	1 3/4"	3 1/2"
1	3"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
2	3 1/4"	3"	3"	1 1/2"	3"	1 1/2"	1 1/2"	1 1/2"
3	5 1/2"	3"	4 1/2"	3"	3 1/2"	3"	3"	1 1/2"
4	7 1/4"	3 1/2"	6"	3"	4 1/2"	3"	3"	1 1/2"
5	9 1/4"	4 1/2"	7 1/4"	4 1/2"	5 1/2"	3"	3 1/2"	3"
6		5 1/2"	9 1/4"	4 1/2"	7 1/4"	3 1/2"	4 1/2"	3"
7		6"		5 1/2"	7 1/4"	4 1/2"	5 1/2"	3"
8		7 1/4"		6"	9 1/4"	4 1/2"	5 1/2"	3"
9		9 1/4"		7 1/4"	9 1/4"	5 1/2"	7 1/2"	3 1/2"
10		9 1/4"		7 1/4"		5 1/2"	7 1/2"	3 1/2"
11				9 1/4"		6"	7 1/2"	4 1/2"
12				9 1/4"		7 1/4"	9"	4 1/2"
13						7 1/4"	9"	4 1/2"
14						7 1/4"		5 1/2"
15						9 1/4"		5 1/2"
16						9 1/4"		5 1/2"
17						9 1/4"		6"
18						9 1/4"		7 1/2"
19								7 1/2"
20								7 1/2"
21								7 1/2"
22								7 1/2"
23								9"

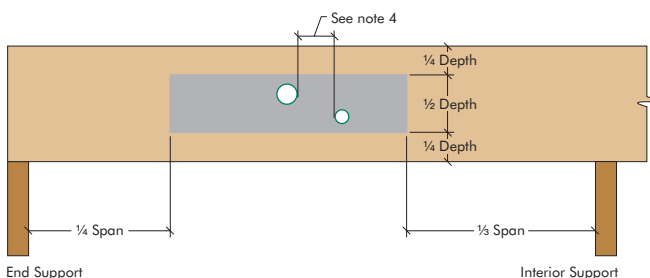
Notes:

1. The minimum required bearing length is 1 1/2".
2. Duration of load factors may not be applied to bearing length requirements.
3. All PT-Lam LVL beams require support across their full width.
4. All PT-Lam LVL beams require lateral support at bearing points.

5. Use these values when the PT-Lam LVL beam is supported by a wall plate, sill plate, timber or built-up girder.
6. Use these values when the PT-Lam LVL beam is supported by the end of a column or connection hardware.
7. The support member must be sized to carry the load from the PT-Lam LVL beam.

HOLE DETAILS

HOLES IN PT-LAM LVL BEAMS



Notes:

1. This technical note applies only to uniformly loaded, simple and multiple span PT-Lam LVL beams. Beams that carry concentrated loads, or cantilevered beams, are outside the scope of this technical note.
2. Square and rectangular holes are not permitted.
3. Round holes may be drilled or cut with a hole saw anywhere within the shaded area of the PT-Lam LVL beam.
4. The horizontal distance between adjacent holes must be at least two times the size of the larger hole. This restriction also applies to the location of access holes relative to bolt holes in multi-ply PT-Lam LVL beams.
5. Do not drill more than three access holes in any four foot long section of PT-Lam LVL beam.
6. The maximum round hole diameter permitted is:

PT-Lam LVL Beam Depth	5 1/2"	7 1/4"	9 1/2" to 24"
Maximum Hole Diameter	3/4"	1"	1 1/2"
7. These limitations apply to holes drilled for plumbing or wiring access only. The size and location of holes drilled for fasteners are governed by the provisions of the *National Design Specification® for Wood Construction*.
8. PT-Lam LVL beams deflect under load. Size holes to provide clearance where required.

2.0E PT-LAM LVL DESIGN PROPERTIES

ALLOWABLE DESIGN PROPERTIES – 1 3/4" 2.0E PT-LAM LVL

Depth	Maximum Vertical Shear (lbs)			Maximum Bending Moment (ft-lbs)			EI (x 10 ⁶ lbs-in ²)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2"	1829	2103	2286	2664	3064	3330	49	2.50
7 1/4"	2411	2772	3013	4380	5037	5475	111	3.30
9 1/2"	3159	3633	3948	7125	8194	8907	250	4.32
11 7/8"	3948	4541	4936	10647	12245	13309	488	5.40
14"	4655	5353	5819	14320	16468	17900	800	6.36
16"	5320	6118	6650	18210	20942	22763	1195	7.27
18"	5985	6883	7481	22511	25888	28139	1701	8.18

ALLOWABLE DESIGN PROPERTIES – 3 1/2" 2.0E PT-LAM LVL

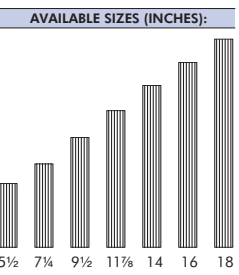
Depth	Maximum Vertical Shear (lbs)			Maximum Bending Moment (ft-lbs)			EI (x 10 ⁶ lbs-in ²)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5 1/2"	3658	4206	4572	5328	6128	6660	97	5.00
7 1/4"	4821	5544	6027	8761	10075	10951	222	6.59
9 1/2"	6318	7265	7897	14251	16388	17813	500	8.64
11 7/8"	7897	9081	9871	21295	24489	26619	977	10.79
14"	9310	10707	11638	28639	32935	35799	1601	12.73
16"	10640	12236	13300	36421	41884	45526	2389	14.54
18"	11970	13766	14963	45022	51775	56277	3402	16.36

2.0E PT-Lam LVL Allowable Design Stresses⁽¹⁾

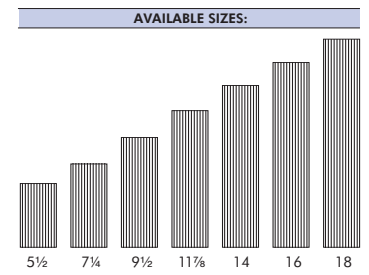
- Modulus of Elasticity E = 2,000,000 psi⁽²⁾
- Bending F_b = 3,100 psi⁽³⁾⁽⁴⁾
- Horizontal Shear (joist) F_v = 285 psi
- Compression Perpendicular to Grain (joist) F_{c⊥} = 850 psi⁽²⁾
- Compression Parallel to Grain F_c = 2,750 psi

- (1) These allowable design stresses apply to dry service conditions.
- (2) No increase is allowed for load duration.
- (3) Multiply by (12/d)^{1/5} where d = depth of member (in).
- (4) A factor of 1.04 may be applied for repetitive members as defined in the National Design Specification® for Wood Construction.

