Technical Sheet

BTALU
Concealed Beam Hanger

The BTALU concealed hanger is one solution to connecting timber members together without seeing the connector.
It is designed to be fixed to the header timber and then fully inserted into a slot in the in-coming beam, and held in place with dowels. Holes are drilled through the timber and fin of the BTALU, allowing accurate alignment. This method provides an aesthetically pleasing connection for feature beams.
Note: Fasteners & dowels supplied; dowel length must be specified upon ordering
Holes for the joist have to be site drilled in accordance to positions shown in diagram below.



SC 3

OUTDOOR

AL

R 30

Features

Material

Aluminium

Benefits

- Accurate alignment of dowels
- Aesthetically pleasing

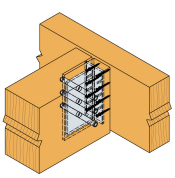
Applications

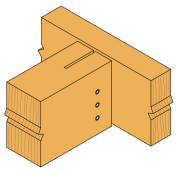
For Connecting

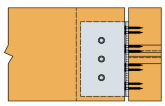
Glulam timbers

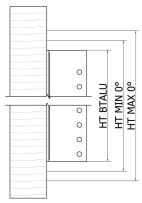
For Use With

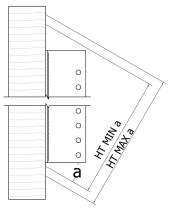
Carried and carrying Glulam member

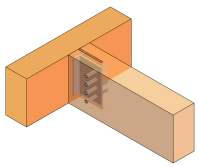


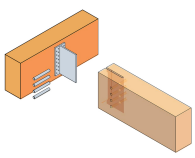


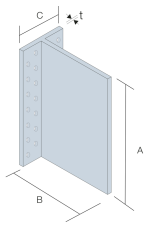




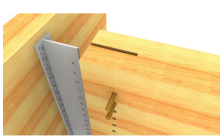








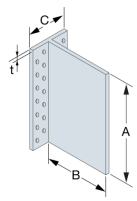




Technical Sheet

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Concealed Beam Hanger

Technical Data



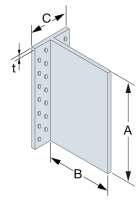
Product Dimensions

Reference	Connector Dimensions							
	Other			Product Dimensions[mm]				Header holes[mm]
	Tun / DB nr.	Qty per Box	Weight[kg]	A[mm]	B[mm]	C[mm]	t[mm]	Round Ø5
BTALU90	1862485	25.0	0.23	86	109	62	6	16
BTALU120	1821910	25.0	0.3	116	109	62	6	20
BTALU160	1821917	25.0	0.41	156	109	62	6	28
BTALU200	1862489	15.0	0.51	196	109	62	6	38
BTALU240	1821920	15.0	0.61	236	109	62	6	44
BTALU1200	-	-	3	1198	109	62	6	-

The holes for the joist has to be drill acc. to the hole pattern of the ETA.
The size A can be up to 4mm less for cutting from the raw length, the cut shall be between the nail holes.

