



## TECHNICAL GUIDE FOR RESIDENTIAL FLOORS AND ROOFS

### FEATURING

- LP® SOLIDSTART™ I-JOISTS
- LP® SOLIDSTART™ LVL
- LP® SOLIDSTART™ LSL
- LP® SOLIDSTART™ RIM BOARD





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## Designed to Outperform Traditional Timber

### LP® SOLIDSTART™ I-JOISTS



LP SolidStart I-Joists make true and uniform floors and ceilings possible for residential and commercial construction. Machine made for precise, straight lines that stay straight, they are lighter yet stronger than traditional timber joists and less likely to split, shrink, twist, warp or bow. LP SolidStart I-Joists\* are lightweight and available in longer lengths and deeper depths than traditional timber, resulting in design freedom.

### LP® SOLIDSTART™ LVL



Delivering a greater load carrying capacity than traditional softwood timber, LP SolidStart LVL provides consistent dimensions, enhanced durability and reduced shrinkage. An improvement over solid timber, LP SolidStart LVL\* minimizes problems that naturally occur as traditional timber dries, such as twisting, splitting, checking, bowing and warping.

### LP® SOLIDSTART™ LSL



The consistency and strength of LP SolidStart LSL means a more predictable and uniform structure. With wider widths, there's no need to spend extra time and material building up beams or headers. LP SolidStart LSL has many advantages over traditional softwood timber products including better fastener connections, consistency, straightness, predictability and increased design flexibility.

### LP® SOLIDSTART™ RIM BOARD



Precision cut to work perfectly with LP SolidStart I-Joist, LVL and LSL beams, LP SolidStart Rim Board is ideal for supporting vertical and lateral wall loads as part of a floor or roof framing system. LP SolidStart Rim Board is available in long 4.88m lengths and eliminates the need for discretionary blocking.



## SUSTAINABLE FORESTRY INITIATIVE

*Good for you. Good for our forests.®*

### IT'S MORE THAN OUR PRODUCTS. IT'S THE WAY WE DO BUSINESS.

At LP Building Products, we're proud to offer integrated building solutions that work together to save you time and money, and we're proud that our products offer so many environmental benefits. But something else sets us apart: the way we do business. We believe that "sustainability" means acting in a way that protects the environment, embraces social responsibilities, and builds economic prosperity today and for future generations. That is why we set a higher standard by using certified procurement systems. Our systems are certified by the same third-party that certifies sustainable forestlands and it ensures our timber comes from non-controversial sources.

LP® SOLIDSTART™

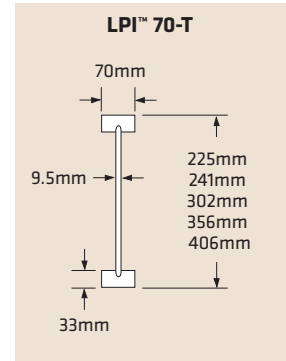
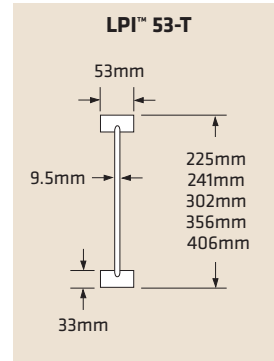
**LIFETIME**  
**LIMITED WARRANTY**

**Australian builders can offer their customers the peace of mind that comes with warranties that support quality products from LP Building Products. LP will cover all reasonable repair and/or replacement cost as per the conditions of our limited warranties.**

Visit [LPCorp.com/AU](http://LPCorp.com/AU) to see complete warranties or contact your local LP® SolidStart™ Engineered Wood Products distributor or sales office for more information.



DESIGN VALUES						
Series	Depth (mm)	Weight	Moment	Shear	El <sub>xx</sub> x10 <sup>6</sup>	G <sub>w</sub> A <sub>w</sub> x10 <sup>5</sup>
		(kg/m)	(kN-m)	(kN)	(N-mm <sup>2</sup> )	(N)
LPI™ 53-T	225	3.25	10.5	12.4	488	2990
	241	3.35	11.4	13.3	574	3190
	302	3.75	14.7	15.7	967	3940
	356	4.11	17.4	17.7	1412	4620
	406	4.45	19.9	19.7	1911	5260
LPI™ 70-T	225	3.97	14.2	12.4	651	3040
	241	4.07	15.4	13.3	769	3240
	302	4.48	19.9	15.7	1286	4000
	356	4.84	23.6	17.7	1871	4690
	406	5.18	27.0	19.7	2528	5340



**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 moisture content in timber will not exceed 16%.
2. Moment and Shear values shall be adjusted by k1 for load duration from AS1720.1.
3. Moment cannot be increased using k9 greater than 1.0.
4. Deflection calculations shall include both bending and shear deformations.

$$\text{Deflection for a simple span, uniform load: } \Delta = \frac{5wL^4}{384EI} + \frac{wL^2}{G_w A_w}$$

Where:  
 Δ = deflection (mm)  
 EI = bending stiffness (from table)  
 w = uniform load (kN/m)  
 GA = G<sub>w</sub>A<sub>w</sub>  
 L = design span (mm)

Equations for other conditions can be found in engineering references.

REACTION AND BEARING CHARACTERISTIC VALUES						
Series	Depth (mm)	End Supports (kN)		Interior Supports (kN)		Flange Bearing (N/mm)
		W/out Stiffeners	With Stiffeners	W/out Stiffeners	With Stiffeners	
LPI™ 53-T	225	9.3	11.5	20.7	22.6	370
	241	9.3	11.9	20.7	23.0	
	302	9.3	13.1	20.9	24.5	
	356	9.3	14.2	20.9	25.8	
	406	9.3	15.3	21.0	27.1	
LPI™ 70-T	225	9.5	11.6	21.7	24.1	500
	241	9.5	12.0	22.0	24.4	
	302	9.5	13.4	22.9	25.5	
	356	9.5	14.7	23.7	26.5	
	406	9.5	15.9	24.5	27.5	

**HR Design Group Pty Ltd**  
1001 1001 1001

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10 April 2012  
 File: 12-0129  
(Please quote this number when calling the office to receive details on the project)

**Attn: Al Huber**  
 Louisa Pacific Corporation

**Ref: Certification for LP Building Products in Australia**

Dear Al:

The final design values that we recommend for the Australian market are listed on pages 4.8 and 7 of the 2012 LP Australian Technical Guide for Residential Floors and Roofs and in HR Design Qualification Report. These characteristic design values have been assessed from recognized testing laboratories approved in the USA, and this qualification data assessed by our engineers, in accordance with the statutory procedures of AS/NZS 4357:2010, AS/NZS 4357:2006 (for LVL).

The products included in this assessment have been: LPI™ I-Joist 53T and 70T, using ASTM D5055-08a, and ISO/TC 185 / SC 1, LP™ LVL E10 Grade (Laminated Strand Lumber) using ASTM 2449-08, AS/NZS 4357:2006 and finally LP™ LVL E10, E13, E14 Grade using AS/NZS 4357:2006.

Also used in the development of the Installation Guide, were the following standards:

- AS1720.1: 2010 Timber Design Code
- AS/NZS 1170 series – Loading Code
- AS 1884.1-1999 Residential Timber Framed Construction – Design Code
- AS 1884.2: 3, 4 – 2010 Residential Timber Framed Construction
- AS 4555:2006 Wind Loads for Housing

Therefore, I certify that the characteristic values, with all products included in this manual, and the terms installed and connected in accordance with the requirements set out throughout this manual, the items will comply with the requirements of the Building Code of Australia, and Australian building practice.

Should you require any further information, or confirmation of any of the above matters, please do not hesitate to contact me at any time.

Yours faithfully,  
**HUNT ROBINSON Pty Ltd**

**Stephen John Hunt BEng (Civil), CPEng**  
(NSR-404 8368737), (PREQ 43771), (NSR)

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Design, project, sales and engineering together

**NOTES**

1. End and Interior Reaction Capacity shall be limited by the Flange Bearing Capacity or the bearing capacity of the support material, whichever is less. The Flange Bearing Capacity, per mm of bearing length, is based on the compression perpendicular-to-grain of the I-joist flange, accounting for raised edges (subtract 2.5mm from the flange width), and may be further limited by the bearing strength of the support material. The bearing capacity of a timber support is based on the species of the timber or type of composite timber. For Radiata Pine (12 MPa), the Flange Bearing Capacity for the LPI™ 20 may be used.
2. Reaction Capacity is for instantaneous load duration and shall be adjusted using k1.
3. The reaction and bearing table values are based on a minimum bearing length of 38mm for end supports and 63mm for intermediate or cantilever supports.
4. No end support reaction increase for web stiffeners when detail F5 is used.

DESIGN CHARACTERISTIC VALUES									
Product	Grade	Density	Modulus of Elasticity E	Modulus of Rigidity G	Bending <sup>2</sup> f <sub>b</sub>	Shear f <sub>v</sub>	Compression Perp-to-Grain f <sub>p</sub>	Parallel-to-Grain	
		kg/m <sup>3</sup>	MPa	MPa	MPa	MPa	MPa	Compression f <sub>c</sub>	Tension f <sub>t</sub>
LSL (LVL)	E10	745 (660)	10000	500	32	5.3	12	28	20
LVL	E13	660	13200	660	38	5.3	12	31	25
LVL	E14 (F17)	660	14000	700	42	5.3	12	42	25

**NOTES:**

- Design values for E, G, f<sub>b</sub>, f<sub>v</sub> and f<sub>c</sub> are for loads applied to the edge of the member ("Beam" orientation), parallel to the face of the strands (LSL) or veneers (LVL).
- f<sub>b</sub> is for 300 depth (d). For depths other than 300mm, use k11 shape factor from AS1720.1
- The values above are for instantaneous load duration. Bending (f<sub>b</sub>), Shear (f<sub>v</sub>), Compression Perpendicular-to-Grain (f<sub>p</sub>), Compression (f<sub>c</sub>) Parallel-to-Grain and Tension (f<sub>t</sub>) Parallel-to-Grain may be adjusted by k1 factor in accordance with AS1720.1. Modulus of Elasticity (E) and Modulus of Rigidity (G) shall NOT be adjusted.

**LSL AND LVL FASTENER VALUES:**

For all connections, use a joint strength grade of JD4 and all nail, screw and bolt capacities in accordance with AS1720.1, or manufacturer's specifications, where appropriate, for JD4 material.

SECTION PROPERTIES													
Product	Depth (mm)	Weight <sup>1</sup> (kg/m <sup>3</sup> )			Moment of Inertia I <sub>xx</sub> x 10 <sup>6</sup> mm <sup>4</sup>			Moment of Inertia I <sub>yy</sub> x 10 <sup>6</sup> mm <sup>4</sup>			Torsion Constant J x 10 <sup>6</sup> mm <sup>4</sup>		
		35mm	45mm	89mm	35mm	45mm	89mm	35mm	45mm	89mm	35mm	45mm	89mm
E10 LSL (LVL)	90	2.35	3.02	5.97	2.13	2.73	5.41	0.32	0.68	5.29	0.97	1.87	7.97
	120	3.13	4.02	7.96	5.04	6.48	12.82	0.43	0.91	7.05	1.40	2.78	15.02
	130	3.39	4.36	8.62	6.41	8.24	16.29	0.46	0.99	7.64	1.54	3.09	17.37
	140	3.65	4.69	9.28	8.00	10.29	20.35	0.50	1.06	8.22	1.69	3.39	19.72
	150	3.91	5.03	9.95	9.84	12.66	25.03	0.54	1.14	8.81	1.83	3.70	22.07
	170	4.43	5.70	11.27	14.33	18.42	36.44	0.61	1.29	9.99	2.11	4.30	26.77
	190	4.95	6.37	12.60	20.01	25.72	50.87	0.68	1.44	11.16	2.40	4.91	31.47
	200	5.22	6.71	13.26	23.33	30.00	59.33	0.71	1.52	11.75	2.54	5.21	33.82
	225	5.87	7.54	14.92	33.22	42.71	84.48	0.80	1.71	13.22	2.90	5.97	39.70
	240	6.26	8.05	15.91	40.32	51.84	102.53	0.86	1.82	14.10	3.11	6.43	43.22
	241	6.28	8.08	15.98	40.83	52.49	103.81	0.86	1.83	14.16	3.13	6.46	43.46
	290	7.56	9.72	19.23	71.13	91.46	180.89	1.04	2.20	17.04	3.83	7.95	54.97
	300	7.82	10.06	19.89	78.75	101.25	200.25	1.07	2.28	17.62	3.97	8.25	57.32
	302	7.87	10.12	20.02	80.34	103.29	204.28	1.08	2.29	17.74	4.00	8.31	57.79
356	9.28	11.93	23.60	131.59	169.19	334.63	1.27	2.70	20.91	4.77	9.95	70.48	
360	9.39	12.07	23.87	136.08	174.96	346.03	1.29	2.73	21.15	4.83	10.07	71.42	
		35mm	45mm	63mm	35mm	45mm	63mm	35mm	45mm	63mm	35mm	45mm	63mm
E13 LVL (63mm) and E14 (F17) LVL (35mm and 45mm)	90	2.08	2.67	3.74	2.13	2.73	3.83	0.32	0.68	1.88	0.97	1.87	4.19
	120	2.77	3.56	4.99	5.04	6.48	9.07	0.43	0.91	2.50	1.40	2.78	6.69
	130	3.00	3.86	5.41	6.41	8.24	11.53	0.46	0.99	2.71	1.54	3.09	7.53
	140	3.23	4.16	5.82	8.00	10.29	14.41	0.50	1.06	2.92	1.69	3.39	8.36
	150	3.47	4.46	6.24	9.84	12.66	17.72	0.54	1.14	3.13	1.83	3.70	9.19
	170	3.93	5.05	7.07	14.33	18.42	25.79	0.61	1.29	3.54	2.11	4.30	10.86
	190	4.39	5.64	7.90	20.01	25.72	36.01	0.68	1.44	3.96	2.40	4.91	12.53
	200	4.62	5.94	8.32	23.33	30.00	42.00	0.71	1.52	4.17	2.54	5.21	13.36
	225	5.20	6.68	9.36	33.22	42.71	59.80	0.80	1.71	4.69	2.90	5.97	15.45
	240	5.54	7.13	9.98	40.32	51.84	72.58	0.86	1.82	5.00	3.11	6.43	16.70
	241	5.57	7.16	10.02	40.83	52.49	73.49	0.86	1.83	5.02	3.13	6.46	16.78
	290	6.70	8.61	12.06	71.13	91.46	128.04	1.04	2.20	6.04	3.83	7.95	20.86
	300	6.93	8.91	12.47	78.75	101.25	141.75	1.07	2.28	6.25	3.97	8.25	21.70
	302	6.98	8.97	12.56	80.34	103.29	144.60	1.08	2.29	6.29	4.00	8.31	21.86
	356	8.22	10.57	14.80	131.59	169.19	236.87	1.27	2.70	7.42	4.77	9.95	26.36
	360	8.32	10.69	14.97	136.08	174.96	244.94	1.29	2.73	7.50	4.83	10.07	26.70
	400	9.24	11.88	16.63	186.67	240.00	336.00	1.43	3.04	8.33	5.40	11.29	30.03
406	9.38	12.06	16.88	195.19	250.96	351.35	1.45	3.08	8.46	5.49	11.47	30.53	
450	10.40	13.37	18.71	265.78	341.72	478.41	1.61	3.42	9.38	6.12	12.81	34.20	
457	10.56	13.57	19.00	278.38	357.91	501.08	1.63	3.47	9.52	6.22	13.02	34.78	

**NOTES**

- The weight for E10 LSL (LVL) is based on the density of E10 LSL. To determine the weight for E10 LVL, multiply the tabulated values by 0.886.

MAXIMUM REACTION (kN)									
Product	Width (mm)	Bearing Length (mm)							
		35	45	63	70	85	90	120	140
LSL and LVL	35	18.9	26.5	29.4	35.7	37.8	50.4	58.8	
	45	24.3	34.0	37.8	45.9	48.6	64.8	75.6	
	63	34.0	47.6	52.9	64.3	68.0	90.7	105.8	
	89	48.1	67.3	74.8	90.8	96.1	128.2	149.5	

**HOW TO USE MAXIMUM REACTION CHART:**

- Determine the thickness required for the LP® SolidStart™ LSL and LP® SolidStart™ LVL beam and calculate the maximum reaction.
- Select the appropriate line based on bearing width.
- Using the appropriate Limit State Reactions for load combinations required evaluate the limit state reaction.
- Divide the reaction by the required phi value for domestic, primary or post disaster as per AS1720.1, for bearing.
- Divide the result also by the appropriate k1 load duration factor from AS1720.1 for the combination to be checked.
- Select a bearing length with a maximum reaction that meets or exceeds your calculated value.
- Make sure the support is structurally adequate to carry the reaction.

