

Technical data sheet

SIMPSON

Strong-Tie

SBE

Joist hangers external flange

SBE is a joist hanger that provides a load bearing capacity similar to the model with 2 mm thickness. It is the first joist hanger resulting from a study carried out according to Eurocode 5 specifications.

Features

Material

- Galvanized steel S250GD + Z275 according to NF EN 10346.
- Thickness 1.5 mm.

Advantages

- Joist hanger optimized for faster installation (20% less nailing compared to SAE).
- Speed prong for easier installation on wood substrate.
- Lower thickness without loss of resistance.

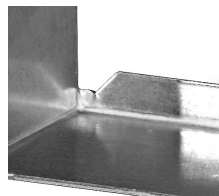
Applications

Support

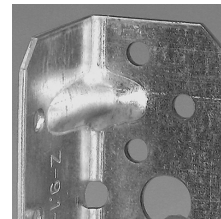
- **Supporting member:** solid wood, composite lumber, glued-laminated wood, concrete, steel.
- **Supported member:** solid wood, composite lumber, glued-laminated wood.

Intend Use

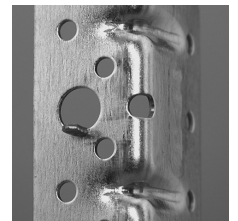
- Joists, purlins.
- Smooth beams and cladding uprights.
- Rafter ends.
- Refurbishment of existing assemblies, etc.



Back seat to prevent opening of the joist hangers



Ribs to increase stiffness



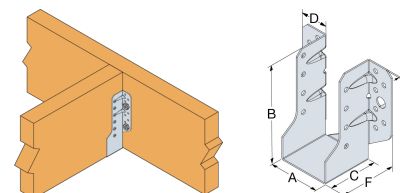
"Speed-prong" to help installation

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Joist hangers external flange

Technical Data

Product Dimensions



References	Tun / DB nr.	NOB nr.	Joist Size [mm]			Product Dimensions [mm]						Header holes		Joist holes	Weight [kg]
			Width	Height		A	B	C	D	F	t	Ø5	Ø11	Ø5	
				Min	Max.										
SBE40/110	5086538	26224352	40	123	165	40	110	55	30	54	1.5	12	2	8	0.2
SBE40/140	5086549	28736114	40	153	210	40	140	55	30	54	1.5	14	2	10	0.24
SBE45/93	5086529	25911793	45	105	139	45	92.5	55	30	54	1.5	12	2	6	0.17
SBE45/108	5086539	26224360	45	120	162	45	107.5	55	30	54	1.5	12	2	8	0.2
SBE45/138	5086550	28755585	45	150	207	45	137.5	55	30	54	1.5	14	2	10	0.24
SBE45/168	5086560	28992535	45	180	252	45	167.5	55	30	54	1.5	18	4	12	0.29
SBE51/90	5086531	26196733	51	102	135	51	89.5	55	30	54	1.5	12	2	6	0.17
SBE51/135	5086552	28902583	51	147	202	51	134.5	55	30	54	1.5	14	2	10	0.24
SBE60/100	5084916	26518449	60	113	150	60	100	55	30	54	1.5	12	2	8	0.2
SBE60/130	5086553	28902591	60	143	195	60	130	55	30	54	1.5	14	2	10	0.24
SBE60/160	-	-	60	173	240	60	160	55	30	54	1.5	18	4	12	0.29
SBE70/125	5086555	28902617	70	138	188	70	125	55	30	54	1.5	14	2	10	0.24
SBE80/120	5068635	28991925	80	133	180	80	120	55	30	54	1.5	14	2	10	0.24
SBE80/150	5086569	28994044	80	163	225	80	150	55	30	54	1.5	18	4	12	0.29
SBE90/145	5086570	28994051	90	158	218	90	145	55	30	54	1.5	18	4	12	0.29
SBE100/140	5068634	28994077	100	153	210	100	140	55	30	54	1.5	18	4	12	0.29

Technical data sheet

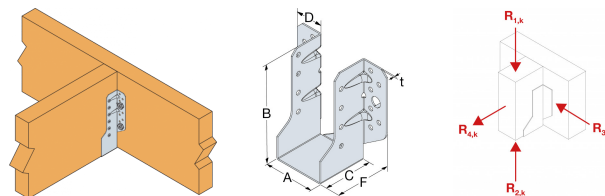
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Joist hangers external flange

Product Capacities



Characteristic capacities - Timber to timber - Full nailing

Product characteristic capacities - Timber C24 [kN]