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BTALU
Concealed Beam Hanger



Performance Values

Reference	Hanger capacity									
	Product Capacities[kN]									
	Number of Fasteners				Product characteristic capacities - Timber C24[kN]					
	Header		Joist		R1,k = R2,k					
	Qty	Type	Qty	Type	Dowels length[mm]					
					60	80	100	120	140	160
BTALU90	16.0	CNA4.0x50	4.0	STD8	10.8	11.8	12.9	13.7	13.7	13.7
BTALU120	20.0	CNA4.0x50	3.0	STD12	17.3	18.2	19.4	20.7	22.3	23.9
BTALU160	28.0	CNA4.0x50	4.0	STD12	28	29.5	31.2	33.3	35.7	38.2
BTALU200	38.0	CNA4.0x50	5.0	STD12	39.8	41.9	44.3	47.2	50.4	53.9
BTALU240	44.0	CNA4.0x50	6.0	STD12	52.2	54.9	57.9	61.7	65.9	70.3
BTALU1200/120	20.0	CNA4.0x50	3.0	STD12	17.3	18.2	19.4	20.7	22.3	23.9
BTALU1200/160	28.0	CNA4.0x50	4.0	STD12	28	29.5	31.2	33.3	35.7	38.2
BTALU1200/200	36.0	CNA4.0x50	5.0	STD12	39.8	41.9	44.3	47.2	50.4	53.9
BTALU1200/240	44.0	CNA4.0x50	6.0	STD12	52.2	54.9	57.9	61.7	65.9	70.3
BTALU1200/280	52.0	CNA4.0x50	7.0	STD12	64.6	68	71.7	76.4	81.7	87.2
BTALU1200/320	60.0	CNA4.0x50	8.0	STD12	77	81	85.5	91.2	97.5	104.1
BTALU1200/360	68.0	CNA4.0x50	9.0	STD12	89.1	93.8	99	105.8	113.3	121.1
BTALU1200/400	76.0	CNA4.0x50	10.0	STD12	100.8	106.1	112.3	120.2	129	137.9
BTALU1200/440	84.0	CNA4.0x50	11.0	STD12	112.1	118	125.2	134.4	144.4	154.7
BTALU1200/480	92.0	CNA4.0x50	12.0	STD12	122.8	129.3	137.7	148.2	159.7	171.3
BTALU1200/520	100.0	CNA4.0x50	12.0	STD12	122.8	129.3	138.4	150.5	163.1	175.8
BTALU1200/560	108.0	CNA4.0x50	12.0	STD12	122.8	129.3	138.4	150.7	164.9	179.1
BTALU1200/600	116.0	CNA4.0x50	12.0	STD12	122.8	129.3	138.4	150.7	164.9	180.4

The joist shall have as minimum a width = length of steel dowel.
For beams with a slope β the capacities shall be multiply with the factor.

β	0°	15°	30°	45°
factor	1.0	0.95	0.90	0.85

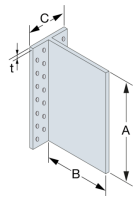
It´s only necessary for connection with less than 7 steel dowel in the joist.

Technical Sheet

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Concealed Beam Hanger

SIMPSON Strong-Tie

Product characteristic capacities - Timber beam to timber beam - $R_{3,k}$ and $R_{4,k}$

