

NZWOOD

NEW ZEALAND WOOD PRODUCTS LIMITED

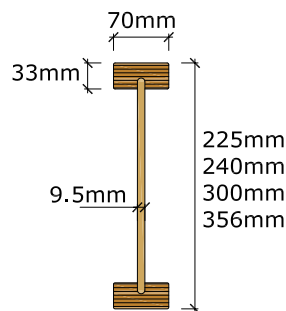
March 2014

LP® SolidStart™ I-Beam Web Holes



Unlike solid timber, LP SolidStart I-Beams do not require proprietary steel reinforcing brackets to support services holes or pipes. Large service holes to accommodate waste lines can be cut with confidence through the OSB web.

LPI™ 70-T Profile



Maximum hole sizes:

Maximum hole diameters for LP® SolidStart™ I-Beams are:

- 150mm Dia for 225mm I-Beam
- 165mm Dia for 240mm I-Beam
- 225mm Dia for 300mm I-Beam
- 280mm Dia for 356mm I-Beam

Refer to web hole table and diagram for the hole centre to closest support minimum distance requirements.



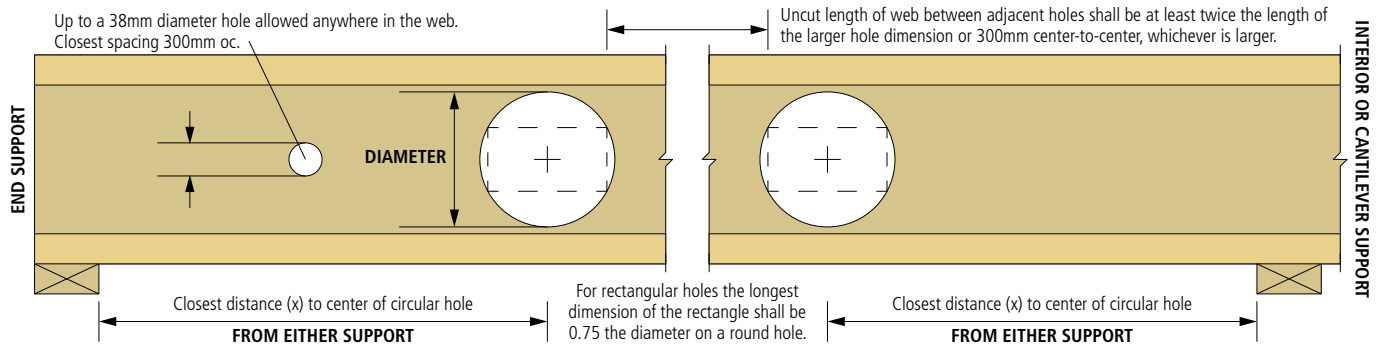
Web Hole Specifications

To use:

1. Select the required depth of I-Beam.
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 centre of a circular hole.
6. Double check the distance to the other support, using the appropriate support condition.

Notes:

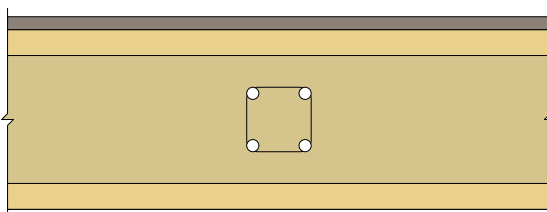
1. **Cut holes carefully! Do not overcut holes! Do not cut or notch joist top and bottom flanges.**
2. Holes may be placed anywhere within the depth of the joist. A minimum 2mm clear distance is required between the hole and the flanges.
3. Round holes up to 38mm diameter may be placed anywhere in the 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 centre-to-centre, 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. 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 Hyne Design (HD) 7 software. Please contact New Zealand Wood Products (NZWOOD) Limited for more information.