References	Number of Fasteners											
	Header	Joist	$R_{1,k}$				$R_{2,k}$				$R_{3,k}$	
	Qty	Qty	CNA4,0x35	CNA4,0x40	CNA4,0x50	CNA4,0x60	CNA4,0x35	CNA4,0x40	CNA4,0x50	CNA4,0x60	CNA4,0x35	CNA4,0x40
SBE40/110	12	8	11.4	13.2	-	-	5.2	5.2	-	-	5.5	6.3
SBE40/140	14	10	15.9	18.3	-	-	6	6	-	-	6.6	7.6
SBE45/93	12	6	9.2	10.8	-	-	5.2	5.2	-	-	4.7	5.4
SBE45/108	12	8	11	12.8	-	-	5.7	5.7	-	-	5.5	6.3
SBE45/138	14	10	15.6	18	-	-	6.7	6.7	-	-	6.6	7.6
SBE45/168	18	12	22	25	-	-	7.5	7.5	-	-	7.5	8.6
SBE51/90	12	8	8.7	10.2	13.3	-	5.8	5.8	5.8	-	4.7	5.4
SBE51/135	14	10	15.3	17.6	22.3	-	7.4	7.4	7.4	-	6.6	7.6
SBE60/100	12	8	9.9	11.6	15	17.8	7.3	7.3	7.3	7.3	5.5	6.3
SBE60/130	14	10	14.7	17	21.6	24.9	8.6	8.6	8.6	8.6	6.6	7.6
SBE60/160	18	12	21	24.1	30.4	33	9.7	9.7	9.7	9.7	7.5	8.6
SBE70/125	14	10	14	16.3	20.8	24.1	9.8	9.8	9.8	9.8	6.6	7.6
SBE80/120	14	10	13.3	15.4	19.8	23.1	10.5	10.9	10.9	10.9	6.6	7.6
SBE80/150	18	12	19.6	22.6	28.7	32.9	12.5	12.5	12.5	12.5	7.5	8.6
SBE90/145	18	12	18.9	21.8	27.8	32	13.7	13.7	13.7	13.7	7.5	8.6
SBE100/140	18	12	18.1	20.9	26.8	31	15	15	15	15	7.5	8.6

A, B and C dimensions are the internal dimensions of the joist hanger.

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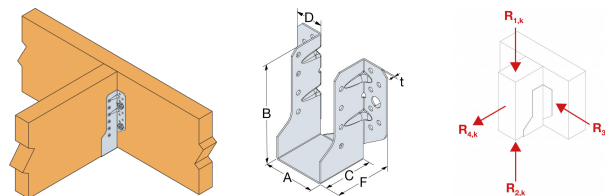
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Joist hangers external flange

Product capacities - Timber to timber - Partial nailing



Characteristic capacities - Timber to timber - Partial nailing

Product characteristic capacities - Timber C24 [kN]

References	Number of Fasteners											
	Header	Joist	$R_{1,k}$				$R_{2,k}$				$R_{3,k}$	
	Qty	Qty	CNA4,0x35	CNA4,0x40	CNA4,0x50	CNA4,0x60	CNA4,0x35	CNA4,0x40	CNA4,0x50	CNA4,0x60	CNA4,0x35	CNA4,0x40
SBE40/110	8	4	8.2	9.4	-	-	5.2	5.2	-	-	2.1	2.3
SBE40/140	10	6	11.5	13.1	-	-	6	6	-	-	2.5	2.7
SBE45/93	8	4	6.5	7.6	-	-	5.2	5.2	-	-	1.9	2.1
SBE45/108	8	4	7.9	9.2	-	-	5.7	5.7	-	-	2.1	2.3
SBE45/138	10	6	11.2	12.9	-	-	6.7	6.7	-	-	2.5	2.7
SBE45/168	12	6	13.4	14.7	-	-	7.5	7.5	-	-	2.9	3.2
SBE51/90	8	4	6.2	7.2	9.4	-	5.7	5.8	5.8	-	1.9	2.1
SBE51/135	10	6	11	12.6	16	-	7.4	7.4	7.4	-	2.5	2.7
SBE60/100	8	4	7.2	8.4	10.8	12.7	5.7	6.7	7.3	7.3	2.1	2.3
SBE60/130	10	6	10.6	12.2	15.5	17.9	8.1	8.6	8.6	8.6	2.5	2.7
SBE60/160	12	6	13.4	14.7	17.7	18.9	9.7	9.7	9.7	9.7	2.9	3.2
SBE70/125	10	6	10.1	11.7	14.9	17.3	8.1	9.5	9.8	9.8	2.5	2.7
SBE80/120	10	6	9.5	11.1	14.2	16.6	8.1	9.5	10.9	10.9	2.5	2.7
SBE80/150	12	6	13.4	14.7	17.7	18.9	10.1	11	12.5	12.5	2.9	3.2
SBE90/145	12	6	13	14.7	17.7	18.9	10.1	11	13.3	13.7	2.9	3.2
SBE100/140	12	6	12.5	14.4	17.7	18.9	10.1	11	13.3	14.2	2.9	3.2

A, B and C dimensions are the internal dimensions of the joist hanger.