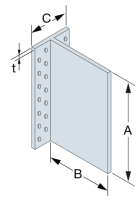


Reference	Hanger capacity										
	Product Capacities[kN]										
	Number of Fasteners				Product characteristic capacities - Timber C24[kN]						
	Header		Joist		$R_{4,k}$[kN]	$R_{3,k}$					
	Qty	Type	Qty	Type		Dowels length[mm]					
						60	80	100	120	140	160
BTALU90	16.0	CNA4.0x50	4.0	STD8	7.8	1.5	1.9	2.3	2.7	3.1	3.6
BTALU120	20.0	CNA4.0x50	3.0	STD12	9.8	2.2	2.9	3.5	4.2	4.8	5.6
BTALU160	28.0	CNA4.0x50	4.0	STD12	13.7	2.9	3.6	4.4	5.3	6.2	7
BTALU200	38.0	CNA4.0x50	5.0	STD12	17.6	3.5	4.4	5.4	6.4	7.4	8.4
BTALU240	44.0	CNA4.0x50	6.0	STD12	21.6	4.2	5.3	6.4	7.4	8.6	9.8
BTALU1200/120	20.0	CNA4.0x50	3.0	STD12	9.8	2.2	2.9	3.5	4.2	4.8	5.6
BTALU1200/160	28.0	CNA4.0x50	4.0	STD12	13.7	2.9	3.6	4.4	5.3	6.2	7
BTALU1200/200	36.0	CNA4.0x50	5.0	STD12	17.6	3.5	4.4	5.4	6.4	7.4	8.4
BTALU1200/240	44.0	CNA4.0x50	6.0	STD12	21.5	4.2	5.3	6.4	7.4	8.6	9.8
BTALU1200/280	52.0	CNA4.0x50	7.0	STD12	25.5	4.8	6.1	7.3	8.5	9.9	11.3
BTALU1200/320	60.0	CNA4.0x50	8.0	STD12	29.4	5.5	6.8	8.3	9.7	11.1	12.9
BTALU1200/360	68.0	CNA4.0x50	9.0	STD12	33.3	6.1	7.6	9.2	10.9	12.4	14.4
BTALU1200/400	76.0	CNA4.0x50	10.0	STD12	37.2	6.7	8.3	10.1	12.1	13.8	15.8
BTALU1200/440	84.0	CNA4.0x50	11.0	STD12	41.2	7.3	9.1	11	13.2	15.2	17.2
BTALU1200/480	92.0	CNA4.0x50	12.0	STD12	45.1	7.9	9.8	11.9	14.3	16.6	18.7
BTALU1200/520	100.0	CNA4.0x50	12.0	STD12	49	8.6	10.6	12.8	15.4	17.8	20.1
BTALU1200/560	108.0	CNA4.0x50	12.0	STD12	52.9	9.2	11.3	13.8	16.5	19.1	21.5
BTALU1200/600	116.0	CNA4.0x50	12.0	STD12	56.8	9.8	12.1	14.7	17.6	20.4	23

The joist shall have as minimum a width = length of steel dowel.
The capacities R4 are for all length of steel dowel.

Technical Sheet

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Product characteristic capacities - Timber beam to timber post

Reference	Hanger capacity										Connector Dimensions
	Product characteristic capacities - Timber beam to timber post - partial nailing										Header dimensions[mm]
	Number of Fasteners				Product characteristic capacities - Timber C24[kN]						Post Width
	Header		Joist		R1,k = R2,k						Min[mm]
	Qty	Type	Qty	Type	Dowels length[mm]						
					60	80	100	120	140	160	
BTALU90	8.0	CNA4.0x50	4.0	STD8	9	9.9	10.9	11.6	11.6	11.6	96
BTALU120	12.0	CNA4.0x50	3.0	STD12	14.7	15.5	16.6	17.9	19.4	20.7	96
BTALU160	16.0	CNA4.0x50	4.0	STD12	23.2	24.4	26	27.9	30	32	96
BTALU200	20.0	CNA4.0x50	5.0	STD12	32.4	34.1	36.2	38.7	41.2	43.4	96
BTALU240	24.0	CNA4.0x50	6.0	STD12	42.1	44.3	46.8	49.7	52.3	53.2	96
BTALU1200/120	12.0	CNA4.0x50	3.0	STD12	14.7	15.5	16.6	17.9	19.4	20.7	96
BTALU1200/160	16.0	CNA4.0x50	4.0	STD12	23.2	24.4	26	27.9	30	32	96
BTALU1200/200	20.0	CNA4.0x50	5.0	STD12	32.4	34.1	36.2	38.7	41.2	43.4	96
BTALU1200/240	24.0	CNA4.0x50	6.0	STD12	42.1	44.3	46.8	49.7	52.3	53.2	96
BTALU1200/280	28.0	CNA4.0x50	7.0	STD12	52	54.7	57.5	60.5	62	62	96
BTALU1200/320	32.0	CNA4.0x50	8.0	STD12	61.8	65.1	68.1	70.7	70.9	70.9	96
BTALU1200/360	36.0	CNA4.0x50	9.0	STD12	71.7	75.5	78.5	79.8	79.8	79.8	96
BTALU1200/400	40.0	CNA4.0x50	10.0	STD12	81.4	85.7	88.4	88.6	88.6	88.6	96
BTALU1200/440	44.0	CNA4.0x50	11.0	STD12	91	95.8	97.5	97.5	97.5	97.5	96
BTALU1200/480	48.0	CNA4.0x50	12.0	STD12	100.3	105.6	106.4	106.4	106.4	106.4	96
BTALU1200/520	52.0	CNA4.0x50	12.0	STD12	105.5	111.1	114.6	115.2	115.2	115.2	96
BTALU1200/560	56.0	CNA4.0x50	12.0	STD12	109.9	115.7	120.3	124	124.1	124.1	96
BTALU1200/600	60.0	CNA4.0x50	12.0	STD12	113.8	119.8	125	130.5	133	133	96

