



### 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

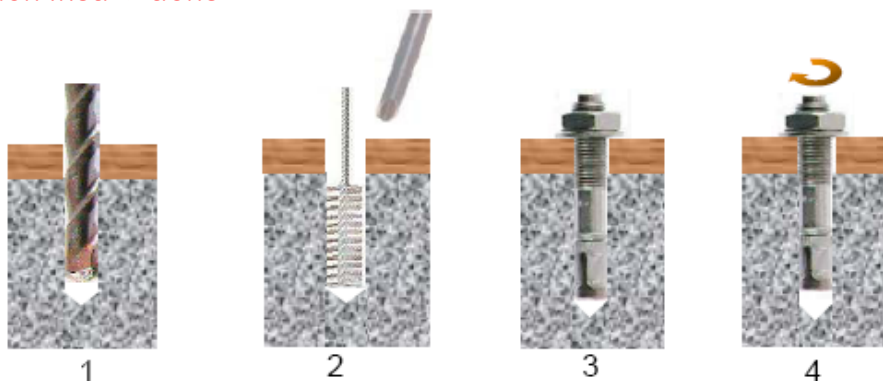
### Features

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 No.	Thread Diam	Anchor Length	Hole Diam	Maximum Fixture Thickness	Fixture Clearance Hole	Thread Length	Embedment Depth	Minimum Hole Depth	Structure Thickness	Tightening Torque
	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm
TG08050	8	50	8	5*	9	22	35	45	140	15
TG08075		75		25		55	65			
TG08095		95		25						
TG08120		120		25						
TG10060	10	60	10	10*	12	25	40	50	160	30
TG10070		70		30		60	70			
TG10080		85		30						
TG10100		105		30						
TG10125		125		30						
TG12085	12	95	12	10*	14	50	70	80	210	50
TG12100		110		35		80	90			
TG12115		115		35						
TG12145		145		35						
TG12180		180		80						
TG16110	16	115	16	15*	18	40	80	90	280	100
TG16125		130		40		100	110			
TG16150		150		40						
TG16200		200		40						
TG20170	20	180	20	35	22	45	120	130	370	200
TG20220		220		45						
TG20280		240		45						

\* Reduced Loading due to shallow embedment depths

### Installation Instructions



1. Position fixture and drill correct diameter hole through fixture to recommended depth
2. Clean hole by brushing and blowing to remove drilling debris and dust
3. Insert Throughbolt through fixture into drilled hole
4. Tighten anchor to recommended Torque



### Performance Data (C20/25 Concrete)

Thread Diam mm	Characteristic Resistance kN		Design Resistance kN		Recommended Load kN		Spacing mm	Edge Distance mm	
	Tensile	Shear	Tensile	Shear	Tensile	Shear	Tensile & Shear	Tensile	Shear
8	12.0	11.0	8.0	8.8	5.7	6.3	85	60	120
10	16.0	16.7	10.7	11.2	7.6	8.0	130	85	120
12	25.0	25.0	16.7	20.0	11.9	14.3	200	105	180
16	35.0	44.0	23.3	33.1	16.6	23.6	250	130	220
20	50.0	69.0	33.3	51.9	23.8	37.1	300	150	260

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 (Factored) 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	7.4					2.9				
55	7.8					3.4				
60	8.0					3.8				
65		9.3				4.3	4.7			
75		10.0				5.4	5.9			
80		10.5				6.0	6.5			
85		10.6				6.5	6.9			
90			16.1			7.1	7.7	8.7		
100			16.6			8.0	9.0	10.2		
105			17.1	22.1		8.3	9.8	10.9	12.4	
120			17.6	24.1		8.8	11.0	13.4	15.2	
125				24.7	29.2			14.2	16.1	18.1
130				24.9	30.1			15.1	17.1	19.2
140					31.8			16.8	18.3	21.4
150					33.6			17.8	21.2	23.8
160								18.8	23.4	26.2
175								20.0	26.8	29.9
190									30.0	33.9
210									32.6	39.4
220										42.2
240										48.1
260										51.8

#### Spacing (C20/25 Concrete)

Spacing mm	Tensile Resistance per Pair of Anchors				
	M8	M10	M12	M16	M20
40	12.7				
50	13.5				
55	13.8	15.4			
60	14.2	15.8			
70	15.0	16.6			
75	15.3	16.9	24.3		
85	16.0	17.7	25.2		
90		18.1	25.7	34.0	
105		19.3	27.0	35.5	45.3
120		20.4	28.4	37.1	47.0
130		21.2	29.3	38.1	48.1
140			30.2	39.1	49.2
160			32.0	41.1	51.5
180			33.8	43.2	53.7
190			34.7	44.2	54.8
200			35.2	45.2	55.9
220				47.2	58.2
240				49.2	60.4
250				49.8	61.5
270					63.8
290					66.0
300					67.2

### 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		1.0	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 Diam.	mm	17	21	24	30	37