LP SolidStart®
ENGINEERED WOOD PRODUCTS

Limit States Design

LP SolidStart I-Joists

LPI® 20Plus, 32Plus and 42Plus Technical Guide

Floor & Roof Applications

BUILD WITH US:

Please verify availability with the LP SolidStart Engineered Wood Products distributor in your area prior to specifying these products.

Introduction

LP® SolidStart® I-Joists provide solid, true and uniform floors and ceilings for residential and commercial construction. Machine made for precise, straight lines that stay straight, they are stronger pound for pound than traditional solid sawn lumber joists, and less likely to split, shrink, twist, warp or crown. We've reduced moisture content, which means floors with fewer pops and squeaks and ceilings that are solid and uniform.

While lightweight and easy to install, LP SolidStart I-Joists are versatile, with deep depths, wide flanges and long span capability that allows you to engineer the structural components of floors and ceilings with fewer pieces, saving installation and materials costs.

STRENGTH IN NUMBERS

LP's full range of SolidStart products are designed and manufactured to install easily and work together to provide a strong, sound structure.

For I-Joists, we combine laminated veneer lumber (LVL) or finger-jointed sawn wood flanges with a web of oriented strand board (OSB) to produce an I-shaped structural member. The webs allow plumbing and wiring to pass through without extra framing, while the flanges resist bending – ideal for long spans in floors, ceilings and roofs.

A NATURAL CHOICE FOR GREEN BUILDING

LP uses forest management and procurement systems that are SFI® certified, which helps ensure its wood comes from well managed forests. As an engineered product, LP SolidStart I-Joists use less raw material and offer more consistent performance than traditional products. Made with safe, low emitting resin, LP SolidStart I-Joists are a natural choice for building green.

PEACE-OF-MIND FOR A LIFETIME

If your LP SolidStart I-Joists ever develop problems due to a defect, LP will cover all reasonable repair and/or replacement costs per the conditions of our Lifetime Limited Warranty. Visit www.lpcorp.com to view our complete warranty, or contact your local LP SolidStart Engineered Wood Products distributor or sales office for an original copy.

COMPLIANT WITH MAJOR BUILDING CODES

LP SolidStart I-Joists have been evaluated by CCMC for compliance with the National Building Code of Canada. Contact your local LP SolidStart Engineered Wood Products distributor or visit www.lpcorp.com for the most current code reports.

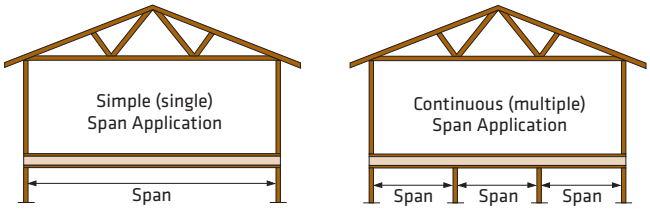
Table of Contents

SPECIFIED FLOOR LOADS: 40 PSF LIVE LOAD, 15 PSF DEAD LOAD

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.



19/32" OSB SHEATHING

Series	Depth	Sheathing Nailed Only											
		No Ceiling						1/2" Gypsum Ceiling Direct Applied to Joists					
		Maximum Simple Spans			Maximum Continuous Spans			Maximum Simple Spans			Maximum Continuous Spans		
		12" oc	16" oc	19.2" oc	12" oc	16" oc	19.2" oc	12" oc	16" oc	19.2" oc	12" oc	16" oc	19.2" oc
LPI 20Plus	9-1/2"	14'-4"	13'-4"	12'-10"	15'-4"	14'-4"	13'-9"	14'-9"	13'-9"	13'-2"	15'-10"	14'-9"	14'-2"
	11-7/8"	16'-2"	15'-1"	14'-5"	17'-4"	16'-2"	15'-6"	16'-7"	15'-6"	14'-10"	17'-11"	16'-8"	16'-0"
	14"	17'-8"	16'-5"	15'-9"	19'-4"	17'-8"	17'-0"	18'-3"	16'-11"	16'-3"	20'-1"	18'-5"	17'-6"
LPI 32Plus	9-1/2"	14'-10"	13'-10"	13'-3"	15'-11"	14'-10"	14'-3"	15'-3"	14'-2"	13'-7"	16'-5"	15'-3"	14'-8"
	11-7/8"	16'-9"	15'-7"	14'-11"	18'-0"	16'-9"	16'-1"	17'-2"	16'-0"	15'-4"	18'-8"	17'-3"	16'-6"
	14"	18'-3"	16'-11"	16'-3"	20'-2"	18'-5"	17'-6"	18'-11"	17'-5"	16'-9"	20'-10"	19'-1"	18'-1"
	16"	19'-11"	18'-2"	17'-5"	22'-0"	20'-1"	19'-1"	20'-8"	18'-11"	17'-11"	22'-9"	20'-10"	19'-10"
LPI 42Plus	9-1/2"	16'-4"	15'-2"	14'-7"	17'-6"	16'-4"	15'-8"	16'-8"	15'-6"	14'-11"	17'-11"	16'-8"	16'-0"
	11-7/8"	18'-5"	17'-1"	16'-5"	20'-3"	18'-7"	17'-8"	19'-0"	17'-6"	16'-9"	20'-11"	19'-2"	18'-2"
	14"	20'-7"	18'-9"	17'-10"	22'-8"	20'-8"	19'-8"	21'-2"	19'-4"	18'-4"	23'-4"	21'-4"	20'-3"
	16"	22'-5"	20'-6"	19'-6"	24'-9"	22'-7"	21'-5"	23'-1"	21'-2"	20'-1"	25'-6"	23'-4"	22'-2"

Series	Depth	Sheathing Glued & Nailed											
		No Ceiling						1/2" Gypsum Ceiling Direct Applied to Joists					
		Maximum Simple Spans			Maximum Continuous Spans			Maximum Simple Spans			Maximum Continuous Spans		
		12" oc	16" oc	19.2" oc	12" oc	16" oc	19.2" oc	12" oc	16" oc	19.2" oc	12" oc	16" oc	19.2" oc
LPI 20Plus	9-1/2"	15'-5"	14'-7"	14'-1"	16'-6"	15'-7"	15'-1"	15'-10"	15'-0"	14'-6"	17'-1"	16'-1"	15'-7"
	11-7/8"	17'-4"	16'-4"	15'-9"	18'-10"	17'-6"	16'-11"	17'-10"	16'-10"	16'-3"	19'-7"	18'-2"	17'-6"
	14"	19'-1"	17'-9"	17'-2"	21'-0"	19'-6"	18'-8"	19'-10"	18'-6"	17'-9"	21'-10"	20'-4"	19'-6"
LPI 32Plus	9-1/2"	15'-11"	15'-0"	14'-6"	17'-0"	16'-1"	15'-6"	16'-4"	15'-5"	14'-11"	17'-6"	16'-7"	16'-0"
	11-7/8"	17'-9"	16'-9"	16'-3"	19'-6"	18'-1"	17'-5"	18'-5"	17'-3"	16'-8"	20'-3"	18'-9"	18'-0"
	14"	19'-9"	18'-3"	17'-7"	21'-8"	20'-1"	19'-3"	20'-5"	19'-0"	18'-2"	22'-6"	20'-11"	20'-0"
	16"	21'-5"	19'-10"	19'-0"	23'-7"	21'-10"	20'-11"	22'-3"	20'-8"	19'-10"	24'-6"	22'-9"	21'-10"
LPI 42Plus	9-1/2"	17'-1"	16'-1"	15'-7"	18'-6"	17'-3"	16'-8"	17'-6"	16'-6"	15'-11"	19'-1"	17'-9"	17'-1"
	11-7/8"	19'-6"	18'-1"	17'-5"	21'-6"	19'-10"	19'-0"	20'-1"	18'-8"	17'-10"	22'-2"	20'-6"	19'-7"
	14"	21'-8"	20'-1"	19'-2"	23'-10"	22'-1"	21'-1"	22'-4"	20'-9"	19'-10"	24'-7"	22'-10"	21'-10"
	16"	23'-8"	21'-10"	20'-11"	26'-0"	24'-0"	23'-0"	24'-4"	22'-7"	21'-7"	26'-10"	24'-10"	23'-9"

23/32" OSB SHEATHING

Series	Depth	Sheathing Nailed Only													
		No Ceiling								1/2" Gypsum Ceiling Direct Applied to Joists							
		Maximum Simple Spans				Maximum Continuous Spans				Maximum Simple Spans				Maximum Continuous Spans			
		12" oc	16" oc	19.2" oc	24" oc	12" oc	16" oc	19.2" oc	24" oc	12" oc	16" oc	19.2" oc	24" oc	12" oc	16" oc	19.2" oc	24" oc
LPI 20Plus	9-1/2"	15'-0"	14'-0"	13'-4"	12'-9"	16'-1"	15'-0"	14'-4"	13'-8"	15'-4"	14'-4"	13'-8"	13'-0"	16'-6"	15'-5"	14'-9"	14'-0"
	11-7/8"	16'-11"	15'-9"	15'-1"	14'-4"	18'-4"	16'-11"	16'-3"	15'-5"	17'-4"	16'-2"	15'-6"	14'-9"	18'-11"	17'-5"	16'-8"	15'-10"
	14"	18'-8"	17'-3"	16'-6"	15'-8"	20'-7"	18'-9"	17'-9"	16'-11"	19'-3"	17'-8"	16'-11"	16'-1"	21'-3"	19'-5"	18'-5"	17'-4"
LPI 32Plus	9-1/2"	15'-7"	14'-6"	13'-10"	13'-2"	16'-9"	15'-7"	14'-11"	14'-2"	15'-11"	14'-10"	14'-2"	13'-6"	17'-1"	15'-11"	15'-3"	14'-6"
	11-7/8"	17'-6"	16'-4"	15'-7"	14'-10"	19'-2"	17'-7"	16'-9"	16'-0"	17'-11"	16'-8"	16'-0"	15'-2"	19'-9"	18'-1"	17'-3"	16'-5"
	14"	19'-5"	17'-9"	17'-0"	16'-2"	21'-5"	19'-6"	18'-5"	17'-5"	20'-0"	18'-3"	17'-5"	16'-7"	22'-1"	20'-2"	19'-1"	17'-11"
	16"	21'-2"	19'-4"	18'-3"	17'-4"	23'-4"	21'-4"	20'-2"	18'-11"	21'-10"	20'-0"	18'-10"	17'-9"	24'-1"	22'-1"	20'-10"	19'-7"
LPI 42Plus	9-1/2"	17'-1"	15'-11"	15'-3"	14'-6"	18'-6"	17'-1"	16'-4"	15'-7"	17'-5"	16'-3"	15'-6"	14'-9"	19'-0"	17'-5"	16'-8"	15'-11"
	11-7/8"	19'-7"	17'-11"	17'-2"	16'-4"	21'-7"	19'-8"	18'-7"	17'-7"	20'-1"	18'-4"	17'-6"	16'-7"	22'-1"	20'-2"	19'-1"	17'-11"
	14"	21'-10"	19'-11"	18'-10"	17'-9"	24'-0"	21'-11"	20'-9"	19'-6"	22'-4"	20'-5"	19'-4"	18'-2"	24'-7"	22'-7"	21'-4"	20'-0"
	16"	23'-10"	21'-9"	20'-7"	19'-4"	26'-3"	24'-0"	22'-8"	21'-3"	24'-5"	22'-4"	21'-2"	19'-10"	26'-11"	24'-8"	23'-4"	21'-11"

Series	Depth	Sheathing Glued & Nailed													
		No Ceiling								1/2" Gypsum Ceiling Direct Applied to Joists							
		Maximum Simple Spans				Maximum Continuous Spans				Maximum Simple Spans				Maximum Continuous Spans			
		12" oc	16" oc	19.2" oc	24" oc	12" oc	16" oc	19.2" oc	24" oc	12" oc	16" oc	19.2" oc	24" oc	12" oc	16" oc	19.2" oc	24" oc
LPI 20Plus	9-1/2"	16'-4"	15'-4"	14'-10"	14'-3"	17'-6"	16'-6"	15'-11"	15'-2"	16'-9"	15'-9"	15'-3"	14'-5"	18'-0"	17'-0"	16'-4"	15'-2"
	11-7/8"	18'-4"	17'-3"	16'-7"	15'-11"	20'-2"	18'-8"	17'-10"	17'-1"	19'-0"	17'-9"	17'-1"	16'-5"	20'-11"	19'-5"	18'-7"	17'-7"
	14"	20'-6"	19'-0"	18'-1"	17'-4"	22'-6"	20'-10"	19'-10"	18'-9"	21'-2"	19'-8"	18'-10"	17'-10"	23'-3"	21'-8"	20'-8"	18'-9"
LPI 32Plus	9-1/2"	16'-9"	15'-10"	15'-3"	14'-8"	18'-1"	17'-0"	16'-4"	15'-8"	17'-2"	16'-2"	15'-7"	15'-0"	18'-8"	17'-5"	16'-9"	16'-1"
	11-7/8"	19'-0"	17'-8"	17'-0"	16'-4"	20'-11"	19'-4"	18'-5"	17'-7"	19'-7"	18'-2"	17'-6"	16'-10"	21'-7"	20'-0"	19'-1"	17'-7"
	14"	21'-1"	19'-7"	18'-8"	17'-9"	23'-2"	21'-6"	20'-6"	18'-9"	21'-9"	20'-3"	19'-4"	18'-4"	24'-0"	22'-3"	21'-3"	18'-9"
	16"	23'-0"	21'-3"	20'-3"	19'-3"	25'-3"	23'-4"	22'-3"	19'-11"	23'-8"	22'-0"	21'-0"	19'-8"	26'-1"	24'-3"	23'-2"	19'-11"
LPI 42Plus	9-1/2"	18'-1"	17'-0"	16'-4"	15'-8"	19'-10"	18'-4"	17'-7"	16'-10"	18'-6"	17'-4"	16'-8"	16'-0"	20'-4"	18'-10"	18'-0"	17'-2"
	11-7/8"	20'-11"	19'-4"	18'-5"	17'-6"	22'-11"	21'-2"	20'-2"	19'-2"	21'-5"	19'-10"	18'-11"	17'-11"	23'-6"	21'-10"	20'-9"	19'-8"
	14"	23'-2"	21'-5"	20'-5"	19'-4"	25'-6"	23'-7"	22'-5"	21'-3"	23'-9"	22'-0"	21'-0"	19'-11"	26'-2"	24'-3"	23'-1"	21'-11"
	16"	25'-3"	23'-4"	22'-2"	21'-0"	27'-9"	25'-8"	24'-5"	23'-1"	25'-11"	24'-0"	22'-10"	21'-8"	28'-6"	26'-5"	25'-2"	23'-10"

DESIGN ASSUMPTIONS:

1. 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.
2. The spans are based on uniform floor loads only, for standard load duration.
3. These tables reflect the additional stiffness for vibration provided by a 19/32" or 23/32" OSB rated sheathing, or equal, attached as indicated (Nailed Only or Glued & Nailed) to the top flange.
4. Live load deflection has been limited to L/360 "bare joist."
5. Total load deflection has been limited to L/240.
6. The spans are based on an end bearing length of at least 1-3/4" and an interior bearing length of at least 3-1/2" and have been limited to the bearing resistance of an SPF wallplate.

ADDITIONAL NOTES:

1. These spans have been designed to meet the Limit States Design and vibration requirements of the 2005 National Building Code of Canada.
2. Web stiffeners are not required for any of the spans in these tables. Web fillers are required for I-Joists seated in hangers that do not laterally support the top flange.
3. For conditions not shown, use the Uniform Floor Load (PLF) tables, LP's design software or contact your LP® SolidStart® Engineered Wood Products distributor for assistance.

Uniform Floor Load (PLF) Tables: 9-1/2" & 11-7/8"

TO USE:

1. Select the span required.
2. Compare the factored design total load to the Factored Total Resistance column.
3. Compare the specified design total load to the Total Deflection Resistance column.
4. Compare the specified design live load to the Live Load Deflection Resistance for the appropriate deflection limit.
5. Select a product that satisfies all three conditions.

EXAMPLE:

Select an I-Joist for a 17'-6" clear span supporting specified loads of 40 psf Live Load and 20 psf Dead Load, spaced 16" oc, at an L/480 deflection limit.

