Shield Anchor Loose Bolt

Performance Data (Grade 8.8 Bolt) C20/25 Concrete									
Thread Diam mm	Characteristic Resistance kN		Design Resistance kN		Recommended Resistance kN		Spacing mm	Edge Distance mm	
	Tensile	Shear	Tensile	Shear	Tensile	Shear	Tensile & Shear	Tensile	Shear
6	7.2	8.8	4.0	4.9	2.9	3.5	140	70	100
8	12.7	15.8	7.1	8.8	5.0	6.3	150	75	120
10	20.3	25.1	11.3	13.9	8.1	10.0	180	90	150
12	28.6	36.6	15.9	20.3	11.3	14.5	230	120	180
16	48.9	69.2	27.2	38.4	19.4	27.5	330	170	250

Shear Resistance towards a free edge is for single anchors where Spacing ≥ 3 x Edge Distance

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

Edge Distance (C20/25Concrete) for single anchors										
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			3.4				
75		7.1	10.0			3.7	5.5			
80			10.4	12.2		3.9	5.9			
90			11.3	13.1		4.4	6.6	8.3		
100				14.0		4.9	7.3	9.3		
110				15.0	20.5		8.1	10.2	12.4	
120				15.9	21.6		8.8	11.1	13.5	
125					22.2			11.6	14.1	
130					22.7			12.0	14.7	
150					25.0			13.9	16.9	
170					27.2				19.2	26.1
180									20.3	27.6
210										32.3
250										38.4

Spacing (C20/25Concrete)					
Spacing mm	Tensile Resistance per Pair of Anchors				
	M6	M8	M10	M12	M16
70	6.0				
90	6.6	11.4			
110	7.1	12.3			
130	7.7	13.3	19.5		
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/mm²	Increased concrete strength factors cannot be used with this anchor					
Cube	N/mm²						
Factor							

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
Tension	kN	10.7	19.3	30.7	44.7	84.0
Shear	kN	6.1	11.3	17.9	26.1	49.4

Anchor mechanical properties

		M6	M8	M10	M12	M16
Tensile Strength	N/mm²	800	800	800	800	800
Yield Strength	N/mm²	640	640	640	640	640
Nut A/F	mm	10.0	13.0	17.0	19.0	24.0
Washer Diam.	mm	12.0	17.0	21.0	24.0	30.0

Resistance for solid Brickwork (20.5N/mm²)	
Thread Diam	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