1 3/4" 2.0E PT-LAM LVL



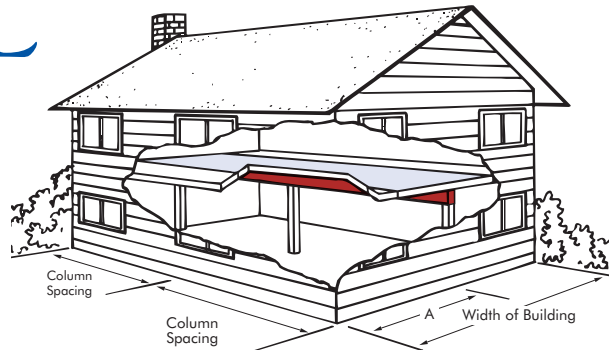
3 1/2" 2.0E PT-LAM LVL



For additional grades and sizes, please visit our Web site at www.plytrim.com

2.0E PT-LAM LVL FLOOR BEAMS

This table provides PT-Lam LVL beam sizes for center support of one level of floor framing over various column spacings. Where floor joists are continuous over the beam, this table applies only when the 'A' span is between 45% and 55% of the building width.



1 3/4" x 2.0E PT-LAM LVL

Width of Building (ft)	Column Spacing									
	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'
24'	2 - 1 1/8"	2 - 1 1/8"	2 - 1 1/8"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"
	3 - 9/2"	3 - 9/2"	3 - 1 1/8"	3 - 1 1/8"	3 - 1 1/8"	3 - 1 1/8"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"
28'	2 - 1 1/8"	2 - 1 1/8"	2 - 1 1/8"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"
	3 - 9/2"	3 - 1 1/8"	3 - 1 1/8"	3 - 1 1/8"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"
32'	2 - 1 1/8"	2 - 1 1/8"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"
	3 - 9/2"	3 - 1 1/8"	3 - 1 1/8"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"
36'	2 - 1 1/8"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"
	3 - 1 1/8"	3 - 1 1/8"	3 - 1 1/8"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"
40'	2 - 1 1/8"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"	2 - 1 1/4"
	3 - 1 1/8"	3 - 1 1/8"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"	3 - 1 1/4"

+ see note 3

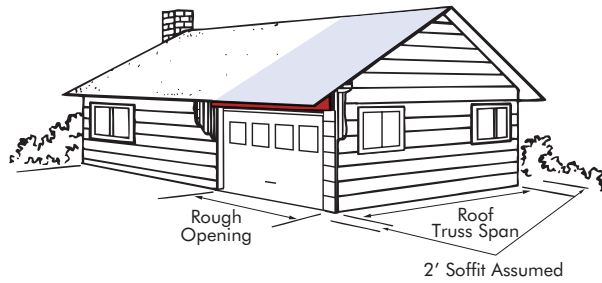
Notes:

1. PT-Lam LVL beam sizes are listed as the number of 1 3/4" thick pieces by the beam depth, e.g. 2 - 9 1/2" indicates two 1 3/4" pieces by 9 1/2" deep.
2. All PT-Lam LVL beams require support across their full width.
3. The minimum required end and intermediate bearing lengths (based on 850 psi) are 3" and 7 1/2" respectively unless the + symbol is shown. In that case, 4 1/2" and 10 1/2" end and intermediate bearing lengths are required.

4. PT-Lam LVL beam sizes are based on residential floor loading of 40 psf live load and 10 psf dead load. The roof framing must be trusses supported at the exterior walls only.
5. Deflection is limited to L/360 at live load and L/240 at total load.
6. PT-Lam LVL beam sizes are based on continuous floor joist spans and simple or continuous beam spans. If the floor joists are not continuous, it is permissible to consider a "Width of Building" dimension that is equal to 0.8 times the actual width of the building.

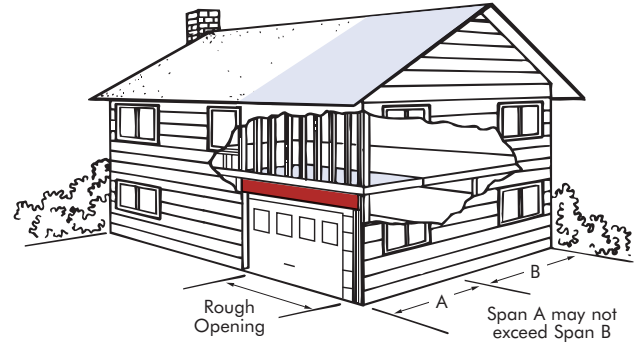
2.0E PT-LAM LVL GARAGE DOOR HEADERS

1-STORY



This table provides PT-Lam LVL header sizes for the support of roof trusses over various rough openings. A 2-foot maximum roof overhang is assumed.

2-STORY



This table provides PT-Lam LVL header sizes for the support of one level of floor framing, an exterior wall and roof trusses over various rough openings. A 2-foot maximum roof overhang and center support for the floor framing are assumed.