1. Factored Total Load = (1.50 x 40 + 1.25 x 20) * (16 / 12) = 114 plf
   Unfactored Total Load = (40 + 20) * (16 / 12) = 80 plf
   Unfactored Live Load = 40 * (16 / 12) = 54 plf
2. Select the row corresponding to an 18' span.
3. Select the first joist to exceed all three resistance criteria:
   The 9-1/2" LPI 42Plus supports 180 plf Factored Total Resistance, 112 plf Total Deflection Resistance and 56 plf Live Load Deflection Resistance at L/480.

Span (ft)	9-1/2" LPI 20Plus				9-1/2" LPI 32Plus				9-1/2" LPI 42Plus				Span (ft)
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total L/240		Live Load		Total L/240		Live Load		Total L/240		
	L/480	L/360			L/480	L/360			L/480	L/360			
8'	282			314				314				401	8'
9'	210			280	241			280	353			357	9'
10'	160	214		253	185	247		253	272			322	10'
11'	125	167		230	145	193		230	213	284		293	11'
12'	99	132	198	212	115	154		212	169	226		269	12'
13'	79	106	159	196	93	124	186	196	137	183		249	13'
14'	65	86	130	182	76	101	152	182	112	149	224	231	14'
15'	53	71	107	161	63	84	126	170	93	124	186	216	15'
16'	44	59	89	142	52	70	105	160	77	103	155	203	16'
17'	37	50	75	126	44	59	89	150	65	87	131	191	17'
18'	32	42	64	112	37	50	75	134	56	74	112	180	18'
19'	27	36	55	101	32	43	65	120	48	64	96	171	19'
20'	23	31	47	91	28	37	56	109	41	55	83	163	20'
21'	20	27	41	82	24	32	48	98	36	48	72	155	21'
22'	-	-	-	-	-	-	-	-	31	42	63	144	22'
23'	-	-	-	-	-	-	-	-	27	37	55	132	23'
24'	-	-	-	-	-	-	-	-	-	-	-	-	24'
25'	-	-	-	-	-	-	-	-	-	-	-	-	25'
26'	-	-	-	-	-	-	-	-	-	-	-	-	26'
27'	-	-	-	-	-	-	-	-	-	-	-	-	27'
28'	-	-	-	-	-	-	-	-	-	-	-	-	28'

Span (ft)	11-7/8" LPI 20Plus				11-7/8" LPI 32Plus				11-7/8" LPI 42Plus				Span (ft)
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total L/240		Live Load		Total L/240		Live Load		Total L/240		
	L/480	L/360			L/480	L/360			L/480	L/360			
8'				340				340				459	8'
9'				303				303				410	9'
10'	257			274				274				370	10'
11'	202			250	230			250	336			337	11'
12'	161	215		229	184			229	270			310	12'
13'	131	174		212	150	200		212	220			286	13'
14'	107	143		197	123	164		197	181	241		266	14'
15'	89	118	178	184	102	137		184	151	201		249	15'
16'	74	99	149	173	86	115	172	173	126	169		233	16'
17'	63	84	126	163	73	97	146	163	107	143	215	220	17'
18'	53	71	107	150	62	83	125	154	91	122	183	208	18'
19'	46	61	92	135	53	71	107	146	79	105	158	197	19'
20'	40	53	80	122	46	62	93	139	68	91	137	187	20'
21'	34	46	69	111	40	54	81	128	59	79	119	179	21'
22'	30	40	61	101	35	47	71	116	52	69	104	170	22'
23'	26	35	53	92	31	41	62	106	46	61	92	163	23'
24'	23	31	47	85	27	37	55	98	40	54	81	156	24'
25'	21	28	42	78	24	32	49	90	36	48	72	145	25'
26'	18	25	37	72	22	29	44	83	32	43	65	134	26'
27'	-	-	-	-	-	-	-	-	29	38	58	125	27'
28'	-	-	-	-	-	-	-	-	26	35	52	116	28'

DESIGN ASSUMPTIONS:

1. Span is the clear distance between supports and is 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.
2. The values in the tables are for uniform loads only.
3. Total Load is for standard (100%) load duration.
4. These tables do not reflect any additional stiffness provided by the floor sheathing.
5. Live Load Deflection Resistance has been limited to L/360 or L/480 as noted in the table. Vibration has not been considered.
6. Total Deflection Resistance has been limited to L/240. Long term deflection (creep) has not been considered.
7. These tables assume full lateral support of the compression flange. Full support is considered to be a maximum unbraced length of 24".
8. These tables are based on an end bearing length of at least 1-3/4" and an interior bearing length of at least 3-1/2", and have been limited to the bearing capacity for an SPF wall plate.

ADDITIONAL NOTES:

1. These tables have been designed to meet the Limit States Design requirements of the 2005 National Building Code of Canada.
2. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
3. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
4. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
5. To design a double I-Joist, the values in these tables can be doubled, or the design loads on the I-Joist may be halved to verify the capacity of each ply. The capacity is additive.
6. Web stiffeners are not required for these spans and loads. 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. Do not use a product where designated "-" without further analysis by a professional engineer.

PSF TO PLF CONVERSION

OC Spacing	Load									
	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	60 psf	65 psf
12"	20	25	30	35	40	45	50	55	60	65
16"	26.7	33.3	40	46.7	53.3	60	66.7	73.3	80	86.7
19.2"	32	40	48	56	64	72	80	88	96	104
24"	40	50	60	70	80	90	100	110	120	130

TO CONVERT FROM SPECIFIED TO FACTORED TOTAL PLF:

Factored Total plf = 1.50 x Specified Live plf + 1.25 x Specified Dead plf

Uniform Floor Load (PLF) Tables: 14" & 16"

TO USE:

1. Select the span required.
2. Compare the factored design total load to the Factored Total Resistance column.
3. Compare the specified design total load to the Total Deflection Resistance column.
4. Compare the specified design live load to the Live Load Deflection Resistance for the appropriate deflection limit.
5. Select a product that satisfies all three conditions.

EXAMPLE:

Select an I-Joist for a 20'-6" clear span supporting specified loads of 40 psf Live Load and 20 psf Dead Load, spaced 16" oc, at an L/480 deflection limit.

1. Factored Total Load = (1.50 x 40 + 1.25 x 20) * (16 / 12) = 114 plf
   Unfactored Total Load = (40 + 20) * (16 / 12) = 80 plf
   Unfactored Live Load = 40 * (16 / 12) = 54 plf
2. Select the row corresponding to an 21' span.
3. Select the first joist to exceed all three resistance criteria:
   The 14" LPI 32Plus supports 141 plf Factored Total Resistance, 116 plf Total Deflection Resistance and 58 plf Live Load Deflection Resistance at L/480.

Span (ft)	14" LPI 20Plus				14" LPI 32Plus				14" LPI 42Plus				Span (ft)
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total L/240		Live Load		Total L/240		Live Load		Total L/240		
	L/480	L/360			L/480	L/360			L/480	L/360			
14'	154	205		210	174			210	254			277	**14'**
15'	128	171		196	145	193		196	212			258	**15'**
16'	108	144		184	122	163		184	179	238		243	**16'**
17'	91	122		173	104	138		173	152	203		229	**17'**
18'	78	104	156	164	89	118		164	130	174		216	**18'**
19'	67	89	134	155	76	102	153	155	112	150		205	**19'**
20'	58	77	116	143	66	89	133	148	97	130		195	**20'**
21'	51	68	102	130	58	77	116	141	85	114	171	185	**21'**
22'	44	59	89	118	51	68	102	134	75	100	150	177	**22'**
23'	39	52	78	108	45	60	90	128	66	88	132	170	**23'**
24'	34	46	69	99	40	53	80	118	58	78	117	163	**24'**
25'	31	41	62	92	35	47	71	109	52	69	104	156	**25'**
26'	27	37	55	85	31	42	63	101	46	62	93	150	**26'**
27'	24	33	49	79	28	38	57	93	42	56	84	145	**27'**
28'	22	29	44	73	25	34	51	87	37	50	75	139	**28'**
29'	20	27	40	68	23	31	46	81	34	45	68	130	**29'**
30'	18	24	36	64	21	28	42	76	31	41	62	122	**30'**
31'	16	22	33	60	19	25	38	71	28	37	56	114	**31'**
32'	-	-	-	-	-	-	-	-	25	34	51	107	**32'**
33'	-	-	-	-	-	-	-	-	23	31	47	101	**33'**
34'	-	-	-	-	-	-	-	-	21	28	43	95	**34'**

Span (ft)	16" LPI 32Plus				16" LPI 42Plus				Span (ft)
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total L/240		Live Load		Total L/240		
	L/480	L/360			L/480	L/360			
14'				220				286	**14'**
15'	190			205				267	**15'**
16'	161			193	235			251	**16'**
17'	137			181	201			236	**17'**
18'	117	157		171	172			223	**18'**
19'	101	135		163	149	199		212	**19'**
20'	88	118		154	130	173		201	**20'**
21'	77	103		147	113	151		192	**21'**
22'	68	90	136	141	100	133		183	**22'**
23'	60	80	120	135	88	118		175	**23'**
24'	53	71	106	129	78	104	157	168	**24'**
25'	47	63	95	124	70	93	140	161	**25'**
26'	42	56	85	117	62	83	125	155	**26'**
27'	38	51	76	108	56	75	112	150	**27'**
28'	34	46	69	101	50	67	101	144	**28'**
29'	31	41	62	94	46	61	92	139	**29'**
30'	28	37	56	88	41	55	83	135	**30'**
31'	25	34	51	82	38	50	76	130	**31'**
32'	23	31	47	77	34	46	69	124	**32'**
33'	21	28	43	72	31	42	63	117	**33'**
34'	19	26	39	68	29	38	58	110	**34'**

DESIGN ASSUMPTIONS:

1. Span is the clear distance between supports and is 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.
2. The values in the tables are for uniform loads only.
3. Total Load is for standard (100%) load duration.
4. These tables do not reflect any additional stiffness provided by the floor sheathing.
5. Live Load Deflection Resistance has been limited to L/360 or L/480 as noted in the table. Vibration has not been considered.
6. Total Deflection Resistance has been limited to L/240. Long term deflection (creep) has not been considered.
7. These tables assume full lateral support of the compression flange. Full support is considered to be a maximum unbraced length of 24".
8. These tables are based on an end bearing length of at least 1-3/4" and an interior bearing length of at least 3-1/2", and have been limited to the bearing capacity for an SPF wall plate.

ADDITIONAL NOTES:

1. These tables have been designed to meet the Limit States Design requirements of the 2005 National Building Code of Canada.
2. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
3. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
4. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
5. To design a double I-Joist, the values in these tables can be doubled, or the design loads on the I-Joist may be halved to verify the capacity of each ply. The capacity is additive.
6. Web stiffeners are not required for these spans and loads. 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. Do not use a product where designated "-" without further analysis by a professional engineer.

PSF TO PLF CONVERSION

OC Spacing	Load									
	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	60 psf	65 psf
12"	20	25	30	35	40	45	50	55	60	65
16"	26.7	33.3	40	46.7	53.3	60	66.7	73.3	80	86.7
19.2"	32	40	48	56	64	72	80	88	96	104
24"	40	50	60	70	80	90	100	110	120	130

TO CONVERT FROM SPECIFIED TO FACTORED TOTAL PLF:

Factored Total plf = 1.50 x Specified Live plf + 1.25 x Specified Dead plf

Uniform Roof Load (PLF) Tables: 9-1/2" & 11-7/8"

TO USE:

1. Select the span required. For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate roof slope adjustment factor from the table at the bottom of this page.
2. Compare the factored design total load to the Factored Total Resistance column.
3. Compare the specified design total load to the Total Deflection Resistance column.
4. Compare the specified design live load to the Live Load Deflection Resistance for the appropriate deflection limit. For a live load deflection limit of L/480, use the L/480 Live Load column from the Uniform Floor Load Tables on pages 4-5.
5. Select a product that satisfies all three conditions.

EXAMPLE:

Select an I-Joist for a 12'-8" horizontal clear span supporting 45 psf Snow (Live) Load and 15 psf Dead Load, spaced 24" oc, with a roof slope of 6:12, at an L/240 deflection limit.

1. Sloped Span = (12 + 8 / 12) * 1.118 = 14.16'
2. Factored Total Load = (1.50 x 45 + 1.25 x 15) * (24 / 12) = 173 plf
   Unfactored Total Load = (45 + 15) * (24 / 12) = 120 plf
   Unfactored Live Load = 45 * (24 / 12) = 90 plf
3. Select the row corresponding to a 15' span.
4. Select the first joist to exceed all three resistance criteria:
   The 9-1/2" LPI 42Plus supports 216 plf Factored Total Resistance and 124 plf Live Load Deflection Resistance at L/360. Total Deflection Resistance does not control.

Span (ft)	9-1/2" LPI 20Plus				9-1/2" LPI 32Plus				9-1/2" LPI 42Plus				Span (ft)
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total L/180		Live Load		Total L/180		Live Load		Total L/180		
	L/360	L/240			L/360	L/240			L/360	L/240			
8'				314				314				401	8'
9'				280				280				357	9'
10'	214			253	247			253				322	10'
11'	167			230	193			230	284			293	11'
12'	132	198		212	154			212	226			269	12'
13'	106	159		196	124	186		196	183			249	13'
14'	86	130	173	182	101	152		182	149	224		231	14'
15'	71	107	143	161	84	126	168	170	124	186		216	15'
16'	59	89	119	142	70	105	140	160	103	155		203	16'
17'	50	75	100	126	59	89	118	150	87	131	175	191	17'
18'	42	64	85	112	50	75	101	134	74	112	149	180	18'
19'	36	55	73	101	43	65	86	120	64	96	128	171	19'
20'	31	47	63	91	37	56	75	109	55	83	110	163	20'
21'	27	41	55	82	32	48	65	98	48	72	96	155	21'
22'	24	36	48	75	28	42	57	90	42	63	84	144	22'
23'	21	31	42	69	25	37	50	82	37	55	74	132	23'
24'	18	28	37	63	22	33	44	75	32	49	65	121	24'
25'	16	24	33	58	19	29	39	70	29	43	58	112	25'
26'	14	22	29	54	17	26	35	64	26	39	52	104	26'
27'	13	19	26	50	15	23	31	60	23	35	46	96	27'
28'	11	17	23	46	14	21	28	55	21	31	42	89	28'

Span (ft)	11-7/8" LPI 20Plus				11-7/8" LPI 32Plus				11-7/8" LPI 42Plus				Span (ft)
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total L/180		Live Load		Total L/180		Live Load		Total L/180		
	L/360	L/240			L/360	L/240			L/360	L/240			
8'				340				340				459	8'
9'				303				303				410	9'
10'				274				274				370	10'
11'				250				250				337	11'
12'	215			229				229				310	12'
13'	174			212	200			212				286	13'
14'	143			197	164			197	241			266	14'
15'	118	178		184	137			184	201			249	15'
16'	99	149		173	115	172		173	169			233	16'
17'	84	126		163	97	146		163	143	215		220	17'
18'	71	107	143	150	83	125		154	122	183		208	18'
19'	61	92	123	135	71	107	143	146	105	158		197	19'
20'	53	80	106	122	62	93	124	139	91	137	182	187	20'
21'	46	69	92	111	54	81	108	128	79	119	159	179	21'
22'	40	61	81	101	47	71	94	116	69	104	139	170	22'
23'	35	53	71	92	41	62	83	106	61	92	123	163	23'
24'	31	47	63	85	37	55	74	98	54	81	109	156	24'
25'	28	42	56	78	32	49	65	90	48	72	97	145	25'
26'	25	37	50	72	29	44	58	83	43	65	86	134	26'
27'	22	33	45	67	26	39	52	77	38	58	77	125	27'
28'	20	30	40	62	23	35	47	72	35	52	70	116	28'

DESIGN ASSUMPTIONS:

1. Span is the clear distance between supports, along the sloped length of the joist, 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.
2. The values in the tables are for uniform loads only.
3. Total Load is for standard (100%) load duration.
4. These tables do not reflect any additional stiffness provided by the roof sheathing.
5. Total deflection has been limited to L/180. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression flange. Full support is considered to be a maximum unbraced length of 24".
7. These tables are based on an end bearing length of at least 1-3/4" and an interior bearing length of at least 3-1/2", and have been limited to the bearing capacity for an SPF wall plate.

