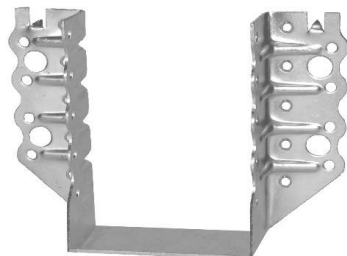




GH - Joist hanger Type Top K 50

ETA-08/0264



Properties

Steel grade S 250 GD Surface Z 275

For detailed design principles for joist hangers, see download document

Fasteners

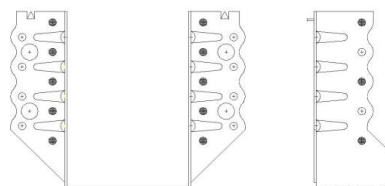
Fixing in timber with fasteners to ETA-13/0523

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:

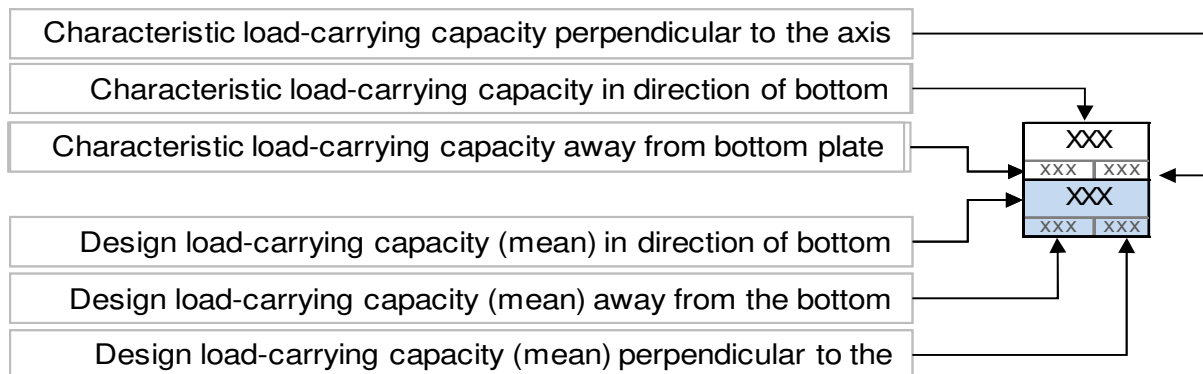
Despite careful calculations and checking, no liability is accepted for the technical data.
 Subject to change without notice.

