PRODUCT DATA SHEET

STRUCTUS

PRODUCT DESCRIPTION

The Structus enable the connection of posts between the ceiling. This makes it possible to construct a point-supported ceiling system, whether for a house or a high-rise building - Structus is the innovative solution for multi-storey buildings made of CLT.

Thanks to the 30 degree holes in the base and top plate the screws are guided at an angle, which guarantees optimum force transmission in all directions.

The steel core in the Structus system prevents lateral pressure failure and optimizes vertical force transmission between the supports.

The Structus system reduces the need for additional beams / cross beams. This saves working time and material is saved.

ADVANTAGES / SPECIFICATIONS

- Enables point-supported ceiling system
- Optimum force transmission to posts
- Saves working time and material

MATERIAL

- Carbon steel S355 zinc galvanized

E.u.r.o.Tec GmbH • Unter dem Hofe 5 • D-58099 Hagen
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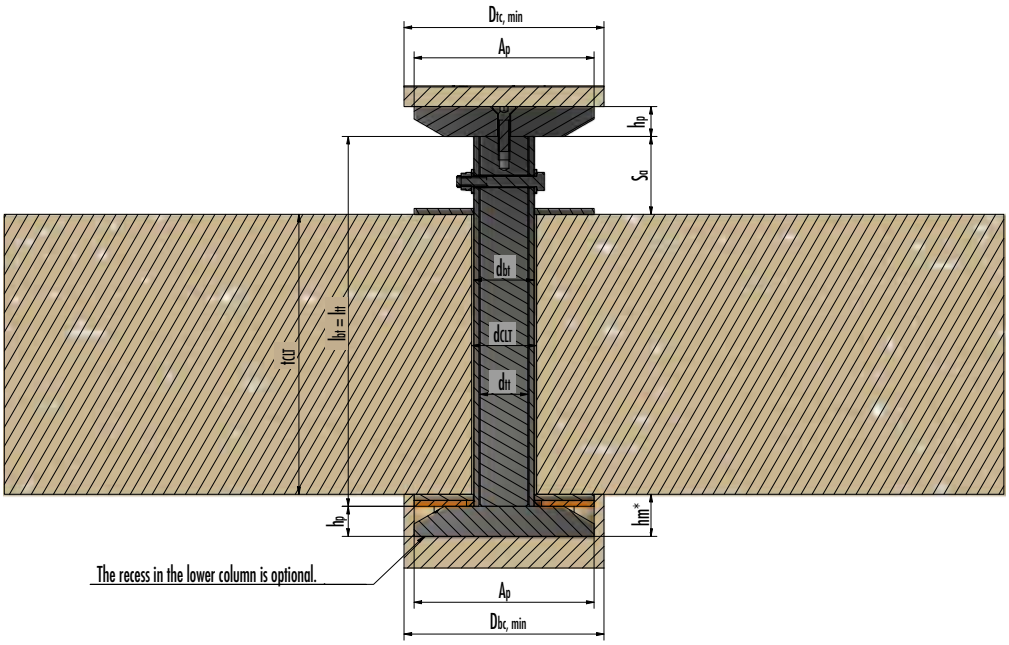
PRODUCT DATA SHEET STRUCTUS

TECHNICAL INFORMATION



Geometry and Materials

Structus									
Art. no.	Model	Bottom and top plates		Bottom tube			Top tube		Material
		Ap [mm x mm]	hp [mm]	dbt [mm]	tbt [mm]	lbt [mm]	dtt [mm]	ltt [mm]	–
946260	Structus1829	180 x 180	30	60	5	290	48	290	S355
946261	Structus1837	180 x 180	30	60	5	370	48	370	
946262	Structus2230	220 x 220	35	76	5	300	64	300	
946263	Structus2238	220 x 220	35	76	5	380	64	380	
946264	Structus2630	260 x 260	40	102	5	305	90	305	
946265	Structus2638	260 x 260	40	102	5	385	90	385	

Distribution and fastening plates' area correspond with the bottom and top plates' area, with a thickness of 6 mm.

