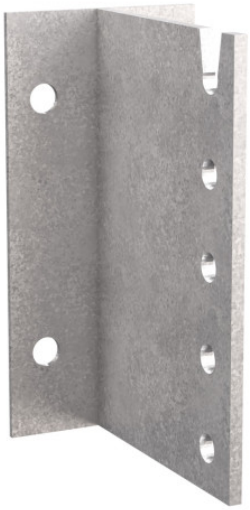
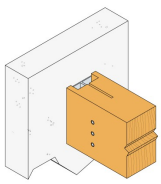
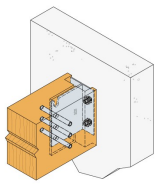
Technical data sheet

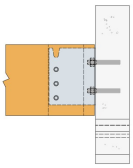
BTC
Concealed Beam Hanger

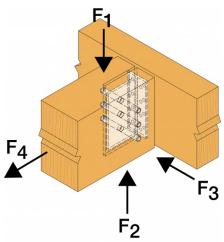
The BTC is designed for concealed connections between timber joists/beam and the concrete structure. The number of dowels and anchors can be chosen, depending on the applied load. BTC concealed beam hangers are approved to take load in all 3 directions. Therefore beam connections with a roof pitch can also be built in an easy and safe way.











Features

Material

Steel:
S 250 GD +Z 275 acc. EN 10326
Corrosion protection:
275 g/m2 on both sides - correspond to a zinc layer of approx. 20 µm

Benefits

- The variety of connection options are given in the ETA 07/0245, here you will find also information of:
- densities > 350kg/m³
- different slopes
- connections of concrete

Applications

Suitable On

Supporting member:
concrete, steel
Supported member:
solid wood, engineered wood

Scope

- The beam hangers serve as concealed connections of joists to the main beams or columns.
- connections with slopes up to 45 ° can be performed.

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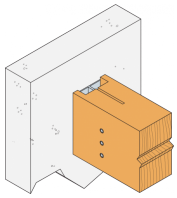
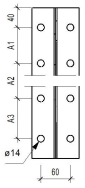
Technical Data

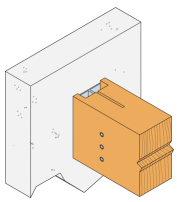
Product Dimensions

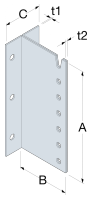


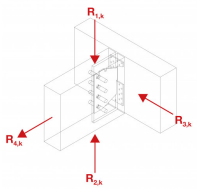


References	Joist Size [mm]	Product Dimensions [mm]					Header holes		Joist holes	Box Quantity	Weight [kg]
	Height Min	A	B	C	t_1	t_2	Ø14	40-A1-A2-A3 [mm]	Ø13		
BTC120-B	160	120	131	96	3	6	2	40	3	15	1
BTC160-B	200	160	131	96	3	6	4	40-80	4	15	1.3
BTC200-B	240	200	131	96	3	6	4	40-120	5	12	1.7
BTC240-B	280	240	131	96	3	6	4	40-160	6	10	2
BTC320-B	360	320	131	96	3	6	6	40-120-120	8	6	2.7
BTC560-B	600	560	131	96	3	6	8	40-160-160-160	14	4	4.7

Wood/rigid substrate fastening - Characteristic values in kN







References	Number of Fasteners				Product characteristic capacities - Timber C24 [kN]											
	Header		Joist		$R_{1,k}$						$R_{2,k}$					
					Dowels length [mm]						Dowels length [mm]					
	Qty	Type	Qty	Type	80	100	120	140	160	180	80	100	120	140	160	180
BTC120-B	2	Ø 12	3	STD12	11.5	12.7	14.2	15.8	17.2	17.2	7.7	8.5	9.5	10.5	11.5	11.5
BTC160-B	4	Ø 12	4	STD12	18.5	20.4	22.8	25.3	27.8	27.8	13.9	15.3	17.1	19	20.9	20.9
BTC200-B	4	Ø 12	5	STD12	26.7	29.4	32.7	36.4	40.3	40.3	21.4	23.5	26.2	29.1	32.2	32.2
BTC240-B	4	Ø 12	6	STD12	35.8	39.4	43.8	48.6	53.8	54.3	29.8	32.8	36.5	40.5	44.8	45.3
BTC320-B	6	Ø 12	8	STD12	56	61.4	68.1	75.5	83.4	85.5	49	53.7	59.6	66.1	73	74.8
BTC560-B	8	Ø 12	12	STD12	100.5	109.5	120.7	133.4	147	147	100.5	109.5	120.7	133.4	147	147

For load combination:

$$\sum \left(\frac{F_{i,d}}{R_{i,d}} \right)^2 \leq 1$$

$R_{2,k}$ capacities are calculated as $R_{2,k} = R_{1,k}$ x (nb of dowels - 1) / (nb of dowels).
The top dowel is not considered for the uplift capacities as it is placed in an open hole.
The anchors resistance and their number have to be checked according to the ETA and the type of header.
The number of anchors given in the table is the maximum. If their resistance is decisive, it is the resistance to consider for the connection.

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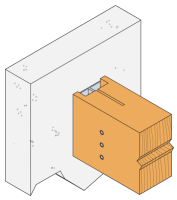
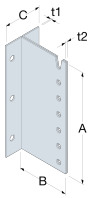
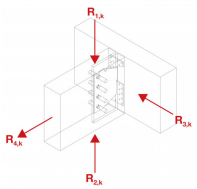
Product characteristic capacities - Timber beam to rigid support - R3.k and R4.k







References	Number of Fasteners				Product characteristic capacities - Timber C24 [kN]							Product Characteristic Capacities - Timber C24 [kN]
	Header		Joist		$R_{3,k}$							$R_{4,k}$
	Qty	Type	Qty	Type	Dowels length [mm]							
					60	80	100	120	140	160	180	
BTC120-B	2	Ø 12	3	STD12	2.6	2.9	3.5	4	4.5	5.2	5.3	6,7/kmod
BTC160-B	4	Ø 12	4	STD12	3.2	3.9	4.4	5	5.9	6.5	7	13,4/kmod
BTC200-B	4	Ø 12	5	STD12	4	4.9	5.5	6.3	7.2	7.8	8.8	13,4/kmod
BTC240-B	4	Ø 12	6	STD12	4.8	5.7	6.6	7.5	8.4	9.1	10.4	13,4/kmod
BTC320-B	6	Ø 12	8	STD12	6.4	7.3	8.6	9.7	10.8	11.8	13.4	20,1/kmod
BTC560-B	8	Ø 12	12	STD12	11.2	12.3	14.3	16.2	18	20.5	22.3	26,8/kmod

The anchors resistance and their number have to be checked according to the ETA and the type of header. The number of anchors given in the table is the maximum. If their resistance is decisive, it is the resistance to consider for the connection.

Installation

Fixing

The following fasteners need to be used:

- steel dowels Ø12 mm, length acc. width of the joist
- bolts M12 acc. static requirements