PRODUCT DATA SHEET KONSTRUX DUO

PRODUCT DESCRIPTION

The KonstruX Duo is an innovative fully threaded screw that combines the advantages of fully threaded and partially threaded screws – maximising the load-bearing capacity of the connection through equally high pull-out resistance in both components.

APPLICATIONS

- Conditionally corrosion-resistant and suitable for use in service classes 1, 2 and 3 according to DIN EN 1995 (Eurocode 5)
- Not suitable for wood containing tannins

MATERIAL

- Hardened carbon steel + blue galvanized
- Free of chromium (VI) oxide
- Good resistance to mechanical stresses

CERTIFICATION

- European Technical Assessment ETA-11/0024
  Self-tapping screws as wood connectors

ETA
CE
Europ. Techn. Bewertung
European Technical Assessment
ETA-11/0024

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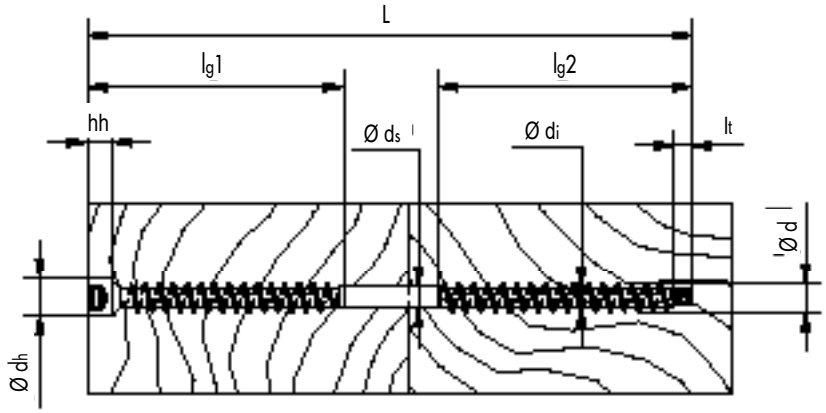
TECHNICAL INFORMATION



Side view

KonstruX DUO										
Nominal-Ø	Head-Ø	Root-Ø	Shaft-Ø	Head height	Head shape	Drill tip length	char. tensile capacity[1)]	char. yield moment[1)]	char. withdrawal parameter[1)]	char. torsional strength[1)]
d [mm]	d_h [mm]	d_i [mm]	d_s [mm]	hh [mm]	–	l_t [mm]	$f_{tens,k}$ [kN]	$M_{y,k}$ [Nm]	$f_{ax,k}$ [N/mm²]	$f_{tor,k}$ [Nm]
6,5	8,0	4,5	5,0	5,5	ZK	4,0	17,0	15,0	11,4	19,0
8,0	10,0	5,2	5,8	6,5	ZK	5,0	25,0	25,0	11,1	28,0

[1)] The values have been taken from ETA 11/0024 and DoP-ETA110024-05-2017. We cannot guarantee that there are no typographical or printing errors and therefore recommend that you check the documents mentioned above.

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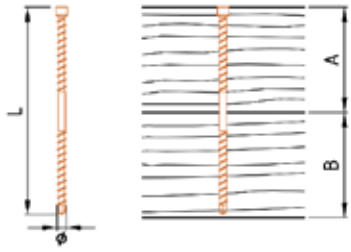
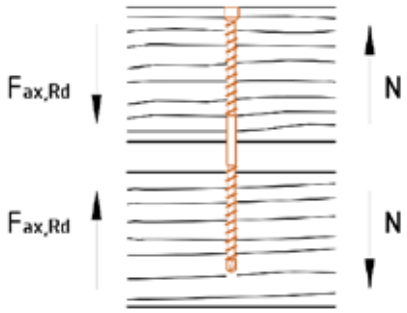
PRODUCT DATA SHEET KONSTRUX DUO