1-STORY – 1 3/4" x 2.0E PT-LAM LVL

Roof Loading	Snow (115%)									Non-Snow (125%)									
	25 psf LL + 20 psf DL			30 psf LL + 20 psf DL			40 psf LL + 20 psf DL			20 psf LL + 15 psf DL			20 psf LL + 20 psf DL			20 psf LL + 25 psf DL			
Width of Building	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	
Roof Truss Span with 2' Soffit Assumed	20'	2-7 1/4"	2-11 7/8"	2-14"	2-7 1/4"	2-11 7/8"	2-14"	2-7 1/4"	2-14"	2-14"	2-7 1/4"	2-11 7/8"	2-11 7/8"	2-7 1/4"	2-11 7/8"	2-14"	2-7 1/4"	2-11 7/8"	2-14"
		3-7 1/4"	3-11 7/8"	3-11 7/8"	3-7 1/4"	3-11 7/8"	3-11 7/8"	3-7 1/4"	3-11 7/8"	3-14"	3-7 1/4"	3-9 1/2"	3-11 7/8"	3-7 1/4"	3-9 1/2"	3-11 7/8"	3-7 1/4"	3-11 7/8"	3-11 7/8"
	24'	2-7 1/4"	2-11 7/8"	2-14"	2-7 1/4"	2-14"	2-14"	2-9 1/2"	2-14"	2-16"	2-7 1/4"	2-11 7/8"	2-14"	2-7 1/4"	2-11 7/8"	2-14"	2-7 1/4"	2-11 7/8"	2-14"
		3-7 1/4"	3-11 7/8"	3-11 7/8"	3-7 1/4"	3-11 7/8"	3-14"	3-7 1/4"	3-11 7/8"	3-14"	3-7 1/4"	3-9 1/2"	3-11 7/8"	3-7 1/4"	3-11 7/8"	3-14"	3-7 1/4"	3-11 7/8"	3-11 7/8"
	28'	2-7 1/4"	2-14"	2-14"	2-9 1/2"	2-14"	2-16"	2-9 1/2"	2-14"	2-16"	2-7 1/4"	2-11 7/8"	2-14"	2-7 1/4"	2-11 7/8"	2-14"	2-7 1/4"	2-14"	2-14"
3-7 1/4"		3-11 7/8"	3-14"	3-7 1/4"	3-11 7/8"	3-14"	3-7 1/4"	3-11 7/8"	3-14"	3-7 1/4"	3-11 7/8"	3-11 7/8"	3-7 1/4"	3-11 7/8"	3-11 7/8"	3-7 1/4"	3-11 7/8"	3-11 7/8"	3-14"
32'	2-9 1/2"	2-14"	2-16"	2-9 1/2"	2-14"	2-16"	2-9 1/2"	2-16"	2-18"	2-7 1/4"	2-11 7/8"	2-14"	2-7 1/4"	2-14"	2-14"	2-9 1/2"	2-14"	2-16"	
	3-7 1/4"	3-11 7/8"	3-14"	3-7 1/4"	3-11 7/8"	3-14"	3-7 1/4"	3-14"	3-14"	3-7 1/4"	3-11 7/8"	3-11 7/8"	3-7 1/4"	3-11 7/8"	3-14"	3-7 1/4"	3-11 7/8"	3-14"	
36'	2-9 1/2"	2-14"	2-16"	2-9 1/2"	2-16"	2-16"	2-18"	2-9 1/2"	2-18"	2-7 1/4"	2-11 7/8"	2-14"	2-9 1/2"	2-14"	2-14"	2-9 1/2"	2-16"	2-16"	
	3-7 1/4"	3-11 7/8"	3-14"	3-7 1/4"	3-14"	3-14"	3-9 1/2"	3-14"	3-16"	3-7 1/4"	3-11 7/8"	3-14"	3-7 1/4"	3-11 7/8"	3-14"	3-7 1/4"	3-11 7/8"	3-14"	

+ see note 3

Notes:

- PT-Lam LVL header sizes are listed as the number of 1 3/4" thick pieces by the header depth, e.g. 2 - 9 1/2" indicates two 1 3/4" pieces by 9 1/2" deep.
- All PT-Lam LVL headers require support across their full width.
- The minimum required bearing length (based on 850 psi) is 3" unless the + symbol is shown. In that case, 4 1/2" is required.
- The roof framing is assumed to be trusses supported by the exterior walls only.
- Deflection is limited to L/240 at live load and L/180 at total load.

2-STORY – 1 3/4" x 2.0E PT-LAM LVL

Roof Loading	Snow (115%)									Non-Snow (125%)									
	25 psf LL + 20 psf DL			30 psf LL + 20 psf DL			40 psf LL + 20 psf DL			20 psf LL + 15 psf DL			20 psf LL + 20 psf DL			20 psf LL + 25 psf DL			
Width of Building	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	9' 3"	16' 3"	18' 3"	
Roof Truss Span with 2' Soffit Assumed	20'	2-9 1/2"	2-16"	2-18"	2-9 1/2"	2-16"	2-18"	2-9 1/2"	2-16"	2-18"	2-9 1/2"	2-14"	2-16"	2-9 1/2"	2-16"	2-16"	2-9 1/2"	2-16"	2-18"
		3-9 1/2"	3-14"	3-16"	3-9 1/2"	3-14"	3-16"	3-9 1/2"	3-14"	3-16"	3-9 1/2"	3-14"	3-14"	3-7 1/4"	3-14"	3-14"	3-9 1/2"	3-14"	3-14"
	24'	2-9 1/2"	2-16"	2-18"	2-9 1/2"	2-16"	2-18"	2-9 1/2"	2-18"	-	2-9 1/2"	2-16"	2-18"	2-9 1/2"	2-16"	2-18"	2-9 1/2"	2-16"	2-18"
		3-9 1/2"	3-14"	3-16"	3-9 1/2"	3-14"	3-16"	3-9 1/2"	3-16"	3-16"	3-9 1/2"	3-14"	3-16"	3-9 1/2"	3-14"	3-16"	3-9 1/2"	3-14"	3-16"
	28'	2-9 1/2"	2-18"	2-18"	2-9 1/2"	2-18"	-	2-11 7/8"	2-18"	-	2-9 1/2"	2-16"	2-18"	2-9 1/2"	2-16"	2-18"	2-9 1/2"	2-16"	2-18"
3-9 1/2"		3-14"	3-16"	3-9 1/2"	3-16"	3-18"	3-9 1/2"	3-16"	3-18"	3-9 1/2"	3-14"	3-16"	3-9 1/2"	3-14"	3-16"	3-9 1/2"	3-14"	3-16"	
32'	2-11 7/8"	2-18"	-	2-11 7/8"	2-18"	-	2-11 7/8"	-	-	2-9 1/2"	2-16"	2-18"	2-9 1/2"	2-18"	-	2-11 7/8"	2-18"	-	
	3-9 1/2"	3-16"	3-18"	3-9 1/2"	3-16"	3-18"	3-9 1/2"	3-16"	3-18"	3-9 1/2"	3-14"	3-16"	3-9 1/2"	3-16"	3-16"	3-9 1/2"	3-16"	3-16"	3-18"
36'	2-11 7/8"	2-18"	-	2-11 7/8"	-	-	2-11 7/8"	-	-	2-9 1/2"	2-18"	-	2-11 7/8"	2-18"	-	2-11 7/8"	2-18"	-	
	3-9 1/2"	3-16"	3-18"	3-9 1/2"	3-16"	3-18"	3-9 1/2"	3-16"	3-18"	3-9 1/2"	3-16"	3-16"	3-9 1/2"	3-16"	3-18"	3-9 1/2"	3-16"	3-16"	

