

PRODUCT DATA SHEET

T-TEC SYSTEM

PRODUCT DESCRIPTION

The T-Tec system is a combination of Eurotec's T-profile and the self-drilling EST. It's an ideal solution to create a hidden connection between main and secondary beams. The double-threaded screw with an innovative arrow drill through wood and aluminium, allowing a fast fix of the joist without predrilling. Whether you opt for horizontal or inclined joints between main and secondary beams, the T-Tec system will ensure a strong long-lasting connection.

ADVANTAGES

- Very high vertical load resistance
- Timber-to-timber and timber-to-concrete connections
- No pre-drilling required with the EST rod dowel
- Possibility to completely achieve a completely hidden connection
- Architecturally aesthetic
- Improved fire resistance if connection is concealed



SERVICE CLASS

- SC1
- SC2

MATERIAL

- Aluminum alloy EN AW-6005A

APPLICATIONS

- Solid timber
- Glued laminated timber
- Cross-laminated timber
- LVL (predrilled)
- Concrete (at least strength class C20)

APPROVAL

- Regulated by European Technical Assessment ETA-21/0710

Note: The ETA approval relates exclusively to the combination of the T-profile and the EST rod anchor. Accordingly, the certification is only authorised for the joint use of the two products!



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T-TEC SYSTEM

PRODUCT TABLE

T-Profil				
Art. no.	Dimensions [mm]	Thickness [mm]	Material	PU
975652	115 x 2000 x 80	6	Aluminum alloy EN AW-6005A	1

EST (EuroTec rod dowel)					
Art. no.	Dimensions Ød x L [mm]	Thread length lg [mm]	Head diameter Ødh [mm]	Drive	PU
800304	7,5 x 73	27/0	12	TX 40	50
800291	7,5 x 93	27/8,5	12	TX 40	50
800305	7,5 x 113	36/12,5	12	TX 40	50
800306	7,5 x 133	36/12,5	12	TX 40	50
800307	7,5 x 153	36/12,5	12	TX 40	50
800287	7,5 x 173	36/12,5	12	TX 40	50
800288	7,5 x 193	36/12,5	12	TX 40	50
800289	7,5 x 213	36/12,5	12	TX 40	50
800290	7,5 x 233	36/12,5	12	TX 40	50

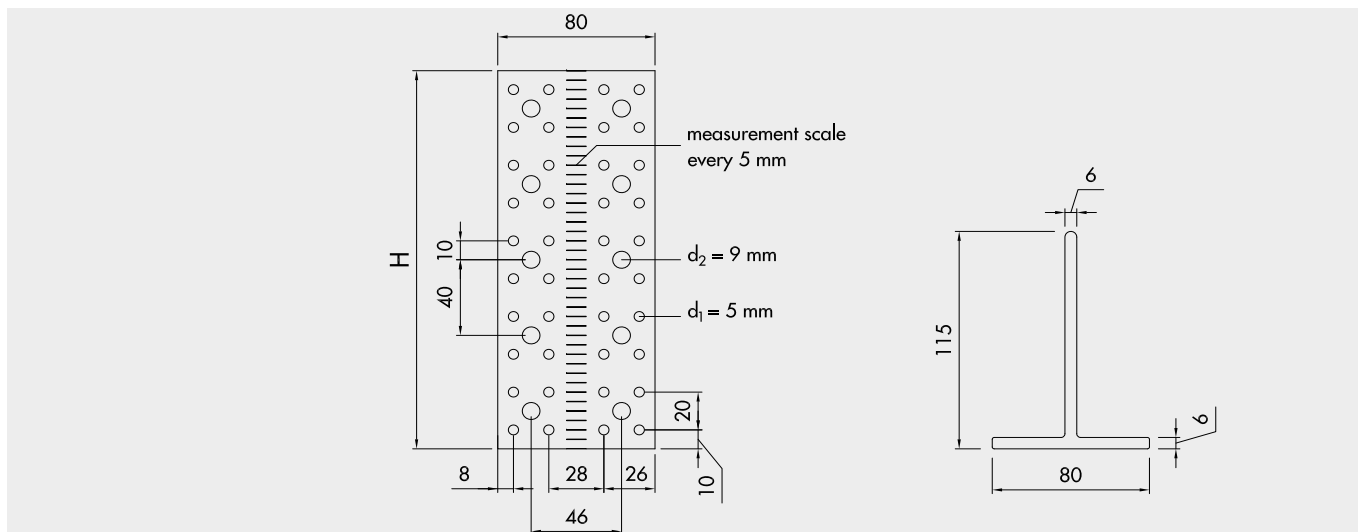
Angle-bracket screw				
Art. no.	Dimensions Ød x L [mm]	Material	Drive	PU
945344	5,0 x 60	Blue galvanized steel	TX20	250