ADDITIONAL NOTES:

1. These tables have been designed to meet the Limit States Design requirements of the 2005 National Building Code of Canada.
2. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
3. For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate slope adjustment factor from the table at the bottom of this page. Roof joists must have a minimum slope of 1/4" per foot (1/4:12) for positive drainage.
4. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
5. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
6. To design for a live load deflection limit of L/480, use the Uniform Floor Load tables.
7. To design a double I-Joist, the values in these tables can be doubled, or the design loads on the I-Joist may be halved to verify the capacity of each ply. The capacity is additive.
8. Web stiffeners are not required for these spans and loads. 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.
9. Do not use a product where designated "-" without further analysis by a professional engineer.

ROOF SLOPE ADJUSTMENT FACTORS

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

Uniform Roof Load (PLF) Tables: 14" & 16"

TO USE:

1. Select the span required. For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate roof slope adjustment factor from the table at the bottom of this page.
2. Compare the factored design total load to the Factored Total Resistance column.
3. Compare the specified design total load to the Total Deflection Resistance column.
4. Compare the specified design live load to the Live Load Deflection Resistance for the appropriate deflection limit. For a live load deflection limit of L/480, use the L/480 Live Load column from the Uniform Floor Load Tables on pages 4-5.
5. Select a product that satisfies all three conditions.

EXAMPLE:

Select an I-Joist for a 17'-8" horizontal clear span supporting 45 psf Snow (Live) Load and 15 psf Dead Load, spaced 24" oc, with a roof slope of 6:12, at an L/240 deflection limit.

1. Sloped Span = (17 + 8 / 12) * 1.118 = 19.75'
2. Factored Total Load = (1.50 x 45 + 1.25 x 15) * (24 / 12) = 173 plf
   Unfactored Total Load = (45 + 15) * (24 / 12) = 120 plf
   Unfactored Live Load = 45 * (24 / 12) = 90 plf
3. Select the row corresponding to a 20' span.
4. Select the first joist to exceed all three resistance criteria:
   The 14" LPI 42Plus supports 195 plf Factored Total Resistance. Deflection Resistance does not control.

Span (ft)	14" LPI 20Plus				14" LPI 32Plus				14" LPI 42Plus				Span (ft)
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total L/180		Live Load		Total L/180		Live Load		Total L/180		
	L/360	L/240			L/360	L/240			L/360	L/240			
14'	205			210				210				277	14'
15'	171			196	193			196				258	15'
16'	144			184	163			184	238			243	16'
17'	122			173	138			173	203			229	17'
18'	104	156		164	118			164	174			216	18'
19'	89	134		155	102	153		155	150			205	19'
20'	77	116		143	89	133		148	130			195	20'
21'	68	102		130	77	116		141	114	171		185	21'
22'	59	89		118	68	102		134	100	150		177	22'
23'	52	78	105	108	60	90	120	128	88	132		170	23'
24'	46	69	93	99	53	80	106	118	78	117	156	163	24'
25'	41	62	82	92	47	71	95	109	69	104	139	156	25'
26'	37	55	74	85	42	63	85	101	62	93	125	150	26'
27'	33	49	66	79	38	57	76	93	56	84	112	145	27'
28'	29	44	59	73	34	51	68	87	50	75	101	139	28'
29'	27	40	54	68	31	46	62	81	45	68	91	130	29'
30'	24	36	49	64	28	42	56	76	41	62	83	122	30'
31'	22	33	44	60	25	38	51	71	37	56	75	114	31'
32'	20	30	40	56	23	35	46	66	34	51	68	107	32'
33'	18	27	37	53	21	32	42	62	31	47	63	101	33'
34'	17	25	34	50	19	29	39	59	28	43	57	95	34'

Span (ft)	16" LPI 32Plus				16" LPI 42Plus				Span (ft)
	Unfactored Deflection Resistance			Factored Total Resistance	Unfactored Deflection Resistance			Factored Total Resistance	
	Live Load		Total L/180		Live Load		Total L/180		
	L/360	L/240			L/360	L/240			
14'				220				286	14'
15'				205				267	15'
16'				193				251	16'
17'				181				236	17'
18'	157			171				223	18'
19'	135			163	199			212	19'
20'	118			154	173			201	20'
21'	103			147	151			192	21'
22'	90	136		141	133			183	22'
23'	80	120		135	118			175	23'
24'	71	106		129	104	157		168	24'
25'	63	95		124	93	140		161	25'
26'	56	85	113	117	83	125		155	26'
27'	51	76	102	108	75	112		150	27'
28'	46	69	92	101	67	101	135	144	28'
29'	41	62	83	94	61	92	122	139	29'
30'	37	56	75	88	55	83	111	135	30'
31'	34	51	68	82	50	76	101	130	31'
32'	31	47	62	77	46	69	92	124	32'
33'	28	43	57	72	42	63	84	117	33'
34'	26	39	52	68	38	58	77	110	34'

DESIGN ASSUMPTIONS:

1. Span is the clear distance between supports, along the sloped length of the joist, 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.
2. The values in the tables are for uniform loads only.
3. Total Load is for standard (100%) load duration.
4. These tables do not reflect any additional stiffness provided by the roof sheathing.
5. Total deflection has been limited to L/180. Long term deflection (creep) has not been considered.
6. These tables assume full lateral support of the compression flange. Full support is considered to be a maximum unbraced length of 24".
7. These tables are based on an end bearing length of at least 1-3/4" and an interior bearing length of at least 3-1/2", and have been limited to the bearing capacity for an SPF wall plate.

ADDITIONAL NOTES:

1. These tables have been designed to meet the Limit States Design requirements of the 2005 National Building Code of Canada.
2. The tabulated resistances represent the capacity of the member in pounds per lineal foot (plf) of length.
3. For roofs with a slope of 2:12 or greater, the horizontal span shall be multiplied by the appropriate slope adjustment factor from the table at the bottom of this page. Roof joists must have a minimum slope of 1/4" per foot (1/4:12) for positive drainage.
4. The designer shall check the Factored Total Resistance, the Total Deflection Resistance and the appropriate Live Load Deflection Resistance columns.
5. Where the Deflection Resistance is blank, the Factored Total Resistance governs the design.
6. To design for a live load deflection limit of L/480, use the Uniform Floor Load tables.
7. To design a double I-Joist, the values in these tables can be doubled, or the design loads on the I-Joist may be halved to verify the capacity of each ply. The capacity is additive.
8. Web stiffeners are not required for these spans and loads. 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.
9. Do not use a product where designated "-" without further analysis by a professional engineer.

ROOF SLOPE ADJUSTMENT FACTORS

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

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

TO USE:

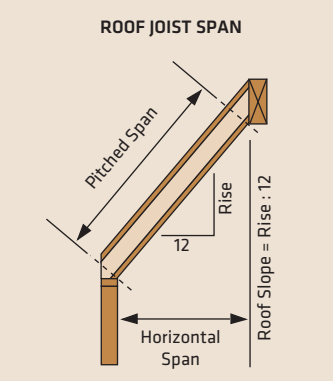
1. Select the appropriate set of tables based on roof slope.
2. Select the section of that table that corresponds to the specified roof live load.
3. Find a span that meets or exceeds the design span for the appropriate specified roof dead load (15 psf or 20 psf).
4. Read the corresponding series, depth and spacing.

DESIGN ASSUMPTIONS:

1. 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.
2. The spans are based on uniform gravity loads (as listed for each table) of standard duration only. These spans have not been evaluated for wind.
3. These tables do not reflect any additional stiffness provided by the roof sheathing.
4. Live load deflection has been limited to L/360.
5. Total load deflection has been limited to L/180.
6. The spans are based on an end bearing length of at least 1-3/4" and an interior bearing length of at least 3-1/2," and have been limited to the bearing resistance of an SPF wall plate.

ADDITIONAL NOTES:

1. These spans have been designed to meet the Limit States Design requirements of the 2005 National Building Code of Canada.
2. Web stiffeners are not required for the Roof Span tables except when using a "bird's mouth" detail for the low-end bearing. 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.
3. L/360 represents the maximum deflection allowed per code for roof joists supporting plaster or gypsum ceilings. Verify deflection limits with local code requirements.
4. Roof joists must have a minimum slope of 1/4" per foot (1/4:12) for positive drainage.
5. Roof applications in high wind areas require special analysis which may reduce spans and require special connectors to resist uplift.
6. For conditions not shown, use the Uniform Roof Load (PLF) tables, LP's design software or contact your LP® SolidStart® Engineered Wood Products distributor for assistance.



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."

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

TO USE:

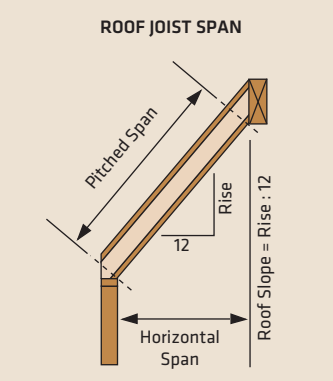
1. Select the appropriate set of tables based on roof slope.
2. Select the section of that table that corresponds to the specified roof live load.
3. Find a span that meets or exceeds the design span for the appropriate specified roof dead load (15 psf or 20 psf).
4. Read the corresponding series, depth and spacing.

DESIGN ASSUMPTIONS:

1. 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.
2. The spans are based on uniform gravity loads (as listed for each table) of standard duration only. These spans have not been evaluated for wind.
3. These tables do not reflect any additional stiffness provided by the roof sheathing.
4. Live load deflection has been limited to L/360.
5. Total load deflection has been limited to L/180.
6. The spans are based on an end bearing length of at least 1-3/4" and an interior bearing length of at least 3-1/2," and have been limited to the bearing resistance of an SPF wall plate.

ADDITIONAL NOTES:

1. These spans have been designed to meet the Limit States Design requirements of the 2005 National Building Code of Canada.
2. Web stiffeners are not required for the Roof Span tables except when using a "bird's mouth" detail for the low-end bearing. 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.
3. L/360 represents the maximum deflection allowed per code for roof joists supporting plaster or gypsum ceilings. Verify deflection limits with local code requirements.
4. Roof joists must have a minimum slope of 1/4" per foot (1/4:12) for positive drainage.
5. Roof applications in high wind areas require special analysis which may reduce spans and require special connectors to resist uplift.
6. For conditions not shown, use the Uniform Roof Load (PLF) tables, LP's design software or contact your LP® SolidStart® Engineered Wood Products distributor for assistance.



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"

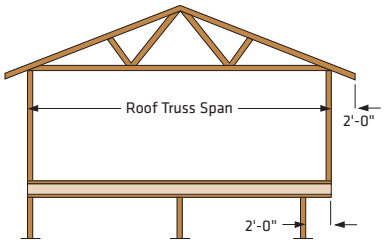
* Deflections rounded to the nearest 1/16."

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

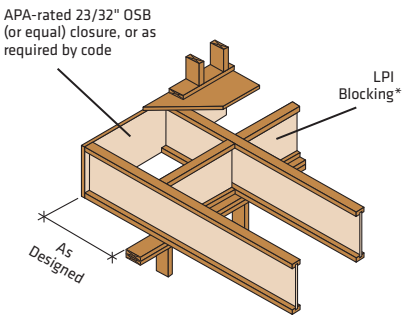
Load-Bearing Cantilever Tables: 9-1/2" & 11-7/8"

TO USE:

1. Select the required product.
2. Select the row corresponding to the Roof Load and Truss Span needed.
3. Follow across the row to the required joist spacing.
4. The letter represents the required detail.

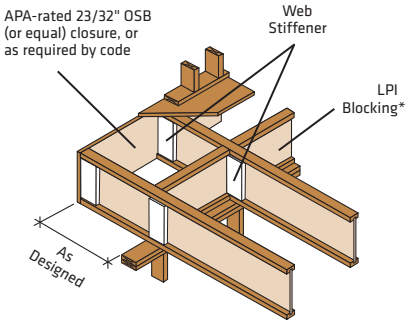


C1 **A: NO REINFORCEMENT REQUIRED**



* LP® SolidStart® Rim Board, LVL or LSL may be substituted for the LP Blocking

C1W **W: WEB STIFFENER REQUIRED**



* LP SolidStart Rim Board, LVL or LSL may be substituted for the LP Blocking

Roof Load	Truss Span (ft)	9-1/2" LPI 20Plus				9-1/2" LPI 32Plus				9-1/2" LPI 42Plus				11-7/8" LPI 20Plus				11-7/8" LPI 32Plus				11-7/8" LPI 42Plus				Truss Span (ft)	Roof Load
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"		
30 psf	22'	A	A	A	W	A	A	A	W	A	A	A	A	A	A	A	W	A	A	A	W	A	A	A	A	22'	30 psf
	24'	A	A	A	W	A	A	A	W	A	A	A	A	A	A	A	W	A	A	A	W	A	A	A	A	24'	
	26'	A	A	A	W	A	A	A	W	A	A	A	A	A	A	A	W	A	A	A	W	A	A	A	A	26'	
	28'	A	A	A	B/D	A	A	A	B/D	A	A	A	A	A	A	A	W	A	A	A	W	A	A	A	A	28'	
	30'	A	A	A	B/D	A	A	A	B/D	A	A	A	B/D	A	A	A	B/D	A	A	A	B/D	A	A	A	A	30'	
	32'	A	A	W	B/D	A	A	W	B/D	A	A	A	B/D	A	A	A	B/D	A	A	A	B/D	A	A	A	A	32'	
	34'	A	A	W	B/D	A	A	W	B/D	A	A	A	B/D	A	A	A	B/D	A	A	A	B/D	A	A	A	A	34'	
	36'	A	A	W	B/D	A	A	W	B/D	A	A	A	B/D	A	A	W	B/D	A	A	W	B/D	A	A	A	A	36'	
	38'	A	A	B/D	B/D	A	A	W	B/D	A	A	A	B/D	A	A	W	B/D	A	A	W	B/D	A	A	A	A	38'	
	40'	A	A	B/D	C	A	A	B/D	C	A	A	A	B/D	A	A	W	C	A	A	W	C	A	A	A	W	40'	
	42'	A	W	B/D	C	A	W	B/D	C	A	A	B/D	B/D	A	A	W	C	A	A	W	C	A	A	A	B/D	42'	
40 psf	22'	A	A	W	B/D	A	A	W	B/D	A	A	A	B/D	A	A	A	B/D	A	A	A	B/D	A	A	A	A	22'	40 psf
	24'	A	A	W	B/D	A	A	W	B/D	A	A	A	B/D	A	A	A	B/D	A	A	A	B/D	A	A	A	A	24'	
	26'	A	A	W	B/D	A	A	W	B/D	A	A	A	B/D	A	A	W	B/D	A	A	W	B/D	A	A	A	A	26'	
	28'	A	A	B/D	B/D	A	A	B/D	B/D	A	A	A	B/D	A	A	W	B/D	A	A	W	B/D	A	A	A	W	28'	
	30'	A	W	B/D	C	A	W	B/D	C	A	A	B/D	B/D	A	A	W	C	A	A	W	C	A	A	A	B/D	30'	
	32'	A	W	B/D	C	A	W	B/D	C	A	A	B/D	B/D	A	A	B/D	C	A	A	B/D	C	A	A	A	B/D	32'	
	34'	A	W	B/D	-	A	W	B/D	C	A	A	B/D	C	A	W	B/D	C	A	W	B/D	C	A	A	A	B/D	34'	
	36'	A	B/D	B/D	-	A	W	B/D	C	A	A	B/D	C	A	W	B/D	C	A	W	B/D	C	A	A	A	B/D	36'	
	38'	A	B/D	C	-	A	B/D	C	-	A	A	B/D	C	A	W	C	-	A	W	C	-	A	A	W	B/D	38'	
	40'	A	B/D	C	-	A	B/D	C	-	A	B/D	B/D	C	A	W	C	-	A	W	C	-	A	A	B/D	B/D	40'	
	42'	A	B/D	C	-	A	B/D	C	-	A	B/D	B/D	C	A	B/D	C	-	A	B/D	C	-	A	A	B/D	C	42'	
50 psf	22'	A	A	B/D	C	A	A	B/D	C	A	A	A	B/D	A	A	W	C	A	A	W	C	A	A	A	W	22'	50 psf
	24'	A	W	B/D	C	A	W	B/D	C	A	A	B/D	B/D	A	A	B/D	C	A	A	B/D	C	A	A	A	B/D	24'	
	26'	A	W	B/D	-	A	W	B/D	C	A	A	B/D	C	A	W	B/D	C	A	W	B/D	C	A	A	A	B/D	26'	
	28'	A	B/D	B/D	-	A	W	B/D	C	A	A	B/D	C	A	W	B/D	C	A	W	B/D	C	A	A	A	B/D	28'	
	30'	A	B/D	C	-	A	B/D	C	-	A	B/D	B/D	C	A	W	C	-	A	W	C	-	A	A	W	B/D	30'	
	32'	A	B/D	C	-	A	B/D	C	-	A	B/D	B/D	C	A	B/D	C	-	A	B/D	C	-	A	A	B/D	C	32'	
	34'	A	B/D	-	-	A	B/D	C	-	A	B/D	B/D	C	A	B/D	C	-	A	B/D	C	-	A	A	B/D	C	34'	
	36'	W	C	-	-	W	C	C	-	A	B/D	C	-	W	B/D	C	-	W	B/D	C	-	A	W	B/D	C	36'	
	38'	W	C	-	-	W	C	C	-	A	B/D	C	-	W	C	C	-	W	C	C	-	A	W	B/D	C	38'	
	40'	W	C	-	-	W	C	-	-	A	B/D	C	-	W	C	-	-	W	C	-	-	A	B/D	B/D	C	40'	
	42'	B/D	C	-	-	B/D	C	-	-	A	B/D	C	-	W	C	-	-	W	C	-	-	A	B/D	C	-	42'	
60 psf	22'	A	B/D	B/D	-	A	W	B/D	C	A	A	B/D	C	A	W	B/D	C	A	W	B/D	C	A	A	A	B/D	22'	60 psf
	24'	A	B/D	C	-	A	B/D	C	-	A	B/D	B/D	C	A	W	C	-	A	W	C	-	A	A	W	B/D	24'	
	26'	A	B/D	C	-	A	B/D	C	-	A	B/D	B/D	C	A	B/D	C	-	A	B/D	C	-	A	A	B/D	C	26'	
	28'	W	B/D	-	-	W	B/D	C	-	A	B/D	C	C	A	B/D	C	-	A	B/D	C	-	A	A	B/D	C	28'	
	30'	W	C	-	-	W	C	C	-	A	B/D	C	-	W	C	C	-	W	C	C	-	A	W	B/D	C	30'	
	32'	W	C	-	-	W	C	-	-	A	B/D	C	-	W	C	-	-	W	C	-	-	A	W	B/D	C	32'	
	34'	B/D	C	-	-	B/D	C	-	-	A	B/D	C	-	W	C	-	-	W	C	-	-	A	B/D	C	-	34'	
	36'	B/D	-	-	-	B/D	C	-	-	B/D	C	C	-	W	C	-	-	W	C	-	-	A	B/D	C	-	36'	
	38'	B/D	-	-	-	B/D	C	-	-	B/D	C	C	-	B/D	C	-	-	B/D	C	-	-	A	B/D	C	-	38'	
	40'	B/D	-	-	-	B/D	-	-	-	B/D	C	-	-	B/D	-	-	-	B/D	-	-	-	A	B/D	C	-	40'	
	42'	C	-	-	-	C	-	-	-	B/D	C	-	-	C	-	-	-	C	-	-	-	W	C	C	-	42'	

