TRUTEK TCM PRO + INJECTION RESIN

Usage:

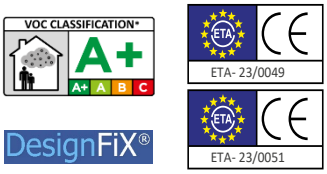
- Installation of threaded studs
- Approved for cracked & non-crack concrete
- Can be used in dry wet and flooded holes
- High loading capacity
- Class A1 reaction to fire

Advantages:

- Available in 300ml & 420ml cartridge
- Suitable for concrete from c20/25 to c50/60
- Range of embedment depths

For use with:

- Cracked Concrete
- Non Cracked Concrete
- Flooded Holes



Concrete Ranges:	C20/25 to C0/60 according to EN 206:2013+A1:2016
Certification:	European Technical Assessment ETA 23/0049 & 23/0051

Installation Data

Threaded Stud Diameter			M8	M10	M12	M16	M20	M24
Nominal drill hole diameter	d_o	[mm]	10	12	14	18	24	28
Diameter of steel brush	d_b	[mm]	10	12	14	18	24	28
Minimum Effective Anchorage Depth	$h_{,ef,min}$	[mm]	60	60	70	80	90	100
Maximum Effective Anchorage Depth	$h_{ef,max}$	[mm]	96	120	144	192	240	288
Standard Effective Anchorage Depth	$h_{ef,std}$	[mm]	80	90	110	125	170	210
Minimum Concrete Thickness	h_{min}	[mm]	h_{ef} + 30mm ≥ 100mm			h_{ef} + 2d_o		
Spacing - Tension (Standard Embedment)	S_{std}	[mm]	240	270	330	375	510	630
Edge Distance - Tension (Standard Embedment)	$c_{N,std}$	[mm]	120	135	165	187.5	255	315
Edge Distance - Shear (Standard Embedment) 5.8 Stud	$c_{V,std}$	[mm]	70	95	115	175	250	360
Edge Distance - Shear (Standard Embedment) 8.8 Stud	$c_{V,std}$	[mm]	80	130	165	285	440	630
Edge Distance - Shear (Standard Embedment) A4-70 Stud	$c_{V,std}$	[mm]	75	120	130	190	290	415
Minimum Spacing	s_{min}	[mm]	40	40	60	75	95	115
Minimum Edge Distance	c_{min}	[mm]	35	40	45	50	60	65

Edge Distances are based on minimum concrete thickness
For variations in Concrete Thickness, Spacing and Edge Distance refer to DesignFix for calculations

Standard Stud Range

Concrete Temperature	Gel / working time in dry/wet concrete STANDARD VERSION	Gel / working time in dry/wet concrete Tropical VERSION	Curing time in dry concrete	Curing time in wet concrete or flooded holes
0°C to +10°C	20 min	20 min	90 min	180 min
+10°C to +20°C	9 min	9 min	60 min	120 min
+20°C to +30°C	5 min	5 min	30 min	60 min
+30°C to +40°C	3 min	3 min	20 min	40 min

The temperature of the resin must be ≥ 20 °C

Load Data

Standard Embedment Depth **Grade 5.8 Studs**

(Non-Cracked concrete, Hammer Drilling and Compressed Air Drilling) ***(Dry and Wet Holes)***

Threaded Stud Diameter			M8	M10	M12	M16	M20	M24
Characteristics Resistance								
Tensile	N_{Rk}	[kN]	18.0	29.0	42.0	66.4	99.7	129.3
Shear	V_{Rk}	[kN]	9.0	15.0	21.0	39.0	61.0	88.0
Design Resistance								
Tensile	N_{Rd}	[kN]	10.0	16.1	23.3	31.6	47.5	61.6
Shear	V_{Rd}	[kN]	7.2	12.0	16.8	31.2	48.8	70.4
Recommended Resistance								
Tensile	N_{rec}	[kN]	7.1	11.5	16.7	22.6	33.9	44.0
Shear	V_{rec}	[kN]	5.1	8.6	12.0	22.3	34.9	50.3