KONSTRUX DUO, TIMBER-TIMBER CONNECTION: AXIAL LOAD-CARRYING CAPACITY OF SCREWS WITH MINIMUM REQUIRED LENGTHS

Dimensions	Axial load-carrying capacity of screws with minimum required lengths





	Ø 6,5 mm			Ø 8 mm		
A [mm]	Fax,Rk [kN]	Fax,Rd [kN]	Lreq [mm]	Fax,Rk [kN]	Fax,Rd [kN]	Lreq [mm]
40	0,96	0,59	90			
60	1,04	0,64	130			
80	1,71	1,05	160	5,74	3,53	160
100	2,12	1,31	190	8,11	4,99	190
120	2,54	1,56	220	8,11	4,99	220
120				9,53	5,87	245
140				9,53	5,87	280
160				12,38	7,62	300
180				12,38	7,62	330
200				12,38	7,62	400

Calculated according to EN 1995-1-1, with non-predrilled holes and wood density ρ_k = 380 kg/m³. Design values F_{Rd} calculated considering k_{mod} = 0,8, γ_M = 1,3, and γ_{M2} = 1,25. For the longer screws, design values may differ from the corresponding characteristic failure mode (withdrawal or steel tension fracture). Component B thickness is such that: B ≥ L_{req} − A. L_{req} is the minimum screw length for achieving the respective load-carrying capacity. Component A thickness is given as the minimum to achieve the specified load-carrying capacity, as long as the interface between both components is located on the screw´s smooth shank.

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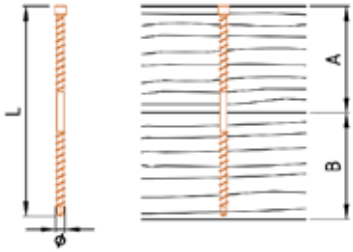
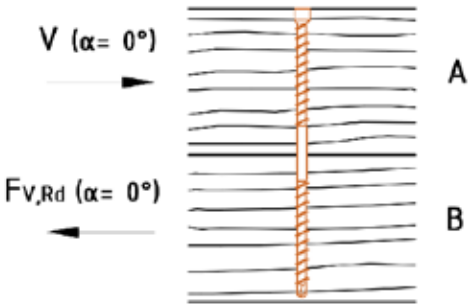
PRODUCT DATA SHEET KONSTRUX DUO

KONSTRUX DUO, TIMBER-TIMBER CONNECTION: LATERAL LOAD-CARRYING CAPACITY OF SCREWS WITH MINIMUM REQUIRED LENGTHS

Dimensions	Lateral load-carrying capacity of screws with minimum required lengths





	Ø 6,5 mm			Ø 8 mm		
A [mm]	$F_{v,Rk}$ [kN]	$F_{v,Rd}$ [kN]	L_{req} [mm]	$F_{v,Rk}$ [kN]	$F_{v,Rd}$ [kN]	L_{req} [mm]
40	2,66	1,64	90			
60	2,68	1,65	130			
80	2,85	1,75	160	4,79	2,95	160
100	2,95	1,82	190	5,38	3,31	190
120	3,06	1,88	220	5,38	3,31	220
120				5,74	3,53	245
140				5,74	3,53	280
160				6,45	3,97	300
180				6,45	3,97	330
200				6,45	3,97	400

Calculated according to EN 1995-1-1, with non-predrilled holes and wood density ρ_k = 380 kg/m³. Design values F_{Rd} calculated considering k_{mod} = 0,8 and γ_M = 1,3. Component B thickness is such that: B ≥ L_{req} – A. L_{req} is the minimum screw length for achieving the respective load-carrying capacity. Component A thickness is given as the minimum to achieve the specified load-carrying capacity, as long as the interface between both components is located on the screw´s smooth shank.

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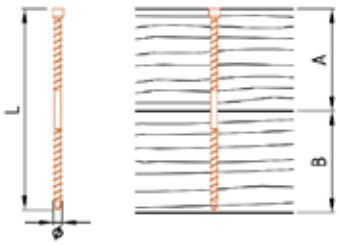
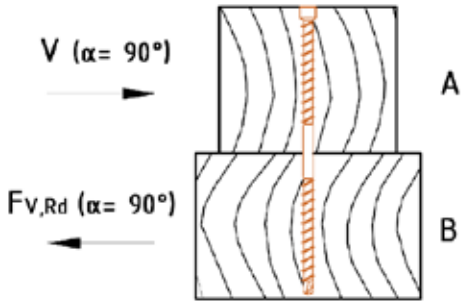
KONSTRUX DUO, TIMBER-TIMBER CONNECTION: LATERAL LOAD-CARRYING CAPACITY OF SCREWS WITH MINIMUM REQUIRED LENGTHS

