

# NZWOOD

NEW ZEALAND WOOD PRODUCTS LIMITED

December 2013

## LP® SolidStart™ I-Beam Rafter



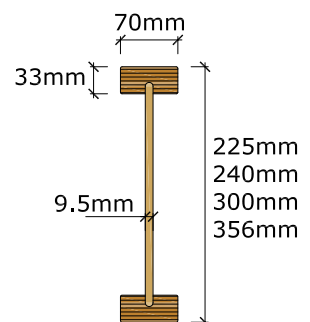
LP® SolidStart™ I-Beams from New Zealand Wood Products (NZWOOD) Limited help make true and uniform floors and ceilings possible for Residential and Commercial construction.

- Available in lengths of up to 12m long
- Fast and easy to install
- Light weight
- No need for mid span blocking
- Ability to cut large holes in web for Ducting, Plumbing and Cabling

I-Built is an engineered wood solution that provides a strong and reliable structure. The Hyne Design HD7 software, technical sales support and layout design package are provided to assist with the design process.



### LP™ 70-T Profile



LP SolidStart I-Beams are made with a Douglas Fir LVL top and bottom flange and a 9.5mm thick OSB web to form a structurally efficient I-section.

Available in 70mm widths and in 225, 240, 300 and 356mm deep sections.

Available untreated or H3.1 treated from stock.



**I BUILT**™  
Building Systems

# LP® SolidStart™ I-Beam Rafter Span Tables

## To use:

1. Determine span condition as either single or continuous & 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 Light or Heavy Roof. (Metal Sheet/Concrete Or Terracotta Tile)
3. Select Rafter centres.
4. Select roof pitch. (For roof pitches & wind zones not listed refer to the Hyne Design (HD) 7 software)
5. Select the LPI™ I-Beam depth to meet or exceed the span of your application.

## Caution:

For roof systems that require both single span & continuous span joists, it is a good idea to check both before selecting a joist.

## Single Span – Maximum Allowable Span (M) – LPI™ 70-T

		I-BEAM DEPTH	RAFTER SPACING								
			600crs			900crs			1200crs		
			0-15°	15-25°	25-35°	0-15°	15-25°	25-35°	0-15°	15-25°	25-35°
Wind Zone: High (44m/sec)	Metal Roof and Ceiling (40kg/m <sup>2</sup> )	225	6.3	6.0	5.6	5.7	5.5	5.1	5.2	5.0	4.7
		240	6.6	6.2	5.8	6.0	5.7	5.3	5.5	5.3	4.9
		300	7.4	7.1	6.6	6.8	6.5	6.0	6.3	6.0	5.6
		356	8.1	7.8	7.2	7.4	7.1	6.6	6.9	6.6	6.1
	Tiled Roof and Ceiling (90kg/m <sup>2</sup> )	225	5.0	4.8	4.5	4.4	4.2	3.9	4.0	3.8	3.6
		240	5.3	5.1	4.8	4.6	4.4	4.2	4.2	4.0	3.8
		300	6.2	5.9	5.4	5.5	5.3	4.9	5.0	4.8	4.5
		356	6.8	6.4	6.0	6.1	5.8	5.4	5.7	5.4	5.0

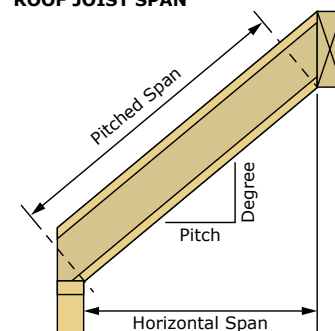
## Note:

Max spans in these span tables are conservative and based on a 'High' wind zone and intended as a guide only. For precise spans and other wind zones please use the HD7 software or contact NZWOOD for assistance.

## Continuous Span – Maximum Allowable Span (M) – LPI™ 70-T

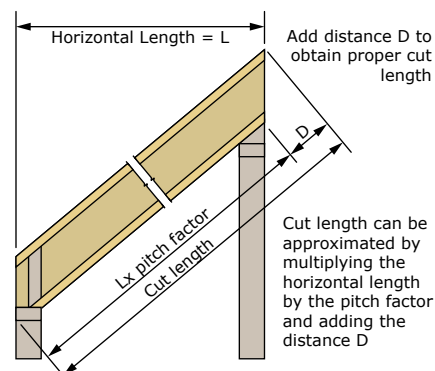
		I-BEAM DEPTH	RAFTER SPACING								
			600crs			900crs			1200crs		
			0-15°	15-25°	25-35°	0-15°	15-25°	25-35°	0-15°	15-25°	25-35°
Wind Zone: High (44m/sec)	Metal Roof and Ceiling (40kg/m <sup>2</sup> )	225	7.9	7.5	7.0	7.2	6.8	6.3	6.7	6.4	5.9
		240	8.2	7.8	7.2	7.5	7.1	6.6	7.0	6.6	6.2
		300	9.3	8.9	8.2	8.5	8.1	7.5	7.9	7.5	7.0
		356	10.2	9.7	9.0	9.3	8.8	8.2	8.7	8.3	7.7
	Tiled Roof and Ceiling (90kg/m <sup>2</sup> )	225	6.5	6.2	5.7	5.9	5.6	5.2	5.3	5.1	4.8
		240	6.8	6.4	6.0	6.1	5.8	5.4	5.6	5.4	5.0
		300	7.7	7.3	6.8	6.9	6.6	6.1	6.4	6.1	5.7
		356	8.4	8.0	7.4	7.6	7.2	6.7	7.1	6.7	6.2

## ROOF JOIST SPAN



## SolidStart™ I-Beam Cut Length Calculation

Pitch Factors		Distance D (mm)				
Pitch (deg)	Pitch Factor	Rafter Depth (mm)				
		225	240	300	356	
5	1.00	20	21	26	31	
10	1.02	40	43	53	63	
15	1.04	60	65	81	95	
20	1.06	82	88	110	129	
22.5	1.08	93	100	125	147	
25	1.10	105	113	141	166	
30	1.16	130	139	174	205	
35	1.22	158	169	211	249	



The new feature packed HD7 software, provides all the information and assistance required for any project. The software covers all help topics and incorporates information on structural and engineered timber building products, technical data sheets, materials, technical safety data sheets, installation guides and fixing connections.

For more information or support please contact NZWOOD  
[www.nzwoodproducts.co.nz](http://www.nzwoodproducts.co.nz)



## 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-Beams must span at least 2 adjacent spans to be continuous. To prevent uplift, short span should be > 0.75 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. Minimum roof surface slope of 1.4 degrees required.

## Additional notes:

1. Structural beam or wall at high end is required (Ridge board applications do not provide adequate support).
2. Minimum Intermediate bearing length = 63mm
3. Minimum End support bearing length = 38mm
4. Point Loads on rafters (i.e. Water storage cylinders, air-conditioning units and other such items) where higher permanent loads may be expected, specific engineering design should be applied – Refer to HD7 software.
5. Snow loadings have not been taken into account.
6. For loading conditions or roof pitches not shown, refer to HD7 software or contact NZWOOD.