Rock concrete screw				
Art. no.	Dimensions Ød x L [mm]	Material	Drive	PU
110341	7,5 x 80	Blue galvanized steel	SW15	100

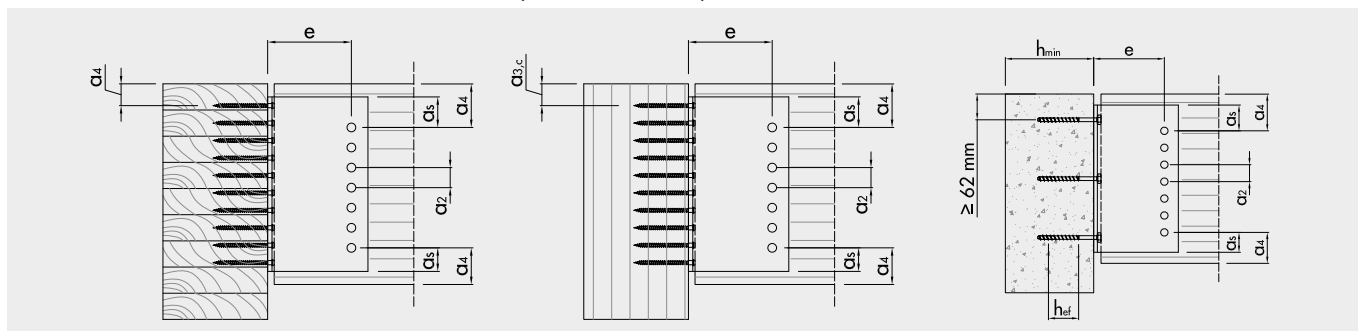
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T-TEC SYSTEM

GEOMETRY



INSTALLATION MINIMUM SPACINGS, DISTANCES, AND DIMENSIONS



T-Tec System			
Secondary beam (timber)			EST rod dowel Ø 7,5 mm
Dowel spacing	a_2 [mm]	$\geq 3 \cdot d$	≥ 23
Dowel to top/bottom of beam	a_1 [mm]	$\geq 4 \cdot d^{(a)}$	≥ 30
Dowel to profile edge	a_3 [mm]	$\geq 1,2 \cdot d^{(b)}$	≥ 10
Dowel to main beam's edge	e [mm]	-	96
Main beam (timber)			ABS Ø 5 mm
Upper fastener to top of beam	a_1 [mm]	$\geq 4 \cdot d$	20
Upper fastener to column end	$a_{3,k}$ [mm]	$\geq 10 \cdot d$	50
Main beam (concrete)			Rock concrete Ø 7,5 mm
Minimum component thickness	h_{min} [mm]		100
Concrete hole predrilling diameter	$d0'$ [mm]		6

Notes:

(a) $a_1 = a_{1,k} = a_{1,r}$. Design tables consider load reversion, i.e., vertical load as being equal downwards and upwards.

(b) Minimum edge distance according to EN 1999-1-1: Design of aluminum structures. $d0'$: hole diameter