Dimensions	Lateral load-carrying capacity of screws with minimum required lengths





	Ø 6,5 mm			Ø 8 mm		
A [mm]	$F_{v,Rk}$ [kN]	$F_{v,Rd}$ [kN]	l_{req} [mm]	$F_{v,Rk}$ [kN]	$F_{v,Rd}$ [kN]	l_{req} [mm]
40	2,06	1,27	90			
60	2,29	1,41	130			
80	2,46	1,51	160	4,23	2,61	160
100	2,56	1,58	190	4,83	2,97	190
120	2,67	1,64	220	4,83	2,97	220
120				5,18	3,19	245
140				5,18	3,19	280
160				5,89	3,63	300
180				5,89	3,63	330
200				5,89	3,63	400

Calculated according to EN 1995-1-1, with non-predrilled holes and wood density ρ_k = 380 kg/m³. Design values F_{Rd} calculated considering k_{mod} = 0,8 and γ_M = 1,3. Component B thickness is such that: B ≥ l_{req} – A. l_{req} is the minimum screw length for achieving the respective load-carrying capacity. Component A thickness is given as the minimum to achieve the specified load-carrying capacity, as long as the interface between both components is located on the screw´s smooth shank.

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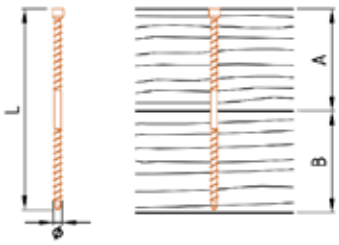
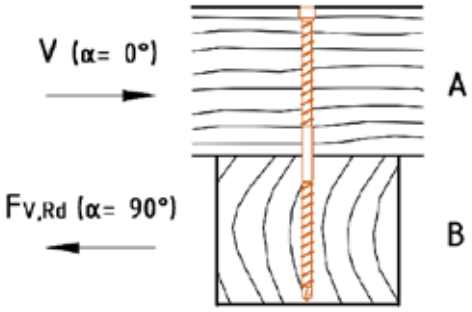
KONSTRUX DUO, TIMBER-TIMBER CONNECTION: LATERAL LOAD-CARRYING CAPACITY OF SCREWS WITH MINIMUM REQUIRED LENGTHS

Dimensions	Lateral load-carrying capacity of screws with minimum required lengths





	Ø 6,5 mm			Ø 8 mm		
A [mm]	$F_{v,Rk}$ [kN]	$F_{v,Rd}$ [kN]	l_{req} [mm]	$F_{v,Rk}$ [kN]	$F_{v,Rd}$ [kN]	l_{req} [mm]
40	2,44	1,50	90			
60	2,46	1,51	130			
80	2,63	1,62	160	4,47	2,75	160
100	2,73	1,68	190	5,07	3,12	190
120	2,84	1,75	220	5,07	3,12	220
120				5,42	3,34	245
140				5,42	3,34	280
160				6,13	3,77	300
180				6,13	3,77	330
200				6,13	3,77	400

Calculated according to EN 1995-1-1, with non-predrilled holes and wood density ρ_k = 380 kg/m³. Design values F_{Rd} calculated considering k_{mod} = 0,8 and γ_M = 1,3. Component B thickness is such that: B ≥ l_{req} – A. l_{req} is the minimum screw length for achieving the respective load-carrying capacity. Component A thickness is given as the minimum to achieve the specified load-carrying capacity, as long as the interface between both components is located on the screw´s smooth shank.

