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LP BUILDING PRODUCTS

SolidStart®
ENGINEERED WOOD PRODUCTS

Limit States Design

LP SolidStart

Light-Frame Commercial and Multifamily Technical Guide

LPI® 20Plus/32Plus/42Plus and LPI 36 and 56 Series I-Joists
2250F_b-1.5E, 2650F_b-1.9E and 2950F_b-2.0E LVL

Build With Us.®

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Light-Frame Commercial and Multifamily Building Solutions from LP Building Products.

LP® SolidStart® ENGINEERED WOOD PRODUCTS. ADVANTAGES YOU CAN USE.

LP SolidStart Engineered Wood Products provide solid, true and uniform building solutions for not only residential construction but for light-frame commercial and multifamily projects as well.

Our products deliver sustainability benefits and cost efficiencies that traditional lumber can't match. They offer superior strength, durability and consistency. They cut and work just like traditional wood with no knots, splits or voids. And they resist cupping, warping, twisting and shrinking. So you save time and money during construction while delivering advantages your customers will enjoy for years to come.

This guide features design information especially for builders using our engineered wood products in light-frame commercial and multifamily construction.

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I-JOISTS

LVL

GENERAL INFORMATION

Product Specifications & Design Values

LIMIT STATES DESIGN VALUES

Series	Depth	Weight (plf)	Factored Moment (lb-ft)	EI x 10^6 ($lb\text{-}in^2$)	K x 10^6 (lb-ft/in)	Factored Shear (lbs)
LPI 20Plus	9-1/2"	2.6	4670	185	0.358	1933
	11-7/8"	2.9	6250	318	0.438	2140
	14"	3.1	7320	474	0.512	2557
LPI 32Plus	9-1/2"	2.6	5570	221	0.358	1986
	11-7/8"	2.9	7210	375	0.438	2140
	14"	3.1	8680	549	0.512	2557
	16"	3.3	10065	743	0.582	2949
LPI 42Plus	9-1/2"	3.4	8940	328	0.501	2060
	11-7/8"	3.5	11585	555	0.613	2549
	14"	3.8	13950	810	0.716	2889
	16"	4.0	16180	1100	0.813	3188
	18"	4.4	18290	1405	0.976	4611
	20"	4.6	20245	1779	1.081	5147
	22"	5.2	22175	2199	1.186	5684
	24"	5.5	24080	2668	1.291	6086
LPI 36	11-7/8"	3.1	10715	429	0.468	2549
	14"	3.4	12900	622	0.550	2889
	16"	3.6	14960	836	0.625	3188
	18"	3.9	16860	1082	0.700	3449
	20"	4.1	18740	1360	0.774	3662
	22"	4.4	20610	1669	0.850	3843
	24"	4.6	22460	2010	0.922	3986
LPI 56	11-7/8"	4.5	16920	668	0.549	3062
	14"	4.8	20370	968	0.641	3537
	16"	5.0	23625	1301	0.729	4074
	18"	5.3	26630	1684	0.817	4611
	20"	5.5	29610	2115	0.905	5147
	22"	5.8	32560	2597	0.993	5684
	24"	6.0	35490	3127	1.081	6086

NOTES:

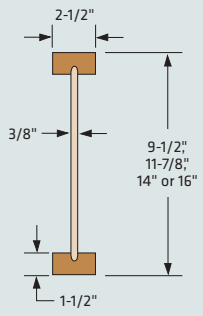
1. LP® SolidStart® I-Joists shall be designed for dry-use conditions only. Dry-use applies to products installed in dry, covered and well ventilated interior conditions in which the equivalent average moisture content in lumber will not exceed 15% nor a maximum of 19%.
2. Moment and Shear are the factored resistances for standard load duration and shall be adjusted according to code.
3. Moment resistance shall not be increased for repetitive member use.
4. Deflection calculations shall include both bending and shear deformations.

Deflection for a simple span, uniform load: $\Delta = \frac{22.5wL^4}{EI} + \frac{wL^2}{K}$ Where: Δ = deflection (in), w = uniform load (plf), L = design span (ft), EI = bending stiffness (from table), K = shear stiffness (from table)

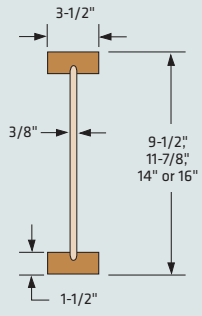
Equations for other conditions can be found in engineering references.

PROFILE DETAILS

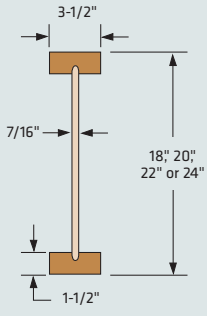
LPI 20PLUS & LPI 32PLUS



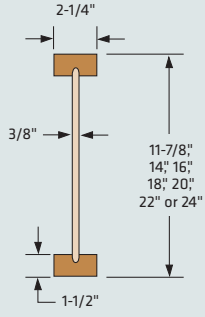
LPI 42PLUS



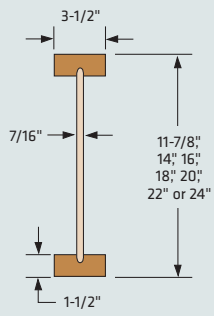
LPI 42PLUS



LPI 36



LPI 56



FACTORED REACTION AND BEARING RESISTANCE

Series	Depth	Factored End Reaction Resistance (lbs)					Factored Interior Reaction Resistance (lbs)				Flange Bearing Resistance (lb/in)
		Minimum Bearing			Maximum Bearing (4")		Minimum Bearing (3-1/2")		Maximum Bearing (5-1/2")		
		W/out Stiffeners	With Stiffeners	Bearing Length (in)	W/out Stiffeners	With Stiffeners	W/out Stiffeners	With Stiffeners	W/out Stiffeners	With Stiffeners	
LPI 20Plus	9-1/2"	1530	1800	1-1/2"	1750	1930	3260	3750	3680	4160	1382
	11-7/8"	1530	2010	1-1/2"	1825	2140	3530	3985	3905	4465	
	14"	1530	2200	1-1/2"	1895	2555	3755	4205	4105	4745	
LPI 32Plus	9-1/2"	1530	1800	1-1/2"	1750	1930	3260	3750	3680	4160	1696
	11-7/8"	1530	2010	1-1/2"	1825	2140	3530	3985	3905	4465	
	14"	1530	2200	1-1/2"	1895	2555	3755	4205	4105	4745	
	16"	1530	2385	1-1/2"	1955	2950	3985	4410	4300	5010	
LPI 42Plus	9-1/2"	1830	2060	1-1/2"	2060	2060	4575	4885	4575	5045	2450
	11-7/8"	2020	2445	1-1/2"	2520	2550	4765	5270	4875	5550	
	14"	2020	2555	1-1/2"	2520	2890	4950	5625	5155	6005	
	16"	2020	2840	1-1/2"	2520	3190	5120	5960	5420	6440	
	18"	2275	3640	2-1/2"	2610	4610	5310	6765	5730	7300	
	20"	2275	3865	2-1/2"	2610	5145	5310	6960	5730	7630	
	22"	2275	4095	2-1/2"	2610	5685	5310	7150	5730	7940	
	24"	2275	4270	2-1/2"	2610	6085	5310	7325	5730	8225	
LPI 36	11-7/8"	1894	2383	1-3/4"	1894	2383	4377	5424	4377	5424	1800
	14"	1894	2383	1-3/4"	1894	2383	4377	5524	4377	5524	
	16"	1894	2383	1-3/4"	1894	2383	4377	5524	4377	5524	
	18"	1736	2840	2-1/2"	1736	2840	4377	5524	4377	5524	
	20"	1736	2931	2-1/2"	1736	2931	4377	5524	4377	5524	
	22"	1736	3008	2-1/2"	1736	3008	4377	5524	4377	5524	
	24"	1736	3070	2-1/2"	1736	3070	4377	5524	4377	5524	
LPI 56	11-7/8"	2210	2904	1-3/4"	2210	2904	5998	6314	5998	6314	2800
	14"	2210	2904	1-3/4"	2210	2904	5998	6314	5998	6314	
	16"	2210	2904	1-3/4"	2210	2904	5998	6314	5998	6314	
	18"	2616	3635	2-1/2"	2616	3635	5998	7892	5998	7892	
	20"	2616	3866	2-1/2"	2616	3866	5998	7892	5998	7892	
	22"	2616	4096	2-1/2"	2616	4096	5998	7892	5998	7892	
	24"	2616	4268	2-1/2"	2616	4268	5998	7892	5998	7892	

NOTES:

1. End and Interior Reaction Resistance shall be limited by the Flange Bearing Resistance or the bearing resistance of the support material, whichever is less. The Flange Bearing Resistance, per inch of bearing length, is based on the compression perpendicular-to-grain of the I-Joist flange, accounting for eased edges, and may be further limited by the bearing strength of the support material. The bearing resistance of a wood support is based on the species of the lumber or type of composite lumber – for SPF lumber, the Flange Bearing Resistance of the LPI 20Plus may be used.
2. Reaction Resistance, Flange Bearing Resistance and the bearing resistance of any wood support are for standard load duration and shall be reduced according to code for longer loading duration.
3. Reaction Resistance and Flange Bearing Resistance may be increased over that tabulated for the minimum bearing length. Linear interpolation of the Reaction Resistance between the minimum and maximum bearing length is permitted. Bearing lengths longer than the maximum do not further increase Reaction Resistance. Flange Bearing Resistance and that of a wood support will increase with additional bearing length.

EXAMPLE:

Determine the stiffened end reaction resistance for a 14" LPI 20Plus with 2" of bearing, supported on an SPF wall plate.

1. Determine ER w/ Stiffeners:
   ER = 2200 + (2555 - 2200) * (2" - 1.5")/(4" - 1.5") = 2271 lbs
2. Determine Flange Bearing Resistance: FBR = 1382 lb/in * 2" = 2764 lbs
3. Determine wall plate bearing capacity: since wall plate is SPF, use same as LPI 20Plus = 2764 lbs
4. Final End Reaction Resistance w/ Stiffeners = 2271 lbs

RIM AND BLOCKING CAPACITY

Series	Depth	Factored Vertical Resistance (plf)
LPI 20Plus	9-1/2"	2670
	11-7/8"	2470
	14"	2250
LPI 32Plus & LPI 42Plus	9-1/2"	3090
	11-7/8"	3090
	14"	2250
	16"	2110
LPI 42Plus	18"	2380
	20"	2220
	22"	1820
	24"	1540
LPI 36	11-7/8"	2530
	14"	2530
	16"	2530
	18"	1820
	20"	1820
	22"	1680
	24"	1540
LPI 56	11-7/8"	3380
	14"	3100
	16"	2670
	18"	2380
	20"	2220
	22"	1820
	24"	1450

NOTES:

1. The Factored Vertical Resistance is the capacity in pounds per lineal foot of length (plf) and shall not be adjusted for load duration.
2. Concentrated vertical loads require the addition of squash blocks. Do not use LPI rim or blocking to support concentrated vertical loads.
3. Lateral load resistance for all series above is 260 plf but may be limited by the connection details used. Do not exceed the Flange Face Nailing requirements above.

FLANGE FACE NAILING

Series	Common Wire Nail Size	Minimum Nail Distance	
		OC Spacing	End
LPI 20Plus LPI 32Plus & LPI 42Plus	2-1/2"	2"	1"
	3"	3"	1-1/2"
	3-1/4"	3"	1-1/2"
	3-1/2"	4"	1-1/2"
LPI 36 & LPI 56	2-1/2"	3"	1-1/2"
	3" or 3-1/4"	3"	1-1/2"
	3-1/2"	5"	1-1/2"

NOTES:

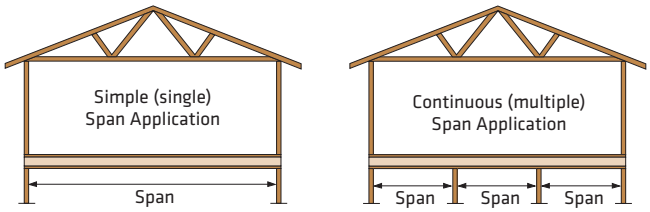
1. Use only 2-1/2" or 3" nails when securing an LPI floor or roof joist to its supports.
2. Power-driven nails shall have a yield strength equivalent to common wire nails of the same shank diameter.

Floor Span Tables: 40 psf Live Load, 25 psf Dead Load, 23/32" OSB Sheathing

TO USE:

1. Select the appropriate table based on the floor system construction.
2. Select the Simple Span or Continuous Span section of the table, as required.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding joist series, depth and spacing.

CAUTION: For floor systems that require both simple span and continuous span joists, it is a good idea to check both before selecting a joist. Some conditions are controlled by continuous span strength rather than simple span deflection or vibration.



40 PSF LIVE LOAD, 25 PSF DEAD LOAD: 23/32" OSB SHEATHING, GLUED & NAILED

Series	Depth	No Direct Attached Ceiling								Direct Attached 1/2" Gypsum Ceiling							
		Maximum Simple Spans				Maximum Continuous Spans				Maximum Simple Spans				Maximum Continuous Spans			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
LPI 20Plus	**9-1/2"**	16'-5"	15'-5"	14'-11"	14'-0"	17'-9"	16'-9"	15'-9"	**14'-1"**	16'-10"	15'-11"	15'-2"	14'-0"	18'-3"	17'-3"	15'-9"	**14'-1"**
	11-7/8"	18'-5"	17'-4"	16'-8"	16'-0"	20'-5"	18'-11"	18'-1"	**16'-4"**	19'-1"	17'-10"	17'-2"	16'-4"	21'-2"	19'-8"	18'-3"	**16'-4"**
	14"	20'-6"	19'-0"	18'-2"	**17'-5"**	22'-8"	21'-1"	19'-9"	**17'-8"**	21'-3"	19'-9"	18'-11"	**17'-9"**	23'-7"	21'-8"	19'-9"	**17'-8"**
LPI 32Plus	**9-1/2"**	16'-11"	15'-11"	15'-4"	14'-9"	18'-4"	17'-3"	16'-7"	**15'-4"**	17'-3"	16'-4"	15'-9"	14'-10"	18'-11"	17'-8"	17'-1"	**15'-4"**
	11-7/8"	19'-1"	17'-9"	17'-2"	16'-5"	21'-2"	19'-7"	18'-8"	**17'-2"**	19'-9"	18'-4"	17'-7"	16'-11"	21'-10"	20'-4"	**19'-5"**	**17'-2"**
	14"	21'-2"	19'-7"	18'-9"	**17'-10"**	23'-5"	21'-9"	**20'-9"**	**18'-2"**	21'-11"	20'-4"	19'-5"	**18'-5"**	24'-3"	22'-6"	**21'-6"**	**18'-2"**
	16"	23'-0"	21'-4"	20'-4"	**19'-3"**	25'-6"	23'-7"	**22'-6"**	**19'-1"**	23'-10"	22'-1"	21'-1"	**20'-0"**	26'-4"	24'-6"	**23'-3"**	**19'-1"**
LPI 42Plus	**9-1/2"**	18'-2"	17'-1"	16'-6"	15'-10"	20'-1"	18'-8"	17'-10"	17'-1"	18'-8"	17'-5"	16'-10"	16'-1"	20'-7"	19'-2"	18'-3"	17'-6"
	11-7/8"	21'-0"	19'-5"	18'-6"	17'-8"	23'-3"	21'-6"	20'-6"	19'-5"	21'-6"	19'-11"	19'-0"	18'-0"	23'-10"	22'-1"	21'-1"	20'-0"
	14"	23'-4"	21'-6"	20'-6"	19'-5"	25'-9"	23'-10"	22'-8"	**21'-6"**	23'-11"	22'-2"	21'-1"	20'-0"	26'-5"	24'-6"	23'-5"	**22'-2"**
	16"	25'-4"	23'-5"	22'-4"	21'-2"	28'-1"	25'-11"	24'-8"	**23'-5"**	26'-0"	24'-1"	23'-0"	21'-9"	28'-9"	26'-8"	25'-6"	**24'-2"**
	18"	27'-3"	25'-2"	23'-11"	22'-8"	30'-1"	27'-10"	26'-6"	**25'-1"**	27'-11"	25'-11"	24'-8"	23'-5"	30'-11"	28'-8"	27'-4"	**25'-11"**
	20"	**29'-1"**	**26'-10"**	**25'-7"**	**24'-2"**	**32'-2"**	**29'-9"**	**28'-3"**	**26'-9"**	**29'-10"**	**27'-8"**	**26'-4"**	**25'-0"**	**33'-4"**	**30'-8"**	**29'-3"**	**27'-8"**
	22"	**30'-10"**	**28'-6"**	**27'-1"**	**25'-8"**	**34'-10"**	**31'-6"**	**30'-0"**	**28'-4"**	**31'-8"**	**29'-4"**	**28'-0"**	**26'-6"**	**36'-1"**	**32'-8"**	**31'-0"**	**29'-5"**
	24"	**32'-9"**	**30'-1"**	**28'-7"**	**27'-1"**	**37'-5"**	**33'-8"**	**31'-8"**	**29'-11"**	**33'-11"**	**31'-0"**	**29'-7"**	**28'-0"**	**38'-9"**	**35'-1"**	**33'-0"**	**30'-5"**
LPI 36	**11-7/8"**	19'-8"	18'-3"	17'-6"	16'-10"	21'-10"	20'-2"	19'-3"	18'-3"	20'-3"	18'-10"	18'-0"	17'-3"	22'-5"	20'-10"	19'-11"	18'-11"
	14"	21'-10"	20'-2"	19'-3"	18'-3"	24'-2"	22'-4"	21'-4"	**20'-0"**	22'-6"	20'-10"	19'-11"	18'-11"	24'-11"	23'-1"	22'-1"	**20'-0"**
	16"	23'-8"	21'-11"	20'-10"	19'-9"	26'-2"	24'-3"	23'-1"	**20'-0"**	24'-5"	22'-8"	21'-7"	20'-6"	27'-0"	25'-1"	**24'-0"**	**20'-0"**
	18"	25'-5"	23'-6"	22'-5"	**21'-3"**	28'-2"	26'-0"	**24'-10"**	**20'-0"**	26'-3"	24'-4"	23'-3"	**22'-0"**	29'-1"	27'-0"	**25'-1"**	**20'-0"**
	20"	**27'-1"**	**25'-1"**	**23'-10"**	**22'-7"**	**30'-0"**	**27'-9"**	**25'-1"**	**20'-0"**	**28'-0"**	**26'-0"**	**24'-9"**	**23'-6"**	**31'-0"**	**28'-10"**	**25'-1"**	**20'-0"**
	22"	**28'-9"**	**26'-7"**	**25'-3"**	**23'-11"**	**31'-9"**	**29'-5"**	**25'-1"**	**20'-0"**	**29'-8"**	**27'-6"**	**26'-3"**	**24'-11"**	**33'-1"**	**30'-2"**	**25'-1"**	**20'-0"**
	24"	**30'-3"**	**28'-0"**	**26'-7"**	**25'-2"**	**34'-0"**	**30'-2"**	**25'-1"**	**20'-0"**	**31'-3"**	**29'-0"**	**27'-8"**	**26'-3"**	**35'-6"**	**30'-2"**	**25'-1"**	**20'-0"**
LPI 56	**11-7/8"**	21'-10"	20'-2"	19'-2"	18'-2"	24'-2"	22'-4"	21'-3"	20'-2"	22'-4"	20'-8"	19'-8"	18'-8"	24'-9"	22'-11"	21'-10"	20'-8"
	14"	24'-2"	22'-4"	21'-3"	20'-1"	26'-9"	24'-9"	23'-6"	22'-3"	24'-9"	22'-11"	21'-10"	20'-8"	27'-5"	25'-5"	24'-2"	22'-11"
	16"	26'-3"	24'-3"	23'-1"	21'-10"	29'-1"	26'-10"	25'-7"	24'-2"	26'-11"	24'-11"	23'-8"	22'-5"	29'-9"	27'-7"	26'-3"	24'-11"
	18"	28'-3"	26'-1"	24'-9"	23'-5"	31'-3"	28'-10"	27'-5"	25'-11"	28'-11"	26'-9"	25'-6"	24'-1"	32'-0"	29'-8"	28'-3"	**26'-9"**
	20"	**30'-1"**	**27'-9"**	**26'-5"**	**24'-11"**	**33'-9"**	**30'-9"**	**29'-3"**	**27'-8"**	**30'-10"**	**28'-6"**	**27'-2"**	**25'-8"**	**34'-11"**	**31'-8"**	**30'-2"**	**28'-6"**
	22"	**31'-11"**	**29'-5"**	**27'-11"**	**26'-5"**	**36'-6"**	**32'-9"**	**31'-0"**	**29'-3"**	**32'-11"**	**30'-3"**	**28'-9"**	**27'-3"**	**37'-8"**	**34'-1"**	**31'-11"**	**30'-3"**
	24"	**34'-2"**	**31'-0"**	**29'-5"**	**27'-10"**	**39'-2"**	**35'-2"**	**32'-10"**	**30'-10"**	**35'-4"**	**31'-11"**	**30'-4"**	**28'-8"**	**40'-5"**	**36'-7"**	**34'-3"**	**31'-9"**

NOTES:

1. Joist spans have been calculated in accordance with CSA 086S1-05 for the specified uniform floor loads listed. Concentrated load cases, where required, shall be evaluated by the designer.
2. The spans listed are the clear distance between supports. Continuous spans are based on the longest span. The shortest span shall not be less than 50% of the longest span. Refer to the Uplift Coefficients table below to determine the required uplift restraint for the end of the shorter span of continuous, unequal span joists.
3. Vibration has been checked in accordance with CCMC concluding report (dated September 4, 1997) with glued & nailed floor sheathing, with or without a direct attached 1/2" gypsum ceiling, as indicated in the table.
4. The floor sheathing shall be 1F24 rated OSB glued to the joists with an elastomeric adhesive conforming to CGSB Standard CAN-CGSB-71.26-M88.
5. Uniform load deflection has been limited to the following: L/360 on live load and L/240 on total load based on bare joist properties only. Long term deflection (creep) has not been considered. The designer shall evaluate live and total load deflection, and creep in the final design of the member.
6. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
7. Web stiffeners are not required for the spans in these tables except where **bold**. For spans in **bold**, web stiffeners shall be installed at all supports. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange or for hangers that require nailing into the web.
8. Provide lateral support at points of bearing to prevent twisting of joists.
9. Use in dry service conditions only.
10. For conditions not covered or for additional information contact your LP® SolidStart® Engineered Wood Products distributor.

UPLIFT COEFFICIENTS

Short span / Long span	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
Coefficient A	0.375	0.709	1.088	1.514	1.989	2.516	3.096	3.732	4.427	5.182	6.0
Coefficient B	6.0	6.82	7.68	8.58	9.52	10.5	11.52	12.58	13.68	14.82	16.0

NOTE:

For joists continuous over two or more spans, where the short span is at least 50% of the long span, the end of the short span shall be anchored to resist any uplift force as indicated by a negative value from the following:

Factored Uplift Force (lb) = $L * s * (A * D_f - L_f) / B$ (a negative value represents uplift that must be restrained)

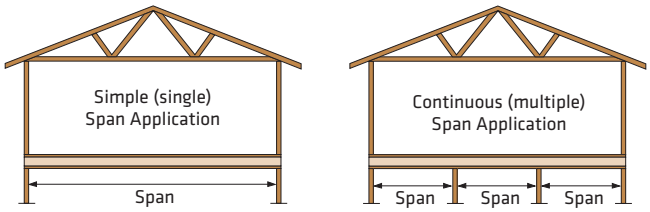
Where L = longest span (ft), s = joist spacing (ft), D_f = factored dead load (psf), L_f = factored live load (psf), A and B are coefficients given in the table.

Floor Span Tables: 40 psf Live Load, 35 psf Dead Load, 23/32" OSB Sheathing

TO USE:

1. Select the appropriate table based on the floor system construction.
2. Select the Simple Span or Continuous Span section of the table, as required.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding joist series, depth and spacing.

CAUTION: For floor systems that require both simple span and continuous span joists, it is a good idea to check both before selecting a joist. Some conditions are controlled by continuous span strength rather than simple span deflection or vibration.



40 PSF LIVE LOAD, 35 PSF DEAD LOAD: 23/32" OSB SHEATHING, GLUED & NAILED

Series	Depth	No Direct Attached Ceiling								Direct Attached 1/2" Gypsum Ceiling							
		Maximum Simple Spans				Maximum Continuous Spans				Maximum Simple Spans				Maximum Continuous Spans			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
LPI 20Plus	**9-1/2"**	16'-5"	15'-4"	14'-5"	13'-3"	17'-9"	16'-2"	14'-9"	**13'-2"**	16'-10"	15'-4"	14'-5"	13'-3"	18'-3"	16'-2"	14'-9"	**13'-2"**
	11-7/8"	18'-5"	17'-4"	16'-8"	**15'-4"**	20'-5"	18'-9"	**17'-1"**	**15'-1"**	19'-1"	17'-10"	17'-2"	**15'-4"**	21'-2"	18'-9"	**17'-1"**	**15'-1"**
	14"	20'-6"	19'-0"	18'-2"	**16'-7"**	22'-8"	20'-4"	**18'-6"**	**15'-11"**	21'-3"	19'-9"	18'-7"	**16'-7"**	23'-6"	20'-4"	**18'-6"**	**15'-11"**
LPI 32Plus	**9-1/2"**	16'-11"	15'-11"	15'-3"	14'-1"	18'-4"	17'-3"	**16'-1"**	**14'-2"**	17'-3"	16'-3"	15'-3"	14'-1"	18'-11"	17'-8"	**16'-1"**	**14'-2"**
	11-7/8"	19'-1"	17'-9"	17'-2"	**16'-5"**	21'-2"	19'-7"	**18'-5"**	**15'-1"**	19'-9"	18'-4"	17'-7"	**16'-6"**	21'-10"	**20'-2"**	**18'-5"**	**15'-1"**
	14"	21'-2"	19'-7"	**18'-9"**	**17'-10"**	23'-5"	**21'-9"**	**20'-0"**	**15'-11"**	21'-11"	20'-4"	**19'-5"**	**18'-1"**	24'-3"	**22'-2"**	**20'-0"**	**15'-11"**
	16"	23'-0"	21'-4"	**20'-4"**	**19'-3"**	25'-6"	**23'-7"**	**21'-0"**	**16'-9"**	23'-10"	22'-1"	**21'-1"**	**19'-6"**	26'-4"	**23'-10"**	**21'-0"**	**16'-9"**
LPI 42Plus	**9-1/2"**	18'-2"	17'-1"	16'-6"	15'-10"	20'-1"	18'-8"	17'-10"	15'-7"	18'-8"	17'-5"	16'-10"	16'-1"	20'-7"	19'-2"	18'-3"	15'-7"
	11-7/8"	21'-0"	19'-5"	18'-6"	17'-8"	23'-3"	21'-6"	20'-6"	**19'-5"**	21'-6"	19'-11"	19'-0"	18'-0"	23'-10"	22'-1"	21'-1"	**19'-5"**
	14"	23'-4"	21'-6"	20'-6"	19'-5"	25'-9"	23'-10"	22'-8"	**21'-5"**	23'-11"	22'-2"	21'-1"	**20'-0"**	26'-5"	24'-6"	23'-5"	**21'-5"**
	16"	25'-4"	23'-5"	22'-4"	**21'-2"**	28'-1"	25'-11"	**24'-8"**	**22'-8"**	26'-0"	24'-1"	23'-0"	**21'-9"**	28'-9"	26'-8"	**25'-6"**	**22'-8"**
	18"	27'-3"	25'-2"	23'-11"	**22'-8"**	30'-1"	27'-10"	**26'-6"**	**25'-1"**	27'-11"	25'-11"	24'-8"	**23'-5"**	30'-11"	28'-8"	**27'-4"**	**25'-9"**
	20"	**29'-1"**	**26'-10"**	**25'-7"**	**24'-2"**	**32'-2"**	**29'-9"**	**28'-3"**	**26'-7"**	**29'-10"**	**27'-8"**	**26'-4"**	**25'-0"**	**33'-4"**	**30'-8"**	**29'-3"**	**26'-7"**
	22"	**30'-10"**	**28'-6"**	**27'-1"**	**25'-8"**	**34'-10"**	**31'-6"**	**30'-0"**	**26'-8"**	**31'-8"**	**29'-4"**	**28'-0"**	**26'-6"**	**36'-1"**	**32'-8"**	**31'-0"**	**26'-8"**
	24"	**32'-9"**	**30'-1"**	**28'-7"**	**27'-1"**	**37'-5"**	**33'-8"**	**31'-8"**	**26'-8"**	**33'-11"**	**31'-0"**	**29'-7"**	**28'-0"**	**38'-9"**	**35'-1"**	**33'-0"**	**26'-8"**
LPI 36	**11-7/8"**	19'-8"	18'-3"	17'-6"	16'-10"	21'-10"	20'-2"	19'-3"	**17'-7"**	20'-3"	18'-10"	18'-0"	17'-3"	22'-5"	20'-10"	19'-11"	**17'-7"**
	14"	21'-10"	20'-2"	19'-3"	**18'-3"**	24'-2"	22'-4"	**21'-4"**	**17'-7"**	22'-6"	20'-10"	19'-11"	**18'-11"**	24'-11"	23'-1"	**22'-1"**	**17'-7"**
	16"	23'-8"	21'-11"	20'-10"	**19'-9"**	26'-2"	24'-3"	**22'-1"**	**17'-7"**	24'-5"	22'-8"	21'-7"	**20'-6"**	27'-0"	**25'-1"**	**22'-1"**	**17'-7"**
	18"	25'-5"	23'-6"	**22'-5"**	**21'-3"**	28'-2"	**26'-0"**	**22'-0"**	**17'-7"**	26'-3"	24'-4"	**23'-3"**	**22'-0"**	29'-1"	**26'-6"**	**22'-0"**	**17'-7"**
	20"	**27'-1"**	**25'-1"**	**23'-10"**	**22'-7"**	**30'-0"**	**26'-6"**	**22'-0"**	**17'-7"**	**28'-0"**	**26'-0"**	**24'-9"**	**23'-6"**	**31'-0"**	**26'-6"**	**22'-0"**	**17'-7"**
	22"	**28'-9"**	**26'-7"**	**25'-3"**	**23'-11"**	**31'-9"**	**26'-6"**	**22'-0"**	**17'-7"**	**29'-8"**	**27'-6"**	**26'-3"**	**24'-11"**	**33'-1"**	**26'-6"**	**22'-0"**	**17'-7"**
	24"	**30'-3"**	**28'-0"**	**26'-7"**	**25'-2"**	**34'-0"**	**26'-6"**	**22'-0"**	**17'-7"**	**31'-3"**	**29'-0"**	**27'-8"**	**26'-3"**	**35'-5"**	**26'-6"**	**22'-0"**	**17'-7"**
LPI 56	**11-7/8"**	21'-10"	20'-2"	19'-2"	18'-2"	24'-2"	22'-4"	21'-3"	20'-2"	22'-4"	20'-8"	19'-8"	18'-8"	24'-9"	22'-11"	21'-10"	20'-8"
	14"	24'-2"	22'-4"	21'-3"	20'-1"	26'-9"	24'-9"	23'-6"	22'-3"	24'-9"	22'-11"	21'-10"	20'-8"	27'-5"	25'-5"	24'-2"	**22'-11"**
	16"	26'-3"	24'-3"	23'-1"	**21'-10"**	29'-1"	26'-10"	25'-7"	**24'-1"**	26'-11"	24'-11"	23'-8"	**22'-5"**	29'-9"	27'-7"	26'-3"	**24'-1"**
	18"	28'-3"	26'-1"	24'-9"	23'-5"	31'-3"	28'-10"	27'-5"	**25'-11"**	28'-11"	26'-9"	25'-6"	24'-1"	32'-0"	29'-8"	28'-3"	**26'-9"**
	20"	**30'-1"**	**27'-9"**	**26'-5"**	**24'-11"**	**33'-9"**	**30'-9"**	**29'-3"**	**27'-8"**	**30'-10"**	**28'-6"**	**27'-2"**	**25'-8"**	**34'-11"**	**31'-8"**	**30'-2"**	**27'-11"**
	22"	**31'-11"**	**29'-5"**	**27'-11"**	**26'-5"**	**36'-6"**	**32'-9"**	**31'-0"**	**27'-11"**	**32'-11"**	**30'-3"**	**28'-9"**	**27'-3"**	**37'-8"**	**34'-1"**	**31'-11"**	**27'-11"**
	24"	**34'-2"**	**31'-0"**	**29'-5"**	**27'-10"**	**39'-2"**	**35'-2"**	**32'-10"**	**27'-11"**	**35'-4"**	**31'-11"**	**30'-4"**	**28'-8"**	**40'-5"**	**36'-7"**	**34'-3"**	**27'-11"**

NOTES:

1. Joist spans have been calculated in accordance with CSA 086S1-05 for the specified uniform floor loads listed. Concentrated load cases, where required, shall be evaluated by the designer.
2. The spans listed are the clear distance between supports. Continuous spans are based on the longest span. The shortest span shall not be less than 50% of the longest span. Refer to the Uplift Coefficients table below to determine the required uplift restraint for the end of the shorter span of continuous, unequal span joists.
3. Vibration has been checked in accordance with CCMC concluding report (dated September 4, 1997) with glued & nailed floor sheathing, with or without a direct attached 1/2" gypsum ceiling, as indicated in the table.
4. The floor sheathing shall be 1F24 rated OSB glued to the joists with an elastomeric adhesive conforming to CGSB Standard CAN-CGSB-71.26-M88.
5. Uniform load deflection has been limited to the following: L/360 on live load and L/240 on total load based on bare joist properties only. Long term deflection (creep) has not been considered. The designer shall evaluate live and total load deflection, and creep in the final design of the member.
6. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
7. Web stiffeners are not required for the spans in these tables except where **bold**. For spans in **bold**, web stiffeners shall be installed at all supports. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange or for hangers that require nailing into the web.
8. Provide lateral support at points of bearing to prevent twisting of joists.
9. Use in dry service conditions only.
10. For conditions not covered or for additional information contact your LP® SolidStart® Engineered Wood Products distributor.

UPLIFT COEFFICIENTS

Short span / Long span	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
Coefficient A	0.375	0.709	1.088	1.514	1.989	2.516	3.096	3.732	4.427	5.182	6.0
Coefficient B	6.0	6.82	7.68	8.58	9.52	10.5	11.52	12.58	13.68	14.82	16.0

NOTE:

For joists continuous over two or more spans, where the short span is at least 50% of the long span, the end of the short span shall be anchored to resist any uplift force as indicated by a negative value from the following:

Factored Uplift Force (lb) = $L * s * (A * D_f - L_f) / B$ (a negative value represents uplift that must be restrained)

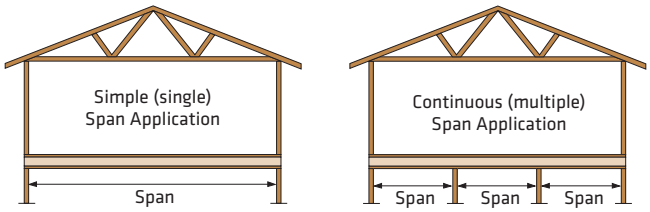
Where L = longest span (ft), s = joist spacing (ft), D_f = factored dead load (psf), L_f = factored live load (psf), A and B are coefficients given in the table.

Floor Span Tables: 50 psf Live Load, 35 psf Dead Load, 23/32" OSB Sheathing

TO USE:

1. Select the appropriate table based on the floor system construction.
2. Select the Simple Span or Continuous Span section of the table, as required.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding joist series, depth and spacing.

CAUTION: For floor systems that require both simple span and continuous span joists, it is a good idea to check both before selecting a joist. Some conditions are controlled by continuous span strength rather than simple span deflection or vibration.



50 PSF LIVE LOAD, 35 PSF DEAD LOAD: 23/32" OSB SHEATHING, GLUED & NAILED

Series	Depth	No Direct Attached Ceiling								Direct Attached 1/2" Gypsum Ceiling							
		Maximum Simple Spans				Maximum Continuous Spans				Maximum Simple Spans				Maximum Continuous Spans			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
LPI 20Plus	**9-1/2"**	16'-2"	14'-8"	13'-10"	12'-4"	17'-6"	15'-1"	**13'-9"**	**12'-3"**	16'-2"	14'-8"	13'-10"	12'-4"	17'-6"	15'-1"	**13'-9"**	**12'-3"**
	11-7/8"	18'-5"	17'-4"	16'-0"	**14'-4"**	20'-3"	17'-6"	**16'-0"**	**13'-2"**	19'-1"	17'-7"	16'-0"	**14'-4"**	20'-3"	17'-6"	**16'-0"**	**13'-2"**
	14"	20'-6"	19'-0"	**17'-4"**	**15'-6"**	21'-11"	**19'-0"**	**17'-4"**	**13'-11"**	21'-3"	19'-1"	**17'-4"**	**15'-6"**	21'-11"	**19'-0"**	**17'-4"**	**13'-11"**
LPI 32Plus	**9-1/2"**	16'-11"	15'-6"	14'-7"	**13'-6"**	18'-4"	**16'-6"**	**15'-1"**	**12'-4"**	17'-0"	15'-6"	14'-7"	**13'-6"**	18'-5"	**16'-6"**	**15'-1"**	**12'-4"**
	11-7/8"	19'-1"	17'-9"	**17'-2"**	**15'-5"**	21'-2"	**18'-10"**	**16'-6"**	**13'-2"**	19'-9"	18'-4"	**17'-3"**	**15'-5"**	21'-9"	**18'-10"**	**16'-6"**	**13'-2"**
	14"	21'-2"	**19'-7"**	**18'-9"**	**16'-11"**	23'-5"	**20'-8"**	**17'-5"**	**13'-11"**	21'-11"	**20'-4"**	**18'-11"**	**16'-11"**	23'-11"	**20'-8"**	**17'-5"**	**13'-11"**
	16"	23'-0"	**21'-4"**	**20'-4"**	**18'-3"**	25'-6"	**22'-0"**	**18'-4"**	**14'-7"**	23'-10"	**22'-1"**	**20'-5"**	**18'-3"**	25'-9"	**22'-0"**	**18'-4"**	**14'-7"**
LPI 42Plus	**9-1/2"**	18'-2"	17'-1"	16'-6"	15'-4"	20'-1"	18'-8"	17'-1"	13'-7"	18'-8"	17'-5"	16'-6"	15'-4"	20'-7"	19'-1"	17'-1"	13'-7"
	11-7/8"	21'-0"	19'-5"	18'-6"	**17'-8"**	23'-3"	21'-6"	**20'-6"**	**16'-11"**	21'-6"	19'-11"	19'-0"	**18'-0"**	23'-10"	22'-1"	**21'-1"**	**16'-11"**
	14"	23'-4"	21'-6"	20'-6"	**19'-5"**	25'-9"	23'-10"	**22'-8"**	**18'-8"**	23'-11"	22'-2"	21'-1"	**20'-0"**	26'-5"	24'-6"	**23'-5"**	**18'-8"**
	16"	25'-4"	23'-5"	**22'-4"**	**21'-2"**	28'-1"	**25'-11"**	**24'-8"**	**19'-9"**	26'-0"	24'-1"	**23'-0"**	**21'-9"**	28'-9"	**26'-8"**	**24'-10"**	**19'-9"**
	18"	27'-3"	25'-2"	**23'-11"**	**22'-8"**	30'-1"	**27'-10"**	**26'-6"**	**22'-6"**	27'-11"	25'-11"	**24'-8"**	**23'-5"**	30'-11"	**28'-8"**	**27'-4"**	**22'-6"**
	20"	**29'-1"**	**26'-10"**	**25'-7"**	**24'-2"**	**32'-2"**	**29'-9"**	**28'-3"**	**23'-2"**	**29'-10"**	**27'-8"**	**26'-4"**	**25'-0"**	**33'-4"**	**30'-8"**	**28'-11"**	**23'-2"**
	22"	**30'-10"**	**28'-6"**	**27'-1"**	**25'-8"**	**34'-10"**	**31'-6"**	**29'-2"**	**23'-3"**	**31'-8"**	**29'-4"**	**28'-0"**	**26'-6"**	**36'-1"**	**32'-8"**	**29'-2"**	**23'-3"**
	24"	**32'-9"**	**30'-1"**	**28'-7"**	**27'-1"**	**37'-5"**	**33'-8"**	**29'-2"**	**23'-3"**	**33'-11"**	**31'-0"**	**29'-7"**	**28'-0"**	**38'-9"**	**34'-7"**	**29'-2"**	**23'-3"**
LPI 36	**11-7/8"**	19'-8"	18'-3"	17'-6"	**16'-9"**	21'-10"	20'-2"	**19'-3"**	**15'-4"**	20'-3"	18'-10"	18'-0"	**16'-9"**	22'-5"	20'-10"	**19'-3"**	**15'-4"**
	14"	21'-10"	20'-2"	19'-3"	**18'-3"**	24'-2"	**22'-4"**	**19'-3"**	**15'-4"**	22'-6"	20'-10"	**19'-11"**	**18'-11"**	24'-11"	**23'-1"**	**19'-3"**	**15'-4"**
	16"	23'-8"	21'-11"	**20'-10"**	**19'-4"**	26'-2"	**23'-1"**	**19'-3"**	**15'-4"**	24'-5"	22'-8"	**21'-7"**	**19'-4"**	27'-0"	**23'-1"**	**19'-3"**	**15'-4"**
	18"	25'-5"	**23'-6"**	**22'-5"**	**21'-3"**	28'-2"	**23'-1"**	**19'-2"**	**15'-4"**	26'-3"	**24'-4"**	**23'-3"**	**22'-0"**	29'-1"	**23'-1"**	**19'-2"**	**15'-4"**
	20"	**27'-1"**	**25'-1"**	**23'-10"**	**22'-7"**	**30'-0"**	**23'-1"**	**19'-2"**	**15'-4"**	**28'-0"**	**26'-0"**	**24'-9"**	**23'-6"**	**30'-11"**	**23'-1"**	**19'-2"**	**15'-4"**
	22"	**28'-9"**	**26'-7"**	**25'-3"**	**23'-11"**	**30'-11"**	**23'-1"**	**19'-2"**	**15'-4"**	**29'-8"**	**27'-6"**	**26'-3"**	**24'-11"**	**30'-11"**	**23'-1"**	**19'-2"**	**15'-4"**
	24"	**30'-3"**	**28'-0"**	**26'-7"**	**25'-2"**	**30'-11"**	**23'-1"**	**19'-2"**	**15'-4"**	**31'-3"**	**29'-0"**	**27'-8"**	**25'-7"**	**30'-11"**	**23'-1"**	**19'-2"**	**15'-4"**
LPI 56	**11-7/8"**	21'-10"	20'-2"	19'-2"	18'-2"	24'-2"	22'-4"	21'-3"	**20'-2"**	22'-4"	20'-8"	19'-8"	**18'-8"**	24'-9"	22'-11"	21'-10"	**20'-4"**
	14"	24'-2"	22'-4"	21'-3"	**20'-1"**	26'-9"	24'-9"	23'-6"	**21'-0"**	24'-9"	22'-11"	21'-10"	**20'-8"**	27'-5"	25'-5"	24'-2"	**21'-0"**
	16"	26'-3"	24'-3"	23'-1"	**21'-10"**	29'-1"	26'-10"	**25'-7"**	**21'-0"**	26'-11"	24'-11"	**23'-8"**	**22'-5"**	29'-9"	27'-7"	**26'-3"**	**21'-0"**
	18"	28'-3"	26'-1"	24'-9"	**23'-5"**	31'-3"	28'-10"	**27'-5"**	**24'-4"**	28'-11"	26'-9"	25'-6"	**24'-1"**	32'-0"	29'-8"	**28'-3"**	**24'-4"**
	20"	**30'-1"**	**27'-9"**	**26'-5"**	**24'-11"**	**33'-9"**	**30'-9"**	**29'-3"**	**24'-4"**	**30'-10"**	**28'-6"**	**27'-2"**	**25'-8"**	**34'-11"**	**31'-8"**	**30'-2"**	**24'-4"**
	22"	**31'-11"**	**29'-5"**	**27'-11"**	**26'-5"**	**36'-6"**	**32'-9"**	**30'-6"**	**24'-4"**	**32'-11"**	**30'-3"**	**28'-9"**	**27'-3"**	**37'-8"**	**34'-1"**	**30'-6"**	**24'-4"**
	24"	**34'-2"**	**31'-0"**	**29'-5"**	**27'-10"**	**39'-2"**	**35'-2"**	**30'-6"**	**24'-4"**	**35'-4"**	**31'-11"**	**30'-4"**	**28'-8"**	**40'-5"**	**36'-7"**	**30'-6"**	**24'-4"**

NOTES:

1. Joist spans have been calculated in accordance with CSA 086S1-05 for the specified uniform floor loads listed. Concentrated load cases, where required, shall be evaluated by the designer.
2. The spans listed are the clear distance between supports. Continuous spans are based on the longest span. The shortest span shall not be less than 50% of the longest span. Refer to the Uplift Coefficients table below to determine the required uplift restraint for the end of the shorter span of continuous, unequal span joists.
3. Vibration has been checked in accordance with CCMC concluding report (dated September 4, 1997) with glued & nailed floor sheathing, with or without a direct attached 1/2" gypsum ceiling, as indicated in the table.
4. The floor sheathing shall be 1F24 rated OSB glued to the joists with an elastomeric adhesive conforming to CGSB Standard CAN-CGSB-71.26-M88.
5. Uniform load deflection has been limited to the following: L/360 on live load and L/240 on total load based on bare joist properties only. Long term deflection (creep) has not been considered.
6. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
7. Web stiffeners are not required for the spans in these tables except where **bold**. For spans in **bold**, web stiffeners shall be installed at all supports. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange or for hangers that require nailing into the web.
8. Provide lateral support at points of bearing to prevent twisting of joists.
9. Use in dry service conditions only.
10. For conditions not covered or for additional information contact your LP® SolidStart® Engineered Wood Products distributor.