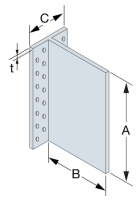
The joist shall have as minimum a width = length of steel dowel.
For beams with a slope β the capacities shall be multiplywith the factor.

β	0°	15°	30°	45°
factor	1.0	0.95	0.90	0.85

It´s only necessary for connection with less than 7 steel dowel in the joist.
The capacities R_4 are for all length of steel dowel.
The capacities from this table are also valid for partial nailing beam to beam.

Technical Sheet

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Concealed Beam Hanger



Product characteristic capacities - Timber beam to timber post - $R_{3,k}$ and $R_{4,k}$

Reference	Hanger capacity											Connector Dimensions
	Product characteristic capacities - Timber beam to timber post - partial nailing											Header dimensions[mm]
	Number of Fasteners				Product characteristic capacities - Timber C24[kN]							Post Width
	Header		Joist		$R_{4,k}$[kN]	$R_{3,k}$						Min[mm]
	Qty	Type	Qty	Type		Dowels length[mm]						
						60	80	100	120	140	160	
BTALU90	8.0	CNA4.0x50	4.0	STD8	3.9	1.5	1.9	2.3	2.7	2.7	2.7	96
BTALU120	12.0	CNA4.0x50	3.0	STD12	5.9	2.2	2.9	3.5	4.2	4.8	5.6	96
BTALU160	16.0	CNA4.0x50	4.0	STD12	7.8	2.9	3.6	4.4	5.3	6.2	7	96
BTALU200	20.0	CNA4.0x50	5.0	STD12	9.8	3.5	4.4	5.4	6.4	7.4	8.4	96
BTALU240	24.0	CNA4.0x50	6.0	STD12	11.8	4.2	5.3	6.4	7.4	8.6	9.8	96
BTALU1200/120	12.0	CNA4.0x50	3.0	STD12	5.9	2.2	2.9	3.5	4.2	4.8	5.6	96
BTALU1200/160	16.0	CNA4.0x50	4.0	STD12	7.8	2.9	3.6	4.4	5.3	6.2	7	96
BTALU1200/200	20.0	CNA4.0x50	5.0	STD12	9.8	3.5	4.4	5.4	6.4	7.4	8.4	96
BTALU1200/240	24.0	CNA4.0x50	6.0	STD12	11.8	4.2	5.3	6.4	7.4	8.6	9.8	96
BTALU1200/280	28.0	CNA4.0x50	7.0	STD12	13.7	4.5	5.6	6.7	7.7	8.9	10.1	96
BTALU1200/320	32.0	CNA4.0x50	8.0	STD12	15.7	5.2	6.4	7.7	8.8	10.2	11.5	96
BTALU1200/360	36.0	CNA4.0x50	9.0	STD12	17.6	5.8	7.2	8.6	9.9	11.5	12.9	96
BTALU1200/400	40.0	CNA4.0x50	10.0	STD12	19.6	6.5	8	9.6	11	12.7	14.4	96
BTALU1200/440	44.0	CNA4.0x50	11.0	STD12	21.6	7.1	8.8	10.5	12.1	14	15.8	96
BTALU1200/480	48.0	CNA4.0x50	12.0	STD12	23.5	7.7	9.5	11.5	13.2	15.3	17.2	96
BTALU1200/520	52.0	CNA4.0x50	12.0	STD12	25.5	8.4	10.3	12.4	14.3	16.6	18.7	96
BTALU1200/560	56.0	CNA4.0x50	12.0	STD12	27.4	9	11.1	13.4	15.4	17.8	20.1	96
BTALU1200/600	60.0	CNA4.0x50	12.0	STD12	29.4	9.7	11.9	14.4	16.5	19.1	21.5	96

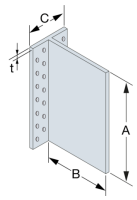
The joist shall have as minimum a width = length of steel dowel.
The capacities R_4 are for all length of steel dowel.