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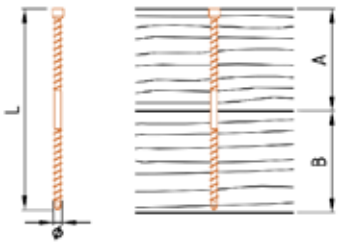
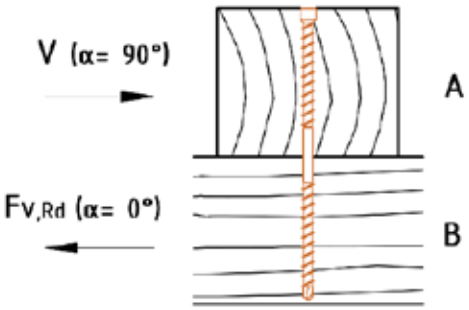
KONSTRUX DUO, TIMBER-TIMBER CONNECTION: LATERAL LOAD-CARRYING CAPACITY OF SCREWS WITH MINIMUM REQUIRED LENGTHS

Dimensions	Lateral load-carrying capacity of screws with minimum required lengths





	Ø 6,5 mm			Ø 8 mm		
A [mm]	$F_{v,Rk}$ [kN]	$F_{v,Rd}$ [kN]	L_{req} [mm]	$F_{v,Rk}$ [kN]	$F_{v,Rd}$ [kN]	L_{req} [mm]
40	2,18	1,34	90			
60	2,46	1,51	130			
80	2,63	1,62	160	4,47	2,75	160
100	2,73	1,68	190	5,07	3,12	190
120	2,84	1,75	220	5,07	3,12	220
120				5,42	3,34	245
140				5,42	3,34	280
160				6,13	3,77	300
180				6,13	3,77	330
200				6,13	3,77	400

Calculated according to EN 1995-1-1, with non-predrilled holes and wood density ρ_k = 380 kg/m³. Design values F_{Rd} calculated considering k_{mod} = 0,8 and γ_M = 1,3. Component B thickness is such that: B ≥ L_{req} – A. L_{req} is the minimum screw length for achieving the respective load-carrying capacity. Component A thickness is given as the minimum to achieve the specified load-carrying capacity, as long as the interface between both components is located on the screw´s smooth shank.

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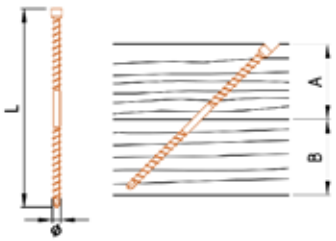
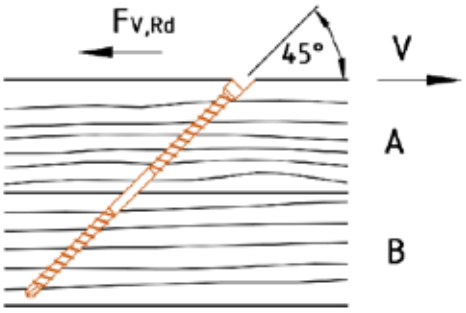
PRODUCT DATA SHEET KONSTRUX DUO

KONSTRUX DUO, TIMBER-TIMBER CONNECTION, 45° INCLINED SCREWS: LOAD-CARRYING CAPACITY OF SHEAR-TENSION SCREWS WITH MINIMUM REQUIRED LENGTHS

Dimensions	Load-carrying capacity of shear-tension screws with minimum required lengths





	Ø 6,5 mm			Ø 8 mm		
A [mm]	$F_{v,Rk}$ [kN]	$F_{v,Rd}$ [kN]	L_{req} [mm]	$F_{v,Rk}$ [kN]	$F_{v,Rd}$ [kN]	L_{req} [mm]
40	0,68	0,42	90			
40	0,74	0,45	130			
60	1,21	0,74	160	4,06	2,50	160
60	1,50	0,92	190	5,73	3,53	190
80	1,80	1,11	220	5,73	3,53	220
100				6,74	4,15	245
100				6,74	4,15	280
120				8,75	5,39	300
120				8,75	5,39	330
140				8,75	5,39	400

Calculated according to EN 1995-1-1, with non-predrilled holes and wood density ρ_k = 380 kg/m³. Design values F_{Rd} calculated considering k_{mod} = 0,8, γ_M = 1,3, and γ_{M2} = 1,25 For the longer screws, design values may differ from the corresponding characteristic failure mode (withdrawal or steel tension fracture). Load capacity values are not dependent on the grain orientations of components A and B. Component B thickness is such that: $B \geq [L_{req} \cdot \sin(\alpha) - A]$. Lreq is the minimum screw length for achieving the respective load-carrying capacity. Component A thickness is given as the minimum to achieve the specified load-carrying capacity, as long as the interface between both components is located on the screw´s smooth shank.