+ see note 3

Notes:

- PT-Lam LVL header sizes are listed as the number of 1 3/4" thick pieces by the header depth, e.g. 2 - 9 1/2" indicates two 1 3/4" pieces by 9 1/2" deep.
- All PT-Lam LVL headers require support across their full width.
- The minimum required bearing length (based on 850 psi) is 3" unless the + symbol is shown. In that case, 4 1/2" is required.
- PT-Lam LVL header sizes are based on residential floor loading of 40 psf live load and 10 psf dead load, and an exterior wall weight of 100 plf. The roof framing is assumed to be trusses supported by the exterior walls only.
- Deflection is limited to L/360 at live load and L/240 at total load.
- PT-Lam LVL header sizes are based on the assumption that the floor joists are supported in the middle of the building by a beam or wall.

2.0E PT-LAM LVL ALLOWABLE LOADS FLOOR 100%

ALLOWABLE UNIFORM LOADS* – POUNDS PER LINEAL FOOT – 1¾" 2.0E PT-LAM LVL

Span (ft)	Key	One 1¾" PT-Lam LVL			Two 1¾" PT-Lam LVL					Three 1¾" PT-Lam LVL				
		9½"	11½"	14"	9½"	11½"	14"	16"	18"	9½"	11½"	14"	16"	18"
6	LL	-	-	-	-	-	-	-	-	-	-	-	-	-
	TL	1063	1425	1796	2127	2850	3591	4388	5304	3190	4275	5387	6582	7955
	BRG	2.2/5.4	2.9/7.2	3.6/9.1	2.2/5.4	2.9/7.2	3.6/9.1	4.4/11.1	5.4/13.4	2.2/5.4	2.9/7.2	3.6/9.1	4.4/11.1	5.4/13.4
8	LL	724	-	-	1447	-	-	-	-	2171	-	-	-	-
	TL	746	979	1208	1493	1958	2416	2887	3404	2239	2937	3624	4331	5105
	BRG	2/5	2.6/6.6	3.3/8.2	2/5	2.6/6.6	3.3/8.2	3.9/9.8	4.6/11.5	2/5	2.6/6.6	3.3/8.2	3.9/9.8	4.6/11.5
10	LL	370	724	-	741	1447	-	-	-	1111	2171	-	-	-
	TL	551	745	909	1103	1490	1819	2150	2504	1654	2236	2728	3224	3755
	BRG	1.9/4.7	2.5/6.3	3.1/7.7	1.9/4.7	2.5/6.3	3.1/7.7	3.6/9.1	4.2/10.6	1.9/4.7	2.5/6.3	3.1/7.7	3.6/9.1	4.2/10.6
11	LL	278	544	-	557	1087	-	-	-	835	1631	-	-	-
	TL	413	665	809	826	1331	1618	1905	2211	1240	1996	2427	2858	3316
	BRG	1.5/3.9	2.5/6.2	3/7.5	1.5/3.9	2.5/6.2	3/7.5	3.5/8.9	4.1/10.3	1.5/3.9	2.5/6.2	3/7.5	3.5/8.9	4.1/10.3
12	LL	214	419	686	429	837	1372	-	-	643	1256	2058	-	-
	TL	317	586	729	635	1172	1457	1711	1979	952	1758	2186	2566	2968
	BRG	1.5/3.2	2.4/6	3/7.4	1.5/3.2	2.4/6	3/7.4	3.5/8.7	4/10.1	1.5/3.2	2.4/6	3/7.4	3.5/8.7	4/10.1
13	LL	169	329	540	337	659	1079	-	-	506	988	1619	-	-
	TL	249	489	663	497	977	1325	1552	1790	746	1466	1988	2328	2686
	BRG	1.5/3	2.2/5.4	2.9/7.3	1.5/3	2.2/5.4	2.9/7.3	3.4/8.6	3.9/9.9	1.5/3	2.2/5.4	2.9/7.3	3.4/8.6	3.9/9.9
14	LL	135	264	432	270	527	864	1290	-	405	791	1296	1935	-
	TL	198	390	578	396	780	1156	1420	1635	595	1170	1734	2130	2452
	BRG	1.5/3	1.9/4.7	2.8/6.9	1.5/3	1.9/4.7	2.8/6.9	3.4/8.4	3.9/9.7	1.5/3	1.9/4.7	2.8/6.9	3.4/8.4	3.9/9.7
15	LL	110	214	351	220	429	703	1049	1493	329	643	1054	1573	2240
	TL	160	316	503	321	632	1006	1280	1504	481	949	1508	1921	2255
	BRG	1.5/3	1.6/4.1	2.6/6.4	1.5/3	1.6/4.1	2.6/6.4	3.3/8.2	3.8/9.6	1.5/3	1.6/4.1	2.6/6.4	3.3/8.2	3.8/9.6
16	LL	90	177	289	181	353	579	864	1230	271	530	868	1296	1846
	TL	131	260	428	263	519	856	1124	1391	394	779	1284	1685	2086
	BRG	1.5/3	1.5/3.6	2.3/5.8	1.5/3	1.5/3.6	2.3/5.8	3.1/7.7	3.8/9.5	1.5/3	1.5/3.6	2.3/5.8	3.1/7.7	3.8/9.5
17	LL	75	147	241	151	295	483	720	1026	226	442	724	1081	1539
	TL	109	216	356	218	431	711	994	1230	326	647	1067	1490	1845
	BRG	1.5/3	1.5/3.2	2.1/5.2	1.5/3	1.5/3.2	2.1/5.2	2.9/7.2	3.6/8.9	1.5/3	1.5/3.2	2.1/5.2	2.9/7.2	3.6/8.9
18	LL	64	124	203	127	248	407	607	864	191	372	610	910	1296
	TL	91	181	299	182	361	597	885	1095	273	542	896	1327	1643
	BRG	1.5/3	1.5/3	1.8/4.6	1.5/3	1.5/3	1.8/4.6	2.7/6.8	3.4/8.4	1.5/3	1.5/3	1.8/4.6	2.7/6.8	3.4/8.4
19	LL	54	105	173	108	211	346	516	735	162	316	519	774	1102
	TL	77	153	253	153	306	506	760	981	230	459	759	1139	1472
	BRG	1.5/3	1.5/3	1.7/4.1	1.5/3	1.5/3	1.7/4.1	2.5/6.2	3.2/8	1.5/3	1.5/3	1.7/4.1	2.5/6.2	3.2/8
20	LL	46	90	148	93	181	296	442	630	139	271	445	664	945
	TL	65	130	216	130	261	432	649	884	195	391	648	974	1326
	BRG	1.5/3	1.5/3	1.5/3.7	1.5/3	1.5/3	1.5/3.7	2.2/5.6	3/7.6	1.5/3	1.5/3	1.5/3.7	2.2/5.6	3/7.6
22	LL	35	68	111	70	136	223	332	473	104	204	334	499	710
	TL	48	97	161	96	193	321	484	694	144	290	482	726	1040
	BRG	1.5/3	1.5/3	1.5/3.1	1.5/3	1.5/3	1.5/3.1	1.8/4.6	2.6/6.6	1.5/3	1.5/3	1.5/3.1	1.8/4.6	2.6/6.6
24	LL	27	52	86	54	105	172	256	365	80	157	257	384	547
	TL	36	73	122	72	146	245	370	530	108	219	367	554	796
	BRG	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3.9	2.2/5.5	1.5/3	1.5/3	1.5/3	1.5/3.9	2.2/5.5
26	LL	21	41	67	42	82	135	201	287	63	124	202	302	430
	TL	27	56	95	55	113	190	288	414	82	169	284	431	621
	BRG	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3.3	1.9/4.7	1.5/3	1.5/3	1.5/3	1.5/3.3	1.9/4.7
28	LL	17	33	54	34	66	108	161	230	51	99	162	242	344
	TL	21	44	75	42	88	149	227	328	63	132	224	341	492
	BRG	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.6/4.1	1.5/3	1.5/3	1.5/3	1.5/3	1.6/4.1
30	LL	14	27	44	27	54	88	131	187	41	80	132	197	280
	TL	16	35	60	33	70	119	182	264	49	104	179	273	395
	BRG	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3.5	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3.5