UPLIFT COEFFICIENTS

Short span / Long span	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
Coefficient A	0.375	0.709	1.088	1.514	1.989	2.516	3.096	3.732	4.427	5.182	6.0
Coefficient B	6.0	6.82	7.68	8.58	9.52	10.5	11.52	12.58	13.68	14.82	16.0

NOTE:

For joists continuous over two or more spans, where the short span is at least 50% of the long span, the end of the short span shall be anchored to resist any uplift force as indicated by a negative value from the following:

Factored Uplift Force (lb) = L * s * (A * D_f - L_f) / B (a negative value represents uplift that must be restrained)

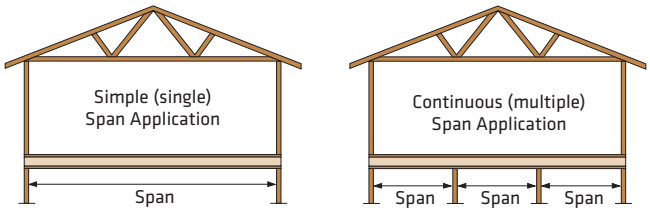
Where L = longest span (ft), s = joist spacing (ft), D_f = factored dead load (psf), L_f = factored live load (psf), A and B are coefficients given in the table.

Floor Span Tables: 50 psf Live Load, 45 psf Dead Load, 23/32" OSB Sheathing

TO USE:

1. Select the appropriate table based on the floor system construction.
2. Select the Simple Span or Continuous Span section of the table, as required.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding joist series, depth and spacing.

CAUTION: For floor systems that require both simple span and continuous span joists, it is a good idea to check both before selecting a joist. Some conditions are controlled by continuous span strength rather than simple span deflection or vibration.



50 PSF LIVE LOAD, 45 PSF DEAD LOAD: 23/32" OSB SHEATHING, GLUED & NAILED

Series	Depth	No Direct Attached Ceiling								Direct Attached 1/2" Gypsum Ceiling							
		Maximum Simple Spans				Maximum Continuous Spans				Maximum Simple Spans				Maximum Continuous Spans			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
LPI 20Plus	**9-1/2"**	16'-2"	14'-5"	13'-2"	**11'-9"**	16'-7"	14'-4"	**13'-1"**	**11'-2"**	16'-2"	14'-5"	13'-2"	**11'-9"**	16'-7"	14'-4"	**13'-1"**	**11'-2"**
	11-7/8"	18'-5"	16'-9"	**15'-3"**	**13'-7"**	19'-3"	**16'-8"**	**14'-11"**	**11'-11"**	19'-1"	16'-9"	**15'-3"**	**13'-7"**	19'-3"	**16'-8"**	**14'-11"**	**11'-11"**
	14"	20'-6"	**18'-1"**	**16'-6"**	**14'-9"**	20'-10"	**18'-0"**	**15'-9"**	**12'-7"**	20'-11"	**18'-1"**	**16'-6"**	**14'-9"**	20'-10"	**18'-0"**	**15'-9"**	**12'-7"**
LPI 32Plus	**9-1/2"**	16'-11"	15'-6"	14'-5"	**12'-10"**	18'-2"	**15'-8"**	**14'-0"**	**11'-2"**	17'-0"	15'-6"	14'-5"	**12'-10"**	18'-2"	**15'-8"**	**14'-0"**	**11'-2"**
	11-7/8"	19'-1"	**17'-9"**	**16'-5"**	**14'-8"**	20'-8"	**17'-11"**	**14'-11"**	**11'-11"**	19'-9"	**18'-0"**	**16'-5"**	**14'-8"**	20'-8"	**17'-11"**	**14'-11"**	**11'-11"**
	14"	21'-2"	**19'-7"**	**18'-0"**	**16'-1"**	**22'-9"**	**19'-0"**	**15'-9"**	**12'-7"**	21'-11"	**19'-9"**	**18'-0"**	**16'-1"**	**22'-9"**	**19'-0"**	**15'-9"**	**12'-7"**
	16"	23'-0"	**21'-3"**	**19'-5"**	**17'-4"**	**24'-6"**	**19'-11"**	**16'-6"**	**13'-2"**	**23'-10"**	**21'-3"**	**19'-5"**	**17'-4"**	**24'-6"**	**19'-11"**	**16'-6"**	**13'-2"**
LPI 42Plus	**9-1/2"**	18'-2"	17'-1"	16'-6"	**15'-4"**	20'-1"	18'-7"	15'-5"	12'-4"	18'-8"	17'-5"	16'-6"	**15'-4"**	20'-7"	18'-7"	15'-5"	12'-4"
	11-7/8"	21'-0"	19'-5"	18'-6"	**17'-8"**	23'-3"	21'-6"	**19'-2"**	**15'-3"**	21'-6"	19'-11"	19'-0"	**18'-0"**	23'-10"	**22'-1"**	**19'-2"**	**15'-3"**
	14"	23'-4"	21'-6"	**20'-6"**	**19'-5"**	25'-9"	**23'-10"**	**21'-2"**	**16'-11"**	23'-11"	22'-2"	**21'-1"**	**19'-6"**	26'-5"	**24'-6"**	**21'-2"**	**16'-11"**
	16"	25'-4"	23'-5"	**22'-4"**	**21'-2"**	28'-1"	**25'-11"**	**22'-5"**	**17'-10"**	26'-0"	**24'-1"**	**23'-0"**	**21'-9"**	28'-9"	**26'-8"**	**22'-5"**	**17'-10"**
	18"	27'-3"	25'-2"	**23'-11"**	**22'-8"**	30'-1"	**27'-10"**	**25'-6"**	**20'-4"**	27'-11"	**25'-11"**	**24'-8"**	**23'-4"**	30'-11"	**28'-7"**	**25'-6"**	**20'-4"**
	20"	**29'-1"**	**26'-10"**	**25'-7"**	**24'-2"**	**32'-2"**	**29'-9"**	**26'-3"**	**20'-11"**	**29'-10"**	**27'-8"**	**26'-4"**	**24'-7"**	**33'-4"**	**30'-2"**	**26'-3"**	**20'-11"**
	22"	**30'-10"**	**28'-6"**	**27'-1"**	**25'-8"**	**34'-10"**	**31'-6"**	**26'-4"**	**21'-0"**	**31'-8"**	**29'-4"**	**28'-0"**	**25'-9"**	**36'-1"**	**31'-7"**	**26'-4"**	**21'-0"**
	24"	**32'-9"**	**30'-1"**	**28'-7"**	**26'-10"**	**37'-5"**	**31'-8"**	**26'-4"**	**21'-0"**	**33'-11"**	**31'-0"**	**29'-7"**	**26'-10"**	**38'-0"**	**31'-8"**	**26'-4"**	**21'-0"**
LPI 36	**11-7/8"**	19'-8"	18'-3"	17'-6"	**16'-9"**	21'-10"	**20'-2"**	**17'-4"**	**13'-10"**	20'-3"	18'-10"	**18'-0"**	**16'-9"**	22'-5"	**20'-10"**	**17'-4"**	**13'-10"**
	14"	21'-10"	20'-2"	**19'-3"**	**17'-5"**	24'-2"	**20'-11"**	**17'-4"**	**13'-10"**	22'-6"	20'-10"	**19'-11"**	**17'-5"**	24'-11"	**20'-11"**	**17'-4"**	**13'-10"**
	16"	23'-8"	**21'-11"**	**20'-10"**	**17'-5"**	26'-2"	**20'-11"**	**17'-4"**	**13'-10"**	24'-5"	**22'-8"**	**21'-7"**	**17'-5"**	**27'-0"**	**20'-11"**	**17'-4"**	**13'-10"**
	18"	25'-5"	**23'-6"**	**22'-5"**	**21'-3"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**	**26'-3"**	**24'-4"**	**23'-3"**	**21'-5"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**
	20"	**27'-1"**	**25'-1"**	**23'-10"**	**22'-1"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**	**28'-0"**	**26'-0"**	**24'-9"**	**22'-1"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**
	22"	**28'-9"**	**26'-7"**	**25'-3"**	**22'-8"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**	**29'-8"**	**27'-6"**	**26'-3"**	**22'-8"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**
	24"	**30'-3"**	**28'-0"**	**26'-7"**	**23'-2"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**	**31'-3"**	**29'-0"**	**27'-8"**	**23'-2"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**
LPI 56	**11-7/8"**	21'-10"	20'-2"	19'-2"	**18'-2"**	24'-2"	22'-4"	21'-3"	**18'-5"**	22'-4"	20'-8"	19'-8"	**18'-8"**	24'-9"	22'-11"	21'-10"	**18'-5"**
	14"	24'-2"	22'-4"	**21'-3"**	**20'-1"**	26'-9"	24'-9"	**23'-6"**	**19'-0"**	24'-9"	22'-11"	**21'-10"**	**20'-8"**	27'-5"	25'-5"	**23'-10"**	**19'-0"**
	16"	26'-3"	24'-3"	**23'-1"**	**21'-10"**	29'-1"	26'-10"	**23'-10"**	**19'-0"**	26'-11"	24'-11"	**23'-8"**	**21'-11"**	29'-9"	**27'-7"**	**23'-10"**	**19'-0"**
	18"	28'-3"	26'-1"	**24'-9"**	**23'-5"**	31'-3"	**28'-10"**	**27'-5"**	**22'-0"**	28'-11"	26'-9"	**25'-6"**	**24'-1"**	32'-0"	**29'-8"**	**27'-7"**	**22'-0"**
	20"	**30'-1"**	**27'-9"**	**26'-5"**	**24'-11"**	**33'-9"**	**30'-9"**	**27'-7"**	**22'-0"**	**30'-10"**	**28'-6"**	**27'-2"**	**25'-8"**	**34'-11"**	**31'-8"**	**27'-7"**	**22'-0"**
	22"	**31'-11"**	**29'-5"**	**27'-11"**	**26'-5"**	**36'-6"**	**32'-9"**	**27'-7"**	**22'-0"**	**32'-11"**	**30'-3"**	**28'-9"**	**27'-3"**	**37'-8"**	**33'-2"**	**27'-7"**	**22'-0"**
	24"	**34'-2"**	**31'-0"**	**29'-5"**	**27'-10"**	**39'-2"**	**33'-2"**	**27'-7"**	**22'-0"**	**35'-4"**	**31'-11"**	**30'-4"**	**28'-8"**	**40'-5"**	**33'-2"**	**27'-7"**	**22'-0"**

NOTES:

1. Joist spans have been calculated in accordance with CSA 086S1-05 for the specified uniform floor loads listed. Concentrated load cases, where required, shall be evaluated by the designer.
2. The spans listed are the clear distance between supports. Continuous spans are based on the longest span. The shortest span shall not be less than 50% of the longest span. Refer to the Uplift Coefficients table below to determine the required uplift restraint for the end of the shorter span of continuous, unequal span joists.
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6. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
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8. Provide lateral support at points of bearing to prevent twisting of joists.
9. Use in dry service conditions only.
10. For conditions not covered or for additional information contact your LP® SolidStart® Engineered Wood Products distributor.

UPLIFT COEFFICIENTS

Short span / Long span	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
Coefficient A	0.375	0.709	1.088	1.514	1.989	2.516	3.096	3.732	4.427	5.182	6.0
Coefficient B	6.0	6.82	7.68	8.58	9.52	10.5	11.52	12.58	13.68	14.82	16.0

NOTE:

For joists continuous over two or more spans, where the short span is at least 50% of the long span, the end of the short span shall be anchored to resist any uplift force as indicated by a negative value from the following:

Factored Uplift Force (lb) = L * s * (A * D_f - L_f) / B (a negative value represents uplift that must be restrained)

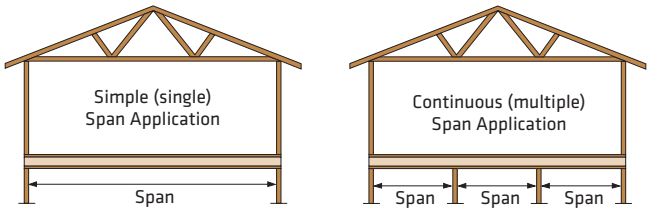
Where L = longest span (ft), s = joist spacing (ft), D_f = factored dead load (psf), L_f = factored live load (psf), A and B are coefficients given in the table.

Floor Span Tables: 100 psf Live Load, 35 psf Dead Load, 23/32" OSB Sheathing

TO USE:

1. Select the appropriate table based on the floor system construction.
2. Select the Simple Span or Continuous Span section of the table, as required.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding joist series, depth and spacing.

CAUTION: For floor systems that require both simple span and continuous span joists, it is a good idea to check both before selecting a joist. Some conditions are controlled by continuous span strength rather than simple span deflection or vibration.



100 PSF LIVE LOAD, 35 PSF DEAD LOAD: 23/32" OSB SHEATHING, GLUED & NAILED

Series	Depth	No Direct Attached Ceiling						Direct Attached 1/2" Gypsum Ceiling					
		Maximum Simple Spans			Maximum Continuous Spans			Maximum Simple Spans			Maximum Continuous Spans		
		12"	16"	19.2"	12"	16"	19.2"	12"	16"	19.2"	12"	16"	19.2"
LPI 20Plus	9-1/2"	12'-6"	11'-4"	**10'-8"**	**13'-6"**	**11'-4"**	**9'-5"**	12'-6"	11'-4"	**10'-8"**	**13'-6"**	**11'-4"**	**9'-5"**
	11-7/8"	15'-0"	**13'-7"**	**12'-6"**	**15'-10"**	**12'-1"**	**10'-0"**	15'-0"	**13'-7"**	**12'-6"**	**15'-10"**	**12'-1"**	**10'-0"**
	14"	**17'-1"**	**14'-10"**	**13'-7"**	**17'-1"**	**12'-9"**	**10'-7"**	**17'-1"**	**14'-10"**	**13'-7"**	**17'-1"**	**12'-9"**	**10'-7"**
LPI 32Plus	9-1/2"	13'-2"	**11'-11"**	**11'-2"**	**14'-3"**	**11'-4"**	**9'-5"**	13'-2"	**11'-11"**	**11'-2"**	**14'-3"**	**11'-4"**	**9'-5"**
	11-7/8"	**15'-8"**	**14'-3"**	**12'-10"**	**16'-2"**	**12'-1"**	**10'-0"**	**15'-8"**	**14'-3"**	**12'-10"**	**16'-2"**	**12'-1"**	**10'-0"**
	14"	**17'-10"**	**16'-2"**	**14'-3"**	**17'-1"**	**12'-9"**	**10'-7"**	**17'-10"**	**16'-2"**	**14'-3"**	**17'-1"**	**12'-9"**	**10'-7"**
	16"	**19'-9"**	**17'-6"**	**15'-5"**	**17'-11"**	**13'-5"**	**11'-1"**	**19'-9"**	**17'-6"**	**15'-5"**	**17'-11"**	**13'-5"**	**11'-1"**
LPI 42Plus	9-1/2"	15'-0"	13'-7"	**12'-9"**	16'-3"	12'-6"	10'-4"	15'-0"	13'-7"	**12'-9"**	16'-3"	12'-6"	10'-4"
	11-7/8"	17'-11"	**16'-3"**	**15'-3"**	19'-5"	**15'-6"**	**12'-11"**	17'-11"	**16'-3"**	**15'-3"**	19'-5"	**15'-6"**	**12'-11"**
	14"	20'-4"	**18'-5"**	**16'-6"**	**22'-1"**	**17'-2"**	**14'-3"**	20'-4"	**18'-5"**	**16'-6"**	**22'-1"**	**17'-2"**	**14'-3"**
	16"	**22'-6"**	**20'-5"**	**18'-4"**	**24'-4"**	**18'-2"**	**15'-1"**	**22'-6"**	**20'-5"**	**18'-4"**	**24'-4"**	**18'-2"**	**15'-1"**
	18"	**24'-6"**	**22'-2"**	**20'-10"**	**26'-8"**	**20'-8"**	**17'-2"**	**24'-6"**	**22'-2"**	**20'-10"**	**26'-8"**	**20'-8"**	**17'-2"**
	20"	**26'-6"**	**24'-0"**	**22'-7"**	**28'-5"**	**21'-3"**	**17'-8"**	**26'-6"**	**24'-0"**	**22'-7"**	**28'-5"**	**21'-3"**	**17'-8"**
	22"	**28'-6"**	**25'-10"**	**23'-8"**	**28'-7"**	**21'-4"**	**17'-9"**	**28'-6"**	**25'-10"**	**23'-8"**	**28'-7"**	**21'-4"**	**17'-9"**
	24"	**30'-5"**	**27'-1"**	**24'-8"**	**28'-7"**	**21'-4"**	**17'-9"**	**30'-5"**	**27'-1"**	**24'-8"**	**28'-7"**	**21'-4"**	**17'-9"**
LPI 36	11-7/8"	16'-5"	**14'-10"**	**13'-11"**	17'-9"	**14'-1"**	**11'-8"**	16'-5"	**14'-10"**	**13'-11"**	17'-9"	**14'-1"**	**11'-8"**
	14"	18'-7"	**16'-10"**	**14'-9"**	**18'-10"**	**14'-1"**	**11'-8"**	18'-7"	**16'-10"**	**14'-9"**	**18'-10"**	**14'-1"**	**11'-8"**
	16"	**20'-6"**	**17'-9"**	**14'-9"**	**18'-10"**	**14'-1"**	**11'-8"**	**20'-6"**	**17'-9"**	**14'-9"**	**18'-10"**	**14'-1"**	**11'-8"**
	18"	**22'-4"**	**20'-3"**	**18'-1"**	**18'-10"**	**14'-0"**	**11'-8"**	**22'-4"**	**20'-3"**	**18'-1"**	**18'-10"**	**14'-0"**	**11'-8"**
	20"	**24'-2"**	**21'-10"**	**18'-8"**	**18'-10"**	**14'-0"**	**11'-8"**	**24'-2"**	**21'-10"**	**18'-8"**	**18'-10"**	**14'-0"**	**11'-8"**
	22"	**25'-10"**	**23'-0"**	**19'-2"**	**18'-10"**	**14'-0"**	**11'-8"**	**25'-10"**	**23'-0"**	**19'-2"**	**18'-10"**	**14'-0"**	**11'-8"**
	24"	**27'-7"**	**23'-6"**	**19'-7"**	**18'-10"**	**14'-0"**	**11'-8"**	**27'-7"**	**23'-6"**	**19'-7"**	**18'-10"**	**14'-0"**	**11'-8"**
LPI 56	11-7/8"	18'-10"	**17'-0"**	**15'-11"**	20'-5"	**18'-4"**	**15'-7"**	18'-10"	**17'-0"**	**15'-11"**	20'-5"	**18'-4"**	**15'-7"**
	14"	21'-4"	**19'-4"**	**18'-1"**	23'-1"	**19'-4"**	**16'-0"**	21'-4"	**19'-4"**	**18'-1"**	23'-1"	**19'-4"**	**16'-0"**
	16"	**23'-7"**	**21'-4"**	**18'-7"**	**25'-7"**	**19'-4"**	**16'-0"**	**23'-7"**	**21'-4"**	**18'-7"**	**25'-7"**	**19'-4"**	**16'-0"**
	18"	25'-8"	**23'-3"**	**21'-9"**	**27'-10"**	**22'-4"**	**18'-7"**	25'-8"	**23'-3"**	**21'-9"**	**27'-10"**	**22'-4"**	**18'-7"**
	20"	**27'-9"**	**25'-1"**	**23'-6"**	**29'-11"**	**22'-4"**	**18'-7"**	**27'-9"**	**25'-1"**	**23'-6"**	**29'-11"**	**22'-4"**	**18'-7"**
	22"	**29'-9"**	**26'-11"**	**25'-3"**	**29'-11"**	**22'-4"**	**18'-7"**	**29'-9"**	**26'-11"**	**25'-3"**	**29'-11"**	**22'-4"**	**18'-7"**
	24"	**31'-8"**	**28'-8"**	**26'-11"**	**29'-11"**	**22'-4"**	**18'-7"**	**31'-8"**	**28'-8"**	**26'-11"**	**29'-11"**	**22'-4"**	**18'-7"**

NOTES:

1. Joist spans have been calculated in accordance with CSA 086S1-05 for the specified uniform floor loads listed. Concentrated load cases, where required, shall be evaluated by the designer.
2. The spans listed are the clear distance between supports. Continuous spans are based on the longest span. The shortest span shall not be less than 50% of the longest span. Refer to the Uplift Coefficients table below to determine the required uplift restraint for the end of the shorter span of continuous, unequal span joists.
3. Vibration has been checked in accordance with CCMC concluding report (dated September 4, 1997) with glued & nailed floor sheathing, with or without a direct attached 1/2" gypsum ceiling, as indicated in the table.
4. The floor sheathing shall be 1F24 rated OSB glued to the joists with an elastomeric adhesive conforming to CGSB Standard CAN-CGSB-71.26-M88.
5. Uniform load deflection has been limited to the following: L/360 on live load and L/240 on total load based on bare joist properties only. Long term deflection (creep) has not been considered.
6. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
7. Web stiffeners are not required for the spans in these tables except where **bold**. For spans in **bold**, web stiffeners shall be installed at all supports. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange or for hangers that require nailing into the web.
8. Provide lateral support at points of bearing to prevent twisting of joists.
9. Use in dry service conditions only.
10. For conditions not covered or for additional information contact your LP® SolidStart® Engineered Wood Products distributor.

UPLIFT COEFFICIENTS

Short span / Long span	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
Coefficient A	0.375	0.709	1.088	1.514	1.989	2.516	3.096	3.732	4.427	5.182	6.0
Coefficient B	6.0	6.82	7.68	8.58	9.52	10.5	11.52	12.58	13.68	14.82	16.0

NOTE:

For joists continuous over two or more spans, where the short span is at least 50% of the long span, the end of the short span shall be anchored to resist any uplift force as indicated by a negative value from the following:

Factored Uplift Force (lb) = L * s * (A * D_f - L_f) / B (a negative value represents uplift that must be restrained)

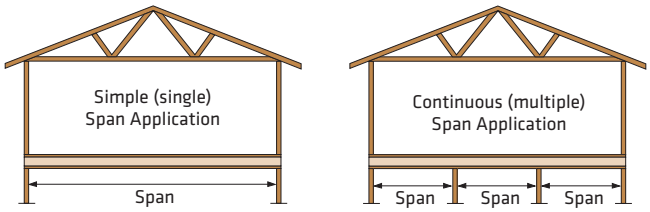
Where L = longest span (ft), s = joist spacing (ft), D_f = factored dead load (psf), L_f = factored live load (psf), A and B are coefficients given in the table.

Floor Span Tables: 100 psf Live Load, 45 psf Dead Load, 23/32" OSB Sheathing

TO USE:

1. Select the appropriate table based on the floor system construction.
2. Select the Simple Span or Continuous Span section of the table, as required.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding joist series, depth and spacing.

CAUTION: For floor systems that require both simple span and continuous span joists, it is a good idea to check both before selecting a joist. Some conditions are controlled by continuous span strength rather than simple span deflection or vibration.



100 PSF LIVE LOAD, 45 PSF DEAD LOAD: 23/32" OSB SHEATHING, GLUED & NAILED

Series	Depth	No Direct Attached Ceiling						Direct Attached 1/2" Gypsum Ceiling					
		Maximum Simple Spans			Maximum Continuous Spans			Maximum Simple Spans			Maximum Continuous Spans		
		12"	16"	19.2"	12"	16"	19.2"	12"	16"	19.2"	12"	16"	19.2"
LPI 20Plus	9-1/2"	12'-6"	11'-4"	10'-5"	13'-2"	10'-8"	8'-10"	12'-6"	11'-4"	10'-5"	13'-2"	10'-8"	8'-10"
	11-7/8"	15'-0"	13'-4"	12'-1"	15'-2"	11'-4"	9'-5"	15'-0"	13'-4"	12'-1"	15'-2"	11'-4"	9'-5"
	14"	16'-8"	14'-5"	13'-2"	16'-1"	12'-0"	9'-11"	16'-8"	14'-5"	13'-2"	16'-1"	12'-0"	9'-11"
LPI 32Plus	9-1/2"	13'-2"	11'-11"	10'-10"	14'-3"	10'-8"	8'-10"	13'-2"	11'-11"	10'-10"	14'-3"	10'-8"	8'-10"
	11-7/8"	15'-8"	14'-3"	12'-1"	15'-2"	11'-4"	9'-5"	15'-8"	14'-3"	12'-1"	15'-2"	11'-4"	9'-5"
	14"	17'-10"	15'-8"	13'-4"	16'-1"	12'-0"	9'-11"	17'-10"	15'-8"	13'-4"	16'-1"	12'-0"	9'-11"
	16"	19'-7"	16'-11"	14'-6"	16'-10"	12'-7"	10'-5"	19'-7"	16'-11"	14'-6"	16'-10"	12'-7"	10'-5"
LPI 42Plus	9-1/2"	15'-0"	13'-7"	12'-4"	15'-9"	11'-9"	9'-9"	15'-0"	13'-7"	12'-4"	15'-9"	11'-9"	9'-9"
	11-7/8"	17'-11"	16'-3"	14'-8"	19'-5"	14'-7"	12'-1"	17'-11"	16'-3"	14'-8"	19'-5"	14'-7"	12'-1"
	14"	20'-4"	18'-5"	15'-6"	21'-7"	16'-1"	13'-5"	20'-4"	18'-5"	15'-6"	21'-7"	16'-1"	13'-5"
	16"	22'-6"	20'-5"	17'-3"	22'-10"	17'-1"	14'-2"	22'-6"	20'-5"	17'-3"	22'-10"	17'-1"	14'-2"
	18"	24'-6"	22'-2"	20'-10"	25'-11"	19'-5"	16'-1"	24'-6"	22'-2"	20'-10"	25'-11"	19'-5"	16'-1"
	20"	26'-6"	24'-0"	21'-11"	26'-8"	19'-11"	16'-7"	26'-6"	24'-0"	21'-11"	26'-8"	19'-11"	16'-7"
	22"	28'-6"	25'-2"	22'-11"	26'-10"	20'-1"	16'-8"	28'-6"	25'-2"	22'-11"	26'-10"	20'-1"	16'-8"
	24"	30'-4"	26'-3"	23'-11"	26'-10"	20'-1"	16'-8"	30'-4"	26'-3"	23'-11"	26'-10"	20'-1"	16'-8"
LPI 36	11-7/8"	16'-5"	14'-10"	13'-10"	17'-8"	13'-2"	11'-0"	16'-5"	14'-10"	13'-10"	17'-8"	13'-2"	11'-0"
	14"	18'-7"	16'-8"	13'-10"	17'-8"	13'-2"	11'-0"	18'-7"	16'-8"	13'-10"	17'-8"	13'-2"	11'-0"
	16"	20'-6"	16'-8"	13'-10"	17'-8"	13'-2"	11'-0"	20'-6"	16'-8"	13'-10"	17'-8"	13'-2"	11'-0"
	18"	22'-4"	20'-3"	17'-0"	17'-8"	13'-2"	10'-11"	22'-4"	20'-3"	17'-0"	17'-8"	13'-2"	10'-11"
	20"	24'-2"	21'-1"	17'-6"	17'-8"	13'-2"	10'-11"	24'-2"	21'-1"	17'-6"	17'-8"	13'-2"	10'-11"
	22"	25'-10"	21'-8"	18'-0"	17'-8"	13'-2"	10'-11"	25'-10"	21'-8"	18'-0"	17'-8"	13'-2"	10'-11"
	24"	27'-7"	22'-1"	18'-4"	17'-8"	13'-2"	10'-11"	27'-7"	22'-1"	18'-4"	17'-8"	13'-2"	10'-11"
LPI 56	11-7/8"	18'-10"	17'-0"	15'-11"	20'-5"	17'-7"	14'-7"	18'-10"	17'-0"	15'-11"	20'-5"	17'-7"	14'-7"
	14"	21'-4"	19'-4"	17'-5"	23'-1"	18'-1"	15'-1"	21'-4"	19'-4"	17'-5"	23'-1"	18'-1"	15'-1"
	16"	23'-7"	20'-11"	17'-5"	24'-3"	18'-1"	15'-1"	23'-7"	20'-11"	17'-5"	24'-3"	18'-1"	15'-1"
	18"	25'-8"	23'-3"	21'-9"	27'-10"	21'-0"	17'-5"	25'-8"	23'-3"	21'-9"	27'-10"	21'-0"	17'-5"
	20"	27'-9"	25'-1"	23'-2"	28'-1"	21'-0"	17'-5"	27'-9"	25'-1"	23'-2"	28'-1"	21'-0"	17'-5"
	22"	29'-9"	26'-11"	24'-7"	28'-1"	21'-0"	17'-5"	29'-9"	26'-11"	24'-7"	28'-1"	21'-0"	17'-5"
	24"	31'-8"	28'-8"	25'-7"	28'-1"	21'-0"	17'-5"	31'-8"	28'-8"	25'-7"	28'-1"	21'-0"	17'-5"

NOTES:

1. Joist spans have been calculated in accordance with CSA 086S1-05 for the specified uniform floor loads listed. Concentrated load cases, where required, shall be evaluated by the designer.
2. The spans listed are the clear distance between supports. Continuous spans are based on the longest span. The shortest span shall not be less than 50% of the longest span. Refer to the Uplift Coefficients table below to determine the required uplift restraint for the end of the shorter span of continuous, unequal span joists.
3. Vibration has been checked in accordance with CCMC concluding report (dated September 4, 1997) with glued & nailed floor sheathing, with or without a direct attached 1/2" gypsum ceiling, as indicated in the table.
4. The floor sheathing shall be 1F24 rated OSB glued to the joists with an elastomeric adhesive conforming to CGSB Standard CAN-CGSB-71.26-M88.
5. Uniform load deflection has been limited to the following: L/360 on live load and L/240 on total load based on bare joist properties only. Long term deflection (creep) has not been considered.
6. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
7. Web stiffeners are not required for the spans in these tables except where **bold**. For spans in **bold**, web stiffeners shall be installed at all supports. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange or for hangers that require nailing into the web.
8. Provide lateral support at points of bearing to prevent twisting of joists.
9. Use in dry service conditions only.
10. For conditions not covered or for additional information contact your LP® SolidStart® Engineered Wood Products distributor.

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Short span / Long span	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
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NOTE:

For joists continuous over two or more spans, where the short span is at least 50% of the long span, the end of the short span shall be anchored to resist any uplift force as indicated by a negative value from the following:

Factored Uplift Force (lb) = L * s * (A * D_f - L_f) / B (a negative value represents uplift that must be restrained)

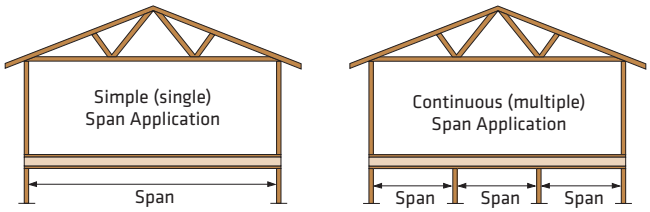
Where L = longest span (ft), s = joist spacing (ft), D_f = factored dead load (psf), L_f = factored live load (psf), A and B are coefficients given in the table.

Floor Span Tables: 50 psf Live Load, 35 psf Dead Load, 7/8" OSB Sheathing

TO USE:

1. Select the appropriate table based on the floor system construction.
2. Select the Simple Span or Continuous Span section of the table, as required.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding joist series, depth and spacing.

CAUTION: For floor systems that require both simple span and continuous span joists, it is a good idea to check both before selecting a joist. Some conditions are controlled by continuous span strength rather than simple span deflection or vibration.



50 PSF LIVE LOAD, 35 PSF DEAD LOAD: 7/8" OSB SHEATHING, GLUED & NAILED

Series	Depth	No Direct Attached Ceiling								Direct Attached 1/2" Gypsum Ceiling							
		Maximum Simple Spans				Maximum Continuous Spans				Maximum Simple Spans				Maximum Continuous Spans			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
LPI 20Plus	**9-1/2"**	16'-4"	14'-10"	13'-10"	12'-4"	17'-6"	15'-1"	**13'-9"**	**12'-3"**	16'-4"	14'-10"	13'-10"	12'-4"	17'-6"	15'-1"	**13'-9"**	**12'-3"**
	11-7/8"	19'-5"	17'-7"	16'-0"	**14'-4"**	20'-3"	17'-6"	**16'-0"**	**13'-2"**	19'-5"	17'-7"	16'-0"	**14'-4"**	20'-3"	17'-6"	**16'-0"**	**13'-2"**
	14"	21'-11"	19'-1"	**17'-4"**	**15'-6"**	21'-11"	**19'-0"**	**17'-4"**	**13'-11"**	22'-0"	19'-1"	**17'-4"**	**15'-6"**	21'-11"	**19'-0"**	**17'-4"**	**13'-11"**
LPI 32Plus	**9-1/2"**	17'-2"	15'-8"	14'-9"	**13'-6"**	18'-7"	**16'-6"**	**15'-1"**	**12'-4"**	17'-2"	15'-8"	14'-9"	**13'-6"**	18'-7"	**16'-6"**	**15'-1"**	**12'-4"**
	11-7/8"	20'-5"	18'-7"	**17'-3"**	**15'-5"**	21'-9"	**18'-10"**	**16'-6"**	**13'-2"**	20'-5"	18'-7"	**17'-3"**	**15'-5"**	21'-9"	**18'-10"**	**16'-6"**	**13'-2"**
	14"	22'-7"	**20'-9"**	**18'-11"**	**16'-11"**	23'-11"	**20'-8"**	**17'-5"**	**13'-11"**	23'-2"	**20'-9"**	**18'-11"**	**16'-11"**	23'-11"	**20'-8"**	**17'-5"**	**13'-11"**
	16"	24'-7"	**22'-4"**	**20'-5"**	**18'-3"**	25'-9"	**22'-0"**	**18'-4"**	**14'-7"**	25'-4"	**22'-4"**	**20'-5"**	**18'-3"**	25'-9"	**22'-0"**	**18'-4"**	**14'-7"**
LPI 42Plus	**9-1/2"**	19'-5"	17'-9"	16'-8"	**15'-6"**	21'-2"	19'-3"	17'-1"	13'-7"	19'-5"	17'-9"	16'-8"	**15'-6"**	21'-2"	19'-3"	17'-1"	13'-7"
	11-7/8"	22'-4"	20'-9"	19'-9"	**18'-5"**	24'-9"	22'-11"	**21'-2"**	**16'-11"**	22'-10"	21'-1"	19'-10"	**18'-5"**	25'-2"	22'-11"	**21'-2"**	**16'-11"**
	14"	24'-10"	23'-0"	**21'-10"**	**20'-7"**	27'-5"	**25'-5"**	**23'-5"**	**18'-8"**	25'-4"	23'-7"	**22'-5"**	**20'-11"**	28'-1"	**25'-11"**	**23'-5"**	**18'-8"**
	16"	27'-0"	25'-0"	**23'-9"**	**22'-5"**	29'-10"	**27'-8"**	**24'-10"**	**19'-9"**	27'-7"	25'-8"	**24'-5"**	**23'-0"**	30'-6"	**28'-4"**	**24'-10"**	**19'-9"**
	18"	28'-11"	26'-10"	**25'-6"**	**24'-0"**	32'-0"	**29'-8"**	**27'-6"**	**22'-6"**	29'-7"	27'-6"	**26'-3"**	**24'-7"**	33'-0"	**30'-1"**	**27'-6"**	**22'-6"**
	20"	**30'-11"**	**28'-7"**	**27'-3"**	**25'-7"**	**34'-10"**	**31'-8"**	**28'-11"**	**23'-2"**	**31'-8"**	**29'-5"**	**28'-0"**	**25'-10"**	**36'-0"**	**31'-8"**	**28'-11"**	**23'-2"**
	22"	**33'-0"**	**30'-4"**	**28'-10"**	**27'-1"**	**37'-8"**	**33'-2"**	**29'-2"**	**23'-3"**	**34'-1"**	**31'-2"**	**29'-9"**	**27'-1"**	**38'-4"**	**33'-2"**	**29'-2"**	**23'-3"**
	24"	**35'-6"**	**32'-0"**	**30'-5"**	**28'-3"**	**40'-0"**	**34'-7"**	**29'-2"**	**23'-3"**	**36'-7"**	**33'-3"**	**31'-5"**	**28'-3"**	**40'-0"**	**34'-7"**	**29'-2"**	**23'-3"**
LPI 36	**11-7/8"**	21'-0"	19'-4"	18'-3"	**16'-11"**	23'-1"	21'-0"	**19'-3"**	**15'-4"**	21'-3"	19'-4"	18'-3"	**16'-11"**	23'-1"	21'-0"	**19'-3"**	**15'-4"**
	14"	23'-3"	21'-7"	**20'-6"**	**19'-2"**	25'-9"	**23'-1"**	**19'-3"**	**15'-4"**	23'-11"	21'-11"	**20'-8"**	**19'-2"**	26'-2"	**23'-1"**	**19'-3"**	**15'-4"**
	16"	25'-3"	23'-5"	**22'-3"**	**19'-4"**	27'-11"	**23'-1"**	**19'-3"**	**15'-4"**	25'-11"	**24'-2"**	**22'-9"**	**19'-4"**	28'-8"	**23'-1"**	**19'-3"**	**15'-4"**
	18"	27'-1"	**25'-1"**	**23'-11"**	**22'-6"**	**29'-11"**	**23'-1"**	**19'-2"**	**15'-4"**	27'-11"	**25'-11"**	**24'-9"**	**23'-0"**	**30'-10"**	**23'-1"**	**19'-2"**	**15'-4"**
	20"	**28'-10"**	**26'-9"**	**25'-5"**	**24'-0"**	**30'-11"**	**23'-1"**	**19'-2"**	**15'-4"**	**29'-9"**	**27'-8"**	**26'-5"**	**24'-5"**	**30'-11"**	**23'-1"**	**19'-2"**	**15'-4"**
	22"	**30'-7"**	**28'-4"**	**26'-11"**	**25'-1"**	**30'-11"**	**23'-1"**	**19'-2"**	**15'-4"**	**31'-6"**	**29'-4"**	**28'-0"**	**25'-1"**	**30'-11"**	**23'-1"**	**19'-2"**	**15'-4"**
	24"	**32'-3"**	**29'-10"**	**28'-4"**	**25'-7"**	**30'-11"**	**23'-1"**	**19'-2"**	**15'-4"**	**33'-6"**	**30'-11"**	**29'-6"**	**25'-7"**	**30'-11"**	**23'-1"**	**19'-2"**	**15'-4"**
LPI 56	**11-7/8"**	23'-3"	21'-6"	20'-5"	**19'-3"**	25'-9"	23'-10"	22'-7"	**20'-4"**	23'-9"	22'-0"	20'-10"	**19'-4"**	26'-3"	24'-1"	22'-7"	**20'-4"**
	14"	25'-9"	23'-10"	22'-8"	**21'-4"**	28'-6"	26'-4"	**25'-1"**	**21'-0"**	26'-3"	24'-5"	**23'-2"**	**21'-10"**	29'-1"	27'-0"	**25'-7"**	**21'-0"**
	16"	28'-0"	25'-10"	**24'-7"**	**23'-1"**	30'-11"	28'-8"	**26'-4"**	**21'-0"**	28'-6"	26'-6"	**25'-2"**	**23'-9"**	31'-7"	29'-4"	**26'-4"**	**21'-0"**
	18"	30'-1"	27'-9"	26'-5"	**24'-10"**	33'-8"	**30'-9"**	**29'-3"**	**24'-4"**	30'-8"	28'-6"	27'-1"	**25'-6"**	34'-7"	**31'-6"**	**30'-0"**	**24'-4"**
	20"	**32'-0"**	**29'-7"**	**28'-2"**	**26'-5"**	**36'-7"**	**33'-0"**	**30'-6"**	**24'-4"**	**32'-11"**	**30'-4"**	**28'-11"**	**27'-2"**	**37'-8"**	**34'-2"**	**30'-6"**	**24'-4"**
	22"	**34'-7"**	**31'-4"**	**29'-9"**	**28'-0"**	**39'-6"**	**35'-8"**	**30'-6"**	**24'-4"**	**35'-7"**	**32'-2"**	**30'-7"**	**28'-10"**	**40'-8"**	**36'-8"**	**30'-6"**	**24'-4"**
	24"	**37'-1"**	**33'-5"**	**31'-5"**	**29'-6"**	**42'-4"**	**36'-8"**	**30'-6"**	**24'-4"**	**38'-1"**	**34'-7"**	**32'-4"**	**30'-5"**	**43'-7"**	**36'-8"**	**30'-6"**	**24'-4"**

NOTES:

1. Joist spans have been calculated in accordance with CSA 086S1-05 for the specified uniform floor loads listed. Concentrated load cases, where required, shall be evaluated by the designer.
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5. Uniform load deflection has been limited to the following: L/360 on live load and L/240 on total load based on bare joist properties only. Long term deflection (creep) has not been considered. The designer shall evaluate live and total load deflection, and creep in the final design of the member.
6. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
7. Web stiffeners are not required for the spans in these tables except where **bold**. For spans in **bold**, web stiffeners shall be installed at all supports. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange or require nailing into the web.
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Short span / Long span	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
Coefficient A	0.375	0.709	1.088	1.514	1.989	2.516	3.096	3.732	4.427	5.182	6.0
Coefficient B	6.0	6.82	7.68	8.58	9.52	10.5	11.52	12.58	13.68	14.82	16.0

NOTE:

For joists continuous over two or more spans, where the short span is at least 50% of the long span, the end of the short span shall be anchored to resist any uplift force as indicated by a negative value from the following:

Factored Uplift Force (lb) = L * s * (A * D_f - L_f) / B (a negative value represents uplift that must be restrained)

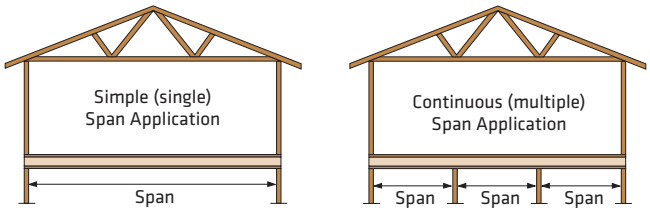
Where L = longest span (ft), s = joist spacing (ft), D_f = factored dead load (psf), L_f = factored live load (psf), A and B are coefficients given in the table.