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CLT Panles and Columns

Structus											
Art. no.	Model	Bottom column		Top column	CLT void	CLT thicknesses			Assembly space		
		$D_{bc,min}$ [mm]	h_m* [mm]	$D_{tc,min}$ [mm]	D_{CLT} [mm]	t_{CLT} [mm]			S_a [mm]		
946260	Structus1829	200	42	200	80	160	180	200	124	104	84
946261	Structus1837	200	42	200	80	220	240	280	144	124	84
946262	Structus2230	240	47	240	96	160	180	200	134	114	94
946263	Structus2238	240	47	240	96	220	240	280	154	134	94
946264	Structus2630	280	52	280	122	160	180	200	139	119	99
946265	Structus2638	280	52	280	122	220	240	280	159	139	99

* The milling height considers the use of sonotec pad and distribution plate. In case of omitting the sonotec pad, the milling height must be reduced by 6 mm.

Optional accoustic pad

Structus		
Art. no.	SonoTec Model	To be used with
946257	SonoTec 180 x 180 SK04	Structus1829 - Structus1837
946258	SonoTec 220 x 220 SK04	Structus2230 - Structus2238
946259	SonoTec 260 x 260 SK04	Structus2630 - Structus2638

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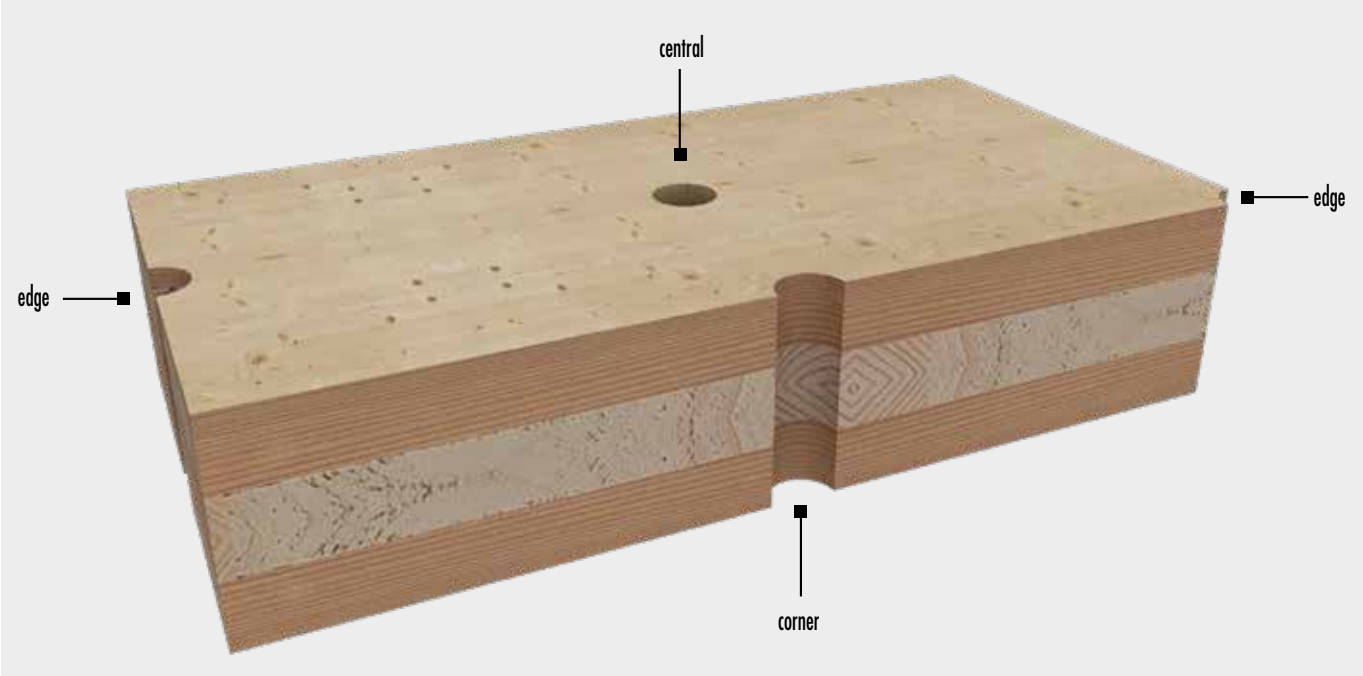
POSSIBLE SUPPORT CONFIGURATIONS:



COMBINED SUPPORT CONFIGURATIONS:


central


4 corners


2 edges


2 corners + 1 edge

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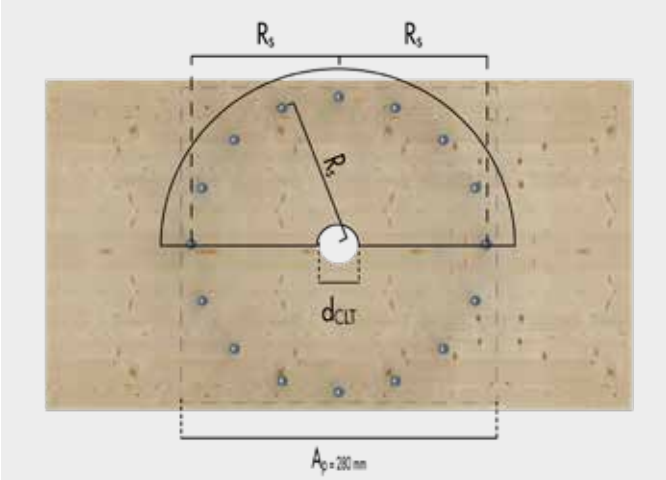
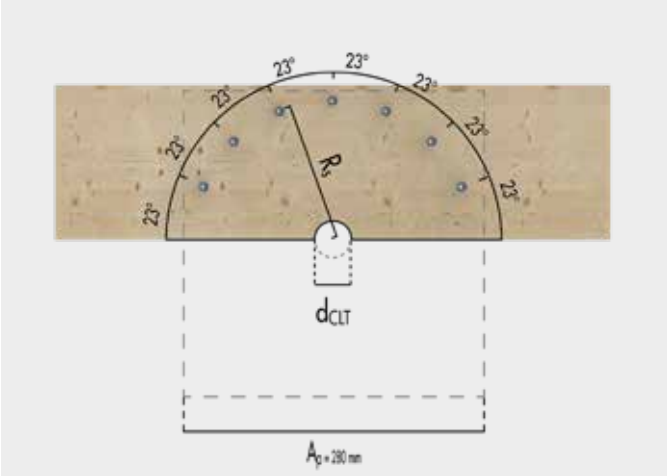
SUPPORT (OPTIONAL):

