Technical Sheet

BTCALU
Concealed Beam Hanger

Hidden from view, the BTCALU concealed beam hanger system combines high strength and performance with a minimalist structural aesthetic for timber-to-timber and timberto-concrete connections.
The system features a single-piece aluminium plate with a fin that locates into a slot - pre-cut into the carried timber member - which is then secured using dowels inserted through the timber section and the BTCALU fin.









Features

Material

Aluminium

Benefits

- Aluminium -strong, yet light weight
- Available in 5 pre-made length as well as a 2,168mm bar version for on-site cutting of custom sizes
- Use in horizontal connections or at inclinations of up to 45°
- The mounting slot is a safe and convenient way to suspend a secondary beam prior to dowel installation
- No additional support required
- Fire protection according to our ETA
- Test for use with Simpson Strong-Tie anchors, dowels and fastenings

Applications

Suitable on

Supporting member:

- Solid wood, engineered wood
- Steel
- Concrete

Supported member:

- Solid wood, engineered wood

Where to use

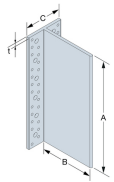
- For connections of secondary beams made of wood or engineered wood to main beams/posts made of solid/engineered wood/concrete or steel.

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Technical Data

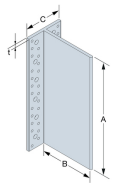
Product Dimensions



Reference	Connector Dimensions							
	Product Dimensions[mm]						Header holes[mm]	
	A[mm]	B[mm]	C[mm]	t[mm]	α[°]	α	Round	
					Min[mm]	Max.[°]	Ø9	Ø5
BTCALU90	90	123	80	6	-45	45	4	16
BTCALU120	120	123	80	6	-45	45	6	22
BTCALU160	160	123	80	6	-45	45	8	30
BTCALU200	200	123	80	6	-45	45	10	38
BTCALU240	240	123	80	6	-45	45	12	46
BTCALU2168	2168	123	80	6	-45	45	-	-

Product characteristic capacities - Timber beam to timber beam - CSA - STD 12





Reference	Hanger capacity																					
	Product characteristic capacities - Timber Beam to timber beam - CSA - STD12																					
	Characteristic capacities - Timber C24[kN]																		Number of Fasteners			
	$R_{4,k}$	$R_{1,k}$						$R_{2,k}$						$R_{3,k}$						Joist		Header	
		Dowels length[mm]						Dowels length[mm]						Dowels length[mm]						Qty	Type	Qty	Type
		60	80	100	120	140	160	60	80	100	120	140	160	60	80	100	120	140	160				
BTCALU90	8.6	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	3.2	4.5	4.7	4.7	4.7	4.7	3.0	STD12	16.0	CSA5.0
BTCALU120	12.9	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	3.9	5.6	6.3	6.3	6.3	6.3	3.0	STD12	22.0	CSA5.0
BTCALU160	17.2	41.9	42	42	42	42	42	41.9	42	42	42	42	42	4.9	7	8.4	8.4	8.4	8.4	4.0	STD12	30.0	CSA5.0
BTCALU200	21.4	52.3	54.1	57.9	61.7	61.7	61.7	52.3	54.1	57.9	61.7	61.7	61.7	5.9	8.4	10.5	10.5	10.5	10.5	5.0	STD12	38.0	CSA5.0
BTCALU240	25.7	62.8	64.9	69.5	75.7	82.8	82.9	62.8	64.9	69.5	75.7	82.8	82.9	6.9	9.8	12.6	12.6	12.6	12.6	6.0	STD12	46.0	CSA5.0

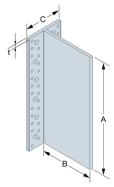
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BTCALU
Concealed Beam Hanger

SIMPSON Strong-Tie

Product characteristic capacities - Timber beam to timber beam - SSH - STD 12

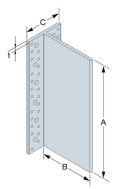




Reference	Hanger capacity																					
	Product characteristic capacities - Timber beam to timber beam - SSH - STD12																					
	Characteristic capacities - Timber C24[kN]																		Number of Fasteners			
	$R_{4,k}$	$R_{1,k}$						$R_{2,k}$						$R_{3,k}$						Joist		Header	
		Dowels length[mm]						Dowels length[mm]						Dowels length[mm]						Qty	Type	Qty	Type
		60	80	100	120	140	160	60	80	100	120	140	160	60	80	100	120	140	160				
BTCALU90	12.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.2	4.5	4.7	4.7	4.7	4.7	3.0	STD12	4.0	SSH8x8
BTCALU120	18.9	6	6	6	6	6	6	6	6	6	6	6	6	3.9	5.6	6.3	6.3	6.3	6.3	3.0	STD12	6.0	SSH8x8
BTCALU160	25.2	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	4.9	7	8.4	8.4	8.4	8.4	4.0	STD12	8.0	SSH8x8
BTCALU200	31.5	17	17	17	17	17	17	17	17	17	17	17	17	5.9	8.4	10.5	10.5	10.5	10.5	5.0	STD12	10.0	SSH8x8
BTCALU240	37.8	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	6.9	9.8	12.6	12.6	12.6	12.6	6.0	STD12	12.0	SSH8x8

