

Shield Anchor Projecting Bolt

Performance Data (C20/25 Concrete)

Thread Diam mm	Characteristic Resistance kN		Design Resistances kN		Recommended Resistance kN		Spacing	Edge Distance	
	Tensile	Shear	Tensile	Shear	Tensile	Shear	Tensile & Shear	Tensile	Shear
								mm	
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 Resistance

Edge Distance (C20/25 Concrete) 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			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 (C20/25 Concrete)

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			
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 ²	Increased concrete strength factors cannot be used with this anchor					
Cube	N/mm ²						
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	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 ²	400	400	400	400	400
Yield Strength	N/mm ²	240	240	240	240	240
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	Due to the variable nature of brickwork these loads are for guidance only
M8	2.3	Where loading is critical a site test is recommended
M10	2.9	Loads are for both Tension & Shear but Combined Loads must not exceed quoted figures
M12	4.3	Anchors above 12mm are not recommended in Brickwork