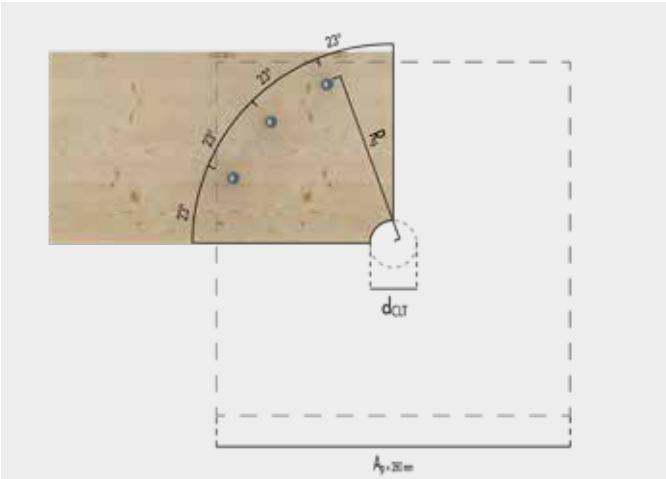
Dimension 280 x 280



Support Central
Number of screws: 16



Support edge
Number of screws: 7



Corner support
Number of screws: 3

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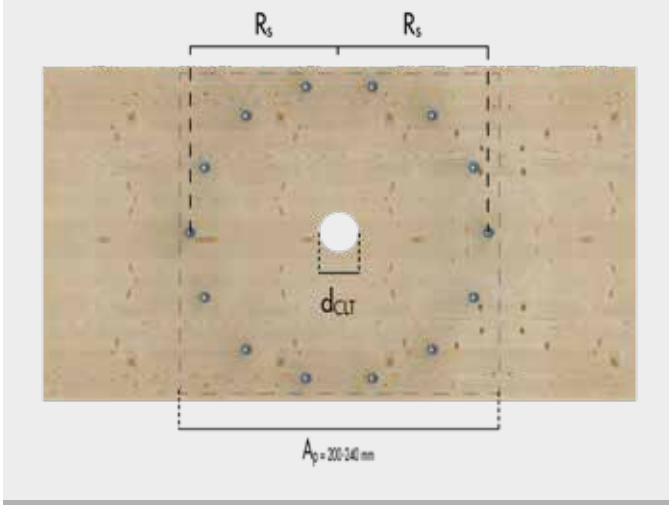
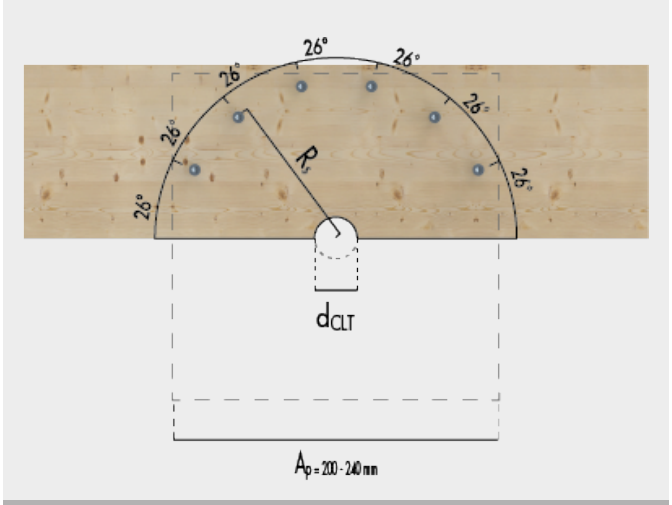
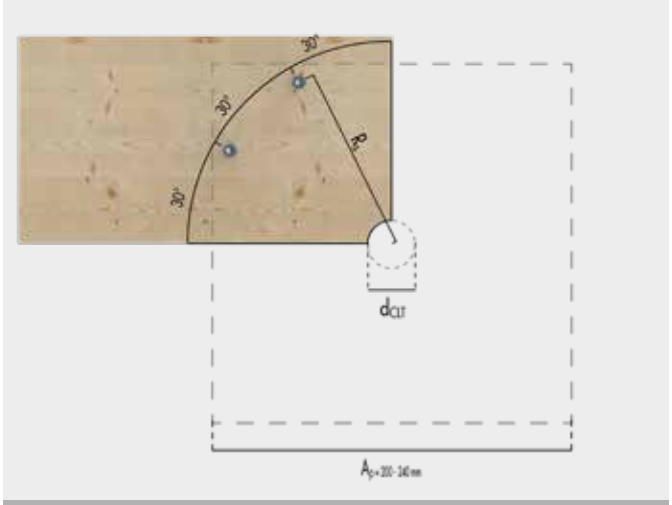
Dimension 200 x 200 – 240 x 240