ROOF TRUSS SPAN WITH 2' OVERHANG

DESIGN ASSUMPTIONS:

1. These tables are valid for joists selected from the Floor Span Tables in this design guide.
2. The specified floor design loads shall not exceed 40 psf Live and 15 psf Dead Load.
3. The maximum cantilever length is 2' (the amount of overhang).
4. The specified wall weight is assumed to be 100 plf.
5. Roof Load is the Specified Total Load (Live plus Dead) on the roof trusses.
6. Truss Span is the out-to-out distance of the truss bearing walls as shown above.
7. A maximum overhang of 2' is allowed for the trusses.
8. These tables assume a cantilever-end bearing length of at least 3-1/2" and have been limited to the bearing capacity for an SPF wall plate.

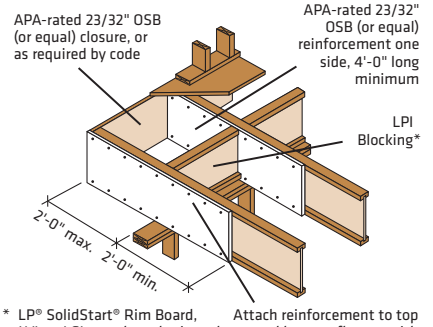
ADDITIONAL NOTES:

1. The reinforcement (when required) shall match the depth of the I-Joist.
2. Where designated "B/D", either detail (B or D) is valid.
3. The closure at the end of the cantilever shall be a minimum of 23/32" APA-rated OSB (or equal). Certain codes may require a thicker product for lateral load transfer.
4. For short cantilevers up to 6" long, use the Brick-Ledge Cantilever Tables on the following pages.
5. For conditions not shown, use LP's design software or contact your LP SolidStart Engineered Wood Products distributor for assistance.
6. Do not use a product where designated "-" without further analysis by a professional engineer.

TO USE:

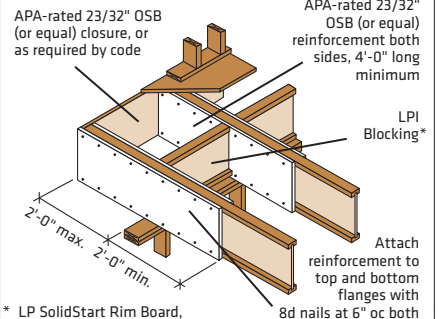
1. Select the required product.
2. Select the row corresponding to the Roof Load and Truss Span needed.
3. Follow across the row to the required joist spacing.
4. The letter represents the required detail.

C2 B: 23/32" OSB (OR EQUAL) REINFORCEMENT ONE SIDE ONLY



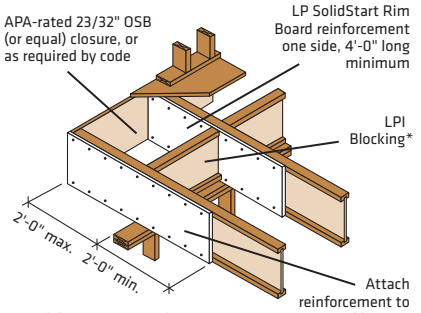
* LP® SolidStart® Rim Board, LVL or LSL may be substituted for the LP Blocking

C3 C: 23/32" OSB (OR EQUAL) REINFORCEMENT BOTH SIDES



* LP SolidStart Rim Board, LVL or LSL may be substituted for the LP Blocking

C4 D: 1" OR 1-1/8" LP SolidStart RIM BOARD MAY BE SUBSTITUTED FOR DETAIL B



* LP SolidStart Rim Board, LVL or LSL may be substituted for the LP Blocking

Roof Load	Truss Span (ft)	14" LPI 20Plus				14" LPI 32Plus				14" LPI 42Plus				16" LPI 32Plus				16" LPI 42Plus				Truss Span (ft)	Roof Load
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"		
30 psf	22'	A	A	A	W	A	A	A	W	A	A	A	A	A	A	A	A	A	A	A	A	22'	30 psf
	24'	A	A	A	W	A	A	A	W	A	A	A	A	A	A	A	W	A	A	A	A	24'	
	26'	A	A	A	W	A	A	A	W	A	A	A	A	A	A	A	W	A	A	A	A	26'	
	28'	A	A	A	W	A	A	A	W	A	A	A	A	A	A	A	W	A	A	A	A	28'	
	30'	A	A	A	W	A	A	A	W	A	A	A	A	A	A	A	W	A	A	A	A	30'	
	32'	A	A	A	B/D	A	A	A	B/D	A	A	A	A	A	A	A	B/D	A	A	A	A	32'	
	34'	A	A	A	B/D	A	A	A	B/D	A	A	A	A	A	A	A	B/D	A	A	A	A	34'	
	36'	A	A	A	B/D	A	A	A	B/D	A	A	A	A	A	A	A	B/D	A	A	A	A	36'	
	38'	A	A	W	B/D	A	A	W	B/D	A	A	A	A	A	A	W	B/D	A	A	A	A	38'	
	40'	A	A	W	B/D	A	A	W	B/D	A	A	A	W	A	A	W	B/D	A	A	A	W	40'	
	42'	A	A	W	B/D	A	A	W	B/D	A	A	A	W	A	A	W	B/D	A	A	A	W	42'	
40 psf	22'	A	A	A	B/D	A	A	A	B/D	A	A	A	A	A	A	A	W	A	A	A	A	22'	40 psf
	24'	A	A	A	B/D	A	A	A	B/D	A	A	A	A	A	A	A	B/D	A	A	A	A	24'	
	26'	A	A	W	B/D	A	A	W	B/D	A	A	A	A	A	A	W	B/D	A	A	A	A	26'	
	28'	A	A	W	B/D	A	A	W	B/D	A	A	A	W	A	A	W	B/D	A	A	A	W	28'	
	30'	A	A	W	B/D	A	A	W	B/D	A	A	A	W	A	A	W	B/D	A	A	A	W	30'	
	32'	A	A	W	C	A	A	W	C	A	A	A	W	A	A	W	B/D	A	A	A	W	32'	
	34'	A	W	W	C	A	W	W	C	A	A	A	W	A	W	W	B/D	A	A	A	W	34'	
	36'	A	W	W	C	A	W	W	C	A	A	A	B/D	A	W	W	C	A	A	A	W	36'	
	38'	A	W	B/D	-	A	W	B/D	-	A	A	W	B/D	A	W	W	C	A	A	W	W	38'	
	40'	A	W	B/D	-	A	W	B/D	-	A	A	W	B/D	A	W	B/D	-	A	A	W	W	40'	
	42'	A	W	C	-	A	W	C	-	A	A	W	C	A	W	B/D	-	A	A	W	C	42'	
50 psf	22'	A	A	W	B/D	A	A	W	B/D	A	A	A	W	A	A	W	B/D	A	A	A	W	22'	50 psf
	24'	A	A	W	C	A	A	W	C	A	A	A	W	A	A	W	B/D	A	A	A	W	24'	
	26'	A	W	W	C	A	W	W	C	A	A	A	W	A	W	W	B/D	A	A	A	W	26'	
	28'	A	W	W	C	A	W	W	C	A	A	A	B/D	A	W	W	C	A	A	A	W	28'	
	30'	A	W	B/D	-	A	W	B/D	-	A	A	W	B/D	A	W	B/D	-	A	A	W	W	30'	
	32'	A	W	C	-	A	W	C	-	A	A	W	C	A	W	B/D	-	A	A	W	B/D	32'	
	34'	A	W	C	-	A	W	C	-	A	A	W	C	A	W	B/D	-	A	A	W	C	34'	
	36'	W	W	C	-	W	W	C	-	A	W	W	C	W	W	C	-	A	W	W	C	36'	
	38'	W	W	C	-	W	W	C	-	A	W	B/D	C	W	W	C	-	A	W	W	C	38'	
	40'	W	C	-	-	W	C	-	-	A	W	B/D	C	W	W	-	-	A	W	W	C	40'	
	42'	W	C	-	-	W	C	-	-	A	W	C	-	W	W	-	-	A	W	B/D	-	42'	
60 psf	22'	A	W	W	C	A	W	W	C	A	A	A	B/D	A	W	W	C	A	A	A	W	22'	60 psf
	24'	A	W	B/D	-	A	W	B/D	-	A	A	W	B/D	A	W	B/D	-	A	A	W	W	24'	
	26'	A	W	C	-	A	W	C	-	A	A	W	C	A	W	B/D	-	A	A	W	C	26'	
	28'	A	W	C	-	A	W	C	-	A	A	W	C	A	W	B/D	-	A	A	W	C	28'	
	30'	W	W	C	-	W	W	C	-	A	W	B/D	C	W	W	C	-	A	W	W	C	30'	
	32'	W	C	-	-	W	C	-	-	A	W	B/D	C	W	W	-	-	A	W	W	C	32'	
	34'	W	C	-	-	W	C	-	-	A	W	C	-	W	W	-	-	A	W	W	-	34'	
	36'	W	C	-	-	W	C	-	-	A	W	C	-	W	C	-	-	A	W	C	-	36'	
	38'	W	C	-	-	W	C	-	-	A	B/D	C	-	W	C	-	-	A	W	C	-	38'	
	40'	W	-	-	-	W	-	-	-	A	B/D	C	-	W	-	-	-	A	W	C	-	40'	
	42'	W	-	-	-	W	-	-	-	W	C	C	-	W	-	-	-	W	W	C	-	42'	

ROOF TRUSS SPAN WITH 2' OVERHANG

DESIGN ASSUMPTIONS:

1. These tables are valid for joists selected from the Floor Span Tables in this design guide.
2. The specified floor design loads shall not exceed 40 psf Live and 15 psf Dead Load.
3. The maximum cantilever length is 2' (the amount of overhang).
4. The specified wall weight is assumed to be 100 plf.
5. Roof Load is the Specified Total Load (Live plus Dead) on the roof trusses.
6. Truss Span is the out-to-out distance of the truss bearing walls as shown above.
7. A maximum overhang of 2' is allowed for the trusses.
8. These tables assume a cantilever-end bearing length of at least 3-1/2" and have been limited to the bearing capacity for an SPF wall plate.

ADDITIONAL NOTES:

1. The reinforcement (when required) shall match the depth of the I-Joist.
2. Where designated "B/D", either detail (B or D) is valid.
3. The closure at the end of the cantilever shall be a minimum of 23/32" APA-rated OSB (or equal). Certain codes may require a thicker product for lateral load transfer.
4. For short cantilevers up to 6" long, use the Brick-Ledge Cantilever Tables on the following pages.
5. For conditions not shown, use LP's design software or contact your LP SolidStart Engineered Wood Products distributor for assistance.
6. Do not use a product where designated "-" without further analysis by a professional engineer.

TOTAL JOIST REACTION CALCULATION

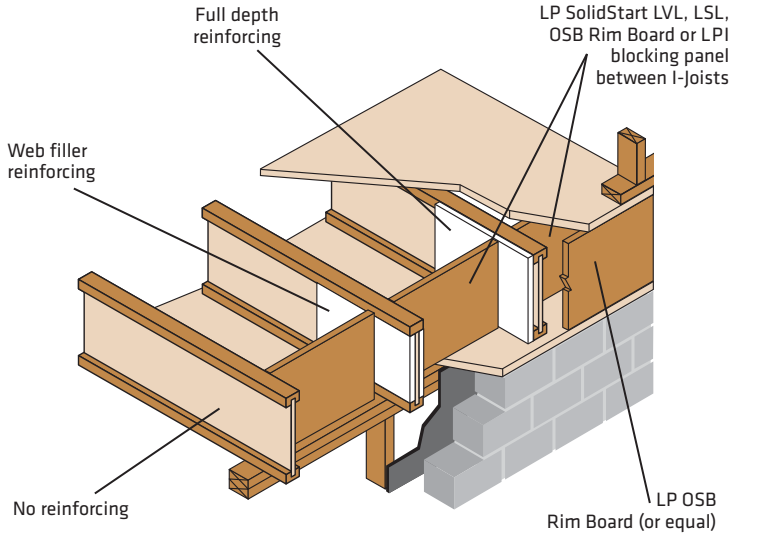
LP® SolidStart® I-Joists can cantilever up to 6" to support a load-bearing wall over a brick finish. Depending on the Total Joist Reaction (TJR), the joists may require reinforcement. If the TJR is less than the End Reaction Capacity W/out Stiffeners (page 16), then no reinforcement is required. If the TJR is greater than the End Reaction Capacity W/out Stiffeners, but less than the End Reaction Capacity With Stiffeners, then web stiffeners shall be installed at the bearing. Otherwise, one of the reinforcing details from below shall be used.