Floor Span Tables: 50 psf Live Load, 45 psf Dead Load, 7/8" OSB Sheathing

TO USE:

1. Select the appropriate table based on the floor system construction.
2. Select the Simple Span or Continuous Span section of the table, as required.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding joist series, depth and spacing.

CAUTION: For floor systems that require both simple span and continuous span joists, it is a good idea to check both before selecting a joist. Some conditions are controlled by continuous span strength rather than simple span deflection or vibration.



50 PSF LIVE LOAD, 45 PSF DEAD LOAD: 7/8" OSB SHEATHING, GLUED & NAILED

Series	Depth	No Direct Attached Ceiling								Direct Attached 1/2" Gypsum Ceiling							
		Maximum Simple Spans				Maximum Continuous Spans				Maximum Simple Spans				Maximum Continuous Spans			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
LPI 20Plus	9-1/2"	16'-3"	14'-5"	13'-2"	**11'-9"**	16'-7"	14'-4"	**13'-1"**	**11'-2"**	16'-3"	14'-5"	13'-2"	**11'-9"**	16'-7"	14'-4"	**13'-1"**	**11'-2"**
	11-7/8"	19'-4"	16'-9"	**15'-3"**	**13'-7"**	19'-3"	**16'-8"**	**14'-11"**	**11'-11"**	19'-4"	16'-9"	**15'-3"**	**13'-7"**	19'-3"	**16'-8"**	**14'-11"**	**11'-11"**
	14"	20'-11"	**18'-1"**	**16'-6"**	**14'-9"**	20'-10"	**18'-0"**	**15'-9"**	**12'-7"**	20'-11"	**18'-1"**	**16'-6"**	**14'-9"**	20'-10"	**18'-0"**	**15'-9"**	**12'-7"**
LPI 32Plus	9-1/2"	17'-2"	15'-7"	14'-5"	**12'-10"**	18'-2"	**15'-8"**	**14'-0"**	**11'-2"**	17'-2"	15'-7"	14'-5"	**12'-10"**	18'-2"	**15'-8"**	**14'-0"**	**11'-2"**
	11-7/8"	20'-5"	**18'-0"**	**16'-5"**	**14'-8"**	20'-8"	**17'-11"**	**14'-11"**	**11'-11"**	20'-5"	**18'-0"**	**16'-5"**	**14'-8"**	20'-8"	**17'-11"**	**14'-11"**	**11'-11"**
	14"	22'-7"	**19'-9"**	**18'-0"**	**16'-1"**	**22'-9"**	**19'-0"**	**15'-9"**	**12'-7"**	22'-10"	**19'-9"**	**18'-0"**	**16'-1"**	**22'-9"**	**19'-0"**	**15'-9"**	**12'-7"**
	16"	**24'-7"**	**21'-3"**	**19'-5"**	**17'-4"**	**24'-6"**	**19'-11"**	**16'-6"**	**13'-2"**	**24'-7"**	**21'-3"**	**19'-5"**	**17'-4"**	**24'-6"**	**19'-11"**	**16'-6"**	**13'-2"**
LPI 42Plus	9-1/2"	19'-5"	17'-9"	16'-8"	**15'-6"**	21'-2"	18'-7"	15'-5"	12'-4"	19'-5"	17'-9"	16'-8"	**15'-6"**	21'-2"	18'-7"	15'-5"	12'-4"
	11-7/8"	22'-4"	20'-9"	**19'-9"**	**18'-5"**	24'-9"	**22'-9"**	**19'-2"**	**15'-3"**	22'-10"	21'-1"	**19'-10"**	**18'-5"**	25'-2"	**22'-9"**	**19'-2"**	**15'-3"**
	14"	24'-10"	23'-0"	**21'-10"**	**19'-6"**	27'-5"	**25'-0"**	**21'-2"**	**16'-11"**	25'-4"	**23'-7"**	**22'-5"**	**19'-6"**	28'-1"	**25'-0"**	**21'-2"**	**16'-11"**
	16"	27'-0"	**25'-0"**	**23'-9"**	**21'-9"**	29'-10"	**26'-11"**	**22'-5"**	**17'-10"**	27'-7"	**25'-8"**	**24'-5"**	**21'-9"**	30'-6"	**26'-11"**	**22'-5"**	**17'-10"**
	18"	28'-11"	**26'-10"**	**25'-6"**	**23'-4"**	32'-0"	**28'-7"**	**25'-6"**	**20'-4"**	29'-7"	**27'-6"**	**26'-2"**	**23'-4"**	**33'-0"**	**28'-7"**	**25'-6"**	**20'-4"**
	20"	**30'-11"**	**28'-7"**	**27'-3"**	**24'-7"**	**34'-10"**	**30'-2"**	**26'-3"**	**20'-11"**	**31'-8"**	**29'-5"**	**27'-6"**	**24'-7"**	**34'-10"**	**30'-2"**	**26'-3"**	**20'-11"**
	22"	**33'-0"**	**30'-4"**	**28'-10"**	**25'-9"**	**36'-6"**	**31'-7"**	**26'-4"**	**21'-0"**	**34'-1"**	**31'-2"**	**28'-10"**	**25'-9"**	**36'-6"**	**31'-7"**	**26'-4"**	**21'-0"**
	24"	**35'-6"**	**32'-0"**	**30'-0"**	**26'-10"**	**38'-0"**	**31'-8"**	**26'-4"**	**21'-0"**	**36'-7"**	**32'-11"**	**30'-0"**	**26'-10"**	**38'-0"**	**31'-8"**	**26'-4"**	**21'-0"**
LPI 36	11-7/8"	21'-0"	19'-4"	**18'-3"**	**16'-10"**	23'-1"	**20'-11"**	**17'-4"**	**13'-10"**	21'-3"	19'-4"	**18'-3"**	**16'-10"**	23'-1"	**20'-11"**	**17'-4"**	**13'-10"**
	14"	23'-3"	**21'-7"**	**20'-6"**	**17'-5"**	25'-9"	**20'-11"**	**17'-4"**	**13'-10"**	23'-11"	**21'-11"**	**20'-8"**	**17'-5"**	26'-2"	**20'-11"**	**17'-4"**	**13'-10"**
	16"	25'-3"	**23'-5"**	**21'-10"**	**17'-5"**	**27'-11"**	**20'-11"**	**17'-4"**	**13'-10"**	25'-11"	**24'-2"**	**21'-10"**	**17'-5"**	**27'-11"**	**20'-11"**	**17'-4"**	**13'-10"**
	18"	**27'-1"**	**25'-1"**	**23'-11"**	**21'-5"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**	**27'-11"**	**25'-11"**	**24'-9"**	**21'-5"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**
	20"	**28'-10"**	**26'-9"**	**25'-5"**	**22'-1"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**	**29'-9"**	**27'-8"**	**26'-5"**	**22'-1"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**
	22"	**30'-7"**	**28'-4"**	**26'-11"**	**22'-8"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**	**31'-6"**	**29'-4"**	**27'-9"**	**22'-8"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**
	24"	**32'-3"**	**29'-10"**	**28'-4"**	**23'-2"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**	**33'-6"**	**30'-11"**	**29'-0"**	**23'-2"**	**27'-11"**	**20'-10"**	**17'-4"**	**13'-10"**
LPI 56	11-7/8"	23'-3"	21'-6"	20'-5"	**19'-3"**	25'-9"	23'-10"	**22'-7"**	**18'-5"**	23'-9"	22'-0"	20'-10"	**19'-4"**	26'-3"	24'-1"	**22'-7"**	**18'-5"**
	14"	25'-9"	23'-10"	**22'-8"**	**21'-4"**	28'-6"	26'-4"	**23'-10"**	**19'-0"**	26'-3"	24'-5"	**23'-2"**	**21'-10"**	29'-1"	27'-0"	**23'-10"**	**19'-0"**
	16"	28'-0"	**25'-10"**	**24'-7"**	**21'-11"**	30'-11"	**28'-7"**	**23'-10"**	**19'-0"**	28'-6"	**26'-6"**	**25'-2"**	**21'-11"**	31'-7"	**28'-7"**	**23'-10"**	**19'-0"**
	18"	30'-1"	27'-9"	**26'-5"**	**24'-10"**	33'-8"	**30'-9"**	**27'-7"**	**22'-0"**	30'-8"	28'-6"	**27'-1"**	**25'-6"**	34'-7"	**31'-6"**	**27'-7"**	**22'-0"**
	20"	**32'-0"**	**29'-7"**	**28'-2"**	**26'-5"**	**36'-7"**	**33'-0"**	**27'-7"**	**22'-0"**	**32'-11"**	**30'-4"**	**28'-11"**	**27'-2"**	**37'-8"**	**33'-2"**	**27'-7"**	**22'-0"**
	22"	**34'-7"**	**31'-4"**	**29'-9"**	**28'-0"**	**39'-6"**	**33'-2"**	**27'-7"**	**22'-0"**	**35'-7"**	**32'-2"**	**30'-7"**	**28'-10"**	**40'-8"**	**33'-2"**	**27'-7"**	**22'-0"**
	24"	**37'-1"**	**33'-5"**	**31'-5"**	**29'-6"**	**42'-4"**	**33'-2"**	**27'-7"**	**22'-0"**	**38'-1"**	**34'-7"**	**32'-4"**	**30'-5"**	**43'-7"**	**33'-2"**	**27'-7"**	**22'-0"**

NOTES:

1. Joist spans have been calculated in accordance with CSA 086S1-05 for the specified uniform floor loads listed. Concentrated load cases, where required, shall be evaluated by the designer.
2. The spans listed are the clear distance between supports. Continuous spans are based on the longest span. The shortest span shall not be less than 50% of the longest span. Refer to the Uplift Coefficients table below to determine the required uplift restraint for the end of the shorter span of continuous, unequal span joists.
3. Vibration has been checked in accordance with CCMC concluding report (dated September 4, 1997) with glued & nailed floor sheathing, with or without a direct attached 1/2" gypsum ceiling, as indicated in the table.
4. The floor sheathing shall be 1F32 rated OSB glued to the joists with an elastomeric adhesive conforming to CGSB Standard CAN-CGSB-71.26-M88.
5. Uniform load deflection has been limited to the following: L/360 on live load and L/240 on total load based on bare joist properties only. Long term deflection (creep) has not been considered. The designer shall evaluate live and total load deflection, and creep in the final design of the member.
6. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
7. Web stiffeners are not required for the spans in these tables except where **bold**. For spans in **bold**, web stiffeners shall be installed at all supports. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange or require nailing into the web.
8. Provide lateral support at points of bearing to prevent twisting of joists.
9. Use in dry service conditions only.
10. For conditions not covered or for additional information contact your LP® SolidStart® Engineered Wood Products distributor.

UPLIFT COEFFICIENTS

Short span / Long span	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
Coefficient A	0.375	0.709	1.088	1.514	1.989	2.516	3.096	3.732	4.427	5.182	6.0
Coefficient B	6.0	6.82	7.68	8.58	9.52	10.5	11.52	12.58	13.68	14.82	16.0

NOTE:

For joists continuous over two or more spans, where the short span is at least 50% of the long span, the end of the short span shall be anchored to resist any uplift force as indicated by a negative value from the following:

Factored Uplift Force (lb) = L * s * (A * D_f - L_f) / B (a negative value represents uplift that must be restrained)

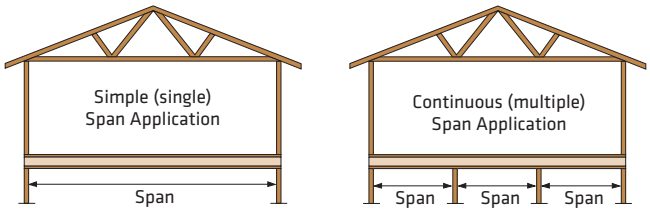
Where L = longest span (ft), s = joist spacing (ft), D_f = factored dead load (psf), L_f = factored live load (psf), A and B are coefficients given in the table.

Floor Span Tables: 100 psf Live Load, 35 psf Dead Load, 7/8" OSB Sheathing

TO USE:

1. Select the appropriate table based on the floor system construction.
2. Select the Simple Span or Continuous Span section of the table, as required.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding joist series, depth and spacing.

CAUTION: For floor systems that require both simple span and continuous span joists, it is a good idea to check both before selecting a joist. Some conditions are controlled by continuous span strength rather than simple span deflection or vibration.



100 PSF LIVE LOAD, 35 PSF DEAD LOAD: 7/8" OSB SHEATHING, GLUED & NAILED

Series	Depth	No Direct Attached Ceiling								Direct Attached 1/2" Gypsum Ceiling							
		Maximum Simple Spans				Maximum Continuous Spans				Maximum Simple Spans				Maximum Continuous Spans			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
LPI 20Plus	9-1/2"	12'-8"	11'-6"	**10'-9"**	**9'-2"**	**13'-8"**	**11'-4"**	**9'-5"**	**7'-6"**	12'-8"	11'-6"	**10'-9"**	**9'-2"**	**13'-8"**	**11'-4"**	**9'-5"**	**7'-6"**
	11-7/8"	15'-1"	**13'-8"**	**12'-6"**	**10'-3"**	**15'-10"**	**12'-1"**	**10'-0"**	**8'-0"**	15'-1"	**13'-8"**	**12'-6"**	**10'-3"**	**15'-10"**	**12'-1"**	**10'-0"**	**8'-0"**
	14"	**17'-2"**	**14'-10"**	**13'-7"**	**11'-4"**	**17'-1"**	**12'-9"**	**10'-7"**	**8'-5"**	**17'-2"**	**14'-10"**	**13'-7"**	**11'-4"**	**17'-1"**	**12'-9"**	**10'-7"**	**8'-5"**
LPI 32Plus	9-1/2"	13'-4"	**12'-1"**	**11'-4"**	**9'-2"**	**14'-4"**	**11'-4"**	**9'-5"**	**7'-6"**	13'-4"	**12'-1"**	**11'-4"**	**9'-2"**	**14'-4"**	**11'-4"**	**9'-5"**	**7'-6"**
	11-7/8"	15'-10"	**14'-4"**	**12'-10"**	**10'-3"**	**16'-2"**	**12'-1"**	**10'-0"**	**8'-0"**	15'-10"	**14'-4"**	**12'-10"**	**10'-3"**	**16'-2"**	**12'-1"**	**10'-0"**	**8'-0"**
	14"	**18'-0"**	**16'-2"**	**14'-3"**	**11'-4"**	**17'-1"**	**12'-9"**	**10'-7"**	**8'-5"**	**18'-0"**	**16'-2"**	**14'-3"**	**11'-4"**	**17'-1"**	**12'-9"**	**10'-7"**	**8'-5"**
	16"	**19'-11"**	**17'-6"**	**15'-5"**	**12'-4"**	**17'-11"**	**13'-5"**	**11'-1"**	**8'-10"**	**19'-11"**	**17'-6"**	**15'-5"**	**12'-4"**	**17'-11"**	**13'-5"**	**11'-1"**	**8'-10"**
LPI 42Plus	9-1/2"	15'-2"	13'-9"	**12'-11"**	**10'-5"**	16'-5"	12'-6"	10'-4"	8'-3"	15'-2"	13'-9"	**12'-11"**	**10'-5"**	16'-5"	12'-6"	10'-4"	8'-3"
	11-7/8"	18'-1"	**16'-4"**	**15'-4"**	**12'-6"**	**19'-7"**	**15'-6"**	**12'-11"**	**10'-3"**	18'-1"	**16'-4"**	**15'-4"**	**12'-6"**	**19'-7"**	**15'-6"**	**12'-11"**	**10'-3"**
	14"	20'-6"	**18'-7"**	**16'-6"**	**13'-2"**	**22'-2"**	**17'-2"**	**14'-3"**	**11'-4"**	20'-6"	**18'-7"**	**16'-6"**	**13'-2"**	**22'-2"**	**17'-2"**	**14'-3"**	**11'-4"**
	16"	**22'-8"**	**20'-7"**	**18'-4"**	**14'-8"**	**24'-4"**	**18'-2"**	**15'-1"**	**12'-0"**	**22'-8"**	**20'-7"**	**18'-4"**	**14'-8"**	**24'-4"**	**18'-2"**	**15'-1"**	**12'-0"**
	18"	**24'-8"**	**22'-4"**	**21'-0"**	**18'-6"**	**26'-9"**	**20'-8"**	**17'-2"**	**13'-8"**	**24'-8"**	**22'-4"**	**21'-0"**	**18'-6"**	**26'-9"**	**20'-8"**	**17'-2"**	**13'-8"**
	20"	**26'-8"**	**24'-2"**	**22'-7"**	**19'-8"**	**28'-5"**	**21'-3"**	**17'-8"**	**14'-1"**	**26'-8"**	**24'-2"**	**22'-7"**	**19'-8"**	**28'-5"**	**21'-3"**	**17'-8"**	**14'-1"**
	22"	**28'-8"**	**25'-11"**	**23'-8"**	**20'-11"**	**28'-7"**	**21'-4"**	**17'-9"**	**14'-2"**	**28'-8"**	**25'-11"**	**23'-8"**	**20'-11"**	**28'-7"**	**21'-4"**	**17'-9"**	**14'-2"**
	24"	**30'-7"**	**27'-1"**	**24'-8"**	**21'-9"**	**28'-7"**	**21'-4"**	**17'-9"**	**14'-2"**	**30'-7"**	**27'-1"**	**24'-8"**	**21'-9"**	**28'-7"**	**21'-4"**	**17'-9"**	**14'-2"**
LPI 36	11-7/8"	16'-6"	**15'-0"**	**14'-1"**	**11'-9"**	**17'-10"**	**14'-1"**	**11'-8"**	**9'-4"**	16'-6"	**15'-0"**	**14'-1"**	**11'-9"**	**17'-10"**	**14'-1"**	**11'-8"**	**9'-4"**
	14"	18'-9"	**16'-11"**	**14'-9"**	**11'-9"**	**18'-10"**	**14'-1"**	**11'-8"**	**9'-4"**	18'-9"	**16'-11"**	**14'-9"**	**11'-9"**	**18'-10"**	**14'-1"**	**11'-8"**	**9'-4"**
	16"	**20'-8"**	**17'-9"**	**14'-9"**	**11'-9"**	**18'-10"**	**14'-1"**	**11'-8"**	**9'-4"**	**20'-8"**	**17'-9"**	**14'-9"**	**11'-9"**	**18'-10"**	**14'-1"**	**11'-8"**	**9'-4"**
	18"	**22'-6"**	**20'-4"**	**18'-1"**	**14'-5"**	**18'-10"**	**14'-0"**	**11'-8"**	**9'-3"**	**22'-6"**	**20'-4"**	**18'-1"**	**14'-5"**	**18'-10"**	**14'-0"**	**11'-8"**	**9'-3"**
	20"	**24'-3"**	**22'-0"**	**18'-8"**	**14'-11"**	**18'-10"**	**14'-0"**	**11'-8"**	**9'-3"**	**24'-3"**	**22'-0"**	**18'-8"**	**14'-11"**	**18'-10"**	**14'-0"**	**11'-8"**	**9'-3"**
	22"	**26'-0"**	**23'-0"**	**19'-2"**	**15'-3"**	**18'-10"**	**14'-0"**	**11'-8"**	**9'-3"**	**26'-0"**	**23'-0"**	**19'-2"**	**15'-3"**	**18'-10"**	**14'-0"**	**11'-8"**	**9'-3"**
	24"	**27'-9"**	**23'-6"**	**19'-7"**	**15'-7"**	**18'-10"**	**14'-0"**	**11'-8"**	**9'-3"**	**27'-9"**	**23'-6"**	**19'-7"**	**15'-7"**	**18'-10"**	**14'-0"**	**11'-8"**	**9'-3"**
LPI 56	11-7/8"	18'-11"	**17'-2"**	**16'-1"**	**14'-10"**	20'-6"	**18'-6"**	**15'-7"**	**12'-5"**	18'-11"	**17'-2"**	**16'-1"**	**14'-10"**	20'-6"	**18'-6"**	**15'-7"**	**12'-5"**
	14"	21'-6"	**19'-5"**	**18'-3"**	**14'-10"**	23'-3"	**19'-4"**	**16'-0"**	**12'-9"**	21'-6"	**19'-5"**	**18'-3"**	**14'-10"**	23'-3"	**19'-4"**	**16'-0"**	**12'-9"**
	16"	**23'-9"**	**21'-6"**	**18'-7"**	**14'-10"**	**25'-8"**	**19'-4"**	**16'-0"**	**12'-9"**	**23'-9"**	**21'-6"**	**18'-7"**	**14'-10"**	**25'-8"**	**19'-4"**	**16'-0"**	**12'-9"**
	18"	25'-10"	**23'-4"**	**21'-11"**	**18'-6"**	**28'-0"**	**22'-4"**	**18'-7"**	**14'-10"**	25'-10"	**23'-4"**	**21'-11"**	**18'-6"**	**28'-0"**	**22'-4"**	**18'-7"**	**14'-10"**
	20"	**27'-11"**	**25'-3"**	**23'-8"**	**19'-8"**	**29'-11"**	**22'-4"**	**18'-7"**	**14'-10"**	**27'-11"**	**25'-3"**	**23'-8"**	**19'-8"**	**29'-11"**	**22'-4"**	**18'-7"**	**14'-10"**
	22"	**29'-11"**	**27'-1"**	**25'-5"**	**20'-11"**	**29'-11"**	**22'-4"**	**18'-7"**	**14'-10"**	**29'-11"**	**27'-1"**	**25'-5"**	**20'-11"**	**29'-11"**	**22'-4"**	**18'-7"**	**14'-10"**
	24"	**31'-10"**	**28'-10"**	**27'-1"**	**21'-9"**	**29'-11"**	**22'-4"**	**18'-7"**	**14'-10"**	**31'-10"**	**28'-10"**	**27'-1"**	**21'-9"**	**29'-11"**	**22'-4"**	**18'-7"**	**14'-10"**

NOTES:

1. Joist spans have been calculated in accordance with CSA 086S1-05 for the specified uniform floor loads listed. Concentrated load cases, where required, shall be evaluated by the designer.
2. The spans listed are the clear distance between supports. Continuous spans are based on the longest span. The shortest span shall not be less than 50% of the longest span. Refer to the Uplift Coefficients table below to determine the required uplift restraint for the end of the shorter span of continuous, unequal span joists.
3. Vibration has been checked in accordance with CCMC concluding report (dated September 4, 1997) with glued & nailed floor sheathing, with or without a direct attached 1/2" gypsum ceiling, as indicated in the table.
4. The floor sheathing shall be 1F32 rated OSB glued to the joists with an elastomeric adhesive conforming to CGSB Standard CAN-CGSB-71.26-M88.
5. Uniform load deflection has been limited to the following: L/360 on live load and L/240 on total load based on bare joist properties only. Long term deflection (creep) has not been considered. The designer shall evaluate live and total load deflection, and creep in the final design of the member.
6. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
7. Web stiffeners are not required for the spans in these tables except where **bold**. For spans in **bold**, web stiffeners shall be installed at all supports. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange or require nailing into the web.
8. Provide lateral support at points of bearing to prevent twisting of joists.
9. Use in dry service conditions only.
10. For conditions not covered or for additional information contact your LP® SolidStart® Engineered Wood Products distributor.

UPLIFT COEFFICIENTS

Short span / Long span	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
Coefficient A	0.375	0.709	1.088	1.514	1.989	2.516	3.096	3.732	4.427	5.182	6.0
Coefficient B	6.0	6.82	7.68	8.58	9.52	10.5	11.52	12.58	13.68	14.82	16.0

NOTE:

For joists continuous over two or more spans, where the short span is at least 50% of the long span, the end of the short span shall be anchored to resist any uplift force as indicated by a negative value from the following:

Factored Uplift Force (lb) = $L * s * (A * D_f - L_f) / B$ (a negative value represents uplift that must be restrained)

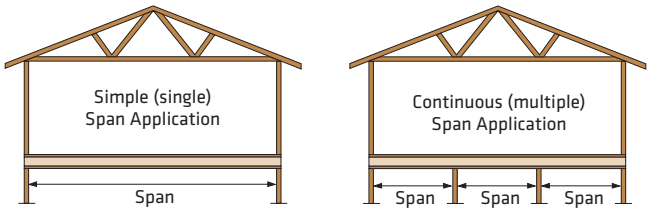
Where L = longest span (ft), s = joist spacing (ft), D_f = factored dead load (psf), L_f = factored live load (psf), A and B are coefficients given in the table.

Floor Span Tables: 100 psf Live Load, 45 psf Dead Load, 7/8" OSB Sheathing

TO USE:

1. Select the appropriate table based on the floor system construction.
2. Select the Simple Span or Continuous Span section of the table, as required.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding joist series, depth and spacing.

CAUTION: For floor systems that require both simple span and continuous span joists, it is a good idea to check both before selecting a joist. Some conditions are controlled by continuous span strength rather than simple span deflection or vibration.



100 PSF LIVE LOAD, 45 PSF DEAD LOAD: 7/8" OSB SHEATHING, GLUED & NAILED

Series	Depth	No Direct Attached Ceiling								Direct Attached 1/2" Gypsum Ceiling							
		Maximum Simple Spans				Maximum Continuous Spans				Maximum Simple Spans				Maximum Continuous Spans			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
LPI 20Plus	9-1/2"	12'-8"	11'-6"	10'-5"	8'-7"	13'-2"	10'-8"	8'-10"	7'-0"	12'-8"	11'-6"	10'-5"	8'-7"	13'-2"	10'-8"	8'-10"	7'-0"
	11-7/8"	15'-1"	13'-4"	12'-1"	9'-7"	15'-2"	11'-4"	9'-5"	7'-6"	15'-1"	13'-4"	12'-1"	9'-7"	15'-2"	11'-4"	9'-5"	7'-6"
	14"	16'-8"	14'-5"	13'-2"	10'-8"	16'-1"	12'-0"	9'-11"	7'-11"	16'-8"	14'-5"	13'-2"	10'-8"	16'-1"	12'-0"	9'-11"	7'-11"
LPI 32Plus	9-1/2"	13'-4"	12'-1"	10'-10"	8'-7"	14'-3"	10'-8"	8'-10"	7'-0"	13'-4"	12'-1"	10'-10"	8'-7"	14'-3"	10'-8"	8'-10"	7'-0"
	11-7/8"	15'-10"	14'-4"	12'-1"	9'-7"	15'-2"	11'-4"	9'-5"	7'-6"	15'-10"	14'-4"	12'-1"	9'-7"	15'-2"	11'-4"	9'-5"	7'-6"
	14"	18'-0"	15'-8"	13'-4"	10'-8"	16'-1"	12'-0"	9'-11"	7'-11"	18'-0"	15'-8"	13'-4"	10'-8"	16'-1"	12'-0"	9'-11"	7'-11"
	16"	19'-7"	16'-11"	14'-6"	11'-7"	16'-10"	12'-7"	10'-5"	8'-4"	19'-7"	16'-11"	14'-6"	11'-7"	16'-10"	12'-7"	10'-5"	8'-4"
LPI 42Plus	9-1/2"	15'-2"	13'-9"	12'-4"	9'-10"	15'-9"	11'-9"	9'-9"	7'-9"	15'-2"	13'-9"	12'-4"	9'-10"	15'-9"	11'-9"	9'-9"	7'-9"
	11-7/8"	18'-1"	16'-4"	14'-8"	11'-9"	19'-6"	14'-7"	12'-1"	9'-8"	18'-1"	16'-4"	14'-8"	11'-9"	19'-6"	14'-7"	12'-1"	9'-8"
	14"	20'-6"	18'-7"	15'-6"	12'-4"	21'-7"	16'-1"	13'-5"	10'-8"	20'-6"	18'-7"	15'-6"	12'-4"	21'-7"	16'-1"	13'-5"	10'-8"
	16"	22'-8"	20'-7"	17'-3"	13'-9"	22'-10"	17'-1"	14'-2"	11'-3"	22'-8"	20'-7"	17'-3"	13'-9"	22'-10"	17'-1"	14'-2"	11'-3"
	18"	24'-8"	22'-4"	20'-10"	17'-5"	25'-11"	19'-5"	16'-1"	12'-10"	24'-8"	22'-4"	20'-10"	17'-5"	25'-11"	19'-5"	16'-1"	12'-10"
	20"	26'-8"	24'-0"	21'-11"	18'-6"	26'-8"	19'-11"	16'-7"	13'-2"	26'-8"	24'-0"	21'-11"	18'-6"	26'-8"	19'-11"	16'-7"	13'-2"
	22"	28'-8"	25'-2"	22'-11"	19'-7"	26'-10"	20'-1"	16'-8"	13'-3"	28'-8"	25'-2"	22'-11"	19'-7"	26'-10"	20'-1"	16'-8"	13'-3"
	24"	30'-4"	26'-3"	23'-11"	20'-5"	26'-10"	20'-1"	16'-8"	13'-3"	30'-4"	26'-3"	23'-11"	20'-5"	26'-10"	20'-1"	16'-8"	13'-3"
LPI 36	11-7/8"	16'-6"	15'-0"	13'-10"	11'-0"	17'-8"	13'-2"	11'-0"	8'-9"	16'-6"	15'-0"	13'-10"	11'-0"	17'-8"	13'-2"	11'-0"	8'-9"
	14"	18'-9"	16'-8"	13'-10"	11'-0"	17'-8"	13'-2"	11'-0"	8'-9"	18'-9"	16'-8"	13'-10"	11'-0"	17'-8"	13'-2"	11'-0"	8'-9"
	16"	20'-8"	16'-8"	13'-10"	11'-0"	17'-8"	13'-2"	11'-0"	8'-9"	20'-8"	16'-8"	13'-10"	11'-0"	17'-8"	13'-2"	11'-0"	8'-9"
	18"	22'-6"	20'-4"	17'-0"	13'-6"	17'-8"	13'-2"	10'-11"	8'-8"	22'-6"	20'-4"	17'-0"	13'-6"	17'-8"	13'-2"	10'-11"	8'-8"
	20"	24'-3"	21'-1"	17'-6"	14'-0"	17'-8"	13'-2"	10'-11"	8'-8"	24'-3"	21'-1"	17'-6"	14'-0"	17'-8"	13'-2"	10'-11"	8'-8"
	22"	26'-0"	21'-8"	18'-0"	14'-4"	17'-8"	13'-2"	10'-11"	8'-8"	26'-0"	21'-8"	18'-0"	14'-4"	17'-8"	13'-2"	10'-11"	8'-8"
	24"	27'-9"	22'-1"	18'-4"	14'-8"	17'-8"	13'-2"	10'-11"	8'-8"	27'-9"	22'-1"	18'-4"	14'-8"	17'-8"	13'-2"	10'-11"	8'-8"
LPI 56	11-7/8"	18'-11"	17'-2"	16'-1"	13'-11"	20'-6"	17'-7"	14'-7"	11'-7"	18'-11"	17'-2"	16'-1"	13'-11"	20'-6"	17'-7"	14'-7"	11'-7"
	14"	21'-6"	19'-5"	17'-5"	13'-11"	23'-3"	18'-1"	15'-1"	12'-0"	21'-6"	19'-5"	17'-5"	13'-11"	23'-3"	18'-1"	15'-1"	12'-0"
	16"	23'-9"	20'-11"	17'-5"	13'-11"	24'-3"	18'-1"	15'-1"	12'-0"	23'-9"	20'-11"	17'-5"	13'-11"	24'-3"	18'-1"	15'-1"	12'-0"
	18"	25'-10"	23'-4"	21'-9"	17'-4"	28'-0"	21'-0"	17'-5"	13'-11"	25'-10"	23'-4"	21'-9"	17'-4"	28'-0"	21'-0"	17'-5"	13'-11"
	20"	27'-11"	25'-3"	23'-2"	18'-6"	28'-1"	21'-0"	17'-5"	13'-11"	27'-11"	25'-3"	23'-2"	18'-6"	28'-1"	21'-0"	17'-5"	13'-11"
	22"	29'-11"	27'-1"	24'-7"	19'-7"	28'-1"	21'-0"	17'-5"	13'-11"	29'-11"	27'-1"	24'-7"	19'-7"	28'-1"	21'-0"	17'-5"	13'-11"
	24"	31'-10"	28'-10"	25'-7"	20'-5"	28'-1"	21'-0"	17'-5"	13'-11"	31'-10"	28'-10"	25'-7"	20'-5"	28'-1"	21'-0"	17'-5"	13'-11"

NOTES:

1. Joist spans have been calculated in accordance with CSA 086S1-05 for the specified uniform floor loads listed. Concentrated load cases, where required, shall be evaluated by the designer.
2. The spans listed are the clear distance between supports. Continuous spans are based on the longest span. The shortest span shall not be less than 50% of the longest span. Refer to the Uplift Coefficients table below to determine the required uplift restraint for the end of the shorter span of continuous, unequal span joists.
3. Vibration has been checked in accordance with CCMC concluding report (dated September 4, 1997) with glued & nailed floor sheathing, with or without a direct attached 1/2" gypsum ceiling, as indicated in the table.
4. The floor sheathing shall be 1F32 rated OSB glued to the joists with an elastomeric adhesive conforming to CGSB Standard CAN-CGSB-71.26-M88.
5. Uniform load deflection has been limited to the following: L/360 on live load and L/240 on total load based on bare joist properties only. Long term deflection (creep) has not been considered. The designer shall evaluate live and total load deflection, and creep in the final design of the member.
6. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
7. Web stiffeners are not required for the spans in these tables except where **bold**. For spans in **bold**, web stiffeners shall be installed at all supports. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange or require nailing into the web.
8. Provide lateral support at points of bearing to prevent twisting of joists.
9. Use in dry service conditions only.
10. For conditions not covered or for additional information contact your LP® SolidStart® Engineered Wood Products distributor.

UPLIFT COEFFICIENTS

Short span / Long span	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
Coefficient A	0.375	0.709	1.088	1.514	1.989	2.516	3.096	3.732	4.427	5.182	6.0
Coefficient B	6.0	6.82	7.68	8.58	9.52	10.5	11.52	12.58	13.68	14.82	16.0

NOTE:

For joists continuous over two or more spans, where the short span is at least 50% of the long span, the end of the short span shall be anchored to resist any uplift force as indicated by a negative value from the following:

Factored Uplift Force (lb) = L * s * (A * D_f - L_f) / B (a negative value represents uplift that must be restrained)

Where L = longest span (ft), s = joist spacing (ft), D_f = factored dead load (psf), L_f = factored live load (psf), A and B are coefficients given in the table.

Roof Span Tables: Low Slope (6:12 or less)

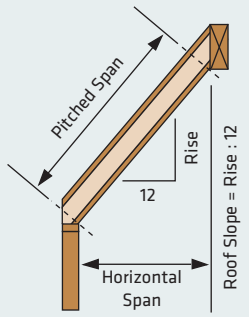
TO USE:

1. Select the appropriate set of tables based on roof slope.
2. Select the section of that table that corresponds to the specified roof snow load.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding series, depth and spacing.

NOTES:

1. Joist spans have been calculated in accordance with CSA O86S1-05 for the specified uniform snow and dead loads shown. These spans have not been evaluated for wind, snow drift or concentrated loads. The designer shall evaluate all required conditions.
2. The spans listed are the horizontal clear distance between supports and are valid for simple or continuous span applications. Continuous spans are based on the longest span. The shortest span must not be less than 50% of the longest span. Refer to the Uplift Coefficients table on page 17 to determine the required uplift restraint for the end of the shorter span of continuous, unequal span joists due solely to gravity loads. Uplift due to wind may require additional restraint.
3. These tables do not reflect any additional stiffness provided by the roof sheathing.
4. Uniform load deflection has been limited to the following: L/360 on live load and L/180 on total load based on bare joist properties only. Long term deflection (creep) has not been considered. The designer shall evaluate live and total load deflection, and creep in the final design of the member.
5. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
6. Web stiffeners shall be installed at all supports for joists 18" and deeper and for all depths when using a "bird's mouth" detail. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange or for hangers that require nailing into the web.
7. Provide continuous lateral support for compression flange. Provide lateral support at points of bearing to prevent twisting of the joist.
8. Roof joists must have a minimum slope of 1/4" per foot (1/4:12) for positive drainage.
9. Roof applications in high wind areas require special analysis which may reduce spans and require special connectors to resist uplift.
10. Use in dry service conditions only.
11. For conditions not covered or for additional information contact your LP® SolidStart® Engineered Wood Products distributor.

ROOF JOIST SPAN



ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

Span (ft)	L/360	L/240	L/180
10'	5/16"	1/2"	11/16"
12'	3/8"	5/8"	13/16"
14'	7/16"	11/16"	15/16"
16'	9/16"	13/16"	1-1/16"
18'	5/8"	7/8"	1-3/16"
20'	11/16"	1"	1-5/16"
22'	3/4"	1-1/8"	1-7/16"
24'	13/16"	1-3/16"	1-5/8"
26'	7/8"	1-5/16"	1-3/4"
28'	15/16"	1-3/8"	1-7/8"
30'	1"	1-1/2"	2"

* Deflections rounded to the nearest 1/16".

