

TRUTEK TCM M PRO INJECTION RESIN

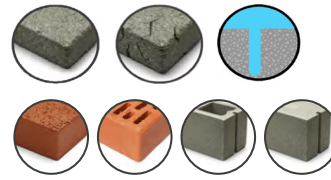
Polyester Styrene Free

Usage:

- Installation of threaded studs
- Approved for non-cracked concrete
- Can be used in dry wet and flooded holes
- Class A1 reaction to fire
- Suitable for use in brickwork
- Can be used with perforated sleeves in hollow substrate

Advantages:

- Styrene free for interior use and confined spaces
- Available in 300ml and 420ml cartridge
- Suitable for concrete from c20/25 to c50/60
- Range of embedment depths



Resin setting times

Substrate temperature	°C	0 - 10	10 - 20	20 - 30	30 - 40
Gel time	min.	20	9	5	3
Cure time in dry concrete	hour.	90	60	30	20

The temperature of the resin container must be $\geq 20^{\circ}\text{C}$

Concrete Ranges:	C20/25 to C0/60 according to EN 206:2013+A1:2016
Certification:	European Technical Assessment ETA 19/0153 Issued 03/06/2019

Installation Data

Threaded Stud Diameter			M8	M10	M12	M16
Nominal drill hole diameter	d _o	[mm]	10	12	14	18
Diameter of clearance hole in fixture	d _f	[mm]	9	12	14	18
Diameter of steel brush	d _b	[mm]	12	13.3	14.9	19.4
Minimum Effective Anchorage Depth	h _{ef,min}	[mm]	60	60	70	80
Maximum Effective Anchorage Depth	h _{ef,max}	[mm]	160	200	240	320
Standard Effective Anchorage Depth	h _{ef,std}	[mm]	80	90	110	125
Minimum Concrete Thickness	h _{min}	[mm]	h _{ef} + 30mm ≥ 100mm			h _{ef} + 2d _o
Spacing - Tension (Standard Embedment) Dry & Wet holes	S _{std}	[mm]	125	140	160	200
Edge Distance - Tension (Standard Embedment) Dry & Wet holes	c _{N,std}	[mm]	65	75	85	105
Spacing - Tension (Standard Embedment) Flooded holes	S _{std}	[mm]	105	125	150	200
Edge Distance - Tension (Standard Embedment) Flooded holes	c _{N,std}	[mm]	55	65	80	105
Edge Distance - Shear (Standard Embedment) 5.8 Stud (Dry & Wet holes)	c _{V,std}	[mm]	85	110	130	160
Edge Distance - Shear (Standard Embedment) 8.8 Stud (Dry & Wet holes)	c _{V,std}	[mm]	100	115	130	160
Edge Distance - Shear (Standard Embedment) A4-70 Stud (Dry & Wet holes)	c _{V,std}	[mm]	95	115	130	160
Edge Distance - Shear (Standard Embedment) All studs (Floode holes holes)	c _{V,std}	[mm]	85	90	115	160
Minimum Spacing	s _{min}	[mm]	0.5 h _{ef}			
Minimum Edge Distance	c _{min}	[mm]	0.5 h _{ef}			
Installation torque	T _{inst}	[Nm]	8	10	15	25

Edge Distances are based on minimum concrete thickness

For variations in Concrete Thickness, Spacing and Edge Distance refer to DesignFix for calculations

Load Data

Standard Embedment Depth

(Non-Cracked concrete, Hammer Drilling and Compressed Air Drilling)

(Dry and Wet Holes)

Threaded Stud Diameter	M8	M10	M12	M16
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Characteristics Resistance

Tensile (5.8, 8.8 and A4-70 studs)		N _{Rk}	[kN]	9.0	11.3	14.5	18.8
Shear	5.8	V _{Rk}	[kN]	9.0	15.0	29.0	37.7
	8.8		[kN]	18.0	22.6	29.0	37.7
	A4-70		[kN]	13.0	22.6	29.0	37.7

Design Resistance

Tensile (5.8, 8.8 and A4-70 studs)		N _{Rd}	[kN]	4.3	6.2	8.0	10.4
Shear	5.8	V _{Rd}	[kN]	7.2	12.0	16.1	20.9
	8.8		[kN]	8.6	12.5	16.1	20.9
	A4-70		[kN]	8.3	12.5	16.1	20.9

Recommended Resistance

Tensile (5.8, 8.8 and A4-70 studs)		N _{rec}	[kN]	3.1	4.4	5.7	7.4
Shear	5.8	V _{rec}	[kN]	5.1	8.6	11.5	14.9
	8.8		[kN]	6.1	8.9	11.5	14.9
	A4-70		[kN]	5.9	8.9	11.5	14.9