(Cracked concrete, Hammer Drilling and Compressed Air Drilling) ***(Dry and Wet Holes)***

Threaded Stud Diameter			M8	M10	M12	M16	M20	M24
Characteristics Resistance								
Tensile	N_{Rk}	[kN]	12.5	14.9	17.3	24.5	38.8	53.3
Shear	V_{Rk}	[kN]	9.0	15.0	21.0	39.0	61.0	88.0
Design Resistance								
Tensile	N_{Rd}	[kN]	6.9	8.3	9.6	11.7	18.5	25.4
Shear	V_{Rd}	[kN]	7.2	12	16.8	31.2	48.8	70.4
Recommended Resistance								
Tensile	N_{rec}	[kN]	5.0	5.9	6.9	8.3	13.2	18.1
Shear	V_{rec}	[kN]	5.1	8.6	12.0	22.3	34.9	50.3

Standard Embedment **Grade 8.8 Zinc Plated Studs**

(Non-Cracked concrete, Hammer Drilling and Compressed Air Drilling) ***(Dry and Wet Holes)***

Threaded Stud Diameter			M8	M10	M12	M16	M20	M24
Characteristics Resistance								
Tensile	N_{Rk}	[kN]	29.0	42.7	57.7	62.9	83.1	106.5
Shear	V_{Rk}	[kN]	15.0	23.0	34.0	63.0	98.0	141.0
Design Resistance								
Tensile	N_{Rd}	[kN]	16.1	23.7	32.1	30.0	39.6	50.7
Shear	V_{Rd}	[kN]	12.0	18.4	27.2	50.4	78.4	112.8
Recommended Resistance								
Tensile	N_{rec}	[kN]	11.5	16.9	22.9	21.4	28.3	36.2
Shear	V_{rec}	[kN]	8.6	13.1	19.4	36.0	56.0	80.6

(Cracked concrete, Hammer Drilling and Compressed Air Drilling) *(Dry and Wet Holes)*

Threaded Stud Diameter			M8	M10	M12	M16	M20	M24
Characteristics Resistance								
Tensile	N_{Rk}	[kN]	12.5	14.9	17.3	24.5	38.8	53.3
Shear	V_{Rk}	[kN]	15.0	23.0	34.0	63.0	98.0	141.0
Design Resistance								
Tensile	N_{Rd}	[kN]	6.9	8.3	9.6	11.7	18.5	25.4
Shear	V_{Rd}	[kN]	12.0	18.4	27.2	50.4	78.4	112.8
Recommended Resistance								
Tensile	N_{rec}	[kN]	5.0	5.9	6.9	8.3	13.2	18.1
Shear	V_{rec}	[kN]	8.6	13.1	19.4	36.0	56.0	80.6

Standard Embedment **Grade A4-70 Stainless Steel Studs**

(Non-Cracked concrete, Hammer Drilling and Compressed Air Drilling) *(Dry and Wet Holes)*

Threaded Stud Diameter			M8	M10	M12	M16	M20	M24
Characteristics Resistance								
Tensile	N_{Rk}	[kN]	26.0	41.0	57.7	66.4	99.7	129.3
Shear	V_{Rk}	[kN]	13.0	20.0	30.0	55.0	86.0	124.0
Design Resistance								
Tensile	N_{Rd}	[kN]	14.4	22.8	32.1	31.6	47.5	61.6
Shear	V_{Rd}	[kN]	8.3	12.8	19.2	35.3	55.1	79.5
Recommended Resistance								
Tensile	N_{rec}	[kN]	10.3	16.3	22.9	22.6	33.9	44.0
Shear	V_{rec}	[kN]	6.0	9.2	13.7	25.2	39.4	56.8

(Cracked concrete, Hammer Drilling and Compressed Air Drilling) *(Dry and Wet Holes)*