ROOF SNOW LOAD		Series	Depth	16" oc	19.2" oc	24" oc
		Roof Dead Load →			25 psf	
	25 psf	LPI 20Plus	9-1/2"	18'-11"	17'-6"	15'-8"
			11-7/8"	22'-3"	20'-3"	18'-1"
			14"	24'-1"	22'-0"	19'-7"
		LPI 32Plus	9-1/2"	20'-1"	18'-10"	17'-1"
			11-7/8"	23'-11"	21'-10"	19'-6"
			14"	26'-3"	23'-11"	20'-10"
			16"	28'-3"	25'-10"	20'-11"
		LPI 42Plus	9-1/2"	23'-0"	21'-7"	19'-11"
			11-7/8"	27'-5"	25'-9"	23'-10"
			14"	31'-1"	29'-3"	27'-1"
			16"	34'-6"	32'-5"	27'-7"
			18"	37'-5"	34'-10"	31'-2"
			20"	40'-2"	36'-8"	32'-9"
			22"	42'-1"	38'-5"	34'-4"
			24"	43'-10"	40'-0"	35'-9"
		LPI 36	11-7/8"	25'-1"	23'-6"	21'-9"
			14"	28'-5"	26'-8"	24'-8"
			16"	31'-5"	29'-6"	25'-2"
			18"	34'-2"	32'-1"	26'-6"
			20"	36'-11"	33'-2"	26'-6"
			22"	39'-7"	33'-2"	26'-6"
			24"	39'-11"	33'-2"	26'-6"
		LPI 56	11-7/8"	29'-1"	27'-4"	25'-3"
			14"	32'-11"	30'-11"	28'-7"
			16"	36'-5"	34'-2"	29'-6"
			18"	39'-8"	37'-3"	34'-5"
			20"	42'-10"	40'-2"	37'-2"
			22"	45'-11"	43'-1"	39'-10"
			24"	48'-10"	45'-10"	42'-1"
	30 psf	LPI 20plus	9-1/2"	18'-4"	16'-10"	15'-1"
			11-7/8"	21'-5"	19'-6"	17'-5"
			14"	23'-2"	21'-2"	18'-11"
		LPI 32plus	9-1/2"	19'-5"	18'-3"	16'-5"
			11-7/8"	23'-0"	21'-0"	18'-2"
			14"	25'-3"	23'-1"	19'-3"
			16"	27'-3"	24'-3"	19'-4"
		LPI 42plus	9-1/2"	22'-4"	20'-11"	19'-4"
			11-7/8"	26'-7"	25'-0"	23'-1"
			14"	30'-3"	28'-5"	25'-7"
			16"	33'-6"	31'-5"	25'-7"
			18"	36'-4"	33'-7"	30'-0"
			20"	38'-9"	35'-4"	31'-7"
			22"	40'-6"	37'-0"	33'-1"
			24"	42'-3"	38'-7"	34'-5"
		LPI 36	11-7/8"	24'-4"	22'-10"	21'-1"
			14"	27'-7"	25'-11"	22'-8"
			16"	30'-6"	28'-4"	22'-8"
			18"	33'-2"	29'-11"	23'-10"
			20"	35'-10"	29'-11"	23'-10"
			22"	36'-0"	29'-11"	23'-10"
			24"	36'-0"	29'-11"	23'-10"
		LPI 56	11-7/8"	28'-3"	26'-6"	24'-6"
			14"	32'-0"	30'-0"	27'-4"
			16"	35'-4"	33'-2"	27'-4"
			18"	38'-6"	36'-2"	33'-5"
			20"	41'-7"	39'-0"	36'-1"
			22"	44'-7"	41'-10"	37'-11"
			24"	47'-5"	44'-6"	37'-11"
	40 psf	LPI 20Plus	9-1/2"	16'-8"	15'-5"	13'-9"
			11-7/8"	19'-8"	17'-11"	15'-2"
			14"	21'-3"	19'-5"	16'-2"
		LPI 32Plus	9-1/2"	17'-8"	16'-7"	13'-11"
			11-7/8"	21'-1"	19'-0"	15'-2"
			14"	23'-2"	20'-3"	16'-2"
			16"	24'-6"	20'-5"	16'-3"
		LPI 42Plus	9-1/2"	20'-4"	19'-1"	17'-7"
			11-7/8"	24'-3"	22'-9"	20'-7"
			14"	27'-6"	25'-10"	21'-4"
			16"	30'-6"	26'-11"	21'-6"
			18"	33'-1"	30'-9"	27'-6"
			20"	35'-6"	32'-5"	28'-11"
			22"	37'-2"	33'-11"	30'-3"
			24"	38'-9"	35'-4"	30'-3"
		LPI 36	11-7/8"	22'-2"	20'-9"	18'-10"
			14"	25'-1"	23'-7"	18'-10"
			16"	27'-9"	23'-8"	18'-10"
			18"	30'-0"	24'-11"	19'-10"
			20"	30'-0"	24'-11"	19'-10"
			22"	30'-0"	24'-11"	19'-10"
			24"	30'-0"	24'-11"	19'-10"
		LPI 56	11-7/8"	25'-8"	24'-1"	22'-3"
			14"	29'-2"	27'-4"	23'-0"
			16"	32'-2"	28'-10"	23'-0"
			18"	35'-1"	32'-11"	30'-5"
			20"	37'-10"	35'-6"	31'-8"
			22"	40'-7"	38'-1"	31'-8"
			24"	43'-2"	39'-8"	31'-8"

TO USE:

1. Select the appropriate set of tables based on roof slope.
2. Select the section of that table that corresponds to the specified roof snow load.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding series, depth and spacing.

NOTES:

1. Joist spans have been calculated in accordance with CSA O86S1-05 for the specified uniform snow and dead loads shown. These spans have not been evaluated for wind, snow drift or concentrated loads. The designer shall evaluate all required conditions.
2. The spans listed are the horizontal clear distance between supports and are valid for simple or continuous span applications. Continuous spans are based on the longest span. The shortest span must not be less than 50% of the longest span. Refer to the Uplift Coefficients table below to determine the required uplift restraint for the end of the shorter span of continuous, unequal span joists due solely to gravity loads. Uplift due to wind may require additional restraint.
3. These tables do not reflect any additional stiffness provided by the roof sheathing.
4. Uniform load deflection has been limited to the following: L/360 on live load and L/180 on total load based on bare joist properties only. Long term deflection (creep) has not been considered. The designer shall evaluate live and total load deflection, and creep in the final design of the member.
5. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
6. Web stiffeners shall be installed at all supports for joists 18" and deeper and for all depths when using a "bird's mouth" detail. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange or for hangers that require nailing into the web.
7. Provide continuous lateral support for compression flange. Provide lateral support at points of bearing to prevent twisting of the joist.
8. Roof joists must have a minimum slope of 1/4" per foot (1/4:12) for positive drainage.
9. Roof applications in high wind areas require special analysis which may reduce spans and require special connectors to resist uplift.
10. Use in dry service conditions only.
11. For conditions not covered or for additional information contact your LP® SolidStart® Engineered Wood Products distributor.

ROOF SNOW LOAD		Series	Depth	16" oc	19.2" oc	24" oc
		Roof Dead Load ⟶		25 psf		
	50 psf	LPI 20Plus	9-1/2"	15'-5"	14'-4"	11'-11"
			11-7/8"	18'-3"	16'-3"	12'-11"
			14"	19'-9"	17'-4"	13'-10"
		LPI 32Plus	9-1/2"	16'-4"	15'-0"	11'-11"
			11-7/8"	19'-7"	16'-3"	12'-11"
			14"	20'-10"	17'-4"	13'-10"
			16"	21'-2"	17'-7"	14'-0"
		LPI 42Plus	9-1/2"	18'-9"	17'-7"	15'-3"
			11-7/8"	22'-5"	21'-0"	17'-7"
			14"	25'-6"	23'-0"	18'-4"
			16"	27'-11"	23'-3"	18'-6"
			18"	30'-8"	28'-7"	25'-1"
			20"	33'-0"	30'-1"	25'-10"
			22"	34'-6"	31'-6"	25'-11"
			24"	36'-0"	32'-6"	25'-11"
		LPI 36	11-7/8"	20'-6"	19'-2"	16'-2"
			14"	23'-3"	20'-3"	16'-2"
			16"	24'-5"	20'-3"	16'-2"
			18"	25'-8"	21'-4"	17'-0"
			20"	25'-8"	21'-4"	17'-0"
			22"	25'-8"	21'-4"	17'-0"
			24"	25'-8"	21'-4"	17'-0"
		LPI 56	11-7/8"	23'-9"	22'-3"	19'-10"
			14"	26'-11"	24'-10"	19'-10"
			16"	29'-9"	24'-10"	19'-10"
			18"	32'-5"	30'-5"	27'-1"
			20"	35'-0"	32'-10"	27'-1"
			22"	37'-6"	34'-0"	27'-1"
			24"	40'-0"	34'-0"	27'-1"
	60 psf	LPI 20plus	9-1/2"	14'-6"	13'-1"	10'-5"
			11-7/8"	17'-1"	14'-3"	11'-4"
			14"	18'-3"	15'-2"	12'-1"
		LPI 32plus	9-1/2"	15'-4"	13'-1"	10'-5"
			11-7/8"	17'-2"	14'-3"	11'-4"
			14"	18'-3"	15'-2"	12'-1"
			16"	18'-7"	15'-5"	12'-3"
		LPI 42plus	9-1/2"	17'-7"	16'-6"	13'-4"
			11-7/8"	21'-0"	19'-4"	15'-5"
			14"	23'-11"	20'-1"	16'-0"
			16"	24'-6"	20'-5"	16'-3"
			18"	28'-9"	26'-9"	21'-11"
			20"	30'-11"	28'-2"	22'-7"
			22"	32'-4"	28'-5"	22'-8"
			24"	33'-9"	28'-5"	22'-8"
		LPI 36	11-7/8"	19'-2"	17'-9"	14'-1"
			14"	21'-4"	17'-9"	14'-1"
			16"	21'-4"	17'-9"	14'-1"
			18"	22'-6"	18'-8"	14'-10"
			20"	22'-6"	18'-8"	14'-10"
			22"	22'-6"	18'-8"	14'-10"
			24"	22'-6"	18'-8"	14'-10"
		LPI 56	11-7/8"	22'-3"	20'-11"	17'-5"
			14"	25'-3"	21'-10"	17'-5"
			16"	26'-3"	21'-10"	17'-5"
			18"	30'-5"	28'-6"	23'-9"
			20"	32'-10"	29'-9"	23'-9"
			22"	35'-3"	29'-9"	23'-9"
			24"	35'-9"	29'-9"	23'-9"

UPLIFT COEFFICIENTS

Short span / Long span	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
Coefficient A	0.375	0.709	1.088	1.514	1.989	2.516	3.096	3.732	4.427	5.182	6.0
Coefficient B	6.0	6.82	7.68	8.58	9.52	10.5	11.52	12.58	13.68	14.82	16.0

NOTE:

For joists continuous over two or more spans, where the short span is at least 50% of the long span, the end of the short span shall be anchored to resist any uplift force as indicated by a negative value from the following:

Factored Uplift Force (lb) = L * s * [A * (D_f + 0.5 * L_f) - 0.5 * L_f] / B (a negative value represents uplift that must be restrained)

Where L = longest span (ft), s = joist spacing (ft), D_f = factored dead load (psf), L_f = factored live load (psf), A and B are coefficients given in the table.

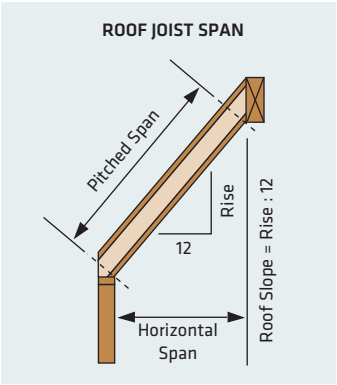
Roof Span Tables: High Slope (over 6:12, not to exceed 12:12)

TO USE:

1. Select the appropriate set of tables based on roof slope.
2. Select the section of that table that corresponds to the specified roof snow load.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding series, depth and spacing.

NOTES:

1. Joist spans have been calculated in accordance with CSA O86S1-05 for the specified uniform snow and dead loads shown. These spans have not been evaluated for wind, snow drift or concentrated loads. The designer shall evaluate all required conditions.
2. The spans listed are the horizontal clear distance between supports and are valid for simple or continuous span applications. Continuous spans are based on the longest span. The shortest span must not be less than 50% of the longest span. Refer to the Uplift Coefficients table on page 19 to determine the required uplift restraint for the end of the shorter span of continuous, unequal span joists due solely to gravity loads. Uplift due to wind may require additional restraint.
3. These tables do not reflect any additional stiffness provided by the roof sheathing.
4. Uniform load deflection has been limited to the following: L/360 on live load and L/180 on total load based on bare joist properties only. Long term deflection (creep) has not been considered. The designer shall evaluate live and total load deflection, and creep in the final design of the member.
5. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
6. Web stiffeners shall be installed at all supports for joists 18" and deeper and for all depths when using a "bird's mouth" detail. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange or for hangers that require nailing into the web.
7. Provide continuous lateral support for compression flange. Provide lateral support at points of bearing to prevent twisting of the joist.
8. Roof joists must have a minimum slope of 1/4" per foot (1/4:12) for positive drainage.
9. Roof applications in high wind areas require special analysis which may reduce spans and require special connectors to resist uplift.
10. Use in dry service conditions only.
11. For conditions not covered or for additional information contact your LP® SolidStart® Engineered Wood Products distributor.



ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

Span (ft)	L/360	L/240	L/180
10'	5/16"	1/2"	11/16"
12'	3/8"	5/8"	13/16"
14'	7/16"	11/16"	15/16"
16'	9/16"	13/16"	1-1/16"
18'	5/8"	7/8"	1-3/16"
20'	11/16"	1"	1-5/16"
22'	3/4"	1-1/8"	1-7/16"
24'	13/16"	1-3/16"	1-5/8"
26'	7/8"	1-5/16"	1-3/4"
28'	15/16"	1-3/8"	1-7/8"
30'	1"	1-1/2"	2"

* Deflections rounded to the nearest 1/16".

ROOF SNOW LOAD		Series	Depth	16" oc	19.2" oc	24" oc
		Roof Dead Load →			25 psf	
	25 psf	LPI 20Plus	9-1/2"	16'-9"	15'-9"	14'-4"
			11-7/8"	20'-1"	18'-7"	16'-8"
			14"	22'-1"	20'-2"	17'-6"
		LPI 32Plus	9-1/2"	17'-9"	16'-8"	15'-5"
			11-7/8"	21'-3"	19'-11"	17'-5"
			14"	24'-1"	21'-11"	17'-6"
			16"	25'-11"	22'-0"	17'-7"
		LPI 42Plus	9-1/2"	20'-4"	19'-1"	17'-8"
			11-7/8"	24'-3"	22'-10"	21'-1"
			14"	27'-7"	25'-11"	23'-2"
			16"	30'-7"	28'-9"	23'-2"
			18"	33'-2"	31'-2"	28'-7"
			20"	35'-11"	33'-8"	30'-1"
			22"	38'-7"	35'-3"	31'-6"
			24"	40'-3"	36'-8"	32'-10"
		LPI 36	11-7/8"	22'-3"	20'-10"	19'-4"
			14"	25'-2"	23'-8"	21'-2"
			16"	27'-10"	26'-2"	21'-2"
			18"	30'-4"	28'-5"	26'-4"
			20"	32'-9"	30'-9"	27'-6"
			22"	35'-1"	32'-11"	27'-6"
			24"	37'-4"	34'-5"	27'-6"
		LPI 56	11-7/8"	25'-9"	24'-3"	22'-5"
			14"	29'-3"	27'-5"	24'-9"
			16"	32'-3"	30'-4"	24'-9"
			18"	35'-2"	33'-0"	30'-7"
			20"	37'-11"	35'-8"	33'-0"
			22"	40'-8"	38'-2"	35'-4"
			24"	43'-3"	40'-8"	37'-8"
	30 psf	LPI 20plus	9-1/2"	16'-4"	15'-4"	14'-0"
			11-7/8"	19'-7"	18'-2"	16'-3"
			14"	21'-7"	19'-8"	16'-8"
		LPI 32plus	9-1/2"	17'-4"	16'-3"	15'-1"
			11-7/8"	20'-8"	19'-5"	16'-7"
			14"	23'-6"	20'-11"	16'-8"
			16"	25'-3"	21'-0"	16'-9"
		LPI 42plus	9-1/2"	19'-10"	18'-8"	17'-3"
			11-7/8"	23'-8"	22'-3"	20'-7"
			14"	26'-11"	25'-3"	22'-1"
			16"	29'-9"	27'-9"	22'-1"
			18"	32'-4"	30'-4"	27'-11"
			20"	35'-0"	32'-10"	29'-4"
			22"	37'-7"	34'-5"	30'-9"
			24"	39'-4"	35'-10"	32'-1"
		LPI 36	11-7/8"	21'-8"	20'-4"	18'-10"
			14"	24'-7"	23'-1"	20'-3"
			16"	27'-1"	25'-4"	20'-3"
			18"	29'-6"	27'-9"	25'-6"
			20"	31'-11"	29'-11"	25'-6"
			22"	34'-2"	31'-11"	25'-6"
			24"	36'-4"	31'-11"	25'-6"
		LPI 56	11-7/8"	25'-2"	23'-7"	21'-10"
			14"	28'-6"	26'-9"	23'-8"
			16"	31'-5"	29'-6"	23'-8"
			18"	34'-3"	32'-2"	29'-9"
			20"	37'-0"	34'-9"	32'-2"
			22"	39'-8"	37'-3"	34'-6"
			24"	42'-2"	39'-7"	36'-8"
	40 psf	LPI 20Plus	9-1/2"	15'-6"	14'-7"	13'-2"
			11-7/8"	18'-8"	17'-1"	14'-9"
			14"	20'-4"	18'-6"	14'-9"
		LPI 32Plus	9-1/2"	16'-6"	15'-6"	14'-4"
			11-7/8"	19'-8"	18'-5"	14'-9"
			14"	22'-2"	18'-6"	14'-9"
			16"	22'-5"	18'-7"	14'-10"
		LPI 42Plus	9-1/2"	18'-11"	17'-9"	16'-5"
			11-7/8"	22'-6"	21'-2"	19'-7"
			14"	25'-7"	24'-0"	19'-7"
			16"	28'-4"	24'-7"	19'-7"
			18"	30'-9"	28'-11"	26'-3"
			20"	33'-4"	30'-11"	27'-8"
			22"	35'-6"	32'-5"	29'-0"
			24"	37'-0"	33'-9"	30'-2"
		LPI 36	11-7/8"	20'-7"	19'-4"	17'-11"
			14"	23'-4"	21'-11"	17'-11"
			16"	25'-10"	22'-6"	17'-11"
			18"	28'-1"	26'-5"	21'-5"
			20"	30'-4"	26'-10"	21'-5"
			22"	32'-3"	26'-10"	21'-5"
			24"	32'-3"	26'-10"	21'-5"
		LPI 56	11-7/8"	23'-11"	22'-5"	20'-9"
			14"	27'-1"	25'-5"	21'-0"
			16"	29'-11"	26'-3"	21'-0"
			18"	32'-7"	30'-7"	28'-4"
			20"	35'-2"	33'-1"	30'-7"
			22"	37'-9"	35'-5"	32'-9"
			24"	40'-2"	37'-9"	34'-1"

TO USE:

1. Select the appropriate set of tables based on roof slope.
2. Select the section of that table that corresponds to the specified roof snow load.
3. Find a span that meets or exceeds the design span.
4. Read the corresponding series, depth and spacing.

NOTES:

1. Joist spans have been calculated in accordance with CSA O86S1-05 for the specified uniform snow and dead loads shown. These spans have not been evaluated for wind, snow drift or concentrated loads. The designer shall evaluate all required conditions.
2. The spans listed are the horizontal clear distance between supports and are valid for simple or continuous span applications. Continuous spans are based on the longest span. The shortest span must not be less than 50% of the longest span. Refer to the Uplift Coefficients table below to determine the required uplift restraint for the end of the shorter span of continuous, unequal span joists due solely to gravity loads. Uplift due to wind may require additional restraint.
3. These tables do not reflect any additional stiffness provided by the roof sheathing.
4. Uniform load deflection has been limited to the following: L/360 on live load and L/180 on total load based on bare joist properties only. Long term deflection (creep) has not been considered. The designer shall evaluate live and total load deflection, and creep in the final design of the member.
5. The spans are based on an end bearing length of 1-3/4" for joists up to 16" deep and 2-1/2" for joists 18" and deeper. An interior bearing length of at least 3-1/2" is required. The spans have been limited to the bearing resistance of an SPF wall plate.
6. Web stiffeners shall be installed at all supports for joists 18" and deeper and for all depths when using a "bird's mouth" detail. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange or for hangers that require nailing into the web.
7. Provide continuous lateral support for compression flange. Provide lateral support at points of bearing to prevent twisting of the joist.
8. Roof joists must have a minimum slope of 1/4" per foot (1/4:12) for positive drainage.
9. Roof applications in high wind areas require special analysis which may reduce spans and require special connectors to resist uplift.
10. Use in dry service conditions only.
11. For conditions not covered or for additional information contact your LP® SolidStart® Engineered Wood Products distributor.

ROOF SNOW LOAD		Series	Depth	16" oc	19.2" oc	24" oc
		Roof Dead Load →		25 psf		
	50 psf	LPI 20Plus	9-1/2"	14'-5"	13'-6"	12'-4"
			11-7/8"	17'-3"	16'-0"	12'-10"
			14"	19'-0"	16'-2"	12'-11"
		LPI 32Plus	9-1/2"	15'-3"	14'-4"	12'-9"
			11-7/8"	18'-3"	16'-1"	12'-10"
			14"	19'-6"	16'-2"	12'-11"
			16"	19'-6"	16'-3"	12'-11"
		LPI 42Plus	9-1/2"	17'-6"	16'-5"	15'-2"
			11-7/8"	20'-10"	19'-7"	17'-1"
			14"	23'-8"	21'-5"	17'-1"
			16"	25'-9"	21'-5"	17'-1"
			18"	28'-6"	26'-9"	24'-7"
			20"	30'-10"	28'-11"	25'-10"
			22"	33'-2"	30'-3"	27'-1"
			24"	34'-7"	31'-7"	28'-1"
		LPI 36	11-7/8"	19'-1"	17'-11"	15'-8"
			14"	21'-7"	19'-7"	15'-8"
			16"	23'-7"	19'-7"	15'-8"
			18"	26'-0"	23'-2"	18'-5"
			20"	27'-10"	23'-2"	18'-5"
			22"	27'-10"	23'-2"	18'-5"
			24"	27'-10"	23'-2"	18'-5"
		LPI 56	11-7/8"	22'-2"	20'-9"	18'-4"
			14"	25'-1"	22'-11"	18'-4"
			16"	27'-7"	22'-11"	18'-4"
			18"	30'-2"	28'-4"	26'-2"
			20"	32'-7"	30'-7"	28'-4"
			22"	34'-11"	32'-9"	29'-4"
			24"	37'-2"	34'-11"	29'-4"
	60 psf	LPI 20plus	9-1/2"	13'-6"	12'-8"	11'-4"
			11-7/8"	16'-2"	14'-3"	11'-4"
			14"	17'-3"	14'-4"	11'-5"
		LPI 32plus	9-1/2"	14'-4"	13'-5"	11'-4"
			11-7/8"	17'-1"	14'-3"	11'-4"
			14"	17'-3"	14'-4"	11'-5"
			16"	17'-4"	14'-5"	11'-6"
		LPI 42plus	9-1/2"	16'-5"	15'-5"	13'-7"
			11-7/8"	19'-7"	18'-5"	15'-2"
			14"	22'-3"	19'-0"	15'-2"
			16"	22'-11"	19'-0"	15'-2"
			18"	26'-9"	25'-2"	23'-2"
			20"	29'-0"	27'-3"	24'-4"
			22"	31'-1"	28'-6"	24'-8"
			24"	32'-7"	29'-9"	24'-8"
		LPI 36	11-7/8"	17'-11"	16'-9"	13'-10"
			14"	20'-4"	17'-5"	13'-10"
			16"	20'-11"	17'-5"	13'-10"
			18"	24'-5"	20'-4"	16'-2"
			20"	24'-5"	20'-4"	16'-2"
			22"	24'-5"	20'-4"	16'-2"
			24"	24'-5"	20'-4"	16'-2"
		LPI 56	11-7/8"	20'-9"	19'-6"	16'-3"
			14"	23'-7"	20'-4"	16'-3"
			16"	24'-6"	20'-4"	16'-3"
			18"	28'-4"	26'-7"	24'-7"
			20"	30'-7"	28'-9"	25'-10"
			22"	32'-9"	30'-9"	25'-10"
			24"	34'-11"	32'-4"	25'-10"

UPLIFT COEFFICIENTS

Short span / Long span	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
Coefficient A	0.375	0.709	1.088	1.514	1.989	2.516	3.096	3.732	4.427	5.182	6.0
Coefficient B	6.0	6.82	7.68	8.58	9.52	10.5	11.52	12.58	13.68	14.82	16.0

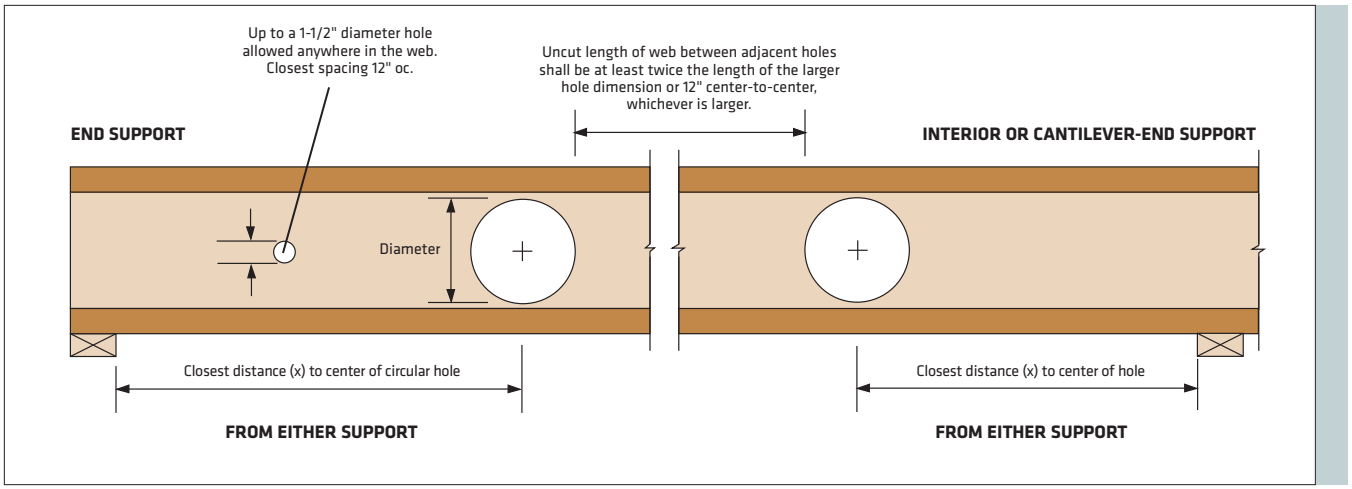
NOTE:

For joists continuous over two or more spans, where the short span is at least 50% of the long span, the end of the short span shall be anchored to resist any uplift force as indicated by a negative value from the following:

Factored Uplift Force (lb) = L * s * [A * (D_f + 0.5 * L_f) - 0.5 * L_f] / B (a negative value represents uplift that must be restrained)

Where L = longest span (ft), s = joist spacing (ft), D_f = factored dead load (psf), L_f = factored live load (psf), A and B are coefficients given in the table.

Web Hole Specifications: Circular Holes



TO USE:

1. Select the required series and depth.
2. Determine the support condition for the nearest bearing: end support or interior support (including cantilever-end supports).
3. Select the row corresponding to the required span. For spans between those listed, use the next largest value.
4. Select the column corresponding to the required hole diameter. For diameters between those listed, use the next largest value.
5. The intersection of the Span row and Hole Diameter column gives the minimum distance from the inside face of bearing to the center of a circular hole.
6. Double check the distance to the other support, using the appropriate support condition.

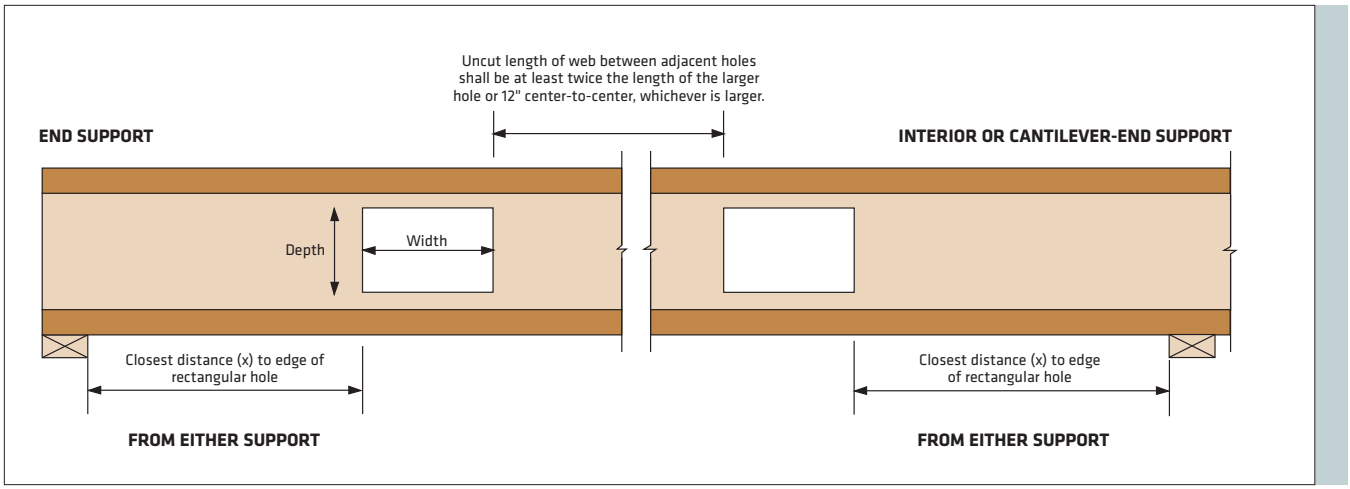
Series	Depth	Round Hole Diameter																
		2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"	13"	14"	15"	16"	17"	18"
LPI 20Plus	9-1/2"	1'-0"	1'-0"	1'-1"	1'-4"	2'-0"	-	-	-	-	-	-	-	-	-	-	-	-
	11-7/8"	1'-0"	1'-0"	1'-3"	1'-10"	2'-7"	3'-3"	3'-11"	-	-	-	-	-	-	-	-	-	-
	14"	1'-8"	2'-1"	2'-6"	2'-10"	3'-3"	3'-8"	4'-1"	4'-6"	5'-0"	-	-	-	-	-	-	-	-
LPI 32Plus	9-1/2"	1'-0"	1'-0"	1'-1"	1'-5"	2'-8"	-	-	-	-	-	-	-	-	-	-	-	-
	11-7/8"	1'-0"	1'-0"	1'-8"	2'-5"	3'-3"	4'-1"	4'-11"	-	-	-	-	-	-	-	-	-	-
	14"	2'-3"	2'-9"	3'-3"	3'-9"	4'-3"	4'-9"	5'-3"	5'-10"	6'-6"	-	-	-	-	-	-	-	-
	16"	3'-1"	3'-6"	3'-11"	4'-4"	4'-9"	5'-2"	5'-7"	6'-1"	6'-7"	7'-3"	8'-1"	-	-	-	-	-	-
LPI 42Plus	9-1/2"	1'-0"	2'-1"	3'-2"	4'-2"	5'-3"	-	-	-	-	-	-	-	-	-	-	-	-
	11-7/8"	3'-0"	3'-9"	4'-6"	5'-2"	5'-11"	6'-9"	7'-7"	-	-	-	-	-	-	-	-	-	-
	14"	4'-0"	4'-8"	5'-3"	5'-11"	6'-7"	7'-3"	7'-11"	8'-9"	9'-9"	-	-	-	-	-	-	-	-
	16"	4'-5"	5'-1"	5'-9"	6'-5"	7'-1"	7'-9"	8'-5"	9'-1"	9'-11"	10'-10"	11'-8"	-	-	-	-	-	-
	18"	1'-0"	1'-0"	1'-5"	2'-4"	3'-2"	4'-1"	5'-0"	5'-11"	6'-11"	8'-0"	9'-2"	-	-	-	-	-	-
	20"	1'-0"	1'-0"	1'-10"	2'-8"	3'-5"	4'-3"	5'-1"	5'-11"	6'-9"	7'-7"	8'-7"	9'-9"	11'-1"	-	-	-	-
	22"	1'-0"	1'-5"	2'-2"	2'-11"	3'-8"	4'-5"	5'-2"	5'-11"	6'-8"	7'-5"	8'-3"	9'-3"	10'-4"	11'-5"	12'-6"	-	-
	24"	1'-2"	1'-10"	2'-6"	3'-3"	3'-11"	4'-7"	5'-3"	6'-0"	6'-9"	7'-5"	8'-2"	9'-0"	9'-11"	10'-10"	11'-9"	12'-8"	13'-7"
LPI 36	11-7/8"	1'-0"	1'-11"	2'-11"	4'-0"	5'-1"	6'-2"	7'-5"	-	-	-	-	-	-	-	-	-	-
	14"	1'-7"	2'-6"	3'-6"	4'-5"	5'-4"	6'-3"	7'-3"	8'-5"	9'-10"	-	-	-	-	-	-	-	-
	16"	1'-7"	2'-6"	3'-5"	4'-4"	5'-4"	6'-4"	7'-3"	8'-3"	9'-5"	10'-10"	12'-4"	-	-	-	-	-	-
	18"	1'-0"	1'-0"	1'-1"	1'-8"	2'-7"	3'-6"	4'-5"	5'-4"	6'-3"	7'-3"	8'-5"	-	-	-	-	-	-
	20"	1'-0"	1'-0"	1'-3"	2'-1"	2'-11"	3'-8"	4'-6"	5'-4"	6'-2"	7'-0"	7'-10"	8'-11"	10'-4"	-	-	-	-
	22"	1'-0"	1'-0"	1'-9"	2'-6"	3'-3"	3'-11"	4'-8"	5'-5"	6'-2"	6'-11"	7'-8"	8'-6"	9'-6"	10'-8"	11'-10"	-	-
	24"	1'-0"	1'-5"	2'-1"	2'-9"	3'-5"	4'-1"	4'-10"	5'-6"	6'-2"	6'-10"	7'-7"	8'-4"	9'-1"	10'-1"	11'-1"	12'-1"	13'-1"
LPI 56	11-7/8"	3'-4"	4'-5"	5'-6"	6'-7"	7'-8"	8'-9"	9'-10"	-	-	-	-	-	-	-	-	-	-
	14"	4'-0"	5'-1"	6'-1"	7'-2"	8'-2"	9'-3"	10'-4"	11'-6"	12'-8"	-	-	-	-	-	-	-	-
	16"	4'-4"	5'-5"	6'-5"	7'-5"	8'-6"	9'-6"	10'-6"	11'-7"	12'-7"	13'-7"	14'-8"	-	-	-	-	-	-
	18"	1'-4"	2'-5"	3'-6"	4'-8"	5'-9"	6'-11"	8'-0"	9'-2"	10'-3"	11'-5"	12'-6"	-	-	-	-	-	-
	20"	1'-2"	2'-2"	3'-2"	4'-2"	5'-2"	6'-2"	7'-2"	8'-2"	9'-2"	10'-2"	11'-2"	12'-3"	13'-3"	-	-	-	-
	22"	1'-0"	1'-10"	2'-9"	3'-8"	4'-7"	5'-6"	6'-5"	7'-4"	8'-3"	9'-2"	10'-1"	11'-0"	11'-11"	12'-10"	13'-9"	-	-
	24"	1'-5"	2'-3"	3'-1"	3'-11"	4'-8"	5'-6"	6'-4"	7'-2"	7'-11"	8'-9"	9'-7"	10'-4"	11'-2"	12'-0"	12'-10"	13'-7"	14'-5"

DESIGN ASSUMPTIONS:

1. The hole locations listed above are valid for joists supporting the uniform loads. The specified uniform Dead Load shall not exceed the Live Load.
2. Hole location is measured from the inside face of bearing to the center of a circular hole, from the closest support.
3. Verify that the joist selected will work for the span and loading conditions needed before checking hole location.
4. Maximum hole depth for circular holes is Joist Depth less 4," not to exceed 18," except the maximum hole depth is 6" for 9-1/2" and 8" for 11-7/8" LP I-Joists.
5. Holes cannot be located in the span where designated "-", without further analysis by a professional engineer.

NOTES:

1. CUT HOLES CAREFULLY! DO NOT OVERCUT HOLES! DO NOT CUT JOIST FLANGES!
2. Holes may be placed anywhere within the depth of the joist. A minimum 1/4" clear distance is required between the hole and the flanges.
3. Round holes up to 1-1/2" diameter may be placed anywhere in the web.
4. Perforated "knockouts" may be neglected when locating web holes.
5. Holes larger than 1-1/2" are not permitted in cantilevers without special engineering.
6. Multiple holes shall have a clear separation along the length of the joist of at least twice the length of the larger adjacent hole, or a minimum of 12" center-to-center, whichever is greater.
7. Multiple holes may be spaced closer provided they fit within the boundary of an acceptable larger hole. Example: two 3" round holes aligned parallel to the joist length may be spaced 2" apart (clear distance) provided that a 3" high by 8" long rectangle or an 8" diameter round hole are acceptable for the joist depth at that location and completely encompass the holes.
8. These web hole tables are valid for simple and continuous span I-Joists with uniform loads only, as sized from the tables contained in LP's current I-Joist product guides. Larger holes, non-uniform loading conditions and/or closer proximity to supports may be possible, but require further analysis using LP's design software. Please contact your local LP® SolidStart® Engineered Wood Products distributor for more details.



TO USE:

1. Select the required series and depth.
2. Determine the support condition for the nearest bearing: end support or interior support (including cantilever-end supports).
3. Select the row corresponding to the required span. For spans between those listed, use the next largest value.
4 Select the column corresponding to the required hole dimension. For dimensions between those listed, use the next largest value.
5. The intersection of the Span row and Hole Dimension column gives the minimum distance from the inside face of bearing to the nearest edge of a square or rectangular hole.
6. Double check the distance to the other support, using the appropriate support condition.

Series	Depth	Rectangular Hole Depth Or Width																
		2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"	13"	14"	15"	16"	17"	18"
LPI 20Plus	9-1/2"	2'-2"	3'-0"	3'-9"	4'-7"	5'-8"	6'-1"	6'-6"	7'-0"	7'-7"	8'-1"	8'-7"	9'-3"	-	-	-	-	-
	11-7/8"	3'-7"	4'-2"	4'-9"	5'-5"	6'-4"	7'-7"	9'-6"	10'-3"	10'-11"	11'-7"	12'-4"	-	-	-	-	-	-
	14"	1'-8"	2'-2"	2'-9"	3'-4"	4'-0"	4'-8"	5'-6"	6'-9"	8'-10"	9'-8"	10'-8"	11'-8"	12'-8"	13'-8"	-	-	-
LPI 32Plus	9-1/2"	2'-11"	3'-11"	4'-11"	6'-0"	7'-4"	7'-9"	8'-2"	8'-7"	9'-0"	9'-5"	9'-11"	10'-6"	-	-	-	-	-
	11-7/8"	4'-6"	5'-3"	5'-11"	6'-10"	8'-0"	9'-6"	11'-3"	11'-11"	12'-5"	13'-1"	13'-9"	-	-	-	-	-	-
	14"	2'-2"	2'-11"	3'-8"	4'-5"	5'-2"	6'-0"	7'-1"	8'-9"	11'-2"	11'-11"	12'-9"	13'-6"	14'-3"	15'-1"	-	-	-
	16"	3'-0"	3'-8"	4'-4"	5'-0"	5'-7"	6'-4"	7'-4"	8'-8"	10'-6"	12'-6"	14'-6"	15'-2"	15'-10"	-	-	-	-
LPI 42Plus	9-1/2"	5'-6"	6'-5"	7'-4"	8'-3"	9'-3"	9'-8"	10'-0"	10'-4"	10'-10"	11'-3"	11'-10"	12'-5"	-	-	-	-	-
	11-7/8"	7'-1"	7'-11"	8'-11"	9'-11"	11'-0"	12'-1"	13'-7"	14'-1"	14'-7"	15'-0"	15'-6"	-	-	-	-	-	-
	14"	3'-10"	4'-10"	5'-10"	6'-9"	7'-9"	9'-0"	10'-7"	12'-4"	14'-1"	14'-7"	15'-1"	15'-7"	16'-2"	16'-8"	-	-	-
	16"	4'-3"	5'-4"	6'-4"	7'-5"	8'-5"	9'-6"	10'-11"	12'-3"	13'-7"	14'-11"	16'-4"	16'-9"	17'-2"	-	-	-	-
	18"	1'-4"	2'-4"	3'-3"	4'-2"	5'-2"	6'-2"	7'-3"	8'-5"	9'-11"	11'-8"	13'-5"	15'-2"	16'-11"	17'-7"	-	-	-
	20"	2'-0"	2'-11"	3'-10"	4'-9"	5'-8"	6'-7"	7'-6"	8'-7"	9'-11"	11'-4"	12'-10"	14'-4"	15'-10"	17'-3"	-	-	-
	22"	2'-7"	3'-5"	4'-3"	5'-2"	6'-0"	6'-10"	7'-9"	8'-10"	10'-0"	11'-3"	12'-7"	13'-10"	15'-1"	16'-4"	17'-8"	-	-
	24"	3'-1"	3'-11"	4'-8"	5'-7"	6'-5"	7'-3"	8'-2"	9'-1"	10'-2"	11'-4"	12'-5"	13'-6"	14'-8"	15'-9"	16'-10"	18'-0"	-
LPI 36	11-7/8"	6'-7"	7'-3"	8'-0"	8'-9"	9'-7"	10'-7"	11'-10"	12'-5"	13'-0"	13'-7"	14'-2"	-	-	-	-	-	-
	14"	3'-7"	4'-6"	5'-4"	6'-3"	7'-2"	8'-4"	9'-8"	11'-1"	12'-8"	13'-4"	14'-0"	14'-8"	15'-3"	15'-11"	-	-	-
	16"	3'-11"	4'-10"	5'-10"	6'-10"	7'-9"	8'-10"	10'-2"	11'-7"	13'-1"	14'-6"	16'-0"	16'-5"	16'-11"	-	-	-	-
	18"	1'-0"	1'-8"	2'-7"	3'-7"	4'-7"	5'-7"	6'-7"	7'-8"	9'-2"	11'-0"	12'-11"	14'-9"	16'-8"	17'-4"	-	-	-
	20"	1'-5"	2'-4"	3'-3"	4'-2"	5'-1"	6'-0"	6'-11"	7'-10"	9'-1"	10'-8"	12'-3"	13'-10"	15'-6"	17'-1"	-	-	-
	22"	2'-1"	3'-0"	3'-10"	4'-8"	5'-6"	6'-4"	7'-3"	8'-1"	9'-2"	10'-6"	11'-11"	13'-3"	14'-8"	16'-1"	17'-5"	-	-
	24"	2'-7"	3'-5"	4'-3"	5'-1"	5'-10"	6'-8"	7'-7"	8'-5"	9'-5"	10'-7"	11'-10"	13'-0"	14'-3"	15'-5"	16'-8"	17'-10"	-
LPI 56	11-7/8"	9'-1"	9'-8"	10'-4"	11'-1"	12'-1"	13'-3"	14'-7"	15'-0"	15'-5"	15'-10"	16'-2"	-	-	-	-	-	-
	14"	6'-3"	7'-3"	8'-3"	9'-3"	10'-4"	11'-4"	12'-6"	13'-10"	15'-3"	15'-8"	16'-1"	16'-6"	16'-11"	17'-4"	-	-	-
	16"	6'-11"	8'-0"	9'-0"	10'-0"	11'-1"	12'-1"	13'-1"	14'-2"	15'-2"	16'-2"	17'-2"	17'-6"	17'-10"	-	-	-	-
	18"	3'-5"	4'-8"	5'-10"	7'-1"	8'-3"	9'-6"	10'-8"	11'-11"	13'-1"	14'-3"	15'-6"	16'-8"	17'-11"	18'-4"	-	-	-
	20"	3'-4"	4'-6"	5'-7"	6'-9"	7'-10"	9'-0"	10'-1"	11'-3"	12'-4"	13'-5"	14'-7"	15'-8"	16'-10"	17'-11"	-	-	-
	22"	3'-3"	4'-4"	5'-4"	6'-5"	7'-6"	8'-6"	9'-7"	10'-8"	11'-8"	12'-9"	13'-10"	14'-10"	15'-11"	17'-0"	18'-0"	-	-
	24"	3'-8"	4'-8"	5'-8"	6'-7"	7'-7"	8'-7"	9'-6"	10'-6"	11'-6"	12'-5"	13'-5"	14'-4"	15'-4"	16'-4"	17'-3"	18'-3"	-

DESIGN ASSUMPTIONS:

1. The hole locations listed above are valid for joists supporting the uniform loads. The specified uniform Dead Load shall not exceed the Live Load.
2. Hole location is measured from the inside face of bearing to the center of a circular hole, from the closest support.
3. Verify that the joist selected will work for the span and loading conditions needed before checking hole location.
4. Maximum hole depth for circular holes is Joist Depth less 4," not to exceed 18," except the maximum hole depth is 6" for 9-1/2" and 8" for 11-7/8" LP I-Joists.
5. Holes cannot be located in the span where designated "-", without further analysis by a professional engineer.

