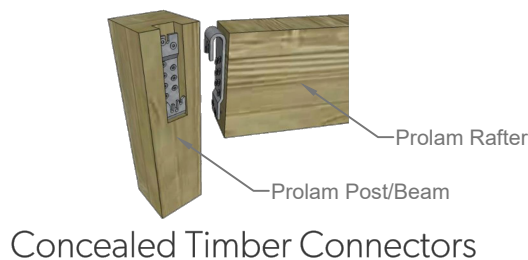
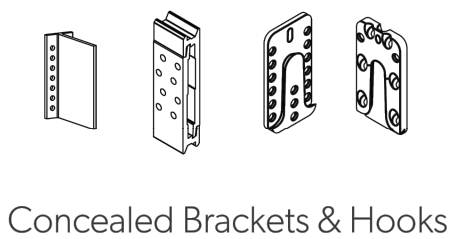
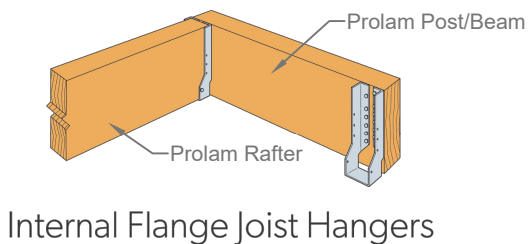
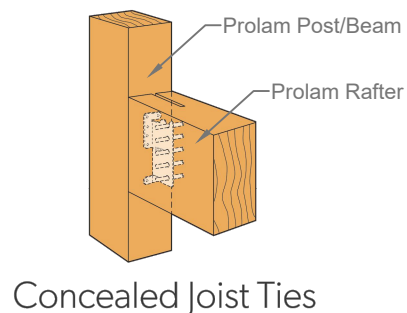
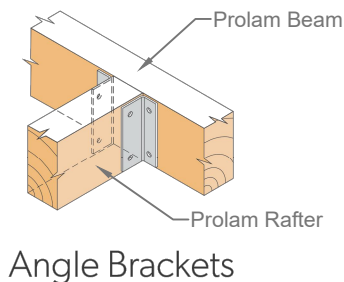
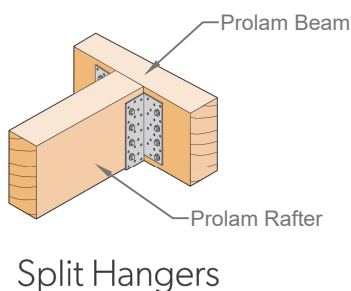
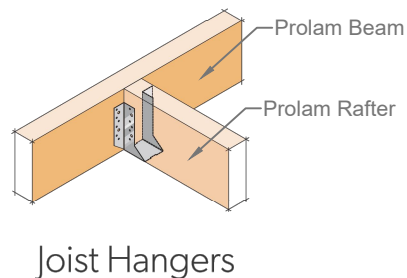
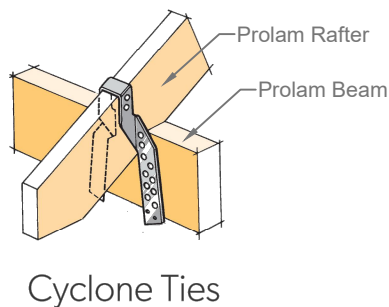
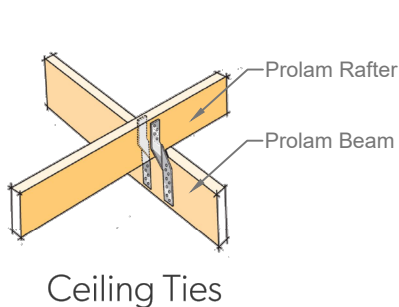
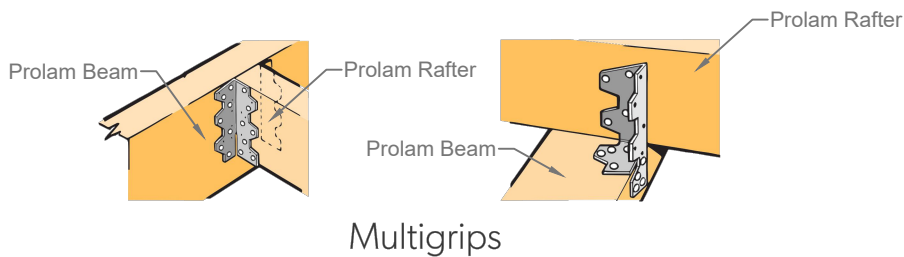
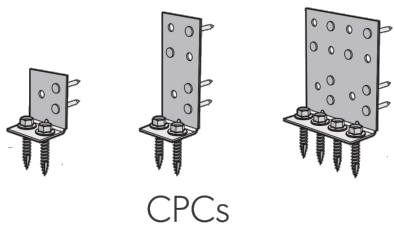


