

### INFORMATION

The torque controlled Throughbolt is a Hot Dipped Galvanised through fixing for use in non-cracked concrete and normal applications such as:

- Temporary Barriers
- Temporary site equipments' anchoring
- Temporary Fencing
- Warehouse Shelving
- Temporary Signs and posts

### BASE MATERIAL

- Concrete C20/25 to C50/60
- Non-Cracked Concrete

### FEATURES

- Medium Duty
- HDG To Minimum 45µm
- Wide Range Of Sizes
- Fast And Secure Installation
- Through Fixing
- Three way Expansion Sleeve
- Reaction To Fire Class A1

### RELATED PRODUCTS

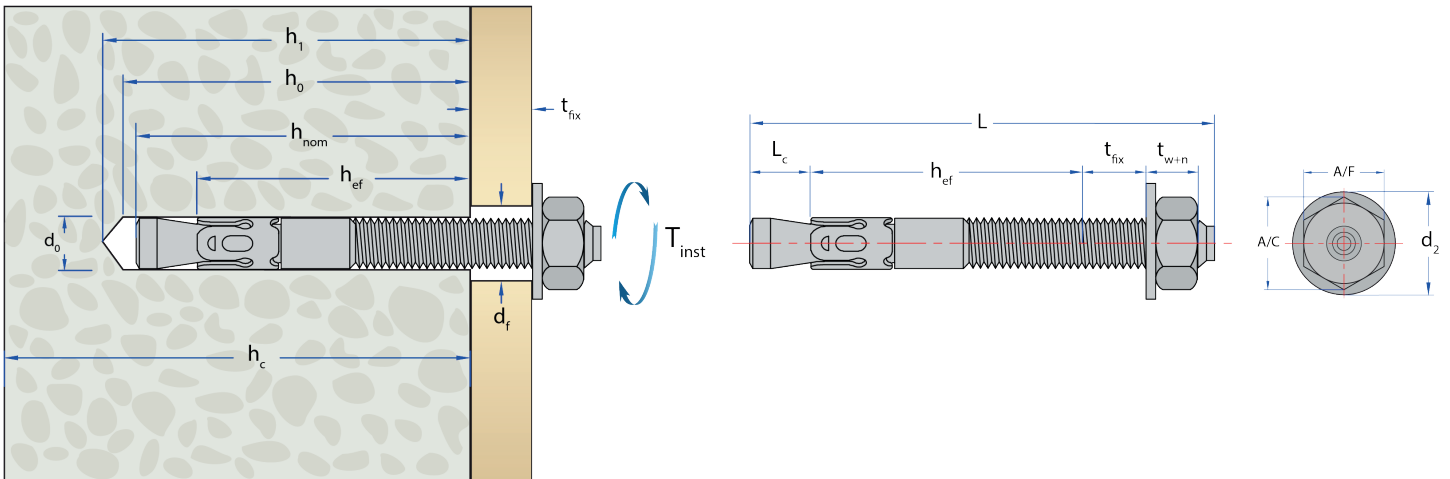


SDS+ Drill Bits



Hole Cleaning Pump

### RANGE AND LOAD DATA



For combined loads, variations in structure thickness, reduced spacing and edge calculations download the free **Anchor Calculation Program** from [www.jcpfixings.co.uk](http://www.jcpfixings.co.uk)





### RANGE AND LOAD DATA

RANGE DATA															
Part Number	Size of Thread	Min. Structure Thickness	Drill Hole Diameter	Min Hole Depth	Fixture Clearance Hole	Cone Length	Effective Embedment Depth	Max Fixture Thickness	Washer and Nut Thickness	Total Length	Thread Length	Width Across Flats	Washer Outer diameter	Tightening Torque	
		(h <sub>c</sub> )	(d <sub>o</sub> )	(h <sub>1</sub> )	(d <sub>f</sub> )	(L <sub>c</sub> )	(h <sub>ef</sub> )	(t <sub>fx</sub> )	(t <sub>w+n</sub> )	(L)	(L <sub>th</sub> )	(A/F)	(d <sub>2</sub> )	(T <sub>inst</sub> )	
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm	
STANDARD EMBEDMENT DEPTH															
TG08050*	M8	100	8	45	9	8	28	5	8	50	15	13	17	15	
TG08075				65			48	10			75				40
TG08095				75			55	30			95				50
TG08120				85			55	30			120				85
TG10060*	M10	100	10	50	12	9	30	10	10	80	20	17	21	25	
TG10070*				70			52	20			70				30
TG10080				70			52	30			100				55
TG10100				105			52	30			100				55
TG10125				105			52	50			125				80
TG12085*	M12	140	12	70	14	13	50	10	13	115	40	19	24	50	
TG12100				90			70	5			100				55
TG12115				90			70	20			115				60
TG12145				90			70	50			145				95
TG12180				90			70	85			180				110
TG16110*	M16	180	16	85	18	15	63	15	16	200	50	24	30	100	
TG16125				110			88	10			130				65
TG16150				110			88	30			150				90
TG16200				110			88	80			200				115
TG20170	M20	215	20	130	22	16	106	25	19	220	100	30	37	120	
TG20220								75			125				
TG20280								135			150				

\* Use Reduced Embedment Loads, Spacings & Edge Distances.

