

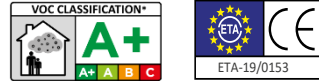
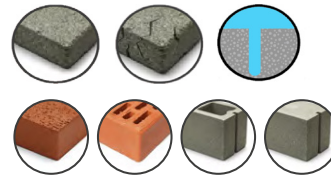
## TRUTEK TCM M PRO INJECTION RESIN

### 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]	$h_{ef} + 30\text{mm} \geq 100\text{mm}$			$h_{ef} + 2d_o$
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
	8.8		[kN]	18.0	22.6	29.0
	A4-70		[kN]	13.0	22.6	29.0

#### 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
	8.8		[kN]	8.6	12.5	16.1
	A4-70		[kN]	8.3	12.5	16.1

#### 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
	8.8		[kN]	6.1	8.9	11.5
	A4-70		[kN]	5.9	8.9	11.5

*(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
	8.8		[kN]	14.0	16.9	24.8
	A4-70		[kN]	14.0	16.9	24.8

#### 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
	8.8		[kN]	6.7	9.4	13.8
	A4-70		[kN]	6.7	9.4	13.8

#### 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
	8.8		[kN]	4.8	6.7	9.9
	A4-70		[kN]	4.8	6.7	9.9

**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	$\gamma_{MsN}$	[-]	1.5			
Characteristic Shear Resistance	$V_{Rk,s}$	[kN]	9	15	21	39
Partial Safety Factor	$\gamma_{MsV}$	[-]	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	$\gamma_{MsN}$	[-]	1.5			
Characteristic Shear Resistance	$V_{Rk,s}$	[kN]	15.0	23.0	34.0	63.0
Partial Safety Factor	$\gamma_{MsV}$	[-]	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	$\gamma_{MsN}$	[-]	1.87			
Characteristic Shear Resistance	$V_{Rk,s}$	[kN]	13.0	20.0	30.0	55.0
Partial Safety Factor	$\gamma_{MsV}$	[-]	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	M8	M10	M12	M16	M8	M10	M12	M16	M8	M10	M12	M16
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											
	Aerated concrete / YTONG grade 6				Aerated concrete / YTONG grade 4				Aerated concrete / YTONG grade 2			
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]	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  $\geq 700$  by PN-EN 771-4 + A1: 2015 standards
- aerated concrete e.g. YTONG class 4, density  $\geq 650$  by PN-EN 771-4 + A1: 2015 standards
- aerated concrete e.g. YTONG class 2, density  $\geq 400$  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											
	CLINKER BRICK WITH HOLES OF CLASS 20				POORIZED CERAMIC FLUSHES, class 15				SILICATE BRICK WITH HOLES OF CLASS 15			
Type of ground												
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  $\geq 10$ mm);
- class 15 ceramic hollow bricks according to PN-EN 771-1: 2015 standards (wall thickness  $\geq 12$ 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											
	FULL BRICK 15 grade				Aerated concrete / YTONG class 6				Aerated concrete / YTONG class 4			
Type of ground												
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

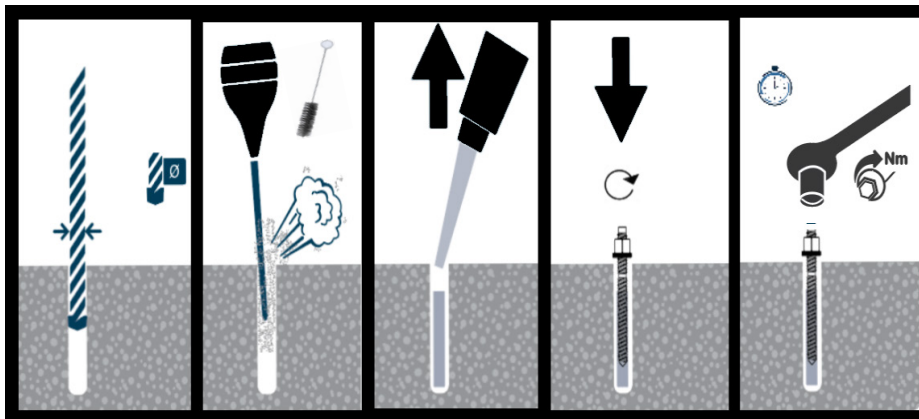
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- full ceramic brick, class 15 PN-EN 771-1: 2015 standards;
- aerated concrete e.g. YTONG class 6, density  $\geq 700$  by PN-EN 771-4 + A1: 2015 standards
- aerated concrete e.g. YTONG class 4, density  $\geq 650$  by PN-EN 771-4 + A1: 2015 standards

## 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:



Cartridge Nozzle & Extension  
TCN01 & TCN03



TCM420MTP



Wire Mesh Sleeve

Perforated Sleeve