TOTAL JOIST REACTION, TJR = FLR + WLR + RLR

Where: **FLR** = Floor Load Reaction

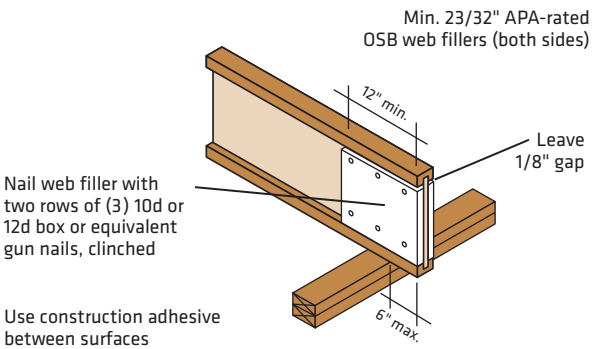
WLR = Wall Load Reaction

RLR = Roof Load Reaction, including any other floor, ceiling or attic loads imposed on wall



C7

BRICK LEDGE CANTILEVER WEB FILLER REINFORCING



Blocking panels are required at the bearing, but are not shown for clarity

C8

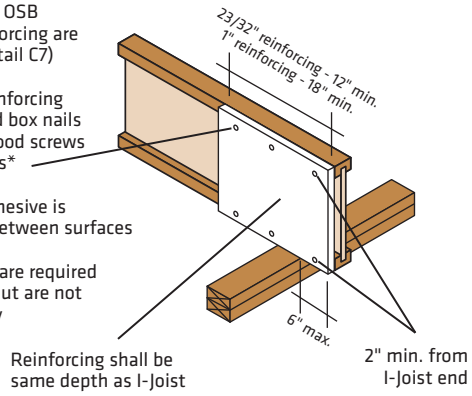
BRICK LEDGE CANTILEVER FULL-DEPTH REINFORCING One Side

For 14" and 16" I-Joists, web filler (both sides) and OSB or plywood reinforcing are required (see detail C7)

Nail or screw reinforcing with (3) 6d or 8d box nails or #6 x 1-1/2" wood screws into both flanges*

Construction adhesive is recommended between surfaces

Blocking panels are required at the bearing, but are not shown for clarity



* **NOTE:** Pilot holes required when using screws

Series	Min. Web Filler Thickness	Factored Reaction Resistance (lbs)
LPI 20Plus	23/32" APA-rated OSB (or equal)	3660
LPI 32Plus	23/32" APA-rated OSB (or equal)	3660
LPI 42Plus	1-1/8" LP Rim Board (or equal)	5630

Series	Factored Reaction Resistance (lbs)	
	23/32" APA-rated OSB (or equal)	1" Min. LP SolidStart Rim Board
LPI 20Plus	4930	5350
LPI 32Plus	4930	5350
LPI 42Plus	6760	7320

EXAMPLE 1:

I-Joist: 9-1/2" LPI 20Plus **Wall under Cantilever: 3-1/2" wide**

Specified Design Loads: Floor: 40/10 psf; Roof: 20/10 psf; Wall: 80 plf

Floor System: Joist Span = 16'; Joist Cantilever = 5"; Joist Spacing = 16" oc

Roof System: Roof Span = 22'; Roof Overhang = 1'

Factored FLR = (Joist Span / 2 + Joist Cantilever / 12) * (Factored Floor Load) * (Joist Spacing / 12)
= (16' / 2 + 5" / 12) * (1.5 * 40 psf + 1.25 * 10 psf) * (16" / 12)
= 814 lbs.

Factored WLR = (Factored Wall Load) * (Joist Spacing / 12)
= (1.25 * 80 plf) * (16" / 12)
= 133 lbs.

Factored RLR = (Roof Span / 2 + Roof Overhang) * (Factored Roof Load) * (Joist Spacing / 12)
= (22' / 2 + 1') * (1.5 * 20 psf + 1.25 * 10 psf) * (16" / 12)
= 680 lbs.

Factored TJR = 814 + 133 + 680
= 1627 lbs.

FACTORED END REACTION RESISTANCE

9-1/2" LPI 20Plus on a 3-1/2" Wall	Min. 1-1/2" Bearing	Max. 4" Bearing	3-1/2" Bearing
w/o Web Stiffeners	1530	1750	**1706**
w/ Web Stiffeners	1800	1930	**1904**
w/ Web Filler Reinforcing	–	–	**3660**
w/ 23/32" APA-Rated OSB Full-Depth Reinforcing (One Side)	–	–	**4930**
w/ 1" LP Rim Full-Depth Reinforcing (One Side)	–	–	**5350**

Since the Factored Total Joist Reaction, 1627 lbs., is less than the Factored End Reaction Resistance w/out Stiffeners for 3-1/2" bearing (1706 lbs.), no reinforcement is required.

EXAMPLE 2:

I-Joist: 11-7/8" LPI 32Plus **Wall under Cantilever: 3-1/2" wide**

Specified Design Loads: Floor: 40/15 psf; Roof: 30/15 psf; Wall: 100 plf

Floor System: Joist Span = 16'; Joist Cantilever = 5"; Joist Spacing = 24" oc

Roof System: Roof Span = 32'; Roof Overhang = 1'

Factored FLR = (Joist Span / 2 + Joist Cantilever / 12) * (Factored Floor Load) * (Joist Spacing / 12)
= (16' / 2 + 5" / 12) * (1.5 * 40 psf + 1.25 * 15 psf) * (24" / 12)
= 1326 lbs.

Factored WLR = (Factored Wall Load) * (Joist Spacing / 12)
= (1.25 * 100 plf) * (24" / 12)
= 250 lbs.

Factored RLR = (Roof Span / 2 + Roof Overhang) * (Factored Roof Load) * (Joist Spacing / 12)
= (32' / 2 + 1') * (1.5 * 30 psf + 1.25 * 15 psf) * (24" / 12)
= 2168 lbs.

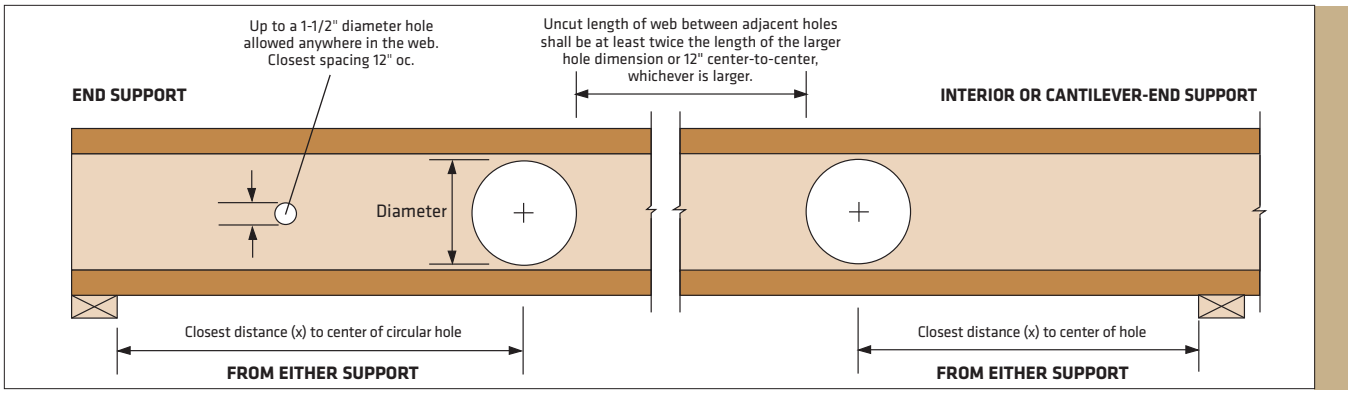
Factored TJR = 1326 + 250 + 2168
= 3743 lbs.

FACTORED END REACTION RESISTANCE

11-7/8" LPI 32Plus on a 3-1/2" Wall	Min. 1-1/2" Bearing	Max. 4" Bearing	3-1/2" Bearing
w/o Web Stiffeners	1530	1825	**1766**
w/ Web Stiffeners	2010	2140	**2114**
w/ Web Filler Reinforcing	–	–	**3660**
w/ 23/32" APA-Rated OSB Full-Depth Reinforcing (One Side)	–	–	**4930**
w/ 1" LP Rim Full-Depth Reinforcing (One Side)	–	–	**5350**

Since the Factored Total Joist Reaction, 3743 lbs., is greater than the Factored End Reaction Resistance with Web Filler Reinforcing (3660 lbs.) but is less than the Factored End Reaction Resistance with 23/32" APA-Rated OSB Full-Depth Reinforcing (4930 lbs.), this joist requires the installation of full-depth reinforcing consisting of a minimum 23/32" APA-rated OSB (or equal) attached to one side (Detail C8) at the bearing.

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	Clear Span (ft)	Distance from End Support							Distance from Interior or Cantilever-End Support						
			Hole Diameter							Hole Diameter						
			2"	4"	6"	8"	10"	12"	14"	2"	4"	6"	8"	10"	12"	14"
LPI 20Plus & LPI 32Plus	9-1/2"	6'	1'-0"	1'-0"	1'-6"	-	-	-	-	1'-0"	1'-0"	1'-6"	-	-	-	-
		10'	1'-0"	1'-0"	1'-6"	-	-	-	-	1'-0"	1'-0"	1'-6"	-	-	-	-
		14'	1'-0"	1'-0"	1'-6"	-	-	-	-	1'-0"	1'-8"	3'-5"	-	-	-	-
		18'	1'-0"	1'-10"	3'-8"	-	-	-	-	2'-8"	4'-5"	6'-3"	-	-	-	-
	11-7/8"	6'	1'-0"	1'-0"	1'-6"	2'-0"	-	-	-	1'-0"	1'-0"	1'-6"	2'-0"	-	-	-
		10'	1'-0"	1'-0"	1'-6"	2'-0"	-	-	-	1'-0"	1'-0"	1'-6"	2'-0"	-	-	-
		14'	1'-0"	1'-0"	1'-6"	2'-0"	-	-	-	1'-0"	1'-0"	2'-5"	3'-10"	-	-	-
		18'	1'-0"	1'-5"	2'-9"	4'-1"	-	-	-	2'-2"	3'-6"	5'-4"	6'-9"	-	-	-
		22'	1'-8"	3'-4"	5'-0"	6'-8"	-	-	-	4'-11"	6'-7"	8'-3"	9'-11"	-	-	-
	14"	10'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	-	-	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	-	-
		14'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	-	-	1'-0"	1'-0"	1'-8"	2'-9"	4'-2"	-	-
		18'	1'-0"	1'-0"	1'-10"	3'-3"	4'-7"	-	-	1'-9"	3'-1"	4'-5"	5'-10"	7'-2"	-	-
		22'	1'-8"	2'-10"	4'-6"	5'-7"	7'-3"	-	-	4'-11"	6'-0"	7'-8"	8'-9"	10'-5"	-	-
		26'	4'-0"	5'-3"	6'-7"	8'-6"	9'-10"	-	-	7'-9"	9'-1"	10'-5"	12'-4"	-	-	-
LPI 32Plus	16"	10'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-
		14'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-	1'-0"	1'-0"	1'-6"	2'-5"	3'-5"	4'-6"	-
		18'	1'-0"	1'-0"	1'-6"	2'-9"	3'-8"	5'-0"	-	1'-9"	2'-8"	4'-0"	4'-11"	6'-3"	7'-8"	-
		22'	1'-8"	2'-10"	3'-11"	5'-0"	6'-2"	7'-10"	-	4'-4"	5'-5"	7'-1"	8'-3"	9'-4"	11'-0"	-
		26'	4'-0"	5'-3"	5'-11"	7'-3"	9'-2"	10'-6"	-	7'-1"	8'-5"	9'-9"	11'-0"	13'-0"	-	-
		30'	6'-1"	7'-7"	8'-4"	9'-10"	11'-4"	12'-10"	-	10'-6"	12'-0"	13'-6"	14'-3"	-	-	-
LPI 42Plus	9-1/2"	6'	1'-0"	1'-0"	1'-6"	-	-	-	-	1'-0"	1'-0"	1'-6"	-	-	-	-
		10'	1'-0"	1'-0"	1'-6"	-	-	-	-	1'-0"	1'-0"	1'-6"	-	-	-	-
		14'	1'-0"	1'-0"	1'-6"	-	-	-	-	1'-0"	1'-8"	3'-5"	-	-	-	-
		18'	1'-0"	1'-10"	3'-8"	-	-	-	-	2'-8"	4'-5"	6'-3"	-	-	-	-
	11-7/8"	6'	1'-0"	1'-0"	1'-6"	2'-0"	-	-	-	1'-0"	1'-0"	1'-6"	2'-0"	-	-	-
		10'	1'-0"	1'-0"	1'-6"	2'-0"	-	-	-	1'-0"	1'-0"	1'-6"	2'-0"	-	-	-
		14'	1'-0"	1'-0"	1'-6"	2'-0"	-	-	-	1'-0"	1'-0"	2'-5"	3'-10"	-	-	-
		18'	1'-0"	1'-5"	2'-9"	4'-1"	-	-	-	2'-2"	3'-6"	5'-4"	6'-9"	-	-	-
		22'	1'-8"	3'-4"	5'-0"	6'-8"	-	-	-	4'-11"	6'-7"	8'-3"	9'-11"	-	-	-
	14"	10'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	-	-	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	-	-
		14'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	-	-	1'-0"	1'-0"	1'-8"	2'-9"	4'-2"	-	-
		18'	1'-0"	1'-0"	1'-10"	3'-3"	4'-7"	-	-	1'-9"	3'-1"	4'-5"	5'-10"	7'-2"	-	-
		22'	1'-8"	2'-10"	4'-6"	5'-7"	7'-3"	-	-	4'-11"	6'-0"	7'-8"	8'-9"	10'-5"	-	-
		26'	4'-0"	5'-3"	6'-7"	8'-6"	9'-10"	-	-	7'-9"	9'-1"	10'-5"	12'-4"	-	-	-
	16"	10'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-
		14'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-	1'-0"	1'-0"	1'-6"	2'-5"	3'-5"	4'-6"	-
		18'	1'-0"	1'-0"	1'-6"	2'-9"	3'-8"	5'-0"	-	1'-9"	2'-8"	4'-0"	4'-11"	6'-3"	7'-8"	-
		22'	1'-8"	2'-10"	3'-11"	5'-0"	6'-2"	7'-10"	-	4'-4"	5'-5"	7'-1"	8'-3"	9'-4"	11'-0"	-
		26'	4'-0"	5'-3"	5'-11"	7'-3"	9'-2"	10'-6"	-	7'-1"	8'-5"	9'-9"	11'-0"	13'-0"	-	-
		30'	6'-1"	7'-7"	8'-4"	9'-10"	11'-4"	12'-10"	-	10'-6"	12'-0"	13'-6"	14'-3"	-	-	-

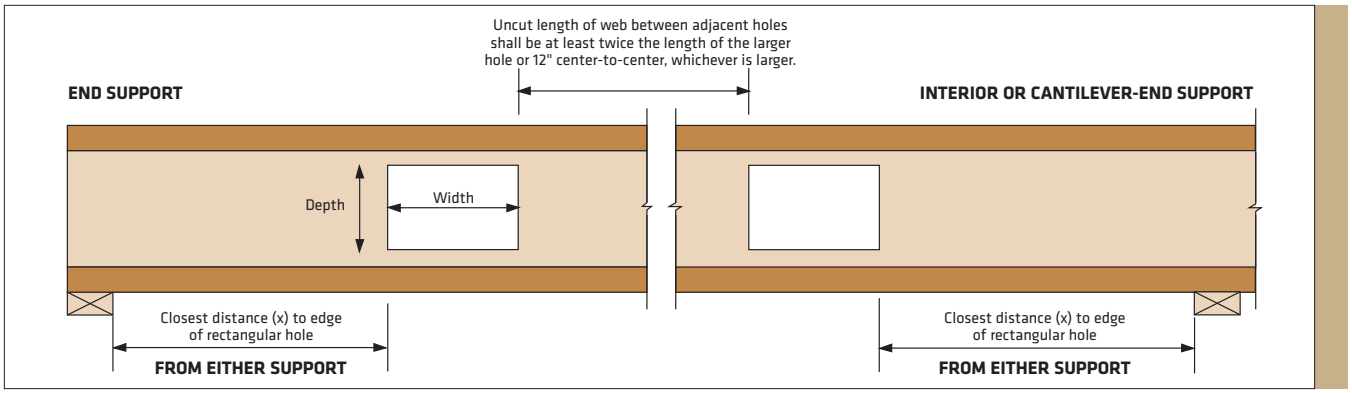
DESIGN ASSUMPTIONS:

1. The hole locations listed above are valid for floor joists supporting only the specified uniform loads as follows: For joists 16" deep and less, the total specified uniform load shall not exceed 130 plf (e.g., 40 psf Live Load and a 25 psf Dead Load, spaced up to 24" oc). The specified uniform dead load shall be at least 10 plf and 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. Clear Span has not been verified for these joists and is shown for informational purposes only! 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 14," 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. Not all series are available in all depths. Check availability with a local LP® SolidStart® Engineered Wood Products distributor.
9. Locating holes in joists with spans exceeding those in the tables or larger holes, greater uniform loads or non-uniform loads, and closer proximity to supports and other holes may be possible with analysis using LP's design software. Please contact your local LP SolidStart Engineered Wood Products distributor for more information.