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SIMPSON Strong-Tie

Product characteristic capacities - Timber beam to timber beam - $R_{3,k}$ and $R_{4,k}$ - SDD

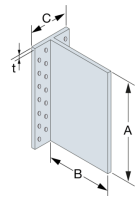


Reference	Hanger capacity									
	Product characteristic capacities - Timber Beam to timber beam - CNA - SDD7.5 - Full nailing[kN]									
	Characteristic capacities - Timber C24[kN]						Number of Fasteners			
	$R_{4,k}$	$R_{3,k}$					Joist		Header	
		Dowels length[mm]					Qty	Type	Qty	Type
		93	113	133	153	173				
BTALU90	-	-	-	-	-	-	-	-	-	-
BTALU120	8.8	2.9	3.5	4.2	4.8	5.6	3.0	SDD7.5	22.0	CNA4.0x50
BTALU160	12.7	3.6	4.4	5.3	6.2	7	4.0	SDD7.5	30.0	CNA4.0x50
BTALU200	16.7	4.4	5.4	6.4	7.4	8.4	5.0	SDD7.5	38.0	CNA4.0x50
BTALU240	20.6	5.3	6.4	7.4	8.6	9.8	6.0	SDD7.5	46.0	CNA4.0x50
BTALU1200/120	8.8	2.9	3.5	4.2	4.8	5.6	3.0	SDD7.5	20.0	CNA4.0x50
BTALU1200/160	12.7	3.6	4.4	5.3	6.2	7	4.0	SDD7.5	28.0	CNA4.0x50
BTALU1200/200	16.7	4.4	5.4	6.4	7.4	8.4	5.0	SDD7.5	36.0	CNA4.0x50
BTALU1200/240	20.6	5.3	6.4	7.4	8.6	9.8	6.0	SDD7.5	44.0	CNA4.0x50
BTALU1200/280	24.5	6.1	7.3	8.5	9.9	11.3	7.0	SDD7.5	52.0	CNA4.0x50
BTALU1200/320	28.4	6.8	8.3	9.7	11.1	12.9	8.0	SDD7.5	60.0	CNA4.0x50
BTALU1200/360	32.3	7.6	9.2	10.9	12.4	14.4	9.0	SDD7.5	68.0	CNA4.0x50
BTALU1200/400	36.3	8.3	10.1	12.1	13.8	15.8	10.0	SDD7.5	76.0	CNA4.0x50
BTALU1200/440	40.2	9.1	11	13.2	15.2	17.2	11.0	SDD7.5	84.0	CNA4.0x50
BTALU1200/480	44.1	9.8	11.9	14.3	16.6	18.7	12.0	SDD7.5	92.0	CNA4.0x50
BTALU1200/520	48	10.6	12.8	15.4	17.8	20.1	12.0	SDD7.5	100.0	CNA4.0x50
BTALU1200/560	51.9	11.3	13.8	16.5	19.1	21.5	12.0	SDD7.5	108.0	CNA4.0x50
BTALU1200/600	55.9	12.1	14.7	17.6	20.4	23	12.0	SDD7.5	116.0	CNA4.0x50

The joist shall have as minimum a width = length of steel dowel.
The capacities R4 are for all length of steel dowel.