(Non-Cracked concrete, Hammer Drilling and Compressed Air Drilling)

(Flooded Holes)

Threaded Stud Diameter	M8	M10	M12	M16
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Characteristics Resistance

Tensile (5.8, 8.8 and A4-70 studs)		N _{Rk}	[kN]	7.0	8.4	12.4	18.8
Shear	5.8	V _{Rk}	[kN]	14.0	16.9	24.8	37.7
	8.8		[kN]	14.0	16.9	24.8	37.7
	A4-70		[kN]	14.0	16.9	24.8	37.7

Design Resistance

Tensile (5.8, 8.8 and A4-70 studs)		N _{Rd}	[kN]	3.3	4.0	5.9	8.9
Shear	5.8	V _{Rd}	[kN]	6.7	9.4	13.8	20.9
	8.8		[kN]	6.7	9.4	13.8	20.9
	A4-70		[kN]	6.7	9.4	13.8	20.9

Recommended Resistance

Tensile (5.8, 8.8 and A4-70 studs)		N _{rec}	[kN]	2.4	2.9	4.2	6.4
Shear	5.8	V _{rec}	[kN]	4.8	6.7	9.9	14.9
	8.8		[kN]	4.8	6.7	9.9	14.9
	A4-70		[kN]	4.8	6.7	9.9	14.9

Recommended Resistance Includes Partial Safety Factor $\gamma = 1.4$ in the absence of national regulations and type of loading Data is for Static and Quasi Static Loads for a single anchor

Increasing Factor

Increasing factor for non-cracked concrete (all types of drilling)

Threaded Stud Diameter		M8	M10	M12	M16
Ψc C30/37	[-]	1.08			
Ψc C40/50	[-]	1.15			
Ψc C50/60	[-]	1.19			

Steel Limits

Grade 5.8

Threaded Stud Diameter			M8	M10	M12	M16
Characteristic Tensile Resistance	$N_{Rk,s}$	[kN]	18	29.0	42.0	78.0
Partial safety factor	γ_{MsN}	[-]	1.5			
Characteristic Shear Resistance	$V_{Rk,s}$	[kN]	9	15	21	39
Partial Safety Factor	γ_{MsV}	[-]	1.25			

Grade 8.8

Threaded Stud Diameter			M8	M10	M12	M16
Characteristic Tensile Resistance	$N_{Rk,s}$	[kN]	29.0	46.0	67.0	125.0
Partial safety factor	γ_{MsN}	[-]	1.5			
Characteristic Shear Resistance	$V_{Rk,s}$	[kN]	15.0	23.0	34.0	63.0
Partial Safety Factor	γ_{MsV}	[-]	1.25			

Stainless Steel A4-70

Threaded Stud Diameter			M8	M10	M12	M16
Characteristic Tensile Resistance	$N_{Rk,s}$	[kN]	26.0	41.0	59.0	110.0
Partial safety factor	γ_{MsN}	[-]	1.87			
Characteristic Shear Resistance	$V_{Rk,s}$	[kN]	13.0	20.0	30.0	55.0
Partial Safety Factor	γ_{MsV}	[-]	1.56			

TCM MPRO resin with TCS threaded rods in solid masonry substrates

Resin / type of anchored rod	TCM MPRO / TCS threaded rods, steel class 5.8											
	FULL BRICK 15 grade				FULL SILICATE BRICK 15 grade				FULL CLINKER BRICK grade 35			
Type of ground												
Rod diameter d [mm]	M8	M10	M12	M16	M8	M10	M12	M16	M8	M10	M12	M16
Design loads for pulling and shearing NRd and VRd [kN]	1,68	2,6	3,12	3,36	3,1	3,2	3,8	4,1	2,3	3,0	3,7	4,6
Hole / drill diameter up to [mm]	10	12	14	18	10	12	14	18	10	12	14	18
Hole depth h1 [mm]	85	95	115	130	85	95	115	130	85	95	115	130
Effective anchorage depth hef [mm]	80	90	110	125	80	90	110	125	80	90	110	125
Substrate thickness hmin [mm]	100	120	125	140	100	120	125	140	100	120	125	140
Distance between anchors Smin [mm]	120	135	165	188	120	135	165	188	120	135	165	188
Distance from the edge Cmin [mm]	240	270	330	390	240	270	330	390	240	270	330	390
Required tightening torque Tinst [Nm]	4	6	8	10	4	6	8	10	15	30	50	80
Approximate amount of resin per hole in [ml]	4	5	8	12	4	5	8	12	4	5	8	12
Number of mounts from one tube - 420ml capacity	105	80	50	35	105	80	50	35	105	80	50	35

Technical data Trutek TCM 420M PRO were developed in accordance with ITB-KOT-2018/0124 edition 2 for the following strength of substrates:

- full ceramic brick, class 15 PN-EN 771-1: 2015 standards;
- full silicate brick class 15 according to PN-EN 771-2: 2015 standards;
- full clinker brick, class 35 according to PN-EN 771-1: 2015 standards;

TCM MPRO resin with TCS threaded rods in solid masonry substrates cont.