**EXAMPLE:** An 89mm LP® SolidStart™ LSL beam is required, and the Dead Load + Floor Live Load reaction is 42.2kN, with phi=0.9 and k1=0.8. The reaction to load up is 42.2 / (0.9 \* 0.8) = 58.6kN.

**SOLUTION:** The minimum bearing length required for this beam is 63mm.

**GENERAL NOTES:**

- Tabulated values are based on a support with a minimum edge bearing value of 12.0 MPa. This is suitable for beams bearing on steel or the end grain of studs.
- Make sure the support is structurally adequate to carry the reaction. Compressive strength parallel to grain of studs may require more studs than the bearing length above indicates.
- For beams bearing on timber top plates, the required bearing length may increase based on the bearing strength (compression perpendicular to grain) of the species and grade used for the top plate material.
- Verify AS1684 code requirements concerning minimum bearing.

**ADDITIONAL NOTES:**

- Minimum bearing length is 45mm at end supports and 63mm at intermediate supports. Span tables may be based on longer bearing lengths.
- Capacity reduction factor phi = 0.9 for domestic houses. For primary structures use 0.85 and 0.8 for post disaster structures.
- Lateral support of beam compression edge is required at intervals of 600mm centres or closer.
- Values shown throughout this brochure are applicable to untreated LP® SolidStart™ LSL in dry-service conditions only.
- All modification factors, including k11, are per AS 1720.1, section 8.4. Values and design rules for LVL material may be applied for LSL beams.
- Joint group, classification: JD4.
- For values of modification factors other than those shown in this guide, contact your LP representative.
- Section properties are based on the actual member size. Width and depth shown in the table are converted from actual sizes and may vary by +/- 0.5mm.

**SINGLE SPAN - MAXIMUM ALLOWABLE SPANS (m)**

Tile Floor 100 kg/m <sup>2</sup> Dead Load	Joist Size (mm)	300			400			450			480			600		
		E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14
		90x35	1.7	1.9	2.0	1.6	1.7	1.8	1.5	1.7	1.7	1.5	1.6	1.7	1.4	1.5
120x35	2.3	2.6	2.6	2.1	2.3	2.4	2.0	2.2	2.3	2.0	2.2	2.2	1.9	2.0	2.1	
130x35	2.5	2.8	2.8	2.3	2.5	2.6	2.2	2.4	2.5	2.2	2.4	2.4	2.0	2.2	2.3	
140x35	2.7	3.0	3.0	2.5	2.7	2.8	2.4	2.6	2.7	2.3	2.6	2.6	2.2	2.4	2.4	
150x35	2.9	3.2	3.3	2.7	2.9	3.0	2.6	2.8	2.9	2.5	2.8	2.8	2.3	2.6	2.6	
170x35	3.3	3.6	3.7	3.0	3.3	3.4	2.9	3.2	3.3	2.8	3.1	3.2	2.6	2.9	3.0	
190x35	3.7	4.0	4.1	3.4	3.7	3.8	3.2	3.6	3.6	3.2	3.5	3.6	2.9	3.2	3.3	
200x35	3.9	4.3	4.3	3.5	3.9	4.0	3.4	3.7	3.8	3.3	3.7	3.7	3.1	3.4	3.5	
225x35	4.3	4.7	4.8	4.0	4.4	4.5	3.8	4.2	4.3	3.7	4.1	4.2	3.5	3.8	3.9	
240x35	4.6	4.9	5.0	4.2	4.6	4.7	4.1	4.5	4.5	4.0	4.4	4.5	3.7	4.1	4.2	
241x35	4.6	4.9	5.0	4.2	4.6	4.7	4.1	4.5	4.6	4.0	4.4	4.5	3.7	4.1	4.2	
290x35	5.2	5.6	5.7	4.9	5.3	5.4	4.8	5.1	5.2	4.7	5.1	5.1	4.5	4.8	4.9	
300x35	5.4	5.8	5.9	5.0	5.4	5.5	4.9	5.3	5.4	4.8	5.2	5.3	4.6	4.9	5.0	
302x35	5.4	5.8	5.9	5.1	5.4	5.5	4.9	5.3	5.4	4.9	5.2	5.3	4.6	5.0	5.0	
90x45	1.9	2.1	2.1	1.7	1.9	1.9	1.7	1.8	1.9	1.6	1.8	1.8	1.5	1.7	1.7	
120x45	2.5	2.8	2.8	2.3	2.5	2.6	2.2	2.4	2.5	2.2	2.4	2.4	2.0	2.2	2.3	
130x45	2.7	3.0	3.1	2.5	2.7	2.8	2.4	2.6	2.7	2.4	2.6	2.6	2.2	2.4	2.5	
140x45	2.9	3.2	3.3	2.7	3.0	3.0	2.6	2.8	2.9	2.5	2.8	2.8	2.4	2.6	2.6	
150x45	3.1	3.5	3.5	2.9	3.2	3.2	2.8	3.0	3.1	2.7	3.0	3.0	2.5	2.8	2.8	
170x45	3.6	3.9	4.0	3.3	3.6	3.7	3.1	3.5	3.5	3.1	3.4	3.5	2.9	3.2	3.2	
190x45	4.0	4.4	4.5	3.6	4.0	4.1	3.5	3.9	3.9	3.4	3.8	3.9	3.2	3.5	3.6	
200x45	4.2	4.6	4.6	3.8	4.2	4.3	3.7	4.1	4.1	3.6	4.0	4.1	3.4	3.7	3.8	
225x45	4.6	5.0	5.0	4.3	4.7	4.7	4.1	4.5	4.6	4.1	4.5	4.5	3.8	4.2	4.2	
240x45	4.8	5.2	5.3	4.5	4.9	4.9	4.4	4.7	4.8	4.3	4.7	4.7	4.0	4.4	4.5	
241x45	4.8	5.2	5.3	4.5	4.9	5.0	4.4	4.8	4.8	4.3	4.7	4.8	4.0	4.5	4.5	
290x45	5.5	6.0	6.0	5.2	5.6	5.7	5.1	5.5	5.5	5.0	5.4	5.5	4.7	5.1	5.2	
300x45	5.7	6.1	6.2	5.3	5.7	5.8	5.2	5.6	5.7	5.1	5.5	5.6	4.9	5.2	5.3	
302x45	5.7	6.1	6.2	5.3	5.8	5.8	5.2	5.6	5.7	5.1	5.5	5.6	4.9	5.3	5.3	
356x45	6.4	6.9	7.0	6.0	6.5	6.6	5.9	6.3	6.4	5.8	6.2	6.3	5.5	5.9	6.0	
360x45	6.4	7.0	7.1	6.1	6.5	6.6	5.9	6.4	6.5	5.8	6.3	6.4	5.6	6.0	6.1	

**CONTINUOUS SPAN - MAXIMUM ALLOWABLE SPANS (m)**

Tile Floor 100 kg/m <sup>2</sup> Dead Load	Joist Size (mm)	300			400			450			480			600		
		E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14
		90x35	2.4	2.6	2.0	2.2	2.4	1.8	1.9	2.1	1.7	1.9	2.1	1.7	1.7	1.9
120x35	3.2	3.4	2.6	2.9	3.2	2.4	2.8	3.1	2.3	2.7	3.0	2.2	2.5	2.8	2.1	
130x35	3.4	3.7	2.8	3.1	3.4	2.6	3.0	3.3	2.5	3.0	3.2	2.4	2.7	3.0	2.3	
140x35	3.6	3.9	3.0	3.4	3.6	2.8	3.3	3.5	2.7	3.2	3.4	2.6	3.0	3.2	2.4	
150x35	3.8	4.1	3.3	3.5	3.8	3.0	3.4	3.7	2.9	3.4	3.6	2.8	3.2	3.4	2.6	
170x35	4.2	4.5	3.7	3.9	4.2	3.4	3.8	4.0	3.3	3.7	4.0	3.2	3.5	3.8	3.0	
190x35	4.6	4.9	4.1	4.2	4.5	3.8	4.1	4.4	3.6	4.0	4.3	3.6	3.8	4.1	3.3	
200x35	4.7	5.1	4.3	4.4	4.7	4.0	4.3	4.6	3.8	4.2	4.5	3.7	4.0	4.3	3.5	
225x35	5.2	5.5	4.8	4.8	5.2	4.5	4.7	5.0	4.3	4.6	4.9	4.2	4.3	4.7	3.9	
240x35	5.4	5.8	5.0	5.1	5.4	4.7	4.9	5.3	4.5	4.8	5.2	4.5	4.6	4.9	4.2	
241x35	5.5	5.8	5.0	5.1	5.4	4.7	4.9	5.3	4.6	4.8	5.2	4.5	4.6	4.9	4.2	
290x35	6.3	6.7	5.7	5.8	6.3	5.4	5.7	6.1	5.2	5.6	6.0	5.1	5.3	5.6	4.9	
300x35	6.4	6.9	5.9	6.0	6.4	5.5	5.8	6.2	5.4	5.7	6.1	5.3	5.4	5.8	5.0	
302x35	6.5	6.9	5.9	6.0	6.4	5.5	5.8	6.3	5.4	5.7	6.2	5.3	5.4	5.8	5.0	
90x45	2.6	2.8	2.1	2.4	2.6	1.9	2.1	2.4	1.9	2.1	2.3	1.8	1.9	2.1	1.7	
120x45	3.4	3.7	2.8	3.1	3.4	2.6	3.0	3.3	2.5	3.0	3.3	2.4	2.7	3.0	2.3	
130x45	3.6	3.9	3.1	3.4	3.6	2.8	3.3	3.5	2.7	3.2	3.5	2.6	3.0	3.3	2.5	
140x45	3.8	4.1	3.3	3.6	3.8	3.0	3.5	3.7	2.9	3.4	3.7	2.8	3.2	3.5	2.6	
150x45	4.1	4.3	3.5	3.8	4.0	3.2	3.7	3.9	3.1	3.6	3.9	3.0	3.4	3.6	2.8	
170x45	4.5	4.8	4.0	4.1	4.4	3.7	4.0	4.3	3.5	4.0	4.2	3.5	3.7	4.0	3.2	
190x45	4.8	5.2	4.5	4.5	4.8	4.1	4.4	4.7	3.9	4.3	4.6	3.9	4.1	4.4	3.6	
200x45	5.0	5.4	4.6	4.7	5.0	4.3	4.5	4.9	4.1	4.5	4.8	4.1	4.2	4.5	3.8	
225x45	5.5	5.9	5.0	5.1	5.5	4.7	5.0	5.3	4.6	4.9	5.2	4.5	4.6	5.0	4.2	
240x45	5.8	6.2	5.3	5.4	5.8	4.9	5.2	5.6	4.8	5.1	5.5	4.7	4.9	5.2	4.5	
241x45	5.8	6.2	5.3	5.4	5.8	5.0	5.2	5.6	4.8	5.2	5.5	4.8	4.9	5.2	4.5	
290x45	6.7	7.2	6.0	6.2	6.7	5.7	6.0	6.5	5.5	5.9	6.4	5.5	5.6	6.0	5.2	
300x45	6.8	7.3	6.2	6.4	6.8	5.8	6.2	6.6	5.7	6.1	6.5	5.6	5.8	6.2	5.3	
302x45	6.9	7.4	6.2	6.4	6.9	5.8	6.2	6.7	5.7	6.1	6.6	5.6	5.8	6.2	5.3	
356x45	7.8	8.4	7.0	7.2	7.8	6.6	7.0	7.5	6.4	6.9	7.4	6.3	6.5	7.0	6.0	
360x45	7.9	8.4	7.1	7.3	7.8	6.6	7.1	7.6	6.5	7.0	7.5	6.4	6.6	7.1	6.1	

**NOTES:**

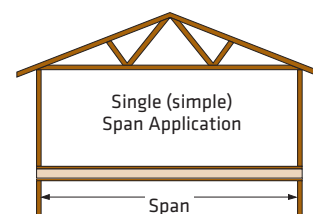
1. See page 7 for Usage, Design Assumptions and General Notes.

## TO USE:

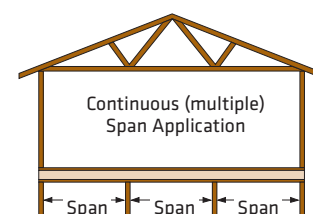
1. Determine span condition as either single or continuous and select the appropriate table. If span is continuous, verify that it meets the continuous span criteria listed in the General Notes below.
2. Identify dead load condition as either 40 kg/m<sup>2</sup> or 100 kg/m<sup>2</sup>.
3. Select joist centres.
4. Scan down the column until you meet or exceed the span of your application.
5. Select the LPI™ Series and depth

**CAUTION:** For floor systems that require both single 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 single span deflection.

		SINGLE SPAN - MAXIMUM ALLOWABLE SPANS (m)					
	LPI™ Series	Depth (mm)	Joist Spacing (mm)				
			300	400	450	480	
Timber Floor 40 kg/m <sup>2</sup> Dead Load	LPI™ 53-T	225	5.1	4.8	4.5	4.4	4.2
		241	5.3	5.0	4.8	4.7	4.5
		302	6.1	5.7	5.5	5.4	5.1
		356	6.7	6.2	6.0	5.9	5.6
		406	7.2	6.7	6.5	6.4	6.0
	LPI™ 70-T	225	5.5	5.1	5.0	4.9	4.6
		241	5.7	5.3	5.2	5.2	4.8
		302	6.5	6.1	5.9	5.8	5.4
		356	7.2	6.7	6.5	6.3	6.0
		406	7.7	7.2	7.0	6.8	6.5
Tile Floor 100 kg/m <sup>2</sup> Dead Load	LPI™ 53-T	225	4.8	4.5	4.3	4.2	3.9
		241	5.0	4.6	4.5	4.4	4.1
		302	5.7	5.3	5.1	5.1	4.8
		356	6.2	5.8	5.6	5.5	5.2
		406	6.7	6.3	6.1	6.0	5.7
	LPI™ 70-T	225	5.1	4.8	4.6	4.6	4.3
		241	5.3	5.0	4.8	4.8	4.5
		302	6.1	5.7	5.5	5.4	5.1
		356	6.6	6.2	6.0	5.9	5.6
		406	7.2	6.7	6.5	6.4	6.0



		CONTINUOUS SPAN - MAXIMUM ALLOWABLE SPANS (m)					
	LPI™ Series	Depth (mm)	Joist Spacing (mm)				
			300	400	450	480	
Timber Floor 40 kg/m <sup>2</sup> Dead Load	LPI™ 53-T	225	5.6	5.2	5.0	5.0	4.7
		241	5.8	5.4	5.2	5.2	4.9
		302	6.6	6.2	6.0	5.9	5.5
		356	7.3	6.8	6.6	6.5	6.1
		406	7.9	7.3	7.1	7.0	6.6
	LPI™ 70-T	225	6.0	5.6	5.4	5.3	5.0
		241	6.3	5.8	5.6	5.5	5.2
		302	7.1	6.6	6.4	6.3	5.9
		356	7.8	7.3	7.0	5.9	6.5
		406	8.4	7.8	7.6	7.5	7.0
Tile Floor 100 kg/m <sup>2</sup> Dead Load	LPI™ 53-T	225	5.6	5.2	5.0	5.0	4.7
		241	5.8	5.4	5.2	5.2	4.9
		302	6.6	6.2	6.0	5.9	5.5
		356	7.3	6.8	6.6	6.5	6.1
		406	7.9	7.3	7.1	7.0	6.6
	LPI™ 70-T	225	6.0	5.6	5.4	5.3	5.0
		241	6.3	5.8	5.6	5.5	5.2
		302	7.1	6.6	6.4	6.3	5.9
		356	7.8	7.3	7.0	6.9	6.5
		406	8.4	7.8	7.6	7.5	7.0



## GENERAL NOTES:

1. Span is the clear distance between supports. Calculation is based on clear span plus 1/2 the bearing lengths.
2. The LP® SolidStart™ I joists must span at least 2 adjacent spans to be continuous. To prevent uplift, short span should be > 0.5 times the long span. For continuous span conditions that do not meet this criteria, use the single span table. Always use the longest span with either table.
3. For loading conditions not shown, contact your LP Building Products representative.
4. Live loads: 1.5kPa distributed and 1.8kN concentrated.