# Prolam®

## Rafter to Beam Fixings



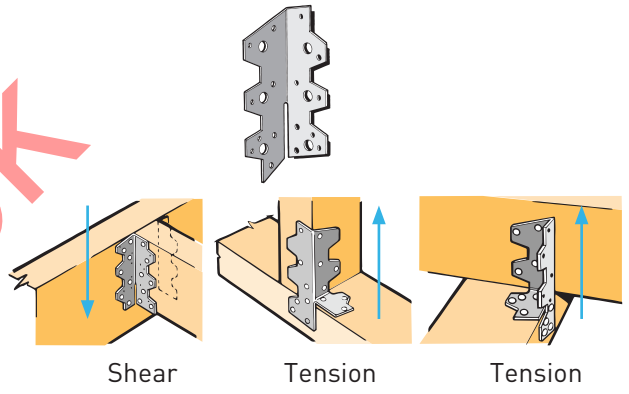
# LUMBERLOK

## TIMBER CONNECTORS CHARACTERISTIC LOADINGS DATA

### MULTIGRIP

0.91mm G300 Z275 GALVANISED STEEL  
0.9mm STAINLESS STEEL 304-2B

Characteristic Load		
Fixings	Nails: All holes filled with 30mm x 3.15 dia.	Screws: 3 x Type 17-14g x 35mm per flange
Shear	11.9 kN / pair	10.9 kN / pair
Tension	4.0 kN / each	-

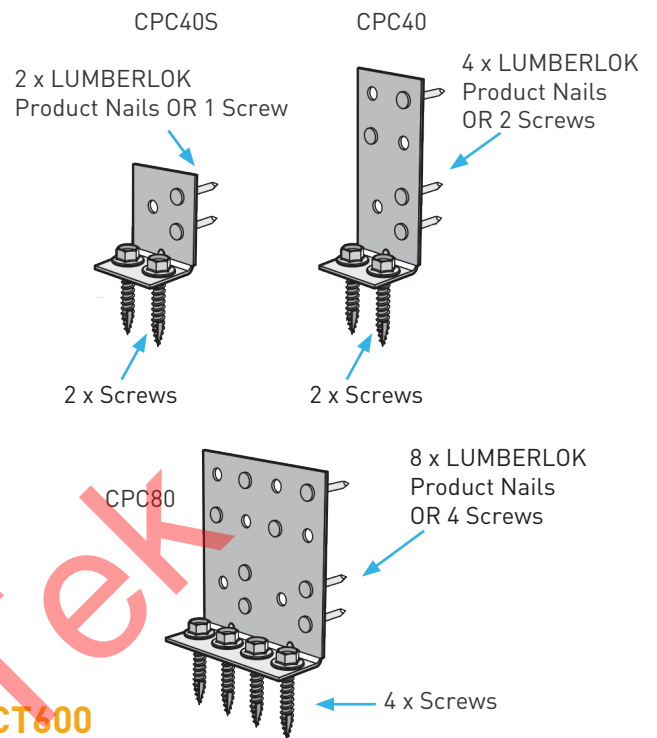


### CONCEALED PURLIN CLEATS

1.55mm G300 Z275 GALVANISED STEEL  
0.9mm STAINLESS STEEL 304-2B (SSPC40S)  
1.5mm STAINLESS STEEL 304-2B (SSPC40 & SSPC80)

Characteristic Load	CPC40S	CPC40	CPC80
Uplift / Tension	4.0 kN / pair	8.0 kN / pair	16.0 kN / pair

Fix as shown with:  
LUMBERLOK Product Nails 30mm x 3.15 dia.  
AND Type 17-14g x 35mm Hex Head Screws