Resin / type of anchored rod	TCM MPRO / TCS threaded rods, steel class 5.8											
Type of ground	Aerated concrete / YTONG grade 6				Aerated concrete / YTONG grade 4				Aerated concrete / YTONG grade 2			
Rod diameter d [mm]	M8	M10	M12	M16	M8	M10	M12	M16	M8	M10	M12	M16
Design loads for pulling and shearing NRd and VRd [kN]	2,2	2,9	3,1	3,1	1,8	2,6	2,8	2,8	1,3	1,7	1,8	1,9
Hole / drill diameter up to [mm]	10	12	14	18	10	12	14	18	10	12	14	18
Hole depth h1 [mm]	85	95	115	130	85	95	115	130	85	95	115	130
Effective anchorage depth hef [mm]	80	90	110	125	80	90	110	125	80	90	110	125
Substrate thickness hmin [mm]	100	120	125	140	100	120	125	140	100	120	125	140
Distance between anchors Smin [mm]	120	135	165	188	120	135	165	188	120	135	165	188
Distance from the edge Cmin [mm]	240	270	330	390	240	270	330	390	240	270	330	390
Required tightening torque Tinst [Nm]	5	8	8	10	5	8	8	10	4	6	8	10
Approximate amount of resin per hole in [ml]	4	5	8	12	4	5	8	12	4	5	8	12
Number of mounts from one tube - 420ml capacity	105	80	50	35	105	80	50	35	105	80	50	35

Technical data Trutek TCM 420M PRO were developed in accordance with ITB-KOT-2018/0124 edition 2 for the following strength of substrates:

- aerated concrete e.g. YTONG class 6, density ≥ 700 by PN-EN 771-4 + A1: 2015 standards
- aerated concrete e.g. YTONG class 4, density ≥ 650 by PN-EN 771-4 + A1: 2015 standards
- aerated concrete e.g. YTONG class 2, density ≥ 400 by PN-EN 771-4 + A1: 2015 standards

TCM MPRO resin with TCS threaded rods and TPS or TMS perforated sleeves in masonry substrates with holes

Resin / type of anchored rod	TCM MPRO / TCS threaded rods steel class 5.8 / TPS perforated sleeves or TMS mesh											
Type of ground	CLINKER BRICK WITH HOLES OF CLASS 20				POORIZED CERAMIC FLUSHES, class 15				SILICATE BRICK WITH HOLES OF CLASS 15			
Rod diameter d[mm]	M8	M10	M12	M16	M8	M10	M12	M16	M8	M10	M12	M16
Pull-out and shear load capacity NRd and VRd [kN]	1,8	3,3	3,7	4,0	0,9	1,6	1,6	1,7	1,8	3,3	3,7	4,0
Hole / drill diameter up to [mm]	12	16	16	20	12	16	16	20	12	16	16	20
Dimensions of the TPS or TMS perforated sleeve	12x50	15x85	15x85	20x85	12x50	15x85	15x85	20x85	12x50	15x85	15x85	20x85
Hole depth h1 [mm]	60	95	95	95	60	95	95	95	60	95	95	95
Effective anchorage depth hef [mm]	50	85	85	85	50	85	85	85	50	85	85	85
Substrate thickness hmin [mm]	80	110	110	110	80	110	110	110	80	110	110	110
Distance between anchors Smin [mm]	100	170	170	170	100	170	170	170	100	170	170	170
Distance from the edge Cmin [mm]	100	100	100	100	100	100	100	100	100	100	100	100
Required tightening torque Tinst [Nm]	5	8	8	10	5	8	8	10	5	8	8	10
Approximate amount of resin per hole in [ml]	7	20	20	30	7	20	20	30	7	20	20	30
Nbr of mounts from one tube - capacity 420 ml	60	21	21	14	60	21	21	14	60	21	21	14

Technical data Trutek TCM 420M PRO were developed in accordance with ITB-KOT-2018/0124 edition 2 for the following strength of substrates:

- clinker brick with holes class 20 according to PN-EN 771-1: 2015 standards (wall thickness ≥ 10 mm);
- class 15 ceramic hollow bricks according to PN-EN 771-1: 2015 standards (wall thickness ≥ 12 mm);