* Can be applied to the PT-Lam LVL beam in addition to its own weight. Simple or multiple PT-Lam LVL beam spans.

Key to Table:

LL = Maximum live load – limits deflection to L/360

TL = Maximum total load – limits deflections to L/240

BRG = Required end/intermediate bearing length (inches), based on plate bearing stress of 850 psi.

2.0E PT-LAM LVL ALLOWABLE LOADS

FLOOR 100%

ALLOWABLE UNIFORM LOADS* – POUNDS PER LINEAL FOOT – 3½" 2.0E PT-LAM LVL

Span (ft)	Key	One 3½" PT-Lam LVL					Two 3½" PT-Lam LVL				
		9½"	11¾"	14"	16"	18"	9½"	11¾"	14"	16"	18"
6	LL	-	-	-	-	-	-	-	-	-	-
	TL	2127	2850	3591	4388	5304	4254	5700	7182	8776	10607
	BRG	2.2/5.4	2.9/7.2	3.6/9.1	4.4/11.1	5.4/13.4	2.2/5.4	2.9/7.2	3.6/9.1	4.4/11.1	5.4/13.4
8	LL	1447	-	-	-	-	2894	-	-	-	-
	TL	1493	1958	2416	2887	3404	2985	3917	4832	5775	6807
	BRG	2/5	2.6/6.6	3.3/8.2	3.9/9.8	4.6/11.5	2/5	2.6/6.6	3.3/8.2	3.9/9.8	4.6/11.5
10	LL	741	1447	-	-	-	1482	2894	-	-	-
	TL	1103	1490	1819	2150	2504	2206	2981	3637	4299	5007
	BRG	1.9/4.7	2.5/6.3	3.1/7.7	3.6/9.1	4.2/10.6	1.9/4.7	2.5/6.3	3.1/7.7	3.6/9.1	4.2/10.6
11	LL	557	1087	-	-	-	1113	2175	-	-	-
	TL	826	1331	1618	1905	2211	1653	2662	3236	3811	4421
	BRG	1.5/3.9	2.5/6.2	3/7.5	3.5/8.9	4.1/10.3	1.5/3.9	2.5/6.2	3/7.5	3.5/8.9	4.1/10.3
12	LL	429	837	1372	-	-	858	1675	2745	-	-
	TL	635	1172	1457	1711	1979	1269	2344	2915	3422	3957
	BRG	1.5/3.2	2.4/6	3/7.4	3.5/8.7	4/10.1	1.5/3.2	2.4/6	3/7.4	3.5/8.7	4/10.1
13	LL	337	659	1079	-	-	675	1317	2159	-	-
	TL	497	977	1325	1552	1790	994	1954	2650	3104	3581
	BRG	1.5/3	2.2/5.4	2.9/7.3	3.4/8.6	3.9/9.9	1.5/3	2.2/5.4	2.9/7.3	3.4/8.6	3.9/9.9
14	LL	270	527	864	1290	-	540	1055	1728	2580	-
	TL	396	780	1156	1420	1635	793	1561	2312	2840	3269
	BRG	1.5/3	1.9/4.7	2.8/6.9	3.4/8.4	3.9/9.7	1.5/3	1.9/4.7	2.8/6.9	3.4/8.4	3.9/9.7
15	LL	220	429	703	1049	1493	439	858	1405	2098	2987
	TL	321	632	1006	1280	1504	641	1265	2011	2561	3007
	BRG	1.5/3	1.6/4.1	2.6/6.4	3.3/8.2	3.8/9.6	1.5/3	1.6/4.1	2.6/6.4	3.3/8.2	3.8/9.6
16	LL	181	353	579	864	1230	362	707	1158	1728	2461
	TL	263	519	856	1124	1391	525	1038	1711	2247	2781