Technical Sheet

BTALU
Concealed Beam Hanger



Product characteristic capacities - Timber beam to timber post with SDD

Reference	Hanger capacity										Connector Dimensions
	Product characteristic capacities - Timber Beam to timber beam - CNA - SDD7.5 - Partial nailing										Header dimensions[mm]
	Characteristic capacities - Timber C24[kN]						Number of Fasteners				Post Width
	$R_{4,k}$	$R_{1,k}$					Header		Joist		Min[mm]
		Dowels length[mm]					Qty	Type	Qty	Type	
		93	113	133	153	173					
BTALU90	-	-	-	-	-	-	-	-	-	-	96
BTALU120	8.8	12.2	13.2	13.5	14.1	14.1	12.0	CNA4.0x50	3.0	SDD7.5	96
BTALU160	12.7	18.7	19.7	21.3	21.3	21.3	16.0	CNA4.0x50	4.0	SDD7.5	96
BTALU200	16.7	25.9	27.7	29.8	29.8	29.8	20.0	CNA4.0x50	5.0	SDD7.5	96
BTALU240	20.6	33.6	36.2	38.9	38.9	38.9	24.0	CNA4.0x50	6.0	SDD7.5	96
BTALU1200/120	8.8	12.2	13.2	13.5	14.1	14.1	12.0	CNA4.0x50	3.0	SDD7.5	96
BTALU1200/160	12.7	18.7	19.7	21.3	21.3	21.3	16.0	CNA4.0x50	4.0	SDD7.5	96
BTALU1200/200	16.7	25.9	27.7	29.8	29.8	29.8	20.0	CNA4.0x50	5.0	SDD7.5	96
BTALU1200/240	20.6	33.6	36.2	38.9	38.9	38.9	24.0	CNA4.0x50	6.0	SDD7.5	96
BTALU1200/280	24.5	41.5	44.9	48.2	48.2	48.2	28.0	CNA4.0x50	7.0	SDD7.5	96
BTALU1200/320	28.4	49.4	53.6	53.6	53.6	53.6	32.0	CNA4.0x50	8.0	SDD7.5	96
BTALU1200/360	32.3	57.5	62.4	62.4	62.4	62.4	36.0	CNA4.0x50	9.0	SDD7.5	96
BTALU1200/400	36.3	65.5	71.2	76.4	76.4	76.4	40.0	CNA4.0x50	10.0	SDD7.5	96
BTALU1200/440	40.2	73.6	79.3	85.8	91.4	92.5	44.0	CNA4.0x50	11.0	SDD7.5	96
BTALU1200/480	44.1	81.4	57.9	94.5	100.2	101.7	48.0	CNA4.0x50	12.0	SDD7.5	96
BTALU1200/520	48	83.6	90.2	97.5	104.1	106.4	52.0	CNA4.0x50	12.0	SDD7.5	96
BTALU1200/560	51.9	85.9	92.5	100.5	107.9	111.2	56.0	CNA4.0x50	12.0	SDD7.5	96
BTALU1200/600	55.9	85.9	94.8	103.5	111.7	115.9	60.0	CNA4.0x50	12.0	SDD7.5	96

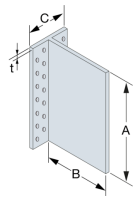
The joist shall have as minimum a width = length of steel dowel.
For beams with a slope β the capacities shall be multiplywith the factor.

β	0°	15°	30°	45°
factor	1.0	0.92	0.90	0.85

It´s only necessary for connection with less than 7 steel dowel in the joist.
The capacities R4 are for all length of steel dowel.
The capacities from this table are also valid for partial nailing beam to beam.