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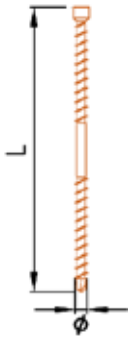
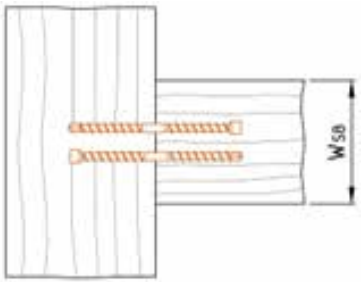
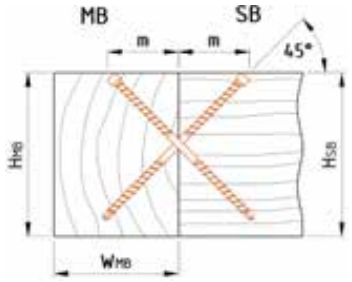
PRODUCT DATA SHEET KONSTRUX DUO

KONSTRUX DUO, TIMBER-TIMBER, CROSS SCREWS: LOAD-CARRYING CAPACITY OF SCREWS WITH MINIMUM REQUIRED LENGTHS

Dimensions	Load-carrying capacity of screws with minimum required lengths







Ø x L [mm]	min. WSB [mm]	min. HSB [mm]	min. WMB [mm]	min. HMB [mm]	Fv,Rd [kN]		Pair (n)
					kmod = 0,8	kmod = 0,9	
6,5 x 190	60	160	80	160	1,84	2,08	1
	100				3,43	3,88	2
	120				4,95	5,59	3
6,5 x 220	60	180	100	180	2,21	2,49	1
	100				4,13	4,64	2
	120				5,94	6,69	3
8,0 x 190	80	160	80	160	7,06	7,94	1
	100				13,17	14,81	2
	140				18,97	21,34	3
8,0 x 220	80	180	100	180	7,06	7,94	1
	100				13,17	14,81	2
	140				18,97	21,34	3
8,0 x 245	80	200	100	200	8,30	9,33	1
	100				15,48	17,41	2
	140				22,30	25,08	3
8,0 x 280	80	220	120	220	8,30	9,33	1
	100				15,48	17,41	2
	140				22,30	25,08	3
8,0 x 300	80	240	120	240	10,77	12,12	1
	100				20,10	22,61	2
	140				28,95	32,57	3
8,0 x 330	80	260	140	260	10,77	12,12	1
	100				20,10	22,61	2
	140				28,95	32,57	3
8,0 x 400	80	300	160	300	10,77	12,12	1
	100				20,10	22,61	2
	140				28,95	32,57	3

Calculated according to EN 1995-1-1 and ETA-11/0024, with non-predrilled holes and wood density ρ_k = 380 kg/m³. Design values F_{Rd} calculated considering k_{mod} = 0,8, k_{mod} = 0,9, γ_M = 1,3 (connections), γ_{M2} = 1,25 (tensile fracture), and γ_{M1} = 1,0 (instability failure). L_{req} is the minimum screw length for achieving the respective load-carrying capacity. Calculation of $F_{v,Rd} = 2 \cdot n_{pair}^{0,9} \cdot \sin 45° \cdot \min. [F_{ax,\alpha,Rd}$; $F_{tens,d}$; $F_{ki,Rd}]$.