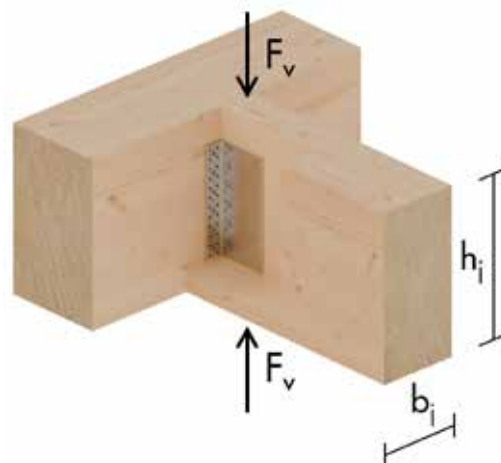
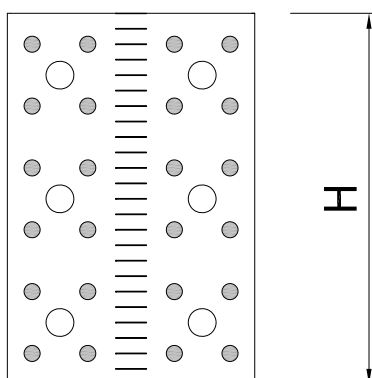
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T-TEC SYSTEM

TIMBER-TO-TIMBER

Vertical load-carrying capacity of connector F_v

TOTAL FASTENING



T-Profile H [mm]	Secondary beam		Main beam		
	$b_j \times h_j$ [mm x mm]	EST dowel Ø 7,5 [pcs - L]	ABS Ø 5 x 60 [pcs]	F_v, R_k [kN]	F_v, R_d [kN]
100	120 x 140	3 - 113	20	19,3	11,9
120	120 x 160	3 - 113	24	27,3	16,8
140	120 x 160	4 - 113	28	36,3	22,3
160	120 x 200	5 - 113	32	45,5	28,0
180	120 x 240	6 - 113	36	54,6	33,6
200	120 x 240	7 - 113	40	63,7	39,2
220	120 x 260	8 - 113	44	72,8	44,8
240	140 x 280	9 - 133	48	88,8	54,6
260	140 x 320	10 - 133	52	99,8	61,4
280	160 x 320	10 - 153	56	109,5	67,4
300	160 x 360	11 - 153	60	120,5	74,1
320	160 x 360	12 - 153	64	131,4	80,9
340	160 x 400	13 - 153	68	142,4	87,6
360	160 x 400	14 - 153	72	153,3	94,3
380	160 x 440	15 - 153	76	164,3	101,1
400	160 x 440	16 - 153	80	175,2	107,8
420	180 x 480	16 - 173	84	191,7	118,0
440	180 x 480	17 - 173	88	197,2	121,3
460	180 x 520	18 - 173	92	212,5	130,7
480	180 x 520	19 - 173	96	223,3	137,4

Notes:

Calculated according to EN 1995-1-1, with non-predrilled holes and wood density $\rho_k = 385 \text{ kg/m}^3$.

Design values calculated considering $k_{mod} = 0,8$ and $\gamma_m = 1,3$.

Please note: these are planning aids. Projects must be calculated only by authorized professionals.

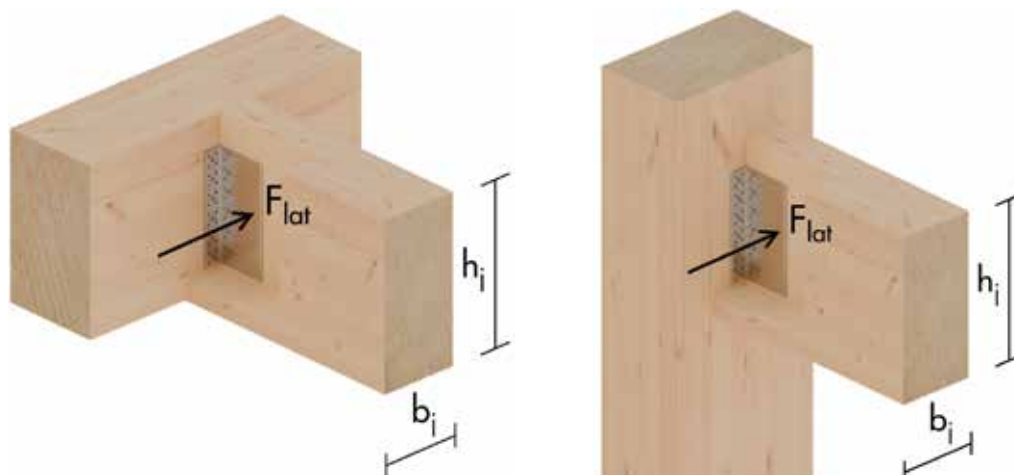
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T-TEC SYSTEM

