



### Product Information

The Hot Dipped Galvanised Throughbolt is a torque controlled through fixing suitable for use in concrete from C20/25 to C50/60. The Hot Dipped Galvanised finish to a minimum thickness of 42µm offers good corrosion resistance together with excellent load bearing capacities.

### Features

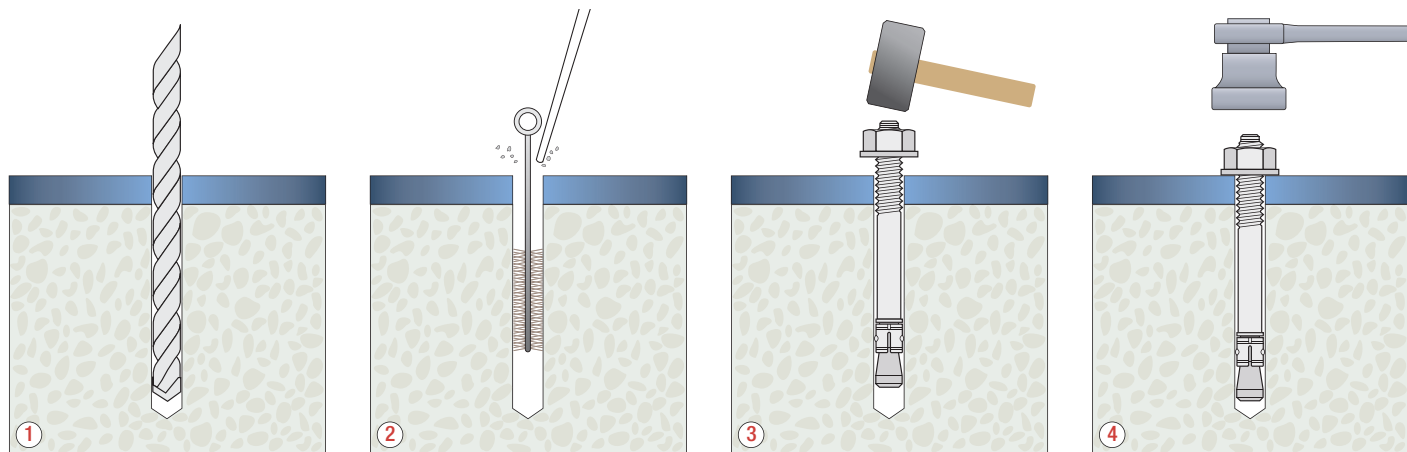
- 1 Through Fixing
- 2 Suitable for indoor and outdoor use
- 3 Medium to Heavy Duty applications
- 4 Torque controlled expansion
- 5 Supplied pre-assembled for rapid installation

### Range Data

Part Number	Thread Diameter mm	Anchor Length mm	Hole Diameter mm	Maximum Fixture Thickness mm	Fixture Clearance Hole mm	Thread Length mm	Embedment Depth mm	Minimum Hole Depth mm	Minimum Structure Thickness mm	Tightening Torque Nm
TG08050	8	50	8	5*	9	22	35	45	100	15
TG08075		75		25						
TG08095		95		25						
TG08120		120		25						
TG10060	10	60	10	10*	12	25	40	50	100	30
TG10070		70		30						
TG10080		85		30						
TG10100		105		30						
TG10125	125	50	30	14	80	80	90	130	50	
TG12085	95	10*	50							
TG12100	110	15	35							
TG12115	115	20	35							
TG12145	145	50	35	18	100	110	170	100		
TG12180	180	85	80							
TG16110	16	115	16	15*	18	40	80	90	200	200
TG16125		130		40						
TG16150		150		40						
TG16200		200		40						
TG20170	20	180	20	35	22	45	120	130	200	200
TG20220		220		75		45				
TG20280		240		135		45				