For technical drawing, see website www.holzverbinder.de

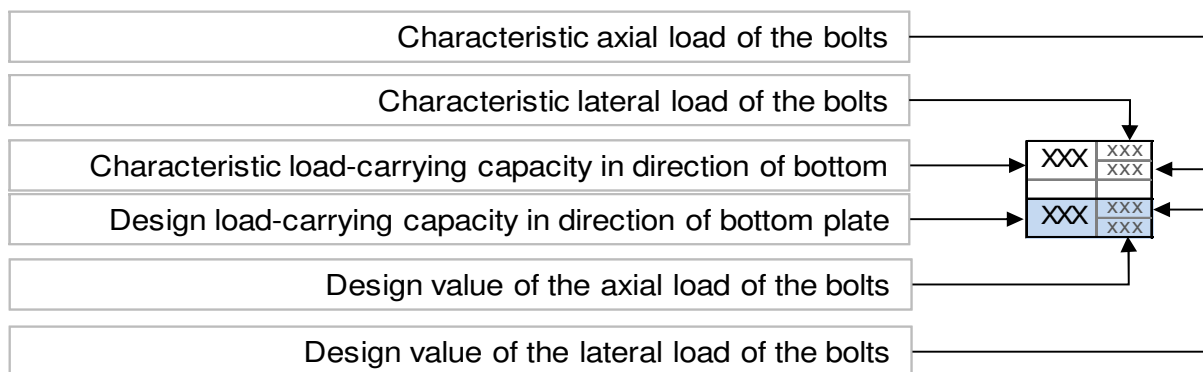


GH - Joist hanger Type Top K 50

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 K 50

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	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	---	---	3,4	1,9	---	---	5,5	1,6	---	---	---	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	---	---	---	2,1	1,2	---	---	3,4	1,0	---	---	---	0,6	---
40x140x1.5	18 (10)	5 (5)	1/3	13,2	---	9,5	---	2,2	9,9	5,0	---	---	12,9	---	9,5	---	2,2	9,9	5,0	---	---						
				9,2	2,2	---	---	6,8	1,8	---	---	---	1,1	---	---	5,4	2,2	---	---	6,8	1,8	---	---	---	1,1	---	---
				8,1	---	5,9	---	1,4	7,9	4,0	---	---	---	---	8,0	---	5,9	---	1,4	7,9	4,0	---	---	---	---	---	---
				5,7	1,4	---	---	4,2	1,1	---	---	---	0,7	---	---	---	3,3	1,4	---	---	4,2	1,1	---	---	---	0,7	---
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	---	---	3,4	2,1	---	---	5,5	1,8	---	---	---	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	---	---	---	2,1	1,3	---	---	3,4	1,1	---	---	---	0,6	---
44x138x1.5	18 (10)	10 (5)	1/3	13,2	---	9,5	---	4,4	9,9	5,0	---	---	12,8	---	9,5	---	2,2	9,9	5,0	---	---						
				9,3	2,4	---	---	6,8	2,0	---	---	---	2,3	---	---	5,4	2,4	---	---	6,8	2,0	---	---	---	1,2	---	---
				8,1	---	5,9	---	2,7	7,9	4,0	---	---	---	---	7,8	---	5,9	---	1,4	7,9	4,0	---	---	---	---	---	---
				5,7	1,5	---	---	4,2	1,2	---	---	---	1,4	---	---	---	3,4	1,5	---	---	4,2	1,2	---	---	---	0,7	---
48x136x1.5	18 (10)	10 (5)	1/3	13,2	---	9,5	---	4,4	9,9	5,0	---	---	12,6	---	9,5	---	2,2	9,9	5,0	---	---						
				9,4	2,5	---	---	6,8	2,1	---	---	---	2,5	---	---	5,5	2,5	---	---	6,8	2,1	---	---	---	1,3	---	---
				8,1	---	5,9	---	2,7	7,9	4,0	---	---	---	---	7,7	---	5,9	---	1,4	7,9	4,0	---	---	---	---	---	---
				5,8	1,6	---	---	4,2	1,3	---	---	---	1,6	---	---	---	3,4	1,6	---	---	4,2	1,3	---	---	---	0,8	---
48x166x1.5	22 (12)	12 (6)	1/3	15,1	---	10,9	---	6,3	9,9	5,0	---	---	15,1	---	10,9	---	3,2	9,9	5,0	---	---						
				11,3	2,8	---	---	8,2	2,3	---	---	---	2,7	---	---	7,9	2,8	---	---	8,2	2,3	---	---	---	1,4	---	---
				9,3	---	6,7	---	3,9	7,9	4,0	---	---	---	---	9,3	---	6,7	---	1,9	7,9	4,0	---	---	---	---	---	---
				7,0	1,7	---	---	5,0	1,4	---	---	---	1,7	---	---	---	4,9	1,7	---	---	5,0	1,4	---	---	---	0,8	---
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	---	---	3,6	2,3	---	---	5,5	2,0	---	---	---	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	---	---	---	2,2	1,4	---	---	3,4	1,2	---	---	---	0,7	---
50x135x1.5	18 (10)	10 (5)	1/3	13,2	---	9,5	---	4,4	9,9	5,0	---	---	12,5	---	9,5	---	2,2	9,9	5,0	---	---						
				9,5	2,6	---	---	6,8	2,2	---	---	---	2,6	---	---	5,6	2,6	---	---	6,8	2,2	---	---	---	1,3	---	---
				8,1	---	5,9	---	2,7	7,9	4,0	---	---	---	---	7,7	---	5,9	---	1,4	7,9	4,0	---	---	---	---	---	---
				5,8	1,6	---	---	4,2	1,4	---	---	---	1,6	---	---	---	3,4	1,6	---	---	4,2	1,4	---	---	---	0,8	---
50x165x1.5	22 (12)	12 (6)	1/3	15,1	---	10,9	---	6,3	9,9	5,0	---	---	15,1	---	10,9	---	3,2	9,9	5,0	---	---						
				11,3	2,9	---	---	8,2	2,4	---	---	---	2,8	---	---	8,0	2,9	---	---	8,2	2,4	---	---	---	1,4	---	---
				9,3	---	6,7	---	3,9	7,9	4,0	---	---	---	---	9,3	---	6,7	---	1,9	7,9	4,0	---	---	---	---	---	---
				7,0	1,8	---	---	5,0	1,5	---	---	---	1,7	---	---	---	4,9	1,8	---	---	5,0	1,5	---	---	---	0,9	---
50x195x1.5	26 (14)	14 (7)	1/3	17,0	---	12,3	---	8,3	9,9	5,0	---	---	17,0	---	12,3	---	4,1	9,9	5,0	---	---						
				13,2	3,1	---	---	9,5	2,5	---	---	---	3,0	---	---	10,7	3,1	---	---	9,5	2,5	---	---	---	1,5	---	---
				10,5	---	7,6	---	5,1	7,9	4,0	---	---	---	---	10,5	---	7,6	---	2,5	7,9	4,0	---	---	---	---	---	---
				8,1	1,9	---	---	5,9	1,6	---	---	---	1,8	---	---	---	6,6	1,9	---	---	5,9	1,6	---	---	---	0,9	---