Threaded Stud Diameter			M8	M10	M12	M16	M20	M24
Characteristics Resistance								
Tensile	N_{Rk}	[kN]	12.5	14.9	17.3	24.5	38.8	53.3
Shear	V_{Rk}	[kN]	13.0	20.0	30.0	55.0	86.0	124.0
Design Resistance								
Tensile	N_{Rd}	[kN]	6.9	8.3	9.6	11.7	18.5	25.4
Shear	V_{Rd}	[kN]	8.3	12.8	19.2	35.3	55.1	79.5
Recommended Resistance								
Tensile	N_{rec}	[kN]	5.0	5.9	6.9	8.3	13.2	18.1
Shear	V_{rec}	[kN]	6.0	9.2	13.7	25.2	39.4	56.8

Recommended Resistance Includes Partial Safety Factor γ = 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 (hammer drilling)

Threaded Stud Diameter		M8	M10	M12	M16	M20	M24
Ψc C30/37	[-]	1.08					1.00
Ψc C40/50	[-]	1.15					1.00
Ψc C50/60	[-]	1.20					1.00

Increasing factor for cracked concrete (hammer drilling)

Threaded Stud Diameter		M8	M10	M12	M16	M20	M24
Ψc C30/37	[-]	1.08	1.00				
Ψc C40/50	[-]	1.15	1.00				
Ψc C50/60	[-]	1.20	1.00				

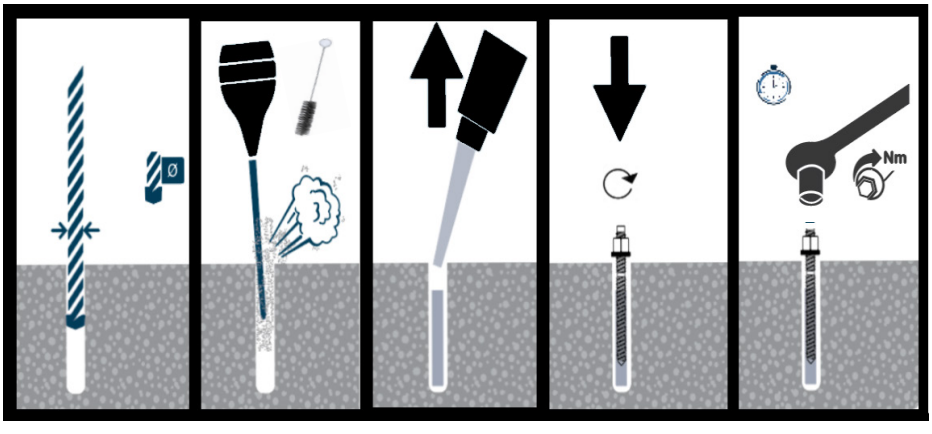
Threaded Stud Diameter			M8	M10	M12	M16	M20	M24
Characteristic Tensile Resistance	$N_{Rk,s}$	[kN]	18.0	29.0	42.0	78.0	122.0	176.0
Partial safety factor	γ_{MsN}	[-]	1.5					
Characteristic Shear Resistance	$V_{Rk,s}$	[kN]	9.0	15.0	21.0	39.0	61.0	88.0
Partial Safety Factor	γ_{MsV}	[-]	1.25					

Grade 8.8

Threaded Stud Diameter			M8	M10	M12	M16	M20	M24
Characteristic Tensile Resistance	$N_{Rk,s}$	[kN]	29.0	46.0	67.0	125.0	196.0	282.0
Partial safety factor	γ_{MsN}	[-]	1.5					
Characteristic Shear Resistance	$V_{Rk,s}$	[kN]	15.0	23.0	34.0	63.0	98.0	141.0
Partial Safety Factor	γ_{MsV}	[-]	1.25					

Stainless Steel A4-70

Threaded Stud Diameter			M8	M10	M12	M16	M20	M24
Characteristic Tensile Resistance	$N_{Rk,s}$	[kN]	26.0	41.0	59.0	110.0	171.0	247.0
Partial safety factor	γ_{MsN}	[-]	1.87					
Characteristic Shear Resistance	$V_{Rk,s}$	[kN]	13.0	20.0	30.0	55.0	86.0	124.0
Partial Safety Factor	γ_{MsV}	[-]	1.56					



Accessories:

Cartridge Nozzle
& Extension
TCN01 & TCN03

TCM420MTP