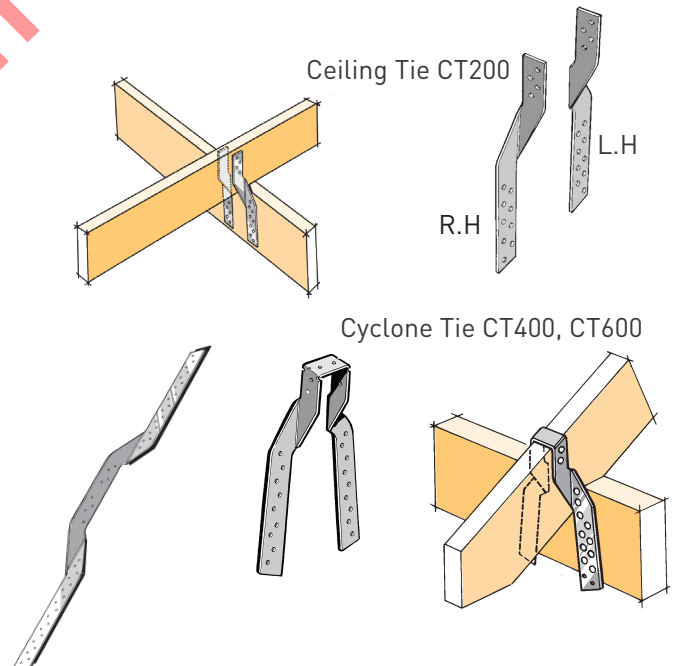


### CEILING TIE CT200 & CYCLONE TIES CT400, CT600

0.91mm G300 Z275 GALVANISED STEEL  
0.9mm STAINLESS STEEL 304-2B

Characteristic Load	CT200 (pair)	CT400, CT600
Uplift / Tension (4 nails each end)	10.5 kN	10.5 kN
Uplift / Tension (6 nails each end)	-	12.0 kN

Nails: LUMBERLOK Product Nails 30mm x 3.15 dia.



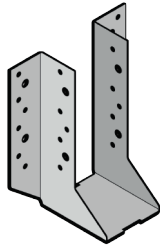
# LUMBERLOK

## TIMBER CONNECTORS CHARACTERISTIC LOADINGS DATA

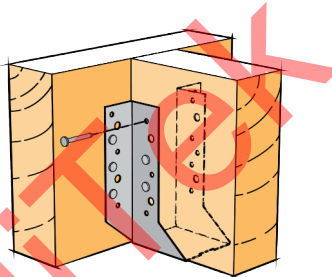
### JOIST HANGERS

0.91mm G300 Z275 GALVANISED STEEL

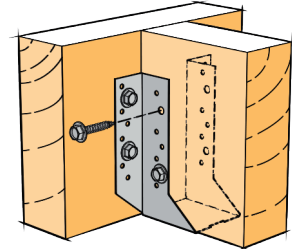
0.9mm STAINLESS STEEL 304-2B



UP  
DOWN



Nail Detail



Screw Detail

Joist Hanger Type	Characteristic Load - Nails			Characteristic Load - Screws		
	No. of Nails per Flange*	Down	Uplift	No. of Screws per Flange*	Down	Uplift
JH 47 x 90	3	9.0 kN	6.0 kN	1	7.0 kN	4.7 kN
JH 47 x 120	5	15.0 kN	10.0 kN	2	14.0 kN	12.0 kN
JH 47 x 190	9	27.0 kN	18.0 kN	3	21.0 kN	18.0 kN
JH 95 x 165	8	24.0 kN	16.0 kN	3	21.0 kN	18.0 kN
JH 70 x 180	8	24.0 kN	16.0 kN	3	21.0 kN	18.0 kN

Nails: LUMBERLOK Product Nails 30mm x 3.15 dia.      Screws: Type 17-12g x 35mm Hex Head

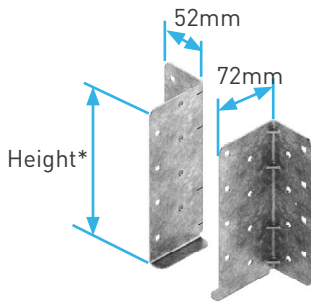
\*4 Flanges per hanger

Note: Loads for 47mm Joist Hangers also apply to 52mm.

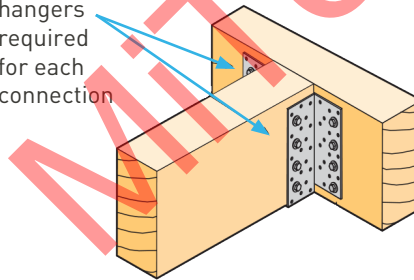
For roof trusses, Joist Hangers shall be fully nailed or screw fixed.