Support Central
Number of screws: 14



Support edge
Number of screws: 6



Corner support
Number of screws: 2

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PRODUCT DATA SHEET STRUCTUS

STRUCTUS 200 X 200

Resistance to pressure perpendicular to the fibre for the CLT ceiling						
CLT panel	$R_{clt,k}$ (with reinforcement) [kN]			$R_{clt,k}$ (without) reinforcement [kN]		
Height CLT [mm]	Central	Edge	Corner	Central	Edge	Corner
160	168	83	37	125	55	24
180	183	91	39	125	55	24
200	200	100	45	160	67	27
220	200	100	45	160	67	27
240	233	117	48	160	67	27
280	233	117	48	160	67	27

Strength steel side		
Class	$R_{c,k}$ [kN]	$R_{c,d}$ [kN]
C24	680	418
GL24h	777	497
GL28h	907	580

** Gama-m = 1.3 for solid wood and Gama-m = 1.25 for glulam. kmod = 0.8 for gravity load

Strength wood side			
Failure mode	Place	$R_{steel,k}$ [kN]	$R_{steel,d}$ [kN]
[Bending]	Upper and lower plate	690	627
Instability and buckling	Hollow tube and solid rod, gross area	903	821
Compliance in compression	Hollow tube and solid rod, net area	615	559

* Gama-m = 1.1 for steel

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PRODUCT DATA SHEET STRUCTUS

STRUCTUS 240 X 240

Resistance to pressure perpendicular to the fibre for the CLT-DCorner						
CLT-Panel	$R_{clt,k}$ (with reinforcement) [kN]			$R_{clt,k}$ (without) reinforcement [kN]		
Height CLT [mm]	Central	Edge	Corner	Central	Edge	Corner
160	239	120	53	201	88	38
180	259	129	55	201	88	38
200	280	140	63	258	108	44
220	280	140	63	258	108	44
240	323	161	67	258	108	44
280	323	161	67	258	108	44

Strength steel side		
Class	$R_{c,k}$ [kN]	$R_{c,d}$ [kN]
C24	1016	625
GL24h	1161	743
GL28h	1355	867

** Gama-m = 1.3 for solid wood and Gama-m = 1.25 for glulam. kmod = 0.8 for gravity load

Strength wood side			
Failure mode	Place	$R_{steel,k}$ [kN]	$R_{steel,d}$ [kN]
[Bending]	Upper and lower plate	1263	1148
Instability and buckling	Hollow tube and solid rod, gross area	1462	1330
Compliance in compression	Hollow tube and solid rod, net area	1107	1006

* Gama-m = 1.1 for steel

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PRODUCT DATA SHEET STRUCTUS

STRUCTUS 280 X 280

Resistance to pressure perpendicular to the fibre for the CLT-DCorner						
CLT-Panel	Rclt,k (with reinforcement) [kN]			Rclt,k (without) reinforcement [kN]		
Height CLT [mm]	Central	Edge	Corner	Central	Edge	Corner
160	293	147	73	268	118	50
180	315	158	76	268	118	50
200	339	169	85	339	144	58
220	339	169	85	339	144	58
240	386	193	94	339	144	58
280	386	193	94	339	144	58

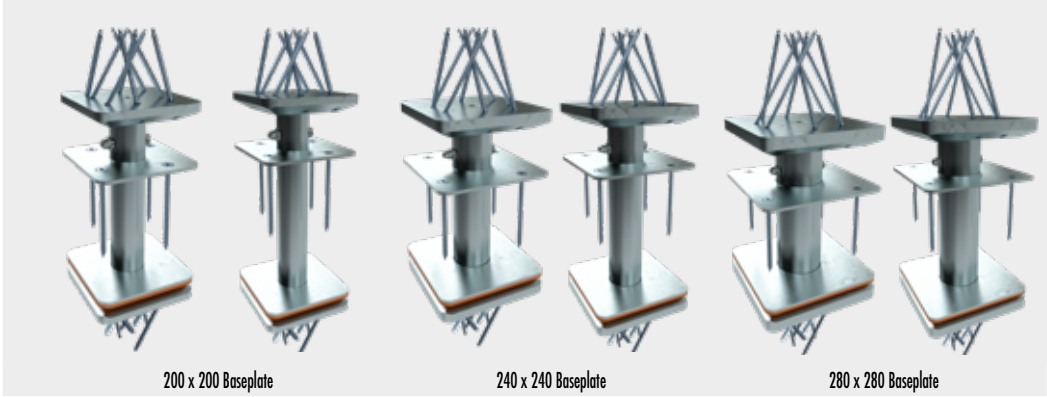
Strength steel side		
Class	Rc,k [kN]	Rc,d [kN]
C24	1622	1038
GL24h	1893	1211
GL28h	2163	1385