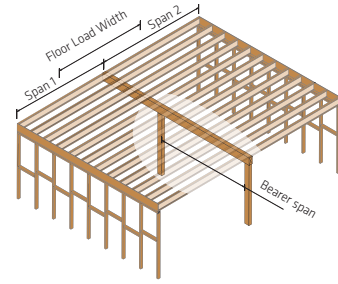
## DESIGN ASSUMPTIONS:

1. The single spans listed are the clear distance between supports.
2. The spans are based on uniform floor loads only as listed for each table.
3. Live load deflection has been limited to the lesser of L/360 or 9mm. Permanent Load deflection has been limited to lesser of L/300 or 12mm, and dynamic performance is checked as the maximum of 2mm deflection under a 1kN static load
4. The spans are based on an end bearing length of at least 38mm and intermediate bearing length of 63mm.

# Sizing Tables - Floor Bearers

## TO USE:

1. Calculate FLOOR LOAD WIDTH as 1/2 (Span 1 + Span 2) for single span joists, or 5/8 (Span 1 + Span 2) if joists are continuous over the floor bearer.
2. Identify dead load condition as either 40 kg/m<sup>2</sup> or 100 kg/m<sup>2</sup> and select the appropriate table.
3. Locate the FLOOR LOAD WIDTH that meets or exceeds your condition.
4. Scan down the column until you meet or exceed the span of your application.
5. Scan left to determine the required beam size.



FLOOR BEARERS - TIMBER FLOOR TOTAL DEAD LOAD 40 kg/m <sup>2</sup>																						
Beam Depth (mm)	Beam Width (mm)	Floor Load Width (m)																				
		1.0			2.0			3.0			4.0			5.0			6.0			7.0		
		E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14
90	45	1.4	1.6	1.6	1.1	1.2	1.3	1.0	1.1	1.1	0.9	1.0	1.0	-	0.9	0.9	-	-	-	-	-	-
	63	na	1.8	1.8	na	1.4	1.4	na	1.2	na	1.1	1.1	na	1.0	1.0	na	0.9	1.0	na	na	0.9	0.9
	2/35	1.7	1.8	1.9	1.3	1.5	1.5	1.1	1.3	1.3	1.0	1.1	1.2	0.9	1.0	1.1	0.9	1.0	1.0	-	0.9	0.9
	89 or 2/45	1.8	2.0	2.0	1.4	1.6	1.6	1.2	1.4	1.4	1.1	1.2	1.3	1.0	1.1	1.2	1.0	1.1	1.1	0.9	1.0	1.0
225	45	3.6	3.9	3.9	2.9	3.2	3.2	2.5	2.8	2.8	2.3	2.5	2.5	2.1	2.3	2.3	1.9	2.1	2.2	1.8	2.0	2.1
	63	na	4.2	4.3	na	3.6	3.6	na	3.1	3.2	na	2.8	2.8	na	2.6	2.6	na	2.4	2.4	na	2.3	2.3
	2/35	4.0	4.3	4.4	3.3	3.6	3.7	2.9	3.2	3.3	2.6	2.9	2.9	2.4	2.7	2.7	2.3	2.5	2.5	2.1	2.3	2.4
	89 or 2/45	4.2	4.6	4.6	3.6	3.9	3.9	3.1	3.5	3.5	2.8	3.1	3.2	2.6	2.9	2.9	2.4	2.7	2.8	2.3	2.5	2.6
241	45	3.8	4.1	4.2	3.1	3.4	3.5	2.7	3.0	3.0	2.4	2.7	2.7	2.2	2.5	2.5	2.1	2.3	2.3	2.0	2.2	2.2
	63	na	4.4	4.5	na	3.7	3.8	na	3.3	3.4	na	3.0	3.1	na	2.8	2.8	na	2.6	2.6	na	2.4	2.5
	2/35	4.2	4.5	4.6	3.6	3.8	3.9	3.1	3.4	3.5	2.8	3.1	3.2	2.6	2.8	2.9	2.4	2.7	2.7	2.3	2.5	2.6
	89 or 2/45	4.5	4.8	4.9	3.8	4.1	4.1	3.4	3.7	3.7	3.0	3.4	3.4	2.8	3.1	3.2	2.6	2.9	3.0	2.5	2.7	2.8
302	45	4.5	4.8	4.9	3.8	4.1	4.1	3.4	3.7	3.7	3.0	3.3	3.4	2.8	3.1	3.1	2.6	2.9	2.9	2.5	2.7	2.8
	63	na	5.2	5.3	na	4.4	4.5	na	4.0	4.0	na	3.7	3.8	na	3.5	3.5	na	3.2	3.3	na	3.0	3.1
	2/35	5.0	5.3	5.4	4.2	4.5	4.6	3.8	4.1	4.1	3.5	3.8	3.8	3.2	3.6	3.6	2.9	3.3	3.4	2.9	3.0	3.1
	89 or 2/45	5.2	5.6	5.7	4.5	4.8	4.9	4.0	4.3	4.4	3.7	4.0	4.1	3.5	3.8	3.8	3.1	3.5	3.6	3.1	3.4	3.5
356	45	5.1	5.5	5.5	4.3	4.6	4.7	3.9	4.1	4.2	3.6	3.8	3.9	3.2	3.6	3.7	2.9	3.3	3.4	2.8	3.0	3.1
	63	na	5.9	6.0	na	5.0	5.1	na	4.5	4.6	na	4.2	4.2	na	3.9	4.0	na	3.7	3.8	na	3.6	3.6
	2/35	5.6	6.0	6.1	4.8	5.1	5.2	4.3	4.6	4.7	4.0	4.3	4.3	3.6	4.0	4.1	3.3	3.7	3.8	3.0	3.4	3.5
	89 or 2/45	5.9	6.4	6.4	5.0	5.4	5.5	4.6	4.9	5.0	4.2	4.6	4.6	4.0	4.3	4.4	3.8	4.1	4.1	3.6	3.9	4.0
406	63	na	6.5	6.6	na	5.5	5.6	na	5.0	5.1	na	4.6	4.7	na	4.4	4.4	na	4.1	4.2	na	4.0	4.0
	2/35	na	6.6	6.7	na	5.6	5.7	na	5.1	5.2	na	4.7	4.8	na	4.5	4.5	na	4.1	4.2	na	3.7	3.9
	89 or 2/45	na	7.0	7.1	na	6.0	6.1	na	5.4	5.5	na	5.0	5.1	na	4.7	4.8	na	4.5	4.6	na	4.3	4.4
457	63	na	7.1	7.2	na	6.0	6.1	na	5.4	5.5	na	5.1	5.1	na	4.8	4.8	na	4.5	4.6	na	4.3	4.4
	2/35	na	7.2	7.3	na	6.2	6.2	na	5.6	5.7	na	5.2	5.2	na	4.8	4.9	na	4.4	4.6	na	4.0	4.2
	89 or 2/45	na	7.6	7.7	na	6.5	6.6	na	5.9	6.0	na	5.5	5.6	na	5.2	5.3	na	4.9	5.0	na	4.7	4.8

FLOOR BEARERS - TILE FLOOR TOTAL DEAD LOAD 100 kg/m <sup>2</sup>																						
Beam Depth (mm)	Beam Width (mm)	Floor Load Width (m)																				
		1.0			2.0			3.0			4.0			5.0			6.0			7.0		
		E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14
90	45	1.3	1.4	1.4	1.0	1.1	1.1	0.9	0.9	1.0	-	-	0.9	-	-	-	-	-	-	-	-	-
	63	na	1.6	1.6	na	1.2	1.3	na	1.1	1.1	na	1.0	1.0	na	0.9	0.9	na	-	-	na	-	-
	2/35	1.5	1.6	1.6	1.2	1.3	1.3	1.0	1.1	1.1	0.9	1.0	1.0	-	0.9	0.9	-	-	0.9	-	-	-
	89 or 2/45	1.6	1.8	1.8	1.2	1.4	1.4	1.1	1.2	1.2	1.0	1.1	1.1	0.9	1.0	1.0	-	0.9	0.9	-	0.9	0.9
225	45	3.2	3.5	3.6	2.5	2.8	2.8	2.2	2.4	2.5	2.0	2.2	2.2	1.8	2.0	2.1	1.7	1.9	1.9	1.6	1.8	1.8
	63	na	3.8	3.9	na	3.1	3.2	na	2.7	2.8	na	2.5	2.5	na	2.3	2.3	na	2.1	2.2	na	2.0	2.0
	2/35	3.6	3.9	4.0	2.9	3.2	3.3	2.6	2.8	2.9	2.3	2.5	2.6	2.1	2.3	2.4	2.0	2.2	2.2	1.9	2.1	2.1
	89 or 2/45	3.9	4.2	4.2	3.2	3.5	3.6	2.8	3.0	3.1	2.5	2.8	2.8	2.3	2.5	2.6	2.2	2.4	2.4	2.0	2.3	2.3
241	45	3.4	3.7	3.8	2.7	3.0	3.0	2.4	2.6	2.7	2.1	2.3	2.4	2.0	2.2	2.2	1.8	2.0	2.1	1.7	1.9	2.0
	63	na	4.0	4.1	na	3.3	3.4	na	2.9	3.0	na	2.6	2.7	na	2.4	2.5	na	2.3	2.3	na	2.1	2.2
	2/35	3.8	4.1	4.2	3.1	3.5	3.5	2.7	3.0	3.1	2.5	2.7	2.8	2.3	2.5	2.6	2.1	2.4	2.4	2.0	2.2	2.3
	89 or 2/45	4.1	4.4	4.4	3.4	3.7	3.8	3.0	3.3	3.3	2.7	3.0	3.0	2.5	2.7	2.8	2.3	2.6	2.6	2.2	2.4	2.5
302	45	4.1	4.4	4.5	3.4	3.7	3.7	3.0	3.3	3.3	2.7	2.9	3.0	2.5	2.7	2.8	2.3	2.5	2.6	2.2	2.4	2.5
	63	na	4.8	4.8	na	4.0	4.1	na	3.6	3.7	na	3.3	3.4	na	3.0	3.1	na	2.9	2.9	na	2.7	2.8
	2/35	4.5	4.9	4.9	3.8	4.1	4.2	3.4	3.7	3.8	3.1	3.4	3.5	2.9	3.1	3.2	2.7	2.9	3.0	2.5	2.8	2.8
	89 or 2/45	4.8	5.2	5.2	4.1	4.4	4.4	3.7	3.9	4.0	3.4	3.7	3.7	3.1	3.4	3.5	2.9	3.2	3.3	2.7	3.0	3.1
356	45	4.6	5.0	5.0	3.9	4.2	4.2	3.5	3.8	3.8	3.2	3.5	3.5	2.9	3.2	3.3	2.7	3.0	3.1	2.6	2.7	2.7
	63	na	5.4	5.5	na	4.5	4.6	na	4.1	4.2	na	3.8	3.9	na	3.6	3.6	na	3.4	3.4	na	3.2	3.3
	2/35	5.1	5.5	5.6	4.3	4.7	4.7	3.9	4.2	4.3	3.6	3.9	4.0	3.3	3.7	3.7	3.0	3.3	3.5	2.9	3.1	3.2
	89 or 2/45	5.4	5.8	5.9	4.6	4.9	5.0	4.1	4.5	4.5	3.9	4.1	4.2	3.6	3.9	4.0	3.4	3.7	3.8	3.2	3.6	3.6
406	63	na	5.9	6.0	na	5.0	5.1	na	4.5	4.6	na	4.2	4.3	na	4.0	4.0	na	3.8	3.8	na	3.6	3.7
	2/35	na	6.1	6.2	na	5.1	5.2	na	4.6	4.7	na	4.3	4.4	na	4.0	4.1	na	3.7	3.8	na	3.4	3.5
	89 or 2/45	na	6.4	6.5	na	5.5	5.5	na	4.9	5.0	na	4.6	4.7	na	4.3	4.4	na	4.1	4.2	na	4.0	4.0
457	63	na	6.5	6.6	na	5.5	5.6	na	5.0	5.0	na	4.6	4.7	na	4.3	4.4	na	4.1	4.2	na	3.8	3.8
	2/35	na	6.6	6.7	na	5.6	5.7	na	5.1	5.1	na	4.7	4.8	na	4.4	4.5	na	4.0	4.1	na	3.7	3.8
	89 or 2/45	na	7.0	7.1	na	6.0	6.0	na	5.4	5.5	na	5.0	5.1	na	4.7	4.8	na	4.5	4.6	na	4.3	4.4

## NOTES:

1. Tables are based on single supported spans. For continuous span applications, or where there are special load requirements, use the software for design or contact your local LPTM representative.
2. Span is clear distance between supports. Calculation is based on clear span plus 1/2 the bearing lengths.
3. Bearing lengths based on compressive stress perpendicular to grain of 12.0MPa for LP® SolidStart™ LSL and LP® SolidStart™ LVL.
4. The minimum bearing length at end spans is 45mm, except 63mm is required where **bold** and 89mm where **bold white**.
5. Live loads: 1.5kPa distributed and 1.8kN concentrated.
6. Product not available where marked "na".
7. Do not use product where marked "-".

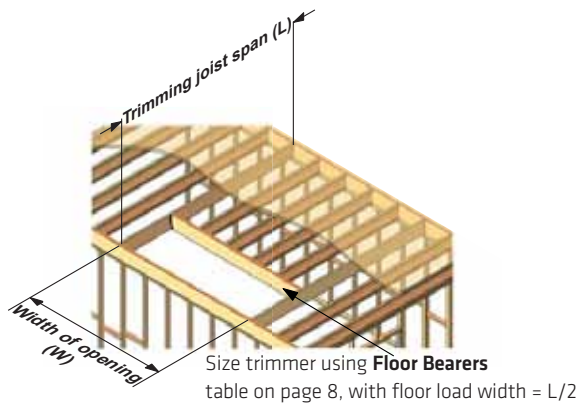


**TO USE:**

1. Approximate the area "A" supported by the trimming joist as  $(L \times W) / 4m^2$  where L and W are in metres and as shown in the diagram.
2. Find your concentrated load position in the table, and locate the column for the area "A" that meets or exceeds your condition.
3. Scan down the column until you meet or exceed the span of your application.
4. Scan left to determine the required beam size.

**NOTES:**

1. Span is clear distance between supports.
2. Bearing lengths based on compressive stress ( $f_p$ ) of 12.0 MPa for plate material.
3. Permanent load: 40kg/m<sup>2</sup>
4. Live loads: 1.5kPa distributed and 1.8kN concentrated
5. Permanent load deflection: Span/300 or maximum 12mm
6. Live load deflection: Span/360 or 9mm
7. Bearing length: Minimum 45mm end support bearing length
8. Lateral restraint: Fix flooring in accordance with AS1684 requirements
9. Modification factors: As per AS1720-1997
10. 70mm section width is achieved as 2/35mm sections, 89mm section width can be 89mm or achieved as 2/45mm sections. See Connection of Multiple-Ply Beams on Page 19 for details.
11. Do not use product where marked "-".