TIMBER-TO-TIMBER

Lateral load-carrying capacity of connector F_{lat}

TOTAL AND PARTIAL FASTENING



T-Profile H [mm]	Secondary beam	Flat,timber,k	Flat,alu,k	Flat,d
	$b_i \times h_i$ [mm x mm]	GL24h [kN]	[kN]	[kN]
100	120 x 140	10,2	4,3	3,4
120	120 x 160	11,6	5,1	4,1
140	120 x 160	11,6	6,0	4,8
160	120 x 200	14,6	6,9	5,5
180	120 x 240	17,5	7,7	6,2
200	120 x 240	17,5	8,6	6,9
220	120 x 260	18,9	9,4	7,6
240	140 x 280	23,9	10,3	8,2
260	140 x 320	27,3	11,2	8,9
280	160 x 320	31,3	12,0	9,6
300	160 x 360	35,2	12,9	10,3
320	160 x 360	35,2	13,7	11,0
340	160 x 400	39,1	14,6	11,7
360	160 x 400	39,1	15,4	12,4
380	160 x 440	43,0	16,3	13,0
400	160 x 440	43,0	17,2	13,7
420	180 x 480	52,6	18,0	14,4
440	180 x 480	52,6	18,9	15,1
460	180 x 520	57,0	19,7	15,8
480	180 x 520	57,0	20,6	16,5

Notes:

Calculated according to EN 1995-1-1, with non-predrilled holes and wood density $\rho_k = 385 \text{ kg/m}^3$.

Design values calculated considering $k_{mod} = 0,8$ and $\gamma_m = 1,3$.

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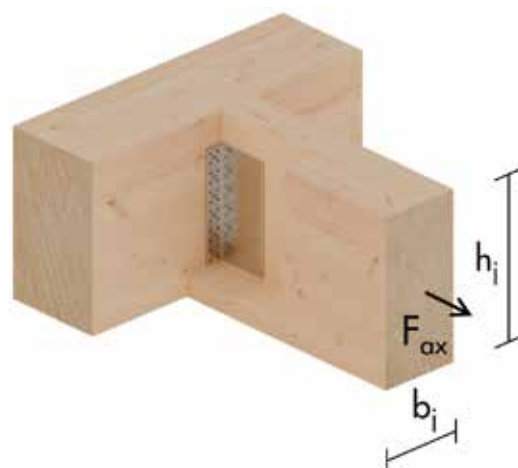
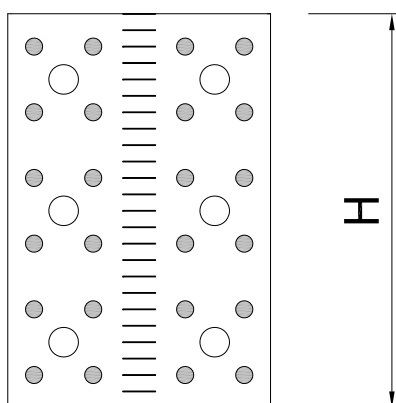
PRODUCT DATA SHEET

T-TEC SYSTEM

TIMBER-TO-TIMBER

Axial load-carrying capacity of connector F_{ax}

TOTAL FASTENING



T-Profile H [mm]	Secondary beam		Main beam		
	$b_j \times h_j$ [mm x mm]	EST dowel Ø 7,5 [pcs - L]	ABS Ø 5 x 60 [pcs]	$F_{ax,Rk}$ [kN]	$F_{ax,Rd}$ [kN]
100	120 x 140	3 - 113	20	26,6	16,4
120	120 x 160	3 - 113	24	27,3	16,8
140	120 x 160	4 - 113	28	36,4	22,4
160	120 x 200	5 - 113	32	42,6	26,2
180	120 x 240	6 - 113	36	48,0	29,5
200	120 x 240	7 - 113	40	53,3	32,8
220	120 x 260	8 - 113	44	58,6	36,1
240	140 x 280	9 - 133	48	63,9	39,3
260	140 x 320	10 - 133	52	69,3	42,6
280	160 x 320	10 - 153	56	74,6	45,9
300	160 x 360	11 - 153	60	79,9	49,2
320	160 x 360	12 - 153	64	85,2	52,5
340	160 x 400	13 - 153	68	90,6	55,7
360	160 x 400	14 - 153	72	95,9	59,0
380	160 x 440	15 - 153	76	101,2	62,3
400	160 x 440	16 - 153	80	106,6	65,6
420	180 x 480	16 - 173	84	111,9	68,9
440	180 x 480	17 - 173	88	117,2	72,1
460	180 x 520	18 - 173	92	122,5	75,4
480	180 x 520	19 - 173	96	127,9	78,7