NOTES:

1. CUT HOLES CAREFULLY! DO NOT OVERCUT HOLES! DO NOT CUT JOIST FLANGES!
2. Holes may be placed anywhere within the depth of the joist. A minimum 1/4" clear distance is required between the hole and the flanges.
3. Round holes up to 1-1/2" diameter may be placed anywhere in the web.
4. Perforated "knockouts" may be neglected when locating web holes.
5. Holes larger than 1-1/2" are not permitted in cantilevers without special engineering.
6. Multiple holes shall have a clear separation along the length of the joist of at least twice the length of the larger adjacent hole, or a minimum of 12" center-to-center, whichever is greater.
7. Multiple holes may be spaced closer provided they fit within the boundary of an acceptable larger hole. Example: two 3" round holes aligned parallel to the joist length may be spaced 2" apart (clear distance) provided that a 3" high by 8" long rectangle or an 8" diameter round hole are acceptable for the joist depth at that location and completely encompass the holes.
8. These web hole tables are valid for simple and continuous span I-Joists with uniform loads only, as sized from the tables contained in LP's current I-Joist product guides. Larger holes, non-uniform loading conditions and/or closer proximity to supports may be possible, but require further analysis using LP's design software. Please contact your local LP® SolidStart® Engineered Wood Products distributor for more details.

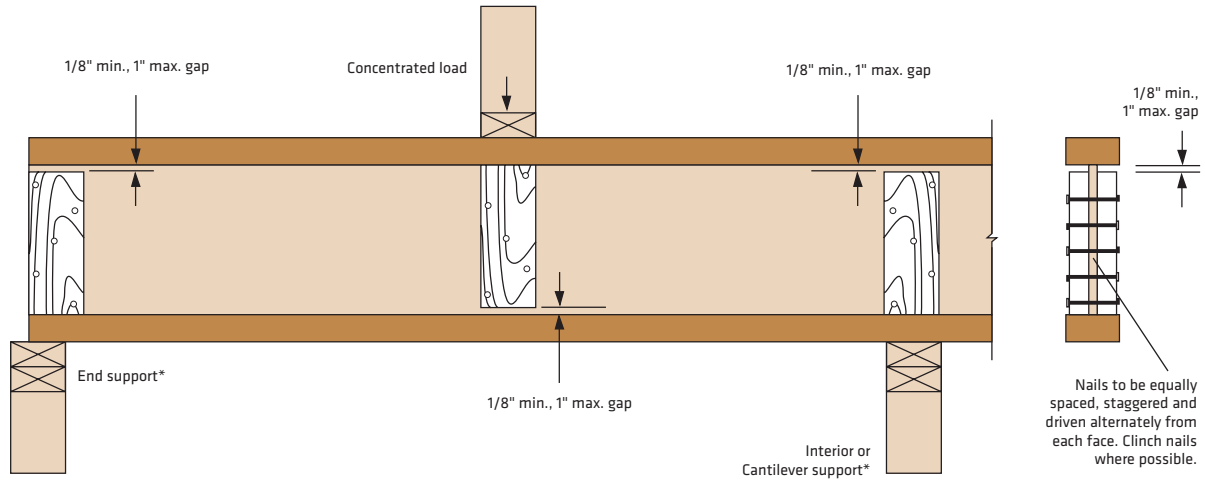
Web Stiffeners

WEB STIFFENER REQUIREMENTS

Series	Depth	Minimum Thickness	Maximum Height	Nail Size*	Nail Qty
LPI 20Plus & LPI 32Plus	9-1/2"	23/32"	6-3/8"	8d (2-1/2")	3
	11-7/8"	23/32"	8-3/4"	8d (2-1/2")	3
	14"	23/32"	10-7/8"	8d (2-1/2")	3
	16"	23/32"	12-7/8"	8d (2-1/2")	3
LPI 42Plus	9-1/2"	1-1/2"	6-3/8"	10d (3")	3
	11-7/8"	1-1/2"	8-3/4"	10d (3")	3
	14"	1-1/2"	10-7/8"	10d (3")	3
	16"	1-1/2"	12-7/8"	10d (3")	3
	18"	1-1/2"	14-7/8"	10d (3")	7
	20"	1-1/2"	16-7/8"	10d (3")	8
	22"	1-1/2"	18-7/8"	10d (3")	9
	24"	1-1/2"	20-7/8"	10d (3")	10
LPI 36	11-7/8"	23/32"	8-3/4"	8d (2-1/2")	4
	14"	23/32"	10-7/8"	8d (2-1/2")	5
	16"	23/32"	12-7/8"	8d (2-1/2")	6
	18"	23/32"	14-7/8"	8d (2-1/2")	7
	20"	23/32"	16-7/8"	8d (2-1/2")	8
	22"	23/32"	18-7/8"	8d (2-1/2")	9
	24"	23/32"	20-7/8"	8d (2-1/2")	10
LPI 56	11-7/8"	1-1/2"	8-3/4"	10d (3")	4
	14"	1-1/2"	10-7/8"	10d (3")	5
	16"	1-1/2"	12-7/8"	10d (3")	6
	18"	1-1/2"	14-7/8"	10d (3")	7
	20"	1-1/2"	16-7/8"	10d (3")	8
	22"	1-1/2"	18-7/8"	10d (3")	9
	24"	1-1/2"	20-7/8"	10d (3")	10

* Nail Size is for common wire nails.

WEB STIFFENER REQUIREMENTS



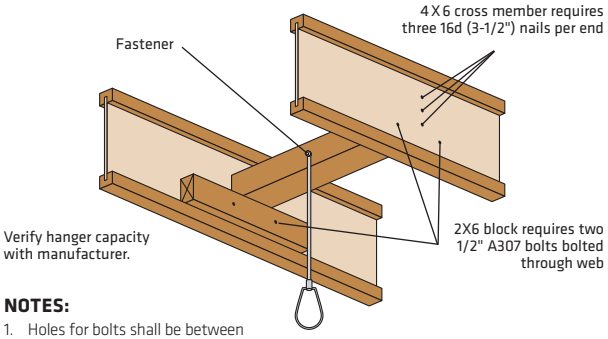
* Refer to framing plan for specific conditions.

NOTES:

1. Web stiffeners shall be installed in pairs – one to each side of the web. Web stiffeners are always required for the "Bird's Mouth" roof joist bearing detail.
2. Web stiffeners shall be cut to fit between the flanges of the LP® SolidStart® I-Joist, leaving a minimum 1/8" gap (1" maximum). At bearing locations, the stiffeners shall be installed tight to the bottom flange. At locations of concentrated loads, the stiffeners shall be installed tight to the top flange.
3. Web stiffeners shall be cut from APA-rated OSB (or equal) or from LP SolidStart LVL, LSL or OSB Rim Board. 2x lumber is permissible. Do not use 1x lumber, as it tends to split, or build up the required stiffener thickness from multiple pieces.
4. Web stiffeners shall be the same width as the bearing surface, with a minimum of 3-1/2".
5. See the Web Stiffener Requirements table above for minimum stiffener thickness, maximum stiffener height and required nailing.

S2

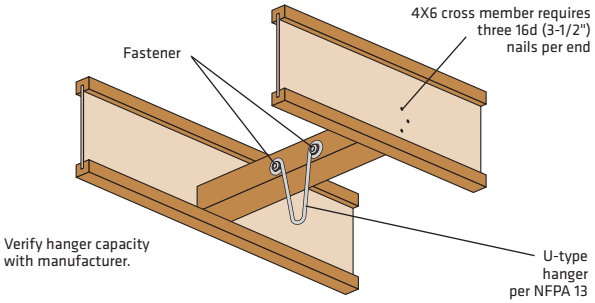
SPRINKLER SUPPORT
Factored Assembly Capacity 610 lbs.



NOTES:
1. Holes for bolts shall be between 1/32" and 1/16" greater than the diameter of the bolt.
2. Provide a flat washer and nut for bolts.
3. Use three 16d (3-1/2") common nails to attach cross member to web.
4. Lag screw fastener for rod should be located 1" from top of cross member.
5. Consult NFPA 13 for lag screw dimensions and maximum supported pipe diameter.
6. Sprinkler support should be centered between the joists.
7. Spacing between joists is limited to 48" oc.
8. Framing members to be SPF or better.

S3

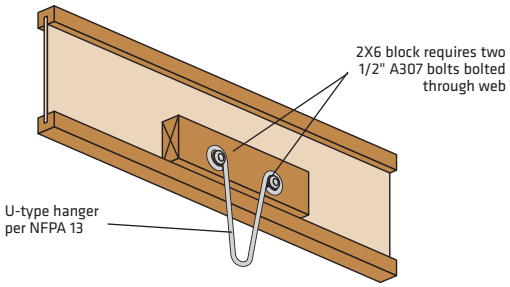
SPRINKLER SUPPORT
Factored Assembly Capacity 375 lbs.



NOTES:
1. Use three 16d (3-1/2") common nails to attach cross member to web.
2. Lag screw fastener for hanger should be located 2-1/2" from bottom of cross member for branch lines and 3" for mains.
3. Consult NFPA 13 for lag screw dimensions and maximum supported pipe diameter.
4. Sprinkler support should be centered between the joists.
5. Spacing between joists is limited to 48" oc.
6. Framing members to be SPF or better.

S4

SPRINKLER SUPPORT
Factored Assembly Capacity 305 lbs.

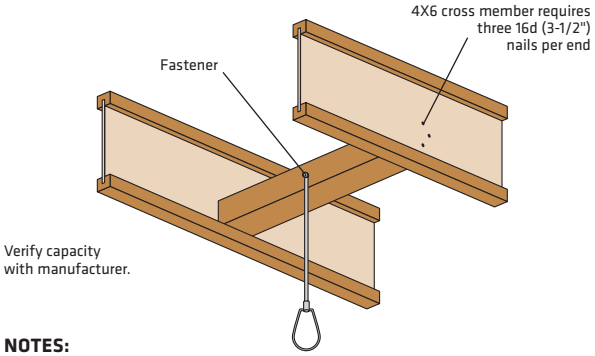


Verify capacity with manufacturer.

NOTES:
1. Holes for bolts shall be between 1/32" and 1/16" greater than the diameter of the bolt.
2. Provide flat washer and nut for bolts.
3. Bolts should be located 2-1/2" from bottom of block.
4. Consult NFPA 13 for maximum supported pipe diameter.
5. Framing members to be SPF or better.

S7

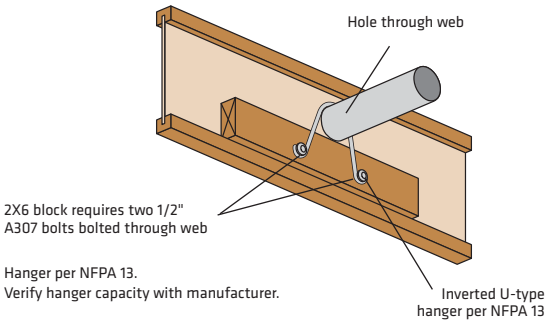
SPRINKLER SUPPORT
Factored Assembly Capacity 375 lbs.



NOTES:
1. Use three 16d (3-1/2") common nails to attach cross member to web.
2. Lag screw fastener for rod should be located 2-1/2" from bottom of cross member for branch lines and 3" for mains.
3. Consult NFPA 13 for lag screw dimensions and maximum supported pipe diameter.
4. Sprinkler support should be centered between joists.
5. Joist spacing is limited to 48" oc.
6. Framing members to be SPF or better.

S8

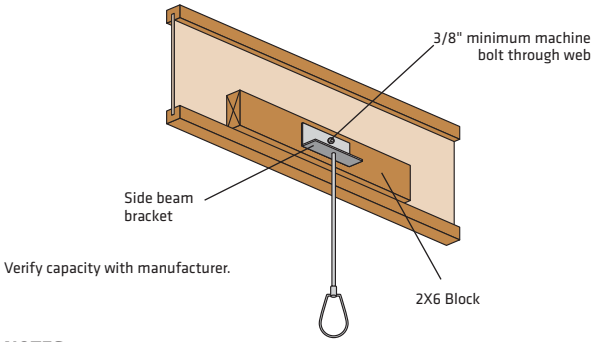
SPRINKLER SUPPORT
Factored Assembly Capacity 305 lbs.



NOTES:
1. Holes for bolts shall be between 1/32" and 1/16" greater than the diameter of the bolt.
2. Provide a flat washer and nut for bolts.
3. Bolts should be located 2-1/2" from bottom of block.
4. Consult NFPA 13 for maximum supported pipe diameter.
5. See product specific technical guide for hole sizes and location.
6. Framing members to be SPF or better.

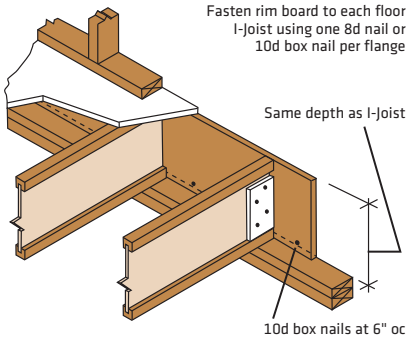
S9

SPRINKLER SUPPORT
Factored Assembly Capacity 120 lbs.



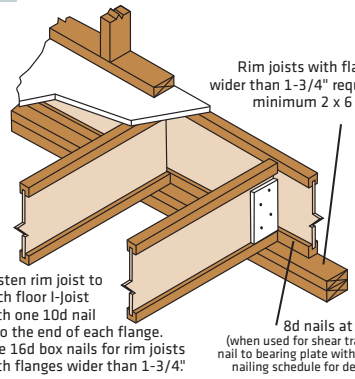
NOTES:
1. Holes for bolts shall be between 1/32" and 1/16" greater than the diameter of the bolt.
2. Provide a flat washer and nut for bolts.
3. Bolts should be located 2-1/2" from bottom of block.
4. Consult NFPA 13 for maximum supported pipe diameter.
5. Side beam bracket per NFPA 13.
6. Framing members to be SPF or better.

A1 RIM BOARD

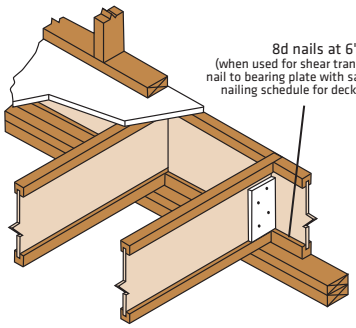


A2 RIM JOIST

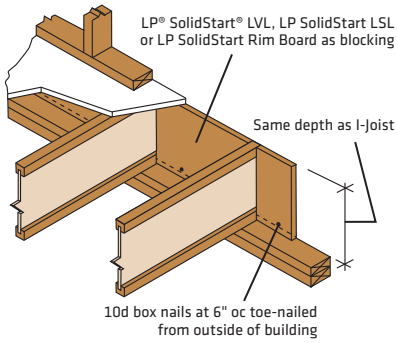
Refer to Note 8



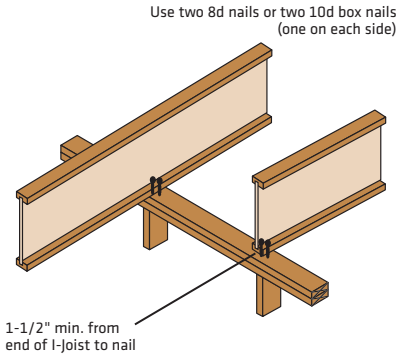
A3 BLOCKING AT EXTERIOR WALL



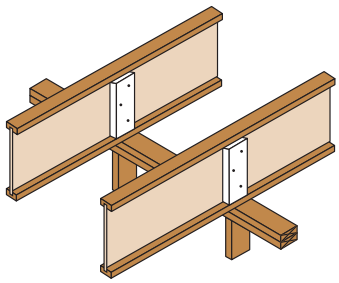
A4 SOLID BLOCKING AT EXTERIOR WALL



A5 JOIST SUPPORT NAILING

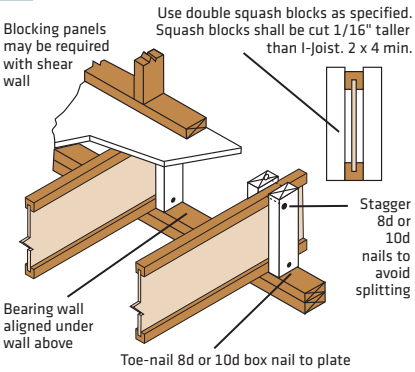


B1 WEB STIFFENERS AT INTERIOR SUPPORT (When Required)



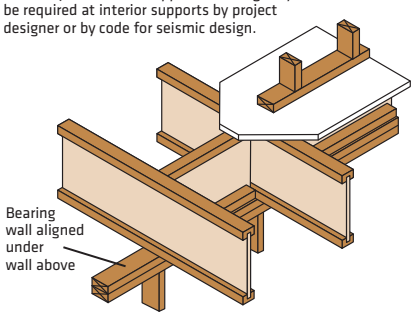
Verify stiffener requirements (see Web Stiffener detail)

B2 SQUASH BLOCKS

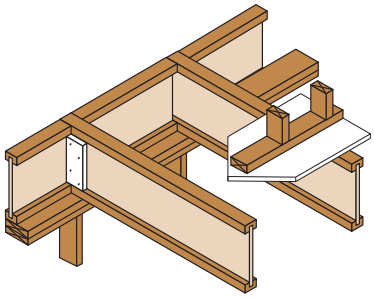


B3 BLOCKING AT INTERIOR SUPPORT

Blocking is not required if no wall above unless I-Joists end at support. Blocking may be required at interior supports by project designer or by code for seismic design.

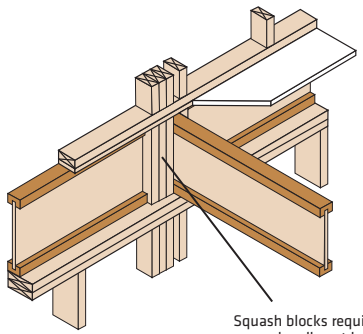


NON-STACKING WALLS

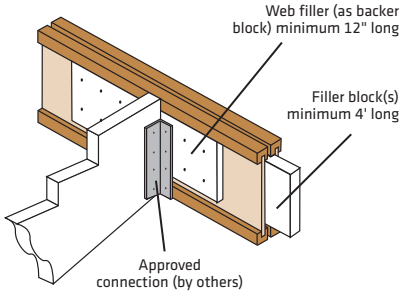


LP SolidStart I-Joists shall be designed to carry all applied loads including walls from above that do not stack directly over the I-Joist support.

D2 POST LOADS



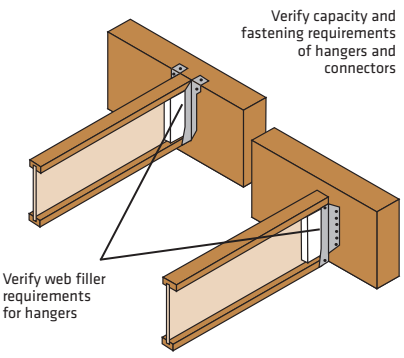
E1 STAIR STRINGER



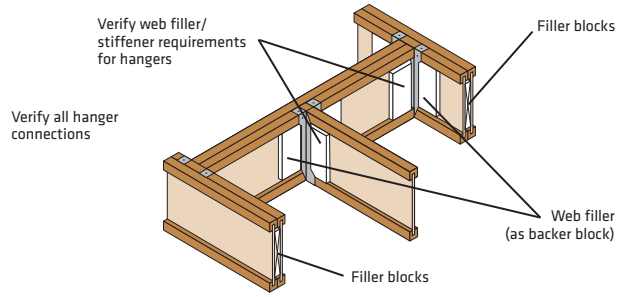
See I-Joist Header Cross-Section for connection information of the filler and backer blocks

See I-Joist Filler Schedule for filler block and web filler sizes

E2 HANGER DETAIL



E3 I-JOIST HEADER

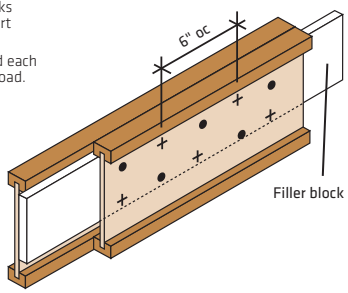


See I-Joist Header Cross-Section for information on attaching web fillers and filler blocks

Refer to I-Joist Header Cross-Section for filler block and web filler sizes

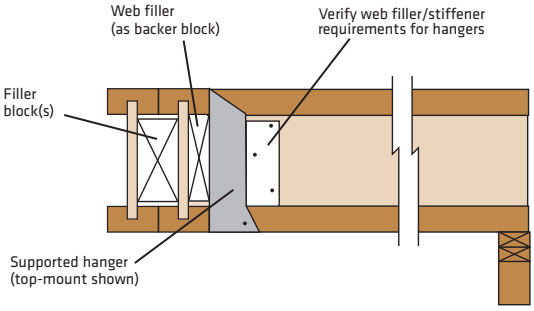
E5 DOUBLE I-JOIST CONNECTION

- Connect double I-Joists with filler blocks in minimum 4' sections at each support and at no more than 8' oc.
- Provide 4' filler blocks centered behind each hanger and under each concentrated load.
- Cut filler blocks at least 1/8" less than clear distance between flanges to avoid forcing into place.
- Attach filler blocks with two rows of 8d nails or larger (10d nails or larger for flanges wider than 2-1/2") at 6" oc. Nail through the web of both joists into the filler block. Clinch nails where possible.
- Floor sheathing to be glued and nailed to flanges of both plies.



Refer to I-Joist Filler Thickness table for filler block and web filler sizes

E4 I-JOIST HEADER CROSS-SECTION



Web Filler/Backer Block: Backer blocks are required for top-mount hangers supporting a factored downward load exceeding 360 lbs. for all face-mount hangers and for any uplift condition. Backer blocks may be omitted for top-mount hangers supporting only a downward factored load not exceeding 360 lbs.

Backer blocks shall be at least 12" long and located behind every supported hanger. For a single I-joist header, install backer blocks to both sides of the web behind each supported face-mount hanger. Two pieces of lumber, cut to the proper height (see notes 2 & 3), may be set vertically side-by-side to achieve the required minimum 12" length. For example, two 2x8 lumber backer blocks set vertically side-by-side provides 14-1/2" along the length of the joist. See note 5 for nailing.

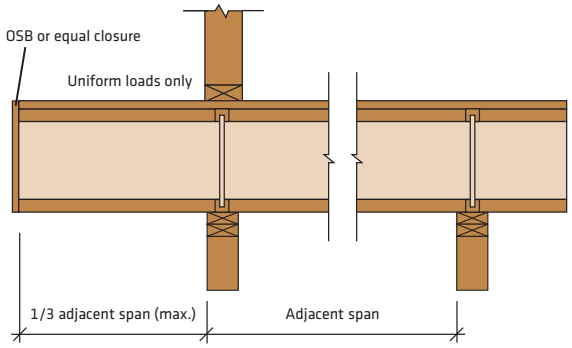
Filler Blocks: Filler blocks are required for all 2 ply I-Joists, or two I-Joists that are (or might be when installed) in contact with each other.

Install in minimum 4' long sections at each support, centered behind each supported hanger and at no more than 8' oc. Lumber fillers may be stacked to achieve the required depth (see notes 2 & 3). For example, two 4' long 2x8's may be stacked vertically to achieve the filler depth for an 18" deep I-joist (minimum required depth is 18" - 3" - 1" = 14"). See note 6 for nailing.

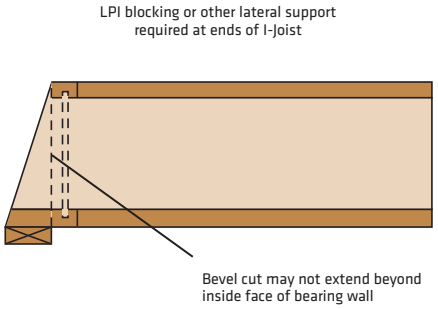
NOTES:

1. Backer blocks and filler blocks shall consist of APA-rated wood structural panel (OSB or plywood), 2x lumber (SPF or better), or LP LVL, LSL or OSB Rim Board, with a net thickness equivalent to that shown in the I-Joist Filler Thickness table.
2. Except as noted in 3, backer blocks and filler blocks shall fit the clear distance between flanges with a gap of at least 1/8," but not more than 1," and shall be of sufficient depth to allow for any hanger nailing into the web. Do not force into place.
3. Backer blocks and filler blocks for double I-joists that are top-loaded only or side-loaded supporting top-mount hangers that do not require nailing into the web, shall be at least 5-1/2" deep for I-joists to 11-7/8" deep, and shall be at least 7-1/4" deep for I-joists 14" and deeper.
4. Install backer blocks tight to top flange for top-loaded joists and for joists supporting top-mount hangers (shown). Install tight to bottom flange for joists supporting face-mount hangers.
5. Attach backer blocks with 10d (3") nails. Use a minimum of 10 nails, 5 spaced equally on each side of the supported hanger.
6. Attach filler blocks with 10d (3") nails spaced 6" oc per row. Use one row of nails in each row of stacked fillers, with a minimum of two rows of nails. Drive every other nail from opposite sides.
7. Clinch nails where possible.
8. For double I-joists, additional nailing is required to transfer factored loads exceeding 1110 lbs for concentrated loads or 740 plf of uniformly distributed load (i.e., hangers supported at 24" oc or less). For additional information, contact your LP® SolidStart® Engineered Wood Products distributor.

NON LOAD-BEARING CANTILEVER



BEVEL CUT/FIRE CUT



I-JOIST FILLER THICKNESS

Series	Filler Block (in)	Web Filler/Backer Block (in)
LPI 20Plus & LPI 32Plus	2-1/8"	1"
LPI 42Plus	3"	1-1/2"
LPI 36	1-7/8"	7/8"
LPI 56	3"	1-1/2"

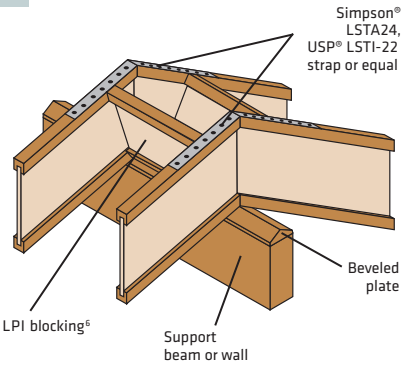
NOTES:

1. Backer blocks and filler blocks shall consist of APA-rated wood structural panel (OSB or plywood) or 2x lumber (SPF or better).
2. LP LVL, LSL or OSB Rim Board may also be used.
3. Refer to the Notes for the I-Joist Header Cross-Section above for details on the required height and length, and nailing of the backer blocks and filler blocks.

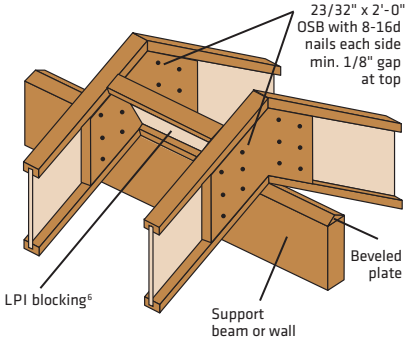
GENERAL NOTES:

1. Some wind or seismic loads may require different or additional details and connections.
2. Verify building code requirements for suitability of details shown.
3. Refer to page 5 for bearing length requirements.
4. Refer to page 5 for Flange Nailing Schedule for LPI rim joist and blocking panel nailing.
5. Lateral support shall be considered for bottom flange when there is no sheathing on underside.
6. Verify capacity and fastening requirements of hangers and connectors.
7. Squash block capacity designed by others.
8. Do not use I-joists with flanges wider than 2-1/2" as rim joists.

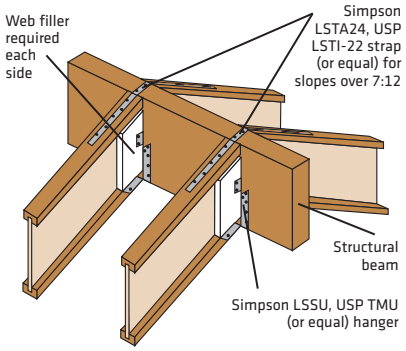
J1 RAFTER CONNECTION



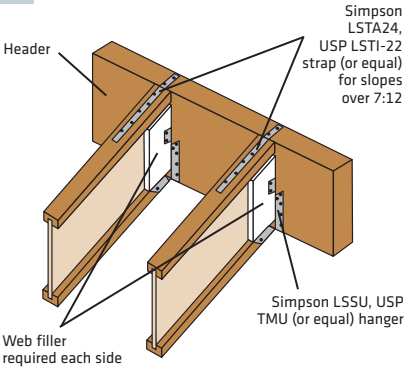
J2 RAFTER CONNECTION WITH FITTED OSB GUSSET



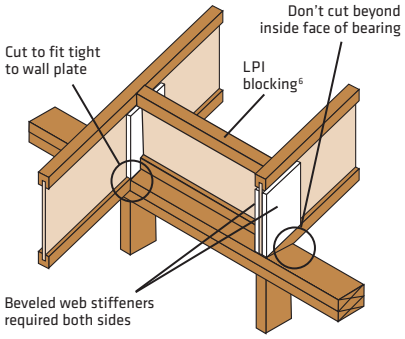
J3 RIDGE RAFTER CONNECTION



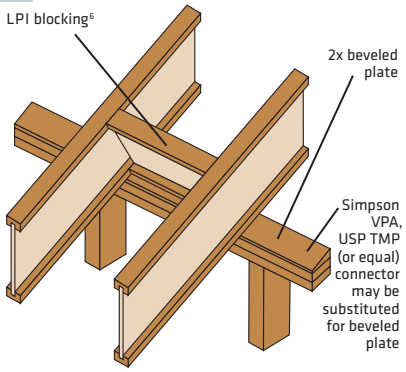
J4 HEADER CONNECTION



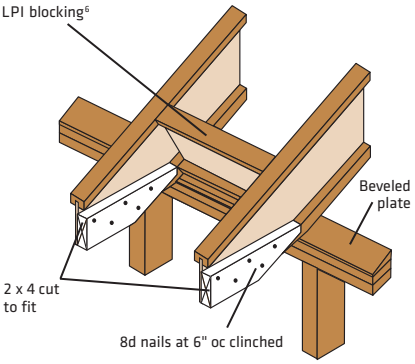
H1 BIRD'S MOUTH (Lower bearing only)



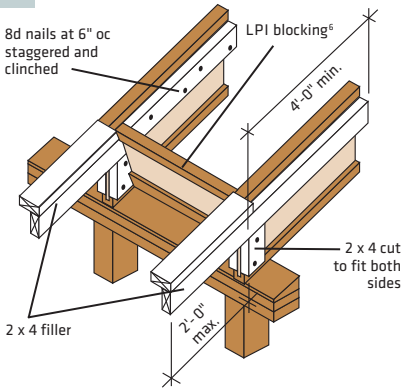
H2 BEVELED PLATE



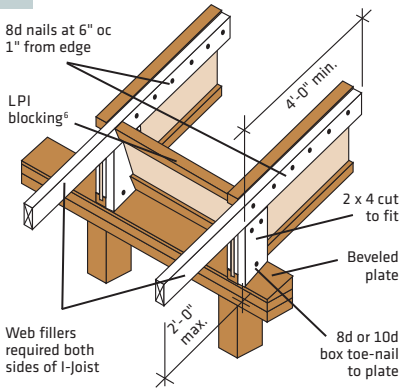
H3 FLAT SOFFIT



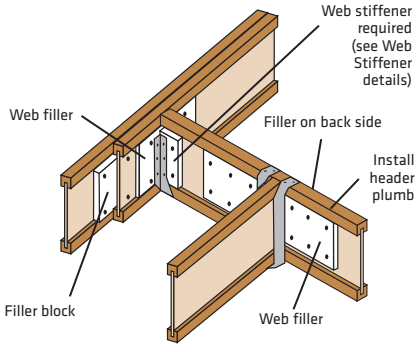
H4 OVERHANG



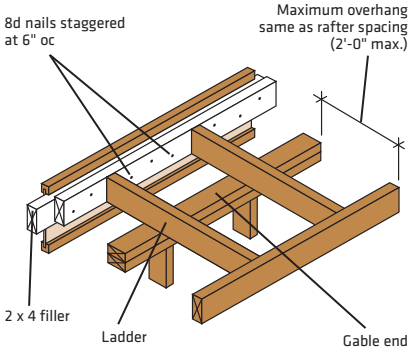
H5 OVERHANG



K1 ROOF OPENING Hanger Connections



K2 OUTRIGGER



GENERAL NOTES:

1. Minimum slope: 1/4" per foot (1/4:12). Maximum slope: 12" per foot (12:12).
2. Verify capacity and fastening requirements of hangers and connectors.
3. The LP® SolidStart® I-Joist flange may be a bird's mouth cut only at the low end of the LP SolidStart I-Joist. Bird's mouth cut shall not overhang the inside face of bearing plate. The LP SolidStart I-Joist shall bear fully on plate.
4. Some wind or seismic loads may require different or additional details and connections. Uplift anchors may be required.
5. One 4" diameter hole may be cut in blocking for ventilation.
6. Lateral resistance shall be provided. Other methods of restraint, such as full depth LP SolidStart OSB Rim Board, LP SolidStart LVL, LP SolidStart LSL or metal X-bracing may be substituted for the LP blocking shown.

SPECIFIED STRENGTHS & STIFFNESS (psi)

Grade	Bending Stress F_b[3]	Modulus of Elasticity E (X10⁶ psi)	Shear Stress F_v	Compression Stress	
				F_c (parallel to grain)	$F_{c\perp}$ (perpendicular to grain)
2950F_b-2.0E	5452	2.0	540	5107	1365
2650F_b-1.9E	4897	1.9	530	3751	1365
2250F_b-1.5E	4158	1.5	530	3751	1365

NOTES:

1. LP LVL shall be designed for dry-use conditions only. Dry-use applies to products installed in dry, covered and well ventilated interior conditions in which the equivalent average moisture content in lumber will not exceed 15% nor a maximum of 19%.
2. The specified strengths and stiffness are for standard load duration. Bending, Shear and Compression, both parallel-to-grain and perpendicular-to-grain shall be adjusted according to code. Modulus of Elasticity shall not be adjusted.
3. The specified Bending, F_b, for LP LVL is tabulated for a standard 12" depth. For depths greater than 12", multiply F_b by $(12/\text{depth})^{0.143}$. For depths less than 12", multiply F_b by $(12/\text{depth})^{0.111}$. For depths less than 3-1/2", multiply F_b by 1.147.
4. Deflection calculations shall include both bending and shear deformations.

Deflection for a simple span, uniform load: $\Delta = \frac{22.5wL^4}{EI} + \frac{28.8wL^2}{AE}$ Where: Δ = deflection (in), w = uniform load (plf), L = design span (ft), E = Modulus of Elasticity (from table above), I = moment of inertia (in^4) (from table below), A = cross-section area (in^2)

Equations for other conditions can be found in engineering references.

SECTION PROPERTIES AND FACTORED RESISTANCES

Grade	Depth	Weight (lb/ft)				Factored Moment Resistance (lb-ft)				Factored Shear Resistance (lb)				Moment of Inertia (in^4)			
		1-3/4"	3-1/2"	5-1/4"	7"	1-3/4"	3-1/2"	5-1/4"	7"	1-3/4"	3-1/2"	5-1/4"	7"	1-3/4"	3-1/2"	5-1/4"	7"
2950F_b-2.0E	7-1/4"	3.6	7.3	10.9	14.5	6630	13259	19889	26519	4111	8222	12332	16443	56	111	167	222
	9-1/4"	4.6	9.3	13.9	18.5	10504	21008	31511	42015	5245	10490	15734	20979	115	231	346	462
	9-1/2"	4.8	9.5	14.3	19.0	11046	22093	33139	44186	5387	10773	16160	21546	125	250	375	500
	11-1/4"	5.6	11.3	16.9	22.5	15203	30406	45608	60811	6379	12758	19136	25515	208	415	623	831
	11-7/8"	5.9	11.9	17.8	23.8	16837	33675	50512	67350	6733	13466	20199	26933	244	488	733	977
	14"	7.0	14.0	21.0	28.0	22866	45733	68599	91465	7938	15876	23814	31752	400	800	1201	1601
	16"	8.0	16.0	24.0	32.0	29302	58604	87906	117208	9072	18144	27216	36288	597	1195	1792	2389
	18"	9.0	18.0	27.0	36.1	36466	72933	109399	145866	10206	20412	30618	40824	851	1701	2552	3402
	20"	10.0	20.0	30.0	40.1	44348	88695	133043	177391	11340	22680	34020	45360	1167	2333	3500	4667
	22"	11.0	22.0	33.0	44.1	52935	105870	158805	211740	12474	24948	37422	49896	1553	3106	4659	6211
	24"	12.0	24.0	36.1	48.1	62219	124438	186657	248875	13608	27216	40824	54432	2016	4032	6048	8064
2650F_b-1.9E	7-1/4"	3.6	7.3	10.9	14.5	5955	11910	17865	23819	4035	8069	12104	16139	56	111	167	222
	9-1/4"	4.6	9.3	13.9	18.5	9435	18869	28304	37738	5148	10295	15443	20591	115	231	346	462
	9-1/2"	4.8	9.5	14.3	19.0	9922	19844	29766	39688	5287	10574	15860	21147	125	250	375	500
	11-1/4"	5.6	11.3	16.9	22.5	13655	27310	40966	54621	6261	12521	18782	25043	208	415	623	831
	11-7/8"	5.9	11.9	17.8	23.8	15123	30247	45370	60494	6608	13217	19825	26434	244	488	733	977
	14"	7.0	14.0	21.0	28.0	20539	41077	61616	82154	7791	15582	23373	31164	400	800	1201	1601
	16"	8.0	16.0	24.0	32.0	26319	52638	78957	105276	8904	17808	26712	35616	597	1195	1792	2389
	18"	9.0	18.0	27.0	36.1	32754	65508	98263	131017	10017	20034	30051	40068	851	1701	2552	3402
	20"	10.0	20.0	30.0	40.1	39833	79666	119500	159333	11130	22260	33390	44520	1167	2333	3500	4667
	22"	11.0	22.0	33.0	44.1	47546	95093	142639	190186	12243	24486	36729	48972	1553	3106	4659	6211
	24"	12.0	24.0	36.1	48.1	55885	111770	167655	223541	13356	26712	40068	53424	2016	4032	6048	8064
2250F_b-1.5E	5-1/2"	2.8	5.5	8.3	11.0	3001	6001	9002	12002	3061	6122	9182	12243	24	49	73	97
	7-1/4"	3.6	7.3	10.9	14.5	5056	10112	15169	20225	4035	8069	12104	16139	56	111	167	222
	9-1/4"	4.6	9.3	13.9	18.5	8011	16022	24032	32043	5148	10295	15443	20591	115	231	346	462
	9-1/2"	4.8	9.5	14.3	19.0	8425	16849	25274	33699	5287	10574	15860	21147	125	250	375	500
	11-1/4"	5.6	11.3	16.9	22.5	11594	23189	34783	46378	6261	12521	18782	25043	208	415	623	831
	11-7/8"	5.9	11.9	17.8	23.8	12841	25682	38524	51365	6608	13217	19825	26434	244	488	733	977
	14"	7.0	14.0	21.0	28.0	17439	34878	52317	69757	7791	15582	23373	31164	400	800	1201	1601
	16"	8.0	16.0	24.0	32.0	22347	44695	67042	89389	8904	17808	26712	35616	597	1195	1792	2389

NOTES:

1. The Factored Moment and Shear Resistances are for standard load duration and shall be adjusted according to code.

FASTENERS:

Refer to pages 40-41 for information on connecting multiple plies and for the equivalent specific gravity for design of nailed and bolted connections.

FACTORED REACTION RESISTANCE (LBS)

	Bearing Length																					
Width	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	4-1/2"	5"	5-1/2"	6"	6-1/2"	7"	7-1/2"	8"	8-1/2"	9"	9-1/2"	10"	10-1/2"	11"	11-1/2"	12"
1-3/4"	2860	3820	4770	5730	6680	7640	8590	9550	10510	11460	12420	13370	14330	15280	16240	17190	18150	19110	20060	21020	21970	22930
3-1/2"	5730	7640	9550	11460	13370	15280	17190	19110	21020	22930	24840	26750	28660	30570	32480	34390	36300	38220	40130	42040	43950	45860
5-1/4"	8590	11460	14330	17190	20060	22930	25790	28660	31530	34390	37260	40130	42990	45860	48730	51590	54460	57330	60190	63060	65920	68790
7"	11460	15280	19110	22930	26750	30570	34390	38220	42040	45860	49680	53500	57330	61150	64970	68790	72610	76440	80260	84080	87900	91720

NOTES:

1. Tabulated values are based on the factored compression resistance, perpendicular-to-grain, of the LVL. This is suitable for beams bearing on steel or the end-grain of studs.
2. Verify that the support for the beam is structurally adequate to carry the reaction. The compressive resistance, parallel-to-grain, of studs may require more studs than the bearing length above indicates.
3. For beams bearing on wood plates, the required bearing length will increase based on the bearing resistance (compression perpendicular-to-grain) of the species and grade used for the plate material.
4. Verify local code requirements concerning minimum bearing.