	BRG	1.5/3	1.5/3.6	2.3/5.8	3.1/7.7	3.8/9.5	1.5/3	1.5/3.6	2.3/5.8	3.1/7.7	3.8/9.5
17	LL	151	295	483	720	1026	302	589	965	1441	2052
	TL	218	431	711	994	1230	435	862	1423	1987	2460
	BRG	1.5/3	1.5/3.2	2.1/5.2	2.9/7.2	3.6/8.9	1.5/3	1.5/3.2	2.1/5.2	2.9/7.2	3.6/8.9
18	LL	127	248	407	607	864	254	496	813	1214	1728
	TL	182	361	597	885	1095	364	723	1194	1769	2191
	BRG	1.5/3	1.5/3	1.8/4.6	2.7/6.8	3.4/8.4	1.5/3	1.5/3	1.8/4.6	2.7/6.8	3.4/8.4
19	LL	108	211	346	516	735	216	422	691	1032	1470
	TL	153	306	506	760	981	307	611	1012	1519	1963
	BRG	1.5/3	1.5/3	1.7/4.1	2.5/6.2	3.2/8	1.5/3	1.5/3	1.7/4.1	2.5/6.2	3.2/8
20	LL	93	181	296	442	630	185	362	593	885	1260
	TL	130	261	432	649	884	261	521	864	1298	1768
	BRG	1.5/3	1.5/3	1.5/3.7	2.2/5.6	3/7.6	1.5/3	1.5/3	1.5/3.7	2.2/5.6	3/7.6
22	LL	70	136	223	332	473	139	272	445	665	947
	TL	96	193	321	484	694	191	386	643	968	1387
	BRG	1.5/3	1.5/3	1.5/3.1	1.8/4.6	2.6/6.6	1.5/3	1.5/3	1.5/3.1	1.8/4.6	2.6/6.6
24	LL	54	105	172	256	365	107	209	343	512	729
	TL	72	146	245	370	530	144	292	489	739	1061
	BRG	1.5/3	1.5/3	1.5/3	1.5/3.9	2.2/5.5	1.5/3	1.5/3	1.5/3	1.5/3.9	2.2/5.5
26	LL	42	82	135	201	287	84	165	270	403	574
	TL	55	113	190	288	414	109	225	379	575	828
	BRG	1.5/3	1.5/3	1.5/3	1.5/3.3	1.9/4.7	1.5/3	1.5/3	1.5/3	1.5/3.3	1.9/4.7
28	LL	34	66	108	161	230	68	132	216	322	459
	TL	42	88	149	227	328	84	176	299	455	656
	BRG	1.5/3	1.5/3	1.5/3	1.5/3	1.6/4.1	1.5/3	1.5/3	1.5/3	1.5/3	1.6/4.1
30	LL	27	54	88	131	187	55	107	176	262	373
	TL	33	70	119	182	264	65	139	238	364	527
	BRG	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3.5	1.5/3	1.5/3	1.5/3	1.5/3	1.5/3.5

*Can be applied to the PT-Lam LVL beam in addition to its own weight. Simple or multiple PT-Lam LVL beam spans.

Key to Table:

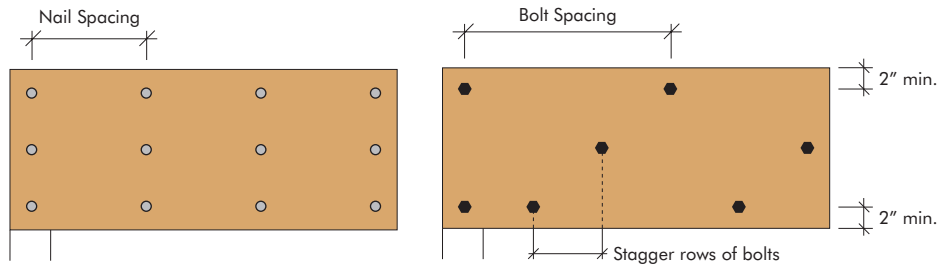
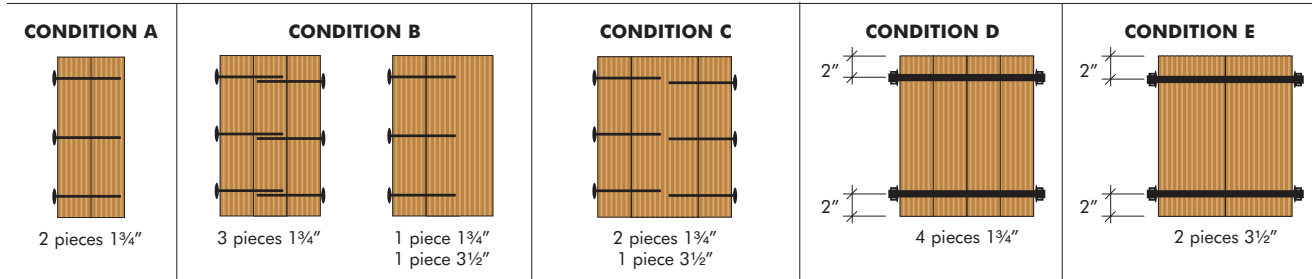
LL = Maximum live load – limits deflection to L/360

TL = Maximum total load – limits deflections to L/240

BRG = Required end/intermediate bearing length (inches), based on plate bearing stress of 850 psi.