Notes:

Calculated according to EN 1995-1-1, with non-predrilled holes and wood density $\rho_k = 385 \text{ kg/m}^3$.

Design values calculated considering $k_{mod} = 0,8$ and $\gamma_m = 1,3$.

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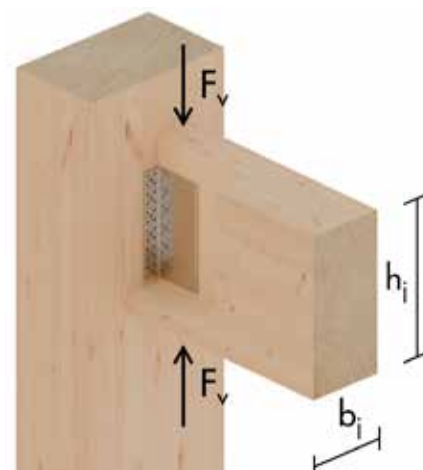
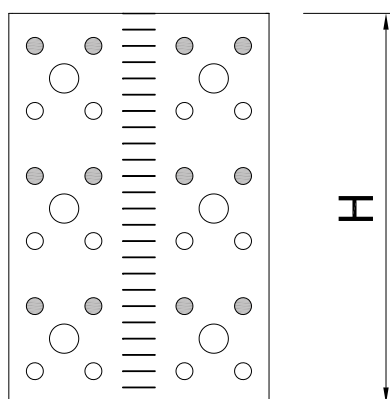
PRODUCT DATA SHEET

T-TEC SYSTEM

TIMBER-TO-TIMBER

Vertical load-carrying capacity of connector F_v

PARTIAL FASTENING



T-Profile H [mm]	Secondary beam		Main beam		
	$b_j \times h_j$ [mm x mm]	EST dowel Ø 7,5 [pcs - L]	ABS Ø 5 x 60 [pcs]	Rock concrete Ø 7,5 x 80 [pcs]	F_v, R_d [kN]
100	120 x 140	3 - 113	12	12,7	7,8
120	120 x 160	3 - 113	12	16,4	10,1
140	120 x 160	3 - 113	16	22,0	13,5
160	120 x 200	4 - 113	16	25,9	15,9
180	120 x 240	4 - 113	20	32,4	19,9
200	120 x 240	5 - 113	20	36,2	22,3
220	120 x 260	5 - 113	24	43,4	26,7
240	140 x 280	6 - 133	24	47,0	28,9
260	140 x 320	6 - 133	28	54,8	33,7
280	160 x 320	7 - 153	28	57,9	35,6
300	160 x 360	7 - 153	32	66,2	40,7
320	160 x 360	8 - 153	32	69,0	42,5
340	160 x 400	8 - 153	36	77,6	47,8
360	160 x 400	9 - 153	36	80,0	49,2
380	160 x 440	9 - 153	40	88,9	54,7
400	160 x 440	10 - 153	40	91,0	56,0
420	180 x 480	10 - 173	44	100,1	61,6
440	180 x 480	11 - 173	44	102,0	62,8
460	180 x 520	11 - 173	48	111,3	68,5
480	180 x 520	12 - 173	48	112,9	69,5

Notes:

Calculated according to EN 1995-1-1, with non-predrilled holes and wood density $\rho_k = 385 \text{ kg/m}^3$.

The two uppermost header screws are placed 50 mm below the upper end of the connector. The subsequent header screws below are spaced at 120 mm.