Technical Sheet

BTALU
Concealed Beam Hanger



Product characteristic capacities - Timber beam to timber post - $R_{3.k}$ and $R_{4.k}$ - SDD

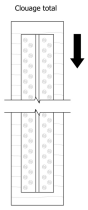
Reference	Hanger capacity										Connector Dimensions
	Product characteristic capacities - Timber Beam to timber beam - CNA - SDD7.5 - Partial nailing										Header dimensions[mm]
	Characteristic capacities - Timber C24[kN]						Number of Fasteners				Post Width
	$R_{4.k}$	$R_{3,k}$					Header		Joist		Min[mm]
		Dowels length[mm]					Qty	Type	Qty	Type	
		93	113	133	153	173					
BTALU90	-	-	-	-	-	-	-	-	-	-	96
BTALU120	8.8	2.9	3.5	4.2	4.8	5.6	12.0	CNA4.0x50	3.0	SDD7.5	96
BTALU160	12.7	3.6	4.4	5.3	6.2	7	16.0	CNA4.0x50	4.0	SDD7.5	96
BTALU200	16.7	4.4	5.4	6.4	7.4	8.4	20.0	CNA4.0x50	5.0	SDD7.5	96
BTALU240	20.6	5.3	6.4	7.4	8.6	9.8	24.0	CNA4.0x50	6.0	SDD7.5	96
BTALU1200/120	8.8	2.9	3.5	4.2	4.8	5.6	12.0	CNA4.0x50	3.0	SDD7.5	96
BTALU1200/160	12.7	3.6	4.4	5.3	6.2	7	16.0	CNA4.0x50	4.0	SDD7.5	96
BTALU1200/200	16.7	4.4	5.4	6.4	7.4	8.4	20.0	CNA4.0x50	5.0	SDD7.5	96
BTALU1200/240	20.6	5.3	6.4	7.4	8.6	9.8	24.0	CNA4.0x50	6.0	SDD7.5	96
BTALU1200/280	24.5	5.6	6.7	7.7	8.9	10.1	28.0	CNA4.0x50	7.0	SDD7.5	96
BTALU1200/320	28.4	6.4	7.7	8.8	10.2	11.5	32.0	CNA4.0x50	8.0	SDD7.5	96
BTALU1200/360	32.3	7.2	8.6	9.9	11.5	12.9	36.0	CNA4.0x50	9.0	SDD7.5	96
BTALU1200/400	36.3	8	9.6	11	12.7	14.4	40.0	CNA4.0x50	10.0	SDD7.5	96
BTALU1200/440	40.2	8.8	10.5	12.1	14	15.8	44.0	CNA4.0x50	11.0	SDD7.5	96
BTALU1200/480	44.1	9.5	11.5	13.2	15.3	17.2	48.0	CNA4.0x50	12.0	SDD7.5	96
BTALU1200/520	48	10.3	12.4	14.3	16.6	18.7	52.0	CNA4.0x50	12.0	SDD7.5	96
BTALU1200/560	51.9	11.1	13.4	15.4	17.8	20.1	56.0	CNA4.0x50	12.0	SDD7.5	96
BTALU1200/600	55.9	11.9	14.4	16.5	19.1	21.5	60.0	CNA4.0x50	12.0	SDD7.5	96

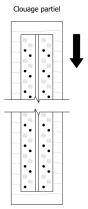
The joist shall have as minimum a width = length of steel dowel.
The capacities R4 are for all length of steel dowel.

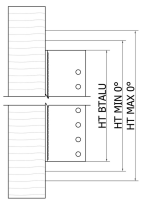
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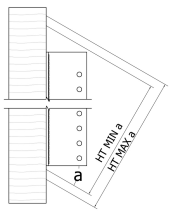
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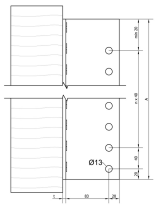
CNA4,0xL

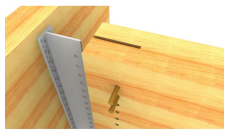


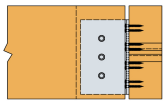


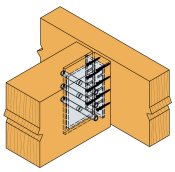


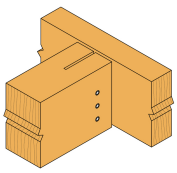


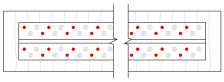












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