

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:

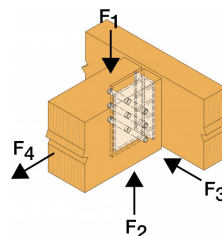
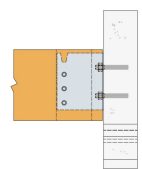
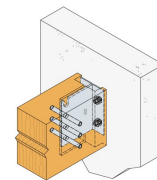
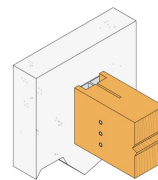
concrete, steel

Supported member:

solid wood, engineered wood

Scope

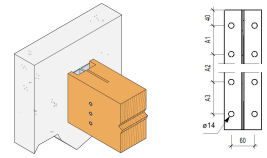
- The beam hangers serve as concealed connections of joists to the main beams or columns.
- connections with slopes up to 45 ° can be performed.



BTC
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Technical Data

Product Dimensions



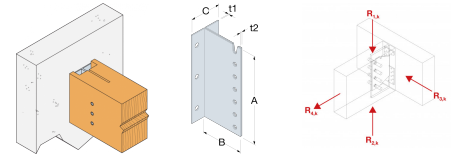
References	Joist Size [mm]	Product Dimensions [mm]					Header holes		Joist holes
	Height Min	A	B	C	t ₁	t ₂	Ø14	40-A1-A2-A3 [mm]	Ø13
BTC120-B	160	120	128	96	3	6	2	40	3
BTC160-B	200	160	128	96	3	6	4	40-80	4
BTC200-B	240	200	128	96	3	6	4	40-120	5
BTC240-B	280	240	128	96	3	6	4	40-160	6
BTC280-B	320	280	128	96	3	6	6	40-100-100	7
BTC320-B	360	320	128	96	3	6	6	40-120-120	8
BTC360-B	400	360	128	96	3	6	6	40-140-140	9
BTC400-B	440	400	128	96	3	6	8	40-120-120-80	10
BTC440-B	480	440	128	96	3	6	8	40-120-120-120	11
BTC480-B	520	480	128	96	3	6	8	40-120-120-160	12
BTC520-B	560	520	128	96	3	6	8	40-160-160-120	13
BTC560-B	600	560	128	96	3	6	8	40-160-160-160	14
BTC600-B	640	600	128	96	3	6	8	40-160-160-200	15

Technical data sheet



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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}					
	Qty	Type	Qty	Type	Dowels length [mm]						Dowels length [mm]					
					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
BTC280-B	6	Ø 12	7	STD12	45.6	50.1	55.6	61.7	68.3	69.4	39.1	42.9	47.7	52.9	58.5	59.5
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
BTC360-B	6	Ø 12	9	STD12	66.8	73.1	80.9	89.6	99	102.2	59.4	65	71.9	79.6	88	90.8
BTC400-B	8	Ø 12	10	STD12	77.9	85.1	94	104.1	114.8	119.5	70.1	76.6	84.6	93.7	103.3	107.6
BTC440-B	8	Ø 12	11	STD12	89	97.2	107.3	118.7	130.9	133.3	81	88.4	97.5	107.9	119	121.2
BTC480-B	8	Ø 12	12	STD12	100.5	109.5	120.7	133.4	147	147	92.1	100.4	110.6	122.3	134.8	134.8
BTC520-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
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
BTC600-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.

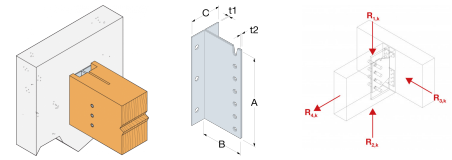
The number of anchors given in the table is the maximum. If their resistance is decisive, it is the resistance to consider for the connection.

Technical data sheet



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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]						Simplified Characteristic Capacities - C24
	Header		Joist		R _{3,k}						R _{4,k} [kN]
	Qty	Type	Qty	Type	Dowels length [mm]						
					80	100	120	140	160	180	
BTC120-B	2	Ø 12	3	STD12	2.9	3.5	4	4.5	5.2	5.3	6.1
BTC160-B	4	Ø 12	4	STD12	3.9	4.4	5	5.9	6.5	7	12.2
BTC200-B	4	Ø 12	5	STD12	4.9	5.5	6.3	7.2	7.8	8.8	12.2
BTC240-B	4	Ø 12	6	STD12	5.7	6.6	7.5	8.4	9.1	10.4	12.2
BTC280-B	6	Ø 12	7	STD12	6.5	7.6	8.7	9.6	10.4	11.9	18.3
BTC320-B	6	Ø 12	8	STD12	7.3	8.6	9.7	10.8	11.8	13.4	18.3
BTC360-B	6	Ø 12	9	STD12	8.1	9.5	10.8	12	13.2	14.9	18.3
BTC400-B	8	Ø 12	10	STD12	8.9	10.5	11.9	13.2	14.7	16.4	24.4
BTC440-B	8	Ø 12	11	STD12	9.7	11.4	13	14.4	16.1	17.8	24.4
BTC480-B	8	Ø 12	12	STD12	10.6	12.4	14.1	15.6	17.6	19.3	24.4
BTC520-B	8	Ø 12	12	STD12	11.4	13.3	15.1	16.8	19.1	20.8	24.4
BTC560-B	8	Ø 12	12	STD12	12.3	14.3	16.2	18	20.5	22.3	24.4
BTC600-B	8	Ø 12	12	STD12	13.2	15.2	17.3	19.2	22	23.8	24.4

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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Installation

Fixing

The following fasteners need to be used:

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