LVL 2950F$_b$-2.0E Uniform Floor Load (PLF) Tables

TO USE:

1. Choose the required beam span in the left column.
2. Divide the design loads by the desired number of plies to verify each ply of the beam.
3. Select a beam that exceeds the Factored Total Resistance, the Total L/240 Resistance, and the appropriate Live Load Deflection Resistance.
4. Check bearing requirements.

EXAMPLE:

For a 16' beam span, select a 2- and 3-ply beam that satisfies an L/480 Live Load deflection limit for the following specified loads: Live Load = 480 plf; Dead Load = 220 plf

CALCULATE TOTAL LOADS:

Factored Total Load = (1.5 * 480) + (1.25 * 220) = 995 plf
Unfactored Total Load = 480 + 220 = 700 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 995/2 = 498 plf
Unfactored Total Load per ply = 700/2 = 350 plf
Unfactored Live Load per ply = 480/2 = 240 plf
⟶ **Use 2 plies 1-3/4" x 16"**

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 995/3 = 332 plf
Unfactored Total Load per ply = 700/3 = 234 plf
Unfactored Live Load per ply = 480/3 = 160 plf
⟶ **Use 3 plies 1-3/4" x 14"**

Span	1-3/4" x 7-1/4"				1-3/4" x 9-1/4"				1-3/4" x 9-1/2"				1-3/4" x 11-1/4"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
6'	571	762	1139	1302	1187	1583		1754	1286	1715		1814	2136			2260	6'
7'	360	480	716	1077	747	997		1449	810	1080		1497	1345	1793		1848	7'
8'	241	321	478	824	500	667	997	1234	542	723	1080	1274	901	1201		1563	8'
9'	169	225	335	650	351	469	699	1031	381	508	757	1085	632	843	1260	1353	9'
10'	123	164	243	525	256	341	508	834	277	370	550	877	461	615	917	1193	10'
11'	92	123	181	433	192	256	380	688	208	278	412	724	346	462	687	998	11'
12'	71	95	139	363	148	197	292	577	160	214	316	607	267	356	528	837	12'
13'	56	74	108	309	116	155	228	491	126	168	248	516	210	280	414	712	13'
14'	45	60	86	266	93	124	182	422	101	135	197	444	168	224	330	613	14'
15'	36	48	69	231	75	101	147	367	82	109	159	386	136	182	267	533	15'
16'	30	40	56	202	62	83	120	322	67	90	130	339	112	150	219	468	16'
17'	-	-	-	-	52	69	99	284	56	75	108	299	93	125	182	413	17'
18'	-	-	-	-	43	58	83	253	47	63	90	266	79	105	152	368	18'
19'	-	-	-	-	37	49	70	226	40	54	76	238	67	89	128	329	19'
20'	-	-	-	-	32	42	59	204	34	46	64	214	57	76	109	297	20'
21'	-	-	-	-	-	-	-	-	30	40	55	194	49	66	94	268	21'
22'	-	-	-	-	-	-	-	-	-	-	-	-	43	57	81	244	22'

Span	1-3/4" x 11-7/8"				1-3/4" x 14"				1-3/4" x 16"				1-3/4" x 18"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
10'	542	723	1079	1272	889	1185		1552	1327	1769		1835	1890			2137	10'
11'	407	543	809	1105	668	890	1329	1381	997	1329		1627	1419			1887	11'
12'	314	418	622	927	514	686	1022	1244	768	1024		1461	1093	1458		1689	12'
13'	247	329	488	789	404	539	802	1073	604	805	1200	1325	860	1147		1529	13'
14'	197	263	389	679	324	432	641	924	483	644	959	1185	688	918	1368	1396	14'
15'	160	214	315	591	263	351	519	804	393	524	778	1031	560	746	1110	1284	15'
16'	132	176	259	518	217	289	427	705	324	432	640	905	461	615	913	1128	16'
17'	110	147	214	458	181	241	354	624	270	360	532	801	384	512	760	998	17'
18'	93	124	180	408	152	203	297	555	227	303	447	713	324	432	639	889	18'
19'	79	105	152	365	129	172	252	497	193	258	379	639	275	367	542	796	19'
20'	67	90	129	329	111	148	215	448	165	221	323	576	236	315	463	718	20'
21'	58	78	111	298	96	128	185	406	143	191	278	521	204	272	399	650	21'
22'	50	67	95	270	83	111	160	369	124	166	241	474	177	236	345	591	22'
23'	44	59	83	247	73	97	139	337	109	145	210	433	155	207	301	540	23'
24'	39	52	72	226	64	85	121	308	96	128	184	396	136	182	264	495	24'
25'	34	46	63	208	56	75	106	283	84	113	161	365	120	161	232	455	25'
26'	30	41	55	191	50	67	94	261	75	100	143	336	107	143	206	420	26'
27'	-	-	-	-	45	60	83	242	67	89	126	311	96	128	183	388	27'
28'	-	-	-	-	40	54	74	224	60	80	112	288	86	114	163	360	28'
29'	-	-	-	-	36	48	65	208	54	72	100	268	77	103	145	335	29'
30'	-	-	-	-	32	43	58	194	49	65	90	250	70	93	130	312	30'

NOTES:

1. The values in these tables meet the NBCC 2005 requirements for Limit States Design. Vibration has NOT been considered.
2. Span is defined as center-to-center of bearings and is valid for simple span and equal, continuous span conditions.
3. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a professional engineer.
4. The designer must check both the Factored Total Resistance and the Total L/240 Deflection Resistance, AND the appropriate Live Load column, either the L/480 or L/360 deflection limit. Unfactored Deflection Resistance values that are blank are governed by the Factored Total Load. Do not use a product where designated "-" without further analysis by a design professional.
5. All values listed are based on uniform loads of standard duration. The dead load MUST NOT exceed the live load to use these tables.
6. The Unfactored Deflection Resistance for Total L/240 does NOT include the effects of long term loading (creep).
7. The Total Load values have been adjusted to account for the self-weight of the beam.
8. Proper bearing must be provided at each support. The required bearing can be determined from the Factored Reaction Resistance table on page 27.
9. Depths of 16" and greater shall be a minimum of two plies unless designed specifically as a single ply of 1-3/4" with proper lateral bracing as defined in note 3. (Example: the marriage beam for each half of a manufactured home before units are joined.)
10. The values in the tables are for a single ply of 1-3/4" LVL. Double the values for a 2-ply or 3-1/2" thickness (or divide design loads by 2 to use the table directly to verify each ply of a 2-ply beam). Triple the values for a 3-ply or 5-1/4" thickness (or divide design loads by 3 to use the table directly to verify each ply of a 3-ply beam). Quadruple the values for 4-ply or 7" thickness (or divide the design loads by 4 to use the table directly to verify each ply of a 4-ply beam).
11. Side-loaded beams built up from multiple plies of LVL (e.g., supporting joists connected to the beam by hangers) may have a limited load capacity depending on the method of connecting the plies. Refer to page 40 for connection details and limits on side-loaded members.

ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

Span (ft)	L/480	L/360	L/240
10'	1/4"	5/16"	1/2"
12'	5/16"	3/8"	5/8"
14'	3/8"	7/16"	11/16"
16'	3/8"	9/16"	13/16"
18'	7/16"	5/8"	7/8"
20'	1/2"	11/16"	1"
22'	9/16"	3/4"	1-1/8"
24'	5/8"	13/16"	1-3/16"
26'	5/8"	7/8"	1-5/16"
28'	11/16"	15/16"	1-3/8"
30'	3/4"	1"	1-1/2"

* Deflections rounded to the nearest 1/16".

LVL 2950F_b-2.0E Uniform Floor Load (PLF) Tables

TO USE:

1. Choose the required beam span in the left column.
2. Divide the design loads by the desired number of plies to verify each ply of the beam.
3. Select a beam that exceeds the Factored Total Resistance, the Total L/240 Resistance, and the appropriate Live Load Deflection Resistance.
4. Check bearing requirements.

EXAMPLE:

For a 16' beam span, select a 2- and 3-ply beam that satisfies an L/480 Live Load deflection limit for the following specified loads: Live Load = 480 plf; Dead Load = 220 plf

CALCULATE TOTAL LOADS:

Factored Total Load = (1.5 * 480) + (1.25 * 220) = 995 plf
Unfactored Total Load = 480 + 220 = 700 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 995/2 = 498 plf
Unfactored Total Load per ply = 700/2 = 350 plf
Unfactored Live Load per ply = 480/2 = 240 plf
⟶ **Use 2 plies 1-3/4" x 16"**

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 995/3 = 332 plf
Unfactored Total Load per ply = 700/3 = 234 plf
Unfactored Live Load per ply = 480/3 = 160 plf
⟶ **Use 3 plies 1-3/4" x 14"**

Span	1-3/4" x 20"				1-3/4" x 22"				1-3/4" x 24"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
10'				2461				2810				3186	**10'**
11'	1947			2164				2460				2776	**11'**
12'	1500			1931	1996			2187				2459	**12'**
13'	1180	1573		1743	1570			1968	2039			2206	**13'**
14'	944	1259		1588	1257	1676		1789	1632			2000	**14'**
15'	768	1024		1458	1022	1363		1640	1327	1769		1830	**15'**
16'	632	843	1255	1348	842	1123		1513	1093	1458		1685	**16'**
17'	527	703	1045	1215	702	936	1393	1405	911	1215		1562	**17'**
18'	444	592	879	1082	591	788	1172	1293	768	1024		1456	**18'**
19'	377	503	745	970	503	670	995	1159	653	870	1294	1363	**19'**
20'	324	432	638	874	431	575	851	1044	560	746	1107	1229	**20'**
21'	279	373	549	791	372	496	734	946	483	644	955	1113	**21'**
22'	243	324	476	720	324	432	637	861	420	560	829	1013	**22'**
23'	213	284	416	658	283	378	556	786	368	490	724	925	**23'**
24'	187	250	365	603	249	332	488	721	324	432	636	849	**24'**
25'	165	221	321	555	220	294	430	663	286	382	561	781	**25'**
26'	147	196	285	512	196	261	381	612	254	339	497	721	**26'**
27'	131	175	253	474	175	233	339	567	227	303	443	667	**27'**
28'	118	157	226	440	157	209	303	526	204	272	396	619	**28'**
29'	106	141	202	409	141	188	271	489	183	244	355	576	**29'**
30'	96	128	182	381	127	170	244	456	165	221	319	538	**30'**
31'	87	116	164	356	115	154	220	426	150	200	288	502	**31'**
32'	79	105	148	333	105	140	199	399	136	182	261	471	**32'**
33'	72	96	134	313	96	128	181	375	124	166	237	442	**33'**
34'	65	87	121	294	87	117	164	352	113	151	215	415	**34'**
35'	60	80	110	277	80	107	149	331	104	139	196	391	**35'**
36'	55	74	101	261	73	98	136	312	96	128	180	369	**36'**
37'	51	68	92	246	68	90	125	295	88	117	164	348	**37'**
38'	47	62	84	233	62	83	114	279	81	108	151	329	**38'**
39'	43	58	77	220	58	77	105	264	75	100	139	312	**39'**
40'	40	54	71	209	53	71	96	250	70	93	127	296	**40'**

NOTES:

1. The values in these tables meet the NBCC 2005 requirements for Limit States Design. Vibration has NOT been considered.
2. Span is defined as center-to-center of bearings and is valid for simple span and equal, continuous span conditions.
3. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a professional engineer.
4. The designer must check both the Factored Total Resistance and the Total L/240 Deflection Resistance, AND the appropriate Live Load column, either the L/480 or L/360 deflection limit. Unfactored Deflection Resistance values that are blank are governed by the Factored Total Load. Do not use a product where designated "-" without further analysis by a design professional.
5. All values listed are based on uniform loads of standard duration. The dead load MUST NOT exceed the live load to use these tables.
6. The Unfactored Deflection Resistance for Total L/240 does NOT include the effects of long term loading (creep).
7. The Total Load values have been adjusted to account for the self-weight of the beam.
8. Proper bearing must be provided at each support. The required bearing can be determined from the Factored Reaction Resistance table on page 27.
9. Depths of 16" and greater shall be a minimum of two plies unless designed specifically as a single ply of 1-3/4" with proper lateral bracing as defined in note 3. (Example: the marriage beam for each half of a manufactured home before units are joined.)
10. The values in the tables are for a single ply of 1-3/4" LVL. Double the values for a 2-ply or 3-1/2" thickness (or divide design loads by 2 to use the table directly to verify each ply of a 2-ply beam). Triple the values for a 3-ply or 5-1/4" thickness (or divide design loads by 3 to use the table directly to verify each ply of a 3-ply beam). Quadruple the values for 4-ply or 7" thickness (or divide the design loads by 4 to use the table directly to verify each ply of a 4-ply beam).
11. Side-loaded beams built up from multiple plies of LVL (e.g., supporting joists connected to the beam by hangers) may have a limited load capacity depending on the method of connecting the plies. Refer to page 40 for connection details and limits on side-loaded members.

ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

Span (ft)	L/480	L/360	L/240
10'	1/4"	5/16"	1/2"
12'	5/16"	3/8"	5/8"
14'	3/8"	7/16"	11/16"
16'	3/8"	9/16"	13/16"
18'	7/16"	5/8"	7/8"
20'	1/2"	11/16"	1"
22'	9/16"	3/4"	1-1/8"
24'	5/8"	13/16"	1-3/16"
26'	5/8"	7/8"	1-5/16"
28'	11/16"	15/16"	1-3/8"
30'	3/4"	1"	1-1/2"

* Deflections rounded to the nearest 1/16".

LVL 2950F$_b$-2.0E Uniform Roof Snow Load (PLF) Tables

TO USE:

1. Choose the required beam span in the left column. For beams with a pitch greater than 1:12, multiply the horizontal beam span by the slope adjustment factor from the table below.
2. Divide the design loads by the desired number of plies to verify each ply of the beam.
3. Select a beam that exceeds the Factored Total Resistance, the Total L/180 Resistance, and the appropriate Snow Load Deflection Resistance.
4. Check bearing requirements.

NOTE: The serviceability limit states Importance Factor for Snow Load, I_S, of 0.9 can be applied to the specified snow loads for evaluation of the deflection resistance. See the example to the right.

EXAMPLE:

For an 18' horizontal span with a pitch of 4:12, select a 2- and 3-ply beam that satisfies an L/360 Snow Load deflection limit for the following specified loads: Snow Load = 480 plf; Dead Load = 220 plf

CALCULATE BEAM SPAN: 18' * 1.054 = 18.97' ⟶ **Use 19'**

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 * 480) + (1.25 * 220) = 995 plf
Unfactored Total Load = 0.9 * 480 + 220 = 652 plf
Unfactored Snow Load = 0.9 * 480 = 432 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 995/2 = 498 plf
Unfactored Total Load per ply = 652/2 = 326 plf
Unfactored Snow Load per ply = 432/2 = 216 plf
⟶ **Use 2 plies 1-3/4" x 16"**

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 995/3 = 332 plf
Unfactored Total Load per ply = 652/3 = 218 plf
Unfactored Snow Load per ply = 432/3 = 144 plf
⟶ **Use 3 plies 1-3/4" x 14"**

Span	1-3/4" x 7-1/4"				1-3/4" x 9-1/4"				1-3/4" x 9-1/2"				1-3/4" x 11-1/4"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
6'	762	1143		1302	1583			1754	1715			1814				2260	6'
7'	480	720	956	1077	997			1449	1080			1497	1793			1848	7'
8'	321	482	639	824	667	1001		1234	723	1085		1274	1201			1563	8'
9'	225	338	448	650	469	703	933	1031	508	762	1011	1085	843	1265		1353	9'
10'	164	246	325	525	341	512	679	834	370	555	736	877	615	922		1193	10'
11'	123	185	243	433	256	385	509	688	278	417	551	724	462	693	918	998	11'
12'	95	142	186	363	197	296	391	577	214	321	424	607	356	534	706	837	12'
13'	74	112	146	309	155	233	306	491	168	252	332	516	280	420	554	712	13'
14'	60	90	116	266	124	186	244	422	135	202	265	444	224	336	442	613	14'
15'	48	73	93	231	101	151	198	367	109	164	214	386	182	273	358	533	15'
16'	40	60	76	202	83	125	162	322	90	135	176	339	150	225	294	468	16'
17'	33	50	63	178	69	104	134	284	75	113	146	299	125	187	244	413	17'
18'	-	-	-	-	58	87	112	253	63	95	122	266	105	158	205	368	18'
19'	-	-	-	-	49	74	95	226	54	81	103	238	89	134	173	329	19'
20'	-	-	-	-	42	64	80	204	46	69	87	214	76	115	148	297	20'
21'	-	-	-	-	36	55	69	184	40	60	75	194	66	99	127	268	21'
22'	-	-	-	-	32	48	59	167	34	52	64	176	57	86	109	244	22'

Span	1-3/4" x 11-7/8"				1-3/4" x 14"				1-3/4" x 16"				1-3/4" x 18"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
10'	723	1085		1272	1185			1552	1769			1835				2137	10'
11'	543	815	1081	1105	890	1336		1381	1329			1627				1887	11'
12'	418	628	831	927	686	1029		1244	1024			1461	1458			1689	12'
13'	329	494	652	789	539	809	1072	1073	805	1208		1325	1147			1529	13'
14'	263	395	521	679	432	648	857	924	644	967		1185	918	1377		1396	14'
15'	214	321	422	591	351	526	695	804	524	786		1031	746	1120		1284	15'
16'	176	264	347	518	289	434	571	705	432	648	856	905	615	922		1128	16'
17'	147	220	288	458	241	362	475	624	360	540	712	801	512	769		998	17'
18'	124	186	242	408	203	304	399	555	303	455	598	713	432	648	855	889	18'
19'	105	158	205	365	172	259	338	497	258	387	508	639	367	551	725	796	19'
20'	90	135	174	329	148	222	289	448	221	331	434	576	315	472	620	718	20'
21'	78	117	150	298	128	192	249	406	191	286	374	521	272	408	535	650	21'
22'	67	101	129	270	111	167	215	369	166	249	324	474	236	354	464	591	22'
23'	59	89	112	247	97	146	187	337	145	218	282	433	207	310	405	540	23'
24'	52	78	98	226	85	128	164	308	128	192	248	396	182	273	355	495	24'
25'	46	69	86	208	75	113	144	283	113	169	218	365	161	241	313	455	25'
26'	41	61	76	191	67	101	127	261	100	151	193	336	143	215	277	420	26'
27'	36	55	67	177	60	90	113	242	89	134	171	311	128	192	247	388	27'
28'	32	49	59	164	54	81	101	224	80	120	153	288	114	172	220	360	28'
29'	-	-	-	-	48	72	90	208	72	108	137	268	103	154	197	335	29'
30'	-	-	-	-	43	65	80	194	65	98	123	250	93	140	177	312	30'

NOTES:

1. The values in these tables meet the NBCC 2005 requirements for Limit States Design.
2. Span is defined as center-to-center of bearings and is valid for simple span and equal, continuous span conditions. For beams with a pitch greater than 1:12, the horizontal beam span must be multiplied by the factor from the Slope Adjustment table.
3. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a professional engineer.
4. The designer must check both the Factored Total Resistance and the Total L/180 Deflection Resistance, AND the appropriate Snow Load column, either the L/360 or L/240 deflection limit. To design for a Snow Load deflection of L/480, use the appropriate column from the Uniform Floor Load tables on pages 28-29. Unfactored Deflection Resistance values that are blank are governed by the Factored Total Load. Do not use a product where designated "-" without further analysis by a design professional.
5. All values listed are based on uniform loads of standard duration. The dead load MUST NOT exceed the snow load to use these tables.
6. The Unfactored Deflection Resistance for Total L/180 does NOT include the effects of long term loading (creep).
7. The Total Load values have been adjusted to account for the self-weight of the beam.
8. Proper bearing must be provided at each support. The required bearing can be determined from the Factored Reaction Resistance table on page 27.
9. Depths of 16" and greater shall be a minimum of two plies unless designed specifically as a single ply of 1-3/4" with proper lateral bracing as defined in note 3. (Example: the marriage beam for each half of a manufactured home before units are joined.)
10. The values in the tables are for a single ply of 1-3/4" LVL. Double the values for a 2-ply or 3-1/2" thickness (or divide design loads by 2 to use the table directly to verify each ply of a 2-ply beam). Triple the values for a 3-ply or 5-1/4" thickness (or divide design loads by 3 to use the table directly to verify each ply of a 3-ply beam). Quadruple the values for 4-ply or 7" thickness (or divide the design loads by 4 to use the table directly to verify each ply of a 4-ply beam).
11. Side-loaded beams built up from multiple plies of LVL (e.g., supporting joists connected to the beam by hangers) may have a limited load capacity depending on the method of connecting the plies. Refer to page 40 for connection details and limits on side-loaded members.

SLOPE ADJUSTMENT

Slope	Factor
2:12	1.014
3:12	1.031
4:12	1.054
5:12	1.083
6:12	1.118
7:12	1.158
8:12	1.202
9:12	1.250
10:12	1.302
11:12	1.357
12:12	1.414

LVL 2950F_b-2.0E Uniform Roof Snow Load (PLF) Tables

TO USE:

1. Choose the required beam span in the left column. For beams with a pitch greater than 1:12, multiply the horizontal beam span by the slope adjustment factor from the table below.
2. Divide the design loads by the desired number of plies to verify each ply of the beam.
3. Select a beam that exceeds the Factored Total Resistance, the Total L/180 Resistance, and the appropriate Snow Load Deflection Resistance.
4. Check bearing requirements.

NOTE: The serviceability limit states Importance Factor for Snow Load, I_S, of 0.9 can be applied to the specified snow loads for evaluation of the deflection resistance. See the example to the right.

EXAMPLE:

For an 18' horizontal span with a pitch of 4:12, select a 2- and 3-ply beam that satisfies an L/360 Snow Load deflection limit for the following specified loads: Snow Load = 480 plf; Dead Load = 220 plf

CALCULATE BEAM SPAN: 18' * 1.054 = 18.97' ⟶ **Use 19'**

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 * 480) + (1.25 * 220) = 995 plf
Unfactored Total Load = 0.9 * 480 + 220 = 652 plf
Unfactored Snow Load = 0.9 * 480 = 432 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 995/2 = 498 plf
Unfactored Total Load per ply = 652/2 = 326 plf
Unfactored Snow Load per ply = 432/2 = 216 plf
⟶ **Use 2 plies 1-3/4" x 16"**

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 995/3 = 332 plf
Unfactored Total Load per ply = 652/3 = 218 plf
Unfactored Snow Load per ply = 432/3 = 144 plf
⟶ **Use 3 plies 1-3/4" x 14"**

Span	1-3/4" x 20"				1-3/4" x 22"				1-3/4" x 24"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
10'				2461				2810				3186	10'
11'				2164				2460				2776	11'
12'				1931				2187				2459	12'
13'	1573			1743				1968				2206	13'
14'	1259			1588	1676			1789				2000	14'
15'	1024			1458	1363			1640	1769			1830	15'
16'	843	1265		1348	1123			1513	1458			1685	16'
17'	703	1055		1215	936	1404		1405	1215			1562	17'
18'	592	889		1082	788	1183		1293	1024			1456	18'
19'	503	755		970	670	1006		1159	870	1306		1363	19'
20'	432	648	854	874	575	862		1044	746	1120		1229	20'
21'	373	559	736	791	496	745		946	644	967		1113	21'
22'	324	486	639	720	432	648	853	861	560	841		1013	22'
23'	284	426	558	658	378	567	745	786	490	736		925	23'
24'	250	375	490	603	332	499	654	721	432	648		849	24'
25'	221	331	432	555	294	441	577	663	382	573	752	781	25'
26'	196	295	383	512	261	392	512	612	339	509	667	721	26'
27'	175	263	341	474	233	350	456	567	303	455	594	667	27'
28'	157	236	304	440	209	314	408	526	272	408	532	619	28'
29'	141	212	273	409	188	282	366	489	244	367	477	576	29'
30'	128	192	246	381	170	255	329	456	221	331	430	538	30'
31'	116	174	222	356	154	231	297	426	200	300	389	502	31'
32'	105	158	200	333	140	210	269	399	182	273	352	471	32'
33'	96	144	182	313	128	192	245	375	166	249	320	442	33'
34'	87	131	165	294	117	175	223	352	151	227	291	415	34'
35'	80	120	151	277	107	160	203	331	139	208	266	391	35'
36'	74	111	138	261	98	147	186	312	128	192	244	369	36'
37'	68	102	126	246	90	136	170	295	117	176	223	348	37'
38'	62	94	115	233	83	125	156	279	108	163	205	329	38'
39'	58	87	106	220	77	116	144	264	100	151	189	312	39'
40'	54	81	98	209	71	107	132	250	93	140	174	296	40'

NOTES:

1. The values in these tables meet the NBCC 2005 requirements for Limit States Design.
2. Span is defined as center-to-center of bearings and is valid for simple span and equal, continuous span conditions. For beams with a pitch greater than 1:12, the horizontal beam span must be multiplied by the factor from the Slope Adjustment table.
3. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a professional engineer.
4. The designer must check both the Factored Total Resistance and the Total L/180 Deflection Resistance, AND the appropriate Snow Load column, either the L/360 or L/240 deflection limit. To design for a Snow Load deflection of L/480, use the appropriate column from the Uniform Floor Load tables on pages 28-29. Unfactored Deflection Resistance values that are blank are governed by the Factored Total Load. Do not use a product where designated "-" without further analysis by a design professional.
5. All values listed are based on uniform loads of standard duration. The dead load MUST NOT exceed the snow load to use these tables.
6. The Unfactored Deflection Resistance for Total L/180 does NOT include the effects of long term loading (creep).
7. The Total Load values have been adjusted to account for the self-weight of the beam.
8. Proper bearing must be provided at each support. The required bearing can be determined from the Factored Reaction Resistance table on page 27.
9. Depths of 16" and greater shall be a minimum of two plies unless designed specifically as a single ply of 1-3/4" with proper lateral bracing as defined in note 3. (Example: the marriage beam for each half of a manufactured home before units are joined.)
10. The values in the tables are for a single ply of 1-3/4" LVL. Double the values for a 2-ply or 3-1/2" thickness (or divide design loads by 2 to use the table directly to verify each ply of a 2-ply beam). Triple the values for a 3-ply or 5-1/4" thickness (or divide design loads by 3 to use the table directly to verify each ply of a 3-ply beam). Quadruple the values for 4-ply or 7" thickness (or divide the design loads by 4 to use the table directly to verify each ply of a 4-ply beam).
11. Side-loaded beams built up from multiple plies of LVL (e.g., supporting joists connected to the beam by hangers) may have a limited load capacity depending on the method of connecting the plies. Refer to page 40 for connection details and limits on side-loaded members.

SLOPE ADJUSTMENT

Slope	Factor
2:12	1.014
3:12	1.031
4:12	1.054
5:12	1.083
6:12	1.118
7:12	1.158
8:12	1.202
9:12	1.250
10:12	1.302
11:12	1.357
12:12	1.414

LVL 2650F$_b$-1.9E Uniform Floor Load (PLF) Tables

TO USE:

1. Choose the required beam span in the left column.
2. Divide the design loads by the desired number of plies to verify each ply of the beam.
3. Select a beam that exceeds the Factored Total Resistance, the Total L/240 Resistance, and the appropriate Live Load Deflection Resistance.
4. Check bearing requirements.

EXAMPLE:

For a 16' beam span, select a 2- and 3-ply beam that satisfies an L/480 Live Load deflection limit for the following specified loads: Live Load = 480 plf; Dead Load = 220 plf

CALCULATE TOTAL LOADS:

Factored Total Load = (1.5 * 480) + (1.25 * 220) = 995 plf
Unfactored Total Load = 480 + 220 = 700 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 995/2 = 498 plf
Unfactored Total Load per ply = 700/2 = 350 plf
Unfactored Live Load per ply = 480/2 = 240 plf
⟶ Use 2 plies 1-3/4" x 16"

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 995/3 = 332 plf
Unfactored Total Load per ply = 700/3 = 234 plf
Unfactored Live Load per ply = 480/3 = 160 plf
⟶ Use 3 plies 1-3/4" x 14"

Span	1-3/4" x 7-1/4"				1-3/4" x 9-1/4"				1-3/4" x 9-1/2"				1-3/4" x 11-1/4"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
6'	543	724	1082	1277	1128	1504		1722	1222	1629		1781	2029			2218	6'
7'	342	456	680	967	710	947	1416	1422	769	1026		1469	1278	1704		1814	7'
8'	229	305	454	739	475	634	947	1173	515	687	1026	1234	856	1141		1534	8'
9'	160	214	318	583	334	445	663	926	362	482	719	974	601	801	1196	1328	9'
10'	117	156	231	471	243	324	482	748	263	351	523	787	438	584	871	1085	10'
11'	88	117	172	389	183	244	361	617	198	264	391	650	329	439	653	895	11'
12'	67	90	132	326	141	188	277	518	152	203	300	545	253	338	501	751	12'
13'	53	71	103	277	110	147	217	440	120	160	235	463	199	266	393	639	13'
14'	42	57	81	238	88	118	172	379	96	128	187	399	159	213	313	550	14'
15'	34	46	65	207	72	96	139	329	78	104	151	346	129	173	254	478	15'
16'	-	-	-	-	59	79	114	289	64	85	124	304	107	142	208	419	16'
17'	-	-	-	-	49	66	94	255	53	71	102	268	89	118	172	370	17'
18'	-	-	-	-	41	55	78	227	45	60	85	239	75	100	144	330	18'
19'	-	-	-	-	35	47	66	203	38	51	72	213	63	85	122	295	19'
20'	-	-	-	-	30	40	56	182	32	43	61	192	54	73	103	266	20'
21'	-	-	-	-	-	-	-	-	-	-	-	-	47	63	89	240	21'
22'	-	-	-	-	-	-	-	-	-	-	-	-	41	54	76	218	22'

Span	1-3/4" x 11-7/8"				1-3/4" x 14"				1-3/4" x 16"				1-3/4" x 18"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
10'	515	687	1025	1202	844	1126		1523	1261	1681		1800	1795			2097	10'
11'	387	516	768	992	634	846	1262	1349	947	1263		1596	1348	1798		1852	11'
12'	298	397	590	832	488	651	970	1132	729	973		1433	1039	1385		1658	12'
13'	234	312	463	708	384	512	762	963	573	765	1139	1235	817	1089		1500	13'
14'	187	250	369	609	307	410	608	829	459	612	911	1064	654	872	1299	1325	14'
15'	152	203	299	530	250	333	493	721	373	498	739	925	532	709	1054	1153	15'
16'	125	167	245	465	206	274	405	633	307	410	607	812	438	584	867	1012	16'
17'	104	139	203	411	171	229	336	559	256	342	505	718	365	487	721	895	17'
18'	88	117	170	365	144	193	282	498	216	288	424	639	307	410	606	797	18'
19'	75	100	144	327	123	164	239	446	183	245	359	573	261	349	514	714	19'
20'	64	85	122	295	105	140	204	402	157	210	307	516	224	299	439	643	20'
21'	55	74	105	266	91	121	175	363	136	181	264	467	193	258	378	582	21'
22'	48	64	90	242	79	105	151	330	118	157	228	425	168	224	328	530	22'
23'	42	56	78	221	69	92	131	301	103	138	199	388	147	196	286	484	23'
24'	37	49	68	202	61	81	115	276	91	121	174	355	129	173	250	443	24'
25'	32	43	60	186	54	72	101	254	80	107	153	326	114	153	220	407	25'
26'	-	-	-	-	48	64	89	234	71	95	135	301	102	136	195	376	26'
27'	-	-	-	-	42	57	78	216	64	85	120	278	91	121	173	348	27'
28'	-	-	-	-	38	51	69	200	57	76	106	258	81	109	154	322	28'
29'	-	-	-	-	34	46	62	186	51	68	95	240	73	98	138	300	29'
30'	-	-	-	-	31	41	55	173	46	62	85	223	66	88	123	279	30'

NOTES:

1. The values in these tables meet the NBCC 2005 requirements for Limit States Design. Vibration has NOT been considered.
2. Span is defined as center-to-center of bearings and is valid for simple span and equal, continuous span conditions.
3. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a professional engineer.
4. The designer must check both the Factored Total Resistance and the Total L/240 Deflection Resistance, AND the appropriate Live Load column, either the L/480 or L/360 deflection limit. Unfactored Deflection Resistance values that are blank are governed by the Factored Total Load. Do not use a product where designated "-" without further analysis by a design professional.
5. All values listed are based on uniform loads of standard duration. The dead load MUST NOT exceed the live load to use these tables.
6. The Unfactored Deflection Resistance for Total L/240 does NOT include the effects of long term loading (creep).
7. The Total Load values have been adjusted to account for the self-weight of the beam.
8. Proper bearing must be provided at each support. The required bearing can be determined from the Factored Reaction Resistance table on page 27.
9. Depths of 16" and greater shall be a minimum of two plies unless designed specifically as a single ply of 1-3/4" with proper lateral bracing as defined in note 3. (Example: the marriage beam for each half of a manufactured home before units are joined.)
10. The values in the tables are for a single ply of 1-3/4" LVL. Double the values for a 2-ply or 3-1/2" thickness (or divide design loads by 2 to use the table directly to verify each ply of a 2-ply beam). Triple the values for a 3-ply or 5-1/4" thickness (or divide design loads by 3 to use the table directly to verify each ply of a 3-ply beam). Quadruple the values for 4-ply or 7" thickness (or divide the design loads by 4 to use the table directly to verify each ply of a 4-ply beam).
11. Side-loaded beams built up from multiple plies of LVL (e.g., supporting joists connected to the beam by hangers) may have a limited load capacity depending on the method of connecting the plies. Refer to page 40 for connection details and limits on side-loaded members.

ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

Span (ft)	L/480	L/360	L/240
10'	1/4"	5/16"	1/2"
12'	5/16"	3/8"	5/8"
14'	3/8"	7/16"	11/16"
16'	3/8"	9/16"	13/16"
18'	7/16"	5/8"	7/8"
20'	1/2"	11/16"	1"
22'	9/16"	3/4"	1-1/8"
24'	5/8"	13/16"	1-3/16"
26'	5/8"	7/8"	1-5/16"
28'	11/16"	15/16"	1-3/8"
30'	3/4"	1"	1-1/2"

* Deflections rounded to the nearest 1/16".

LVL 2650F$_b$-1.9 E Uniform Floor Load (PLF) Tables

TO USE:

1. Choose the required beam span in the left column.
2. Divide the design loads by the desired number of plies to verify each ply of the beam.
3. Select a beam that exceeds the Factored Total Resistance, the Total L/240 Resistance, and the appropriate Live Load Deflection Resistance.
4. Check bearing requirements.

EXAMPLE:

For a 16' beam span, select a 2- and 3-ply beam that satisfies an L/480 Live Load deflection limit for the following specified loads: Live Load = 480 plf; Dead Load = 220 plf

CALCULATE TOTAL LOADS:

Factored Total Load = (1.5 * 480) + (1.25 * 220) = 995 plf
Unfactored Total Load = 480 + 220 = 700 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 995/2 = 498 plf
Unfactored Total Load per ply = 700/2 = 350 plf
Unfactored Live Load per ply = 480/2 = 240 plf
⟶ **Use 2 plies 1-3/4" x 16"**

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 995/3 = 332 plf
Unfactored Total Load per ply = 700/3 = 234 plf
Unfactored Live Load per ply = 480/3 = 160 plf
⟶ **Use 3 plies 1-3/4" x 14"**

Span	1-3/4" x 20"				1-3/4" x 22"				1-3/4" x 24"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
10'				2415				2758				3127	**10'**
11'	1850			2124				2414				2724	**11'**
12'	1425			1895	1897			2146				2413	**12'**
13'	1121	1494		1710	1492			1932	1937			2165	**13'**
14'	897	1196		1558	1194	1592		1756	1551			1963	**14'**
15'	729	973		1403	971	1295		1609	1261	1681		1795	**15'**
16'	601	801	1192	1232	800	1067		1472	1039	1385		1654	**16'**
17'	501	668	992	1090	667	889		1302	866	1155		1531	**17'**
18'	422	563	834	971	562	749	1113	1160	729	973		1364	**18'**
19'	359	478	708	870	477	637	944	1039	620	827		1223	**19'**
20'	307	410	605	784	409	546	808	937	532	709	1051	1102	**20'**
21'	265	354	521	710	353	471	696	848	459	612	907	998	**21'**
22'	231	308	452	645	307	410	604	772	399	532	787	908	**22'**
23'	202	269	394	589	269	359	527	705	349	466	687	830	**23'**
24'	178	237	346	540	237	316	463	646	307	410	603	761	**24'**
25'	157	210	305	497	209	279	408	594	272	363	532	700	**25'**
26'	140	186	270	458	186	248	362	548	242	322	472	646	**26'**
27'	125	166	240	424	166	222	322	508	216	288	420	598	**27'**
28'	112	149	214	393	149	199	287	471	193	258	375	555	**28'**
29'	100	134	191	366	134	179	257	438	174	232	336	516	**29'**
30'	91	121	172	341	121	161	231	408	157	210	303	481	**30'**
31'	82	110	155	319	110	146	209	382	142	190	273	450	**31'**
32'	75	100	140	298	100	133	189	357	129	173	247	421	**32'**
33'	68	91	127	280	91	121	171	335	118	157	224	395	**33'**
34'	62	83	115	263	83	111	155	315	108	144	204	371	**34'**
35'	57	76	104	247	76	101	141	296	99	132	186	349	**35'**
36'	52	70	95	233	70	93	129	279	91	121	170	329	**36'**
37'	48	64	87	220	64	86	118	264	84	112	156	311	**37'**
38'	44	59	79	208	59	79	108	249	77	103	143	294	**38'**
39'	41	55	73	196	55	73	99	236	71	95	131	278	**39'**
40'	38	51	66	186	51	68	91	223	66	88	120	264	**40'**

NOTES:

1. The values in these tables meet the NBCC 2005 requirements for Limit States Design. Vibration has NOT been considered.
2. Span is defined as center-to-center of bearings and is valid for simple span and equal, continuous span conditions.
3. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a professional engineer.
4. The designer must check both the Factored Total Resistance and the Total L/240 Deflection Resistance, AND the appropriate Live Load column, either the L/480 or L/360 deflection limit. Unfactored Deflection Resistance values that are blank are governed by the Factored Total Load. Do not use a product where designated "-" without further analysis by a design professional.
5. All values listed are based on uniform loads of standard duration. The dead load MUST NOT exceed the live load to use these tables.
6. The Unfactored Deflection Resistance for Total L/240 does NOT include the effects of long term loading (creep).
7. The Total Load values have been adjusted to account for the self-weight of the beam.
8. Proper bearing must be provided at each support. The required bearing can be determined from the Factored Reaction Resistance table on page 27.
9. Depths of 16" and greater shall be a minimum of two plies unless designed specifically as a single ply of 1-3/4" with proper lateral bracing as defined in note 3. (Example: the marriage beam for each half of a manufactured home before units are joined.)
10. The values in the tables are for a single ply of 1-3/4" LVL. Double the values for a 2-ply or 3-1/2" thickness (or divide design loads by 2 to use the table directly to verify each ply of a 2-ply beam). Triple the values for a 3-ply or 5-1/4" thickness (or divide design loads by 3 to use the table directly to verify each ply of a 3-ply beam). Quadruple the values for 4-ply or 7" thickness (or divide the design loads by 4 to use the table directly to verify each ply of a 4-ply beam).
11. Side-loaded beams built up from multiple plies of LVL (e.g., supporting joists connected to the beam by hangers) may have a limited load capacity depending on the method of connecting the plies. Refer to page 40 for connection details and limits on side-loaded members.

ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

Span (ft)	L/480	L/360	L/240
10'	1/4"	5/16"	1/2"
12'	5/16"	3/8"	5/8"
14'	3/8"	7/16"	11/16"
16'	3/8"	9/16"	13/16"
18'	7/16"	5/8"	7/8"
20'	1/2"	11/16"	1"
22'	9/16"	3/4"	1-1/8"
24'	5/8"	13/16"	1-3/16"
26'	5/8"	7/8"	1-5/16"
28'	11/16"	15/16"	1-3/8"
30'	3/4"	1"	1-1/2"

* Deflections rounded to the nearest 1/16".

LVL 2650F$_b$-1.9E Uniform Roof Snow Load (PLF) Tables

TO USE:

1. Choose the required beam span in the left column. For beams with a pitch greater than 1:12, multiply the horizontal beam span by the slope adjustment factor from the table below.
2. Divide the design loads by the desired number of plies to verify each ply of the beam.
3. Select a beam that exceeds the Factored Total Resistance, the Total L/180 Resistance, and the appropriate Snow Load Deflection Resistance.
4. Check bearing requirements.

NOTE: The serviceability limit states Importance Factor for Snow Load, I_S, of 0.9 can be applied to the specified snow loads for evaluation of the deflection resistance. See the example to the right.