MULTIPLE-PLY PT-LAM LVL BEAM ASSEMBLY

COMBINATIONS OF 1 3/4" AND 3 1/2" PLYS



MAXIMUM UNIFORM SIDE LOAD (PLF) 2.0E PT-LAM LVL

Pieces in Member	3 1/2" x 0.131" Nails		16d Common Nails		1/2" Bolts		
	2 rows at 12" o.c.	3 rows at 12" o.c.	2 rows at 12" o.c.	3 rows at 12" o.c.	2 rows at 24" o.c.	2 rows at 12" o.c.	3 rows at 12" o.c.
Condition A (2 - 1 3/4")	390	585	505	760	510	1015	1520
Condition B (3 - 1 3/4")	290	435	380	570	380	760	1140
Condition C (2 - 1 3/4" + 1 - 3 1/2")	260	390	340	505	465	930	1395
Condition D (4 - 1 3/4")	use bolts for this condition				340	680	1015
Condition E (2 - 3 1/2")	use bolts for this condition				860	1720	2580

Notes:

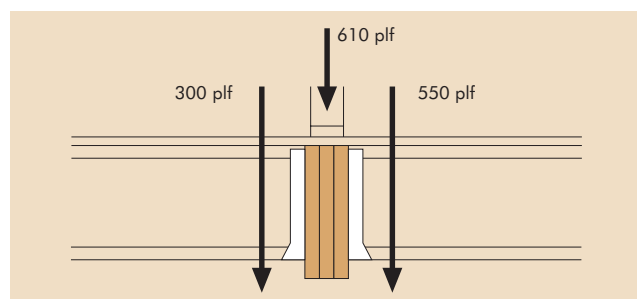
- Minimum fastener schedule for smaller side loads and top-loaded PT-Lam LVL beams:
 Conditions A, B & C, beams 12" deep or less:
 2 rows 3 1/2" x 0.131" at 12" o.c.
 Conditions A, B & C, beams deeper than 12":
 3 rows 3 1/2" x 0.131" at 12" o.c.
 Conditions D & E, all beam depths:
 2 rows 1/2" bolts at 24" o.c.
- The table values for nails may be doubled for 6" o.c. and tripled for 4" o.c. nail spacings.
- The nail schedules shown apply to both sides of a three-ply PT-Lam LVL beam.
- The table values apply to common bolts that conform to ANSI/ASME Standard B18.2.1-1981. A washer not less than a standard cut washer shall be between the wood and the bolt head and between the wood and the nut. The distance from the edge of the PT-Lam LVL beam to the bolt holes must be at least 2" for 1/2" bolts. Bolt holes shall be the same diameter as the bolt.
- 7" wide PT-Lam LVL beams must be loaded from both sides and/or top loaded.
- PT-Lam LVL beams wider than 7" must be designed by the engineer of record.
- Load duration factors may be applied to the table values.

HOW TO USE THE MAXIMUM UNIFORM SIDE LOAD TABLE

EXAMPLE:

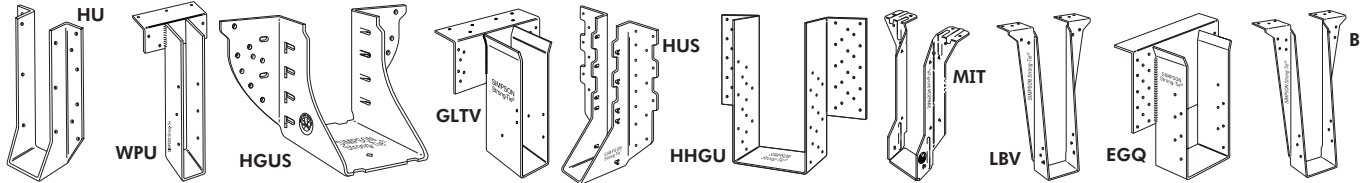
2.0E PT-Lam LVL beam loaded from both sides and above THREE 1 3/4" PLYS (CONDITION B)

- Use allowable load tables or sizing software to size the PT-Lam LVL beam to carry a total load of (300 + 610 + 550) = 1460 plf.
- Refer to the 2.0E PT-Lam LVL table for beam assembly requirements. Refer to the Condition B row in the table. Scan across the Condition B row from left to right for a table value greater than 550 plf, which is the greatest side load carried by the beam. The fourth value in the row indicates that 3 rows of 16d common nails at 12" o.c. will accommodate a side load of 570 plf which is greater than the 550 plf required. Use 3 rows of 16d common nails at 12" o.c., from both sides, to assemble the beam.



FACE MOUNT HANGERS

Single Ply – 1¾" wide			Double Ply – 3½" wide			Triple Ply – 5¼" wide			Quadruple Ply – 7" wide		
Depth	Hanger	Load (100%)	Depth	Hanger	Load (100%)	Depth	Hanger	Load (100%)	Depth	Hanger	Load (100%)
5½"	HU1.81/5	2145	5½"	HU46	1390	5½"	HU66	1390	5½"	See Simpson Wood Construction Connectors catalog for hanger solution	
7¼"	HU7	2145	7¼"	HHUS48	3885	7¼"	HU68	1875	7¼"	See Simpson Wood Construction Connectors catalog for hanger solution	
				HGUS48	3940						
9½"	HU9	3215	9½"	HHUS410	5190	9½"	HHUS5.50/10	5190	9½"	HHUS7.25/10	5190
	HUS1.81/10	4900		HGUS410	8780		HGUS5.50/10	8780		HGUS7.25/10	8780
11⅞"	HU11	4020	11⅞"	HHUS410	5190	11⅞"	HHUS5.50/10	5190	11⅞"	HHUS7.25/10	5190
	HUS1.81/10	4900		HGUS412	9155		HGUS5.50/12	9155		HGUS7.25/12	9835
14"	HU14	4540	14"	HHUS410	5190	14"	HHUS5.50/10	5190	14"	HGUS7.25/14	11110
	HUS1.81/10	4900		HGUS414	10015		HGUS5.50/14	10015		HGU7.25-SDS	14060
16"	HU14	4540	16"	HHUS410	5190	16"	HHUS5.50/10	5190	16"	HGUS7.25/14	11110
				HGUS414	10015		HGUS5.50/14	10015		HHGU7.25-SDS	16700
18"	HU14	4540	18"	HHUS410	5190	18"	HHUS5.50/14	10015	18"	HGUS7.25/14	11110
				HGUS414	10015		HGU5.50-SDS	14060		HHGU7.25-SDS	16700



