NA concrete screwbolt - Hexhead

CHARACTERISTICS

The Ankerbolt is a zinc plated self tapping anchor for use in a variety of base materials.
The undercutting action provides a positive anchorage with no expansion forces.
The wide range of types and sizes gives flexibility of choosing the correct anchor according to the fixture thickness.

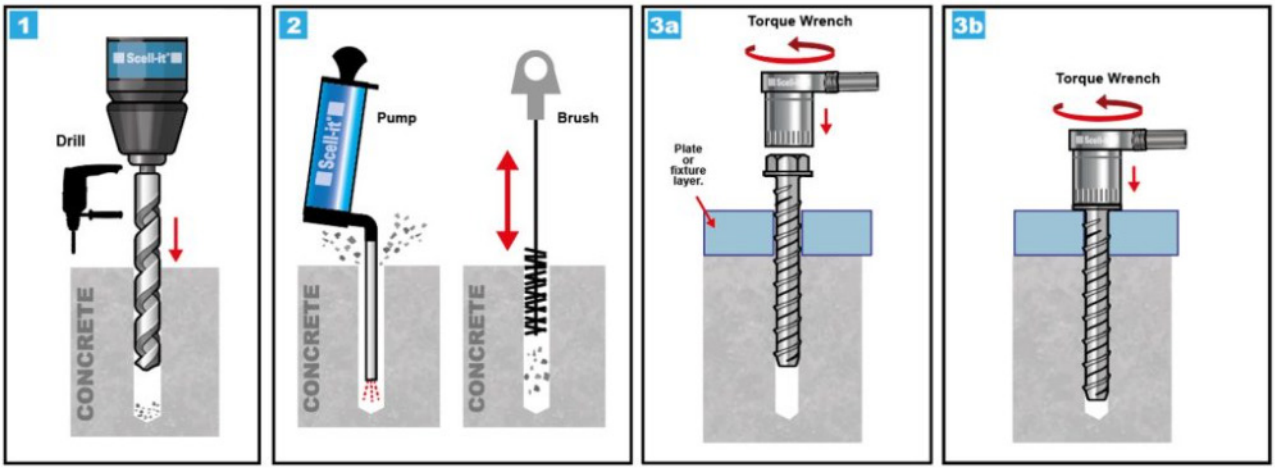
FEATURES

- Undercutting action
- Fast and secure installation
- Expansion free
- Through Fixing
- High performance
- Zinc plated minimum 5µm
- Mechanical galvanised minimum 40 µm

BASE MATERIAL

- Concrete C20/25 to C50/60
- Non-Cracked Concrete
- Hollow Concrete Planks
- Solid Brickwork
- Concrete Block
- Natural Stone

INSTALLATION



1.Drill the hole
Drill a hole to the correct depth and diameter as recommended by the manufacturer. Hole diameter is normally slightly smaller than the screwbolt to allow for 'cutting in' to the substrate. Additionally, the hole should be longer than the screw to provide space for any debris that may collect during installation, preventing it from obstructing the process.

2. Clean the hole
Use a wire brush smaller than the diameter of the hole to thoroughly remove dust and debris. Rotate the brush in a circular and up-and-down motion. Blow out dust with an air pump. Repeat this process to guarantee a clean and debris-free hole (fig. 2).

3.Install the anchor
Insert anchor into hole by screwing into base material with a mechanical impact wrench or a torque wrench. Apply pressure to head of bolt to ensure engagement of first thread (fig. 3a). If resistance is encountered when screwing down the bolt, simply unscrew two turns to release trapped dust, and then continue to tighten down. Screw anchor into concrete until the head shoulders firmly with the fixture and stop (fig. 3b). The anchor should not be able to be tightened further. Do not overtighten the screw as this will weaken the installation.

