



### Product Information

The Shield Anchor is an all steel, internally threaded expansion anchor for general purpose applications. Suitable for fixing into Concrete, Solid Brick, Dense Blockwork and some Natural Stone. Finish available Zinc Plated and Yellow Passivated min 5µm.

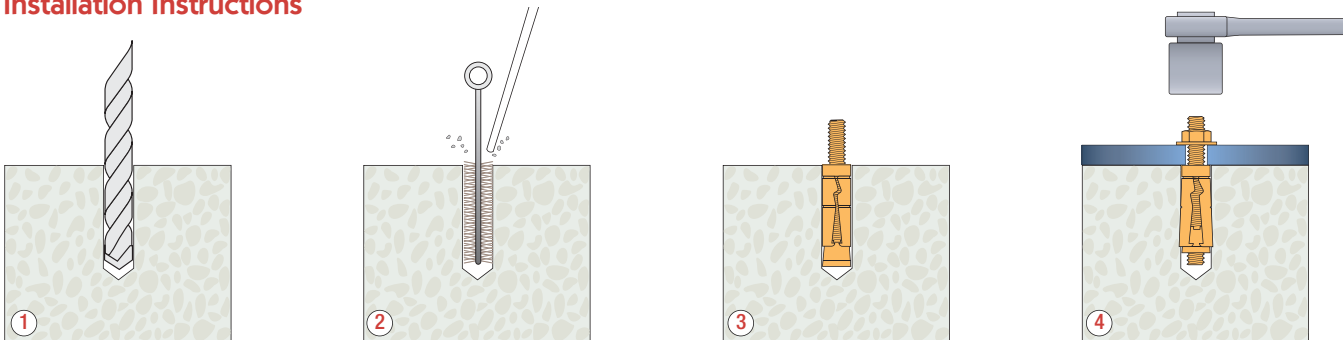
### Features

- 1 All Steel anchor
- 2 High degree of expansion
- 3 Captive Cone Nut
- 4 Removable stud

### Range Data

Part Number	Thread Diameter mm	Overall Length mm	Maximum Fixture Thickness mm	Drill Hole Diameter mm	Minimum Hole Depth mm	Embedment Depth mm	Fixture Clearance Hole mm	Minimum Structure Thickness mm	Tightening Torque Nm
APB0610	6	60	10	12	50	45	8	80	6
APB0625		75	25						
APB0650		100	50						
APB0815	8	75	15	14	55	50	10	100	14
APB0840		100	40						
APB0880		140	80						
APB1010	10	80	10	16	65	60	12	120	27
APB1030		100	30						
APB1050		120	50						
APB1070		140	70						
APB1215	12	100	15	20	85	75	14	160	46
APB1225		110	25						
APB1250		135	50						
APB1270		155	70						
APB1635	16	160	35	25	125	110	18	200	110

### Installation Instructions



1 Position fixture and drill correct diameter hole to correct depth

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

3 Insert shield and stud into drilled hole

4 Position fixture, attach nut and washer onto stud and tighten 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
M6	7.2	4.7	4.0	2.6	2.9	1.9	140	70	100
M8	12.7	8.7	7.1	4.8	5.0	3.5	150	75	120
M10	20.3	14.0	11.3	7.8	8.1	5.6	180	90	150
M12	28.6	20.4	15.9	11.3	11.3	8.1	230	120	180
M16	48.9	37.8	27.2	21.0	19.4	15.0	330	170	250

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 mm	Tensile Resistance					Shear Resistance				
	M6	M8	M10	M12	M16	M6	M8	M10	M12	M16
50	3.2									
60	3.6	6.1								
70	4.0	6.8	9.5			1.8				
75		7.1	10.0			2.0	3.0			
80			10.4	12.2		2.1	3.2			
90			11.3	13.1		2.3	3.6	4.7		
100				14.0		2.6	4.0	5.2		
110				15.0	20.5		4.4	5.7	6.9	
120				15.9	21.6		4.8	6.2	7.5	
125					22.2			6.5	7.8	
130					22.7			6.8	8.2	
150					25.0			7.8	9.4	12.6
170					27.2				10.7	14.3
180									11.3	15.1
210										17.6
250										21.0

Spacing mm	Tensile Resistance per Pair of Anchors				
	M8	M10	M12	M16	M20
70	6.0				
90	6.6	11.4			
110	7.1	12.3			
130	7.7	13.3			
140	8.0	13.7	20.1		
145		14.0	20.4		
150		14.2	20.7	26.3	
160			21.3	27.0	
170			22.0	27.7	
180			22.6	28.3	42.0
200				29.7	43.7
220				31.1	45.3
230				31.8	46.2
270					49.5
300					51.9
330					54.4

**Influence of Concrete Strength**

Concrete Strength		C20/25	C25/30	C30/37	C40/50	C45/55	C50/60
Cylinder	N/mm <sup>2</sup>	Increased concrete strength factors cannot be used with this anchor					
Cube	N/mm <sup>2</sup>						
Factor							

When using concrete factors check all other information to ensure Steel Strength and Pull out Resistance is not exceeded

**Steel Design Resistance for single anchor**

		M6	M8	M10	M12	M16
Tension	kN	4.0	7.1	11.3	15.9	27.2
Shear	kN	2.6	4.8	7.8	11.3	21.0

**Anchor Mechanical Properties**

		M6	M8	M10	M12	M16
Tensile Strength	N/mm <sup>2</sup>	400	400	400	400	400
Yield Strength	N/mm <sup>2</sup>	240	240	240	240	240
Nut A/F	mm	10.0	13.0	17.0	19.0	24.0
Washer Diameter	mm	12.0	17.0	21.0	24.0	30.0

Loads for solid Brickwork (20.5N/mm <sup>2</sup> )	
Anchor Diameter	Recommended Load kN
M6	1.8
M8	2.3
M10	2.9
M12	4.3

Due to the variable nature of brickwork these loads are for guidance only

Where loading is critical a site test is recommended

Loads are for both Tension & Shear but Combined Loads must not exceed quoted figures

Anchors above 12mm are not recommended in Brickwork