Web Hole Specifications: Rectangular 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 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	Clear Span (ft)	Distance from End Support – Maximum Hole Dimension: Depth or Width									Distance from Interior or Cantilever-End Support – Maximum Hole Dimension: Depth or Width								
			2"	4"	6"	8"	10"	12"	14"	16"	18"	2"	4"	6"	8"	10"	12"	14"	16"	18"
LPI 20Plus & LPI 32Plus	9-1/2"	6'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-	-	-	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-	-	-
		10'	1'-0"	1'-1"	2'-7"	3'-1"	3'-7"	4'-1"	4'-7"	-	-	1'-0"	2'-5"	4'-0"	4'-6"	5'-0"	-	-	-	-
		14'	1'-10"	3'-3"	5'-4"	5'-8"	6'-5"	6'-9"	-	-	-	3'-10"	5'-3"	-	-	-	-	-	-	-
		18'	4'-1"	5'-11"	7'-9"	8'-8"	-	-	-	-	-	6'-9"	8'-7"	-	-	-	-	-	-	-
	11-7/8"	6'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-	-	-	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-	-	-
		10'	1'-0"	1'-0"	1'-10"	3'-4"	3'-10"	4'-4"	4'-10"	-	-	1'-0"	1'-11"	3'-3"	4'-9"	-	-	-	-	-
		14'	1'-5"	2'-10"	4'-3"	6'-1"	6'-9"	-	-	-	-	3'-5"	4'-10"	6'-4"	-	-	-	-	-	-
		18'	3'-8"	5'-6"	6'-10"	8'-8"	-	-	-	-	-	6'-3"	8'-1"	-	-	-	-	-	-	-
		22'	6'-2"	7'-10"	10'-0"	-	-	-	-	-	-	9'-4"	-	-	-	-	-	-	-	-
	14"	10'	1'-0"	1'-0"	1'-6"	2'-0"	2'-7"	3'-1"	3'-10"	4'-10"	-	1'-0"	1'-0"	1'-6"	2'-0"	4'-0"	4'-9"	-	-	-
		14'	1'-0"	1'-0"	1'-6"	2'-10"	5'-0"	5'-8"	6'-9"	-	-	1'-0"	1'-0"	2'-9"	4'-10"	-	-	-	-	-
		18'	1'-0"	1'-5"	3'-3"	5'-6"	7'-9"	8'-8"	-	-	-	1'-9"	3'-6"	5'-10"	8'-1"	-	-	-	-	-
		22'	1'-8"	3'-4"	5'-7"	7'-10"	10'-7"	-	-	-	-	4'-4"	6'-7"	8'-9"	11'-0"	-	-	-	-	-
		26'	4'-0"	5'-11"	7'-11"	10'-6"	-	-	-	-	-	7'-9"	9'-9"	11'-8"	-	-	-	-	-	-
LPI 32Plus	16"	10'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-7"	4'-4"	-	-	1'-0"	1'-0"	1'-6"	2'-0"	3'-0"	-	-	-	-
		14'	1'-0"	1'-0"	1'-6"	2'-2"	3'-11"	6'-5"	-	-	-	1'-0"	1'-0"	2'-5"	4'-2"	5'-11"	-	-	-	-
		18'	1'-0"	1'-0"	2'-9"	4'-7"	6'-10"	-	-	-	-	1'-9"	3'-6"	4'-11"	7'-2"	-	-	-	-	-
		22'	1'-8"	3'-4"	5'-0"	7'-3"	9'-5"	-	-	-	-	4'-4"	6'-0"	8'-3"	10'-5"	-	-	-	-	-
		26'	4'-0"	5'-3"	7'-3"	9'-10"	12'-6"	-	-	-	-	7'-1"	9'-1"	11'-0"	-	-	-	-	-	-
		30'	6'-1"	8'-4"	9'-10"	12'-1"	-	-	-	-	-	10'-6"	12'-0"	14'-3"	-	-	-	-	-	-
LPI 42Plus	9-1/2"	6'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-	-	-	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-	-	-
		10'	1'-0"	1'-1"	2'-7"	3'-1"	3'-7"	4'-1"	4'-7"	-	-	1'-0"	2'-5"	4'-0"	4'-6"	5'-0"	-	-	-	-
		14'	1'-10"	3'-3"	5'-4"	5'-8"	6'-5"	6'-9"	-	-	-	3'-10"	5'-3"	-	-	-	-	-	-	-
		18'	4'-1"	5'-11"	7'-9"	8'-8"	-	-	-	-	-	6'-9"	8'-7"	-	-	-	-	-	-	-
	11-7/8"	6'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-	-	-	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	-	-	-
		10'	1'-0"	1'-0"	1'-10"	3'-4"	3'-10"	4'-4"	4'-10"	-	-	1'-0"	1'-11"	3'-3"	4'-9"	-	-	-	-	-
		14'	1'-5"	2'-10"	4'-3"	6'-1"	6'-9"	-	-	-	-	3'-5"	4'-10"	6'-4"	-	-	-	-	-	-
		18'	3'-8"	5'-6"	6'-10"	8'-8"	-	-	-	-	-	6'-3"	8'-1"	-	-	-	-	-	-	-
		22'	6'-2"	7'-10"	10'-0"	-	-	-	-	-	-	9'-4"	-	-	-	-	-	-	-	-
	14"	10'	1'-0"	1'-0"	1'-6"	2'-0"	2'-7"	3'-1"	3'-10"	4'-10"	-	1'-0"	1'-0"	1'-6"	2'-0"	4'-0"	4'-9"	-	-	-
		14'	1'-0"	1'-0"	1'-6"	2'-10"	5'-0"	5'-8"	6'-9"	-	-	1'-0"	1'-0"	2'-9"	4'-10"	-	-	-	-	-
		18'	1'-0"	1'-5"	3'-3"	5'-6"	7'-9"	8'-8"	-	-	-	1'-9"	3'-6"	5'-10"	8'-1"	-	-	-	-	-
		22'	1'-8"	3'-4"	5'-7"	7'-10"	10'-7"	-	-	-	-	4'-4"	6'-7"	8'-9"	11'-0"	-	-	-	-	-
		26'	4'-0"	5'-11"	7'-11"	10'-6"	-	-	-	-	-	7'-9"	9'-9"	11'-8"	-	-	-	-	-	-
	16"	10'	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-7"	4'-4"	-	-	1'-0"	1'-0"	1'-6"	2'-0"	3'-0"	-	-	-	-
		14'	1'-0"	1'-0"	1'-6"	2'-2"	3'-11"	6'-5"	-	-	-	1'-0"	1'-0"	2'-5"	4'-2"	5'-11"	-	-	-	-
		18'	1'-0"	1'-0"	2'-9"	4'-7"	6'-10"	-	-	-	-	1'-9"	3'-6"	4'-11"	7'-2"	-	-	-	-	-
		22'	1'-8"	3'-4"	5'-0"	7'-3"	9'-5"	-	-	-	-	4'-4"	6'-0"	8'-3"	10'-5"	-	-	-	-	-
		26'	4'-0"	5'-3"	7'-3"	9'-10"	12'-6"	-	-	-	-	7'-1"	9'-1"	11'-0"	-	-	-	-	-	-
		30'	6'-1"	8'-4"	9'-10"	12'-1"	-	-	-	-	-	10'-6"	12'-0"	14'-3"	-	-	-	-	-	-

DESIGN ASSUMPTIONS:

1. The hole locations listed above are valid for floor joists supporting only the specified uniform loads as follows: For joists 16" deep and less, the total specified uniform load shall not exceed 130 plf (e.g., 40 psf Live Load and a 25 psf Dead Load, spaced up to 24" oc). The specified uniform dead load shall be at least 10 plf and shall not exceed the Live Load.
2. Hole location is measured from the inside face of bearing to the nearest edge of a rectangular hole, from the closest support.
3. Clear Span has not been verified for these joists and is shown for informational purposes only! Verify that the joist selected will work for the span and loading conditions needed before checking hole location.
4. Maximum hole depth for rectangular holes is Joist Depth less 4," not to exceed 14," except the maximum hole depth is 6" for 9-1/2" and 8" for 11-7/8" LP I-Joists. Maximum hole width for rectangular holes is 18" Where the Maximum Hole Dimension for rectangular holes exceeds the maximum hole depth, the dimension refers to hole width, and the hole depth is assumed to be the maximum for that joist depth.
5. Holes cannot be located in the span where designated "-", without further analysis by a professional engineer.

NOTES:

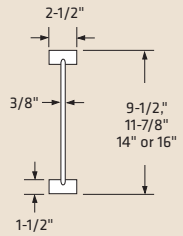
1. CUT HOLES CAREFULLY! DO NOT OVERCUT HOLES! DO NOT CUT JOIST FLANGES!
2. Holes may be placed anywhere within the depth of the joist. A minimum 1/4" clear distance is required between the hole and the flanges.
3. Round holes up to 1-1/2" diameter may be placed anywhere in the web.
4. Perforated "knockouts" 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. Not all series are available in all depths. Check availability with a local LP® SolidStart® Engineered Wood Products distributor.
9. Locating holes in joists with spans exceeding those in the tables or larger holes, greater uniform loads or non-uniform loads, and closer proximity to supports and other holes may be possible with analysis using LP's design software. Please contact your local LP SolidStart Engineered Wood Products distributor for more information.

Product Specifications & Design Values

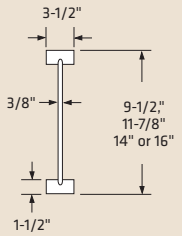
LIMIT STATES DESIGN VALUES

Series	Depth	Weight	Factored Moment	EI (x 10^6)	K (x 10^6)	Factored Shear
		(plf)	(lb-ft)	($lb\text{-}in^2$)	(lb-ft/in)	(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

LPI 20PLUS & LPI 32PLUS



LPI 42PLUS



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.

FACTORED REACTION AND BEARING RESISTANCE

Series	Depth	End Reaction Resistance (lbs)				Interior Reaction Resistance (lbs)				Flange Bearing Resistance (lb/in)
		Minimum Bearing (1-1/2")		Maximum Bearing (4")		Minimum Bearing (3-1/2")		Maximum Bearing (5-1/2")		
		W/out Stiffeners	With Stiffeners	W/out Stiffeners	With Stiffeners	W/out Stiffeners	With Stiffeners	W/out Stiffeners	With Stiffeners	
LPI 20Plus	9-1/2"	1530	1800	1750	1930	3260	3750	3680	4160	1382
	11-7/8"	1530	2010	1825	2140	3530	3985	3905	4465	
	14"	1530	2200	1895	2555	3755	4205	4105	4745	
LPI 32Plus	9-1/2"	1530	1800	1750	1930	3260	3750	3680	4160	1696
	11-7/8"	1530	2010	1825	2140	3530	3985	3905	4465	
	14"	1530	2200	1895	2555	3755	4205	4105	4745	
	16"	1530	2385	1955	2950	3985	4410	4300	5010	
LPI 42Plus	9-1/2"	1830	2060	2060	2060	4575	4885	4575	5045	2450
	11-7/8"	2020	2445	2520	2550	4765	5270	4875	5550	
	14"	2020	2555	2520	2890	4950	5625	5155	6005	
	16"	2020	2840	2520	3190	5120	5960	5420	6440	

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

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"

NOTES:

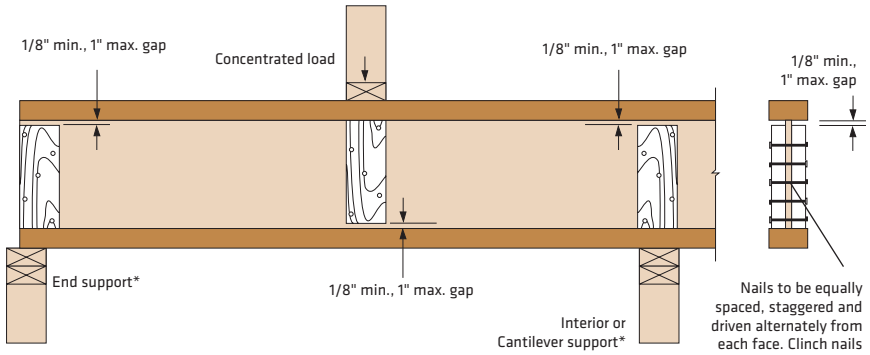
1. Use only 2-1/2" or 3" box nails when securing an LPI floor or roof joist to its supports.

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

* 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 Web Stiffener Requirements for minimum stiffener thickness, maximum stiffener height and required nailing.

SIMPSON STRONG-TIE®

Series	Depth	Top-Mount		Face-Mount		45˚ Skewed	Rafter-To-Ridge	Rafter-To-Plate
		Single	Double	Single	Double	Single	Single	Single
LPI 20Plus	9-1/2"	ITT39.5	MIT39.5-2	IUT310	HU310-2*	SUR/L310*	LSSUH310*	VPA3
	11-7/8"	ITT311.88	MIT311.88-2	IUT312	HU312-2*	SUR/L310*	LSSUH310*	VPA3
	14"	ITT314	MIT314-2	IUT314	HU314-2*	SUR/L314*	LSSUH310*	VPA3
LPI 32Plus	9-1/2"	ITT39.5	MIT39.5-2	IUT310	HU310-2*	SUR/L310*	LSSUH310*	VPA3
	11-7/8"	ITT311.88	MIT311.88-2	IUT312	HU312-2*	SUR/L310*	LSSUH310*	VPA3
	14"	ITT314	MIT314-2	IUT314	HU314-2*	SUR/L314*	LSSUH310*	VPA3
	16"	ITT316	WPI316-2*	IUT316	HU314-2*	SUR/L314*	LSSUH310* **	VPA3
LPI 42Plus	9-1/2"	ITT49.5	B7.12/9.5	IUS3.56/9.5	HU410-2*	SUR/L410*	LSSU410*	VPA4
	11-7/8"	ITT411.88	B7.12/11.88	IUS3.56/11.88	HU412-2*	SUR/L410*	LSSU410*	VPA4
	14"	ITT414	B7.12/14	IUS3.56/14	HU414-2*	SUR/L414*	LSSU410*	VPA4
	16"	ITT416	B7.12/16	IUS3.56/16	HU414-2*	SUR/L414*	–	VPA4

The above connectors are manufactured by Simpson Strong-Tie Co., Inc.
To verify connector suitability for a particular application, refer to the current Simpson Strong-Tie Connector catalog.