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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 K 50

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																		
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	---	3,8	2,5	6,1	3,5	5,5	2,4	7,3	3,2	---	1,4	---	---	---	---	
				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	---	---	---	---	---	---	---	---
				3,8	3,1	5,8	2,2	6,7	2,9	4,5	2,0	---	1,7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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	---	5,8	2,9	9,3	4,0	6,8	2,6	9,1	3,6	---	1,5	---	---	---	---	
				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	---	---	---	---	---	---	---	---
				6,1	3,6	7,3	2,5	8,4	3,2	5,6	2,2	---	1,9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
60x160x1.5	22 (12)	12 (6)	2/4	26,5	18,9	19,1	14,5	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								
				14,5	6,5	14,2	4,4	16,4	5,7	10,9	3,8	---	3,3	---	8,2	3,2	13,1	4,4	8,2	2,8	10,9	3,8	---	1,7	---	---	---	---	
				16,3	11,6	11,7	9,0	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	---	---	---	---	---	---	---	---
				8,9	4,0	8,7	2,7	10,1	3,5	6,7	2,4	---	2,1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
60x190x1.5	26 (14)	14 (7)	2/4	30,2	21,3	21,8	16,4	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								
				19,7	7,1	16,5	4,8	19,1	6,0	12,7	4,0	---	3,5	---	11,0	3,5	16,5	4,8	9,5	3,0	12,7	4,0	---	1,8	---	---	---	---	
				18,6	13,1	13,4	10,1	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	---	---	---	---	---	---	---	---
				12,1	4,3	10,2	2,9	11,7	3,7	7,8	2,5	---	2,2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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	---	3,8	2,6	6,3	3,7	5,5	2,5	7,3	3,4	---	1,4	---	---	---	---	
				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	---	---	---	---	---	---	---	---
				3,9	3,2	5,8	2,3	6,7	3,1	4,5	2,1	---	1,8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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	---	5,9	3,0	9,5	4,2	6,8	2,8	9,1	3,8	---	1,6	---	---	---	---	
				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	---	---	---	---	---	---	---	---
				6,2	3,7	7,3	2,6	8,4	3,4	5,6	2,3	---	2,0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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	---	6,0	3,2	9,7	4,5	6,8	3,0	9,1	4,1	---	1,7	---	---	---	---	
				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	---	---	---	---	---	---	---	---
				6,3	3,9	7,3	2,7	8,4	3,7	5,6	2,5	---	2,1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
70x155x1.5	22 (12)	12 (6)	2/4	26,5	18,9	19,1	14,5	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								
				14,9	7,1	14,2	5,0	16,4	6,6	10,9	4,4	---	3,8	---	8,5	3,6	13,5	5,0	8,2	3,3	10,9	4,4	---	1,9	---	---	---	---	
				16,3	11,6	11,7	9,0	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	---	---	---	---	---	---	---	---
				9,2	4,4	8,7	3,0	10,1	4,0	6,7	2,7	---	2,3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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	---	6,1	3,2	9,8	4,5	6,8	3,1	9,1	4,2	---	1,8	---	---	---	---	
				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	---	---	---	---	---	---	---	---
				6,4	3,9	7,3	2,8	8,4	3,8	5,6	2,6	---	2,2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
72x154x1.5	22 (12)	12 (6)	2/4	26,5	18,9	19,1	14,5	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								
				15,0	7,2	14,2	5,1	16,4	6,7	10,9	4,5	---	3,9	---	8,5	3,6	13,5	5,1	8,2	3,4	10,9	4,5	---	1,9	---	---	---	---	
				16,3	11,6	11,7	9,0	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	---	---	---	---	---	---	---	---
				9,2	4,5	8,7	3,1	10,1	4,1	6,7	2,8	---	2,4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---