### SPLIT HANGERS

1.55 G300 Z275 GALVANISED STEEL



Left and right hand hangers required for each connection



Split Hangers are available in heights of:  
SPH140 - 137mm actual size  
SPH180 - 177mm actual size  
SPH220 - 217mm actual size

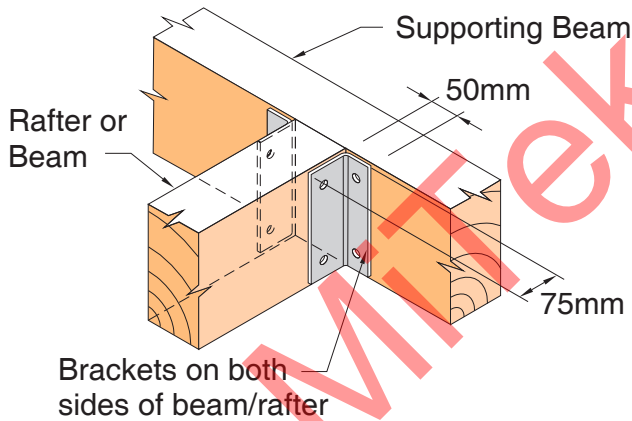
Split Hanger Type	Characteristic Load (per pair) - Screws					
	No. of Screws per Flange	Down	Uplift	No. of Screws per Flange	Down	Uplift
SPH140	3	15.0 kN	15.0 kN	6	36.0 kN	30.0 kN
SPH180	4	24.0 kN	20.0 kN	8	48.0 kN	40.0 kN
SPH220	5	30.0 kN	25.0 kN	10	60.0 kN	50.0 kN

Fill all round holes with screws      Screws: Type 17-14g x 35mm Hex Head

Fill all round and square holes with screws      Screws: Type 17-14g x 35mm Hex Head

# BUILDING WITH BOWMAC®

## HEAVY DUTY SHORT ANGLE BRACKETS



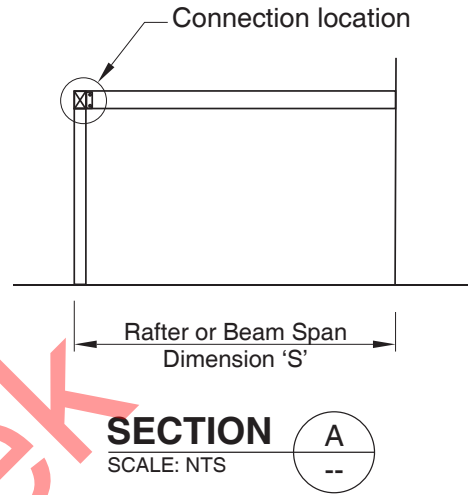
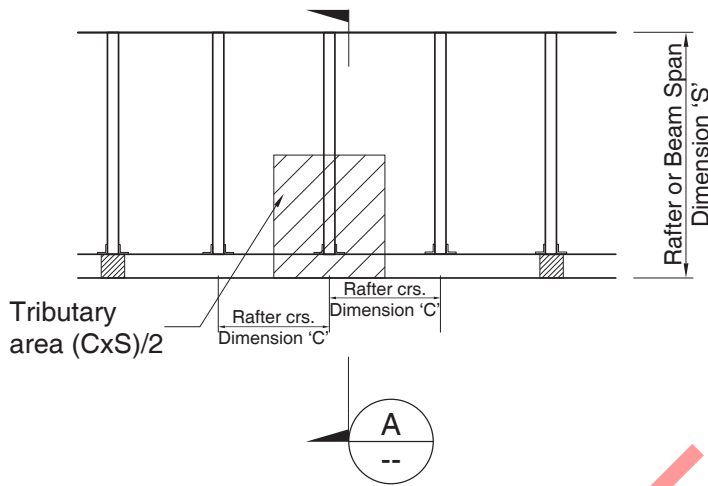
### BRACKET RANGE

- B175, B176, B177 and B178\*
- (\*holes for M16 Bolt)

### FIXING NOTE

- All bolt holes accommodate M12 Bolt unless noted.

