

Technical data sheet

SIMPSON

Strong-Tie

TUS

Concealed Beam Hanger

These concealed hangers ensure a completely invisible assembly. The slot in the head facilitates on-site installation. TUS, factory bent, are suitable for skewed applications.

Features

Material

- Steel S250GD + Z275 according to NF EN 10346.
- Thickness 3 mm.
- Half-hour fire resistance subject to a special installation.

Benefits

Invisible assembly
Optimized implementation complies with Eurocodes

Applications

Header member

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

For Use With

- Joists.
- Purlins.
- Supporting beam.



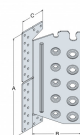
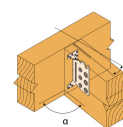
TU



TUS Concealed Beam Hanger

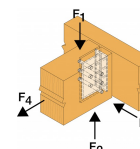
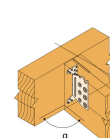
Technical Data

Product Dimensions



References	Joist Size [mm]					Header dimensions [mm]	Product Dimensions [mm]						Header holes	Joist holes	
	Width		Height			Post width	A	B	C	t	α [°]		Ø5	Ø8,5	Ø12,5
	Min	Max.	Min $\beta=0$	Min $\beta \neq 0$	Max.						Min	Max.			
TU/S12	60	120	120	160	200	68	96	97.5	40	3	30	85	6	4	-
TU/S16	60	160	160	190	240	88	134	104.5	60	3	30	85	18	-	3
TU/S20	60	160	200	225	280	88	174	104.5	60	3	30	85	22	-	4
TU/S24	60	160	240	260	300	88	214	104.5	60	3	30	85	26	-	5
TU/S28	60	160	280	295	340	88	254	104.5	60	3	30	85	30	-	6

Product characteristic capacities - Timber beam to timber beam - full nailing - with slope and skew $\alpha=60^\circ$



References	Product characteristic capacities - Timber beam to timber beam - full nailing - with slope and skew $\alpha=60^\circ$																			
	Number of Fasteners				Product characteristic capacities - Timber C24 [kN]															
	Header		Joist		$R_{1,k}$ - Slope $\beta=0^\circ$				$R_{1,k}$ - Slope $\beta=15^\circ$				$R_{1,k}$ - Slope $\beta=30^\circ$				$R_{1,k}$ - Slope $\beta=45^\circ$			
	Qty	Type	Qty	Type	Dowels length [mm]				Dowels length [mm]				Dowels length [mm]				Dowels length [mm]			
					60	80	100	120	60	80	100	120	60	80	100	120	60	80	100	120
TU/S12	6	CSA5,0x40	4	STD8	7.4	8.2	9.1	9.6	7.2	7.9	8.7	9.3	6.9	7.5	8.2	9	6.6	7.1	7.8	8.5
TU/S16	18	CSA5,0x40	3	STD12	16.4	16.9	17.8	19	15.9	16.3	17.1	18.1	15.4	15.7	16.4	17.2	15	15.4	15.9	16.7
TU/S20	22	CSA5,0x40	4	STD12	25	25.8	27.2	28.9	24.2	24.8	25.9	27.4	23.6	24	25	26.2	22.9	23.5	24.4	25.5
TU/S24	26	CSA5,0x40	5	STD12	34.4	35.4	37.3	39.5	33.3	34.1	35.6	37.6	32.4	33.1	34.4	36.1	31.6	32.6	33.7	35.2
TU/S28	30	CSA5,0x40	6	STD12	44.3	45.5	47.8	50.6	43	43.8	45.8	48.2	41.7	42.7	44.3	46.5	40.9	42.2	43.7	45.6

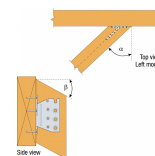
$R_{2,k}$ capacities can be calculated as $R_{2,k} = R_{1,k} \times (\text{nb of dowels} - 1) / (\text{nb of dowels})$.
The top dowel is not considered for the uplift capacities as it is placed in an open hole.

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To view Left model

Product characteristic capacities - Safe working loads - skewed connection

References	Safe working loads - skewed connection											
	Number of Fasteners				Installation: skew = 0° to 60°, slope = 0°				Installation: skew = 0° to 60°, slope = 45°			
	Header		Joist		R _{1,SWL} [kN]				R _{1,SWL} [kN]			
	Qty	Type	Qty	Type	Dowels length [mm]				Dowels length [mm]			
					60	80	100	120	60	80	100	120
TU/S12	6	CSA5,0x40	4	STD8	2.5	2.5	2.5	-	2.3	2.5	2.5	-
TU/S16	18	CSA5,0x40	3	STD12	3.4	4.8	6.1	6.1	3	4.1	5.3	5.3
TU/S20	22	CSA5,0x40	4	STD12	5.5	7.7	9.8	9.8	4.8	6.7	8.5	8.5
TU/S24	26	CSA5,0x40	5	STD12	8	11.1	13.3	13.3	6.9	9.6	12.3	12.3
TU/S28	30	CSA5,0x40	6	STD12	10.7	14.9	16.3	16.3	9.3	12.9	16.3	16.3

The skew may be precise when ordering the products

TUS Concealed Beam Hanger

Installation

Fixing

On supporting wood member: TUS

- CNA annular ring-shank nails dia. 4.0 x 50 mm or CSA screws dia. 5.0 x 40 mm.

On supported member: Steel dowel S235JR type STD12

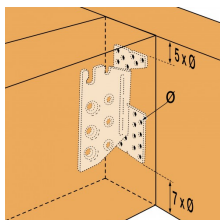
- TUS12: dia. 8 mm type STD 8.
- TUS16 to 28: dia. 12 mm type STD 12.

The length of the dowels is less than or equal to the width of the supported joist.

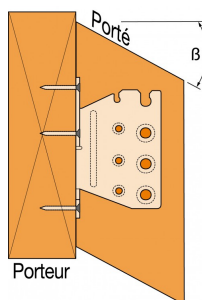
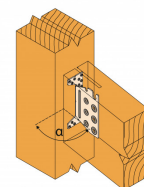
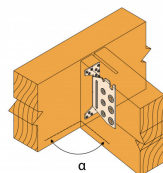
TUS: wood/wood fastening only with nails/screws

Installation

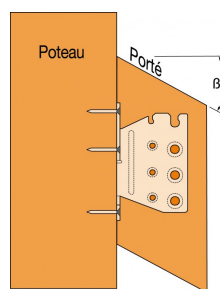
1. Make a vertical notch in the joist end (width 6mm for TUS12 and 9mm for TUS16 to TUS28),
2. Mark the position of the dowels on the joist before drilling holes - diameter of the hole according to the diameter of the dowel
3. Insert the top dowel in the joist
4. Route a 6mm deep pocket in either the joist end or the header. This is not compulsory, it is used to improve the aesthetic of the connection
5. Fix Install the joist onto the concealed beam hanger by hooking the joist onto the concealed beam hanger. Top dowel hooks into slotted top hole on the concealed beam hanger.
6. Install remaining dowels.the concealed beam hanger to the header with nails or screws



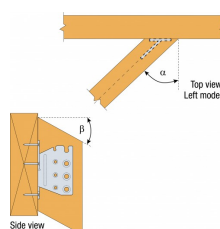
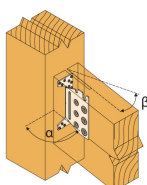
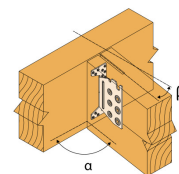
Connection to header



sloped connection to header



sloped connection to post



To view Left model

TUS

Concealed Beam Hanger

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Hanger**



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