**TIMBER FLOOR TOTAL DEAD LOAD 40 kg/m<sup>2</sup>**

Beam Depth (mm)	Beam Width (mm)	Area "A" Supported by Trimming Joist as Concentrated Load (m <sup>2</sup> )																							
		2.0						3.0						4.0						5.0					
		E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14
225	35	3.3	3.6	3.8	3.1	3.4	3.5	2.8	3.1	3.3	2.6	2.9	3.0	3.1	3.5	3.7	2.9	3.2	3.4	2.6	2.9	3.1	2.4	2.7	2.8
	45	3.7	3.9	4.0	3.4	3.7	3.8	3.2	3.5	3.5	2.9	3.3	3.3	3.6	3.8	3.9	3.3	3.6	3.7	3.0	3.3	3.4	2.7	3.1	3.1
	63	-	4.4	4.5	-	4.2	4.3	-	4.0	4.0	-	3.8	3.8	-	4.3	4.4	-	4.1	4.1	-	3.8	3.9	-	3.6	3.6
	70	4.2	4.5	4.6	4.0	4.3	4.4	3.7	4.1	4.1	3.5	3.9	3.9	4.1	4.4	4.5	3.8	4.2	4.2	3.6	3.9	4.0	3.3	3.7	3.7
241	35	3.5	3.9	4.0	3.3	3.7	3.8	3.0	3.4	3.5	2.8	3.2	3.3	3.4	3.8	3.9	3.1	3.5	3.6	2.8	3.2	3.4	2.6	3.0	3.1
	45	3.8	4.2	4.3	3.6	4.0	4.1	3.4	3.8	3.9	3.2	3.6	3.7	3.7	4.1	4.2	3.5	3.9	4.0	3.2	3.6	3.8	3.0	3.4	3.5
	63	-	4.6	4.7	-	4.4	4.5	-	4.2	4.3	-	4.0	4.1	-	4.5	4.6	-	4.3	4.4	-	4.0	4.2	-	3.8	3.9
	70	4.4	4.8	4.8	4.2	4.6	4.6	4.0	4.4	4.4	3.8	4.2	4.2	4.3	4.7	4.7	4.1	4.5	4.5	3.8	4.2	4.3	3.6	4.0	4.0
302	35	4.4	4.7	4.8	4.2	4.5	4.6	3.9	4.2	4.3	3.7	4.0	4.1	4.3	4.6	4.7	4.0	4.3	4.4	3.8	4.0	4.2	3.5	3.8	3.9
	45	4.7	5.1	5.2	4.5	4.9	5.0	4.3	4.7	4.8	4.1	4.5	4.6	4.6	5.0	5.1	4.4	4.8	4.9	4.1	4.5	4.7	3.9	4.3	4.4
	63	-	5.6	5.7	-	5.4	5.5	-	5.2	5.3	-	5.0	5.1	-	5.5	5.6	-	5.3	5.4	-	5.0	5.2	-	4.8	4.9
	70	5.2	5.8	5.8	5.0	5.6	5.6	4.8	5.4	5.4	4.6	5.2	5.2	5.1	5.7	5.7	4.9	5.5	5.5	4.6	5.2	5.3	4.4	5.0	5.0
356	35	5.6	6.1	6.2	5.4	5.9	6.0	5.2	5.7	5.8	5.0	5.5	5.6	5.5	6.0	6.1	5.2	5.8	5.9	5.0	5.6	5.7	4.8	5.3	5.4
	45	5.4	5.9	6.0	5.2	5.7	5.7	5.0	5.4	5.5	4.8	5.1	5.2	5.3	5.8	5.9	5.1	5.5	5.6	4.9	5.2	5.3	4.6	4.9	5.0
	63	-	6.4	6.6	-	6.2	6.3	-	5.9	6.1	-	5.7	5.8	-	6.3	6.5	-	6.1	6.2	-	5.8	5.9	-	5.5	5.6
	70	6.0	6.5	6.6	5.8	6.3	6.4	5.6	6.1	6.2	5.4	5.9	6.0	6.0	6.5	6.5	5.7	6.2	6.3	5.5	6.0	6.0	5.2	5.7	5.8
406	35	6.5	7.1	7.2	6.3	6.8	6.9	6.0	6.6	6.7	5.8	6.3	6.4	6.4	7.0	7.1	6.2	6.7	6.8	5.9	6.4	6.5	5.6	6.1	6.2
	45	-	7.1	7.3	-	6.9	7.0	-	6.7	6.8	-	6.5	6.5	-	7.0	7.2	-	6.8	6.9	-	6.5	6.6	-	6.3	6.3
	63	-	7.3	7.5	-	7.1	7.2	-	6.9	7.0	-	6.7	6.7	-	7.2	7.4	-	7.0	7.1	-	6.7	6.8	-	6.5	6.5
	70	-	7.8	7.9	-	7.6	7.7	-	7.3	7.4	-	7.1	7.2	-	7.7	7.8	-	7.5	7.6	-	7.2	7.3	-	6.9	7.0

**TIMBER FLOOR TOTAL DEAD LOAD 40 kg/m<sup>2</sup>**

Beam Depth (mm)	Beam Width (mm)	Area "A" Supported by Trimming Joist as Concentrated Load (m <sup>2</sup> )																							
		2.0						3.0						4.0						5.0					
		E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14	E10	E13	E14
225	35	3.0	3.4	3.5	2.7	3.1	3.2	2.4	2.8	3.0	2.1	2.4	2.7	2.9	3.3	3.4	2.6	2.9	3.1	2.2	2.6	2.8	1.9	2.2	2.5
	45	3.4	3.8	3.9	3.1	3.5	3.6	2.9	3.2	3.3	2.6	2.9	3.0	3.3	3.7	3.8	3.0	3.4	3.5	2.7	3.0	3.1	2.4	2.7	2.8
	63	-	4.2	4.3	-	3.9	4.0	-	3.7	3.7	-	3.4	3.5	-	4.1	4.2	-	3.8	3.9	-	3.5	3.6	-	3.2	3.3
	70	4.0	4.3	4.4	3.7	4.0	4.1	3.4	3.8	3.8	3.1	3.5	3.6	3.9	4.2	4.3	3.6	3.9	4.0	3.2	3.6	3.7	2.9	3.3	3.4
241	35	4.3	4.7	4.7	4.0	4.4	4.5	3.7	4.1	4.2	3.4	3.9	4.0	4.2	4.6	4.6	3.9	4.3	4.3	3.5	4.0	4.1	3.2	3.7	3.8
	45	3.2	3.7	3.7	2.9	3.4	3.5	2.6	3.1	3.2	2.3	2.7	3.0	3.1	3.6	3.6	2.8	3.2	3.3	2.4	2.9	3.1	2.1	2.5	2.8
	63	-	4.4	4.5	-	4.1	4.3	-	3.9	4.0	-	3.6	3.8	-	4.3	4.4	-	4.0	4.1	-	3.7	3.9	-	3.4	3.6
	70	4.2	4.6	4.6	3.9	4.3	4.4	3.7	4.1	4.1	3.4	3.8	3.9	4.1	4.5	4.5	3.8	4.2	4.2	3.5	3.9	4.0	3.2	3.6	3.7
302	35	4.4	5.0	5.0	4.2	4.7	4.8	3.9	4.4	4.5	3.7	4.2	4.3	4.3	4.9	4.9	4.0	4.6	4.6	3.8	4.3	4.4	3.5	4.0	4.1
	45	4.2	4.5	4.5	3.9	4.2	4.3	3.6	3.9	4.0	3.3	3.5	3.8	4.1	4.4	4.4	3.8	4.0	4.1	3.4	3.7	3.9	3.1	3.3	3.6
	63	-	5.4	5.5	-	5.1	5.3	-	4.9	5.0	-	4.6	4.8	-	5.3	5.4	-	5.0	5.1	-	4.7	4.9	-	4.4	4.6
	70	5.0	5.6	5.6	4.7	5.3	5.4	4.5	5.1	5.1	4.2	4.8	4.9	4.9	5.5	5.5	4.6	5.2	5.2	4.3	4.9	5.0	4.0	4.6	4.7
356	35	5.3	6.0	6.0	5.1	5.7	5.8	4.8	5.4	5.5	4.6	5.2	5.3	5.2	5.9	5.9	4.9	5.6	5.6	4.7	5.3	5.4	4.4	5.0	5.1
	45	-	5.3	5.4	-	5.0	5.1	-	4.7	4.8	-	4.5	4.6	-	5.2	5.3	-	4.9	5.0	-	4.6	4.7	-	4.3	4.4
	63	-	5.7	5.8	5.0	5.4	5.5	4.7	5.1	5.2	4.5	4.8	4.9	5.2	5.6	5.7	4.9	5.3	5.4	4.6	4.9	5.0	4.3	4.6	4.7
	70	5.9	6.4	6.5	5.6	6.1	6.2	5.4	5.8	5.9	5.1	5.5	5.6	5.9	6.4	6.4	5.6	6.0	6.1	5.2	5.7	5.7	4.9	5.3	5.4
406	35	6.4	6.9	7.0	6.0	6.6	6.7	5.7	6.2	6.3	5.4	5.9	6.0	6.3	6.8	6.9	5.9	6.4	6.5	5.6	6.1	6.2	5.2	5.7	5.8
	45	-	7.0	7.1	-	6.7	6.8	-	6.3	6.4	-	6.0	6.1	-	6.9	7.0	-	6.5	6.6	-	6.2	6.3	-	5.8	5.9
	63	-	7.2	7.3	-	6.9	7.0	-	6.5	6.6	-	6.2	6.3	-	7.1	7.2	-	6.7	6.8	-	6.4	6.5	-	6.0	6.1
	70	-	7.7	7.8	-	7.3	7.4	-	7.0	7.1	-	6.7	6.8	-	7.6	7.7	-	7.2	7.3	-	6.9	7.0	-	6.5	6.6

**NOTE:** 89mm section width can be achieved as 2/45mm sections, 127mm section width is achieved as 2/63mm sections, and 133mm width via 3/45mm sections. See Connection of Multiple-Ply Beams on Page 19 for details.



CHARACTERISTIC VALUES (LIMIT STATE DESIGN) <sup>1</sup>			
Rim Board Thickness (mm)	Vertical Load Capacity <sup>2,3</sup>		Horizontal Load Transfer Capacity <sup>5,6</sup> kN/m
	Uniform (kN/m)	Concentrated <sup>4</sup> (kN)	
25	93.0	15.5	6.9

**NOTES:**

1. The characteristic values apply to 25mm LP® SolidStart™ Rim Board up to 406mm deep.
2. The vertical load capacity above is for instantaneous load conditions for limits state. The load must be multiplied by the appropriate k1 duration of load factor appropriate to the load combination considered.
3. The vertical load capacity must be multiplied by the appropriate value for the building type as specified in AS1720.1.
4. The concentrated vertical load capacity assumes the load is applied over a minimum 115mm bearing length.
5. The horizontal load capacity is an instantaneous load and k1 load duration would usually be 1.0 for lateral bracing loads.
6. Horizontal capacity is limited generally by the fixings of the rim board above and below.
7. Additional framing connectors fastened to the face of the rim board may be used to increase horizontal load capacity.

UNIFORM TOTAL LOAD CAPACITY (kN/m) FOR 25mm RIM BOARD OVER 1200mm SPAN				
Rim Board Depth				
225mm	241mm	302mm	2-ply 356mm	2-ply 406mm
5.2	5.7	7.2	17.0	19.4

**NOTES:**

1. This table is for preliminary design of rim board supporting floor joists for uniform gravity loads only. Final design should include a complete analysis of all loads and connections.
2. The uniform load capacities are for a maximum 1200mm clear span with 70mm bearings for each end based on a wall plate with a bearing capacity of 5D6 or better.
3. The tabulated load capacity is for instantaneous load conditions for limits state. The load must be multiplied by the appropriate k1 duration of load factor appropriate to the load combination considered and by the appropriate value for the building type as specified in AS1720.1.
4. Depths greater than 302mm shall be used with a minimum of two plies, as shown. Depths of 302mm and less may be used as a two-ply header by multiplying the resistance by two.
5. Multiple-ply headers shall be skew-nailed to the plate from both faces. Fasten the floor sheathing to the top of each ply to provide proper lateral support for each ply.
6. For multiple-ply headers supporting top-loads only, fasten plies together with minimum 50mm nails at a maximum spacing of 300mm. Use 2 rows of nails for 225, 241 and 302mm depths. Use 3 rows for depths 356 and 406mm depths. Clinch the nails where possible.
7. For side-loaded multiple-ply headers, refer to the Uniform Side-Loaded Capacity For 2-Ply Rim Board Headers table below for the required nailing and the maximum side load that can be applied.
8. The designer shall verify proper bearing for the header.
9. Joints in the rim are not allowed over openings and must be located at least 300mm from any opening.
10. Use LP® SolidStart™ LSL or LVL for headers with clear spans longer than 4' or for loads greater than tabulated above.

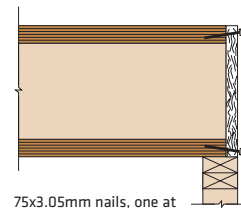
UNIFORM SIDE-LOAD CAPACITY FOR 2-PLY 25mm RIM BOARD HEADERS (kN/m)				
Minimum Nail Size	3 Rows of Nails at 300mm centres	4 Rows of Nails at 300mm centres	3 Rows of Nails at 150mm centres	4 Rows of Nails at 150mm centres
50mm x 2.80mm	6.65	8.87	13.30	17.73

**NOTES:**

1. This table represents the uniform side-load capacity of the connection for a 2-ply header. The total uniform load, including top-load and side-load, shall not exceed the uniform load capacity of the header as tabulated above.
2. The tabulated side-load capacity is for instantaneous load conditions for limits state. The load must be multiplied by the appropriate k1 duration of load factor appropriate to the load combination considered and by the appropriate value for the building type as specified in AS1720.1.
3. Use a minimum of 3 rows of nails for 225, 241 and 302mm, and 4 rows for 356 and 406mm deep rim board. Clinch the nails where possible.
4. Headers consisting of more than 2 plies, alternate fastening or higher side loads are possible but require proper design of the connection.

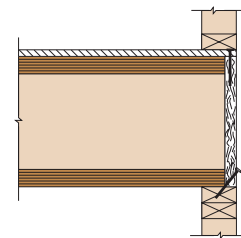
**INSTALLATION**

**RIM TO JOIST CONNECTION**



75x3.05mm nails, one at top, one at bottom of each LPI™-Joist

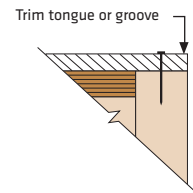
**FLOORING TO RIM AND RIM TO PLATE CONNECTIONS<sup>1</sup>**



- Flooring to Rim Board: Use correct flooring nails at required centres
- Nail wall plate through floor sheathing into rim per code
- Rim Board to Wall Plate: Skew-nail using 75x3.05mm nails at 150mm centres

See T&G Trim Requirements detail.

**T&G TRIM REQUIREMENTS**



Trim the tongue or groove of the floor sheathing for proper panel edge nailing into 25mm rim board.

**NOTE:**

1. Additional framing connectors to the face of the rim board may be used to increase lateral capacity for wind and seismic design.

**FASTENER VALUES:**

- Nail Values: For nails installed into the wide face of LP® SolidStart™ Rim Board, use the values for JD4 from AS1720.1. To allow for the 3.05mm nails from the bottom plate above into the top edge of the rim, the deck nailing shall be at least 150mm centres and the 3.05mm nails shall be spaced in accordance with the prescriptive requirements of AS1684.2 or AS1684.3.
- Bolt and Screw Values: Refer to AS1720.1 for JD4 materials for all load cases and combinations.

LPI™ RIM AND BLOCKING CAPACITY			
Series	Depth	Uniform Vertical Load Capacity <sup>1,2</sup> (kN/m)	Horizontal Load Capacity <sup>3,4</sup> (kN/m)
LPI™ 53-T and LPI™ 70-T	225	41.6	2.9
	241	39.0	
	302	29.1	
	356	20.5	
	406	14.9	

### NOTES

- The uniform vertical load capacity above is for instantaneous load conditions for limits state. The load must be multiplied by the appropriate K1 duration of load factor appropriate to the load combination considered, and must be multiplied by the appropriate  $\phi$  value for the building type as specified in AS1720.1.
- Concentrated vertical loads require the addition of solid blocking. Do not use LPI™ Joist blocking to support concentrated vertical loads.
- The horizontal load capacity is an instantaneous load. K1 load duration would usually be 1.0 for lateral bracing loads.
- Horizontal capacity is limited generally by the fixings of the rim board above and below. Do not exceed the Flange Face Nailing requirements at right.

FLANGE FACE NAILING			
Series	Nail Diameter (mm)	Minimum Nail Distance (mm)	
		Spacing	End
LPI™ 53-T and LPI™ 70-T	2.80	77	39
	3.15	77	39
	3.75	127	39

### NOTES

- Use 75x3.05mm nails when securing an LPI floor or roof joist to its supports.

