



GH - Joist hanger Type Top M

ETA-08/0264



Properties

Steel grade S 250 GD Surface Z 275

For detailed design principles for joist hangers, see download document

Fasteners

Fixing in timber with fasteners to ETA-13/0523

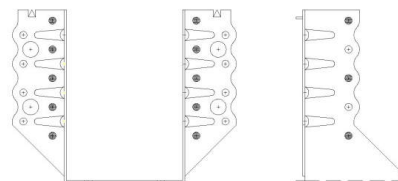
GH connector nails (threaded nails) 4.0 x 40 / 50 / 60 / 75 / 100 mm or connector nail to EN
 GH screw 5.0 x 25 / 35 / 40 / 50 / 60 / 70 mm

The joint can also be made directly on OSB/3, OSB/4 (EN 300) from 11mm - middle in the infill - or with an interlayer!

Nail pattern

Full nailing / partial nailing

- Partial nailing (see footnotes)



Fixing in concrete, masonry, steel, ...

Concrete screw, stud anchor, chemical anchor, screws and bolts to DIN 601 / ISO 4016
 The resistances shown result for the fixing with a pair of dowels, bolts or concrete anchors.

Calculation of the design value of the load-carrying capacities to ETA-08/0264

The tables contain characteristic load-carrying capacities (resistances) and design values of the load-carrying capacity (resistance) "medium-term" in kN

Remarks:

Timber strength class 350 kg/m³ char. density.

The fastener minimum edge distances to EC 5 shall be satisfied.

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.

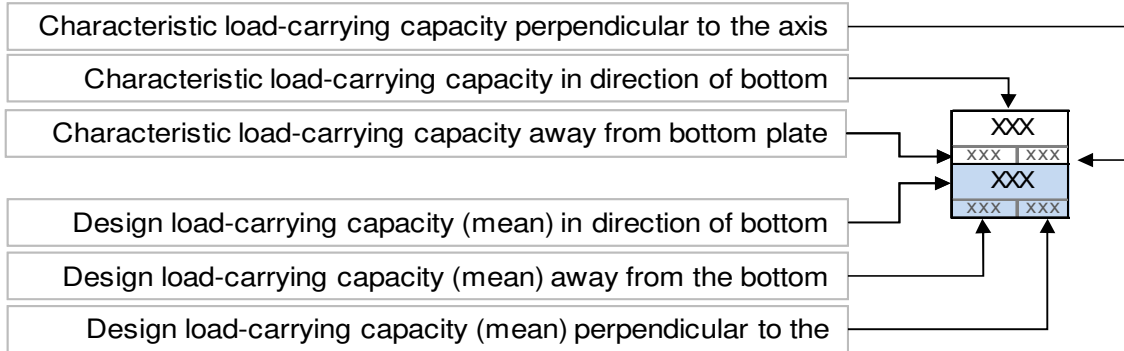
Subject to change without notice.

For technical drawing, see website www.holzverbinder.de

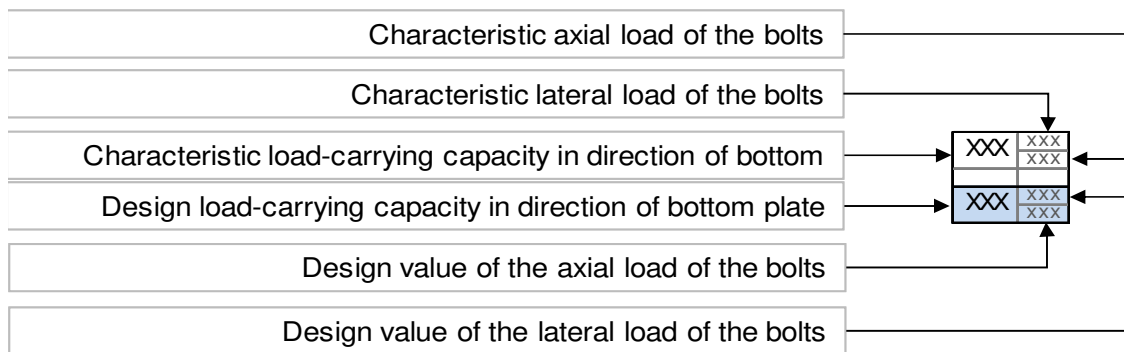


GH - Joist hanger Type Top M

Key for design tables - timber-to-timber joint



Key for design tables - timber-to-masonry, concrete, steel joint



The resistances shown result for the fixing with a pair of dowels, bolts or concrete anchors.

If fixing with more than one pair - see detailed design example in the basic principles.