JOIST DEPTH (mm)	CLEAR SPAN (M)	DISTANCE (x) FROM END SUPPORT (M)						DISTANCE (x) FROM INTERIOR OR CANT END SUPPORT (M)					
		HOLE DIAMETER (mm)						HOLE DIAMETER (mm)					
		50mm	100mm	150mm	165mm	225mm	280mm	50mm	100mm	150mm	165mm	225mm	280mm
LPI™ 70-T 225	2.0m	0.30	0.30	0.30	-	-	-	0.30	0.30	0.36	-	-	-
	3.0m	0.30	0.30	0.66	-	-	-	0.30	0.36	1.09	-	-	-
	4.0m	0.30	0.51	1.27	-	-	-	0.38	1.07	1.88	-	-	-
	5.0m	0.38	1.09	1.93	-	-	-	1.04	1.80	-	-	-	-
	6.0m	0.94	1.70	2.62	-	-	-	1.78	2.59	-	-	-	-
LPI™ 70-T 240	2.0m	0.30	0.30	0.30	0.30	-	-	0.30	0.30	0.30	0.33	-	-
	3.0m	0.30	0.30	0.43	0.64	-	-	0.30	0.30	0.84	1.07	-	-
	4.0m	0.30	0.30	1.02	1.27	-	-	0.30	0.84	1.60	1.85	-	-
	5.0m	0.30	0.84	1.65	1.93	-	-	0.84	1.55	2.39	-	-	-
	6.0m	0.71	1.45	2.31	2.59	-	-	1.52	2.31	-	-	-	-
LPI™ 70-T 300	7.0m	1.27	2.06	2.97	3.30	-	-	2.26	3.10	-	-	-	-
	2.0m	0.30	0.30	0.30	0.30	0.30	-	0.30	0.30	0.30	0.30	0.41	-
	3.0m	0.30	0.30	0.30	0.30	0.71	-	0.30	0.30	0.30	0.30	1.14	-
	4.0m	0.30	0.30	0.30	0.46	1.32	-	0.30	0.30	0.81	1.02	1.93	-
	5.0m	0.30	0.30	0.84	1.04	2.01	-	0.30	0.84	1.52	1.75	-	-
LPI™ 70-T 356	6.0m	0.30	0.74	1.42	1.65	2.67	-	0.89	1.55	2.29	2.51	-	-
	7.0m	0.64	1.30	2.03	2.29	3.38	-	1.57	2.29	3.07	3.33	-	-
	8.0m	1.19	1.88	2.67	2.92	-	-	2.31	3.05	3.89	-	-	-
	2.0m	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.46
	3.0m	0.30	0.30	0.30	0.30	0.30	0.76	0.30	0.30	0.30	0.30	0.46	1.19
	4.0m	0.30	0.30	0.30	0.30	0.61	1.40	0.30	0.30	0.30	0.41	1.17	2.01
	5.0m	0.30	0.30	0.30	0.41	1.19	2.08	0.30	0.30	0.91	1.09	1.93	-
	6.0m	0.30	0.30	0.79	0.97	1.83	2.77	0.38	0.97	1.60	1.80	2.72	-
	7.0m	0.30	0.71	1.35	1.57	2.46	3.45	1.04	1.68	2.34	2.57	-	-
	8.0m	0.66	1.27	1.96	2.18	3.12	-	1.73	2.39	3.12	3.35	-	-

Design assumptions:

1. The hole locations listed above are valid for floor joists supporting only uniform loads that do not exceed those set out in the standard flooring span tables.
2. Hole location is measured from the inside face of bearing to the centre 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-Beams are: 150mm Dia for 225mm deep, 165mm Dia for 240mm deep, 225mm Dia for 300mm deep and 280mm Dia for 356mm deep.
5. Holes cannot be located in the span where designated "-", without further analysis by a design professional.



Cutting rectangular holes:

1. Never drill, cut or notch the top or bottom joist flange, or over cut the web.
2. Holes should always be cut with a sharp saw
3. Avoid over cutting the corners as this can cause stress concentrations within the web.
4. Slightly rounding the corners for rectangular holes is recommended to avoid over cutting.
5. Start the rectangular hole by drilling a 10mm diameter hole in each of the four corners and then making the cuts between the holes to minimise damage to the web.

Rectangular hole sizes:

For rectangular holes the longest dimension of the rectangle shall be 0.75 The diameter on a round hole.