### TYPICAL USE



### LAYOUT & LOAD DIMENSIONS

Roof type	Wind zone	Max. Roof Area (m <sup>2</sup> )	
		1.0kPa Snow	No Snow
Light	Extra high	6	6
	Very high	7	8
	High	7	11
	Medium	7	12
	Low	7	12
Heavy	Extra high	5	8
	Very high	5	10
	High	5	12
	Medium/Low	5	12

Max. design Snow Load S = 1.0kPa

### LOAD TABLE

## Concealed Joist Hangers

The CJT concealed joist tie offers tested performance in a joist connector with a clean, concealed look. Designed for versatility as well as hidden beauty, the CJT allows the joist to be angled up to 45° up or down with no reduction in load.

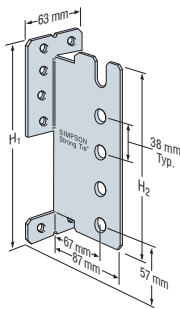
**Material:** 2.7 mm thick

**Finish:** ZMAX® coating. See Corrosion Information.

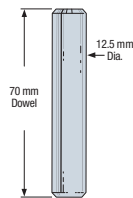
**Related Links** For more information and drawings [click here to visit webpage](#)

### Technical Data

Model No.	Min. Joist Size (mm)	Dimensions (mm)		Fasteners (No. – Lgth x Dia., mm)		Characteristic Load, R <sub>k</sub> (kN)	
		Bracket Height (H <sub>1</sub> )	Knife Plate Height (H <sub>2</sub> )	Post	Joist Pins	Uplift	Download
CJT3ZS	90 x 140	140	112	6 – SDS6.4 x 76	3 – 12 x 70	16.8	23.2
	90 x 184	140	112	6 – SDS6.4 x 76	3 – 12 x 70	19.6	29.0
CJT4ZS	90 x 235	178	151	8 – SDS6.4 x 76	4 – 12 x 70	32.7	38.4
CJT5ZS	90 x 286	216	188	10 – SDS6.4 x 76	5 – 12 x 70	39.0	45.6
CJT6ZS	90 x 286	255	227	12 – SDS6.4 x 76	6 – 12 x 70	59.2	49.3



**CJT5**  
(Others similar)



**Chamfered steel dowel**

## Internal Flange Joist Hangers

The IUC is a face-mounted concealed flange hanger for both I-joists and solid timber sections. Ideal for end of ledger/header or post conditions, the IUC also provides cleaner lines for exposed conditions such as overhead decks.