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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 K 50

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																	
72x184x1.5	26 (14)	14 (7)	2/4	30,2	21,3	21,8	16,4	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							
				20,3	7,9	16,5	5,5	19,1	7,1	12,7	4,8	---	4,2	---	---	11,3	4,0	16,5	5,5	9,5	3,6	12,7	4,8	---	2,1	---	---	
				18,6	13,1	13,4	10,1	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	---	---	---	---	---	---	---
				12,5	4,9	10,2	3,4	11,7	4,4	7,8	2,9	---	2,6	---	---	7,0	2,4	10,2	3,4	5,9	2,2	7,8	2,9	---	1,3	---	---	---
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	---	---	6,2	3,3	9,9	4,7	6,8	3,3	9,1	4,4	---	1,9	---	---	
				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	---	---	---	---	---	---	---
				6,5	4,0	10,5	5,8	8,4	4,0	5,6	2,7	---	2,3	---	---	3,8	2,0	6,1	2,9	4,2	2,0	5,6	2,7	---	1,1	---	---	---
76x152x1.5	22 (12)	12 (6)	4/	26,5	33,1	19,1	14,5	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							
				15,2	7,5	24,2	10,5	16,4	7,1	10,9	4,8	---	4,1	---	---	8,7	3,7	13,7	5,2	8,2	3,5	10,9	4,8	---	2,0	---	---	
				16,3	20,4	11,7	9,0	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	---	---	---	---	---	---	---
				9,4	4,6	14,9	6,4	10,1	4,3	6,7	2,9	---	2,5	---	---	5,3	2,3	8,4	3,2	5,0	2,2	6,7	2,9	---	1,3	---	---	---
76x182x1.5	26 (14)	14 (7)	4/	30,2	37,8	21,8	16,4	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							
				20,5	8,2	32,1	11,4	19,1	7,5	12,7	5,0	---	4,4	---	---	11,4	4,1	16,5	5,7	9,5	3,7	12,7	5,0	---	2,2	---	---	
				18,6	23,3	13,4	10,1	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	---	---	---	---	---	---	---
				12,6	5,0	19,8	7,0	11,7	4,6	7,8	3,1	---	2,7	---	---	7,0	2,5	10,2	3,5	5,9	2,3	7,8	3,1	---	1,3	---	---	---
80x120x1.5	18 (10)	10 (5)	4/	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	---	---	6,3	3,4	10,1	4,8	6,8	3,4	9,1	4,6	---	1,9	---	---	
				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	---	---	3,9	2,1	6,2	3,0	4,2	2,1	5,6	2,9	---	1,2	---	---	---
80x150x1.5	22 (12)	12 (6)	4/	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	---	---	8,7	3,8	13,8	5,4	8,2	3,7	10,9	5,0	---	2,1	---	---	
				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	---	---	5,4	2,4	8,5	3,3	5,0	2,3	6,7	3,1	---	1,3	---	---	---
80x180x1.5	26 (14)	14 (7)	4/	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							
				20,7	8,4	32,4	11,8	19,1	7,8	25,5	10,6	---	4,5	---	---	11,5	4,2	16,5	5,9	9,5	3,9	12,7	5,3	---	2,3	---	---	
				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	---	---	---	---	---	---	---
				12,8	5,2	19,9	7,3	11,7	4,8	15,7	6,5	---	2,8	---	---	7,1	2,6	10,2	3,6	5,9	2,4	7,8	3,3	---	1,4	---	---	---
90x145x1.5	22 (12)	12 (6)	4/	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	---	---	9,1	4,0	14,2	5,8	8,2	4,1	10,9	5,6	---	2,3	---	---	
				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	---	---	5,6	2,5	8,7	3,6	5,0	2,5	6,7	3,4	---	1,4	---	---	---
98x141x1.5	22 (12)	12 (6)	4/	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	---	---	9,3	4,2	14,2	6,1	8,2	4,4	10,9	6,0	---	2,5	---	---	
				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	---	---	5,7	2,6	8,7	3,8	5,0	2,7	6,7	3,7	---	1,5	---	---	---
100x140x1.5	22 (12)	12 (6)	4/	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	---	---	9,3	4,2	14,2	6,2	8,2	4,5	10,9	6,1	---	2,5	---	---	
				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	---	---	5,8	2,6	8,7	3,8	5,0	2,8	6,7	3,8	---	1,5	---	---	---



„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 Top K 50

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											
100x170x1.5	26 (14)	14 (7)	30,2	37,8	21,8	29,1	8,3	9,9	5,0 1,1	9,9	5,0 1,1	17,0	21,3	12,3	16,4	4,1	9,9	5,0 1,1	9,9	5,0 1,1		
			21,8	9,4	33,1	13,6	19,1	9,6	25,5	13,0	---	5,4	12,2	4,7	16,5	6,8	9,5	4,8	12,7	6,5	---	2,7
			18,6	23,3	13,4	17,9	5,1	7,9	4,0 0,9	7,9	4,0 0,9	10,5	13,1	7,6	10,1	2,5	7,9	4,0 0,9	7,9	4,0 0,9		
			13,4	5,8	20,4	8,4	11,7	5,9	15,7	8,0	---	3,3	7,5	2,9	10,2	4,2	5,9	2,9	7,8	4,0	---	1,7
114x163x1.5	26 (14)	14 (7)	30,2	37,8	21,8	29,1	8,3	9,9	5,0 1,2	9,9	5,0 1,2	17,0	21,3	12,3	16,4	4,1	9,9	5,0 1,2	9,9	5,0 1,2		
			22,7	10,0	33,1	14,6	19,1	10,7	25,5	14,6	---	6,0	12,6	5,0	16,5	7,3	9,5	5,4	12,7	7,3	---	3,0
			18,6	23,3	13,4	17,9	5,1	7,9	4,0 0,9	7,9	4,0 0,9	10,5	13,1	7,6	10,1	2,5	7,9	4,0 0,9	7,9	4,0 0,9		
			14,0	6,1	20,4	9,0	11,7	6,6	15,7	9,0	---	3,7	7,7	3,1	10,2	4,5	5,9	3,3	7,8	4,5	---	1,8
120x160x1.5	26 (14)	14 (7)	30,2	37,8	21,8	29,1	8,3	9,9	5,0 1,2	9,9	5,0 1,2	17,0	21,3	12,3	16,4	4,1	9,9	5,0 1,2	9,9	5,0 1,2		
			23,1	10,1	33,1	15,0	19,1	11,2	25,5	15,3	---	6,2	12,8	5,1	16,5	7,5	9,5	5,6	12,7	7,6	---	3,1
			18,6	23,3	13,4	17,9	5,1	7,9	4,0 0,9	7,9	4,0 0,9	10,5	13,1	7,6	10,1	2,5	7,9	4,0 0,9	7,9	4,0 0,9		
			14,2	6,2	20,4	9,2	11,7	6,9	15,7	9,4	---	3,8	7,9	3,1	10,2	4,6	5,9	3,4	7,8	4,7	---	1,9