Product characteristic capacities - Timber beam to Rigid support - FM753 - STD12





Reference	Hanger capacity																							
	Product characteristic capacities - Timber beam to rigid support - FM753 - STD12																							
	Number of Fasteners				Characteristic capacities - Timber C24[kN]																			
	Header		Joist		$R_{4,k}$	$R_{1,k}$						$R_{2,k}$						$R_{3,k}$						
	Qty	Type	Qty	Type		Dowels length[mm]						Dowels length[mm]						Dowels length[mm]						
						60	80	100	120	140	160	60	80	100	120	140	160	60	80	100	120	140	160	
BTCALU90	4.0	FM753 EVO M8	3.0	STD12	21.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.2	4.5	4.7	4.7	4.7	4.7	
BTCALU120	6.0	FM753 EVO M8	3.0	STD12	31.4	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	3.9	5.6	6.3	6.3	6.3	6.3	
BTCALU160	8.0	FM753 EVO M8	4.0	STD12	41.9	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	4.9	7	8.4	8.4	8.4	8.4	
BTCALU200	10.0	FM753 EVO M8	5.0	STD12	52.3	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	5.9	8.4	10.5	10.5	10.5	10.5	
BTCALU240	12.0	FM753 EVO M8	6.0	STD12	62.8	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	41.2	6.9	9.8	12.6	12.6	12.6	12.6	

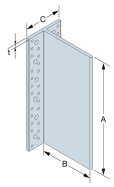
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SIMPSON Strong-Tie

Product characteristic capacities - Timber beam to timber beam - CSA - SDD7.5

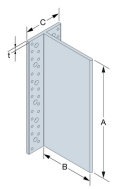




Reference	Hanger capacity																			
	Product characteristic capacities - Timber Beam to timber beam - CSA - SDD7.5																			
	Number of Fasteners				Characteristic capacities - Timber C24[kN]															
	Header		Joist		$R_{4,k}$	$R_{2,k}$					$R_{1,k}$						$R_{3,k}$				
	Qty	Type	Qty	Type		Dowels length[mm]					Dowels length[mm]						Dowels length[mm]				
						93	113	133	153	173	93	113	133	153	173		93	113	133	153	173
BTCALU90	16.0	CSA5.0x50	3.0	SDD7.5	8.6	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5		4.7	4.7	4.7	4.7	4.7
BTCALU120	22.0	CSA5.0x50	3.0	SDD7.5	12.9	21.6	23.8	24.8	24.8	24.8	21.6	23.8	24.8	24.8	24.8		6.3	6.3	6.3	6.3	6.3
BTCALU160	30.0	CSA5.0x50	4.0	SDD7.5	17.2	28.8	31.8	35.2	38.8	41.7	28.8	31.8	35.2	38.8	41.7		8.3	8.4	8.4	8.4	8.4
BTCALU200	38.0	CSA5.0x50	5.0	SDD7.5	21.4	36	39.7	44	48.5	52.2	36	39.7	44	48.5	52.2		10	10.5	10.5	10.5	10.5
BTCALU240	46.0	CSA5.0x50	6.0	SDD7.5	25.7	43.2	47.7	52.7	58.3	62.6	43.2	47.7	52.7	58.3	62.6		11.7	12.6	12.6	12.6	12.6