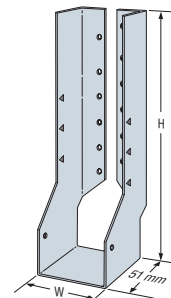
**Material:** 1.2 mm thick

**Finish:** Z275 coating. See Corrosion Information.

**Related Links** For more information and drawings [click here to visit webpage](#)

### Technical Data

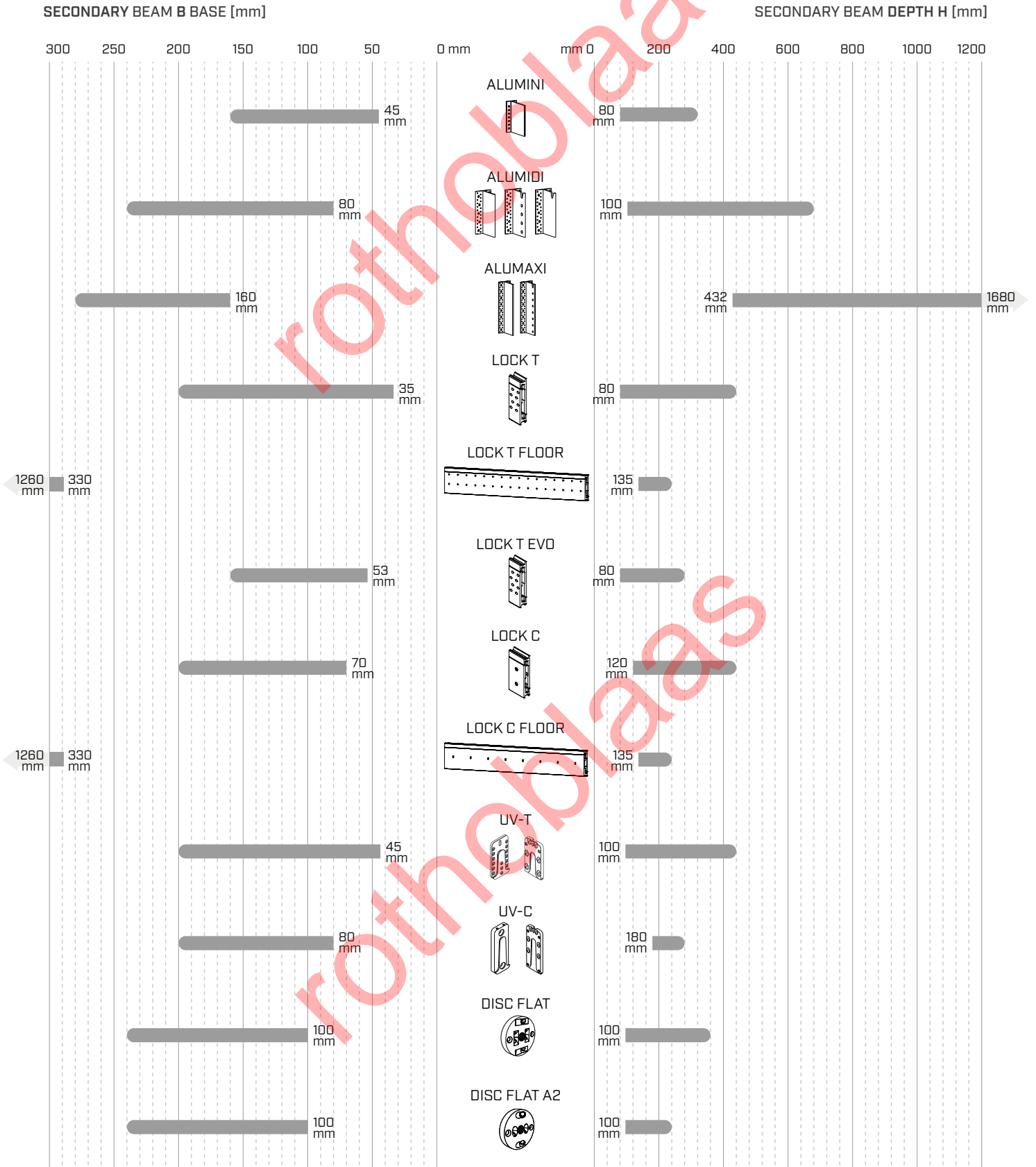
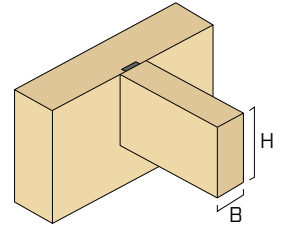
Model No.	Joist size (mm)		Dimensions (mm)			Fasteners (No. – Lgth x Dia., mm)		Characteristic Load, R <sub>k</sub> (kN)	
	Width	Height	Height	Width	Seat Depth	Face	Joist	Uplift	Download
IUC142/47	45	140–230	142	47	51	6 – 38 x 3.75	2 – 38 x 3.75	3.1	10.2
IUC192/47		195–320	192			10 – 38 x 3.75	2 – 38 x 3.75	3.1	11.6
IUC192/50	50	195–320	192	50	51	10 – 38 x 3.75	2 – 38 x 3.75	3.1	11.6
IUC217/50		220–360	217			12 – 38 x 3.75	2 – 38 x 3.75	3.1	11.6
HUC48Z	90	190–300	173	90	64	14 – 75x3.75	6 – 75x3.75	10.4	27.8
SAIX440/90/1.5		190–250	175	90	87	22 – 38x3.75	12 – 38x3.75	12.8	16.7