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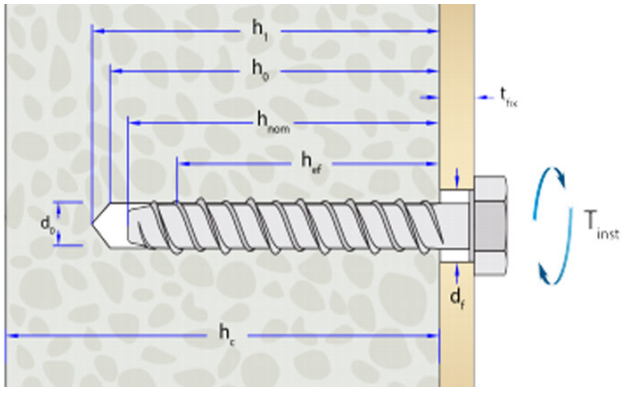
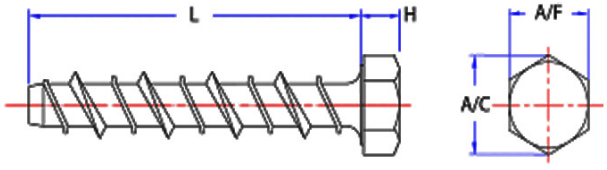
RANGE DATA													
Part Number	Drill Hole Diameter (d_0)	Thread Diameter (d_{nom})	Anchor Length (L)	Fixture Clearance Hole (d_f)	Shallow Embedment			Deep Embedment			Min Structure Thickness (h_c)	Width Across Flats (A/F)	Tightening Torque (T_{inst})
					Max Fixture Thickness (t_{fix})	Min Hole Depth (h_1)	Embed-ment Depth (h_{nom})	Max Fixture Thickness (t_{fix})	Min Hole Depth (h_1)	Embed - ment Depth (h_{nom})			
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm
HEXAGON FLANGE HEAD													
NA-BT-05100	5	6	100	8	75	35	25	63	50	37	100	8	15
NA-BT-06050 *	6	8	50	10	20	40	30	5	55	45	100	10	25
NA-BT-06075 *			75		45			30					
NA-BT-06100 *			100		70			55					
NA-BT-06130			130		100			85					
NA-BT-06150			150		200			105					
HEXAGON HEAD													
NA-BT-08060 *	8	10	60	12	20	55	40	N/A	75	60	120	15	40
NA-BT-08075			75		35			15					
NA-BT-08100 *			100		60			40					
NA-BT-08130			130		90			70					
NA-BT-08150 *			150		110			90					
NA-BT-10060 *	10	12	60	14	10	70	50	N/A	95	75	125	17	60
NA-BT-10075			75		25			N/A					
NA-BT-10100 *			100		50			25					
NA-BT-10130			130		80			55					
NA-BT-10150 *			150		100			75					
NA-BT-12075	12	14	75	16	15	85	60	N/A	115	90	140	19	80
NA-BT-12100 *			100		40			10					
NA-BT-12130			130		70			40					
NA-BT-12150 *			150		90			60					
NA-BT-12200 *			200		140			110					
NA-BT-16100 **	16	18	100	20	20	110	80	N/A	145	115	190	27	100
NA-BT-16150 **			150		70			35					
NA-BT-16200 **			200		120			85					

* The Mechanical Galvanised (minimum 40µm) version is available. ** Mechanical Galvanised minimum 40µm.





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NON-CRACKED CONCRETE - SHALLOW EMBEDMENT

Performance Data (C20/25 non-cracked concrete)

Drill Diam (d_0)	Overall Embedment Depth (h_{nom})	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_{Ra})	Shear (V_{Ra})	Tensile	Shear	Tensile	Shear
mm	mm	mm	kN	kN	kN	kN	kN	kN	mm	mm	mm	mm
5	25	100	3.1	3.2	1.7	2.0	1.2	1.4	50	50	30	40
6	30	100	3.9	3.8	2.1	2.5	1.5	1.7	60	60	40	40
8	40	100	6.3	6.3	3.4	4.2	2.4	3.0	70	80	50	50
10	50	100	9.3	9.1	5.0	6.0	3.5	4.2	100	100	60	70
12	60	100	12.5	12.7	6.9	8.4	4.9	6.0	120	120	70	90
14	70	100	15.3	15.2	8.4	10.3	6.0	7.3	130	140	80	110
16	80	105	19.0	18.9	10.3	12.4	7.3	8.8	160	160	110	120

NON-CRACKED CONCRETE - DEEP EMBEDMENT

Performance Data (C20/25 non-cracked concrete)

Drill Diam (d_0)	Overall Embedment Depth (h_{nom})	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_{Ra})	Shear (V_{Ra})	Tensile	Shear	Tensile	Shear
mm	mm	mm	kN	kN	kN	kN	kN	kN	mm	mm	mm	mm
5	37	100	5.0	6.6	2.7	4.4	1.9	3.1	40	80	30	60
6	45	100	7.5	8.7	4.1	5.6	2.9	4.0	70	90	40	70
8	60	120	10.0	13.7	5.5	9.1	3.9	6.5	70	130	50	90
10	75	125	15.0	20.0	8.3	13.1	5.9	9.3	90	160	60	120
12	90	140	19.0	40.5	10.5	32.3	7.5	23.0	90	160	70	300
14	95	170	22.0	54.1	12.2	35.7	8.7	25.5	130	200	80	300
16	115	190	34.0	74.9	18.8	49.9	13.4	35.6	200	250	110	390

SUPPLEMENTARY DATA

Influence 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	M8, M10, M12	1.0	1.17	1.32	1.42
	M14, M16	1.0	1.22	1.41	1.55

Important Note:

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

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Steel Failure						
Drill Diam (d_0)	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 ($V_{Ra,s}$)
mm	kN	kN	kN	kN	kN	kN
8	44.2	31.6	22.6	28.5	19.0	13.6
10	70.1	50.1	35.8	46.4	30.9	22.1
12	101.2	72.3	51.6	57.2	38.1	27.2
14	140.0	100.0	71.4	80.4	53.6	38.3
16	183.9	131.4	93.8	84.4	56.3	40.2

* A partial safety factor (γ_{MS}) equal to 1.4 is included.

** A partial safety factor (γ_{MS}) equal to 1.5 is included.