Technical data sheet

TU - CONCEALED BEAM HANGER

The TU galvanised steel, load rated hanger provides an aesthetically attractive connection for exposed beams. Mild steel dowels and screws are included.

ETA-07/0245, UK-DoP-e07/0245

FEATURES

CS | CL2 | R 30 | INDOOR | Z275

Material

- Steel S250GD + Z275 according to NF EN 10346
- Thickness 3.5 mm
- Half-hour fire resistance subject to a special installation

Benefits

Invisible assembly

Mounting on wood or concrete

Optimized implementation complies with Eurocodes

APPLICATIONS

Header member

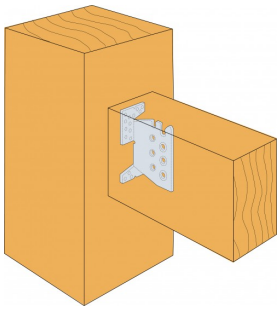
- **Supporting member:** solid wood, glued-laminated wood, composite lumber
- **Supported member:** solid wood, glued-laminated wood, composite lumber

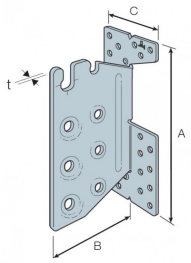
For Use With

- Joists
- Purlins
- Supporting beam

TECHNICAL DATA

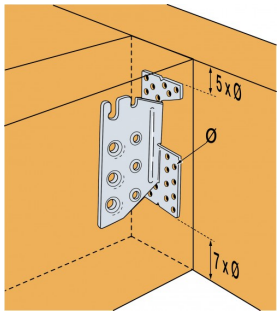
Product Dimensions

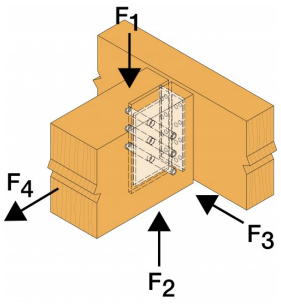




References	Joist Size [mm]					Product Dimensions [mm]				Header holes	Joist holes	
	Width		Height			A	B	C	t	Ø5	Ø8,5	Ø12,5
	Max.	Min	Min β=0	Min β≠0	Max.							
TU12	120	60	120	160	200	96	97.5	40	3.5	6	4	-
TU16	160	60	160	190	240	134	104.5	60	3.5	18	-	3
TU20	160	60	200	225	280	174	104.5	60	3.5	22	-	4
TU24	160	60	240	260	300	214	104.5	60	3.5	26	-	5
TU28	160	60	280	295	340	254	104.5	60	3.5	30	-	6

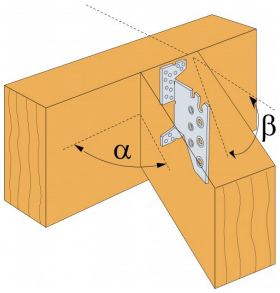
Product Capacities

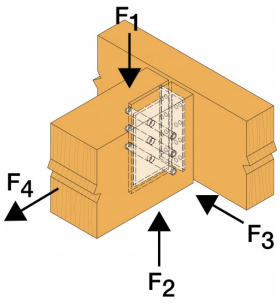




References	Product Capacities - Slope = 0, Skew = 0															
	Number of Fasteners				Product characteristic capacities - Timber C24 [kN]											
	Header		Joist		$R_{1,k}$				$R_{2,k}$				$R_{3,k}$			
	Qty	Type	Qty	Type	Dowels length [mm]				Dowels length [mm]				Dowels length [mm]			
					60	80	100	120	60	80	100	120	60	80	100	120
TU12	6	CSA5,0x40	4	STD8	8.1	9	10.1	10.7	6.1	6.8	7.6	8	1.2	1.7	2.2	2.8
TU16	18	CSA5,0x40	3	STD12	17.5	18.1	19.2	20.5	11.7	12.1	12.8	13.7	1.6	2.2	2.9	3.6
TU20	22	CSA5,0x40	4	STD12	26.7	27.6	29.2	31.1	20	20.7	21.9	23.3	2.2	2.9	3.8	4.6
TU24	26	CSA5,0x40	5	STD12	36.6	37.7	39.8	42.5	29.3	30.2	31.8	34	2.7	3.6	4.7	5.8
TU28	30	CSA5,0x40	6	STD12	46.9	48.3	50.9	54.1	39.1	40.3	42.4	45.1	3.2	4.4	5.5	6.7