WEB STIFFENER REQUIREMENTS						
Series	Depth (mm)	Minimum Thickness (mm)	Web Stiffener Height		Nail Size (mm)*	Nail Quantity
			Minimum (mm)	Maximum (mm)		
LPI™ 53-T and LPI™ 70-T	225	18	135	155	65 x 2.8	3
	241	18	150	170	65 x 2.8	3
	302	18	210	230	65 x 2.8	3
	356	18	265	285	65 x 2.8	3
	406	18	315	335	65 x 2.8	3

### WEB STIFFENER REQUIREMENTS

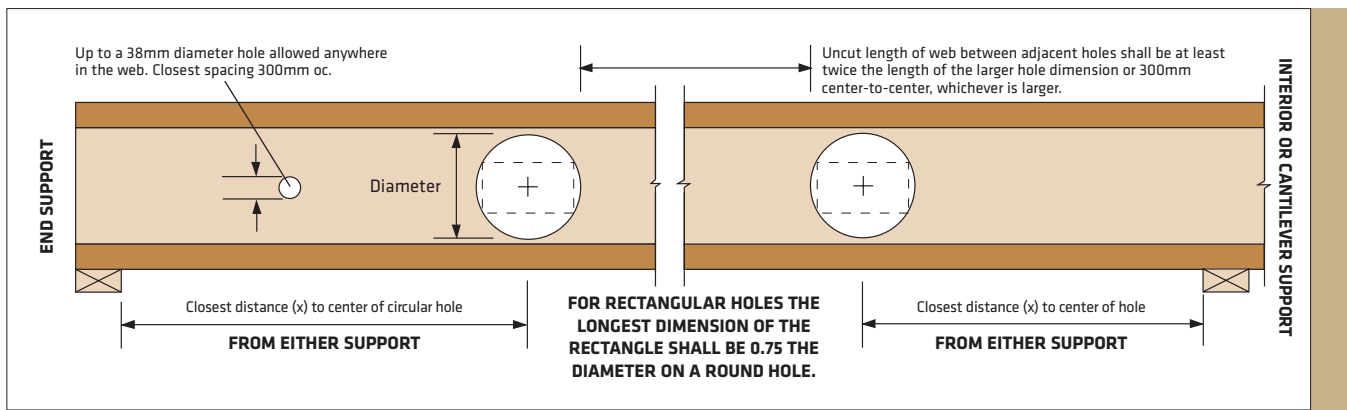
\* Refer to framing plan for specific conditions.

### NOTES:

- 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.
- Web stiffeners shall be cut to fit between the flanges of the LP® SolidStart™ I-Joist, leaving a minimum 3mm gap (25mm 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.
- Web stiffeners shall be cut from plywood or from LP® SolidStart™ LVL, LSL or OSB Rim Board. 35mm timber is permissible. Do not use 19mm timber, as it tends to split, or build up the required stiffener thickness from multiple pieces.
- Web stiffeners shall be the same width as the bearing surface, with a minimum of 89mm.
- See Web Stiffener Requirements for minimum stiffener thickness, maximum stiffener height and required nailing.



# Web Hole Specifications



## 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 (mm)	Clear Span (m)	Distance from End Support (m)								Distance from Interior or Cantilever-End Support (m)					
			Hole Diameter (mm)								Hole Diameter (mm)					
			50	100	150	165	225	280	330	50	100	150	165	225	280	330
LPI™ 53-T and LPI™ 70-T	225	2.0	0.30	0.30	0.30	-	-	-	-	0.30	0.30	0.36	-	-	-	-
		3.0	0.30	0.30	0.66	-	-	-	-	0.30	0.36	1.09	-	-	-	-
		4.0	0.30	0.51	1.27	-	-	-	-	0.38	1.07	1.88	-	-	-	-
		5.0	0.38	1.09	1.93	-	-	-	-	1.04	1.80	-	-	-	-	-
		6.0	0.94	1.70	2.62	-	-	-	-	1.78	2.59	-	-	-	-	-
	241	2.0	0.30	0.30	0.30	0.30	-	-	-	0.30	0.30	0.30	0.33	-	-	-
		3.0	0.30	0.30	0.43	0.64	-	-	-	0.30	0.30	0.84	1.07	-	-	-
		4.0	0.30	0.30	1.02	1.27	-	-	-	0.30	0.84	1.60	1.85	-	-	-
		5.0	0.30	0.84	1.65	1.93	-	-	-	0.84	1.55	2.39	-	-	-	-
		6.0	0.71	1.45	2.31	2.59	-	-	-	1.52	2.31	-	-	-	-	-
	302	2.0	0.30	0.30	0.30	0.30	0.30	-	-	0.30	0.30	0.30	0.30	0.41	-	-
		3.0	0.30	0.30	0.30	0.30	0.71	-	-	0.30	0.30	0.30	0.30	1.14	-	-
		4.0	0.30	0.30	0.30	0.46	1.32	-	-	0.30	0.30	0.81	1.02	1.93	-	-
		5.0	0.30	0.30	0.84	1.04	2.01	-	-	0.30	0.84	1.52	1.75	-	-	-
		6.0	0.30	0.74	1.42	1.65	2.67	-	-	0.89	1.55	2.29	2.51	-	-	-
	356	2.0	0.30	0.30	0.30	0.30	0.30	0.30	-	0.30	0.30	0.30	0.30	0.30	0.46	-
		3.0	0.30	0.30	0.30	0.30	0.30	0.76	-	0.30	0.30	0.30	0.30	0.46	1.19	-
		4.0	0.30	0.30	0.30	0.30	0.61	1.40	-	0.30	0.30	0.30	0.41	1.17	2.01	-
		5.0	0.30	0.30	0.30	0.41	1.19	2.08	-	0.30	0.30	0.91	1.09	1.93	-	-
		6.0	0.30	0.30	0.79	0.97	1.83	2.77	-	0.38	0.97	1.60	1.80	2.72	-	-
	406	2.0	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.46
		3.0	0.30	0.30	0.30	0.30	0.30	0.30	0.79	0.30	0.30	0.30	0.30	0.30	0.56	1.22
		4.0	0.30	0.30	0.30	0.30	0.30	0.71	1.42	0.30	0.30	0.30	0.30	0.58	1.27	-
		5.0	0.30	0.30	0.30	0.30	0.58	1.30	2.08	0.30	0.30	0.38	0.53	1.27	2.03	-
6.0		0.30	0.30	0.30	0.43	1.17	1.93	2.79	0.30	0.46	1.04	1.22	2.01	2.84	-	
406	7.0	0.30	0.30	0.79	0.97	1.75	2.59	3.48	0.56	1.12	1.75	1.93	2.77	-	-	
	8.0	0.30	0.74	1.35	1.55	2.39	3.25	-	1.22	1.83	2.46	2.67	3.58	-	-	
	9.0	0.69	1.30	1.93	2.13	3.02	3.94	-	1.91	2.54	3.23	3.45	4.39	-	-	

## DESIGN ASSUMPTIONS:

1. The hole locations listed above are valid for floor joists supporting only uniform loads that do not exceed the span charts on page 7.
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. The maximum circular hole diameters for I-joists are: 150mm for 225mm deep, 165mm for 241mm deep, 225mm for 302mm deep, 280mm for 356mm deep and 330mm for 406mm deep.
5. Holes cannot be located in the span where designated "-", without further analysis by a design professional.

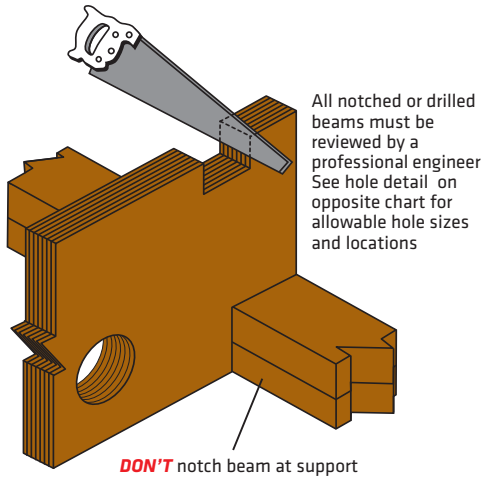
## NOTES:

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 2mm clear distance is required between the hole and the flanges.
3. Round holes up to 38mm diameter may be placed anywhere in the web.
4. Perforated "knockouts" may be neglected when locating web holes.
5. Holes larger than 38mm 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 305mm center-to-center, whichever is greater.
7. Multiple holes may be spaced closer than specified, but the assessment of the hole must be made for a hole diameter that would enclose both smaller holes together.
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.

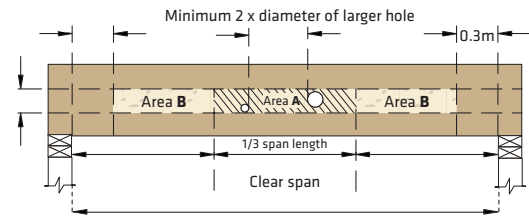
## WARNING

The following conditions are **NOT** permitted!

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



### BEAM HOLE DETAILS

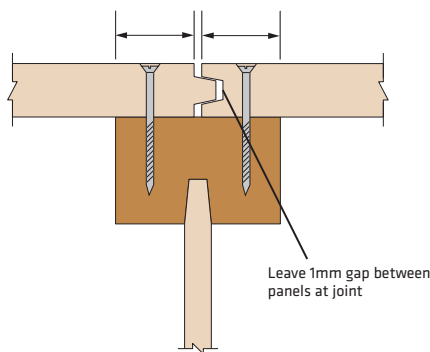


#### NOTES:

1. These guidelines apply to uniformly loaded beams selected from the Quick Reference Tables or the Uniform Load Tables or designed with LP®'s design/specification software only. For all other applications, such as beams with concentrated loads, please contact your LP® SolidStart™ Engineered Wood Products distributor for assistance.
2. Round holes can be drilled anywhere in "Area A" provided that: no more than four holes are cut, with the minimum spacing described in the diagram. The maximum hole size is 38mm for depths up to 235mm, and 50mm for depths greater than 241mm.
3. Rectangular holes are NOT allowed.
4. DO NOT drill holes in cantilevers without prior approval from the project engineer/architect.
5. Other hole sizes and configurations MAY be possible with further engineering analysis. For more information, contact your LP® SolidStart™ Engineered Wood Products distributor.
6. Up to three 19mm holes may be drilled in "Area B" to accommodate wiring and/or water lines. These holes shall be at least 305mm apart. The holes shall be located in the middle third of the depth, or a minimum of 75mm from the bottom and top of the beam. For beams shallower than 235mm, locate holes at mid-depth.
7. Protect plumbing holes from moisture.

## RECOMMENDATIONS FOR FIXING FLOORING

Refer to flooring manufacturer's literature and verify code required edge distances for fastening of sheet joint to LPI™ joists

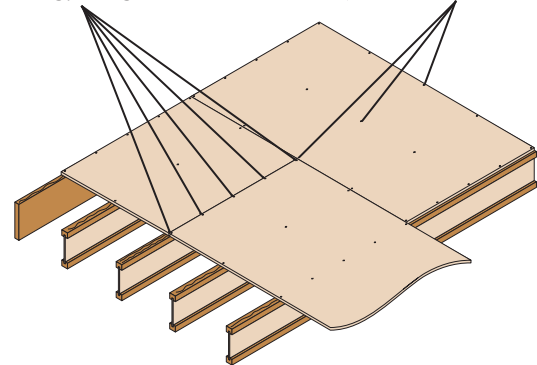


#### NOTES:

1. LP® Building Products recommends the use of tongue and groove floor sheets.
2. Floor sheets should be installed staggered, with all edges parallel to the joists bearing on the joist.
3. Nail, screw or staple floor sheets to each joist. The use of properly applied adequate adhesive will increase floor performance.
4. All four floor sheet corners should preferably be screwed.
5. Leave 10mm gap between sheet edges and walls.
6. Unless otherwise specified by flooring manufacturer, apply fasteners with 8mm (preferably 10mm) minimum distance from sheet edge.

Unless otherwise specified by the manufacturer or designer, nail or screw to LPI™ joist at 150mm on-centre along panel edges.

Unless otherwise specified by the manufacturer or designer, nail or screw to LPI™ joist at 300mm on-centre in the field



#### NAILING RECOMMENDATIONS:

All nailing for flooring must be in accordance with the requirements of AS1684.2, .3 or .4 as appropriate.

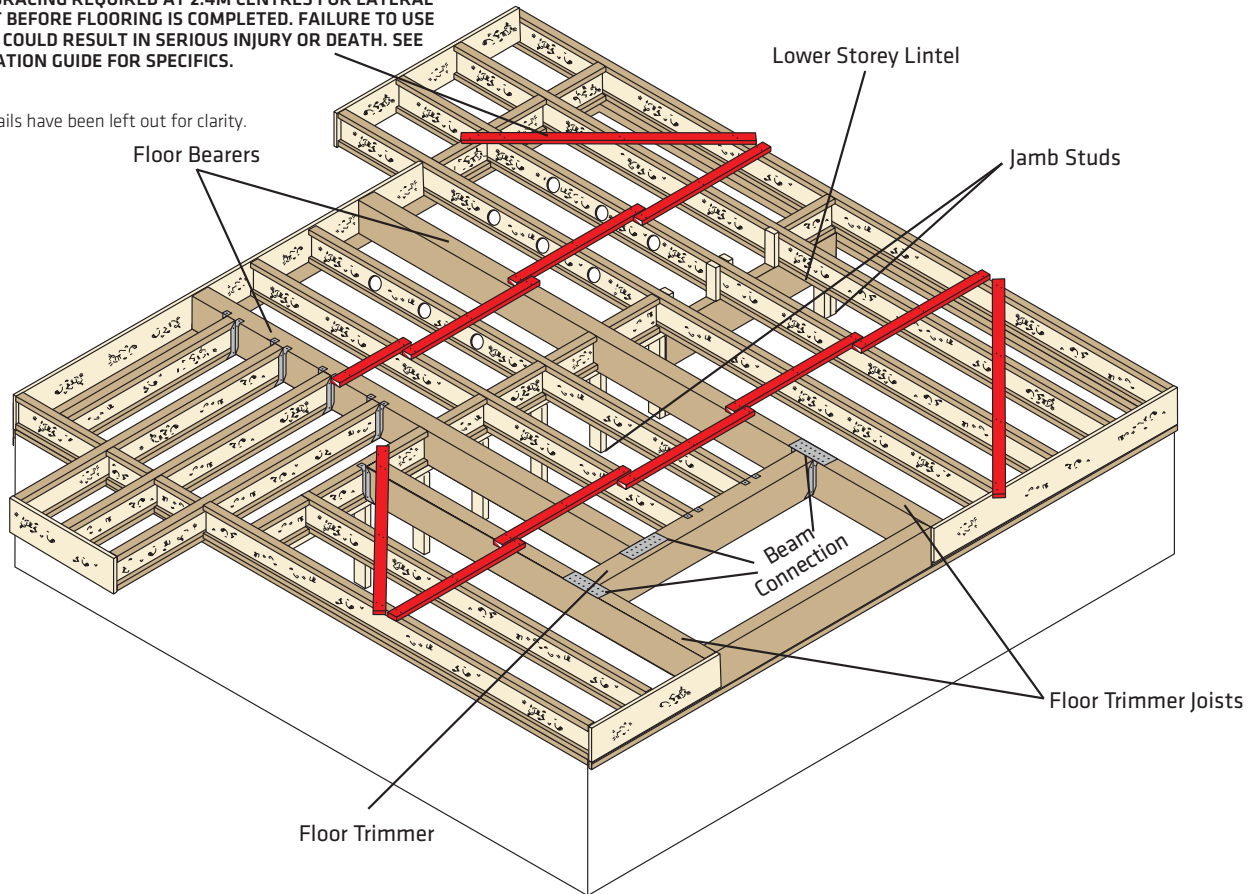
Always refer to flooring manufacturer's literature and designer's requirements for shear transfer fastener schedule.

**WARNING:**

SAFETY BRACING REQUIRED AT 2.4M CENTRES FOR LATERAL SUPPORT BEFORE FLOORING IS COMPLETED. FAILURE TO USE BRACING COULD RESULT IN SERIOUS INJURY OR DEATH. SEE INSTALLATION GUIDE FOR SPECIFICS.

**NOTE:**

Some details have been left out for clarity.