Footnotes for design tables

- 1/ Arrange GH connector nails Ø 4.0x40 in secondary member offset only with partial nailing (up to BS width ≤ 54 mm)
- 2/ Arrange GH connector nail Ø 4.0x60 in secondary member offset only with partial nailing (up to BS width ≤ 74 mm)
- 3/ Arrange the GH timber connector screw Ø5.0x40 in the secondary member offset only with partial screwing (up to BS width ≤ 58 mm)
- 4/ Arrange GH timber connector screw Ø5.0x60 in the secondary member offset only with partial screwing (up to BS width ≤ 78 mm)
- 5/ Arrange GH timber connector screw Ø 4.0x60 in secondary member offset only with partial nailing (up to BS width ≤ 44 mm)



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Characteristic load-carrying capacities (resistances) and design values of the load-carrying capacity (resistance) ("medium-term") with full and partial nailing for joist hangers Type Top M

Footnotes			Full nailing							Partial nailing												
			Timber-to-timber				Timber-to-OSB	Timber-to-concrete/steel		Timber-to-timber				Timber-to-OSB	Timber-to-concrete/steel							
Dimensions	n _{HT}	n _{NT}	4x40	4x60	5x40	5x60	5x25	4x40	4x60	4x40	4x60	5x40	5x60	5x25	4x40	4x60						
W x H x D	Ø5	Ø5	F _{z,down}							F _{z,down}												
mm	mm	mm	kN							kN												
40x110x1.5	14 (8)	4 (4)	1/3/5/	11,3	---	8,2	---	1,4	9,9	5,0	---	---	8,8	---	8,2	---	1,4	9,9	5,0	---	---	
				5,5	1,9	---	---	5,5	1,6	---	---	---	1,0	---	---	---	---	---	1,0	---	---	---
				7,0	---	5,0	---	0,9	7,0	3,5	---	---	5,4	---	5,0	---	0,9	7,0	3,5	---	---	---
				3,4	1,2	---	---	3,4	1,0	---	---	---	0,6	---	---	---	---	---	0,6	---	---	---
44x108x1.5	14 (8)	8 (4)	1/3/	11,3	---	8,2	---	2,9	9,9	5,0	---	---	8,6	---	8,2	---	1,4	9,9	5,0	---	---	
				5,6	2,1	---	---	5,5	1,8	---	---	---	2,1	---	---	---	---	---	1,0	---	---	---
				7,0	---	5,0	---	1,8	7,0	3,5	---	---	5,3	---	5,0	---	0,9	7,0	3,5	---	---	---
				3,5	1,3	---	---	3,4	1,1	---	---	---	1,3	---	---	---	---	---	0,6	---	---	---
50x105x1.5	14 (8)	8 (4)	1/3/	11,3	---	8,2	---	2,9	9,9	5,0	---	---	8,3	---	8,2	---	1,4	9,9	5,0	---	---	
				5,8	2,3	---	---	5,5	2,0	---	---	---	2,3	---	---	---	---	---	1,2	---	---	---
				7,0	---	5,0	---	1,8	7,0	3,5	---	---	5,1	---	5,0	---	0,9	7,0	3,5	---	---	---
				3,6	1,4	---	---	3,4	1,2	---	---	---	1,4	---	---	---	---	---	0,7	---	---	---
60x100x1.5	14 (8)	8 (4)	2/4/	13,2	14,2	13,6	10,9	2,9	9,9	5,0	9,9	5,0	7,7	11,8	8,2	10,9	1,4	9,9	5,0	9,9	5,0	