\*Reduced Loading due to shallow embedment depths – Contact Technical Helpline

### Installation Instructions



1 Position fixture and drill correct diameter hole to correct depth

2 Clean hole by brushing and blowing to remove all dust and drilling debris

3 Insert assembled anchor through fixture into concrete

4 Tighten anchor to Recommended Torque

Performance Data (20/25 Concrete)									
Thread Diameter mm	Characteristic Resistance kN		Design Resistance kN		Recommended Load kN		Spacing mm	Edge Distance mm	
	Tensile	Shear	Tensile	Shear	Tensile	Shear		Tensile & Shear	Tensile
8	12.0	11.0	8.0	8.8	5.7	6.3	85	85	150
10	16.0	16.7	10.7	11.2	7.6	8.0	130	115	180
12	25.0	25.0	16.7	20.0	11.9	14.3	175	155	250
16	35.0	44.0	23.3	33.1	16.6	23.6	215	190	320
20	50.0	69.0	33.3	51.9	23.8	37.1	300	250	420

Shear Loads towards a free edge are for single anchors where Spacing  $\geq 3 \times$  Edge Distance

**Reduced Design Resistance (kN) • Divide Loads by 1.4 for Recommended Loads**

Edge Distance (C20/25 Concrete) for single anchors										
Edge mm	Tensile Resistance					Shear Resistance				
	M8	M10	M12	M16	M20	M8	M10	M12	M16	M20
50	6.0					3.0				
55	6.3					3.4				
65	6.8	7.4				4.4	4.8			
75	7.5	8.1				5.0	5.5			
85	8.0	8.7				5.6	6.1			
95		9.4	12.1			6.1	6.7	8.9		
105		10.1	12.8	16.1		6.6	7.2	9.7	12.5	
115		10.7	13.6	16.9		7.2	7.8	10.4	14.2	
125			14.4	17.7	21.4	7.7	8.4	11.2	15.3	18.1
135			15.1	18.6	22.3	8.2	8.9	11.9	16.3	20.2
150			16.4	19.9	23.7	8.8	9.7	13.0	17.8	22.0
155			16.7	20.3	24.1		10.0	13.4	18.2	22.6
180				22.6	26.5		11.2	15.1	20.7	25.6
190				23.3	27.4			15.8	21.6	26.8
210					29.4			17.2	23.5	29.1
230					31.5			18.6	25.4	31.4
250					33.3			20.0	27.2	33.7
275									29.4	36.5
300									31.6	39.2
320									33.1	41.4
370										46.7
420										51.9

Spacing (C20/25 Concrete)					
Spacing mm	Tensile Resistance per Pair of Anchors				
	M8	M10	M12	M16	M20
50	13.5				
60	14.3	15.8			
65	14.6	16.2			
70	15.0	16.6			
80	15.8	17.4	24.8		
85	16.0	17.8	25.3		
100		18.9	26.6	35.1	
105		19.3	27.1	35.6	45.4
115		20.1	28.0	36.6	46.5
130		21.3	29.4	38.1	48.2
150			31.2	40.2	50.4
175			33.3	42.7	53.2
200				45.2	56.0
215				46.7	57.7
230					59.4
250					61.6
275					64.4
300					66.7

**Influence of Concrete Strength**

Concrete Strength		C20/25	C25/30	C30/37	C40/50	C45/55	C50/60
Cylinder	N/mm <sup>2</sup>	20	25	30	40	45	50
Cube	N/mm <sup>2</sup>	25	30	37	50	55	60
Factor		1	1.1	1.22	1.41	1.48	1.55

When using concrete factors check all other information to ensure Steel Tensile and Shear Resistance is not exceeded

**Steel Design Resistance for single anchor**

		M8	M10	M12	M16	M20
Tension	kN	11.3	18.6	26.6	42.5	66.8
Shear	kN	8.8	13.6	20.0	33.0	51.8

**Anchor Mechanical Properties**

		M8	M10	M12	M16	M20
Tensile Strength	N/mm <sup>2</sup>	560	660	660	560	560
Yield Strength	N/mm <sup>2</sup>	475	560	560	475	475
Nut A/F	mm	13	17	19	24	30
Washer Diameter	mm	17	21	24	30	37