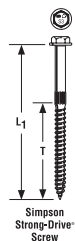
TOP FLANGE HANGERS

Single Ply – 1¾" wide			Double Ply – 3½" wide			Triple Ply – 5¼" wide			Quadruple Ply – 7" wide		
Depth	Hanger	Load (100%)	Depth	Hanger	Load (100%)	Depth	Hanger	Load (100%)	Depth	Hanger	Load (100%)
5½"	See Simpson Wood Construction Connectors catalog for hanger solution		5½"	See Simpson Wood Construction Connectors catalog for hanger solution		5½"	See Simpson Wood Construction Connectors catalog for hanger solution		5½"	See Simpson Wood Construction Connectors catalog for hanger solution	
7¼"	LBV1.81/7.25	2910	7¼"	LBV3.56/7.25	2910	7¼"	WPU5.50/7.25	4700	7¼"	HWU7.12/7.25	6000
	MIT9.5	2550		WPU3.56/9.5	4700		HB5.50/7.25	5815		HB7.12/9.5	5815
9½"	LBV1.81/9.5	2910	9½"	HB3.56/9.5	5815	9½"	GLTV5.59	7500	9½"	GLTV49.5-2	7500
	MIT1.88	2550		BA3.56/11.88	4715		HB5.50/11.88	5815		HB7.12/11.88	5815
	BA1.81/11.88	4715		HB3.56/11.88	5815		HGLTV5.511	10500		EGQ7.25-SDS3	19800
14"	MIT1.81/14	2550	14"	BA3.56/14	4715	14"	HB5.50/14	5815	14"	GLTV414-2	7500
	B1.81X	4135		GLTV3.514	7500		EGQ5.50-SDS3	19800		EGQ7.25-SDS3	19800
16"	MIT1.81/16	2550	16"	BA3.56/16	4715	16"	HB5.50/16	5815	16"	HGLTV416-2	10500
	B1.81/16	4135		GLTV3.516	7500		EGQ5.50-SDS3	19800		EGQ7.25-SDS3	19800
18"	B1.81X	4135	18"	HB3.56/18	5815	18"	HGLTV5.518	10500	18"	HGLTV418-2	10500
				HGLTV3.518	10500		EGQ5.50-SDS3	19800		EGQ7.25-SDS3	19800

Hanger Notes:

- Loads listed address hanger/header/fastener limitations assuming header material is Douglas Fir-Larch LVL manufactured in the U.S. Joist reaction should be checked by a qualified designer to ensure proper hanger selection.
- HU hangers – fill all round and triangle holes for load values shown.
- Loads shown are gravity (floor) loads. Other load durations may apply, refer to the current version of Wood Construction Connectors for allowable increases.
- Top Flange Hanger configurations and thickness of Top Flange needs to be considered for flush frame conditions.

SIMPSON STRONG-DRIVE™ SCREWS



INSTALLATION

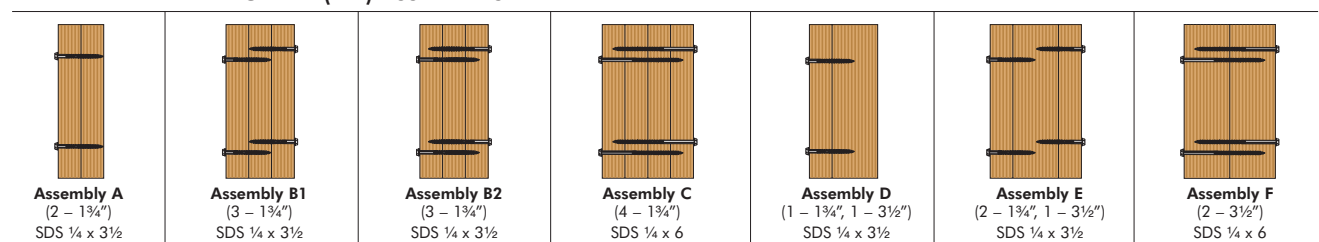
- Hex washer head allows for easy driving.
- No pre-drilling required.
- See illustrations below for SDS positioning on different assemblies.
- Install with high torque, low speed drill (5 amp+).
- Do not over-drive the SDS screws.

Model	L1	T	Head Stamp
SDS25312	3½"	2¼"	S3.5
SDS25412	4½"	2¾"	S4.5
SDS25600	6"	3¼"	S6

DESIGN

- Allowable load values are derived from testing based on ASTM D-1761. The Designer shall apply adjustment factors per current NDS. Loads shown are $C_D = 1.0$. Increase as allowed per code to a maximum $C_D = 1.33$.
- This document uses Douglas Fir-Larch values ($G = 0.5$), as per the manufacturer specifications.
- Loads shown are at 100%. Increase as allowed by code.
- The designer shall specify the location of all screws (stagger screws on opposite faces). Minimum recommended spacing—Wide Face: end distance 4", edge distance 1½", spacing parallel to grain 4", spacing perpendicular to grain 2".
- Uniform loads in the table below are based on the capacity of the fasteners to transfer loads between plies. The capacity of the LVL beam may be less and should be checked by a qualified designer or with the manufacturer's literature.

LAMINATED VENEER LUMBER (LVL) ASSEMBLIES



MAXIMUM ALLOWABLE UNIFORM LOAD THAT CAN BE APPLIED TO EITHER OUTSIDE MEMBER (LBS PER LINEAL FOOT)

Assembly	Multiple Members Components	SDS Screws, 12" o.c.		SDS Screws, 18" o.c.		SDS Screws, 24" o.c.	
		2 Rows	3 Rows	2 Rows	3 Rows	2 Rows	3 Rows
A	2 pieces (all 1¾")	960	1440	720	1080	480	720
B1	3 pieces (all 1¾")	720	1080	540	810	360	540
B2	3 pieces (all 1¾")	1380	2070	1035	1550	690	1035
C	4 pieces (all 1¾")	1225	1840	920	1380	615	920
D	2 pieces (1¾" – 3½")	720	1080	540	810	360	540
E	3 pieces (1¾" – 3½" – 1¾")	640	960	480	720	320	480
F	2 pieces (3½" – 3½")	960	1440	720	1080	480	720

- If 7" 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.
- Quantity and spacing of screws in table are for each screw head side of the assembly as shown in the assembly figures above.
- The design professional shall ensure that adequate lateral bracing is provided to prevent displacement of the beam due to the torsion created by the structural members framing into the side of the beam assembly.