				6,1	5,0	9,5	3,5	10,9	4,7	7,3	3,2	---	2,7	---	---	---	---	---	---	---	---	---
				8,2	8,7	8,4	6,7	1,8	7,9	4,0	7,9	4,0	4,8	7,2	5,0	6,7	0,9	7,0	3,5	7,9	4,0	4,0
				3,8	3,1	5,8	2,2	6,7	2,9	4,5	2,0	---	1,7	---	---	---	---	---	0,8	---	---	---
60x130x1.5	18 (10)	10 (5)	2/4/	21,2	16,5	16,4	12,7	4,4	9,9	5,0	9,9	5,0	11,9	16,5	9,5	12,7	2,2	9,9	5,0	9,9	5,0	
				9,9	5,8	11,8	4,0	13,6	5,3	9,1	3,6	---	3,1	---	---	---	---	---	---	---	---	---
				13,0	10,2	10,1	7,8	2,7	7,9	4,0	7,9	4,0	7,3	10,2	5,9	7,8	1,4	7,9	4,0	7,9	4,0	4,0
				6,1	3,6	7,3	2,5	8,4	3,2	5,6	2,2	---	1,9	---	---	---	---	---	0,9	---	---	---
64x98x1.5	14 (8)	8 (4)	2/4/	12,8	14,2	13,6	10,9	2,9	9,9	5,0	9,9	5,0	7,5	11,5	8,2	10,9	1,4	9,9	5,0	9,9	5,0	
				6,3	5,2	9,5	3,7	10,9	5,0	7,3	3,4	---	2,9	---	---	---	---	---	---	---	---	---
				7,9	8,7	8,4	6,7	1,8	7,9	4,0	7,9	4,0	4,6	7,1	5,0	6,7	0,9	7,0	3,5	7,9	4,0	4,0
				3,9	3,2	5,8	2,3	6,7	3,1	4,5	2,1	---	1,8	---	---	---	---	---	0,9	---	---	---
64x128x1.5	18 (10)	10 (5)	2/4/	20,8	16,5	16,4	12,7	4,4	9,9	5,0	9,9	5,0	11,7	16,5	9,5	12,7	2,2	9,9	5,0	9,9	5,0	
				10,1	6,0	11,8	4,2	13,6	5,6	9,1	3,8	---	3,2	---	---	---	---	---	---	---	---	---
				12,8	10,2	10,1	7,8	2,7	7,9	4,0	7,9	4,0	7,2	10,2	5,9	7,8	1,4	7,9	4,0	7,9	4,0	4,0
				6,2	3,7	7,3	2,6	8,4	3,4	5,6	2,3	---	2,0	---	---	---	---	---	1,0	---	---	---
70x125x1.5	18 (10)	10 (5)	2/4/	20,2	16,5	16,4	12,7	4,4	9,9	5,0	9,9	5,0	11,4	16,5	9,5	12,7	2,2	9,9	5,0	9,9	5,0	
				10,3	6,3	11,8	4,5	13,6	6,1	9,1	4,1	---	3,5	---	---	---	---	---	---	---	---	---
				12,4	10,2	10,1	7,8	2,7	7,9	4,0	7,9	4,0	7,0	10,2	5,9	7,8	1,4	7,9	4,0	7,9	4,0	4,0
				6,3	3,9	7,3	2,7	8,4	3,7	5,6	2,5	---	2,1	---	---	---	---	---	1,1	---	---	---
72x124x1.5	18 (10)	10 (5)	2/4/	19,9	16,5	16,4	12,7	4,4	9,9	5,0	9,9	5,0	11,3	16,5	9,5	12,7	2,2	9,9	5,0	9,9	5,0	
				10,4	6,4	11,8	4,5	13,6	6,2	9,1	4,2	---	3,6	---	---	---	---	---	---	---	---	---
				12,3	10,2	10,1	7,8	2,7	7,9	4,0	7,9	4,0	6,9	10,2	5,9	7,8	1,4	7,9	4,0	7,9	4,0	4,0
				6,4	3,9	7,3	2,8	8,4	3,8	5,6	2,6	---	2,2	---	---	---	---	---	1,1	---	---	---
76x122x1.5	18 (10)	10 (5)	4/	19,5	28,4	16,4	12,7	4,4	9,9	5,0	9,9	5,0	11,0	16,4	9,5	12,7	2,2	9,9	5,0	9,9	5,0	
				10,6	6,6	17,0	9,4	13,6	6,5	9,1	4,4	---	3,7	---	---	---	---	---	---	---	---	---
				12,0	17,5	10,1	7,8	2,7	7,9	4,0	7,9	4,0	6,8	10,1	5,9	7,8	1,4	7,9	4,0	7,9	4,0	4,0
				6,5	4,0	10,5	5,8	8,4	4,0	5,6	2,7	---	2,3	---	---	---	---	---	1,1	---	---	---