EXAMPLE:

For a 18' horizontal span with a pitch of 4:12, select a 2- and 3-ply beam that satisfies an L/360 Snow Load deflection limit for the following specified loads: Snow Load = 480 plf; Dead Load = 220 plf

CALCULATE BEAM SPAN: 18' * 1.054 = 18.97' ⟶ **Use 19'**

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 * 480) + (1.25 * 220) = 995 plf
Unfactored Total Load = 0.9 * 480 + 220 = 652 plf
Unfactored Snow Load = 0.9 * 480 = 432 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 995/2 = 498 plf
Unfactored Total Load per ply = 652/2 = 326 plf
Unfactored Snow Load per ply = 432/2 = 216 plf
⟶ **Use 2 plies 1-3/4" x 16"**

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 995/3 = 332 plf
Unfactored Total Load per ply = 652/3 = 218 plf
Unfactored Snow Load per ply = 432/3 = 144 plf
⟶ **Use 3 plies 1-3/4" x 14"**

Span	1-3/4" x 7-1/4"				1-3/4" x 9-1/4"				1-3/4" x 9-1/2"				1-3/4" x 11-1/4"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
6'	724	1086		1277	1504			1722	1629			1781				2218	6'
7'	456	684	908	967	947	1420		1422	1026			1469	1704			1814	7'
8'	305	458	607	739	634	951		1173	687	1031		1234	1141			1534	8'
9'	214	321	425	583	445	668	886	926	482	724	960	974	801	1202		1358	9'
10'	156	234	309	471	324	487	645	748	351	527	699	787	584	876		1085	10'
11'	117	176	231	389	244	366	483	617	264	396	524	650	439	658	872	895	11'
12'	90	135	177	326	188	282	371	518	203	305	402	545	338	507	670	751	12'
13'	71	106	138	277	147	221	291	440	160	240	315	463	266	399	526	639	13'
14'	57	85	110	238	118	177	232	379	128	192	251	399	213	319	420	550	14'
15'	46	69	89	207	96	144	187	329	104	156	203	346	173	259	340	478	15'
16'	38	57	72	181	79	118	154	289	85	128	167	304	142	214	279	419	16'
17'	31	47	60	160	66	99	127	255	71	107	138	268	118	178	232	370	17'
18'	-	-	-	-	55	83	106	227	60	90	115	239	100	150	194	330	18'
19'	-	-	-	-	47	71	90	203	51	76	97	213	85	127	164	295	19'
20'	-	-	-	-	40	60	76	182	43	65	83	192	73	109	140	266	20'
21'	-	-	-	-	35	52	65	165	38	57	71	174	63	94	120	240	21'
22'	-	-	-	-	30	45	56	150	33	49	61	158	54	82	104	218	22'

Span	1-3/4" x 11-7/8"				1-3/4" x 14"				1-3/4" x 16"				1-3/4" x 18"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
10'	687	1031		1202	1126			1523	1681			1800				2097	10'
11'	516	774		992	846	1269		1349	1263			1596	1798			1852	11'
12'	397	596	789	832	651	977		1132	973			1433	1385			1658	12'
13'	312	469	619	708	512	769		963	765	1147		1235	1089			1500	13'
14'	250	375	495	609	410	615	813	829	612	919		1064	872	1308		1325	14'
15'	203	305	401	530	333	500	660	721	498	747		925	709	1064		1153	15'
16'	167	251	329	465	274	412	542	633	410	615	812	812	584	876		1012	16'
17'	139	209	273	411	229	343	451	559	342	513	676	718	487	730		895	17'
18'	117	176	229	365	193	289	379	498	288	432	568	639	410	615		797	18'
19'	100	150	194	327	164	246	321	446	245	367	482	573	349	523	689	714	19'
20'	85	128	165	295	140	211	274	402	210	315	412	516	299	448	589	643	20'
21'	74	111	142	266	121	182	236	363	181	272	355	467	258	387	507	582	21'
22'	64	96	123	242	105	158	204	330	157	236	307	425	224	337	440	530	22'
23'	56	84	107	221	92	138	178	301	138	207	268	388	196	295	384	484	23'
24'	49	74	93	202	81	122	155	276	121	182	235	355	173	259	337	443	24'
25'	43	65	82	186	72	108	137	254	107	161	207	326	153	229	297	407	25'
26'	39	58	72	171	64	96	121	234	95	143	183	301	136	204	263	376	26'
27'	34	52	63	158	57	85	107	216	85	128	162	278	121	182	234	348	27'
28'	31	46	56	146	51	76	95	200	76	114	145	258	109	163	209	322	28'
29'	-	-	-	-	46	69	85	186	68	103	129	240	98	147	187	300	29'
30'	-	-	-	-	41	62	76	173	62	93	116	223	88	133	168	279	30'

NOTES:

1. The values in these tables meet the NBCC 2005 requirements for Limit States Design.
2. Span is defined as center-to-center of bearings and is valid for simple span and equal, continuous span conditions. For beams with a pitch greater than 1:12, the horizontal beam span must be multiplied by the factor from the Slope Adjustment table.
3. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a professional engineer.
4. The designer must check both the Factored Total Resistance and the Total L/180 Deflection Resistance, AND the appropriate Snow Load column, either the L/360 or L/240 deflection limit. To design for a Snow Load deflection of L/480, use the appropriate column from the Uniform Floor Load tables on pages 32-33. Unfactored Deflection Resistance values that are blank are governed by the Factored Total Load. Do not use a product where designated "-" without further analysis by a design professional.
5. All values listed are based on uniform loads of standard duration. The dead load MUST NOT exceed the snow load to use these tables.
6. The Unfactored Deflection Resistance for Total L/180 does NOT include the effects of long term loading (creep).
7. The Total Load values have been adjusted to account for the self-weight of the beam.
8. Proper bearing must be provided at each support. The required bearing can be determined from the Factored Reaction Resistance table on page 27.
9. Depths of 16" and greater shall be a minimum of two plies unless designed specifically as a single ply of 1-3/4" with proper lateral bracing as defined in note 3. (Example: the marriage beam for each half of a manufactured home before units are joined.)
10. The values in the tables are for a single ply of 1-3/4" LVL. Double the values for a 2-ply or 3-1/2" thickness (or divide design loads by 2 to use the table directly to verify each ply of a 2-ply beam). Triple the values for a 3-ply or 5-1/4" thickness (or divide design loads by 3 to use the table directly to verify each ply of a 3-ply beam). Quadruple the values for 4-ply or 7" thickness (or divide the design loads by 4 to use the table directly to verify each ply of a 4-ply beam).
11. Side-loaded beams built up from multiple plies of LVL (e.g., supporting joists connected to the beam by hangers) may have a limited load capacity depending on the method of connecting the plies. Refer to page 40 for connection details and limits on side-loaded members.

SLOPE ADJUSTMENT

Slope	Factor
2:12	1.014
3:12	1.031
4:12	1.054
5:12	1.083
6:12	1.118
7:12	1.158
8:12	1.202
9:12	1.250
10:12	1.302
11:12	1.357
12:12	1.414

TO USE:

1. Choose the required beam span in the left column. For beams with a pitch greater than 1:12, multiply the horizontal beam span by the slope adjustment factor from the table below.
2. Divide the design loads by the desired number of plies to verify each ply of the beam.
3. Select a beam that exceeds the Factored Total Resistance, the Total L/180 Resistance, and the appropriate Snow Load Deflection Resistance.
4. Check bearing requirements.

NOTE: The serviceability limit states Importance Factor for Snow Load, I_S, of 0.9 can be applied to the specified snow loads for evaluation of the deflection resistance. See the example to the right.

EXAMPLE:

For a 18' horizontal span with a pitch of 4:12, select a 2- and 3-ply beam that satisfies an L/360 Snow Load deflection limit for the following specified loads: Snow Load = 480 plf; Dead Load = 220 plf

CALCULATE BEAM SPAN: 18' * 1.054 = 18.97' ⟶ **Use 19'**

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 * 480) + (1.25 * 220) = 995 plf
Unfactored Total Load = 0.9 * 480 + 220 = 652 plf
Unfactored Snow Load = 0.9 * 480 = 432 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 995/2 = 498 plf
Unfactored Total Load per ply = 652/2 = 326 plf
Unfactored Snow Load per ply = 432/2 = 216 plf
⟶ **Use 2 plies 1-3/4" x 16"**

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 995/3 = 332 plf
Unfactored Total Load per ply = 652/3 = 218 plf
Unfactored Snow Load per ply = 432/3 = 144 plf
⟶ **Use 3 plies 1-3/4" x 14"**

Span	1-3/4" x 20"				1-3/4" x 22"				1-3/4" x 24"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
10'				2415				2758				3127	**10'**
11'				2124				2414				2724	**11'**
12'				1895				2146				2413	**12'**
13'	1494			1710				1932				2165	**13'**
14'	1196			1558	1592			1756				1963	**14'**
15'	973			1403	1295			1609	1681			1795	**15'**
16'	801	1202		1232	1067			1472	1385			1654	**16'**
17'	668	1002		1090	889			1302	1155			1531	**17'**
18'	563	844		971	749	1124		1160	973			1364	**18'**
19'	478	718		870	637	955		1039	827			1223	**19'**
20'	410	615		784	546	819		937	709	1064		1102	**20'**
21'	354	531	699	710	471	707		848	612	919		998	**21'**
22'	308	462	606	645	410	615		772	532	799		908	**22'**
23'	269	404	529	589	359	538		705	466	699		830	**23'**
24'	237	356	465	540	316	474	621	646	410	615		761	**24'**
25'	210	315	410	497	279	419	548	594	363	544		700	**25'**
26'	186	280	363	458	248	373	486	548	322	484	633	646	**26'**
27'	166	250	323	424	222	333	433	508	288	432	564	598	**27'**
28'	149	224	289	393	199	298	387	471	258	387	504	555	**28'**
29'	134	201	259	366	179	268	347	438	232	349	453	516	**29'**
30'	121	182	233	341	161	242	312	408	210	315	408	481	**30'**
31'	110	165	210	319	146	220	282	382	190	285	368	450	**31'**
32'	100	150	190	298	133	200	255	357	173	259	334	421	**32'**
33'	91	137	172	280	121	182	232	335	157	236	303	395	**33'**
34'	83	125	157	263	111	166	211	315	144	216	276	371	**34'**
35'	76	114	143	247	101	152	192	296	132	198	252	349	**35'**
36'	70	105	130	233	93	140	176	279	121	182	231	329	**36'**
37'	64	97	119	220	86	129	161	264	112	168	212	311	**37'**
38'	59	89	109	208	79	119	148	249	103	155	194	294	**38'**
39'	55	83	100	196	73	110	136	236	95	143	179	278	**39'**
40'	51	76	92	186	68	102	125	223	88	133	165	264	**40'**

NOTES:

1. The values in these tables meet the NBCC 2005 requirements for Limit States Design.
2. Span is defined as center-to-center of bearings and is valid for simple span and equal, continuous span conditions. For beams with a pitch greater than 1:12, the horizontal beam span must be multiplied by the factor from the Slope Adjustment table.
3. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a professional engineer.
4. The designer must check both the Factored Total Resistance and the Total L/180 Deflection Resistance, AND the appropriate Snow Load column, either the L/360 or L/240 deflection limit. To design for a Snow Load deflection of L/480, use the appropriate column from the Uniform Floor Load tables on pages 32-33. Unfactored Deflection Resistance values that are blank are governed by the Factored Total Load. Do not use a product where designated "-" without further analysis by a design professional.
5. All values listed are based on uniform loads of standard duration. The dead load MUST NOT exceed the snow load to use these tables.
6. The Unfactored Deflection Resistance for Total L/180 does NOT include the effects of long term loading (creep).
7. The Total Load values have been adjusted to account for the self-weight of the beam.
8. Proper bearing must be provided at each support. The required bearing can be determined from the Factored Reaction Resistance table on page 27.
9. Depths of 16" and greater shall be a minimum of two plies unless designed specifically as a single ply of 1-3/4" with proper lateral bracing as defined in note 3. (Example: the marriage beam for each half of a manufactured home before units are joined.)
10. The values in the tables are for a single ply of 1-3/4" LVL. Double the values for a 2-ply or 3-1/2" thickness (or divide design loads by 2 to use the table directly to verify each ply of a 2-ply beam). Triple the values for a 3-ply or 5-1/4" thickness (or divide design loads by 3 to use the table directly to verify each ply of a 3-ply beam). Quadruple the values for 4-ply or 7" thickness (or divide the design loads by 4 to use the table directly to verify each ply of a 4-ply beam).
11. Side-loaded beams built up from multiple plies of LVL (e.g., supporting joists connected to the beam by hangers) may have a limited load capacity depending on the method of connecting the plies. Refer to page 40 for connection details and limits on side-loaded members.

SLOPE ADJUSTMENT

Slope	Factor
2:12	1.014
3:12	1.031
4:12	1.054
5:12	1.083
6:12	1.118
7:12	1.158
8:12	1.202
9:12	1.250
10:12	1.302
11:12	1.357
12:12	1.414

LVL 2250F$_b$-1.5E Uniform Floor Load (PLF) Tables

TO USE:

1. Choose the required beam span in the left column.
2. Divide the design loads by the desired number of plies to verify each ply of the beam.
3. Select a beam that exceeds the Factored Total Resistance, the Total L/240 Resistance, and the appropriate Live Load Deflection Resistance.
4. Check bearing requirements.

EXAMPLE:

For a 16' beam span, select a 2- and 3-ply beam that satisfies an L/480 Live Load deflection limit for the following specified loads: Live Load = 480 plf; Dead Load = 220 plf

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 * 480) + (1.25 * 220) = 995 plf
Unfactored Total Load = 480 + 220 = 700 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 995/2 = 498 plf
Unfactored Total Load per ply = 700/2 = 350 plf
Unfactored Live Load per ply = 480/2 = 240 plf
⟶ **Use 2 plies 1-3/4" x 16"**

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 995/3 = 332 plf
Unfactored Total Load per ply = 700/3 = 234 plf
Unfactored Live Load per ply = 480/3 = 160 plf
⟶ **Use 3 plies 1-3/4" x 14"**

Span	1-3/4" x 5-1/2"				1-3/4" x 7-1/4"				1-3/4" x 9-1/4"				1-3/4" x 9-1/2"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
6'	187	249	371	663	428	571	853	1119	890	1187		1722	964	1286		1781	6'
7'	117	157	233	486	270	360	536	820	560	747	1117	1302	607	810	1210	1369	7'
8'	78	105	155	371	180	241	358	627	375	500	746	995	407	542	809	1047	8'
9'	55	73	108	292	127	169	250	494	263	351	523	785	285	381	566	826	9'
10'	40	53	78	236	92	123	181	399	192	256	380	635	208	277	412	668	10'
11'	30	40	58	194	69	92	135	329	144	192	284	523	156	208	308	551	11'
12'	-	-	-	-	53	71	103	276	111	148	218	439	120	160	236	462	12'
13'	-	-	-	-	42	56	80	234	87	116	170	373	94	126	184	392	13'
14'	-	-	-	-	33	45	63	201	70	93	135	321	75	101	147	337	14'
15'	-	-	-	-	-	-	-	-	56	75	109	279	61	82	118	293	15'
16'	-	-	-	-	-	-	-	-	46	62	89	244	50	67	96	257	16'
17'	-	-	-	-	-	-	-	-	39	52	73	215	42	56	80	227	17'
18'	-	-	-	-	-	-	-	-	32	43	61	192	35	47	66	202	18'
19'	-	-	-	-	-	-	-	-	-	-	-	-	30	40	56	180	19'
20'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20'
21'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21'
22'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22'

Span	1-3/4" x 11-1/4"				1-3/4" x 11-7/8"				1-3/4" x 14"				1-3/4" x 16"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		Live Load		Total Load		
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		
10'	346	461	686	920	407	542	808	1019	666	889	1326	1386	995	1327		1777	10'
11'	260	346	514	759	305	407	605	841	501	668	995	1144	747	997		1467	11'
12'	200	267	394	637	235	314	465	705	385	514	764	960	576	768	1144	1231	12'
13'	157	210	309	541	185	247	364	600	303	404	600	816	453	604	898	1047	13'
14'	126	168	246	466	148	197	290	516	243	324	479	703	362	483	717	902	14'
15'	102	136	199	405	120	160	235	449	197	263	388	611	294	393	581	784	15'
16'	84	112	163	355	99	132	192	393	162	217	318	536	243	324	478	688	16'
17'	70	93	135	313	82	110	159	348	135	181	264	473	202	270	397	608	17'
18'	59	79	113	279	69	93	133	309	114	152	221	421	170	227	333	541	18'
19'	50	67	95	249	59	79	112	277	97	129	187	377	145	193	282	485	19'
20'	43	57	80	224	50	67	95	249	83	111	159	340	124	165	240	436	20'
21'	37	49	69	203	43	58	81	225	72	96	137	307	107	143	206	395	21'
22'	32	43	59	184	38	50	70	204	62	83	118	279	93	124	178	359	22'
23'	-	-	-	-	33	44	60	186	54	73	102	254	81	109	155	327	23'
24'	-	-	-	-	-	-	-	-	48	64	89	233	72	96	136	300	24'
25'	-	-	-	-	-	-	-	-	42	56	78	214	63	84	119	276	25'
26'	-	-	-	-	-	-	-	-	37	50	68	197	56	75	105	254	26'
27'	-	-	-	-	-	-	-	-	33	45	60	182	50	67	93	235	27'
28'	-	-	-	-	-	-	-	-	30	40	53	169	45	60	82	218	28'
29'	-	-	-	-	-	-	-	-	-	-	-	-	40	54	73	202	29'
30'	-	-	-	-	-	-	-	-	-	-	-	-	36	49	65	188	30'

NOTES:

1. The values in these tables meet the NBCC 2005 requirements for Limit States Design. Vibration has NOT been considered.
2. Span is defined as center-to-center of bearings and is valid for simple span and equal, continuous span conditions.
3. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a professional engineer.
4. The designer must check both the Factored Total Resistance and the Total L/240 Deflection Resistance, AND the appropriate Live Load column, either the L/480 or L/360 deflection limit. Unfactored Deflection Resistance values that are blank are governed by the Factored Total Load. Do not use a product where designated "-" without further analysis by a design professional.
5. All values listed are based on uniform loads of standard duration. The dead load MUST NOT exceed the live load to use these tables.
6. The Unfactored Deflection Resistance for Total L/240 does NOT include the effects of long term loading (creep).
7. The Total Load values have been adjusted to account for the self-weight of the beam.
8. Proper bearing must be provided at each support. The required bearing can be determined from the Factored Reaction Resistance table on page 27.
9. Depths of 16" and greater shall be a minimum of two plies unless designed specifically as a single ply of 1-3/4" with proper lateral bracing as defined in note 3. (Example: the marriage beam for each half of a manufactured home before units are joined.)
10. The values in the tables are for a single ply of 1-3/4" LVL. Double the values for a 2-ply or 3-1/2" thickness (or divide design loads by 2 to use the table directly to verify each ply of a 2-ply beam). Triple the values for a 3-ply or 5-1/4" thickness (or divide design loads by 3 to use the table directly to verify each ply of a 3-ply beam). Quadruple the values for 4-ply or 7" thickness (or divide the design loads by 4 to use the table directly to verify each ply of a 4-ply beam).
11. Side-loaded beams built up from multiple plies of LVL (e.g., supporting joists connected to the beam by hangers) may have a limited load capacity depending on the method of connecting the plies. Refer to page 40 for connection details and limits on side-loaded members.

ACTUAL DEFLECTION BASED ON SPAN AND LIMIT

Span (ft)	L/480	L/360	L/240
10'	1/4"	5/16"	1/2"
12'	5/16"	3/8"	5/8"
14'	3/8"	7/16"	11/16"
16'	3/8"	9/16"	13/16"
18'	7/16"	5/8"	7/8"
20'	1/2"	11/16"	1"
22'	9/16"	3/4"	1-1/8"
24'	5/8"	13/16"	1-3/16"
26'	5/8"	7/8"	1-5/16"
28'	11/16"	15/16"	1-3/8"
30'	3/4"	1"	1-1/2"

LVL 2250F$_b$-1.5E Uniform Roof Snow Load (PLF) Tables

TO USE:

1. Choose the required beam span in the left column. For beams with a pitch greater than 1:12, multiply the horizontal beam span by the slope adjustment factor from the table below.
2. Divide the design loads by the desired number of plies to verify each ply of the beam.
3. Select a beam that exceeds the Factored Total Resistance, the Total L/180 Resistance, and the appropriate Snow Load Deflection Resistance.
4. Check bearing requirements.

NOTE: The serviceability limit states Importance Factor for Snow Load, I_S, of 0.9 can be applied to the specified snow loads for evaluation of the deflection resistance. See the example to the right.

EXAMPLE:

For an 18' horizontal span with a pitch of 4:12, select a 2- and 3-ply beam that satisfies an L/360 Snow Load deflection limit for the following specified loads: Snow Load = 480 plf; Dead Load = 220 plf

CALCULATE BEAM SPAN: 18' * 1.054 = 18.97' ⟶ **Use 19'**

CALCULATE DESIGN LOADS:

Factored Total Load = (1.5 * 480) + (1.25 * 220) = 995 plf
Unfactored Total Load = 0.9 * 480 + 220 = 652 plf
Unfactored Snow Load = 0.9 * 480 = 432 plf

SOLUTION FOR A 2-PLY BEAM:

Factored Total Load per ply = 995/2 = 498 plf
Unfactored Total Load per ply = 652/2 = 326 plf
Unfactored Snow Load per ply = 432/2 = 216 plf
⟶ **No solution: 2-ply 16" does not work.**

SOLUTION FOR A 3-PLY BEAM:

Factored Total Load per ply = 995/3 = 332 plf
Unfactored Total Load per ply = 652/3 = 218 plf
Unfactored Snow Load per ply = 432/3 = 144 plf
⟶ **Use 3 plies 1-3/4" x 16"**

Span	1-3/4" x 5-1/2"				1-3/4" x 7-1/4"				1-3/4" x 9-1/4"				1-3/4" x 9-1/2"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
6'	249	374	496	663	571	857		1119	1187			1722	1286			1781	6'
7'	157	235	311	486	360	540	716	820	747	1121		1302	810	1215		1369	7'
8'	105	157	207	371	241	361	478	627	500	751		995	542	814		1047	8'
9'	73	110	145	292	169	254	335	494	351	527	699	785	381	571	757	826	9'
10'	53	80	105	236	123	185	243	399	256	384	508	635	277	416	550	668	10'
11'	40	60	78	194	92	139	181	329	192	289	380	523	208	313	412	551	11'
12'	31	46	59	163	71	107	139	276	148	222	292	439	160	241	316	462	12'
13'	-	-	-	-	56	84	108	234	116	175	228	373	126	189	248	392	13'
14'	-	-	-	-	45	67	86	201	93	140	182	321	101	151	197	337	14'
15'	-	-	-	-	36	54	69	175	75	113	147	279	82	123	159	293	15'
16'	-	-	-	-	30	45	56	153	62	93	120	244	67	101	130	257	16'
17'	-	-	-	-	-	-	-	-	52	78	99	215	56	84	108	227	17'
18'	-	-	-	-	-	-	-	-	43	65	83	192	47	71	90	202	18'
19'	-	-	-	-	-	-	-	-	37	56	70	171	40	60	76	180	19'
20'	-	-	-	-	-	-	-	-	32	48	59	154	34	52	64	162	20'
21'	-	-	-	-	-	-	-	-	-	-	-	-	30	45	55	146	21'
22'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22'

Span	1-3/4" x 11-1/4"				1-3/4" x 11-7/8"				1-3/4" x 14"				1-3/4" x 16"				Span
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		Snow Load		Total Load		
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		
10'	461	692	917	920	542	814		1019	889	1333		1386	1327			1777	10'
11'	346	520	687	759	407	611	809	841	668	1002		1144	997			1467	11'
12'	267	400	528	637	314	471	622	705	514	771		960	768	1152		1231	12'
13'	210	315	414	541	247	370	488	600	404	607	802	816	604	906		1047	13'
14'	168	252	330	466	197	296	389	516	324	486	641	703	483	725		902	14'
15'	136	205	267	405	160	241	315	449	263	395	519	611	393	589	778	784	15'
16'	112	168	219	355	132	198	259	393	217	325	427	536	324	486	640	688	16'
17'	93	140	182	313	110	165	214	348	181	271	354	473	270	405	532	608	17'
18'	79	118	152	279	93	139	180	309	152	228	297	421	227	341	447	541	18'
19'	67	100	128	249	79	118	152	277	129	194	252	377	193	290	379	485	19'
20'	57	86	109	224	67	101	129	249	111	166	215	340	165	248	323	436	20'
21'	49	74	94	203	58	87	111	225	96	144	185	307	143	214	278	395	21'
22'	43	65	81	184	50	76	95	204	83	125	160	279	124	186	241	359	22'
23'	37	56	70	168	44	66	83	186	73	109	139	254	109	163	210	327	23'
24'	33	50	61	153	39	58	72	170	64	96	121	233	96	144	184	300	24'
25'	-	-	-	-	34	52	63	156	56	85	106	214	84	127	161	276	25'
26'	-	-	-	-	30	46	55	144	50	75	94	197	75	113	143	254	26'
27'	-	-	-	-	-	-	-	-	45	67	83	182	67	101	126	235	27'
28'	-	-	-	-	-	-	-	-	40	60	74	169	60	90	112	218	28'
29'	-	-	-	-	-	-	-	-	36	54	65	157	54	81	100	202	29'
30'	-	-	-	-	-	-	-	-	32	49	58	146	49	73	90	188	30'

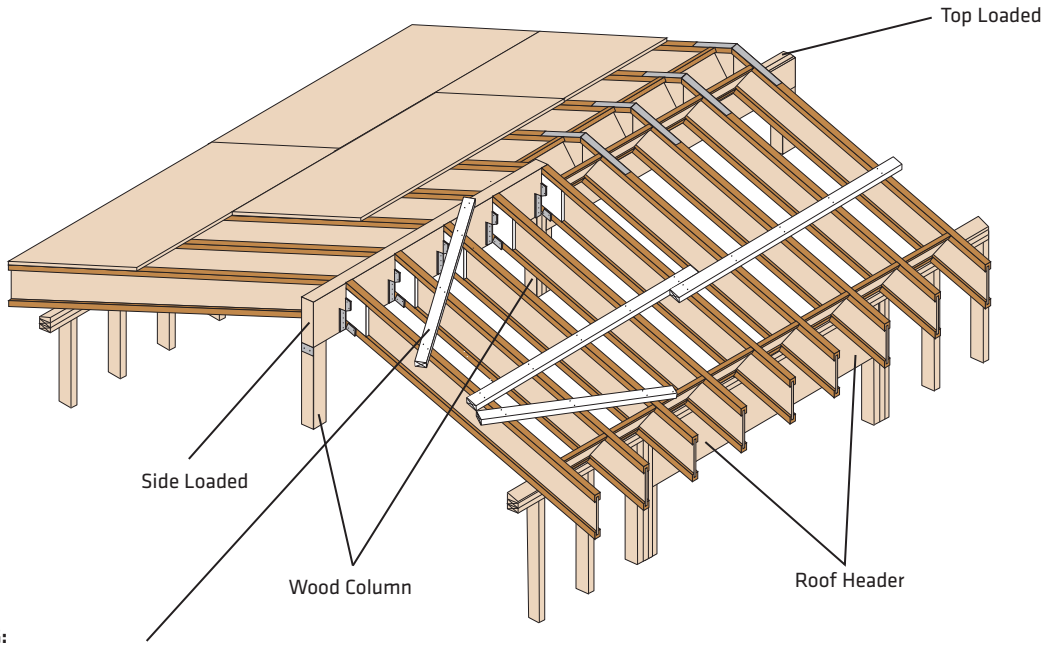
NOTES:

1. The values in these tables meet the NBCC 2005 requirements for Limit States Design.
2. Span is defined as center-to-center of bearings and is valid for simple span and equal, continuous span conditions. For beams with a pitch greater than 1:12, the horizontal beam span must be multiplied by the factor from the Slope Adjustment table.
3. These tables assume full lateral support of the compression edge. In lieu of a lateral stability analysis: Members with a depth-to-width ratio not exceeding 6.5:1 shall be considered to have full lateral support by direct connection, to the compression edge of the member, of structural wood panel sheathing or by joists spaced not more than 24" oc. Members with a depth-to-width ratio not exceeding 7.5:1 shall also have adequate bridging or blocking installed at an interval not to exceed 8 times the depth of the member. Members with a depth-to-width ratio not exceeding 9:1 shall have both edges supported. Other conditions require further analysis by a professional engineer.
4. The designer must check both the Factored Total Resistance and the Total L/180 Deflection Resistance, AND the appropriate Snow Load column, either the L/360 or L/240 deflection limit. To design for a Snow Load deflection of L/480, use the appropriate column from the Uniform Floor Load tables on pages 36. Unfactored Deflection Resistance values that are blank are governed by the Factored Total Load. Do not use a product where designated "-" without further analysis by a design professional.
5. All values listed are based on uniform loads of standard duration. The dead load MUST NOT exceed the snow load to use these tables.
6. The Unfactored Deflection Resistance for Total L/180 does NOT include the effects of long term loading (creep).
7. The Total Load values have been adjusted to account for the self-weight of the beam.
8. Proper bearing must be provided at each support. The required bearing can be determined from the Factored Reaction Resistance table on page 27.
9. Depths of 16" and greater shall be a minimum of two plies unless designed specifically as a single ply of 1-3/4" with proper lateral bracing as defined in note 3. (Example: the marriage beam for each half of a manufactured home before units are joined.)
10. The values in the tables are for a single ply of 1-3/4" LVL. Double the values for a 2-ply or 3-1/2" thickness (or divide design loads by 2 to use the table directly to verify each ply of a 2-ply beam). Triple the values for a 3-ply or 5-1/4" thickness (or divide design loads by 3 to use the table directly to verify each ply of a 3-ply beam). Quadruple the values for 4-ply or 7" thickness (or divide the design loads by 4 to use the table directly to verify each ply of a 4-ply beam).
11. Side-loaded beams built up from multiple plies of LVL (e.g., supporting joists connected to the beam by hangers) may have a limited load capacity depending on the method of connecting the plies. Refer to page 40 for connection details and limits on side-loaded members.

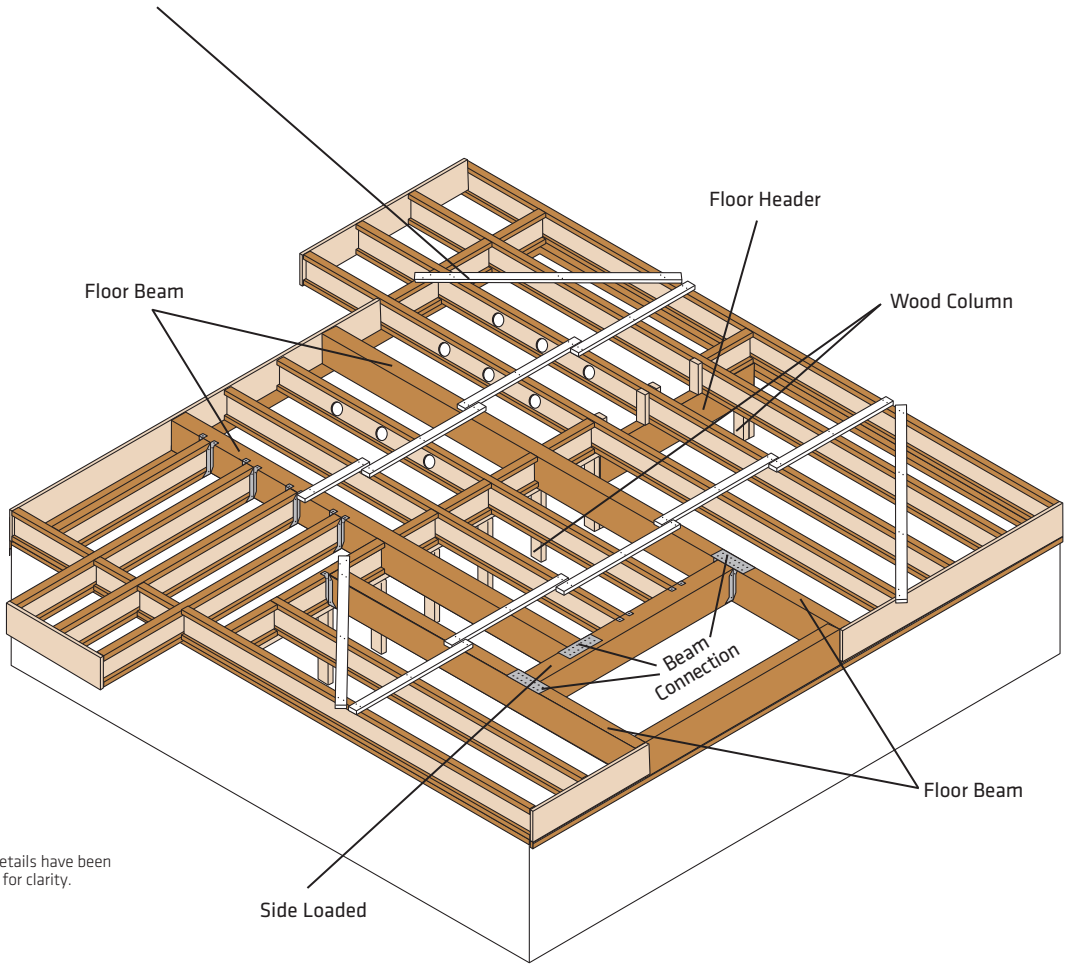
SLOPE ADJUSTMENT

Slope	Factor
2:12	1.014
3:12	1.031
4:12	1.054
5:12	1.083
6:12	1.118
7:12	1.158
8:12	1.202
9:12	1.250
10:12	1.302
11:12	1.357
12:12	1.414

Temporary Bracing

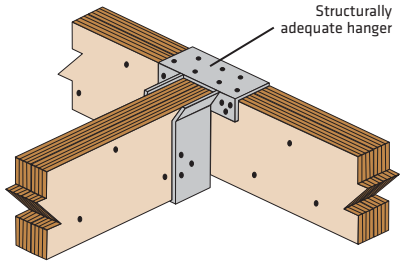


WARNING:
Temporary construction bracing required for lateral support before decking is completed. Failure to use bracing could result in serious injury or death. See Installation Guide for specifics.



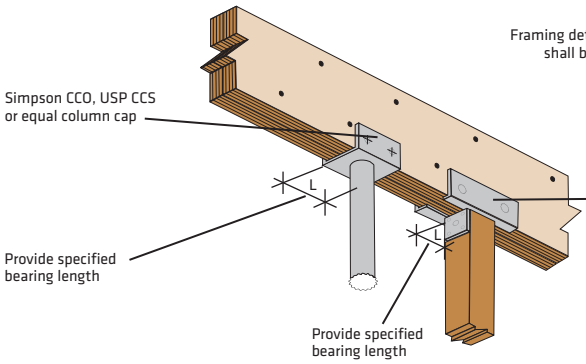
NOTE:
Some details have been left out for clarity.

P3 BEAM CONNECTION



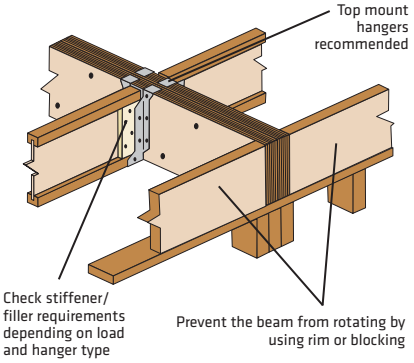
Hanger shall apply load equally to each ply or special design required

P4 STEEL COLUMN & WOOD COLUMN

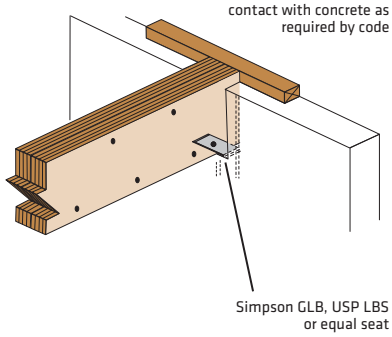


P5

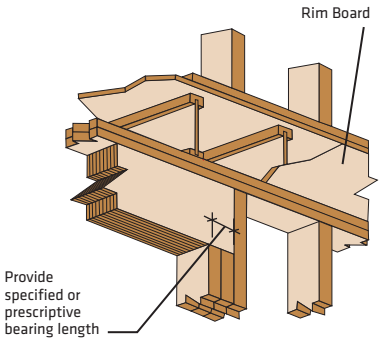
P6 FLOOR BEAM (Flush ceiling)



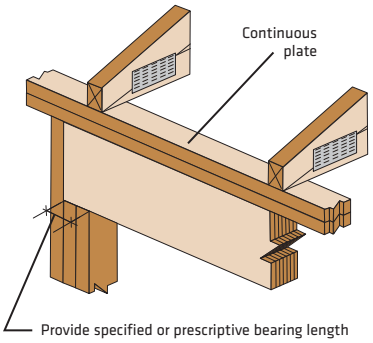
P7 CONCRETE WALL



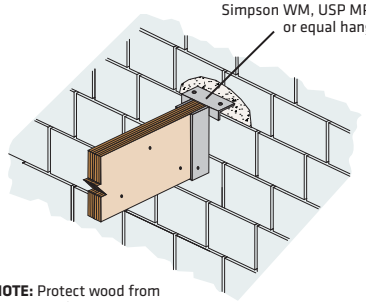
Q1 WINDOW/DOOR HEADER



Q2 WINDOW/DOOR HEADER

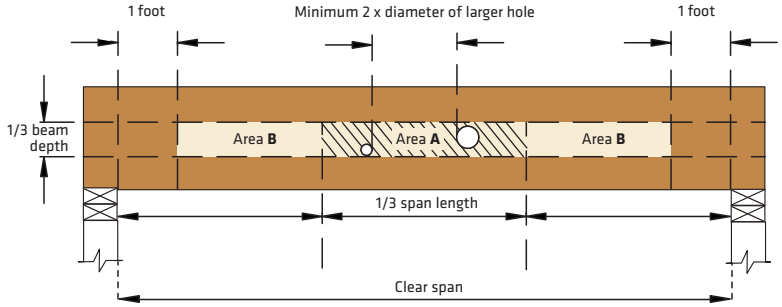


Q4 MASONRY HANGER



NOTE: Protect wood from contact with concrete as required by code

BEAM HOLE DETAILS

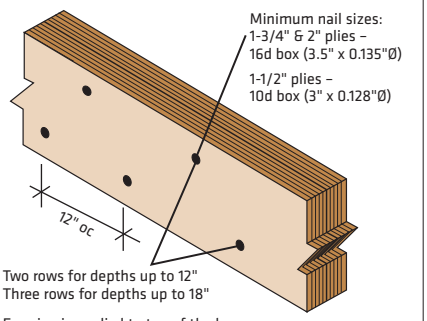


NOTES:

1. These guidelines apply to uniformly loaded beams selected from the Quick Reference Tables or the Uniform Load Tables or designed with LP's design/specification software only. For all other applications, such as beams with concentrated loads, please contact your LP® SolidStart® Engineered Wood Products distributor for assistance.
2. Round holes can be drilled anywhere in "Area **A**" provided that: no more than four holes are cut, with the minimum spacing described in the diagram. The maximum hole size is 1-1/2" for depths up to 9-1/4", and 2" for depths greater than 9-1/4".
3. Rectangular holes are NOT allowed.
4. DO NOT drill holes in cantilevers without prior approval from the project engineer/architect.
5. Other hole sizes and configurations MAY be possible with further engineering analysis. For more information, contact your LP SolidStart Engineered Wood Products distributor.
6. Up to three 3/4" holes may be drilled in "Area **B**" to accommodate wiring and/or water lines. These holes shall be at least 12" apart. The holes shall be located in the middle third of the depth, or a minimum of 3" from the bottom and top of the beam. For beams shallower than 9-1/4", locate holes at mid-depth.
7. Protect plumbing holes from moisture.

Connection of Multiple Ply Beams

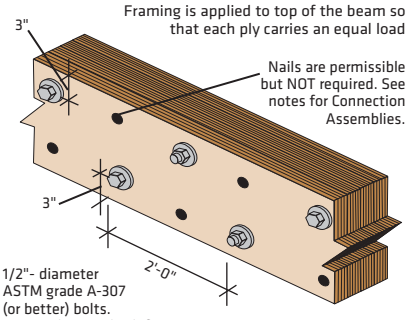
P1 **TOP-LOADED BEAM – NAILED CONNECTION**
(See Connection Assemblies for more details)



Two rows for depths up to 12"
Three rows for depths up to 18"

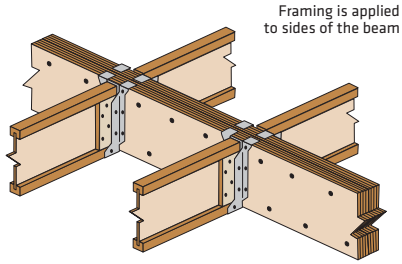
Framing is applied to top of the beam so that each ply carries an equal load

P2 **TOP-LOADED BEAM – BOLTED CONNECTION**
(See Connection Assemblies for more details)

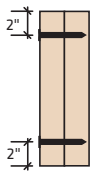
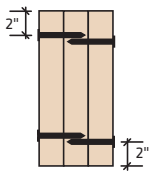
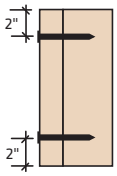
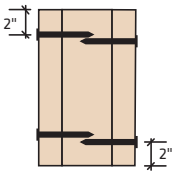
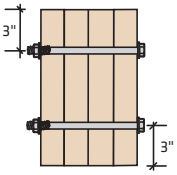
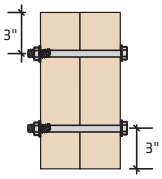
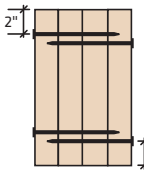


1/2"- diameter ASTM grade A-307 (or better) bolts.
Use washers on both faces.

Q3 **SIDE-LOADED BEAM**
(See Connection Assemblies for more details)



SIDE LOADS ARE NOT RECOMMENDED FOR BEAMS OVER 5-1/2" WIDE UNLESS EQUALLY APPLIED TO BOTH FACES
See Connection Assemblies for more information

DETAIL A	DETAIL B	DETAIL C/E	DETAIL D	DETAIL F	DETAIL G	DETAIL H
MAXIMUM 4" WIDE 2-PLY BEAMS	MAXIMUM 6" WIDE 3-PLY BEAMS	MAXIMUM 7-1/4" WIDE 2-PLY BEAMS	MAXIMUM 9-1/4" WIDE 3-PLY BEAMS	MAXIMUM 7" WIDE 3- OR 4-PLY BEAMS	MAXIMUM 7" WIDE 2-PLY BEAMS	MAXIMUM 7" WIDE 2-, 3- OR 4-PLY BEAMS
						
2" max. ply thickness	2" max. ply thickness	2" maximum side member 3-1/2" main member for C 5-1/4" main member for E	2" maximum side members 5-1/4" maximum main member			Simpson SDS 1/4" x 6" screws (or equal)

CONNECTION ASSEMBLIES

FACTORED UNIFORM SIDE-LOAD RESISTANCE (PLF)

Connection Detail	2 Rows of Nails at 12" oc*	3 Rows of Nails at 12" oc*	2 Rows of Bolts at 24" oc	2 Rows of Bolts at 12" oc
A	860	1290	680	1360
B	645	968	510	1020
C	645	968	765	1530
D	573	860	680	1360
E	573	860	701	1402
F	na	na	453	906
G	na	na	1360	2720
H	Refer to Simpson Strong-Tie catalog for SDS capacities.			

* 3 rows of nails are required for depths greater than 12", up to 18". 4 rows of nails for depths greater than 18", up to 24".

