PRODUCT DATA SHEET

TCC-II

PRODUCT DESCRIPTION

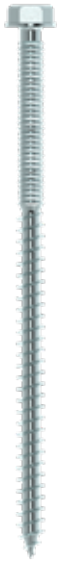
TCC-II is a wood-concrete connecting screw suitable for strengthening supporting structures for ceiling slabs when constructing new buildings or undertaking renovation work.

Above all, high payloads with maximum span widths call for high strength, i.e. low deflection of the ceiling structure under load. In terms of usability, wooden joist ceilings push the boundaries of feasibility relatively quickly. Joining wood and reinforced concrete with composite screws effectively exploits the best properties of both materials for a highly resilient structure.

The wood and concrete composite system is used in the construction and renovation of residential and commercial buildings. In new buildings, larger spans can therefore be taken into account in planning at the outset. The strengths of this approach are especially evident in buildings affected by a change of use.

TCC-II 9

TCC-II 9



TCC-II 7,3

ADVANTAGES

- Increased load-bearing capacity
- Greater strength
- Improved soundproofing
- Improved fire resistance
- Existing beams are retained.
- The formwork can be retained.

MATERIAL

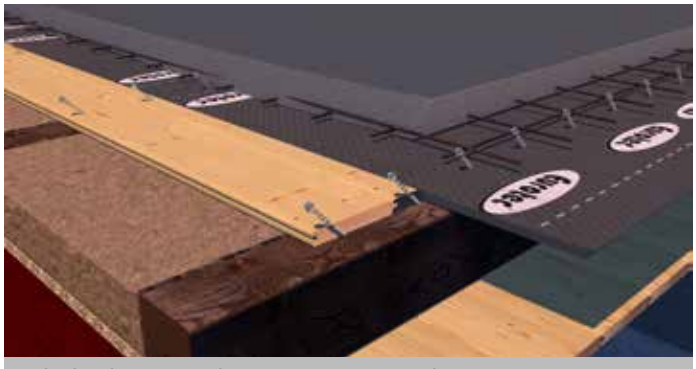
- Carbon steel

Fire prevention

Soundproofing

Load capacity

IMAGES OF APPLICATIONS



Side detail view, wood-concrete composite ceiling.

Layer structure, wood-concrete composite ceiling

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CERTIFICATION

- Regulated by European Technical Assessment ETA-16/0864

SPECIFICATIONS

- Production of a shear-resistant bond between the wood and the concrete
- Special coating prevents corrosion of the screws
- Drive: external hex ensures a safe drive:

  → TCC 9: SW12 und TX40

  → TCC 7,3: SW10
- Special thread geometry prevents shearing
- Screwing in possible without pre-drilling
- A depth stop prevents the screws from being set too low, which is an advantage over conventional fully threaded screws.
- The special gear geometry ensures a strong hold in concrete and an ideal bond.

PRODUCT TABLE

Art. no.	Designation	Dimensions Ød x L [mm]	Drive	PU
981841	TCC-II 7,3	7,3 x 150	SW10	200
903592	TCC-II 9	9,0 x 180	SW12 / TX 40 •	200

INSTRUCTIONS FOR USE

Minimum distances, end and edge distances for TCC-II Ø 7,3 x 150 mm and TCC-II Ø 9,0 x 180 mm screws in mm

	TCC-II Ø 7,3 x 150 mm	TCC-II Ø 9,0 x 180 mm
Distance parallel to fibre a1	80	100
Distance perpendicular to fibre a2	30	45
End distance a3,c	80	100
Edge distance a4,c	30	36