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Characteristic load-carrying capacities (resistances) and design values of the load-carrying capacity (resistance) ("medium-term") with full and partial nailing for joist hangers Type Top M

Footnotes Dimensions W x H x D mm			Full nailing								Partial nailing										
			Timber-to-timber				Timber-to-OSB	Timber-to-concrete/steel			Timber-to-timber				Timber-to-OSB	Timber-to-concrete/steel					
			4x40	4x60	5x40	5x60	5x25	4x40	4x60		4x40	4x60	5x40	5x60	5x25	4x40	4x60				
			F _{z,down} kN																		
80x120x1.5	18 (10)	10 (5)	19,0	28,4	16,4	21,8	4,4	9,9	5,0	9,9	5,0	10,8	16,1	9,5	12,7	2,2	9,9	5,0	9,9	5,0	
			10,8	6,7	17,3	9,7	13,6	6,8	18,2	9,3	---	3,9	---	---	---	---	---	---	---	---	---
			11,7	17,5	10,1	13,4	2,7	7,9	4,0	7,9	4,0	6,6	9,9	5,9	7,8	1,4	7,9	4,0	7,9	4,0	
			6,6	4,1	10,6	6,0	8,4	4,2	11,2	5,7	---	2,4	---	---	---	---	---	---	---	---	---
80x150x1.5	22 (12)	12 (6)	26,5	33,1	19,1	25,5	6,3	9,9	5,0	9,9	5,0	15,1	18,9	10,9	14,5	3,2	9,9	5,0	9,9	5,0	
			15,4	7,7	24,4	10,8	16,4	7,4	21,8	10,0	---	4,2	---	---	---	---	---	---	---	---	---
			16,3	20,4	11,7	15,7	3,9	7,9	4,0	7,9	4,0	9,3	11,6	6,7	9,0	1,9	7,9	4,0	7,9	4,0	
			9,5	4,7	15,0	6,7	10,1	4,6	13,4	6,2	---	2,6	---	---	---	---	---	---	---	---	---
90x145x1.5	22 (12)	12 (6)	26,5	33,1	19,1	25,5	6,3	9,9	5,0	9,9	5,0	14,7	18,9	10,9	14,5	3,2	9,9	5,0	9,9	5,0	
			16,0	8,1	25,2	11,6	16,4	8,2	21,8	11,1	---	4,7	---	---	---	---	---	---	---	---	---
			16,3	20,4	11,7	15,7	3,9	7,9	4,0	7,9	4,0	9,0	11,6	6,7	9,0	1,9	7,9	4,0	7,9	4,0	
			9,8	5,0	15,5	7,2	10,1	5,0	13,4	6,9	---	2,9	---	---	---	---	---	---	---	---	---
98x141x1.5	22 (12)	12 (6)	25,6	33,1	19,1	25,5	6,3	9,9	5,0	9,9	5,0	14,2	18,9	10,9	14,5	3,2	9,9	5,0	9,9	5,0	
			16,4	8,4	25,8	12,2	16,4	8,8	21,8	12,0	---	5,0	---	---	---	---	---	---	---	---	---
			15,8	20,4	11,7	15,7	3,9	7,9	4,0	7,9	4,0	8,8	11,6	6,7	9,0	1,9	7,9	4,0	7,9	4,0	
			10,1	5,2	15,9	7,5	10,1	5,4	13,4	7,4	---	3,1	---	---	---	---	---	---	---	---	---
100x140x1.5	22 (12)	12 (6)	25,4	33,1	19,1	25,5	6,3	9,9	5,0	9,9	5,0	14,1	18,9	10,9	14,5	3,2	9,9	5,0	9,9	5,0	
			16,5	8,4	26,0	12,3	16,4	9,0	21,8	12,2	---	5,0	---	---	---	---	---	---	---	---	---
			15,6	20,4	11,7	15,7	3,9	7,9	4,0	7,9	4,0	8,7	11,6	6,7	9,0	1,9	7,9	4,0	7,9	4,0	
			10,2	5,2	16,0	7,6	10,1	5,5	13,4	7,5	---	3,1	---	---	---	---	---	---	---	---	---
100x170x1.5	26 (14)	14 (7)	30,2	37,8	21,8	29,1	8,3	9,9	5,0	9,9	5,0	17,0	21,3	12,3	16,4	4,1	9,9	5,0	9,9	5,0	
			21,8	9,4	33,1	13,6	19,1	9,6	25,5	13,0	---	5,4	---	---	---	---	---	---	---	---	---
			18,6	23,3	13,4	17,9	5,1	7,9	4,0	7,9	4,0	10,5	13,1	7,6	10,1	2,5	7,9	4,0	7,9	4,0	
			13,4	5,8	20,4	8,4	11,7	5,9	15,7	8,0	---	3,3	---	---	---	---	---	---	---	---	---
114x163x1.5	26 (14)	14 (7)	30,2	37,8	21,8	29,1	8,3	9,9	5,0	9,9	5,0	17,0	21,3	12,3	16,4	4,1	9,9	5,0	9,9	5,0	
			22,7	10,0	33,1	14,6	19,1	10,7	25,5	14,6	---	6,0	---	---	---	---	---	---	---	---	---
			18,6	23,3	13,4	17,9	5,1	7,9	4,0	7,9	4,0	10,5	13,1	7,6	10,1	2,5	7,9	4,0	7,9	4,0	
			14,0	6,1	20,4	9,0	11,7	6,6	15,7	9,0	---	3,7	---	---	---	---	---	---	---	---	---
120x160x1.5	26 (14)	14 (7)	30,2	37,8	21,8	29,1	8,3	9,9	5,0	9,9	5,0	17,0	21,3	12,3	16,4	4,1	9,9	5,0	9,9	5,0	
			23,1	10,1	33,1	15,0	19,1	11,2	25,5	15,3	---	6,2	---	---	---	---	---	---	---	---	---
			18,6	23,3	13,4	17,9	5,1	7,9	4,0	7,9	4,0	10,5	13,1	7,6	10,1	2,5	7,9	4,0	7,9	4,0	
			14,2	6,2	20,4	9,2	11,7	6,9	15,7	9,4	---	3,8	---	---	---	---	---	---	---	---	---