



**GH - Angle bracket Type HB / HSB / Flat steel anchor including washer**

ETA-10/0010



**Properties**

Steel grade S 250 GD / DX 51 D  
Surface Z 275

**Fasteners**

**Fixing on the floor in concrete, masonry, steel, timber**

Concrete screw, stud anchor, chemical anchor, screws and bolts to DIN 601 / ISO 4016

**Wall fixing in timber with connectors to ETA-13/0523**

GH connector nails (threaded nails) 4.0 x 40 / 50 / 60 / 75 / 100 mm

GH screw 5.0 x 35 / 40 / 50 / 60 / 70 mm

The wall/column joint can also be made with an interlayer (e.g. OSB) according to ETA-10/0010.

**Nail pattern**

Minimum number of nails/screws, see load-capacity table, "min.  $n_{\text{nail/screw}}$  ".column

**Calculation of the design value of the load-carrying capacities to ETA-10/0010**

$n_1$	=	Structurally useful number of holes, timber (vertical flange)
$n_2$	=	Number of holes, concrete
LDC	=	Load duration class to EN 1995-1-1
$n_{\text{nail/screw}}$	=	Minimum number of nails $\varnothing$ 4 mm or screws $\varnothing$ 5 mm in the vertical flange
$F_{z,Rk}$	=	Characteristic value of the load-carrying capacity in the load direction $F_z$
$F_{z,Rd}$	=	Design value of load-carrying capacity in load direction $F_z$
$k_t$	=	Factor for calculating the tensile force in the anchor bolt/concrete dowel: $F_{B,Ed} = k_t \cdot F_{z,Ed}$

**Remarks:**

The load-bearing capacities only apply to the given minimum number of fasteners  $\min n_{\text{nail/screw}}$ .

The table values apply to a char. density of timber of at least 350 kg/m<sup>3</sup>.

**The fastener minimum edge distances to EC5 shall be satisfied. Minimum distance of the fastener from the end-grain end  $a_3$ , t: 60 mm for nails  $\varnothing$  4 mm and 75 mm for screws  $\varnothing$  5 mm.**

All calculations and values are exclusively for GH products and their fasteners.

The load-bearing capacities were determined on the basis of ETA 13/0523. It is not possible to transfer the values to third party makes.

**Disclaimer:**

Despite careful calculations and checking, no liability is accepted for the technical data.

Subject to change without notice

**For technical drawing, see website [www.holzverbinder.de](http://www.holzverbinder.de)**



„Innovationen im Holzbau“

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Resistances (load-carrying capacities) with washer

Art.No.	Description	Dimensions [mm]				n <sub>1</sub> Ø 5.0	n <sub>2</sub> Ø	LDC	4x40	5x40	4x50	5x50	4x60	5x60	k <sub>t</sub>			
		H	L	B	T				min.	F <sub>z</sub> [kN]	min.	F <sub>z</sub> [kN]	min.	F <sub>z</sub> [kN]		min.	F <sub>z</sub> [kN]	
									n <sub>Nä</sub> /screw		n <sub>Nä</sub> /screw		n <sub>Nä</sub> /screw			n <sub>Nä</sub> /screw		
1543	HB	155	x	50	x	40	x	3,0	10	1x13	short-term	3	3,50	3,0	3,50	3	3,5	3,1
											instantaneous	3		2,0		2		
											charac.	2		2,0		2		
522	HSB	200	x	40	x	40	x	2,0	19	1x14	short-term	9	11,6	8	11,6	8	11,6	3,2
											instantaneous	8		7		7		
											charac.	7		6		6		
532	HSB	300	x	40	x	40	x	2,0	27	1x14	short-term	9	11,6	8	11,6	8	11,6	3,2
											instantaneous	8		7		7		
											charac.	7		6		6		
542	HSB	400	x	40	x	40	x	2,0	34	1x14	short-term	9	11,6	8	11,6	8	11,6	3,2
											instantaneous	8		7		7		
											charac.	7		6		6		
90504	HSB	500	x	40	x	40	x	2,0	36	1x14	short-term	9	11,6	8	11,6	8	11,6	3,2
											instantaneous	8		7		7		
											charac.	7		6		6		
90505	HSB	600	x	40	x	40	x	2,0	48	1x14	short-term	9	11,6	8	11,6	8	11,6	3,2
											instantaneous	8		7		7		
											charac.	7		6		6		
524	HSB	200	x	40	x	40	x	4,0	19	1x14	short-term	9	11,8	9	13	9	14,1	4,0
											instantaneous	9	14,4	9	16	9	17,2	
											charac.	9	17,0	9	19	9	20,4	
534	HSB	300	x	40	x	40	x	4,0	27	1x14	short-term	17	22,2	16		15		4,0
											instantaneous	15	23,1	13	23,1	13	23,1	
											charac.	13		11		11		
544	HSB	400	x	40	x	40	x	4,0	34	1x14	short-term	18		16		15		4,0
											instantaneous	15	23,1	13	23,1	13	23,1	
											charac.	13		11		11		
90512	HSB	500	x	40	x	40	x	4,0	36	1x14	short-term	18		16		15		4,0
											instantaneous	15	23,1	13	23,1	13	23,1	
											charac.	13		11		11		
90513	HSB	600	x	40	x	40	x	4,0	48	1x14	short-term	18		16		15		4,0
											instantaneous	15	23,1	13	23,1	13	23,1	
											charac.	13		11		11		
555	Washer			40	x	43	x	10,0		1x14								