TCM MPRO resin with TIS threaded sleeves in solid masonry substrates

Resin / type of anchored sleeve	TCM MPRO / TIS threaded sleeves / TPS perforated sleeves or TMS mesh sleeves											
Type of ground	FULL BRICK 15 grade				Aerated concrete / YTONG class 6				Aerated concrete / YTONG class 4			
Rod diameter d [mm]	TIS06	TIS08	TIS10	TIS12	TIS06	TIS08	TIS10	TIS12	TIS06	TIS08	TIS10	TIS12
Pull-out and shear load capacity NRd and VRd [kN]	2,6	2,4	6,7	8,2	1,0	2,3	2,7	2,8	0,3	1,2	1,5	1,6
Hole / drill diameter up to [mm]	10	14	16	18	10	14	16	18	10	14	16	18
Hole depth h1 [mm]	60	95	95	95	60	95	95	95	60	95	95	95
Effective anchorage depth hef [mm]	55	85	85	85	55	85	85	85	55	85	85	85
Substrate thickness hmin [mm]	80	110	110	110	80	110	110	110	80	110	110	110
Distance between anchors Smin [mm]	100	160	160	160	100	160	160	160	100	160	160	160
Distance from the edge Cmin [mm]	150	240	240	240	150	240	240	240	150	240	240	240
Required tightening torque Tinst [Nm]	4	10	13	24	4	10	13	24	4	10	13	24
Approximate amount of resin per hole in [ml]	2,6	6,7	8,0	9,5	2,6	6,7	8,0	9,5	2,6	6,7	8,0	9,5
Number of mounts from one tube - 420ml capacity	162	63	52	44	162	63	52	44	162	63	52	44

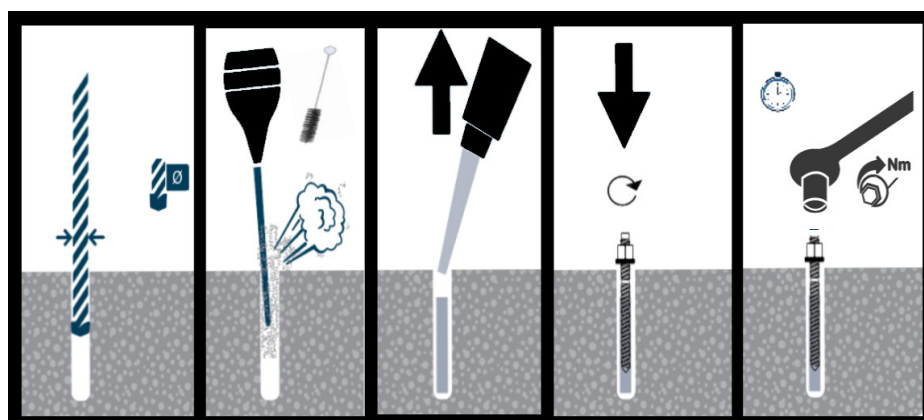
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- full ceramic brick, class 15 PN-EN 771-1: 2015 standards;
- aerated concrete e.g. YTONG class 6, density ≥ 700 by PN-EN 771-4 + A1: 2015 standards
- aerated concrete e.g. YTONG class 4, density ≥ 650 by PN-EN 771-4 + A1: 2015 standards

TCM MPRO resin with TIS threaded sleeves and TPS or TMS perforated sleeves in masonry substrates with holes

Resin / type of anchored rod	TCM MPRO / TIS threaded sleeves / TPS perforated sleeves or TMS mesh sleeves			
Type of ground	POORIZED CERAMIC FLUSHES, class 15			
Rod diameter d [mm]	TIS06	TIS08	TIS10	TIS12
Design loads for pulling and shearing NRd and VRd [kN]	0,4	1,0	1,3	1,5
Hole / drill diameter up to [mm]	12	16	20	20
Dimensions of the TPS or TMS perforated sleeve	12x50	15x85	20x85	20x85
Hole depth h1 [mm]	60	95	95	95
Effective anchorage depth hef [mm]	50	85	85	85
Substrate thickness hmin [mm]	80	110	110	110
Distance between anchors Smin [mm]	100	170	170	170
Distance from the edge Cmin [mm]	100	100	100	100
Required tightening torque Tinst [Nm]	4	10	13	24
Approximate amount of resin per hole in [ml]	7	20	30	30
Number of mounts from one tube - 420ml capacity	60	21	14	14

Technical data Trutek TCM 420M PRO were developed in accordance with ITB-KOT-2018/0124 edition 2 for the following strength of substrates: - class 15 ceramic hollow bricks according to PN-EN 771-1: 2015 standards (wall thickness $\geq 12\text{mm}$);



Accessories:

