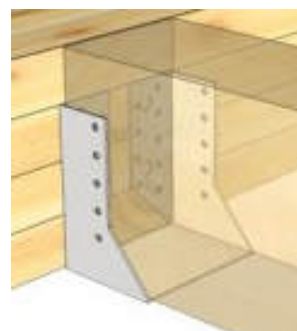




GH - Joist hanger Type I 04 Combination

ETA-08/0264



Properties

Steel grade S 250 GD / 1.4571 Surface Z 275 / Stainless steel

For detailed design principles for joist hangers, see download document

Fasteners

Fixing in timber with fasteners to ETA-13/0523

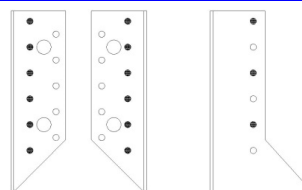
GH connector nails (threaded nails) 4.0 x 40 / 50 / 60 / 75 / 100 mm or connector nail to EN
 GH screw 5.0 x 25 / 35 / 40 / 50 / 60 / 70 mm

The joint can also be made with an interlayer (e.g. OSB)!

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:

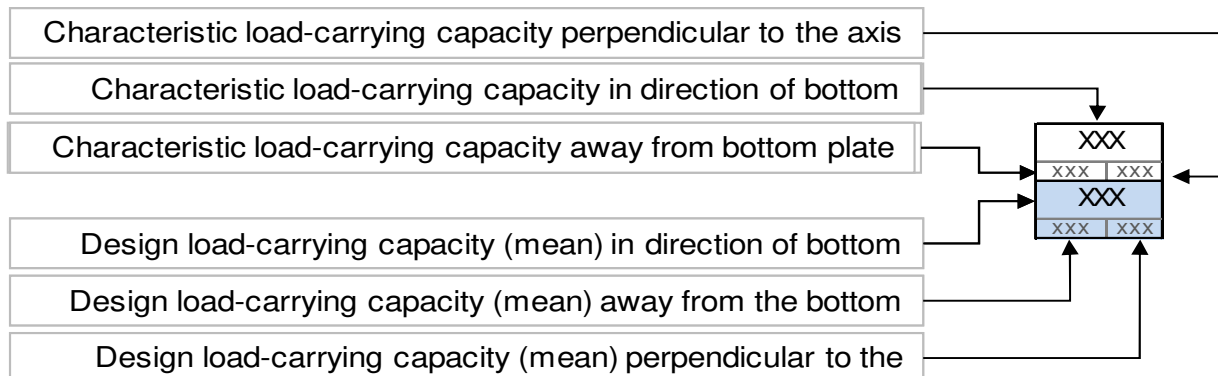
Despite careful calculations and checking, no liability is accepted for the technical data.
 Subject to change without notice.

For technical drawing, see website www.holzverbinder.de

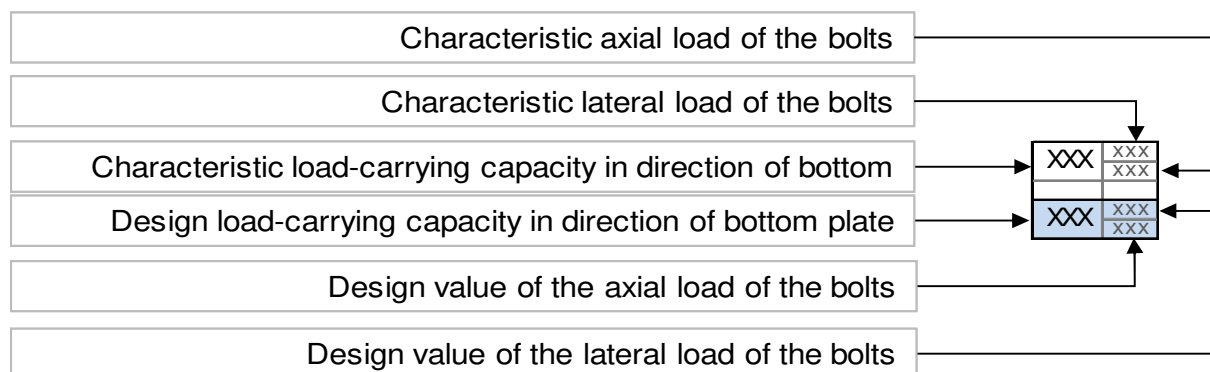


GH - Joist hanger Type I 04 Combination

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)



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 04 Combination I

Footnotes			Full nailing						Partial nailing									
			Timber-to-timber				Timber-to-concrete/steel		Timber-to-timber				Timber-to-concrete/steel					
Dimensions	n _{HT}	n _{NT}	4x40	4x60	5x40	5x60	4x40	4x60	4x40	4x60	5x40	5x60	4x40	4x60				
W x H x D	Ø5	Ø5	F _{z,down}						F _{z,down}									
mm	mm	mm	kN						kN									
40x110x2,0	0 (8)	4 (4)	1/	---	---	---	---	---	---	8,7	---	12,0	---	---	---	---		
			3/	---	---	---	---	---	---	3,3	1,9	---	---	6,6	2,3	---	---	
			5/	---	---	---	---	---	---	---	---	5,3	---	7,4	---	---	---	---
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40x140x2,0	0 (10)	5 (5)	1/	---	---	---	---	---	---	12,1	---	14,0	---	---	---	---		
			3/	---	---	---	---	---	---	---	---	---	---	---	---	---		
			5/	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
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40x170x2,0	0 (12)	6 (6)	1/	---	---	---	---	---	---	15,0	---	16,0	---	---	---	---		
			3/	---	---	---	---	---	---	---	---	---	---	---	---	---		
			5/	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
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44x108x2,0	0 (8)	8 (4)	1/	---	---	---	---	---	---	8,5	---	12,0	---	---	---	---		
			3/	---	---	---	---	---	---	---	---	---	---	---	---	---		
			5/	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
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44x138x2,0	0 (10)	10 (6)	1/	---	---	---	---	---	---	11,9	---	14,0	---	---	---	---		
			3/	---	---	---	---	---	---	---	---	---	---	---	---	---		
			5/	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
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48x136x2,0	0 (10)	10 (6)	1/	---	---	---	---	---	---	11,7	---	14,0	---	---	---	---		
			3/	---	---	---	---	---	---	---	---	---	---	---	---	---		
			5/	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
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48x166x2,0	0 (12)	12 (6)	1/	---	---	---	---	---	---	15,0	---	16,0	---	---	---	---		
			3/	---	---	---	---	---	---	---	---	---	---	---	---	---		
			5/	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
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50x105x2,0	0 (8)	8 (4)	1/	---	---	---	---	---	---	8,2	---	12,0	---	---	---	---		
			3/	---	---	---	---	---	---	---	---	---	---	---	---	---		
			5/	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
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„Innovationen im Holzbau“

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 04 Combination I

Footnotes			Full nailing						Partial nailing									
			Timber-to-timber				Timber-to-concrete/steel		Timber-to-timber				Timber-to-concrete/steel					
Dimensions	n _{HT}	n _{NT}	4x40	4x60	5x40	5x60	4x40	4x60	4x40	4x60	5x40	5x60	4x40	4x60				
W x H x D	Ø5	Ø5	F _{z,down}						F _{z,down}									
mm	mm	mm	kN						kN									
50x135x2,0	0 (10)	10 (6)	1/3/	---	---	---	---	---	---	11,6	---	14,0	---	---	---	---		
				5,1	2,5	---	---	9,7	3,1	---	---	---	---	---	---	---		
				---	---	---	---	---	---	7,1	---	8,6	---	---	---	---	---	
				3,1	1,6	---	---	6,0	1,9	---	---	---	---	---	---	---	---	
50x165x2,0	0 (12)	12 (6)	1/3/	---	---	---	---	---	---	15,0	---	16,0	---	---	---	---		
				7,7	2,8	---	---	12,0	3,4	---	---	---	---	---	---	---		
				---	---	---	---	---	---	9,2	---	9,9	---	---	---	---	---	
				4,7	1,7	---	---	7,4	2,1	---	---	---	---	---	---	---	---	
50x195x2,0	0 (14)	14 (8)	1/3/	---	---	---	---	---	---	16,9	---	18,0	---	---	---	---		
				10,6	3,1	---	---	14,0	3,6	---	---	---	---	---	---	---		
				---	---	---	---	---	---	10,4	---	11,1	---	---	---	---	---	
				6,5	1,9	---	---	8,6	2,2	---	---	---	---	---	---	---	---	
60x100x2,0	0 (8)	8 (4)	2/4/	---	---	---	---	---	---	7,6	11,6	12,0	13,6	---	---	---	---	
				3,7	2,6	6,1	3,5	7,2	3,7	9,1	3,9	---	---	---	---	---	---	
				---	---	---	---	---	---	4,7	7,1	7,4	8,4	---	---	---	---	---
				2,3	1,6	3,7	2,1	4,4	2,2	5,6	2,4	---	---	---	---	---	---	---
60x130x2,0	0 (10)	10 (6)	2/4/	---	---	---	---	---	---	11,1	16,5	16,0	15,9	---	---	---	---	
				5,3	3,4	8,6	3,9	10,0	4,4	11,3	4,3	---	---	---	---	---	---	
				---	---	---	---	---	---	6,8	10,1	9,9	9,8	---	---	---	---	---
				3,3	2,1	5,3	2,4	6,2	2,7	7,0	2,6	---	---	---	---	---	---	---
60x160x2,0	0 (12)	12 (6)	2/4/	---	---	---	---	---	---	15,0	18,9	16,0	18,1	---	---	---	---	
				7,9	3,4	12,6	4,4	12,0	4,4	13,6	4,6	---	---	---	---	---	---	
				---	---	---	---	---	---	9,2	11,6	9,9	11,2	---	---	---	---	---
				4,9	2,1	7,8	2,7	7,4	2,7	8,4	2,9	---	---	---	---	---	---	---
60x190x2,0	0 (14)	14 (8)	2/4/	---	---	---	---	---	---	18,8	21,3	20,0	20,4	---	---	---	---	
				10,8	4,0	16,5	4,7	16,0	4,9	15,9	4,9	---	---	---	---	---	---	
				---	---	---	---	---	---	11,6	13,1	12,3	12,6	---	---	---	---	---
				6,7	2,5	10,2	2,9	9,9	3,0	9,8	3,0	---	---	---	---	---	---	---
64x98x2,0	0 (8)	8 (4)	2/4/	---	---	---	---	---	---	7,4	11,3	11,9	13,6	---	---	---	---	
				3,8	2,7	6,2	3,6	7,4	3,8	9,1	4,1	---	---	---	---	---	---	
				---	---	---	---	---	---	4,5	6,9	7,3	8,4	---	---	---	---	---
				2,3	1,7	3,8	2,2	4,5	2,4	5,6	2,5	---	---	---	---	---	---	---



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 04 Combination I

Footnotes			Full nailing								Partial nailing									
			Timber-to-timber				Timber-to-concrete/steel				Timber-to-timber				Timber-to-concrete/steel					
			4x40	4x60	5x40	5x60	4x40	4x60	4x40	4x60	5x40	5x60	4x40	4x60						
			F _{z,down}								F _{z,down}									
Dimensions	n _{HT}	n _{NT}	kN								kN									
W x H x D	Ø5	Ø5																		
mm	mm	mm																		
64x128x2,0	0 (10)	10 (6)	2/4	---	---	---	---	---	---	---	---	10,9	16,2	16,0	15,9	---	---	---	---	
				5,4	3,6	8,7	4,1	10,2	4,6	11,3	4,5	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
				6,7	10,0	9,9	9,8	---	---	---	---	---	---	---	---	---	---	---	---	---
70x125x2,0	0 (10)	10 (6)	2/4	---	---	---	---	---	---	---	---	10,5	15,8	16,0	15,9	---	---	---	---	
				5,5	3,7	8,9	4,4	10,4	5,0	11,3	4,9	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
				6,5	9,7	9,9	9,8	---	---	---	---	---	---	---	---	---	---	---	---	---
70x155x2,0	0 (12)	12 (6)	2/4	---	---	---	---	---	---	---	---	15,0	18,9	16,0	18,1	---	---	---	---	
				8,2	3,8	13,0	4,9	12,0	5,0	13,6	5,4	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
				9,2	11,6	9,9	11,2	---	---	---	---	---	---	---	---	---	---	---	---	---
72x124x2,0	0 (10)	10 (6)	2/4	---	---	---	---	---	---	---	---	10,4	15,6	15,9	15,9	---	---	---	---	
				5,6	3,8	9,0	4,5	10,4	5,1	11,3	5,0	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
				6,4	9,6	9,8	9,8	---	---	---	---	---	---	---	---	---	---	---	---	---
72x154x2,0	0 (12)	12 (6)	2/4	---	---	---	---	---	---	---	---	15,0	18,9	16,0	18,1	---	---	---	---	
				8,2	3,8	13,1	5,0	12,0	5,1	13,6	5,5	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
				9,2	11,6	9,9	11,2	---	---	---	---	---	---	---	---	---	---	---	---	---
72x184x2,0	0 (14)	14 (8)	2/4	---	---	---	---	---	---	---	---	18,8	21,3	20,0	20,4	---	---	---	---	
				11,2	4,5	16,5	5,4	16,0	5,7	15,9	5,8	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
				11,6	13,1	12,3	12,6	---	---	---	---	---	---	---	---	---	---	---	---	---
76x122x2,0	0 (10)	10 (6)	4/4	---	---	---	---	---	---	---	---	10,2	15,4	15,8	15,9	---	---	---	---	
				5,7	3,9	9,1	5,5	10,6	5,3	11,3	5,3	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
				6,3	9,5	9,7	9,8	---	---	---	---	---	---	---	---	---	---	---	---	---
76x152x2,0	0 (12)	12 (6)	4/4	---	---	---	---	---	---	---	---	15,0	18,9	16,0	18,1	---	---	---	---	
				8,3	3,9	13,2	5,6	12,0	5,3	13,6	5,8	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
				9,2	11,6	9,9	11,2	---	---	---	---	---	---	---	---	---	---	---	---	---
				---	---	---	---	---	---	---	---	5,1	2,4	8,1	3,4	7,4	3,3	8,4	3,5	



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 04 Combination I

Footnotes Dimensions W x H x D mm			Full nailing								Partial nailing										
			Timber-to-timber				Timber-to-concrete/steel				Timber-to-timber				Timber-to-concrete/steel						
			4x40	4x60	5x40	5x60	4x40	4x60	4x40	4x60	4x40	4x60	5x40	5x60	4x40	4x60	5x40	5x60			
			F _{z,down} kN								F _{z,down} kN										
76x182x2,0	0 (14)	14 (8)	4/	---	---	---	---	---	---	---	---	18,8	23,6	20,0	20,4	---	---	---	---		
				11,3	4,7	17,6	6,5	16,0	6,0	15,9	6,1	---	---	---	---	---	---	---	---	---	
				---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
				7,0	2,9	10,9	4,0	9,9	3,7	9,8	3,8	---	---	---	---	---	---	---	---	---	---
80x120x2,0	18 (10)	10 (6)		18,3	27,5	24,1	27,2	13,2	6,6	13,2	6,6	10,4	15,6	15,9	18,1	13,2	6,6	13,2	6,6		
				10,4	6,7	16,7	9,6	19,3	9,3	22,7	11,1	---	---	---	---	---	---	---	---	---	
				11,2	17,0	14,8	16,7	10,6	5,3	10,6	5,3	6,4	9,6	9,8	11,2	9,2	4,6	10,6	5,3	10,6	5,3
				6,4	4,1	10,3	5,9	11,9	5,7	14,0	6,8	---	---	---	---	---	---	---	---	---	---
80x150x2,0	22 (12)	12 (6)		26,3	33,1	28,1	31,7	13,2	6,6	13,2	6,6	14,8	18,9	16,0	18,1	13,2	6,6	13,2	6,6		
				14,9	7,6	23,6	10,7	24,1	10,2	27,2	12,1	---	---	---	---	---	---	---	---	---	
				16,2	20,4	17,3	19,5	10,6	5,3	10,6	5,3	9,1	11,6	9,9	11,2	9,2	4,6	10,6	5,3	10,6	5,3
				9,1	4,7	14,6	6,6	14,8	6,3	16,7	7,4	---	---	---	---	---	---	---	---	---	---
80x180x2,0	26 (14)	14 (8)		30,0	37,8	32,1	36,3	13,2	6,6	13,2	6,6	18,8	23,6	20,0	22,7	13,2	6,6	13,2	6,6		
				20,5	8,4	32,1	11,7	28,1	10,9	31,7	12,9	---	---	---	---	---	---	---	---	---	
				18,5	23,3	19,7	22,3	10,6	5,3	10,6	5,3	11,6	14,5	12,3	14,0	10,6	5,3	10,6	5,3	10,6	5,3
				12,6	5,2	19,8	7,2	17,3	6,7	19,5	7,9	---	---	---	---	---	---	---	---	---	---
80x210x2,0	30 (16)	16 (8)		33,8	42,5	36,1	40,8	13,2	6,6	13,2	6,6	18,8	23,6	20,0	22,7	13,2	6,6	13,2	6,6		
				26,3	9,1	37,8	12,5	32,1	11,5	36,3	13,5	---	---	---	---	---	---	---	---	---	
				20,8	26,2	22,2	25,1	10,6	5,3	10,6	5,3	11,6	14,5	12,3	14,0	10,6	5,3	10,6	5,3	10,6	5,3
				16,2	5,6	23,3	7,7	19,7	7,1	22,3	8,3	---	---	---	---	---	---	---	---	---	---
90x145x2,0	22 (12)	12 (6)		25,7	33,1	28,1	31,7	13,2	6,6	13,2	6,6	14,2	18,9	16,0	18,1	13,2	6,6	13,2	6,6		
				15,4	8,0	24,4	11,6	24,1	11,1	27,2	13,4	---	---	---	---	---	---	---	---	---	
				15,8	20,4	17,3	19,5	10,6	5,3	10,6	5,3	8,7	11,6	9,9	11,2	9,2	4,6	10,6	5,3	10,6	5,3
				9,5	4,9	15,0	7,1	14,8	6,9	16,7	8,2	---	---	---	---	---	---	---	---	---	---
98x141x2,0	22 (12)	12 (6)		24,7	33,1	28,1	31,7	13,2	6,6	13,2	6,6	13,7	18,9	16,0	18,1	13,2	6,6	13,2	6,6		
				15,8	8,3	25,0	12,1	24,1	11,9	27,2	14,4	---	---	---	---	---	---	---	---	---	
				15,2	20,4	17,3	19,5	10,6	5,3	10,6	5,3	8,4	11,6	9,9	11,2	9,2	4,6	10,6	5,3	10,6	5,3
				9,7	5,1	15,4	7,5	14,8	7,3	16,7	8,8	---	---	---	---	---	---	---	---	---	---
100x140x2,0	22 (12)	12 (6)		24,5	33,1	28,1	31,7	13,2	6,6	13,2	6,6	13,6	18,9	16,0	18,1	13,2	6,6	13,2	6,6		
				15,9	8,4	25,1	12,3	24,1	12,0	27,2	14,6	---	---	---	---	---	---	---	---	---	
				15,1	20,4	17,3	19,5	10,6	5,3	10,6	5,3	8,4	11,6	9,9	11,2	9,2	4,6	10,6	5,3	10,6	5,3
				9,8	5,2	15,4	7,5	14,8	7,4	16,7	9,0	---	---	---	---	---	---	---	---	---	---



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 04 Combination I

Footnotes Dimensions W x H x D mm			Full nailing						Partial nailing									
			Timber-to-timber				Timber-to-concrete/steel		Timber-to-timber				Timber-to-concrete/steel					
			4x40	4x60	5x40	5x60	4x40	4x60	4x40	4x60	5x40	5x60	4x40	4x60				
			F _{z,down} kN						F _{z,down} kN									
100x170x2.0	26 (14)	14 (8)	30,0	37,8	32,1	36,3	13,2	6,6 1,5	13,2	6,6 1,5	18,5	23,6	20,0	22,7	13,2	6,6 1,5	13,2	6,6 1,5
			21,6 9,4	33,1 13,5	28,1 13,0	31,7 15,7			12,0 5,4	18,6 7,7	16,0 7,5	18,1 9,0						
			18,5	23,3	19,7	22,3	10,6	5,3 1,2	10,6	5,3 1,2	11,4	14,5	12,3	14,0	10,6	5,3 1,2	10,6	5,3 1,2
			13,3 5,8	20,4 8,3	17,3 8,0	19,5 9,6			7,4 3,3	11,5 4,8	9,9 4,6	11,2 5,5						
100x200x2.0	30 (16)	16 (8)	33,8	42,5	36,1	40,8	13,2	6,6 1,2	13,2	6,6 1,2	18,8	23,6	20,0	22,7	13,2	6,6 1,2	13,2	6,6 1,2
			27,4 10,2	37,8 14,6	32,1 13,8	36,3 16,5			15,0 5,4	18,9 7,7	16,0 7,5	18,1 9,0						
			20,8	26,2	22,2	25,1	10,6	5,3 1,0	10,6	5,3 1,0	11,6	14,5	12,3	14,0	10,6	5,3 1,0	10,6	5,3 1,0
			16,9 6,3	23,3 9,0	19,7 8,5	22,3 10,1			9,2 3,3	11,6 4,8	9,9 4,6	11,2 5,5						
114x163x2.0	26 (14)	14 (8)	30,0	37,8	32,1	36,3	13,2	6,6 1,6	13,2	6,6 1,6	17,7	23,6	20,0	22,7	13,2	6,6 1,6	13,2	6,6 1,6
			22,4 9,9	33,1 14,5	28,1 14,4	31,7 17,5			12,4 5,7	18,9 8,3	16,0 8,2	18,1 10,0						
			18,5	23,3	19,7	22,3	10,6	5,3 1,3	10,6	5,3 1,3	10,9	14,5	12,3	14,0	10,6	5,3 1,3	10,6	5,3 1,3
			13,8 6,1	20,4 8,9	17,3 8,8	19,5 10,8			7,7 3,5	11,6 5,1	9,9 5,0	11,2 6,1						
120x120x2.0	18 (10)	10 (6)	18,3	27,5	24,1	27,2	13,2	6,6 2,4	13,2	6,6 2,4	10,4	15,6	15,9	18,1	13,2	6,6 2,4	13,2	6,6 2,4
			10,4 7,7	16,7 11,7	19,3 12,2	22,7 15,3			6,1 4,6	9,7 7,0	11,2 7,3	13,6 9,2						
			11,2	17,0	14,8	16,7	10,6	5,3 1,9	10,6	5,3 1,9	6,4	9,6	9,8	11,2	9,2	4,6 1,7	10,6	5,3 1,9
			6,4 4,7	10,3 7,2	11,9 7,5	14,0 9,4			3,7 2,8	6,0 4,3	6,9 4,5	8,4 5,7						
120x160x2.0	26 (14)	14 (8)	30,0	37,8	32,1	36,3	13,2	6,6 1,6	13,2	6,6 1,6	17,3	23,6	20,0	22,7	13,2	6,6 1,6	13,2	6,6 1,6
			22,8 10,1	33,1 14,9	28,1 14,9	31,7 18,2			12,6 5,8	18,9 8,5	16,0 8,5	18,1 10,4						
			18,5	23,3	19,7	22,3	10,6	5,3 1,3	10,6	5,3 1,3	10,7	14,5	12,3	14,0	10,6	5,3 1,3	10,6	5,3 1,3
			14,0 6,2	20,4 9,2	17,3 9,2	19,5 11,2			7,8 3,5	11,6 5,2	9,9 5,2	11,2 6,4						
120x190x2.0	30 (16)	16 (8)	33,8	42,5	36,1	40,8	13,2	6,6 1,3	13,2	6,6 1,3	18,8	23,6	20,0	22,7	13,2	6,6 1,3	13,2	6,6 1,3
			28,6 11,1	37,8 16,2	32,1 15,9	36,3 19,3			15,0 5,8	18,9 8,5	16,0 8,5	18,1 10,4						
			20,8	26,2	22,2	25,1	10,6	5,3 1,0	10,6	5,3 1,0	11,6	14,5	12,3	14,0	10,6	5,3 1,0	10,6	5,3 1,0
			17,6 6,8	23,3 10,0	19,7 9,8	22,3 11,9			9,2 3,5	11,6 5,2	9,9 5,2	11,2 6,4						
140x140x2.0	22 (12)	12 (6)	25,0	33,1	28,1	31,7	13,2	6,6 1,9	13,2	6,6 1,9	13,8	18,9	16,0	18,1	13,2	6,6 1,9	13,2	6,6 1,9
			16,3 9,4	25,7 14,3	24,1 15,0	27,2 19,0			9,3 4,8	14,2 7,4	12,0 8,0	13,6 10,3						
			15,4	20,4	17,3	19,5	10,6	5,3 1,5	10,6	5,3 1,5	8,5	11,6	9,9	11,2	9,2	4,6 1,3	10,6	5,3 1,5
			10,0 5,8	15,8 8,8	14,8 9,2	16,7 11,7			5,7 3,0	8,7 4,6	7,4 4,9	8,4 6,3						
140x160x2.0	26 (14)	14 (8)	30,0	37,8	32,1	36,3	13,2	6,6 1,6	13,2	6,6 1,6	17,3	23,6	20,0	22,7	13,2	6,6 1,6	13,2	6,6 1,6
			22,8 10,6	33,1 16,0	28,1 16,4	31,7 20,6			12,6 6,1	18,9 9,1	16,0 9,4	18,1 11,7						
			18,5	23,3	19,7	22,3	10,6	5,3 1,3	10,6	5,3 1,3	10,7	14,5	12,3	14,0	10,6	5,3 1,3	10,6	5,3 1,3
			14,0 6,5	20,4 9,9	17,3 10,1	19,5 12,6			7,8 3,7	11,6 5,6	9,9 5,8	11,2 7,2						