**IUC**  
(Others similar)

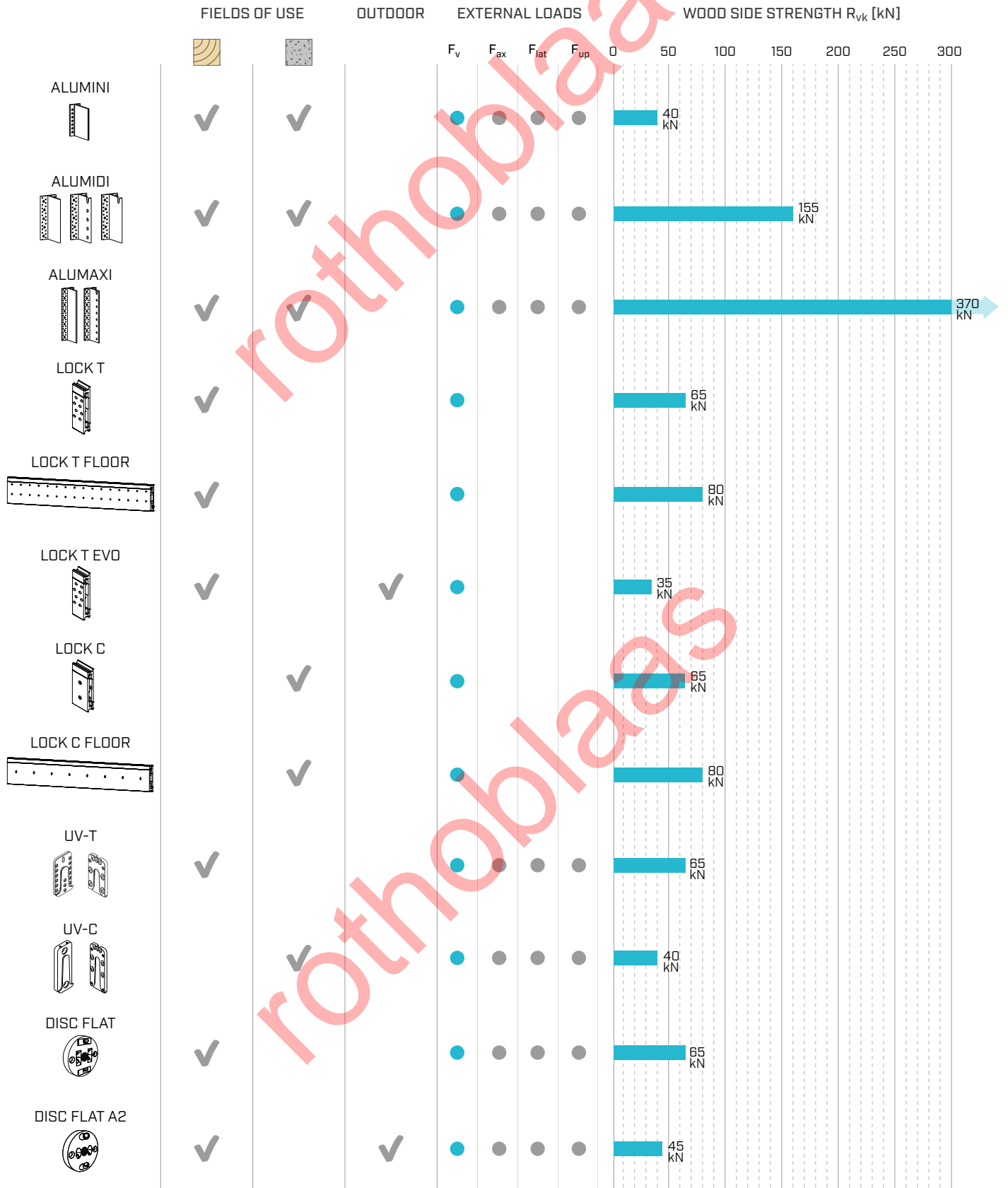
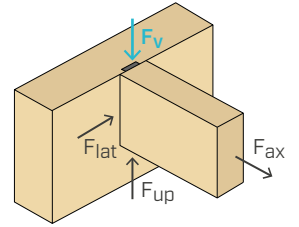
# GEOMETRY

Choice of connection system according to the secondary beam cross section



# STRENGTH

Choice of the connection system according to the vertical component of the shear load





# PRODUCT INFO SHEET

## Concealed Timber Connectors – Product Information



The CTC range are multi-use timber connectors that can be used to connect a variety of timber members to their supporting beams or posts whilst having a concealed connection.

Innovative design means these connectors can be utilised for fixing members with various arrangements and with different pitches and angles without the need for custom made brackets.

- Resists against loads in all directions, downward, uplift and axial.
- Complete concealment can help provide a fire-resistant connection.
- Suitable for all type of timber including sawn lumber, Glulam, LVL and CLT.
- Can be disassembled.
- Suits secondary member section sizes from 135x42 upwards.

