



Product Information

The Stainless Steel Throughbolt is a torque controlled through fixing suitable for use in concrete from C20/25 to C50/60. Manufactured from Grade A4-316 Stainless Steel it offers good corrosion resistance outdoors and in wet internal conditions together with excellent load bearing capacities.

Features

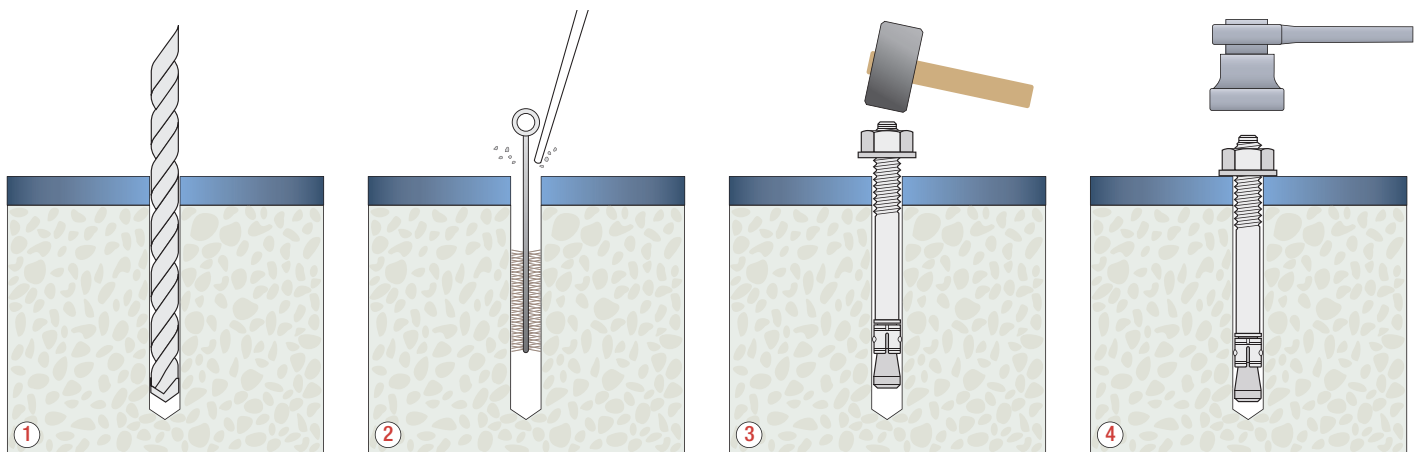
- 1 Through Fixing
- 2 Suitable for indoor and outdoor use
- 3 Medium to Heavy Duty applications
- 4 Torque controlled expansion
- 5 Supplied pre-assembled for rapid installation

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
TSS06040	6	40	6	5*	7	16	30	35	100	6
TSS06065		67		10		20	48	55		
TSS08050	8	50	8	5*	9	25	35	45	100	15
TSS08075		75		10		25	55	65		
TSS08095		95		30		25				
TSS08120		120		55		25				
TSS10060	10	60	10	10*	12	25	40	50	100	25
TSS10080		85		10		30	60	70		
TSS10100		105		30		30				
TSS10125		125		50		30				
TSS10175		175		100		30				
TSS12085	12	95	12	10*	14	50	70	80	130	50
TSS12100		105		10		35	80	90		
TSS12115		115		20		35				
TSS12145		145		50		35				
TSS12200		200		105		80				
TSS16110	16	115	16	15*	18	40	80	90	170	100
TSS16125		130		10		40	98	110		
TSS16150		150		30		40				
TSS16175		180		60		80				
TSS20170	20	180	20	35	22	45	120	130	200	160
TSS20220		240		95		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		Approved Load kN		Spacing mm	Edge Distance mm	
	Tensile	Shear	Tensile	Shear	Tensile	Shear		Tensile & Shear	Tensile
6	7.5	7.0	5.0	5.6	3.6	4.0	35	35	100
8	12.0	12.0	8.0	9.6	5.7	6.9	85	85	165
10	16.0	16.8	10.7	11.2	7.6	8.0	130	115	180
12	25.0	27.0	16.7	21.6	11.9	15.4	175	160	280
16	36.1	50.0	24.0	40.0	17.2	28.6	240	205	420
20	50.4	86.0	33.6	61.4	24.0	43.9	300	280	515

Shear Loads towards a free edge are for single anchors where Spacing ≥ 3 x Edge Distance

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

Edge Distance (C20/25 Concrete) for single anchors												
Edge mm	Tensile Resistance						Shear Resistance					
	M6	M8	M10	M12	M16	M20	M6	M8	M10	M12	M16	M20
35	5.0						1.6					
50		6.0					2.7	3.0				
55		6.3					3.1	3.4	3.7			
65		6.8					3.9	4.4	4.8			
75		7.5	8.1				4.5	5.0	5.5	6.6		
85		8.0	8.7				5.0	5.6	6.1	8.0	9.1	
95			9.4				5.5	6.1	6.7	8.9	10.7	
100			9.7				5.6	6.4	6.9	9.3	11.6	13.0
115			10.7	13.3				7.2	7.8	10.4	13.6	16.0
125				14.1				7.7	8.4	11.2	14.6	18.1
135				14.8				8.2	8.9	11.9	15.5	20.2
160				16.7	20.0			9.4	10.3	13.7	17.9	23.2
165					20.4			9.6	10.5	14.1	18.4	23.8
170					20.9				10.8	14.4	18.8	24.4
180					21.8				11.2	15.1	19.8	25.6
200					23.6	26.7				16.5	21.6	28.0
205					24.0	26.8				16.9	22.0	28.6
230						29.0				18.6	24.2	31.4
250						30.8				19.9	26.0	33.7
280						33.6				21.6	28.5	37.0
300											30.2	39.2
320											31.9	41.4
370											36.0	46.7
420											40.0	51.9
470												57.0
470												60.0
515												61.4

Spacing (C20/25 Concrete)						
Spacing mm	Tensile Resistance per Pair of Anchors					
	M6	M8	M10	M12	M16	M20
35	10.0	12.4				
40		12.8				
45		13.2	14.7			
50		13.5	15.1			
60		14.3	15.8	23.0		
65		14.6	16.2	23.5		
75		15.4	17.0	24.4		
80		15.8	17.4	24.8	32.1	
85		16.0	17.8	25.3	32.6	
100			18.9	26.6	34.1	44.8
105			19.3	27.1	34.6	45.4
110			19.7	27.5	35.1	45.9
115			20.1	28.0	35.6	46.5
130			21.3	29.4	37.1	48.2
150				31.2	39.1	50.4
175				33.3	41.6	53.2
200					44.1	56.0
215					45.6	57.7
230					47.1	59.4
240					48.1	60.5
270						63.8
300						67.2

Influence of Concrete Strength

Concrete Strength		C20/25	C25/30	C30/37	C40/50	C45/55	C50/60
Cylinder	N/mm ²	20	25	30	40	45	50
Cube	N/mm ²	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

		M6	M8	M10	M12	M16	M20
Tension	kN	6.6	12.0	20.0	29.3	58.6	79.7
Shear	kN	5.6	9.6	11.2	21.6	40.0	61.4

Anchor Mechanical Properties

		M6	M8	M10	M12	M16	M20
Tensile Strength	N/mm ²	700	700	700	700	700	700
Yield Strength	N/mm ²	450	450	450	450	450	450
Nut A/F	mm	10	13	17	19	24	30
Washer Diameter	mm	12	17	21	24	30	37