Design values calculated considering $k_{mod} = 0,8$ and $\gamma_m = 1,3$.

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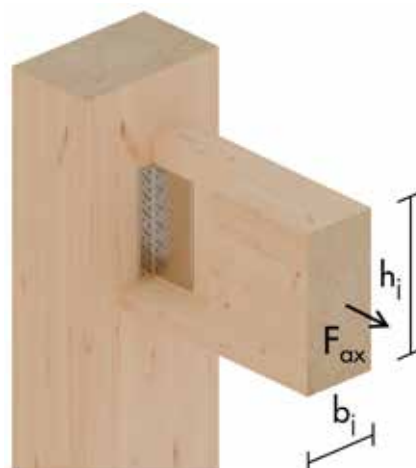
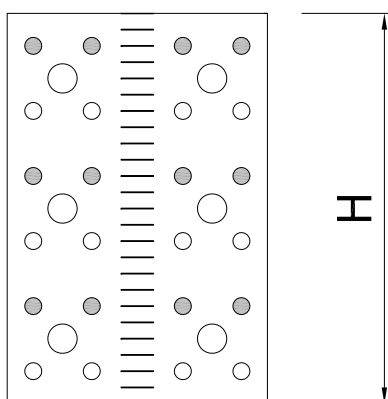
PRODUCT DATA SHEET

T-TEC SYSTEM

TIMBER-TO-TIMBER

Axial load-carrying capacity of connector F_{ax}

PARTIAL FASTENING



T-Profile H [mm]	Secondary beam		Main beam		
	$b_j \times h_j$ [mm x mm]	EST dowel Ø 7,5 [pcs - L]	ABS Ø 5 x 60 [pcs]	F_{ax}, R_k [kN]	F_v, R_d [kN]
100	120 x 140	3 - 113	12	16,0	9,8
120	120 x 160	3 - 113	12	16,0	9,8
140	120 x 160	3 - 113	16	21,3	13,1
160	120 x 200	4 - 113	16	21,3	13,1
180	120 x 240	4 - 113	20	26,6	16,4
200	120 x 240	5 - 113	20	26,6	16,4
220	120 x 260	5 - 113	24	32,0	19,7
240	140 x 280	6 - 133	24	32,0	19,7
260	140 x 320	6 - 133	28	37,3	23,0
280	160 x 320	7 - 153	28	37,3	23,0
300	160 x 360	7 - 153	32	42,6	26,2
320	160 x 360	8 - 153	32	42,6	26,2
340	160 x 400	8 - 153	36	48,0	29,5
360	160 x 400	9 - 153	36	48,0	29,5
380	160 x 440	9 - 153	40	53,3	32,8
400	160 x 440	10 - 153	40	53,3	32,8
420	180 x 480	10 - 173	44	58,6	36,1
440	180 x 480	11 - 173	44	58,6	36,1
460	180 x 520	11 - 173	48	63,9	39,3
480	180 x 520	12 - 173	48	63,9	39,3

Notes:

Calculated according to EN 1995-1-1, with non-predrilled holes and wood density $\rho_k = 385 \text{ kg/m}^3$.

The two uppermost header screws are placed 50 mm below the upper end of the connector. The subsequent header screws below are spaced at 120 mm.

Design values calculated considering $k_{mod} = 0,8$ and $\gamma_m = 1,3$.

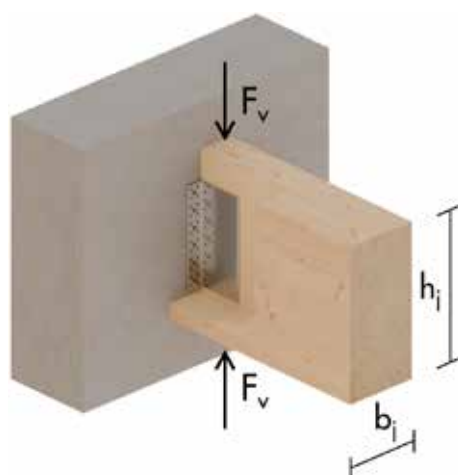
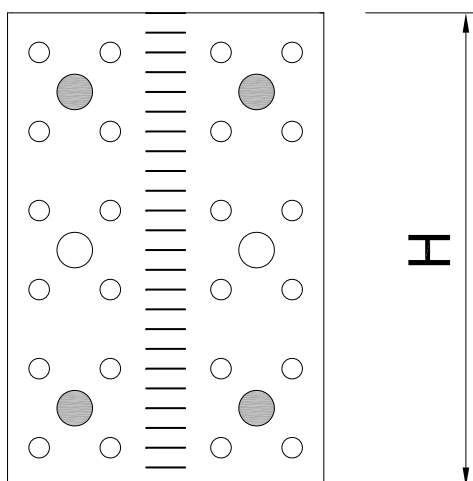
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PRODUCT DATA SHEET

