Technical Sheet

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.





TU

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

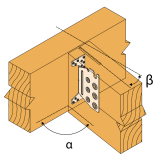
- Joists.
- Purlins.
- Supporting beam.

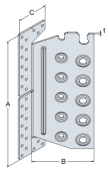
Technical Sheet

TUS
Concealed Beam Hanger

Technical Data

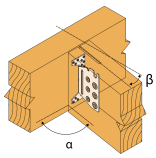
Product Dimensions

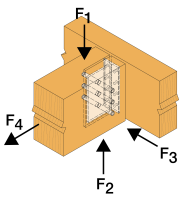




Reference	Connector Dimensions																
	Timber size[mm]				Header dimensions[mm]	Product Dimensions[mm]						Header holes[mm]	Joist holes[mm]		Other	
	Width	Height[mm]			Post Width	A[mm]	B[mm]	C[mm]	t[mm]	α[°]	α	Round	Round		Qty per Box	Weight[kg
	Max. [mm]	Min[mm]	Min β≠0[mm]	Max. [mm]	Min[mm]					Min[mm]	Max. [°]	Ø5	Ø8.5	Ø12.5		
TU/S12	120	120	160	200	68	96	97.5	40	3	30	89	6	4	-	-	0.4
TU/S16	160	160	190	240	88	134	104.5	60	3	30	89	18	-	3	-	0.45
TU/S20	160	200	225	280	88	174	104.5	60	3	30	89	22	-	4	-	0.5
TU/S24	160	240	260	300	88	214	104.5	60	3	30	89	26	-	5	-	0.64
TU/S28	160	280	295	340	88	254	104.5	60	3	30	89	30	-	6	-	0.77

Product characteristic capacities - Timber beam to timber beam - full nailing - with slope and skew α=60°



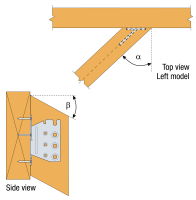


Reference	Hanger capacity																	
	Product characteristic capacities - Timber beam to timber beam - full nailing - with slope and skew α=60°																	
	Number of Fasteners			Product characteristic capacities - Timber C24[kN]														
	Joist		Header	R1,k - Slope β=0°				R1,k - Slope β=45°				R1,k - Slope β=30°				$R_{1,k}$ - Declive β=15°			
	Qty	Type	Qty	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	4.0	STD8	6.0	7.4	8.2	9.1	9.6	6.6	7.1	7.8	8.5	6.9	7.5	8.2	9	7.2	7.9	8.7	9.3
TU/S16	3.0	STD12	18.0	16.4	16.9	17.8	19	15	15.4	15.9	16.7	15.4	15.7	16.4	17.2	15.9	16.3	17.1	18.1
TU/S20	4.0	STD12	22.0	25	25.8	27.2	28.9	22.9	23.5	24.4	25.5	23.6	24	25	26.2	24.2	24.8	25.9	27.4
TU/S24	5.0	STD12	26.0	34.4	35.4	37.3	39.5	31.6	32.6	33.7	35.2	32.4	33.1	34.4	36.1	33.3	34.1	35.6	37.6
TU/S28	6.0	STD12	30.0	44.3	45.5	47.8	50.6	40.9	42.2	43.7	45.6	41.7	42.7	44.3	46.5	43	43.8	45.8	48.2

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

Technical Sheet

TUS
Concealed Beam Hanger



Product characteristic capacities - Safe working loads - skewed connection

Reference	Hanger capacity											
	Product characteristic capacities - Timber beam to timber beam - full nailing - with slope and skew α=30°			Safe working loads - skewed connection							
	Number of Fasteners			Installation: skew = 0° to 60°, slope = 0°				Installation: skew = 0° to 60°, slope = 45°			
	Joist		Header	R1,SWL[kN]				R1,SWL[kN]			
	Qty	Type	Qty	Dowels length[mm]				Dowels length[mm]			
				60	80	100	120	60	80	100	120
TU/S12	4.0	STD8	6.0	2.5	2.5	2.5	-	2.3	2.5	2.5	-
TU/S16	3.0	STD12	18.0	3.4	4.8	6.1	6.1	3	4.1	5.3	5.3
TU/S20	4.0	STD12	22.0	5.5	7.7	9.8	9.8	4.8	6.7	8.5	8.5
TU/S24	5.0	STD12	26.0	8	11.1	13.3	13.3	6.9	9.6	12.3	12.3
TU/S28	6.0	STD12	30.0	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

Installation

Fixing

<u>On supporting wood member:</u> TUS

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

<u>On supported member:</u> Steel dowel S235JR type STD12

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

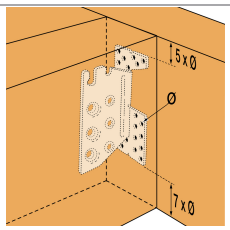
The length of the dowels is less than or equal to the width of the supported joist.
***TUS:* wood/wood fastening only with nails/screws**

Installation

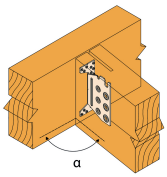
1. Make a vertical notch in the joist end (width 6mm for TUS12 and 9mm for TUS16 to TUS28),
2. Mark the position of the dowels on the joist before drilling holes - diameter of the hole according to the diameter of the dowel
3. Insert the top dowel in the joist
4. Route a 6mm deep pocket in either the 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 reamining dowels.the concealed beam hanger to the header with nails or screws

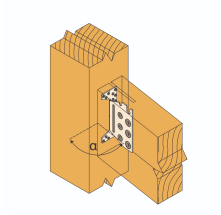
Technical Sheet

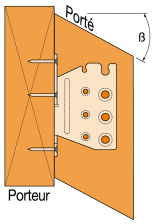
TUS
Concealed Beam Hanger



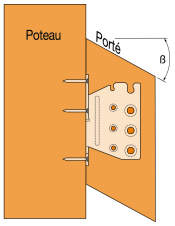
Connection to header



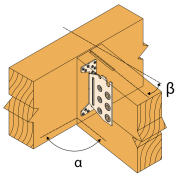


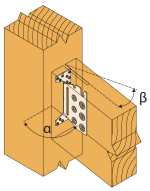


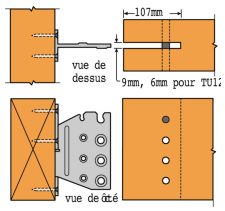
sloped connection to header



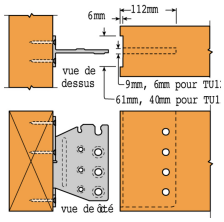
sloped connection to post



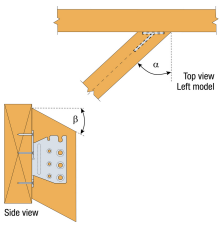


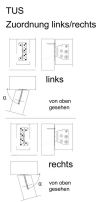


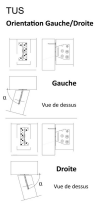
Mounting

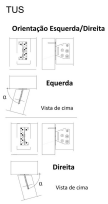


Montage invisible - Dimensions

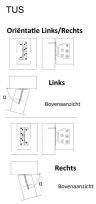


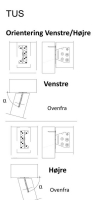












Technical Sheet

TUS
Concealed Beam Hanger

Winchester Road Cardinal Point Tamworth Staffordshire
B78 3HG
tel: +44 1827 255600
fax: +44 1827 255616
Copyright by Simpson Strong-Tie®
Information presented on this document is the exclusive property of Simpson Strong-Tie®