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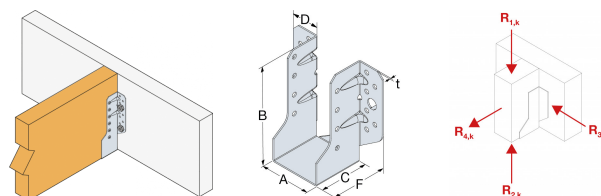
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Joist hangers external flange

Product capacities - Timber to concrete or steel



References	Characteristic capacities - Timber to concrete or steel													
	Number of Fasteners				Product characteristic capacities - Timber C24 [kN]									
	Header		Joist		R _{1,k}				R _{2,k}					
	Qty	Type	Qty	Type	CNA4,0x35	CNA4,0x40	CNA4,0x50	CNA4,0x60	CNA4,0x35	CNA4,0x40	CNA4,0x50	CNA4,0x60	CNA4,0x35	CNA4,0x60
SBE40/110	2	Ø10*	8	CNA**	14.2	14.2	-	-	5.2	5.2	-	-	8.9	
SBE40/140	2	Ø10*	10	CNA**	14.2	14.2	-	-	6	6	-	-	8.3	
SBE45/93	2	Ø10*	6	CNA**	13.4	14.2	-	-	5.2	5.2	-	-	7.9	
SBE45/108	2	Ø10*	8	CNA**	14.2	14.2	-	-	5.7	5.7	-	-	10	
SBE45/138	2	Ø10*	10	CNA**	14.2	14.2	-	-	6.7	6.7	-	-	9.4	
SBE45/168	4	Ø10*	12	CNA**	22.7	22.7	-	-	7.5	7.5	-	-	12.6	
SBE51/90	2	Ø10*	6	CNA**	13.4	14.2	14.2	-	5.8	5.8	5.8	-	8.9	
SBE51/135	2	Ø10*	10	CNA**	14.2	14.2	14.2	-	7.4	7.4	7.4	-	10.6	
SBE60/100	2	Ø10*	8	CNA**	14.2	14.2	14.2	14.2	7.3	7.3	7.3	7.3	13.4	
SBE60/130	2	Ø10*	10	CNA**	14.2	14.2	14.2	14.2	8.6	8.6	8.6	8.6	12.5	
SBE60/160	4	Ø10*	12	CNA**	22.7	22.7	22.7	22.7	9.7	9.7	9.7	9.7	11	
SBE70/125	2	Ø10*	10	CNA**	14.2	14.2	14.2	14.2	9.8	9.8	9.8	9.8	14.6	
SBE80/120	2	Ø10*	10	CNA**	14.2	14.2	14.2	14.2	10.9	10.9	10.9	10.9	11.9	
SBE80/150	4	Ø10*	12	CNA**	22.7	22.7	22.7	22.7	12.5	12.5	12.5	12.5	12.6	
SBE90/145	4	Ø10*	12	CNA**	22.7	22.7	22.7	22.7	13.7	13.7	13.7	13.7	12.6	
SBE100/140	4	Ø10*	12	CNA**	22.7	22.7	22.7	22.7	15	15	15	15	12.6	

A, B and C dimensions are the internal dimensions of the joist hanger.

Load capacities on concrete shown in this table are given in the case of a full slab fixing. In the context of a diff advisable to the designer to ensure the good anchoring performance (a help for dimensioning is available on our software, which can be downloaded for free on this website).

* Refer to the Simpson Strong-Tie anchor product range for suitable anchors. Typical anchor solutions depend spacing and edge distances. The values in this table are given for an installation in the middle of a concrete slab condition (close to the edge,...), the designer must check the anchor separately (Our free software Anchor Design download on our website).

** Refer to Characteristic Capacity table columns for type of fasteners that can be used in Flange A. Capacities type used.

Technical data sheet

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Joist hangers external flange