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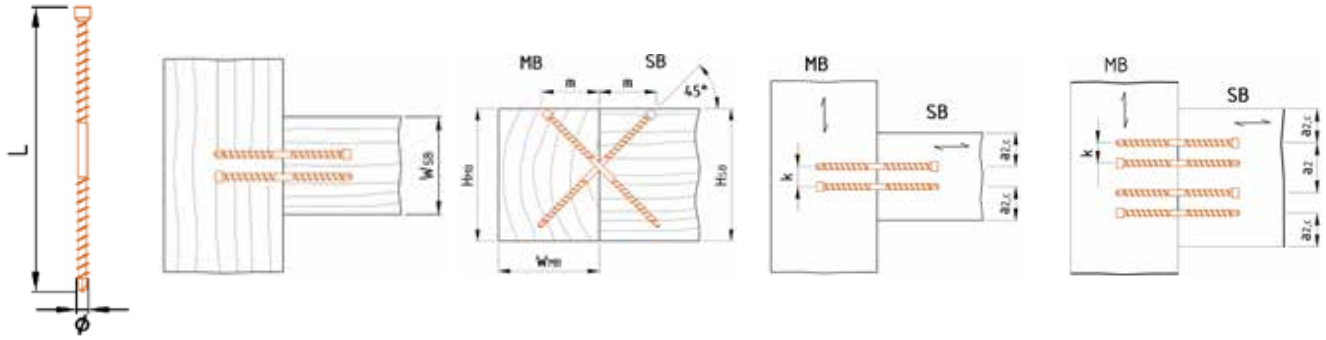
KONSTRUX DUO, TIMBER-TIMBER, CROSS SCREWS: APPLICATION WITH MINIMUM REQUIRED DISTANCES

Dimensions	Application with minimum required distances



Ø x L [mm]	WSB [mm]	HSB [mm]	WMB [mm]	HMB [mm]	m [mm]	a2,c,min [mm]	a2,min [mm]	kmin [mm]	Pair (n)
6,5 x 190	60	160	80	160	67	20	33	10	1
	100								2
	120								3
6,5 x 220	80	180	100	180	78	20	33	10	1
	100								2
	140								3
8,0 x 190	80	160	80	160	67	24	40	12	1
	100								2
	140								3
8,0 x 220	80	180	100	180	78	24	40	12	1
	100								2
	140								3
8,0 x 245	80	200	100	200	87	24	40	12	1
	100								2
	140								3
8,0 x 280	80	220	120	220	100	24	40	12	1
	100								2
	140								3
8,0 x 300	80	240	120	240	106	24	40	12	1
	100								2
	140								3
8,0 x 330	80	260	140	260	117	24	40	12	1
	100								2
	140								3
8,0 x 400	80	300	160	300	141	24	40	12	1
	100								2
	140								

Calculated according to EN 1995-1-1 and ETA-11/0024, with non-predrilled holes and wood density ρ_k = 380 kg/m³. Design values F_{Rd} calculated considering k_{mod} = 0,8, k_{mod} = 0,9, γ_M = 1,3 (connections), γ_{M2} = 1,25 (tensile fracture), and γ_{M1} = 1,0 (instability failure). L_{req} is the minimum screw length for achieving the respective load-carrying capacity. Calculation of $F_{v,Rd} = 2 \cdot n_{pair}^{0,9} \cdot \sin 45° \cdot \min$. [$F_{ax,\alpha,Rd}$; $F_{tens,d}$; $F_{ki,Rd}$].

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PRODUCT DATA SHEET KONSTRUX DUO

PRODUCT TABLE

Art. no.	Dimensions [mm]	Drive	Thread length LG 1 [mm]	Under-head thread LG2 [mm]	PU
100606	6,5 x 90	TX 30 ●	40	40	100
100607	6,5 x 130	TX 30 ●	43	43	100
100608	6,5 x 160	TX 30 ●	67	67	100
100609	6,5 x 190	TX 30 ●	82	82	100
100610	6,5 x 220	TX 30 ●	97	97	100
100611	8,0 x 160	TX 40 ●	67	67	100
100612	8,0 x 190	TX 40 ●	92	92	100
100613	8,0 x 220	TX 40 ●	92	92	100
100614	8,0 x 245	TX 40 ●	107	107	100
100615	8,0 x 280	TX 40 ●	107	107	100
100616	8,0 x 300	TX 40 ●	137	137	100
100617	8,0 x 330	TX 40 ●	137	137	100
100618	8,0 x 400	TX 40 ●	137	137	100

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

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