THROUGHBOLT NA STAINLESS STEEL A2

The torque controlled through bolt is a stainless steel grade A2/304 through fixing for use in a non-cracked concrete and normal applications such as :

- Barriers
- Guard rails
- Fences
- Hand rails
- Signs and posts

FEATURES

- Medium Duty
- Corrosion Resistance
- Wide range of sizes
- Fast and secure installation
- Through fixing
- Three way expansion sleeve
- Stainless steel A2/304
- Reaction to fire class A1

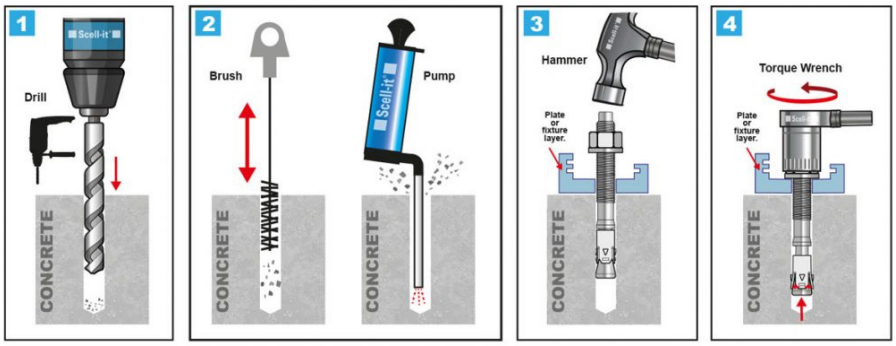
BASE MATERIAL

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

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_c)	(d_0)	(h_1)	(d_f)	(L_c)	(h_{ef})	(t_{fix})	(t_{w+n})	(L)	(L_{th})	(A/F)	(d_2)	(T_{inst})
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm
NA-TBA2-08075	M8	100	8	45	9	9	31	22	8	75	39	13	17	15
NA-TBA2-08100								42		100	59			
NA-TBA2-08120								67		120	62			
NA-TBA2-10100	M10	125	10	55	12	12	38	35	10	100	57	17	21	25
NA-TBA2-10120								60		120	82			
NA-TBA2-10140								85		140	76			
NA-TBA2-12100	M12	170	12	65	14	15	45	20	13	100	58	19	24	45
NA-TBA2-12120								35		120	57			
NA-TBA2-12140								65		140	78			
NA-TBA2-16125	M16	200	16	85	18	17	58	27	16	125	60	24	30	90
NA-TBA2-16145								52		145	87			

INSTALLATION



1. Drill the hole
Drilling must follow manufacturer's recommended values for depth and diameter of anchor.

2. Clean the hole
Remove dust and debris from the hole with a pump and/or a suitably sized brush (preferably a wire brush).

3. Place the anchor
Place the anchor through the fixture/ material to be fixed and into the hole, at the correct angle.

4. Apply torque
Tighten the anchor to recommended torque with a torque wrench.

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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	2.5	5.9	1.4	4.7	1.0	3.3	70	70	70	70
M8	26	100	5.1	10.7	2.8	8.5	2.0	6.0	80	80	80	80
M10	38	125	9.5	17.0	5.3	13.5	3.7	9.6	115	115	90	90
M12	45	170	11.7	24.	6.5	19.7	4.6	14.0	225	225	140	140
M16	58	200	24.2	45.9	13.4	36.7	9.5	26.2	290	290	190	190
M20	66	240	34.4	71.7	19.1	57.3	13.6	40.9	330	330	240	240

SUPPLEMENTARY DATA

In uence Of Concrete Strength (Non-cracked Concrete)					
Concrete strength		C20/25	C30/37	C40/50	C50/60
Cylinder	N/mm²	20	30	40	50
Cube	N/mm²	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 ($V_{Rd,s}$)**	Design 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 (γ_{MS}) equal to 1.5 is included. ** A partial safety factor (γ_{MS}) equal to 1.25 is included.