NAIL SCHEDULE

Nail Length (in)	Nail Diameter (in)	Factored Lateral Resistance (lbs)	Nail Size Factor	Shank Type
3-1/2"	0.160	229	1.07	common wire
	0.152	215	1.00	spiral
3-1/4"	0.144	188	0.87	common wire
	0.122	124	0.58	spiral
	0.120	118	0.55	power-driven[13]
3"	0.144	188	0.87	common wire
	0.122	124	0.58	spiral

NOTES:

1. The Factored Uniform Side-Load Resistance values are the maximum factored load that can be applied to either side of the beam, based on the selected connection detail, and represent loads applied uniformly such as joists supported by hangers spaced 24" oc or less. Connections for discrete point loads may be determined with this table by calculating the equivalent fastener schedule within a 2' length centered about the point load. Details **B** and **D** shall have the back ply connected with a number of nails equal to half that used to connect the front ply – see the Side-Load Connection Example and detail on page 41. All nail and bolt spacing requirements shall be verified. The full length of the beam shall be connected with the standard connection or with the appropriate side-load connection from this table. The beam shall be designed to support all applied loads.
2. Factored resistances are for standard load duration and shall be adjusted according to code. If the dead load exceeds the live load, the appropriate load duration factor (<1) shall be applied.
3. The Factored Uniform Side-Load Resistance for nails is based on 3-1/2" spiral nails for 1-3/4" LVL. For other nail sizes, multiply the Factored Uniform Side-Load Resistance by the Nail Size Factor from the Nail Schedule.
4. The Factored Uniform Side-Load Resistance for bolts is based on ASTM grade A-307, 1/2"Ø bolts, for loads applied perpendicular-to-grain (see Fastener Design on page 41).
5. For nails at 8" oc, multiply resistance by 1.5. For nails at 6" oc, multiply resistance by 2. For four rows of nails, double the two-row resistance.
6. Use 2 rows of nails for depths to 12". Use 3 rows of nails for depths greater than 12", up to 18". Use 4 rows of nails for depths greater than 18", up to 24".
7. Unless specifically designed, use 3-1/2" nails for 1-3/4" thick plies. If the nails do not fully penetrate the second ply (main member), then the nails shall be driven from both faces.
8. For detail **A**, or when attaching the first two plies for details **B** and **F** (optional), the nails may be driven all from one face or alternating from both faces. If the nails do not fully penetrate the second ply, then the nails shall be driven from both faces.
9. When driving nails from each face, alternate every other nail in each row.
10. For detail **C/E**, when side-loaded, the larger side-load shall be applied to the thicker ply (main member).
11. For details **F** and **H**, it is permissible to nail the plies together before bolting or driving Simpson SDS (or equal) screws. Nail two plies together then nail one additional ply to each side.
12. Beams wider than 5-1/2" shall be top-loaded or side-loaded from both sides to prevent rotation. For side loads applied to one side of a beam only, the project designer shall verify torsional capacity or detail the beam to prevent rotation due to any side loads. Consult a professional engineer for other options.
13. Power-driven nails shall have a yield strength equivalent to common wire nails of the same shank diameter.
14. Other nail, screw or bolt configurations are possible. Refer to the Fastener Design table on page 41 or contact your LP® SolidStart® Engineered Wood Products distributor.

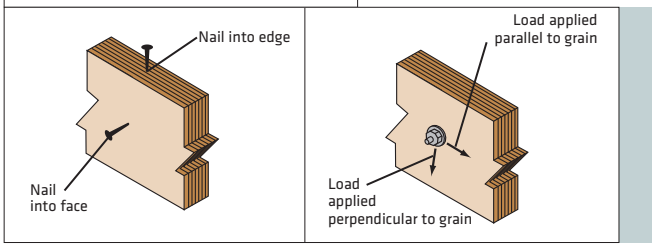
FASTENER DESIGN

Equivalent Specific Gravity					
Nails and Wood Screws				Bolts and Lag Screws	
Withdrawal		Dowel Bearing		Dowel Bearing (into the face only)	
Edge	Face	Edge	Face	Load Applied Parallel to Grain	Load Applied Perpendicular to Grain
0.46	0.50	0.50	0.50	0.46	0.50

NOTES:

1. Connection design using the equivalent specific gravity for each connection type listed above is for standard load duration and shall be adjusted according to code.
2. Fastener spacing, end and edge distance shall be as specified by code except for nail spacing as specified below.
3. See details at right for fastener and applied load orientation.

FASTENER & LOAD ORIENTATION



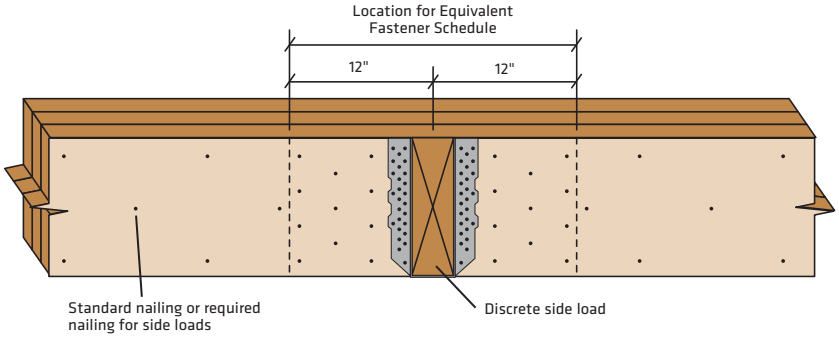
NAIL SPACING REQUIREMENTS

LVL Ply Thickness	Fastener Orientation	Nail Size (common or box)	Minimum End Distance	Minimum Nail Spacing
≥1-3/4"	Edge	3"	2-1/2"	3"
		3-1/4"	2-1/2"	4"
		3-1/2"	3-1/2"	5"
	Face	3"	1-1/2"	3"
		3-1/4"	1-1/2"	3"
		3-1/2"	1-1/2"	5"

NOTES:

1. Edge distance shall be such that does not cause splitting.
2. Multiple rows of nails shall be offset at least 1/2" and staggered.
3. Edge orientation refers to nails driven into the narrow edge of the LVL, parallel to the face of the veneer. Face orientation refers to nails driven into the wide face of the LVL, perpendicular to the face of the veneer. (See Fastener & Load Orientation details above.)

SIDE-LOAD CONNECTION EXAMPLE



EXAMPLE: Assuming a properly designed 3-ply 14" beam, determine the equivalent connection to support a 6970 lb point load applied to the side of the beam.

SOLUTION:

1. Determine the equivalent PLF load over the 2' length by dividing the applied load by 2: 6970 lb / 2' = 3485 plf
2. Divide the equivalent PLF load by the capacity for the appropriate detail. For a 14" depth, 3 rows of nails are required. For Detail **B** with 3 rows of nails at 12" oc: 3485 plf / 968 plf = 3.6
3. The required total number of nails is: 3.6 * 3 rows of nails @ 12" oc = 10.8 nails per foot
4. Connect the front (loaded) ply with the nailing determined in step 3: drive 11 3-1/2" nails within 12" to each side of the point load (a total of 22 nails). Verify nail spacing.
5. Connect the back ply with half the number of nails determined in step 4: drive 6 3-1/2" nails, from the back, within 12" to each side of the point load (a total of 12 nails). Verify nail spacing.
6. Connect full length of member with the standard nailing or as required for side loads.
7. Project designer shall detail to prevent rotation of the beam due to the applied side load.

LVL 2950F_b-2.0E Column Design Tables

TO USE:

1. Select the applicable column table.
2. Determine the height of the column. If not listed, use the next tallest height in the table.
3. Select a column size with an axial load resistance greater than the factored design load.

NAILED COLUMNS

Column Length	Maximum Factored Axial Load Resistance (lbs)						
	Column Dimensions						
	Double 1-3/4" x 3-1/2"	Double 1-3/4" x 5-1/4"	Double 1-3/4" x 7"	Double 1-3/4" x 9-1/2"	Triple 1-3/4" x 5-1/4"	Triple 1-3/4" x 7"	Triple 1-3/4" x 9-1/2"
6'	9980	14970	19960	27080	29830	39770	53970
7'	8450	12680	16900	22940	27400	36540	49590
8'	7110	10660	14220	19300	24910	33210	45070
9'	5970	8950	11930	16190	22450	29930	40620
10'	5000	7500	10010	13580	20120	26820	36410
12'	3540	5310	7070	9600	16000	21330	28950
14'	2530	3790	5060	6860	12660	16880	22900
16'					10020	13360	18130
18'					7960	10610	14400
20'					6350	8470	11490
22'							
24'							

This table applies to built-up columns that have been fastened together with nails as shown in Fastening Details on page 43.

SCREWED COLUMNS

Column Length	Maximum Factored Axial Load Resistance (lbs)						
	Column Dimensions						
	Double 1-3/4" x 3-1/2"	Double 1-3/4" x 5-1/4"	Double 1-3/4" x 7"	Double 1-3/4" x 9-1/2"	Triple 1-3/4" x 5-1/4"	Triple 1-3/4" x 7"	Triple 1-3/4" x 9-1/2"
6'	11550	17820	24070	32990	35480	47940	65710
7'	9760	15070	20370	27920	32630	44070	60400
8'	8180	12650	17100	23460	29660	40060	54910
9'	6820	10570	14310	19640	26730	36100	49480
10'	5690	8800	11970	16440	23930	32340	44330
12'	3960	6180	8400	11560	18970	25650	35190
14'	2790	4380	5960	8220	14930	20220	27770
16'					11750	15940	21910
18'					9270	12600	17340
20'					7360	10010	13790
22'							
24'							

This table applies to built-up columns that have been fastened together with Simpson SDS Screws shown in Fastening Details on page 43.

SOLID COLUMNS

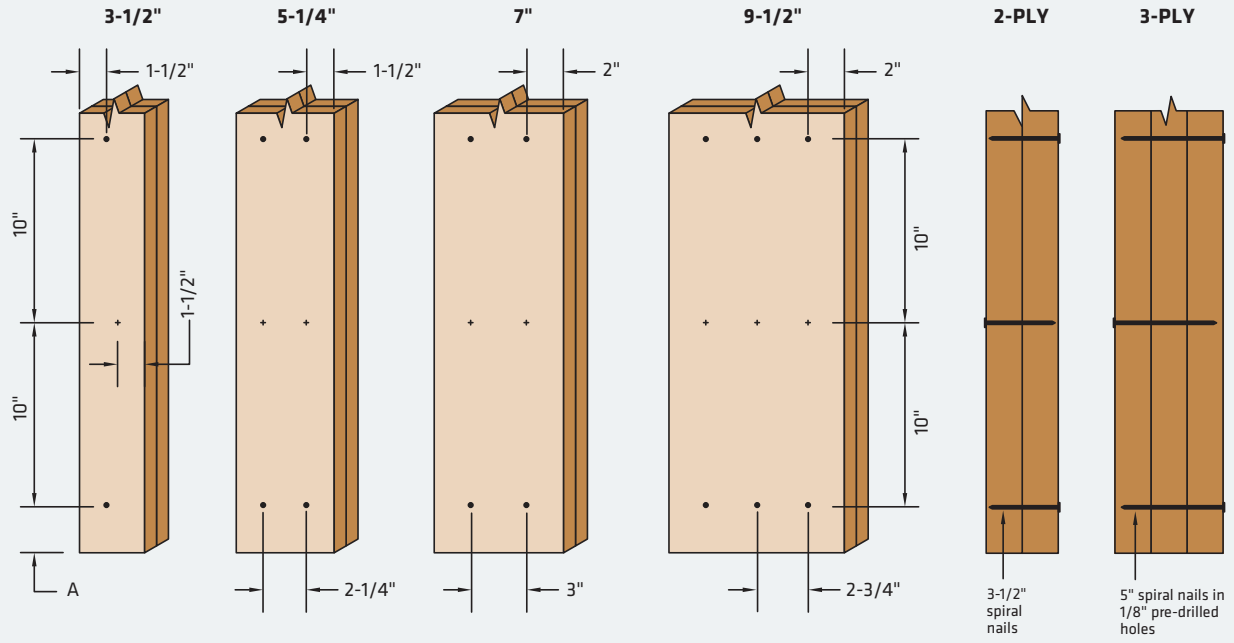
Column Length	Maximum Factored Axial Load Resistance (lbs)								
	Column Dimensions								
	3-1/2" x 3-1/2"	3-1/2" x 5-1/4"	3-1/2" x 7"	3-1/2" x 9-1/2"	5-1/4" x 5-1/4"	5-1/4" x 7"	5-1/4" x 9-1/2"	7" x 7"	7" x 9-1/2"
6'	16630	24940	33260	45140	49710	66280	89950	97820	132760
7'	14090	21130	28170	38230	45670	60900	82650	93360	126710
8'	11850	17770	23700	32160	41510	55350	75120	88380	119940
9'	9940	14910	19880	26980	37420	49890	67710	83030	112680
10'	8340	12510	16680	22640	33530	44710	60680	77500	105180
12'	5900	8840	11790	16000	26660	35550	48240	66520	90280
14'	4210	6320	8430	11430	21090	28130	38170	56340	76470
16'					16700	22270	30220	47400	64330
18'					13260	17690	24000	39770	53970
20'					10590	14110	19160	33360	45270
22'								28020	38020
24'								23580	32000

This table applies to solid one-piece columns that have been manufactured by LP by glue-laminating.

NOTES:

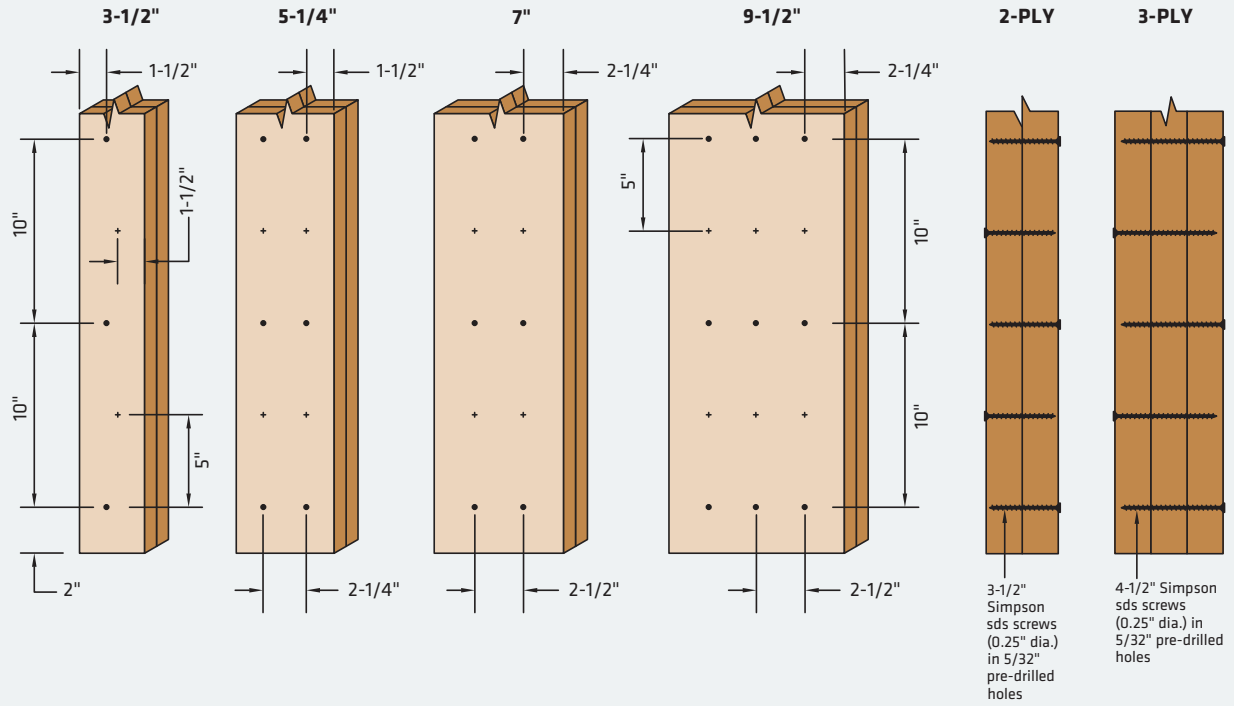
1. Values have been calculated in accordance with CSA O86-01 and the 2005 National Building Code of Canada (Limit States Design).
2. Values are for standard term loads and dry service conditions.
3. The values are based on 60% of the factored resistance of a solid column. The solid column resistance is based on the following assumptions:
   a) The column is braced at the ends only, therefore the column length = the effective length.
   b) The column is subjected to a simple axial load. The calculated values allow for an eccentricity of 1/6 of the column width or depth, whichever controls. The eccentricity is measured from centerline of column to centerline of axial load.
   c) The column is not exposed to any lateral loads. For other conditions refer to CSA O86.
4. No splicing is permitted. All plies must extend the full length of the column.
5. Beams shall be supported on top and across the full width and depth of the column. Face loading is not permitted.

NAILED COLUMN DETAILS



NOTE: A = 2.5" for 2-ply column; 3" for 3-ply column

SCREWED COLUMN DETAILS



Product Description

LP® SolidStart® 1-1/8" OSB and 1-1/4" LVL Rim Board are an integral part of LP's framing package. Designed to match LP SolidStart I-Joists, LP Rim Board provides high vertical and lateral load transfer resistance.

Technical Specifications

LP SolidStart 1-1/8" OSB Rim Board is manufactured and trademarked in accordance with the Performance Standard for APA EWS Rim Boards (PRR-401). LP SolidStart OSB Rim Board may be used to span short openings up to 4' in length (see Factored Header Load table at right). Otherwise, LP SolidStart OSB Rim Board shall be supported by continuous structural bearing. Refer to APA Performance Rated Rim Boards - Limit States Design (Form No. D340 CA) for additional technical specifications.

LP SolidStart 1-1/4" LVL Rim Board is a cross-ply, 1750F_b-1.3E LVL manufactured with two veneers cross-oriented (turned 90°) to provide enhanced vertical load capacity and cupping resistance. LP SolidStart LVL Rim Board is available in a standard thickness of 1-1/4" and may be custom ordered in thicknesses of 1-1/2" and 1-3/4." LP LVL Rim Board may be used to span openings greater than 4'.

Fastener Values

- Nail Values: For nails installed into the wide face of LP SolidStart LVL and OSB Rim Board, use the values for Douglas Fir lumber (Specific Gravity, SG = 0.50) per the 2001 CSA-086 Engineering Design in Wood (Limit States Design). To allow for the 3-1/2" nails from the sole plate of the supported wall into the top edge of the rim, the deck nailing shall be at least 6" oc and the 3-1/2" nails shall be spaced in accordance with the prescriptive requirements of the applicable code.

NOTE: Decreasing the nail spacing will not necessarily increase the lateral load capacity and may cause splitting. To increase the lateral resistance, other connection details may be designed, such as adding framing anchors nailed to the face of the rim and the edge of the wall plates.

- Bolt and Lag Screw Values: For 1/2" diameter through-bolts and lag screws installed in the wide face and loaded in single shear, perpendicular-to-grain, the factored resistance is:

  585 lbs for 1-1/8" APA-Rated OSB Rim Board
  750 lbs for 1-1/4" and thicker cross-ply 1.3E LP LVL Rim Board

- Lag screws shall be at least 4" long. For information on the attachment of 2x lumber ledgers to LP SolidStart Rim Board, refer to APA Performance Rated Rim Boards – Canadian Limit States Design (Form No. D340 CA).

RIM BOARD RESISTANCE

Type	Thickness	Factored Vertical Load Capacity			Factored Lateral Load Resistance (plf)
		Uniform (plf)		Concentrated (lbs)	
		d ≤ 16"	16" < d ≤ 24"	d ≤ 24"	
LP OSB	1-1/8"	7339	5004	5838	234
LP LVL	1-1/4"	13970	8457	7022	326

NOTES:

1. The Factored Vertical Load Resistance shall not be increased for short-term load duration.
2. The Factored Lateral Load Resistance is based on a short-term load duration and shall not be increased.
3. The Factored Lateral Load Resistance is based on the connections specified in the Installation Details below.
4. The vertical load resistance is based on the capacity of the LP rim and may need to be reduced based on the bearing resistance of the supporting wall plate or the attached floor sheathing. Example: The factored bearing resistance of an SPF wall plate is 614 psi so the bearing resistance of a 1-1/8" x 16" deep rim board would be 8289 plf (614 psi x 1-1/8" x 12) so the SPF wall plate does not control.

FACTORED HEADER LOADS (PLF) - MAXIMUM 4' CLEAR SPAN

Type	Thickness	Rim Board Depth			
		9-1/2"	11-7/8"	2-Ply 14"	2-Ply 16"
LP OSB	1-1/8"	620 (1.5")	915 (3.0")	2410 (4.5")	2980 (4.5")
LP LVL	1-1/4"	865 (1.5")	1645 (3.0")	4675 (4.5")	5925 (6.0")

NOTES:

1. This table is for preliminary design for uniform gravity loads only. Final design should include a complete analysis of all loads and connections.
2. The factored load resistances are for a maximum 4' clear span with the minimum bearings for each end (in parentheses) based on the bearing resistance of the rim board. For headers bearing on wood plates, the bearing length may need to be increased based on the ratio of the bearing resistance of the rim board divided by the bearing resistance of the plate species.
3. Standard load duration is assumed and shall be adjusted according to code.
4. Depths greater than 11-7/8" shall be used with a minimum of two plies, as shown. Depths of 11-7/8" and less may be used as a two-ply header by multiplying the allowable loads by two.
5. Multiple-ply headers shall be toe-nailed to the plate from both faces. Fasten the floor sheathing to the top of each ply to provide proper lateral support for each ply.
6. For multiple-ply headers supporting top-loads only, fasten plies together with minimum 2-1/2" nail (common wire or spiral) at a maximum spacing of 12" oc. Use 2 rows of nails for 9-1/2" and 11-7/8". Use 3 rows for depths 14" and greater. Clinch the nails where possible. For side-loaded multiple-ply headers, refer to the Connection Resistance For Side-Loaded 2-Ply Rim Board Headers table for the required nailing and the maximum side load that can be applied.
7. The designer shall verify proper bearing for the header.
8. Joints in the rim are not allowed over openings and must be located at least 12" from any opening.
9. Refer to the APA Performance Rated Rim Boards - Limit States Design (Form No. D340 CA) for additional information including uniform load resistance for smaller openings.
10. Use cross-ply LP SolidStart LVL Rim Board for headers with clear spans longer than 4' or for loads greater than tabulated above. Refer to CCMC report 11518-R for design values for the 1750Fb-1.3E cross-ply LP LVL.

SPECIFIED RIM BOARD WEIGHTS (PLF)

Type	Thickness	Rim Board Depth							
		9-1/2"	11-7/8"	14"	16"	18"	20"	22"	24"
LP OSB	1-1/8"	2.9	3.6	4.3	4.8	5.5	6.1	6.7	7.3
LP LVL	1-1/4"	3.5	4.3	5.1	5.8	6.5	7.3	8.0	8.7

CONNECTION RESISTANCE FOR SIDE-LOADED 2-PLY RIM BOARD HEADERS (PLF)

Type	Thickness	Minimum Nail Size	3 Rows at 6" oc	4 Rows at 6" oc	5 Rows at 6" oc	6 Rows at 6" oc
LP OSB	1-1/8"	2-1/2"	1164	1552	1940	2328
LP LVL	1-1/4"	2-1/2"	1164	1552	1940	2328

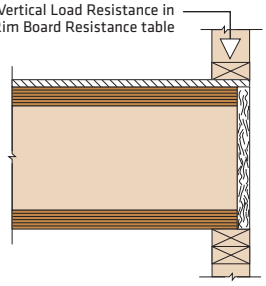
NOTES:

1. This table represents the factored uniform side-load resistance of the connection for a 2-ply header. The total factored uniform load, including top-load and side-load, shall not exceed the factored uniform load resistance of the header as tabulated above for LP OSB Rim Board.
2. The tabulated side-load resistance is for standard load duration and shall be adjusted according to code.
3. Use 3 rows of nails for 9-1/2" and 11-7/8"; 4 rows for 14" and 16"; 5 rows for 18" and 20"; 6 rows for 22" and 24" deep rim board.
4. Nails may be either common wire or spiral. The factored resistances are based on spiral nails. Clinch the nails where possible.
5. Headers consisting of more than 2 plies, alternate fastening or higher side loads are possible but require proper design of the connection.

INSTALLATION

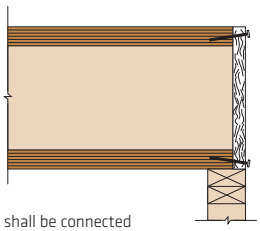
MAXIMUM LOAD

See Vertical Load Resistance in the Rim Board Resistance table



RIM TO JOIST CONNECTION

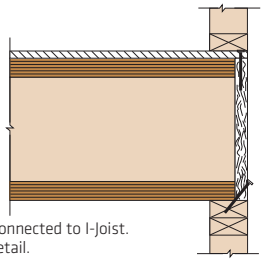
8d (2-1/2") or 10d (3") nails, one at top, one at bottom of each I-Joist



NOTE: Rim Board shall be connected to wall plate and floor deck. See Rim to Deck/Plate Connection detail.

RIM TO DECK/PLATE CONNECTION

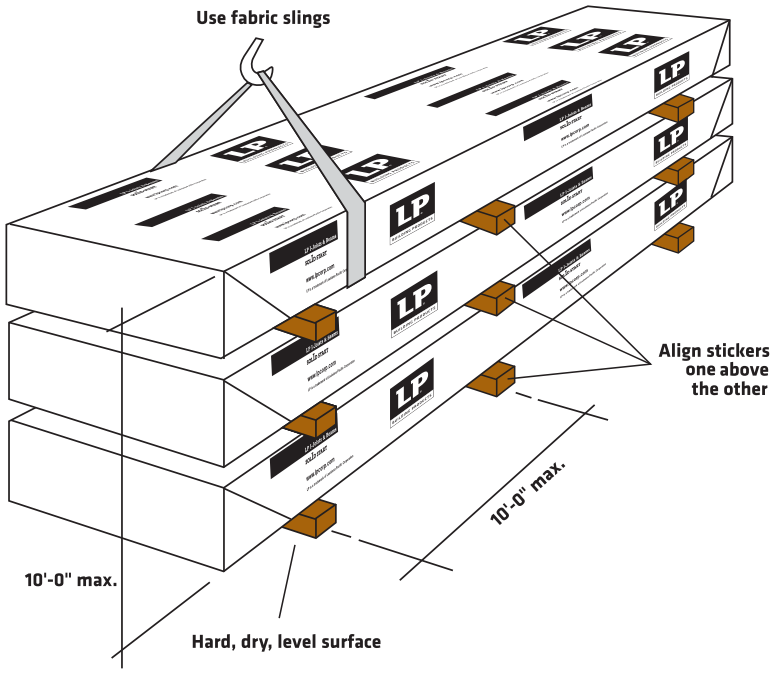
- Floor deck to Rim Board: Use 8d (2-1/2") nails at 6" oc
- Rim Board to wall plate: Toe-nail 8d (2-1/2") or 10d (3") nails at 6" oc



NOTE: Rim Board shall be connected to I-Joist. See Rim Joist Connection Detail.

NOTE:

1. Additional nailing may be required for wind or seismic design by the project designer.

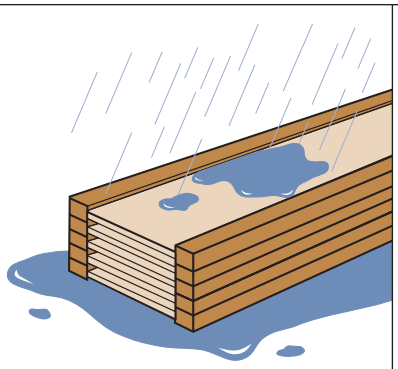


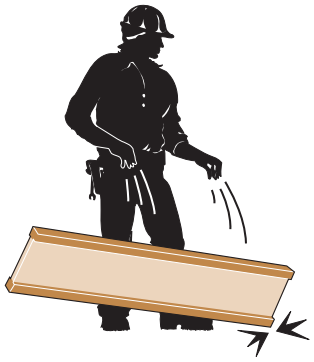
- Warning: Failure to follow proper procedures for handling, storage and installation could result in unsatisfactory performance, unsafe structures and possible collapse.
- Keep LP® SolidStart® Engineered Wood Products dry. These products are intended to resist the effects of moisture on structural performance from normal construction delays but are not intended for permanent exposure to the weather.
- Unload products carefully, by lifting. Support the bundles to reduce excessive bowing. Individual products shall be handled in a manner which prevents physical damage during measuring, cutting, erection, etc. I-Joists shall be handled vertically and not flatwise.
- Keep products stored in wrapped and strapped bundles, stacked no more than 10' high. Support and separate bundles with 2x4 (or larger) stickers spaced no more than 10' apart. Keep stickers in line vertically.
- Product shall not be stored in contact with the ground, or have prolonged exposure to the weather.
- Use forklifts and cranes carefully to avoid damaging products.
- Do not use a visually damaged product. Call your local LP SolidStart Engineered Wood Products distributor for assistance when damaged products are encountered.
- For satisfactory performance, LP SolidStart Engineered Wood Products shall be used under dry, covered and well-ventilated interior conditions in which the equivalent moisture content in lumber will not exceed 16%.
- For built-up members, LP SolidStart Engineered Wood Products shall be dry before nailing or bolting to avoid trapping moisture.
- LP SolidStart Engineered Wood Products shall not be used for unintended purposes such as ramps and planks.

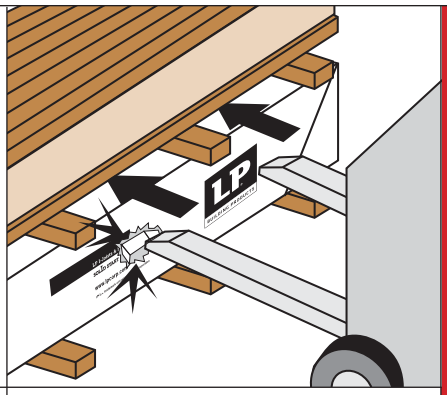
WARNING

The following conditions are NOT permitted!

DO NOT USE VISUALLY DAMAGED PRODUCTS WITHOUT FIRST CHECKING WITH YOUR LOCAL LP® SolidStart® ENGINEERED WOOD PRODUCTS DISTRIBUTOR OR SALES OFFICE. (SEE BACK COVER FOR DETAILS.)

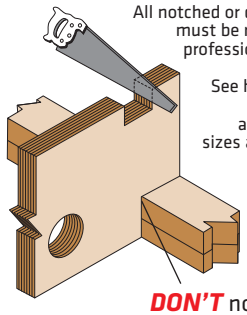






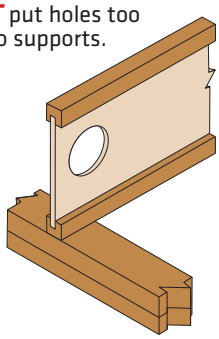
All notched or drilled beams must be reviewed by a professional engineer

See hole detail on page 39 for allowable hole sizes and locations



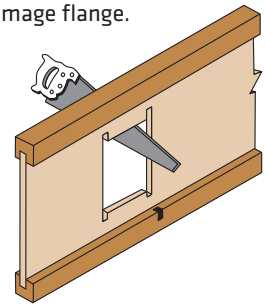
DON'T notch beam at support.

DON'T put holes too close to supports.

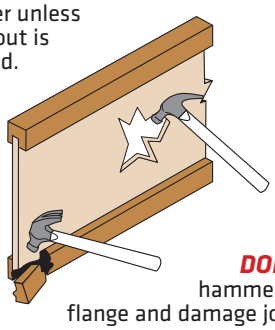


Refer to hole chart for correct location.

DON'T overcut hole and damage flange.

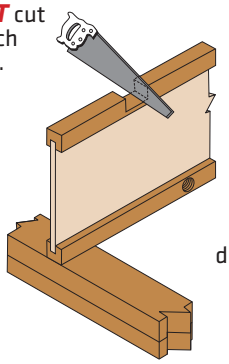


DON'T make hole with hammer unless knock-out is provided.



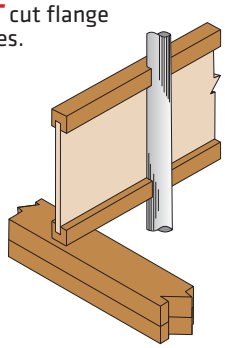
DON'T hammer on flange and damage joist.

DON'T cut or notch flange.

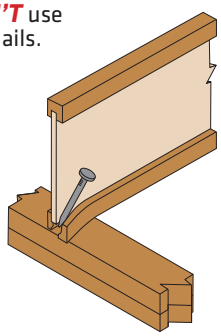


DON'T drill flange.

DON'T cut flange for pipes.

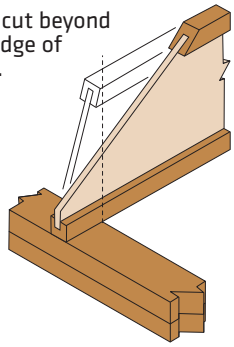


DON'T use 16d nails.

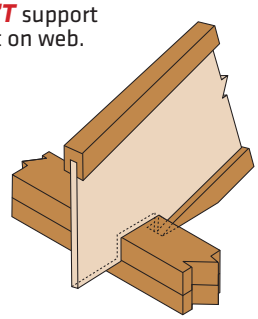


Refer to Joist End Nailing detail for correct sizes and locations.

DON'T cut beyond inside edge of bearing.



DON'T support I-Joist on web.



DON'T

LP SolidStart® ENGINEERED WOOD PRODUCTS

LP® STRUCTURAL PRODUCTS: LP SolidStart® I-JOISTS
LP SolidStart LVL, LP SolidStart LSL, AND LP SolidStart RIM BOARD
LP TOP NOTCH® 250, 350 AND 450 SERIES SUB-FLOORING PRODUCTS

1. WARRANTY COVERAGE

Products. This warranty applies to the original purchaser of LP SolidStart I-Joists, LP SolidStart Laminated Veneer Lumber (LVL), LP SolidStart Laminated Strand Lumber (LSL) and LP SolidStart Rim Board (the "Products") and to any owner of a building in which the Products are originally installed (together the "Owner"). LP warrants that the Products will, at the time of shipment from LP's mills, meet or exceed LP manufacturing standards and exhibit no delamination or joint failure. LP further warrants that the Products, when stored, handled, designed, installed and maintained in accordance with LP published Product instructions and all applicable code requirements in effect when the Products are originally installed, will meet LP's performance specifications for the normal and expected life of the structure.

Delamination is a visible separation between the primary wood elements of the Product which results in the reduction of structural strength and is limited to separations (i) within the matrix of flakes of Laminated Strand Lumber, OSB Rim Board or the web of an I-joist, or (ii) in the glue bonds between the layers of veneer in Laminated Veneer Lumber. Joint failure is a visible separation of the components of an I-joist which results in the reduction of structural strength and is limited to (i) web-to-web separation, or (ii) flange-to-web separation. Minor surface characteristics such as loose or folded surface flakes in Laminated Strand Lumber, OSB Rim Board, or I-joist webs and minor surface checking, swelling or cupping of the Product are not covered by this warranty.

System. LP further warrants that its LP Top Notch 250, 350 and 450 Series sub-flooring products, when incorporated in a floor system with exclusively LP engineered wood products, are included within the definition of Products in this warranty and that the warranty periods for these sub-flooring products, when used in a floor system with exclusively LP engineered wood products shall be extended to the life of the structure subject to and incorporating herein all other terms and conditions in the applicable Top Notch warranty. This system warranty does not apply to (i) LP TopNotch 250, 350 and 450 Series sub-flooring when not used exclusively with LP engineered wood products, or (ii) LP TopNotch and LP Solid Start Rim Board products that are treated with zinc borate. Warranty terms for LP TopNotch 250, 350 and 450 Series sub-flooring not used exclusively with LP engineered wood products and for LP TopNotch and LP Solid Start Rim Board treated with zinc borate are available at www.lpcorp.com or call us at 888.820.0325.

IN THE EVENT PRODUCTS DO NOT COMPLY WITH THIS WARRANTY OR THE APPLICABLE SUB-FLOORING WARRANTY, THE LIABILITY OF LP IS LIMITED TO THE REPAIR AND REPLACEMENT OR PAYMENT PROVISIONS SET FORTH IN PARAGRAPH 4 BELOW.

2. EXCLUSIONS FROM WARRANTY COVERAGE

THIS EXPRESS WARRANTY PROVIDES A REMEDY ONLY FOR NON-CONFORMITIES REPORTED IN ACCORDANCE WITH PARAGRAPH 6(a) BELOW. IN ADDITION, THIS WARRANTY DOES NOT PROVIDE A REMEDY FOR:

a. NON-CONFORMITIES CAUSED BY: (i) MISUSE OR IMPROPER HANDLING, INSTALLATION OR MAINTENANCE; (ii) ALTERATIONS TO THE STRUCTURE AFTER THE ORIGINAL INSTALLATION OF THE PRODUCTS; (iii) ACTS OF GOD, SUCH AS LIGHTNING, WIND STORM, HURRICANE, TORNADO, HAIL, EARTHQUAKE, FLOOD OR OTHER SIMILAR SEVERE WEATHER OR SIMILAR NATURAL PHENOMENA; (iv) DESIGN, APPLICATION OR CONSTRUCTION OF THE STRUCTURE IN WHICH THE PRODUCT IS INSTALLED; AND (v) TRANSPORT, STORAGE OR HANDLING OF THE PRODUCTS PRIOR TO INSTALLATION.

b. PRODUCTS THAT ARE NOT INSTALLED IN COMPLIANCE WITH ALL PRODUCT MARKINGS AND APPLICABLE BUILDING CODES AND PRODUCTS NOT INSTALLED AND MAINTAINED ACCORDING TO LP PRINTED INSTALLATION AND MAINTENANCE INSTRUCTIONS IN EFFECT AT THE DATE OF INSTALLATION;

c. WORKMANSHIP OF THE INSTALLATION OF THE PRODUCTS; OR

d. DAMAGES TO THE BUILDING OR PRODUCT OR LIABILITY FOR HARM OR INJURY (INCLUDING DEATH) TO PERSONS CAUSED BY THE INFILTRATION OF OR EXPOSURE TO WATER FROM ANY SOURCE (INCLUDING BUT NOT LIMITED TO WEATHER, BUILDING ENVELOPE FAILURE, PLUMBING FAILURE, CONDENSATION AND NEGLIGENCE) WHETHER BY ROT, GROWTH OF MOLD OR MILDEW, INFESTATION OR OTHERWISE.

3. EXCLUSION OF IMPLIED WARRANTIES; NO OTHER EXPRESS WARRANTIES

THIS WARRANTY IS THE ONLY WARRANTY APPLICABLE TO THESE PRODUCTS AND EXCLUDES ALL OTHER EXPRESSED OR IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTIES OTHERWISE ARISING FROM A COURSE OF DEALING OR A USAGE OF TRADE OR ADVERTISING, EXCEPT WHERE SUCH WARRANTIES ARISE UNDER APPLICABLE CONSUMER PRODUCT WARRANTY LAWS AND CANNOT LAWFULLY BE DISCLAIMED, IN WHICH EVENT SUCH WARRANTIES ARE LIMITED TO THE SHORTEST PERIOD PERMITTED OR REQUIRED UNDER APPLICABLE LAW.

Some states or provinces may not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

NO OTHER WARRANTY HAS BEEN MADE OR WILL BE MADE ON BEHALF OF LP WITH RESPECT TO THESE PRODUCTS.

4. REMEDIES

THIS SECTION DESCRIBES FOR THE SOLE REMEDY AVAILABLE TO THE OWNER FROM LP FOR ANY NONCONFORMITY IN THE PRODUCTS. In the event of any nonconformity covered by this, or any implied warranty, LP at its option will repair or replace the nonconforming Products including the cost of labor which will be based upon labor estimates established by an independent, nationally-recognized construction cost estimator or construction cost estimating publication.

5. EXCLUSION OF OTHER REMEDIES

IN NO EVENT WILL LP BE LIABLE FOR ANY INCIDENTAL, SPECIAL, PUNITIVE, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY NONCONFORMITY IN THE PRODUCTS SUPPLIED INCLUDING, BUT NOT LIMITED TO, DAMAGE TO PROPERTY OR LOST PROFITS.
Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

6. RESPONSIBILITY OF OWNER

a. Any Owner seeking remedies under this warranty must notify LP in writing within 30 days after discovering a possible non-conformity of the Products, and before beginning any permanent repair. This written notice should include the date the Products were installed, and if known, the mill identity number imprinted on the Products.

b. **It is the Owner's responsibility to establish the date of installation. The Owner should do this by retaining any records which would tend to prove when the product was installed including, but not limited to: purchase invoices and receipts, contractor's billings, service contracts and building permits.**

c. Upon reasonable notice, the Owner must allow LP agents to enter the property and building on which the Products are installed to inspect such Products.

This warranty gives you specific legal rights, and you may also have other rights which vary in each state or province.

FOR FURTHER INFORMATION, CONTACT: Customer Service: 800-648-6893 or Customer.Support@lpcorp.com Visit our web site at www.lpcorp.com.

Distributed in Canada by

taiga building products produits de bâtiment

Branch Location	Toll-Free	Phone
Langley, BC	866-816-7741	604-857-7741
Kelowna, BC	800-665-1187	250-765-7714
Nanaimo, BC	800-667-1470	250-751-1441
Calgary, AB	800-661-8430	403-279-0926
Edmonton, AB	800-642-3897	780-466-4224
Regina, SK	800-552-8045	306-359-1644
Saskatoon, SK	800-772-1243	306-934-1155
Winnipeg, MB	800-665-0298	204-475-4664
Milton, ON	800-268-5095	905-858-1300
Sudbury, ON	800-293-1689	705-525-0777
Boucherville, PQ	800-361-0180	450-655-2324
St. Augustin, PQ	800-463-6110	418-878-3860
Halifax, NS	800-824-4237	902-468-8912
St. John's, NL	877-782-5544	709-782-5600

LP® SolidStart® Engineered Wood Products are manufactured at different locations in the United States and Canada. Please verify availability with the LP SolidStart Engineered Wood Products distributor in your area before specifying these products.

LP BUILDING PRODUCTS SOLIDSTART® ENGINEERED WOOD PRODUCTS

SFI CERTIFIED SOURCING FIBER USED IN THIS PRODUCT LINE MEETS THE SOURCING REQUIREMENTS OF THE SFI PROGRAM WWW.SFIPROGRAM.ORG

For more information on the full line of LP SolidStart Engineered Wood Products or the nearest distributor, please contact **1.888.820.0325** or e-mail **customer.support@lpcorp.com**. Visit our web site at **www.lpcorp.com**.

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