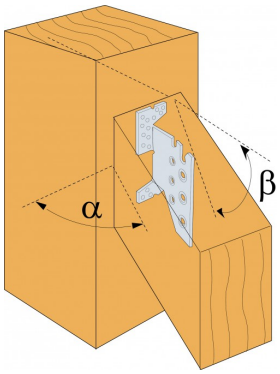
Characteristic Capacities - Sloped Installation (Slope upto 45°, Skew = 0°)

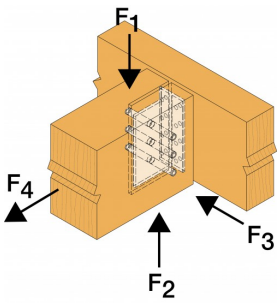




References	Characteristic Capacities - Sloped Installation (Slope upto 45°, Skew = 0°)															
	Number of Fasteners				Product characteristic capacities - Timber C24 [kN]											
	Header		Joist		$R_{1,k}$ - Slope β=15°				$R_{1,k}$ - Slope β=30°				$R_{1,k}$ - Slope β=45°			
	Qty	Type	Qty	Type	Dowels length [mm]				Dowels length [mm]				Dowels length [mm]			
					60	80	100	120	60	80	100	120	60	80	100	120
TU12	6	CSA5,0x40	4	STD8	8.1	9	10.1	10.7	8.1	9	10.1	10.7	8.1	9	10.1	10.7
TU16	18	CSA5,0x40	3	STD12	16.9	17.4	18.3	19.4	16.5	16.8	17.5	18.5	15.9	16.4	17	17.9
TU20	22	CSA5,0x40	4	STD12	25.8	26.4	27.8	29.5	25.1	25.6	26.7	28.1	24.4	25.1	26.1	27.4
TU24	26	CSA5,0x40	5	STD12	35.4	36.2	38	40.2	34.3	35.2	36.6	38.6	33.6	34.7	36	37.8
TU28	30	CSA5,0x40	6	STD12	45.5	46.4	48.6	51.4	44	45.3	47.1	49.5	43.4	44.9	46.5	48.7

Skewed Only: Skewed & Sloped Installation - Skew upto 60°, Slope upto 45°





References	Skewed Only: Skewed & Sloped Installation - Skew upto 60°, Slope upto 45°																			
	Number of Fasteners				Product characteristic capacities - Timber C24 [kN]															
	Header		Joist		R1,k - Slope β=0°				$R_{1,k}$ - Slope β=15°				$R_{1,k}$ - Slope β=30°				$R_{1,k}$ - Slope β=45°			
	Qty	Type	Qty	Type	Dowel Lengths				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
TU12	6	CNA4,0x50	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
TU16	14	CNA4,0x50	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
TU20	14	CNA4,0x50	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
TU24	18	CNA4,0x50	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
TU28	18	CNA4,0x50	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

Rotational Installation

TU - CONCEALED BEAM HANGER

References	Rotated Installation							
	Fasteners		Joist		Characteristic Capacities - Timber C24			
	Header		Qty	Dowel	Dowel Lengths [mm]			
	Qty	Type			60	80	100	120
TU12	6	CSA5.0x40	4	STD8	1.5	2	2.5	3
TU16	18	CSA5.0x40	3	STD12	2	2.6	3.3	4
TU20	22	CSA5.0x40	4	STD12	2.7	3.5	4.4	5.1
TU24	26	CSA5.0x40	5	STD12	3.4	4.4	5.3	6.4
TU28	30	CSA5.0x40	6	STD12	4.3	5.3	6.4	7.7

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INSTALLATION

Fixing

On supporting wood member: TU/TUB/TUBS

- CNA annular ring-shank nails dia. 4.0 x 50 mm or CSA screws dia. 5.0 x 40 mm
- Lag screws and bolts dia. 10 mm only for TUB/TUBS

On supported member: Steel dowel S235JR type STD12

- TU12: dia. 8 mm type STD 8
- TU16 to 28: dia. 12 mm type STD 12
- TUB/TUBS: dia. 12 mm type STD 12

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

TU: wood/wood fastening only with nails/screws
TUB: wood/wood fastening only with nails/screws or lag screws
TUBS: wood/wood fastening only with nails/screws or lag screws

Concrete and steel substrate:

It is not recommended to use hangers on concrete or steel substrate as the size of the bolts makes the distance from the edge of the wood to the dowels non-compliant with Eurocode 5.