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### NON-CRACKED CONCRETE

#### STANDARD EMBEDMENT

Performance Data (C20/25 non-cracked concrete)												
Size Of Thread	Effective Embedment Depth ( $h_{ef}$ )	Minimum Concrete Thickness ( $h_{min}$ )	Characteristic Resistance		Design Resistance		Approved Resistance		Design Spacing (S)		Design Edge Distance (C)	
			Tensile ( $N_{Rk}$ )	Shear ( $V_{Rk}$ )	Tensile ( $N_{Rd}$ )	Shear ( $V_{Rd}$ )	Tensile ( $N_{Ap}$ )	Shear ( $V_{Ap}$ )	Tensile	Shear	Tensile	Shear
-	mm	mm	kN	kN	kN	kN	kN	kN	mm	mm	mm	mm
M6	23	100										
M8	28	100										
M10	37	125										
M12	50	170										
M16	63	200										
M20	71	240										
M24	87	300										

#### SUPPLEMENTARY DATA

Influence Of Concrete Strength (Non-cracked Concrete)					
Concrete strength		C20/25	C30/37	C40/50	C50/60
Cylinder	N/mm <sup>2</sup>	20	30	40	50
Cube	N/mm <sup>2</sup>	25	37	50	60
Factor	-	1.0	1.22	1.41	1.55

Important Note:  
When using concrete factors ensure that loads do not exceed Steel Design Resistance.

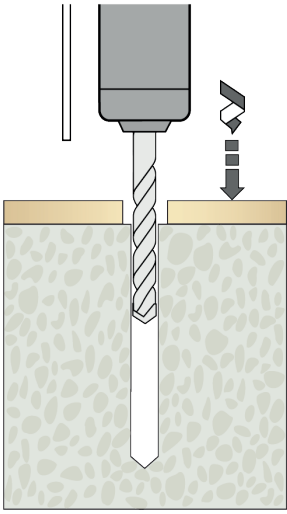
Steel Failure						
Size Of Thread	Tensile Resistance			Shear Resistance		
	Characteristic Resistance ( $N_{Rk,s}$ )	Design Resistance ( $N_{Rd,s}$ )*	Approved Resistance ( $N_{Ra,s}$ )	Characteristic Resistance ( $V_{Rk,s}$ )	Design Resistance ( $V_{Rd,s}$ **)	Approved Resistance ( $V_{Ra,s}$ )
-	kN	kN	kN	kN	kN	kN
M6	11.8	7.8	5.5	5.9	4.7	3.3
M8	21.5	14.3	10.2	10.7	8.5	6.0
M10	34.0	22.6	16.1	17.0	13.5	9.6
M12	49.4	32.9	23.5	24.7	19.7	14.0
M16	91.8	61.2	43.7	45.9	36.7	26.2
M20	143.4	95.6	68.2	71.7	57.3	40.9

\* A partial safety factor ( $\gamma_{MS}$ ) equal to 1.5 is included.  
\*\* A partial safety factor ( $\gamma_{MS}$ ) equal to 1.25 is included.

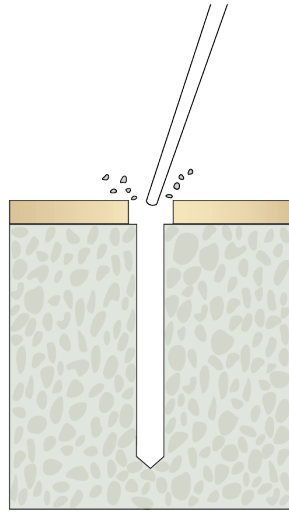




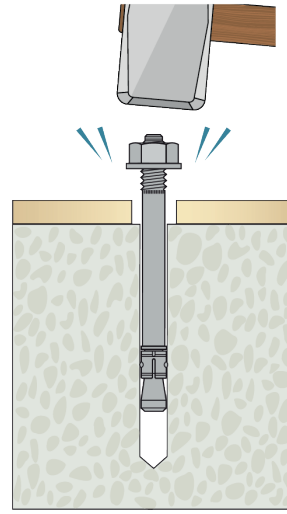
## INSTALLATION INSTRUCTIONS



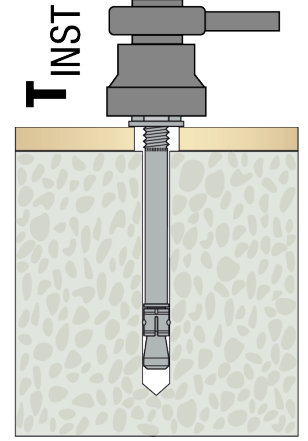
-Position fixture and drill correct diameter hole to corresponding depth



-Clean hole by blowing to remove drilling debris and dust



-Insert anchor through fixture into concrete and lightly hammer into concrete



-Tighten with torque wrench to recommended torque

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