<p><b>E6 STEEL BEAM INFILL</b></p> <p>One M12 bolt at 1.2m centres, minimum of three bolts per filler block section. Minimum edge and end distance of 60mm required. Staggered where possible.</p> <p>Face mount hanger as specified</p>	<p><b>E7 STEEL BEAM/CHANNEL INFILL</b></p> <p>70mm packer stud at bolt locations</p> <p>70mm packer stud at bolt locations</p> <p>30mm minimum bearing on steel</p> <p>One M12 bolt at 1.2m centres, minimum of three bolts per filler block section. Minimum edge and end distance of 60mm required. Staggered where possible.</p> <p>Filler block depth must fit all face mount nails (minimum 20mm edge distance).</p>	<p><b>E8 NOTCHED BEAM</b></p> <p>Gap 3mm min. 25mm max.</p> <p>Web stiffener installed in flush with bottom flange</p> <p>1/2 depth of joist maximum</p> <p>UB, UC or channel section</p> <p>13mm max.</p> <p><b>DO NOT OVERCUT NOTCH</b></p> <p><b>Note:</b> No end support reaction increase for web stiffeners.</p> <p>Minimum bearing length 38mm</p>
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<p><b>A7 PARALLEL WALL</b></p> <p>Rim Board</p> <p>Optional Joist</p> <p>Must have 38mm minimum joist bearing at ends.</p>	<p><b>B6 NON-LOAD BEARING INTERIOR PARTITION</b></p> <p>Minimum 70mm x 35mm noggins at 600mm centres attached with Z-clip</p>	<p><b>F3 LPI™ JOIST TO BLOCK OR STEEL BEAM</b></p> <p>Bearing plate must be same width as wall or beam</p> <p>Minimum 45mm SolidStart™ LSL bearing plate</p> <p>Stagger connections</p> <p>Top view</p> <p>Attach bearing plate to supporting steel beam according to building designer's specification.</p>
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**A1 RIM BOARD**

Fasten rim board to each LPI™ Joist using one 75x3.05mm nail per flange

Same depth as LPI™ Joist

75x3.05mm nail at 150mm centres

**A3 BLOCKING AT EXTERIOR WALL**

75x3.05mm nails at 150mm centres (when used for shear transfer, nail to bearing plate with same nailing schedule for decking)

**A4 SOLID BLOCKING AT EXTERIOR WALL**

LP® SolidStart™ LVL, LP® SolidStart™ LSL or LP® SolidStart™ Rim Board as blocking

Same depth as I-joist

75x3.05mm nails at 150mm centres skew-nailed from outside of building

**A5 JOIST SUPPORT NAILING**

Use two 75x3.05mm nails (one on each side)

38mm min. from end of LPI™ Joist to nail based on 3.05mm nail diameter

**B1 WEB STIFFENERS AT INTERIOR SUPPORT (When Required)**

Verify stiffener requirements (see Web Stiffener detail)

**B2 SQUASH BLOCKS**

Blocking panels may be required with bracing wall

Use double squash blocks as specified. Squash blocks shall be cut 1-2mm taller than LPI™ Joist. 35 x 70mm min.

Stagger 3.05mm nails to avoid splitting

All Load Bearing wall aligned under wall above

Skew-nail 75x3.05mm, nail to plate

**B3 BLOCKING AT INTERIOR SUPPORT**

Blocking is not required if no wall above unless LPI™ Joists end at support. Blocking may be required at interior supports by project designer or by code for bracing requirements

Load Bearing wall aligned under wall above

**B7 JOISTS SUPPORTING OFFSET LOAD BEARING WALLS**

LP® SolidStart™ I-Joists shall be designed to carry all applied loads including walls from above that are not positioned directly over the LPI™ Joist support.

**D2 POST LOADS**

Squash blocks required under all concentrated loads

**E1 STAIR STRINGER**

1.2m

Web filler (as backer block) minimum 300mm long

Filler block(s)

Approved connection (by others)

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

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

**E2 HANGER DETAIL**

Verify capacity and fastening requirements of hangers and connectors

Verify web filler requirements for hangers

**L1 EXTERIOR DECK ATTACHMENT**

Flashing

60mm min.

60mm min.

Coach screw or bolt designed by others

Rim joist

Treated 35x ledger

**E3 LPI™ JOIST AS TRIMMER**

Verify web filler/stiffener requirements for hangers

Verify all hanger connections

Filler blocks

Web filler (as backer block)

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

Refer to LP® SolidStart™ I-Joist Trimmer Cross-Section for filler block and web filler sizes

**E5 DOUBLE LPI™ JOIST CONNECTION**

- Connect double LPI™ Joists with filler blocks in minimum 1.2m sections at each support and at no more than 2.4m centres.
- Provide 1.2m filler blocks centered behind each hanger and under each concentrated load.
- Cut filler blocks 3mm to 25mm less than clear distance between flanges to avoid forcing into place.
- Attach filler blocks with two rows of 65x2.8mm nails or larger (75x3.05mm nails or larger for flanges wider than 63mm) at 150mm centres. Nail through the web of both joists into the filler block. Clinch nails where possible.
- Flooring to be glued and nailed to flanges of both plies.

150mm centres

Filler block

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

**E4 LPI™ JOIST TRIMMER CROSS-SECTION**

Web filler (as backer block)

Verify web filler/stiffener requirements for hangers

Filler block(s)

Supported hanger (top-mount shown)

**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 300mm long and located behind every supported hanger. For a single LPI™ Joist trimmer, install backer block to both sides of the web behind each supported hanger.

**Filler Blocks:** Install in minimum 1.2m sections at each support, centered behind each supported hanger and at no more than 2.4m centres.

Attach web fillers and filler blocks with 2 rows of 65x2.8mm nails or larger (75x3.05mm or larger for flanges wider than 63mm) at 150mm centres. 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 3mm to 25mm less than clear distance between flanges to avoid forcing into place.

Series	Net Filler Thickness (mm)	
	Filler Block	Web Filler
LPI™ 53-T	44	22
LPI™ 70-T	60	30

**C6 BALCONY CANTILEVER**

Deck Joist design by others nailed and glued to LPI™ Joist flange and filler with 75x3.05mm nails 25mm from edge at 150mm centres

35mm x 184mm (min.) closure

Web filler both faces

Uniform loads only

LPI™ blocking\*

See LP® Software for load-bearing cantilever details

\*Rim Board, LSL or LVL may be substituted for the LPI® blocking

2 x cantilever length (600mm min.)

1.2m max.

Refer to LP® SolidStart™ I-Joist Header Cross-Section for filler block and web filler sizes

**A8 BEVEL OR TAPER CUT**

LPI™ blocking or other lateral support required at ends of LPI™ Joist

Bevel cut may not extend beyond inside face of bearing wall

**NOTES:**

- Some wind or seismic loads may require different or additional details and connections.
- Verify building code requirements for suitability of details shown.
- Refer to page 4 for bearing length requirements.
- Refer to page 10 and 11 for Flange Nailing Schedule for LPI™ rim joist and blocking panel nailing.
- Lateral support shall be considered for bottom flange when there is no ceiling on underside.
- Verify capacity and fastening requirements of hangers and connectors.
- Squash block capacity designed by others.

**C9 NON LOAD-BEARING CANTILEVER**

LP® SolidStart™ Rim Board

Uniform loads only

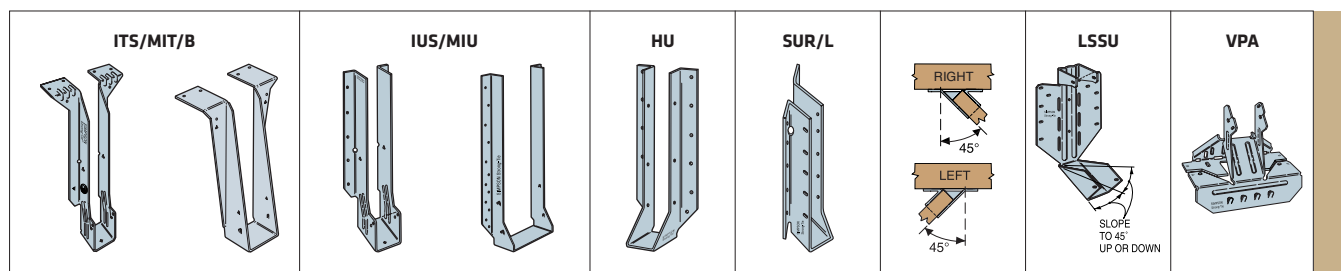
See LP® Software for load bearing cantilever details

1/3 adjacent span (max.)

Adjacent span



JOIST CONNECTORS 1,2,3



Depth (mm)	LPI™ Series	Top Flange Hanger		Face Mount Hanger <sup>4</sup>		Skewed 45°	Rafter to Ridge	Rafter to Plate
		Single	Double	Single	Double	Single	Single	Single
225	LPI™ 53-T	ITS2.06/8.9	-	IUS2.06/8.9	-	-	-	VPA2.06
	LPI™ 70-T	-	-	-	-	-	-	-
241	LPI™ 53-T	ITS2.06/9.5	MIT4.28/9.5	IUS2.06/9.5	MIU4.28/9	SUR/L2.06/9	LSSUI2.06*	VPA2.06
	LPI™ 70-T	-	-	-	-	-	-	-
302	LPI™ 53-T	ITS2.06/11.88	MIT4.28/11.88	IUS2.06/12	MIU4.28/11	SUR/L2.06/11	LSSUI2.06*	VPA2.06
	LPI™ 70-T	-	-	-	-	-	-	-
356	LPI™ 53-T	ITS2.06/14	MIT4.28/14	IUS2.06/14	MIU4.28/14	SUR/L2.06/14	LSSUI2.06*	VPA2.06
	LPI™ 70-T	-	-	-	-	-	-	-
406	LPI™ 53-T	ITS2.06/16	LBV4.28/16	IUS2.06/16	MIU4.28/16	SUR/L2.06/14*	LSSUI2.06*	VPA2.06
	LPI™ 70-T	-	-	-	-	-	-	-



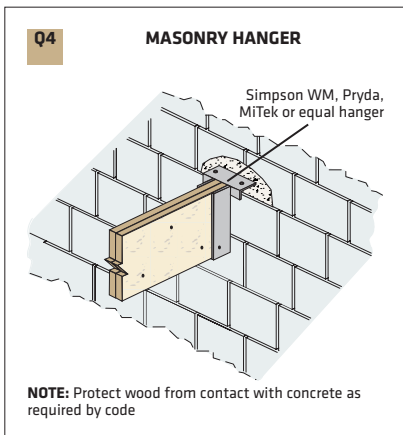
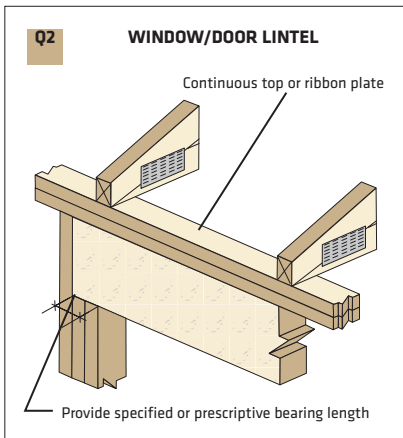
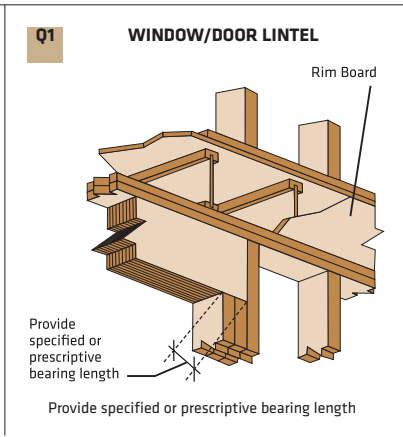
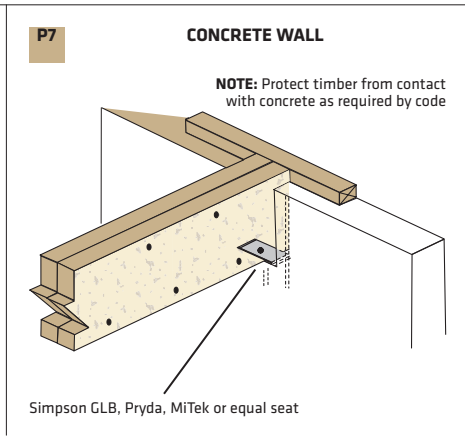
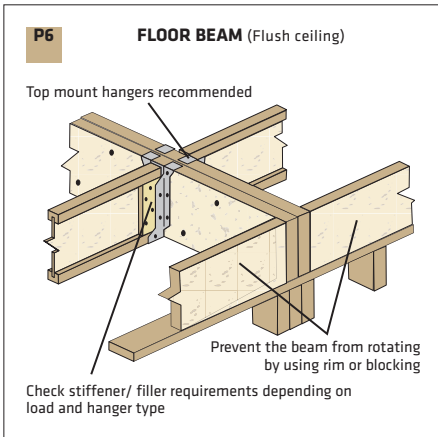
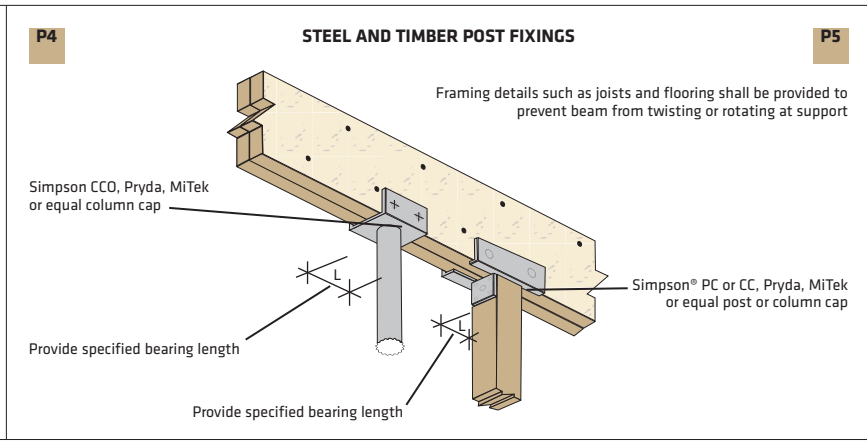
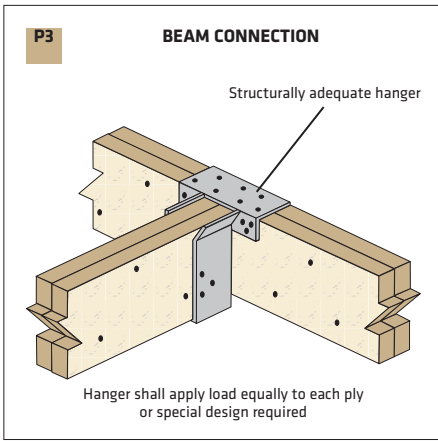
Depth (mm)	LPI™ Series	Top Flange Hanger		Face Mount Hanger <sup>4</sup>		Variable Skew	Rafter to Ridge	Rafter to Plate
		Single	Double	Single	Double	Single	Single	Single
225	LPI™ 53-T	-	-	LF225/53	-	LVSIA	-	-
	LPI™ 70-T	-	-	-	-	LVSIA	-	-
241	LPI™ 53-T	LT241/53	-	LF240/53	-	LVSIA	-	-
	LPI™ 70-T	LT241/70	-	LF235/70	-	LVSIA	-	-
302	LPI™ 53-T	LT302/53	-	LF300/53	-	LVSIA	-	-
	LPI™ 70-T	LT302/70	-	LF290/70	-	LVSIA	-	-
356	LPI™ 53-T	-	-	LF300/53*	-	LVSIA	-	-
	LPI™ 70-T	-	-	LF350/70	-	LVSIA	-	-
406	LPI™ 53-T	-	-	LF300/53*	-	LVSIA	-	-
	LPI™ 70-T	-	-	LF400/70	-	LVSIA	-	-



Depth (mm)	LPI™ Series	Top Flange Hanger		Face Mount Hanger <sup>4</sup>		Variable Skew	Rafter to Ridge	Rafter to Plate
		Single	Double	Single	Double	Single	Single	Single
225	LPI™ 53-T	-	-	-	-	UL7550	-	-
	LPI™ 70-T	-	-	-	-	UL7550	-	-
241	LPI™ 53-T	IBHT24055	-	IBHF24055	-	UL7550	-	-
	LPI™ 70-T	IBHT24070	-	IBHF24070	-	UL7550	-	-
302	LPI™ 53-T	IBHT30055	-	IBHF30055	-	UL7550	-	-
	LPI™ 70-T	IBHT30070	-	IBHF30070	-	UL7550	-	-
356	LPI™ 53-T	-	-	IBHF30055*	-	UL7550	-	-
	LPI™ 70-T	-	-	IBHF36070	-	UL7550	-	-
406	LPI™ 53-T	-	-	IBHF30055*	-	UL7550	-	-
	LPI™ 70-T	-	-	IBHF36070*	-	UL7550	-	-

NOTES:

1. Install hangers per manufacturer's specifications.
2. Refer to hanger manufacturer's specifications for nail size and quantity.
3. An \* indicates web fillers are required.
4. Face mount hangers may require web fillers to resist uplift.



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

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

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

## CONNECTION ASSEMBLIES

DETAIL A	DETAIL B	DETAIL C	DETAIL D	DETAIL E	DETAIL F	DETAIL G
<p><b>MAXIMUM 89MM WIDE 2-PLY BEAMS</b></p> <p>45mm maximum ply thickness</p>	<p><b>MAXIMUM 133MM WIDE 3-PLY BEAMS</b></p> <p>45mm maximum ply thickness</p>	<p><b>MAXIMUM 133MM WIDE 2-PLY BEAMS</b></p> <p>45mm maximum side member 89mm main member</p>	<p><b>MAXIMUM 178MM WIDE 3-PLY BEAMS</b></p> <p>45mm maximum side members 89mm maximum main member</p>	<p><b>MAXIMUM 133MM WIDE 2- OR 3-PLY BEAMS</b></p> <p>100x6.3mm (No. 14 Type 17 Batten) screws (or equal)</p>	<p><b>MAXIMUM 178MM WIDE 3- OR 4-PLY BEAMS</b></p>	<p><b>MAXIMUM 178MM WIDE 2-PLY BEAMS</b></p>

NAIL SPACING REQUIREMENTS				
LVL and LSL Ply Thickness	Fastener Orientation	Nail Diameter (mm)	Minimum End Distance (mm)	Minimum Nail Spacing (mm)
35mm	Edge	3.15	64	102
		3.75	64	102
		4.00	89	127
	Face	3.15	39	77
3.75		39	77	
4.00		39	127	
≥ 45mm	Edge	3.15	64	77
		3.75	64	102
		4.00	89	127
	Face	3.15	39	77
		3.75	39	77
		4.00	39	127

UNIFORM SIDE-LOAD CAPACITY (m FLOOR LOAD WIDTH)				
Connection Detail	2 Rows nails/ screws staggered at 300mm centres	3 rows nails/ screws staggered at 300mm centres	2 rows M12 bolts staggered at 600mm centres	2 rows of M12 bolts staggered at 300mm centres
A	1.32	2.07	-	-
B	1.32	2.07	-	-
C	1.32	2.07	-	-
D	1.32	2.07	-	-
E-2 ply	2.63	4.15	-	-
E-3 ply	3.94	6.22	-	-
F	-	-	4.3	8.6
G	-	-	4.3	8.6

### NOTES:

- Edge distance shall be minimum 5 x diameter of nail, or such that does not cause splitting.
- For 45mm and thicker plies, multiple rows of nails shall be offset at least 5 x diameter of nail and staggered. Do not use multiple rows of nails for 35mm thick plies.
- Edge orientation refers to nails driven into the narrow edge, parallel to the face of the strands or veneer. Face orientation refers to nails driven into the wide face, perpendicular to the face of the strands or veneer. (See diagram.)
- For connection design, use joint group JD4 and calculations in accordance with AS1720.1.
- Fastener spacing, end and edge distance shall be as specified by code except as specified in this table.
- See details below for fastener and applied load orientation.
- Do not use nails larger than 4.00mm diameter.

### NOTES:

- The tabulated values are for 45mm thick plies. Reduce the Floor Load Width by 10% for 35mm thick plies.
- The floor load is evaluated for a 100kg/m<sup>2</sup> floor dead load. For 40kg/m<sup>2</sup> dead load, multiply the load width in the table by 1.26.
- These loads are applicable for only standard domestic floors, and without special load supports, such as concentrated loads.
- Nails and screws must penetrate a minimum of 10 diameters into the ply holding the point of the fastener as shown in the appropriate connection detail.
- All members must be restrained within the floor space to ensure no rotation of the member due to the side loading.

## FASTENER LOAD ORIENTATION LSL AND LVL

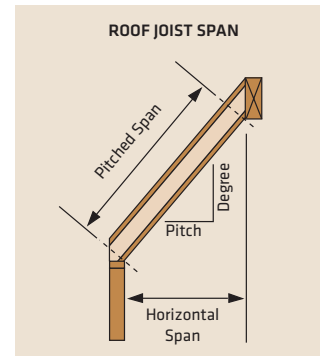


### TO USE:

1. Determine span condition as either single or continuous and select appropriate table. If span is continuous, verify that it meets the continuous span criteria listed in the ADDITIONAL NOTES below.
2. Identify dead load condition as either 40kg/m<sup>2</sup> or 90kg/m<sup>2</sup>.
3. Select the rafter centre.
4. If your slope is 22.5° or less use the LOW slope column. If it is between 22.5° and 35° use the HIGH slope column.
5. Scan down the column until you meet or exceed the span of your application.
6. Select the depth and LP® series.

### ADDITIONAL NOTES:

1. The LP® rafter must span at least 2 adjacent spans to be continuous. To prevent uplift, short span should be >0.5 times the long span. For continuous span conditions that do not meet this criteria, use the single span table. Always use the longest span with either table.
2. Minimum roof surface slope of 1.4° required.
3. Span is horizontal clear distance between supports.
4. Structural beam or wall at high end is required (ridgeboard applications do not provide adequate support).

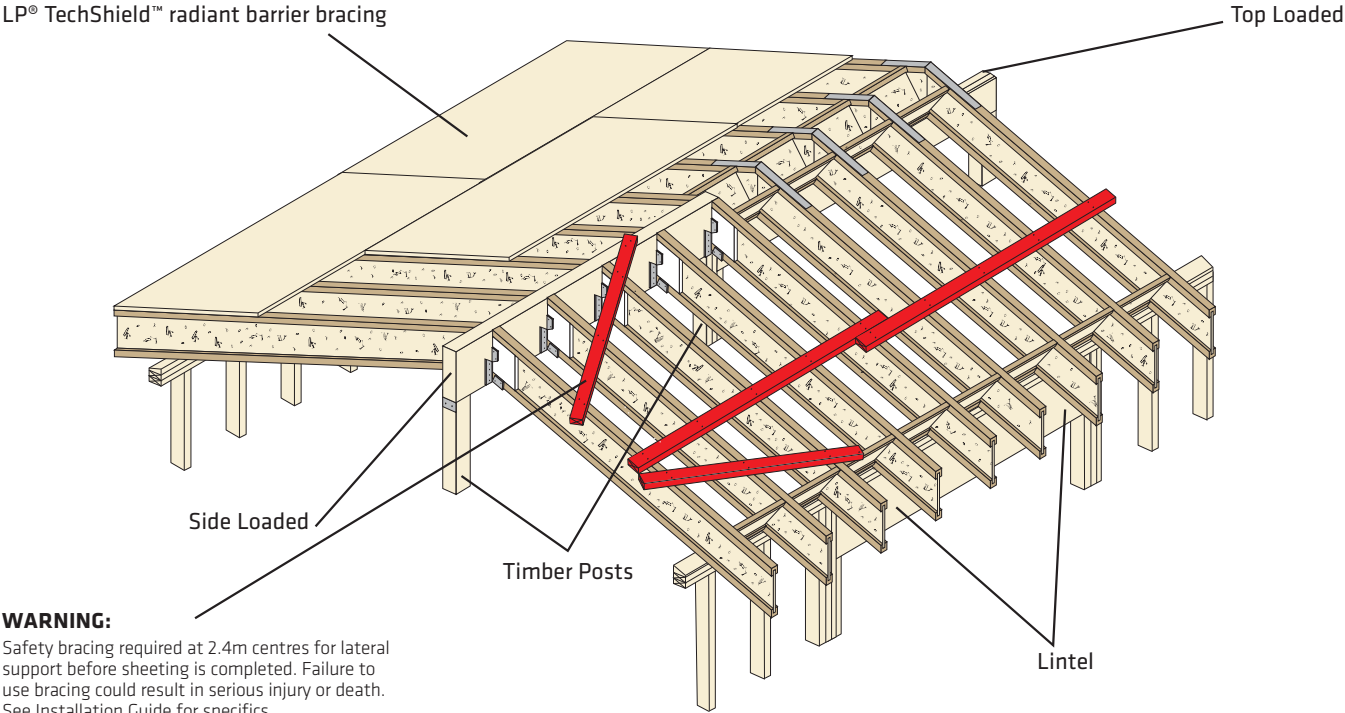


## SINGLE SPAN - MAXIMUM ALLOWABLE SPANS (m)

	Series	Joist Depth (mm)	Rafter Centres (mm)											
			300		400		450		600		900		1200	
			Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
Sheet Roof and Ceiling: 40kg/m <sup>2</sup> Dead Load	LPI™ 53-T	225	7.3	6.8	6.9	6.4	6.8	6.3	6.4	5.9	5.9	5.4	5.5	5.1
		241	7.6	8.0	7.2	7.6	7.1	7.4	6.7	7.0	6.1	6.4	5.7	6.0
		302	8.6	9.3	8.2	8.9	8.0	8.7	7.6	8.2	6.9	7.6	6.5	6.9
		356	9.4	7.4	8.9	7.1	8.7	6.9	8.3	6.6	7.6	6.0	7.1	5.7
		406	10.0	9.2	9.6	8.8	9.4	8.6	8.9	8.1	8.2	7.5	7.7	7.0
	LPI™ 70-T	225	7.7	7.1	7.4	6.7	7.2	6.5	6.8	6.2	6.3	5.7	5.9	5.3
		241	8.0	8.7	7.7	8.3	7.5	8.1	7.1	7.7	6.5	7.0	6.1	6.6
		302	9.1	7.2	8.6	6.8	8.5	6.7	8.0	6.3	7.4	5.8	6.9	5.4
		356	9.9	8.4	9.4	8.0	9.3	7.8	8.8	7.4	8.1	6.8	7.6	6.4
		406	10.6	9.8	10.1	9.4	9.9	9.2	9.4	8.7	8.7	8.1	8.2	7.6
Tile Roof and Ceiling: 90kg/m <sup>2</sup> Dead Load	LPI™ 53-T	225	5.7	5.2	5.2	4.8	5.0	4.7	4.6	4.2	4.0	3.7	3.6	3.4
		241	6.7	6.1	6.3	5.7	6.1	5.6	5.7	5.2	5.0	4.7	4.6	4.2
		302	7.9	7.2	7.4	6.8	7.2	6.6	6.7	6.2	6.1	5.6	5.7	5.2
		356	6.3	5.8	5.9	5.4	5.7	5.2	5.3	4.9	4.6	4.3	4.2	3.9
		406	7.8	7.2	7.3	6.7	7.1	6.5	6.7	6.1	6.0	5.5	5.6	5.1
	LPI™ 70-T	225	5.9	5.4	5.5	5.0	5.3	4.9	4.8	4.5	4.2	3.9	3.8	3.5
		241	7.4	6.7	6.9	6.3	6.7	6.1	6.3	5.7	5.7	5.2	5.2	4.8
		302	6.0	5.5	5.7	5.2	5.5	5.0	5.0	4.6	4.4	4.1	4.0	3.7
		356	7.1	6.5	6.7	6.1	6.5	6.0	6.1	5.6	5.5	5.0	5.0	4.6
		406	8.4	7.7	7.9	7.2	7.7	7.0	7.2	6.6	6.5	6.0	6.1	5.5

## CONTINUOUS SPAN - MAXIMUM ALLOWABLE SPANS (m)

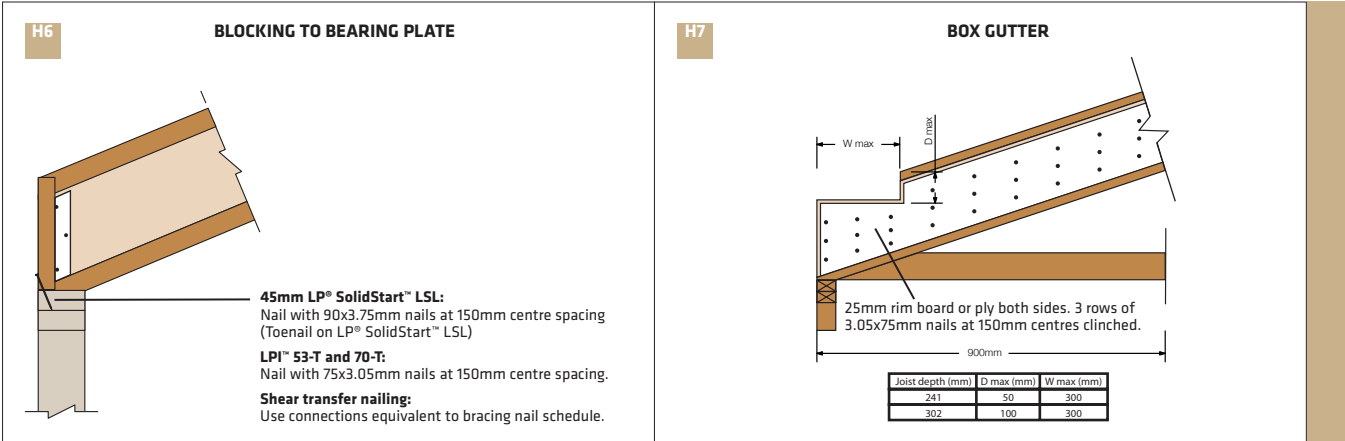
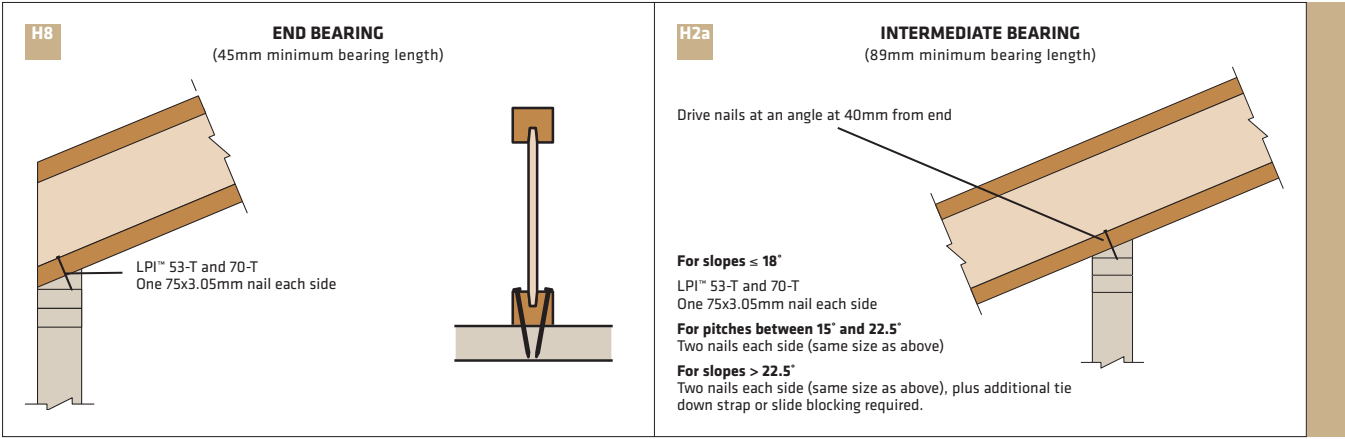
	Series	Joist Depth (mm)	Rafter Centres (mm)											
			300		400		450		600		900		1200	
			Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
Sheet Roof and Ceiling: 40kg/m <sup>2</sup> Dead Load	LPI™ 53-T	225	9.2	8.5	8.7	8.1	8.5	7.9	8.0	7.4	6.9	6.2	5.9	5.3
		241	9.5	10.0	9.1	9.5	8.9	9.3	8.4	8.5	7.1	6.8	6.0	5.8
		302	10.8	11.7	10.2	11.1	10.0	10.6	9.4	9.1	7.6	7.3	6.5	6.3
		356	11.8	9.3	11.2	8.9	11.0	8.7	9.8	8.2	7.9	7.6	6.8	6.7
		406	12.6	11.5	12.0	11.0	11.8	10.7	10.2	10.2	8.2	9.2	7.0	7.9
	LPI™ 70-T	225	9.7	8.8	9.2	8.4	9.0	8.2	8.5	7.7	7.8	6.3	7.2	5.4
		241	10.1	10.9	9.6	10.4	9.4	10.2	8.9	8.8	8.2	7.1	7.4	6.1
		302	11.4	9.0	10.8	8.5	10.6	8.4	10.0	7.9	9.2	7.3	8.2	6.5
		356	12.4	10.5	11.8	10.0	11.6	9.8	11.0	9.3	10.1	8.6	8.8	7.4
		406	13.3	12.3	12.7	11.8	12.4	11.5	11.8	10.9	10.8	9.7	9.3	8.3
Tile Roof and Ceiling: 90kg/m <sup>2</sup> Dead Load	LPI™ 53-T	225	7.1	6.5	6.6	6.1	6.4	5.9	6.0	5.5	5.4	5.0	4.9	4.5
		241	8.4	7.7	7.8	7.2	7.6	7.0	7.1	6.5	6.4	5.9	6.0	5.5
		302	9.9	9.0	9.3	8.5	9.0	8.2	8.4	7.7	7.6	7.0	7.1	6.5
		356	7.9	7.2	7.4	6.7	7.2	6.6	6.7	6.1	6.0	5.5	5.6	5.1
		406	9.8	8.9	9.2	8.4	8.9	8.2	8.3	7.6	7.5	6.9	7.0	6.4
	LPI™ 70-T	225	7.4	6.8	6.9	6.3	6.7	6.1	6.3	5.7	5.7	5.2	5.2	4.8
		241	9.2	8.4	8.6	7.9	8.4	7.7	7.8	7.1	7.1	6.5	6.6	6.0
		302	7.6	6.9	7.1	6.5	6.9	6.3	6.4	5.9	5.8	5.3	5.3	4.9
		356	8.9	8.2	8.4	7.6	8.1	7.4	7.6	6.9	6.9	6.3	6.4	5.8
		406	10.5	9.6	9.9	9.0	9.6	8.8	9.0	8.2	8.1	7.4	7.5	6.9

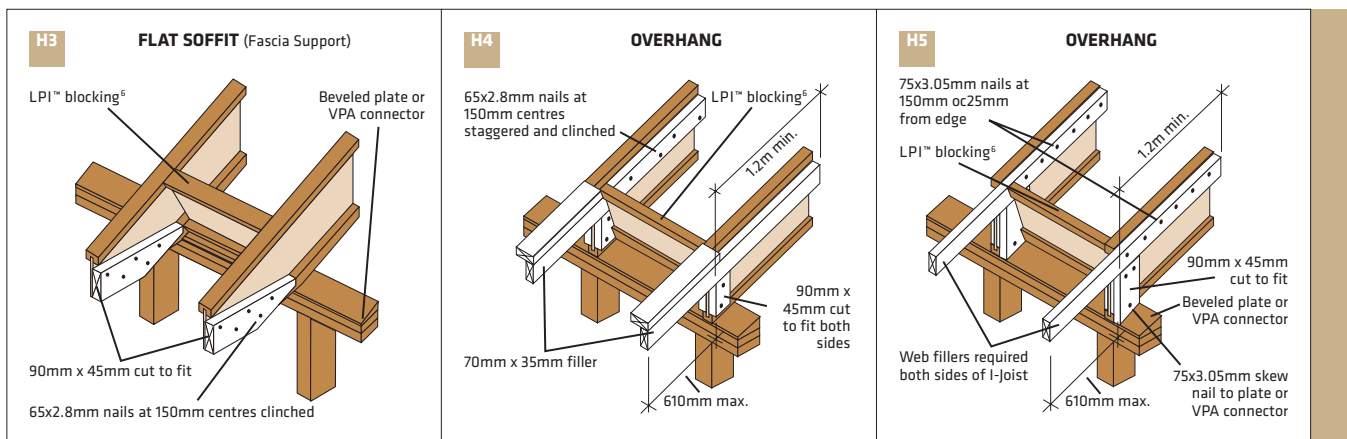
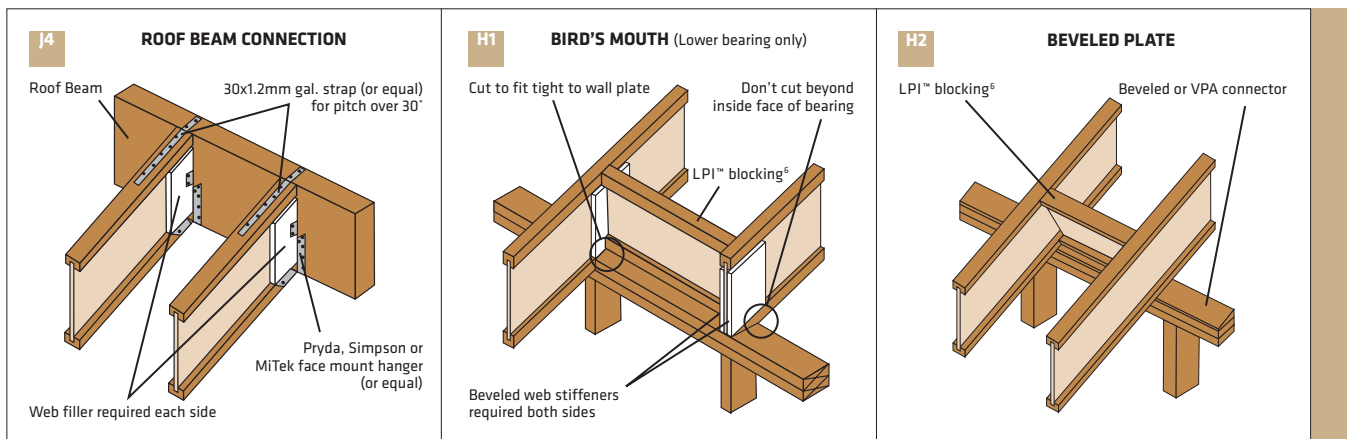
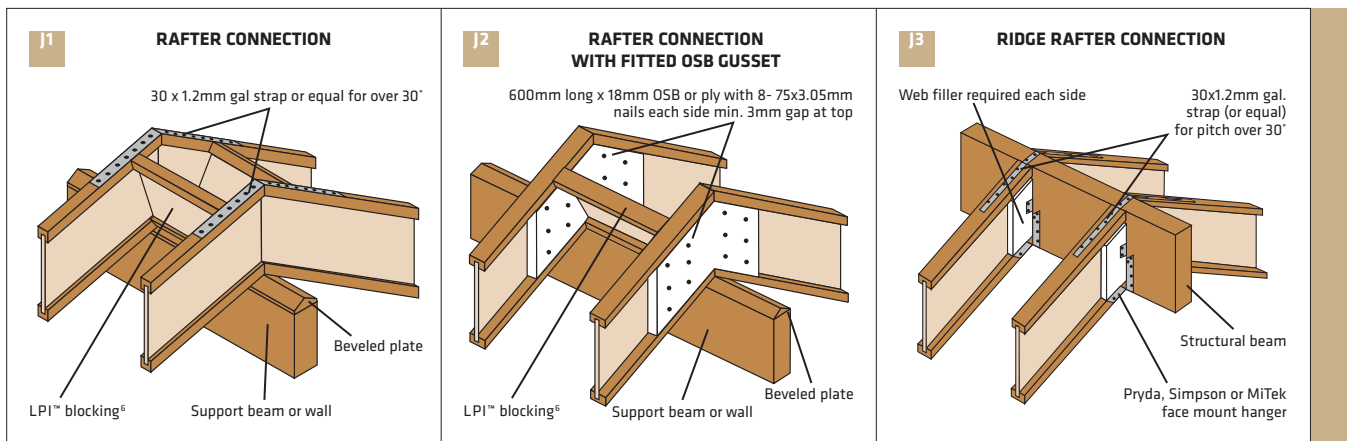


**WARNING:**  
Safety bracing required at 2.4m centres for lateral support before sheeting is completed. Failure to use bracing could result in serious injury or death. See Installation Guide for specifics.

**GENERAL NOTES:**

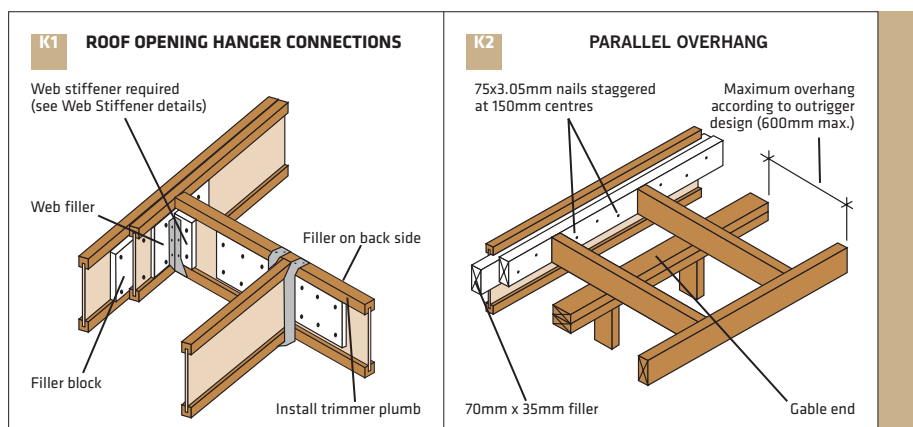
- Unless otherwise noted, all details are valid to a maximum pitch of 35° (100%)
- When pitch exceeds 2°, a beveled bearing plate for birdsmouth cut (at low end of joist only) is required.
- Web stiffeners are required if the sides of the hanger or blocking do not laterally support at least 10mm of LPI™ Joist top flange and at all birdsmouth cut.
- For VPA connectors, pitch must be between 14° and 35°.



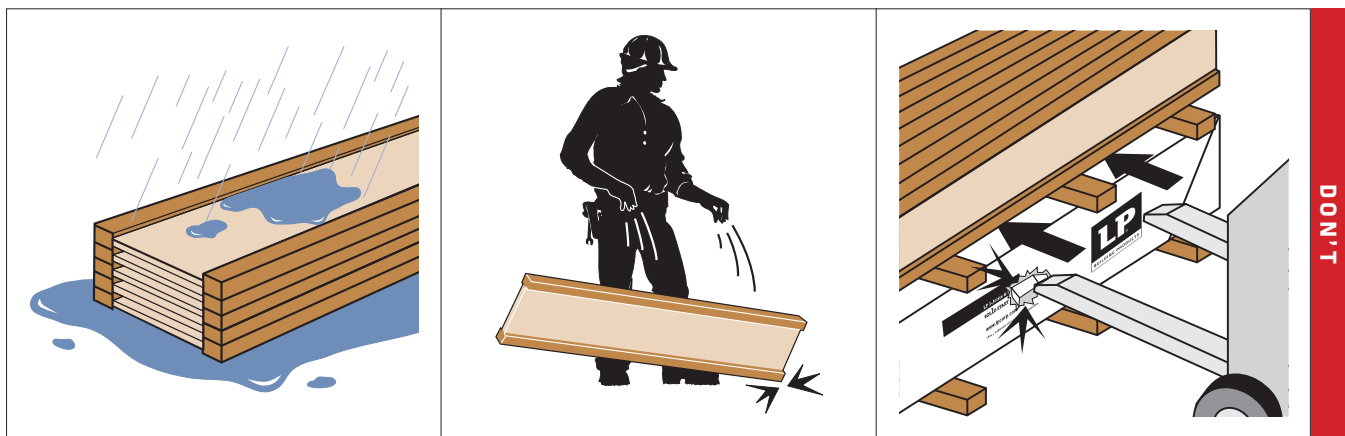
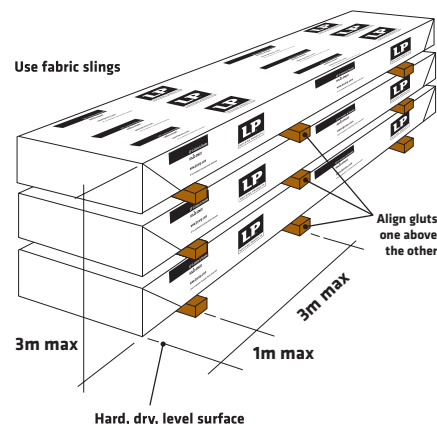


## NOTES:

1. Minimum pitch: 1.4° | Maximum pitch: 35°
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 tie-down may also be required.
5. 100mm 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™ Rim Board, LP® SolidStart™ LVL, LP® SolidStart™ LSL or metal X-bracing may be substituted for the LPI™ blocking shown.



- 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. LP® SolidStart™ I-Joists shall be handled vertically and not flat wise.
- Keep products stored in wrapped and strapped bundles, stacked no more than 3m high. Support and separate bundles with 45mm x 90mm (or larger) gluts spaced no more than 3m apart. Keep gluts 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.

<p><b>DON'T</b> put holes too close to supports.</p> <p>Refer to hole chart for correct location.</p>	<p><b>DON'T</b> overcut hole or cut flange.</p>	<p><b>DON'T</b> make hole with hammer unless knock-out is provided.</p> <p><b>DON'T</b> hammer on flange.</p>	<p><b>DON'T</b> cut or notch flange.</p> <p><b>DON'T</b> drill flange.</p>
<p><b>DON'T</b> cut flange for pipes.</p>	<p><b>DON'T</b> use more than 3.75mm nails.</p> <p>Refer to Joist End Nailing detail for correct sizes and locations.</p>	<p><b>DON'T</b> cut beyond inside edge of bearing.</p>	<p><b>DON'T</b> support LPI™ Joist on web.</p>

NOTE: **DON'T** OVERCUT NOTCH ON STEEL BEAM DETAIL E8, PAGE 14

## SOFTWARE FOR EASY, RELIABLE DESIGN

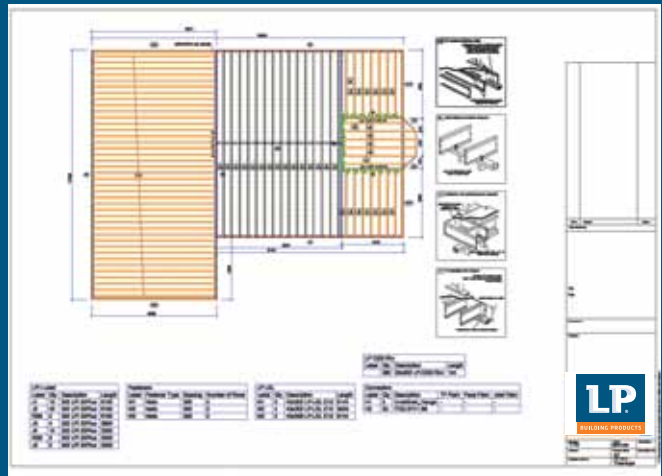
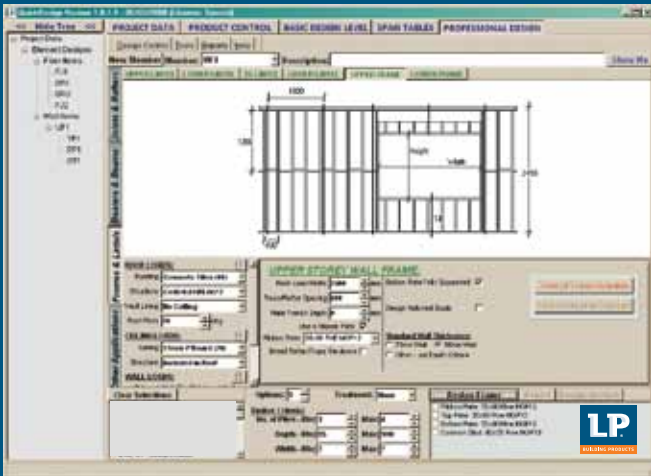
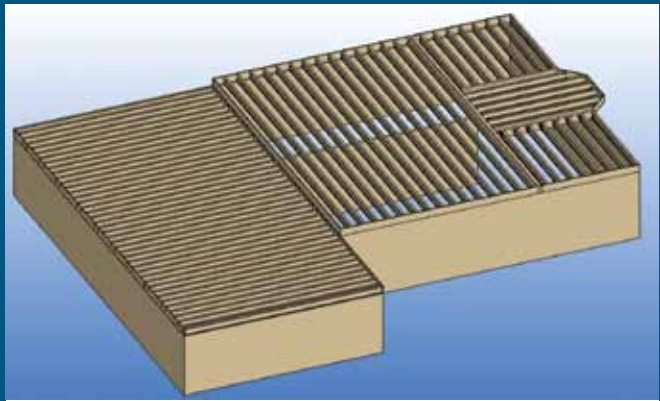
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