Product characteristic capacities - Timber beam to timber beam - SSH - SDD7.5

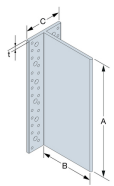




Reference	Hanger capacity																			
	Product characteristic capacities - Timber beam to timber beam - SSH - SDD7.5																			
	Number of Fasteners				Characteristic capacities - Timber C24[kN]															
	Header		Joist		$R_{4,k}$	$R_{1,k}$					$R_{2,k}$						$R_{3,k}$				
	Qty	Type	Qty	Type		Dowels length[mm]					Dowels length[mm]						Dowels length[mm]				
						93	113	133	153	173	93	113	133	153	173		93	113	133	153	173
BTCALU90	4.0	SSH8x80	3.0	SDD7.5	12.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9		4.7	4.7	4.7	4.7	4.7
BTCALU120	6.0	SSH8x80	3.0	SDD7.5	18.9	6	6	6	6	6	6	6	6	6	6		6.3	6.3	6.3	6.3	6.3
BTCALU160	8.0	SSH8x80	4.0	SDD7.5	25.2	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9		8.3	8.4	8.4	8.4	8.4
BTCALU200	10.0	SSH8x80	5.0	SDD7.5	31.5	17	17	17	17	17	17	17	17	17	17		10	10.5	10.5	10.5	10.5
BTCALU240	12.0	SSH8x80	6.0	SDD7.5	37.8	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1		11.7	12.6	12.6	12.6	12.6

Product characteristic capacities - Timber beam to Rigid support - FM753 - SDD7.5





Reference	Hanger capacity																			
	Product characteristic capacities - Timber beam to rigid support - FM753 - SDD7.5																			
	Characteristic capacities - Timber C24[kN]																Number of Fasteners			
	$R_{4,k}$	$R_{1,k}$					$R_{3,k}$					$R_{2,k}$					Joist		Header	
		Dowels length[mm]					Dowels length[mm]					Dowels length[mm]					Qty	Type	Qty	Type
		93	113	133	153	173	93	113	133	153	173	93	113	133	153	173				
BTCALU90	21.4	3.3	3.3	3.3	3.3	3.3	4.7	4.7	4.7	4.7	4.7	3.3	3.3	3.3	3.3	3.3	3.0	SDD7.5	4.0	FM753 EVO M8
BTCALU120	21.6	10.2	10.2	10.2	10.2	10.2	6.3	6.3	6.3	6.3	6.3	10.2	10.2	10.2	10.2	10.2	3.0	SDD7.5	6.0	FM753 EVO M8
BTCALU160	28.8	18.5	18.5	18.5	18.5	18.5	8.3	8.4	8.4	8.4	8.4	18.5	18.5	18.5	18.5	18.5	4.0	SDD7.5	8.0	FM753 EVO M8
BTCALU200	36	29.1	29.1	29.1	29.1	29.1	10	10.5	10.5	10.5	10.5	29.1	29.1	29.1	29.1	29.1	5.0	SDD7.5	10.0	FM753 EVO M8
BTCALU240	43.2	41.2	41.2	41.2	41.2	41.2	11.7	12.6	12.6	12.6	12.6	41.2	41.2	41.2	41.2	41.2	6.0	SDD7.5	12.0	FM753 EVO M8

Technical Sheet

BTCALU

Concealed Beam Hanger

Installation

Fixings

Supported Member

- Steel dowels STD Ø8, Ø10, or Ø12,
- Self Drilling Dowels SDD7.5

Supporting Member

- Concrete
  - FM 753 evo M8
  - FM 753 crack M8
  - AT-HP + LMAS M8
- Steel
  - Bolt M8
- Timber
  - CNA4,0xl threaded nails
  - CSA5,0xl screws
  - SSH Ø8

Installation

BTCALU exist in 2168 mm bars. It must be cut to length by the user, with a maximum usable length of 600 mm. The hanger can be used with a supported beam with a slope of between -45° and +45°. The BTCALU is supplied without drilling in the core. The holes must be drilled at regular 40 mm centres before inserting the STD Ø12 pins or the will be drilleds during the installation of the SDD.

- Cut the BTCALU to the required height (load values are given for a maximum height of 600 mm),
- Fix the BTCALU to the support using CNA Ø4.0 x 50mm nails, CSA5.0x40 screws, SSH8 screws on a timber support or FM 753 evo type anchors on a concrete support.
- Make a vertical cut 9 mm thick and 129 mm deep along the axis of the supported beam over the entire height of the beam to insert the web of the hanger,
- Place the beam on the hanger in its final position,
- **In the case of STD**, drill the wood and the web of the hanger at the same time, taking into account the drilling recommendations on the BTCALU web. The timber can be drilled beforehand and used as a guide for drilling the dowel holes in the core of the hanger,
- Insert the dowels into the holes to complete the installation.
- If the timber and hanger are drilled at the same time for STD smooth dowel pins, the drilling should be 12 mm. With STD smooth dowels, during the construction phase or in the case of light loads, it is recommended that the spindles are held in position either by glue or by taking a dowel smaller than the width of the supported timber , and encapsulating the dowels.
- **In the case of SDD,** the timber and aluminium are drilled directly by the self drilling dowel during the installation. The dowels will be maintained in position by the thread.

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