USP STRUCTURAL CONNECTORS®

Series	Depth	Top-Mount		Face-Mount		45˚ Skewed	Rafter-To-Ridge	Rafter-To-Plate[3]
		Single	Double	Single	Double	Single	Single	Single
LPI 20Plus	9-1/2"	THO25950	THO25950-2*	THF25925	THF25925-2*	SKH310R/L*	TMU25*	TMP25 or TMPH25*
	11-7/8"	THO25118	THO25118-2*	THF25112	THF25112-2*	SKH312R/L*	TMU25*	TMP25 or TMPH25*
	14"	THO25140	THO25140-2*	THF25140	THF25140-2*	SKH312R/L*	TMU25*	TMP25 or TMPH25*
LPI 32Plus	9-1/2"	THO25950	THO25950-2*	THF25925	THF25925-2*	SKH310R/L*	TMU25*	TMP25 or TMPH25*
	11-7/8"	THO25118	THO25118-2*	THF25112	THF25112-2*	SKH312R/L*	TMU25*	TMP25 or TMPH25*
	14"	THO25140	THO25140-2*	THF25140	THF25140-2*	SKH312R/L*	TMU25*	TMP25 or TMPH25*
	16"	THO25160	THO25160-2*	THF25160	THF25160-2*	SKH312R/L*	TMU25* **	TMP25 or TMPH25*
LPI 42Plus	9-1/2"	THO35950	BPH7195*	THF35925	HD7100*	SKH410L/R[1]*	LSSH35*	TMP4 or TMPH4*
	11-7/8"	THO35118	BPH71118*	THF35112	HD7120*	SKH410L/R[1]*	LSSH35*	TMP4 or TMPH4*
	14"	THO35140	BPH7114*	THF35140	HD7140*	SKH414L/R[1]*	LSSH35*	TMP4 or TMPH4*
	16"	THO35160	BPH7116*	THF35157	HD7160*	SKH414L/R[1]*	LSSH35R[2]*	TMP4 or TMPH4*

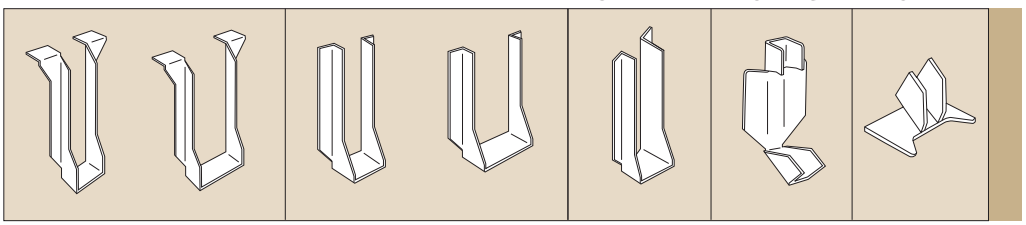
1. Miter cut required on end of joist to achieve design loads.
2. LSTA24 strap required along top chord for lateral restraint.
3. TMP35 adjusts from 1/12 to 6/12 pitch.
   TMPH35 adjusts from 6/12 to 14/12 pitch.

The above connectors are manufactured by USP (United Steel Products Company).
To verify connector suitability for a particular application, refer to the current USP Lumber Connectors catalog.

GENERAL NOTES:

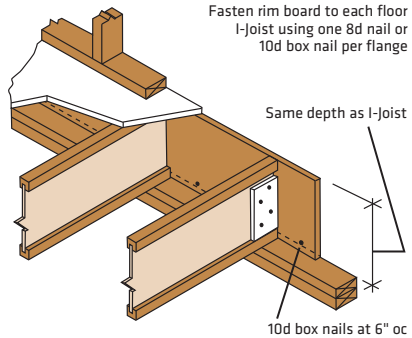
* Web fillers required for proper installation of hanger. Refer to the Engineered Wood Product Guide for filler sizes.

** Hanger is less than 60% of joist depth. Additional rotation resistance is required. Refer to the appropriate hanger manufacturer's catalog for details.



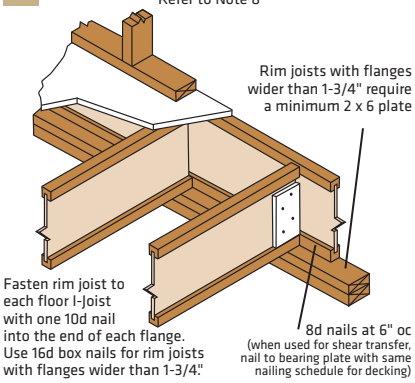
Floor Details

A1 RIM BOARD

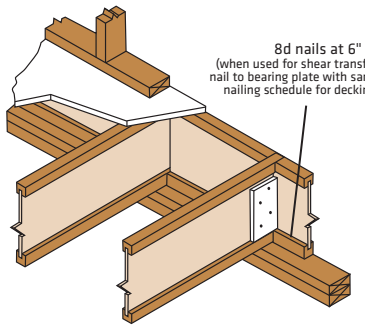


A2 RIM JOIST

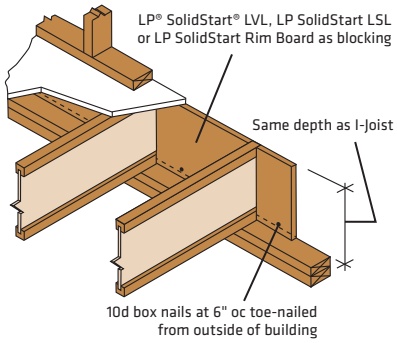
Refer to Note 8



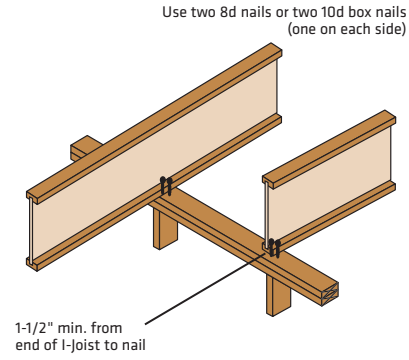
A3 BLOCKING AT EXTERIOR WALL



A4 SOLID BLOCKING AT EXTERIOR WALL

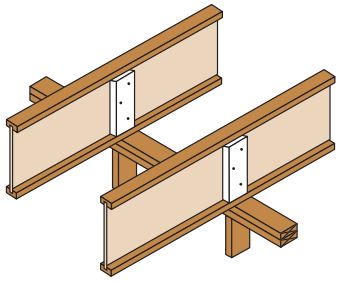


A5 JOIST SUPPORT NAILING



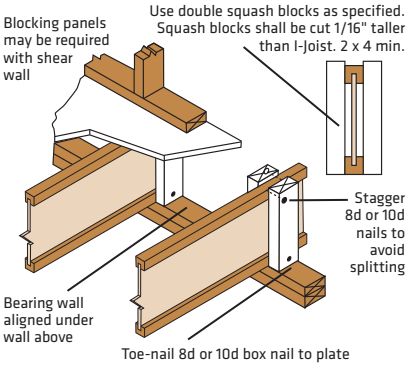
B1 WEB STIFFENERS AT INTERIOR SUPPORT

(When Required)



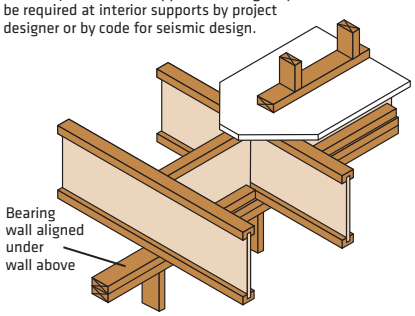
Verify stiffener requirements (see Web Stiffener detail)

B2 SQUASH BLOCKS

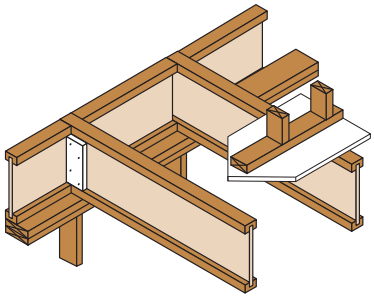


B3 BLOCKING AT INTERIOR SUPPORT

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.

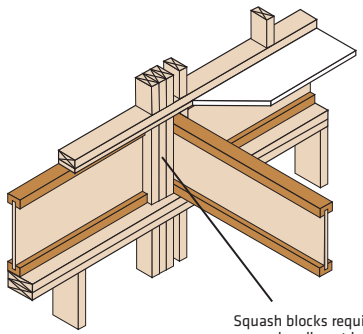


NON-STACKING WALLS

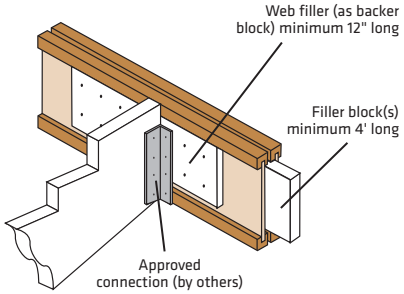


LP SolidStart I-Joists shall be designed to carry all applied loads including walls from above that do not stack directly over the I-Joist support.

D2 POST LOADS



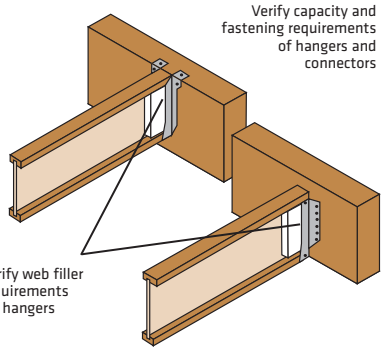
E1 STAIR STRINGER



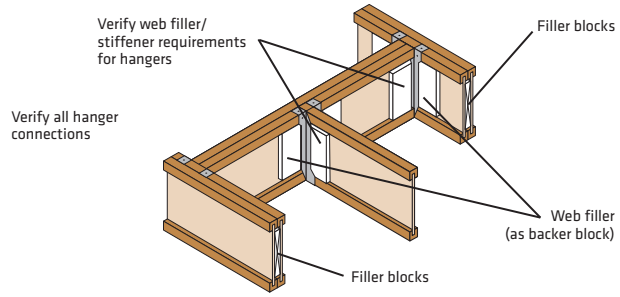
See I-Joist Header Cross-Section for connection information of the filler and backer blocks

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

E2 HANGER DETAIL



E3 I-JOIST HEADER

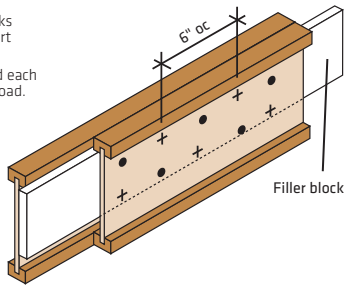


See I-Joist Header Cross-Section for information on attaching web fillers and filler blocks

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

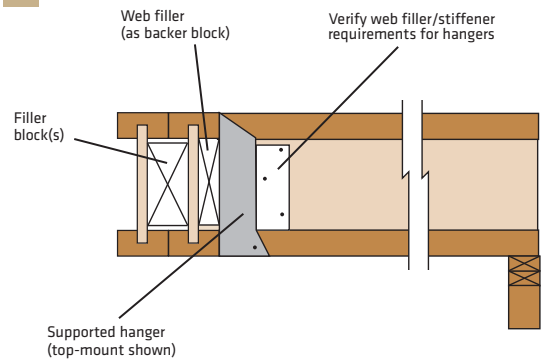
E5 DOUBLE I-JOIST CONNECTION

- 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 Header Cross-Section for filler block and web filler sizes

E4 I-JOIST HEADER CROSS-SECTION



Web Filler (as Backer Block): Install tight to top flange for top-mount hangers (shown) or tight to bottom flange for face-mount hangers. Backer blocks shall be at least 12" long and located behind every supported hanger. For a single I-Joist header, install backer block to both sides of the web behind each supported hanger.

Filler Blocks: Install in minimum 4' sections at each support, centered behind each supported hanger and at no more than 8' oc.

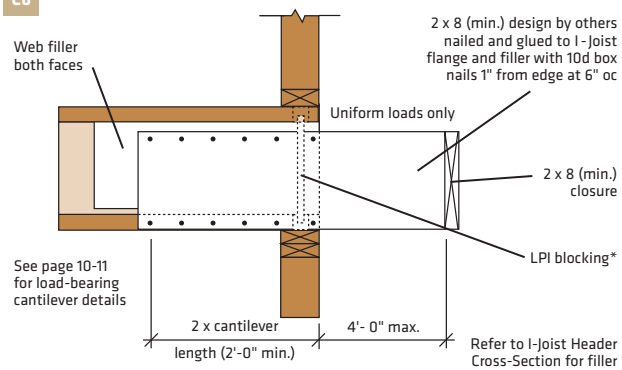
Attach web fillers and filler blocks with 2 rows of 8d nails or larger (10d or larger for flanges wider than 2-1/2") at 6" oc. For the filler blocks, nail through the web of both joists into the block. Clinch nails where possible.

NOTE: Cut web fillers and filler blocks at least 1/8" less than clear distance between flanges to avoid forcing into place.

I-JOIST FILLER SCHEDULE

Depth	Series	Filler Block	Web Filler
9-1/2" & 11-7/8"	LPI 20Plus LPI 32Plus	2 x 6 + 19/32" OSB	1" OSB
	LPI 42Plus	(2) 2 x 6	2 x 6
14" & 16"	LPI 20Plus LPI 32Plus	2 x 8 + 19/32" OSB	1" OSB
	LPI 42Plus	(2) 2 x 8	2 x 8

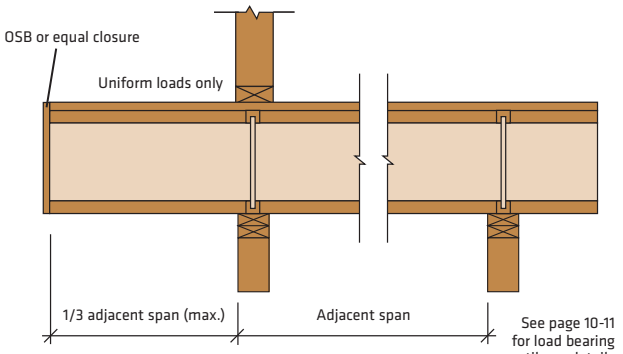
C6 STEP-DOWN CANTILEVER



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

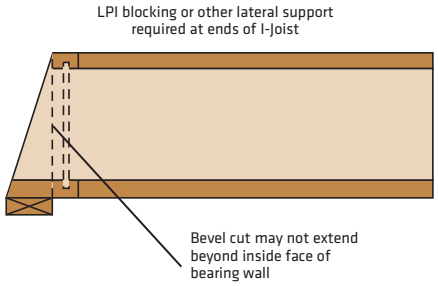
*Rim Board, LSL or LVL may be substituted for the LP blocking

NON LOAD-BEARING CANTILEVER



See page 10-11 for load bearing cantilever details

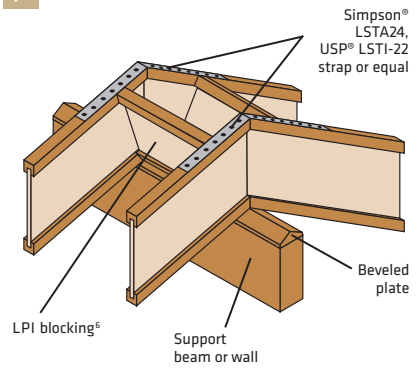
BEVEL CUT/FIRE CUT



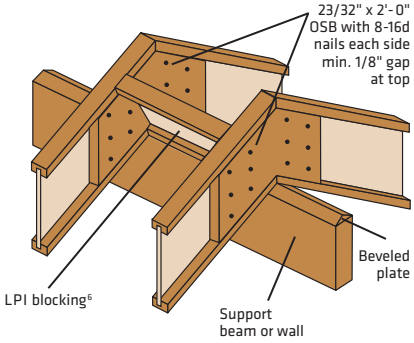
NOTES:

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 16 for bearing length requirements.
4. Refer to page 16 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 rim joists with flanges wider than 2-1/2".