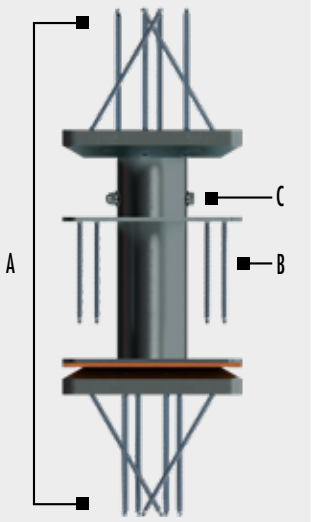
** Gama-m = 1.3 for solid wood and Gama-m = 1.25 for glulam. kmod = 0.8 for gravity load

Strength wood side			
Failure mode	Place	Rsteel,k [kN]	Rsteel,d [kN]
[Bending]	Upper and lower plate	2045	1859
Instability and buckling	Hollow tube and solid rod, gross area	2657	2411
Compliance in compression	Hollow tube and solid rod, net area	2208	2007

* Gama-m = 1.1 for steel

Included Screws





	200 x 200 Baseplate	240 x 240 Baseplate	280 x 280 Baseplate
A	16 x KonstruX L155 top and bottom	16 x KonstruX L195 top and bottom	16 x KonstruX L245 top and bottom
B	4 x KonstruX L155 Pressure Plate	4 x KonstruX L155 Pressure Plate	4 x KonstruX L155 Pressure Plate
C	M12 X L80 6kt-Exagon bolt with 2 x washers and M12 lock nut	M12 X L100 6kt-Exagon bolt with 2 x washers and M12 lock nut	M12 X L120 6kt-Exagon bolt with 2 x washers and M12 lock nut

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ASSEMBLY INSTRUCTIONS

Step 1: Milling the lower post (optional).

Step 2: Inserting the lower part.

Step 3: Fasten the lower section with the KonstruX screws (A).

Step 4: Inserting the SonoTec and pressure plate.

Step 5: Positioning the ceiling element.

Step 6:Attach the pressure plate to the top of the ceiling element with the KonstruX screws (B) supplied.

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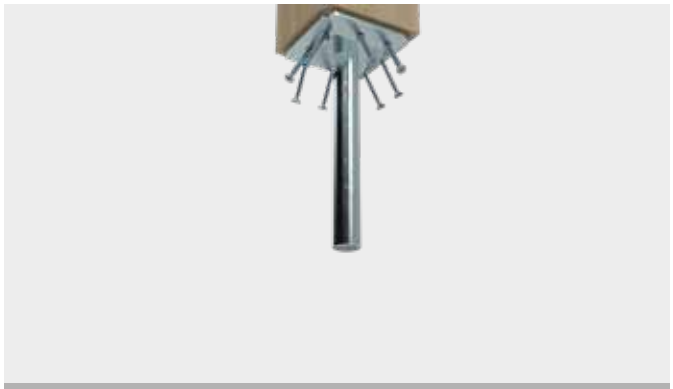

Step 7: Attach the top section to the upper posts with the KonstruX screws (A).

Step 8: Inserting the upper part into the lower part.

Step 9: Inserting the locking bolt (C).

Step 10: finished.

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).

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