„Innovationen im Holzbau“

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 04 Combination I

Footnotes			Full nailing						Partial nailing													
			Timber-to-timber				Timber-to-concrete/steel		Timber-to-timber				Timber-to-concrete/steel									
Dimensions	n _{HT}	n _{NT}	4x40	4x60	5x40	5x60	4x40	4x60	4x40	4x60	5x40	5x60	4x40	4x60								
W x H x D	Ø5	Ø5	F _{z,down}						F _{z,down}													
mm	mm	mm	kN																			
140x180x2.0	30 (16)	16 (8)	33,8	42,5	36,1	40,8	13,2	6,6 1,4	13,2	6,6 1,4	18,8	23,6	20,0	22,7	13,2	6,6 1,4	13,2	6,6 1,4				
			29,9	11,8	37,8	17,5	32,1	17,7	36,3	21,8			15,0	6,1	18,9	9,1	16,0	9,4	18,1	11,7		
			20,8		26,2		22,2		25,1		10,6	5,3 1,1	10,6	5,3 1,1	11,6	14,5	12,3	14,0	10,6	5,3 1,1	10,6	5,3 1,1
			18,4	7,2	23,3	10,8	19,7	10,9	22,3	13,4					9,2	3,7	11,6	5,6	9,9	5,8	11,2	7,2