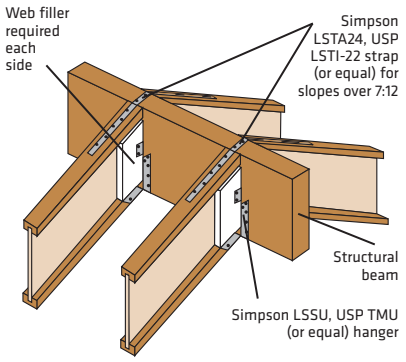
J1 RAFTER CONNECTION



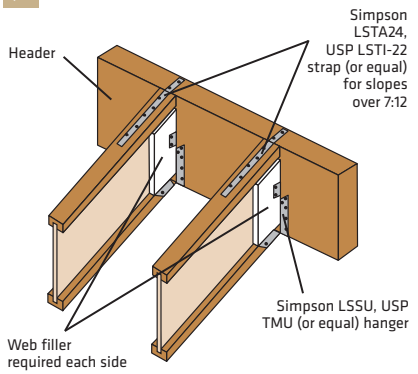
J2 RAFTER CONNECTION WITH FITTED OSB GUSSET



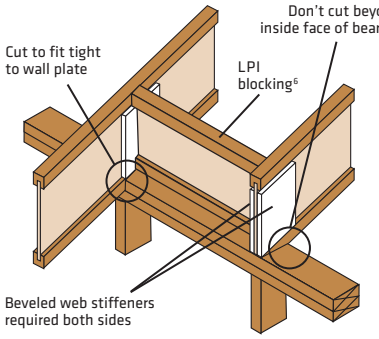
J3 RIDGE RAFTER CONNECTION



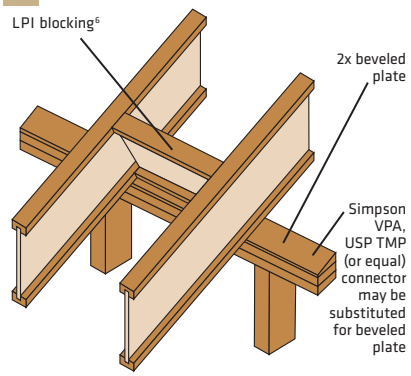
J4 HEADER CONNECTION



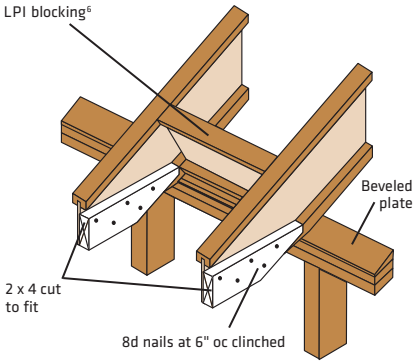
H1 BIRD'S MOUTH (Lower bearing only)



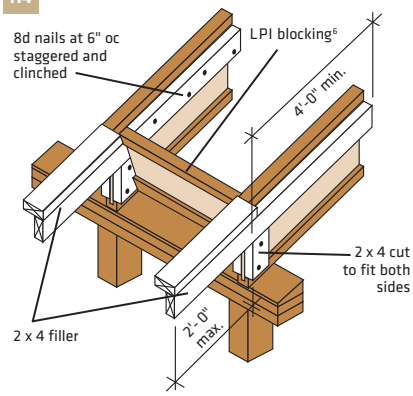
H2 BEVELED PLATE



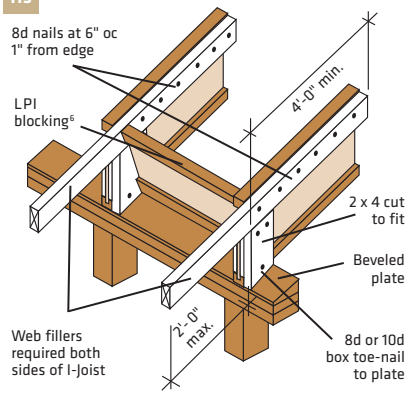
H3 FLAT SOFFIT (Fascia Support)



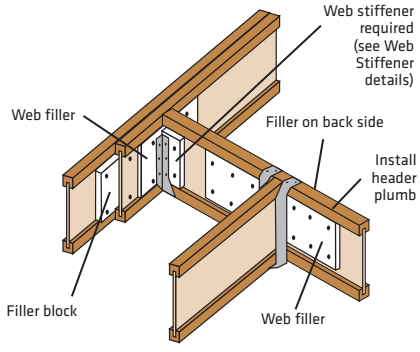
H4 OVERHANG



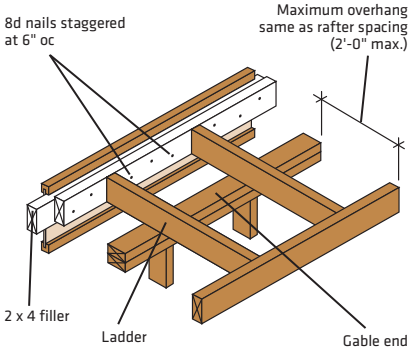
H5 OVERHANG



K1 ROOF OPENING HANGER CONNECTIONS



K2 OUTRIGGER



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. 4" diameter hole(s) 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.

Product Description

LP SolidStart OSB Rim Board is intended for use as an integral component of LP's engineered wood framing systems.

Basic Uses

LP SolidStart OSB Rim Board is designed to be used with LP SolidStart I-Joists and LP SolidStart LVL and LSL beams to support vertical and lateral wall loads as part of a floor or roof framing system.

Materials & Fabrication

- LP SolidStart OSB Rim Board is fabricated from oriented strand board, which is precision cut to match the depths of LP SolidStart I-Joists.
- LP SolidStart OSB Rim Board is dimensionally stable with flat surfaces for easier installation of siding.
- LP SolidStart OSB Rim Board is manufactured in lengths of 12' and 16', making installation faster by reducing joining. Since the rim board is precut, its use eliminates inaccuracies and time involved in ripping plywood rim.
- LP SolidStart OSB Rim Board has a high load capacity that permits the elimination of squash blocks in most multi-story applications.

Technical Specifications

- LP SolidStart OSB Rim Board is manufactured and trademarked in accordance with the Performance Standard for APA EWS Rim Boards (PRR-401). In addition to PRR-401, refer to APA Performance Rated Rim Boards – Canadian Limit States Design (Form No. D340 CA) for additional technical details about LP SolidStart OSB Rim Board.
- LP SolidStart OSB Rim Board may be used to span short openings up to 4' in length (see Factored Header Loads table below). Otherwise, LP SolidStart OSB Rim Board shall be supported by continuous structural bearing. Refer to APA Performance Rated Rim Boards – Canadian Limit States Design (Form No. D340 CA) for additional pertinent information.
- The maximum factored concentrated load for all thicknesses and depths is 5850 lbs. and is based on a 4-1/2" bearing length.

Fastener Values

- Nail Values: For nails installed into the wide face of LP SolidStart 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 16d (3-1/2" common) nails from the sole plate above into the top edge of the rim, the deck nailing shall be at least 6" oc and the 16d (3-1/2" common) nails shall be spaced in accordance with the prescriptive requirements of the applicable code.
- 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:
  - → 495 lbs. for 1" Rim Board
  - → 585 lbs. for 1-1/8" Rim Board

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

RIM BOARD CAPACITIES

Thickness	Factored Vertical Load Capacity			Factored Lateral Load Capacity (plf)
	Uniform (plf)		Concentrated (lbs)	
	d ≤ 16"	16" < d ≤ 24"	d ≤ 24"	
1"	5504	2752	5838	234
1-1/8"	7339	5004	5838	234

NOTES:

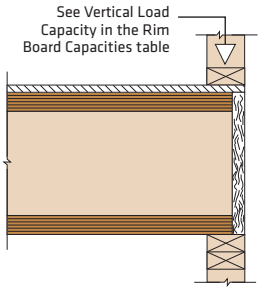
1. The Factored Capacities are based on standard load duration and shall be adjusted for other durations in accordance with the applicable codes.
2. The Lateral Load Capacity is based on the connections specified in the Installation details below.
3. The Vertical Load Capacity is based on the strength of the OSB rim and may need to be reduced based on the bearing capacity of the supporting wall plate or the attached floor sheathing.

RIM BOARD WEIGHTS BY THICKNESS (PLF)

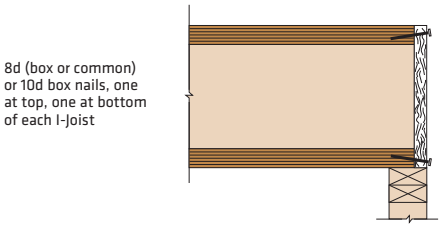
Thickness	Rim Board Depth			
	9-1/2"	11-7/8"	14"	16"
1"	2.6	3.2	3.8	4.3
1-1/8"	2.9	3.6	4.3	4.8

INSTALLATION

MAXIMUM LOAD

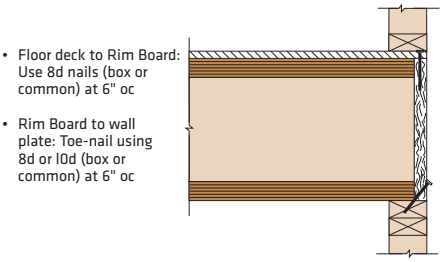


RIM TO JOIST CONNECTION



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

RIM TO DECK/PLATE CONNECTION



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.

FACTORED HEADER LOADS (PLF) – 4' MAX CLEAR SPAN

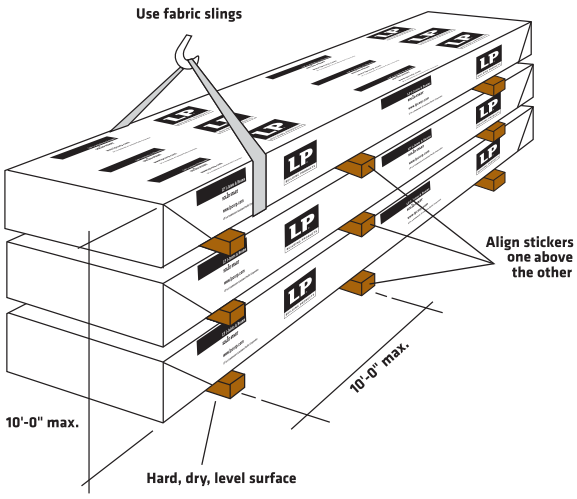
Thickness	Rim Board Depth			
	9-1/2"	11-7/8"	14"	16"
1"	568	719	849	973
1-1/8"	726	1007	1206	1384

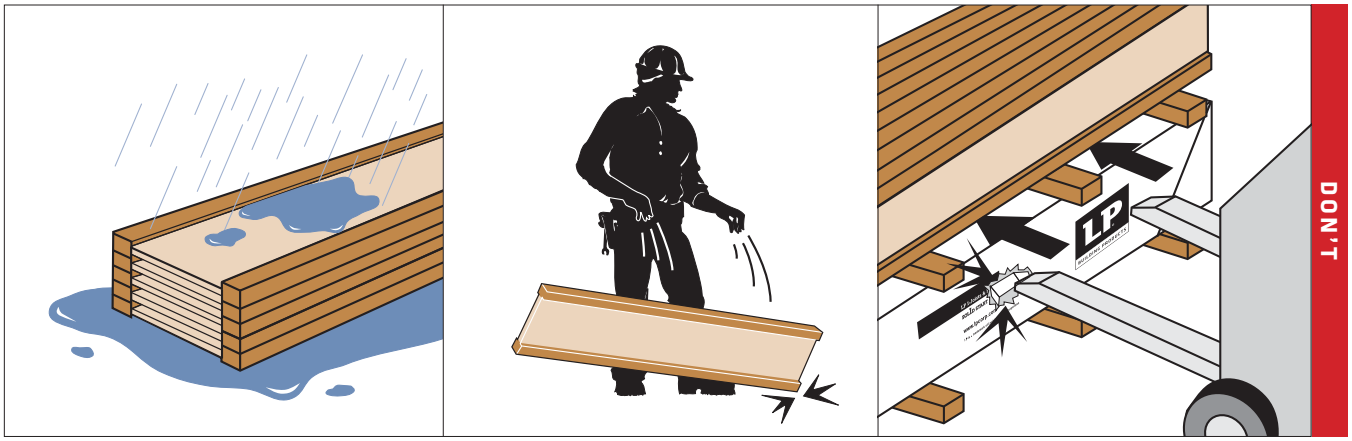
NOTES:

1. The tabulated values are for uniform loads only with a maximum clear span of 4'.
2. The loads assume standard (100%) duration and shall not be increased for loads of shorter duration.
3. Refer to APA Performance Rated Rim Boards - Canadian Limit States Design (Form No. D340 CA) for additional information.
4. The use of this table is for preliminary design. The final design shall include an analysis of bearing stresses and lateral stability.

Handling and Storage Guidelines and Warnings

- Warning: Failure to follow good procedures for handling, storage and installation could result in unsatisfactory performance, unsafe structures and possible collapse.
- Keep LP® SolidStart® Engineered Wood Products dry.
- 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%.

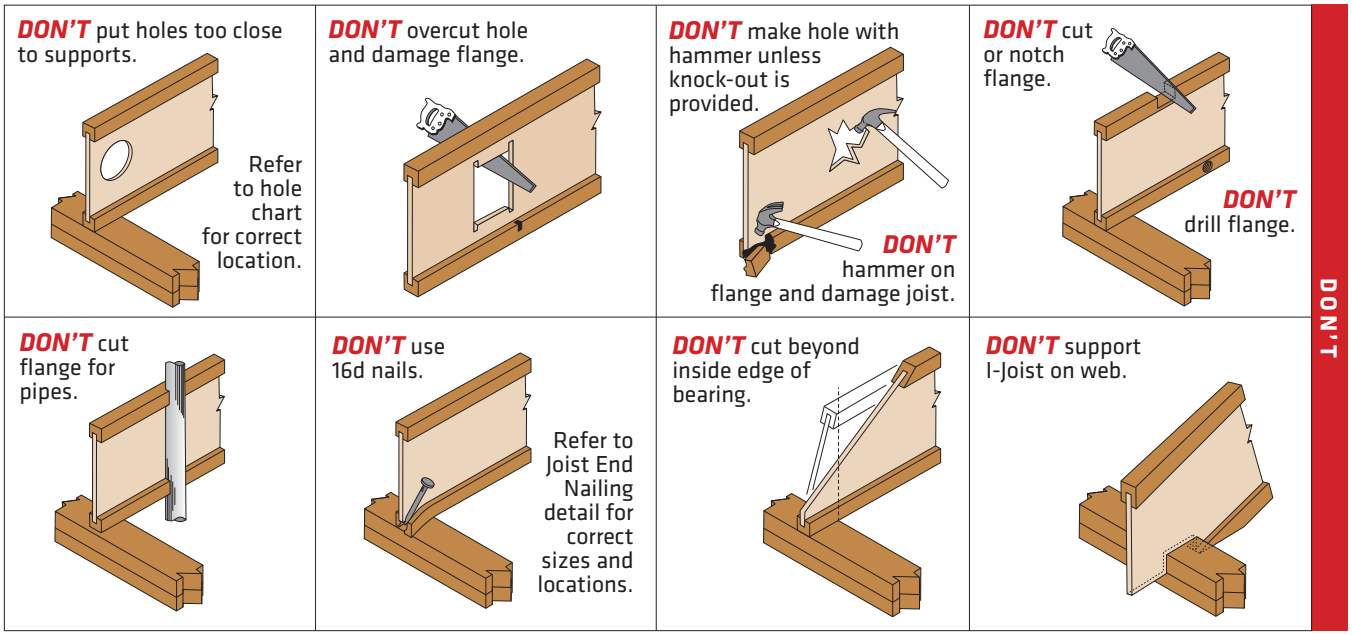




WARNINGS

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.



LP SolidStart®
ENGINEERED WOOD 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) or 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, meet or exceed LP manufacturing standards and when stored, handled, designed, installed and maintained in accordance with LP current published specifications and applicable code requirements will, for the life of the structure, (a) perform as reasonably required of I-Joists, Laminated Veneer Lumber, Laminated Strand Lumber and Rim Board, and (b) exhibit no defects which are defined as delaminations or joint failures.

Delamination is a visible separation between the primary wood elements of the Product which results in the reduction of structural strength. Delamination is limited to separations (a) within the matrix of flakes of Laminated Strand Lumber, OSB Rim Board or the web of an I-Joist, or (b) 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. I-Joist joint failure is limited to (a) web-to-web separation, or (b) 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 do not qualify as defects and are not covered by this warranty.

System. LP further warrants that its LP TopNotch 250, 350 and 450 Series sub-flooring products, when incorporated in a floor system with exclusively LP SolidStart products, are included within the definition of Products in this warranty. In such event, the respective length of the warranty of the sub-flooring products used in the floor system shall be extended to the life of the structure subject to and incorporating herein all other terms and conditions in each such warranty. (For LP TopNotch product warranty terms, please call us or visit www.lpcorp.com.)

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: (1) MISUSE OR IMPROPER HANDLING, INSTALLATION OR MAINTENANCE; (2) ALTERATIONS TO THE STRUCTURE AFTER THE ORIGINAL INSTALLATION OF THE PRODUCTS; (3) ACTS OF GOD, SUCH AS EARTHQUAKE, TORNADO, FLOOD OR OTHER SIMILAR SEVERE WEATHER OR SIMILAR NATURAL PHENOMENA; (4) TRANSPORT, STORAGE OR HANDLING OF THE PRODUCTS PRIOR TO INSTALLATION.

b. PRODUCTS THAT ARE NOT INSTALLED IN COMPLIANCE WITH ALL APPLICABLE BUILDING CODES OR NOT INSTALLED AND MAINTAINED ACCORDING TO LP PRINTED INSTALLATION AND MAINTENANCE INSTRUCTIONS;

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 PROVIDES 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, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY DEFECT 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: 800.648.6893 Visit our web site at www.lpcorp.com.

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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