Product capacities - Timber to timber - with connector screw SSH

References	Product capacities - Timber to timber - with connector screw												
	Number of Fasteners				Characteristic capacities - Timber								
	Header		Joist		R _{1,k}				R _{2,k}				
	Qty	Type	Qty	Type	CNA4.0x35	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x35	CNA4.0x40	CNA4.0x50	CNA4.0x60	CNA4.0x35
SBE40/110	2	SSH10.0x40	8	CNA*	7.2	-	-	-	7.2	-	-	-	1.2
SBE40/140	2	SSH10.0x40	10	CNA*	6.7	-	-	-	6.7	-	-	-	1.2
SBE45/93	2	SSH10.0x40	6	CNA*	6.5	6.7	-	-	6.7	6.9	-	-	1.5
SBE45/108	2	SSH10.0x40	8	CNA*	7.2	7.2	-	-	7.2	7.2	-	-	1.2
SBE45/138	2	SSH10.0x40	10	CNA*	6.7	6.7	-	-	6.7	6.7	-	-	1.2
SBE45/168	4	SSH10.0x40	12	CNA*	12.8	12.8	-	-	12.8	12.8	-	-	1.8
SBE51/90	2	SSH10.0x40	6	CNA*	6.5	6.7	7.1	-	6.7	6.9	7.1	-	1.5
SBE51/135	2	SSH10.0x40	10	CNA*	6.7	6.7	6.7	-	6.7	6.7	6.7	-	1.2
SBE60/100	2	SSH10.0x40	8	CNA*	7.2	7.2	7.2	-	7.2	7.2	7.2	-	1.2
SBE60/130	2	SSH10.0x40	10	CNA*	6.7	6.7	6.7	-	6.7	6.7	6.7	-	1.2
SBE60/160	4	SSH10.0x40	12	CNA*	12.8	12.8	12.8	-	12.8	12.8	12.8	-	1.8
SBE70/125	2	SSH10.0x40	10	CNA*	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	1.2
SBE80/120	2	SSH10.0x40	10	CNA*	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	1.2
SBE80/150	4	SSH10.0x40	12	CNA*	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	1.8
SBE90/145	4	SSH10.0x40	12	CNA*	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	1.8
SBE100/140	4	SSH10.0x40	12	CNA*	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	1.8

Transversal tension shall be checked by the user and may govern.

These values are valid if the following minimum distances from SSH screws to edges are fulfilled:

Screw	min. dist. to loaded edge a _{2,t}	min. dist. to unloaded edge a _{2,c}
SSH10.0	50	40
SSH12.0	80	40

for lower distances, check ETA-06/0270 and EN1995

The minimum thickness of the supporting timber member to use with SSH10x40 is 38 mm.

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Joist hangers external flange

Installation

Fasteners

On supported member:

- CNA annular ring-shank nails dia. 4.0 x 50 mm.
- CNA annular ring-shank nails dia. 4.0 x 35 mm for thickness less than 64 mm.
- CSA screws dia. 5.0 x 40 mm.
- CSA screws dia. 5.0 x 35 mm for thickness less than 60 mm.

On supporting member:

Wood substrate:

- CNA annular ring-shank nails dia. 4.0 x 50 mm.
- CNA annular ring-shank nails dia. 4.0 x 35 mm for thickness less than 64 mm.
- CSA screws dia. 5.0 x 40 mm.
- CSA screws dia. 5.0 x 35 mm for thickness less than 60 mm.

Steel substrate:

- Bolts dia. 10 mm (bolt diameter cannot be more than 2 mm smaller than the drill hole diameter).

Concrete substrate:

- *Mechanical anchor* dia. 10: WA M10-78/5 pin.
- *Chemical anchor* dia. 10: AT-HP resin + LMAS M10-120/25 threaded rod.

Hollow masonry substrate: (check the load bearing capacity of the anchors)

- *Chemical anchor* dia. 10: AT-HP or POLY-GP resin + LMAS M10-120/25 threaded rod + SH M16-130 screen.

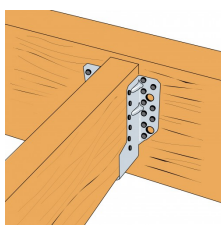
Installation

Sur Bois :

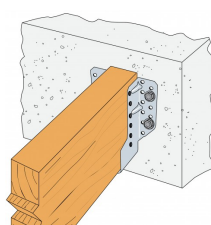
1. Tracer l'emplacement de la poutre portée sur le porteur,
2. Présenter le sabot et préfixer les ailes de chaque côté,
3. Ajuster le sabot par rapport aux tracés : le sabot doit être légèrement plus ouvert en haut que en bas pour faciliter l'installation de la poutre portée,
4. Finaliser la fixation sur chaque aile,
5. Présenter la poutre portée dans le sabot et la fixer en clouage partiel ou total.

Sur Béton :

1. Méthode 1 : Tracer l'emplacement des perçages en appliquant le sabot sur la poutre,
2. Méthode 2 : Tracer l'emplacement de la poutre sur le support, présenter le sabot et repérer les centres des perçages,
3. Percer le support avec un forêt adapté,
4. Présenter le sabot et fixer le sur le support avec des goujons d'ancrages,
5. Présenter la poutre portée dans le sabot avant de la fixer.



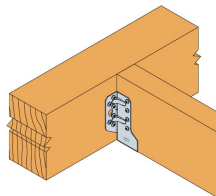
Full nailing on timber



Rigid support installation

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Joist hangers external flange



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