T-TEC SYSTEM

TIMBER-TO-CONCRETE

Vertical load-carrying capacity of connector F_v



T-Profile H [mm]	Secondary beam		Main beam	
	$b_i \times h_i$ [mm x mm]	EST dowel Ø 7,5 [pcs - L]	Rock concrete Ø 7,5 x 80 [pcs]	$F_{v,Rd}$ [kN]
100	120 x 140	3 - 113	4	7
120	120 x 160	3 - 113	4	7,5
140	120 x 160	4 - 113	4	10,0
160	120 x 200	5 - 113	6	12,5
180	120 x 240	6 - 113	6	15,0
200	120 x 240	7 - 113	6	17,6
220	120 x 260	8 - 113	6	20,1
240	140 x 280	9 - 133	6	24,6
260	140 x 320	10 - 133	6	26,1
280	160 x 320	10 - 153	6	27,4
300	160 x 360	11 - 153	6	29,1
320	160 x 360	12 - 153	6	31,4
340	160 x 400	13 - 153	6	31,7
360	160 x 400	14 - 153	6	32,0
380	160 x 440	15 - 153	6	32,2
400	160 x 440	16 - 153	6	32,5
420	180 x 480	16 - 173	8	32,7
440	180 x 480	17 - 173	8	33,0
460	180 x 520	18 - 173	8	33,2
480	180 x 520	19 - 173	8	33,4

Notes:

Calculated according to EN 1995-1-1, with non-predrilled holes and wood density $\rho_k = 385 \text{ kg/m}^3$.

It is mandatory to install the uppermost header screws. The subsequent header screws below are spaced at 80 mm.

Design values calculated considering $k_{mod} = 0,8$ and $\gamma_m = 1,3$.

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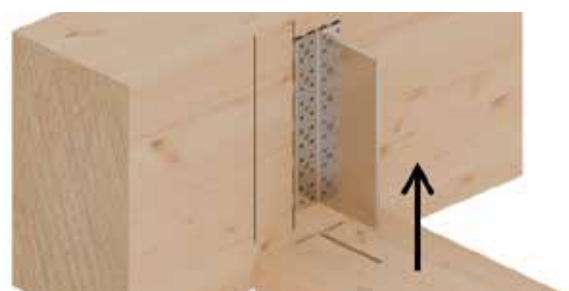
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T-TEC SYSTEM

The tools needed for the assembly of the T-Tec System are the basics for a carpentry job: measure square and tape, pencil, surface milling machine, electric drill, chainsaw, and level. Tip: Eurotec's Beam Grip might be useful for achieving a perfect beam-joist match.



First, mark the dimensions of the joist and t-profile on the beam using the measure square, measure tape and pencil. Then, mark the position of the t-profile on the joist end-grain face (Step 1). Mill the joist at 8 mm of depth to comfortably house the t-profile in. Then make the cut for the t-profile's web with a chainsaw (Step 2; this step can be skipped in case of having milled with a CNC).



Install the ABS 5x60 mm on the beam through the t-profile's flange, then carefully insert the joist, and verify flush edges with the level (Step 3). Install the required quantity of EST rod dowels through the joist and t-profile's web (Step 4). Ensure that the minimum distances specified in the product data sheet on page 4 are observed for all steps.



Final verification with the level and cleansing of the finished joint (Step 5). Alternatively, it can also be installed on a timber column or concrete bearing element.

If you are not familiar with how this product is used, and particularly with the product's intended use, please contact our Application Technology department (Technik@eurotec.team).