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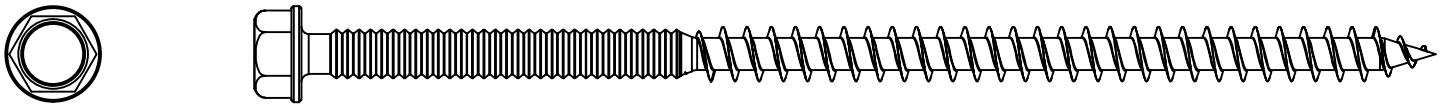
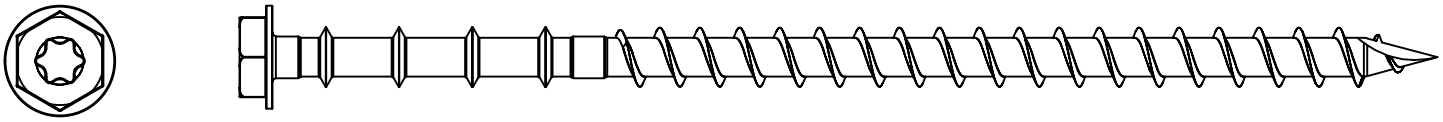
DRAWING: TCC-II 7,3



Top view

Side view

DRAWING: TCC-II 9



Top view

Side view

STATIC VALUES

Properties of TCC-II Ø 7,3 x 150 mm and TCC-II Ø 9,0 x 180 mm

	TCC-II Ø 7,3 x 150 mm	TCC-II Ø 9,0 x 180 mm
Characteristic yield moment My,k [Nm]	25	34
Characteristic tensile strength ftens,k [kN]	23	30
Characteristic value of withdrawal parameter fax,k [N/mm²]	12,6	11,5

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Pre-rated connector TCC-II for wood-concrete composite ceilings, number of connectors per beam and per m²

Assumptions			
Axis distance for beams [mm]	600		
Concrete thickness C25/30 [mm]	70		
Formwork thickness C24 [mm]	21		
Maximum deflection	winst = l/300	wfin = l/200	wnet,fin = l/300

Dead load (beam, formwork, concrete) [kN/m²]	-	
Additional load (5 cm cement floor + 1,5 cm tiling + footfall sound insulation) [kN/m²]	1,50	
Traffic load [kN/m²]	2,00	
Duration of load effect [kN/m²]	medium	
(Not taking account of fire protection and vibration)		

TCC-II 7,3 x 150 mm					
Span width [m]		Beam section solid structural timber C24 W/H [mm]			
		120/200	120/240	140/240	140/260
3	Connectors per beam	8	8	8	8
	Connectors/m²	4,4	4,4	4,4	4,4
3,5	Connectors per beam	14	10	10	8
	Connectors/m²	6,7	4,8	4,8	3,8
4	Connectors per beam	24	18	16	14
	Connectors/m²	10	7,5	6,7	5,8
4,5	Connectors per beam	32	-	-	22
	Connectors/m²	11,9			8,2
5	Connectors per beam	-	-	-	30
	Connectors/m²				10
5,5	Connectors per beam	-	-	-	36
	Connectors/m²				10,9
6	Connectors per beam	-	-	-	48
	Connectors/m²				13,3

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PRODUCT DATA SHEET TCC-II

TCC-II 9 x 180 mm					
Spannweite [m]		Beam section solid structural timber C24 W/H [mm]			
		120/200	120/240	140/240	140/260
3	Connectors per beam	8	8	8	8
	Connectors/m²	4,4	4,4	4,4	4,4
3,5	Connectors per beam	10	8	8	8
	Connectors/m²	4,8	3,8	3,8	3,8
4	Connectors per beam	16	10	10	10
	Connectors/m²	6,7	4,2	4,2	4,2
4,5	Connectors per beam	24	18	16	14
	Connectors/m²	8,9	6,7	5,9	5,2
5	Connectors per beam	32	24	24	20
	Connectors/m²	10,7	8	8	6,7
5,5	Connectors per beam	-	-	-	-
	Connectors/m²				
6	Connectors per beam	-	-	-	-
	Connectors/m²				

The stated values and the type and number of connectors are based on preliminary measurements. Projects must be assessed exclusively by authorised persons in accordance with the State Building Code.

Disclaimer: In spite of careful calculations and tests, no liability is accepted for the technical data provided. Subject to technical modification.

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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