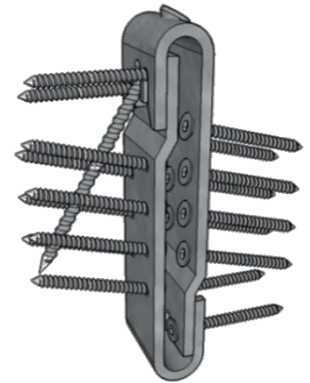


**Material:** G300/G250 mild steel or 316 stainless steel

**Finish/Coating:** Galvanised for mild steel or 316 stainless steel

**Detailing:** Simple rebate formed by router into either primary or secondary components.

**Fixings:** Fixed with self-drilling timber screws.



CTC 65/225 Shown.

For installation information see our Installation Guide, downloadable from our website.



Connectors available exclusively through Würth NZ.





# PRODUCT INFO SHEET

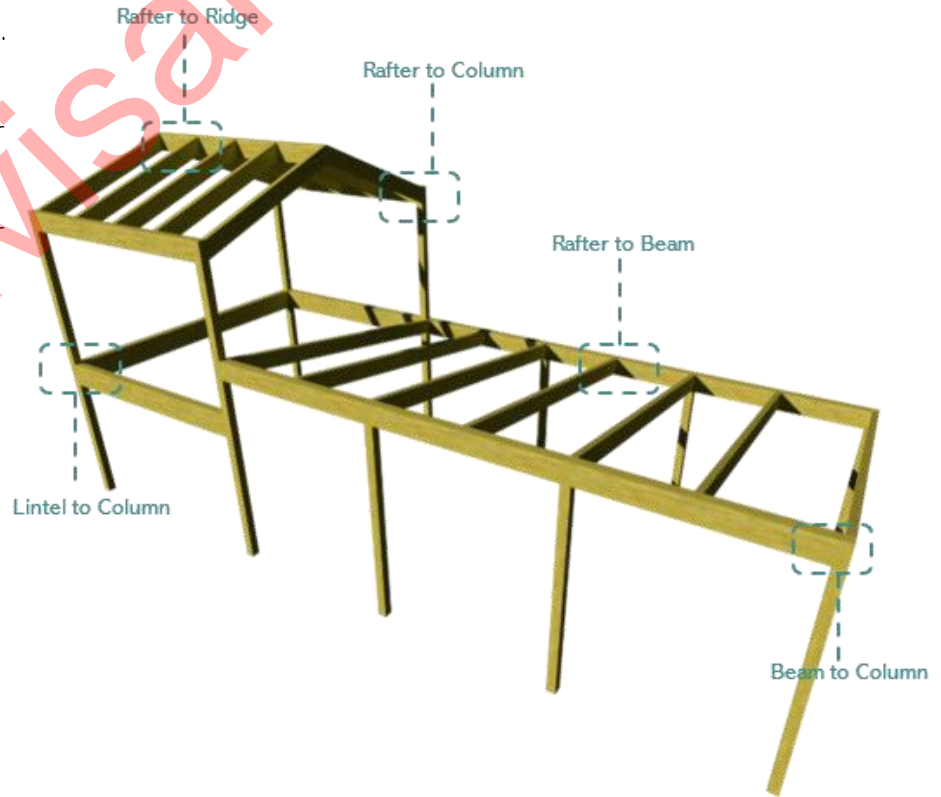
## Concealed Timber Connectors – Product Information

### Availability

Sold exclusively through Wurth stores nationwide.

CTC 42/135 – 8 Connection per pack, pack includes all screws required and a T30 torx driver

CTC 65/225 – 4 Connection per pack, pack includes all screws required and a T30 torx driver



### Technical Data

Our Product Technical Statement is available to download from <https://invisalok.co.nz/concealed-timber-connectors/>

Member size + fixings

Product	Minimum section size of secondary member	Fixings per connection
CTC 42/135	135mm Deep x 42mm wide	10 x 6x60 + 1 x 8x140
CTC 65/225	225mm deep x 65mm wide	18 x 6x60 + 1 x 8x140

Allowable design loads/capacities

Label	Downward Capacity, $\Phi V_n$ (kN)	Upward Capacity, $\Phi V_n$ (kN)
CTC42	3.6	3.2
CTC65	9.6	5.3

The above design capacities have been calculated by a qualified engineer using the data from proof testing. All allowances for creep and other applicable reductions factors have been applied in determining the above capacities, the above values can be considered as applicable for long term loads and exterior conditions.