Installation

• Dowels aligned across the grain may cause splitting if the wood shrinks excessively. Use only in glulam, composite timber or well dried timber. Verify
that the header can take the required fasteners specified in the table.
• Attach to the supporting beam with CSA 5.0 x 40mm screws (supplied).
• Specify dowel length and TU size to fit the application.
• Preparation of carried beam is best done off-site with cutting and boring
tools.
• Holes in beam should be same diameter as dowel to ensure tight fit.
• Centre the TU within height of carried beam.
• Centre dowels within the width of the carried member.
• For a sloped installation the TU hanger remains as standard and the timber
is cut and angled to suit the slope.
• Recommended for internal dry environments (service class 1 & 2) only.

Installation Procedure for a TU Concealed Connector:

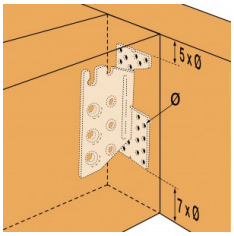
ATTACH CONNECTOR TO HEADER
• Position the connector at the pre-determined height and screw the connector to the header or post.
• Fill all holes with screws supplied.

PREPARE THE BEAM
• Cut the beam to the length specified.
• Cut a slot into the end of the beam. Slot width for TU12 is 6mm and 9mm for all other sizes.
• Cut the slot 3mm deeper than the TU and short of the beam height for concealed
installation. This allows the connector to be hidden from below. Otherwise cut the slot 3mm deeper than the TU and through the entire beam height.

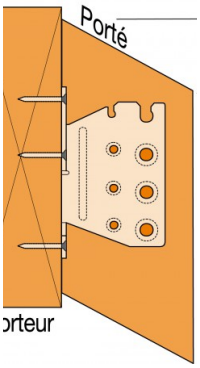
• Fully concealed only: Rout a pocket into the beam end. The pocket should be 6mm deep, enough to hide the thickness of the TU and the screw heads. This eliminates the gap between the beam & header (see Pocket Concealed installation example below).

DRILL BEAM DOWEL HOLES
• Using the TU as a template, mark the hole positions, remove the TU and drill the holes.
• Drill the dowel holes to the required diameter. Dowel hole diameter for the TU12 is 8mm and 12mm for all other sizes.

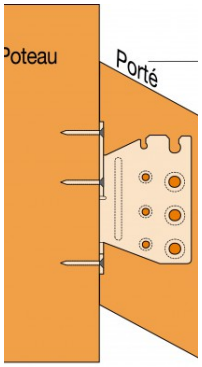
INSTALL BEAMS
• Install top dowel into the carried beam first. Slip beam into place and install the remaining dowels working from the top downwards.
• Fully concealed only: To hide exposed dowel holes when the installation is complete, glue and plug the holes.



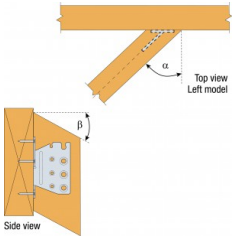
Connection to header

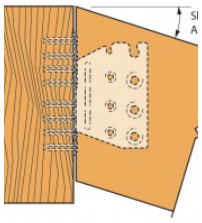


sloped connection to header

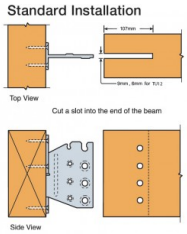


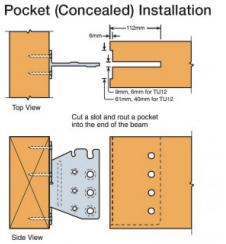
sloped connection to post

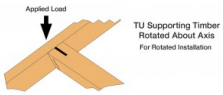




Sloped Beam-to-Beam







TECHNICAL NOTES