Specification Data

RAWL® SPT Throughbolt Performance Data

SIZE	CONCRETE, $f_{ck,cube}$ = 30N/mm² (C20/25)													
	STANDARD EMBEDMENT DEPTH						REDUCED EMBEDMENT DEPTH						CHARACTERISTIC EDGE DISTANCE (mm)	CHARACTERISTIC SPACING (mm)
	CHARACTERISTIC LOAD		DESIGN RESISTANCE (Factored) (kN)		RECOMMENDED LOAD (Unfactored) (kN)		CHARACTERISTIC LOAD		DESIGN RESISTANCE (Factored) (kN)		RECOMMENDED LOAD (Unfactored) (kN)			
	TENSION (N_{Rk})	SHEAR (V_{Rk})	TENSION (N_{Rd})	SHEAR (V_{Rd})	TENSION (N_{rec})	SHEAR (V_{rec})	TENSION (N_{Rk})	SHEAR (V_{Rk})	TENSION (N_{Rd})	SHEAR (V_{Rd})	TENSION (N_{rec})	SHEAR (V_{rec})	TENSION & SHEAR ($C_{cr,N}$) ($C_{cr,V}$)	TENSION & SHEAR ($S_{cr,N}$) ($S_{cr,V}$)
M6	6.8	7.1	3.1	3.9	2.6	3.3	4.5	4.7	2.1	2.6	1.8	2.2	60	80
M8	10.5	13.6	4.9	7.5	4.1	6.3	8.5	10.1	4.0	5.6	3.3	4.7	80	100
M10	15.1	18.4	7.0	10.2	5.8	8.5	10.7	15.3	5.0	8.5	4.2	7.1	100	120
M12	23.7	26.6	11.0	14.8	9.2	12.3	15.0	22.9	7.0	12.7	5.8	10.6	120	150
M16	36.6	50.3	17.0	28.0	14.2	23.3	23.0	42.5	10.7	23.6	8.9	19.7	160	180
M20	45.7	73.3	21.2	40.7	17.7	33.9	38.0	63.2	17.6	35.1	14.7	29.3	190	260
M24	52.8	94.5	24.4	52.5	20.3	43.8	48.9	87.2	22.7	48.4	18.9	40.3	250	300

For further explanations on calculations please see pages 10 and 11

Reduction Factors - Edge and Spacing Distances for Rawl® SPT.
The full characteristic edge and spacing distances shown in the table above are the minimum allowable for the quoted DESIGN RESISTANCE or RECOMMENDED LOAD, depending on your design method.

Where these dimensions are not achievable, the appropriate reduction factor/s from the tables below must be applied to the DESIGN RESISTANCE or RECOMMENDED LOAD. Choose the required bolt diameter across the top of the appropriate table and read down the left hand column until actual edge or spacing distance is found. Read off the reduction factor where the two lines intersect (interpolate as required). Multiply this factor by the DESIGN RESISTANCE or RECOMMENDED LOAD quoted in the table. On the occasion that multiple close edge and/or spacing distances occur, the appropriate reduction factors must be applied.

Edge Distance (Concrete)

EDGE (mm)	TENSILE: EDGE REDUCTION FACTORS							SHEAR: EDGE REDUCTION FACTORS						
	M6	M8	M10	M12	M16	M20	M24	M6	M8	M10	M12	M16	M20	M24
30	0.60													
40	0.73	0.60						0.64						
50	0.87	0.73						0.82	0.62					
60	1.00	0.87	0.65					1.00	0.74	0.60				
80		1.00	0.83	0.65					1.00	0.80	0.67			
100			1.00	0.77	0.65					1.00	0.84	0.62		
120				0.88	0.77	0.65					1.00	0.74	0.58	
140				1.00	0.88	0.77	0.65					0.87	0.73	0.58
160					1.00	0.88	0.74					1.00	0.82	0.66
190						1.00	0.83						1.00	0.78
220							0.91							0.88
250							1.00							1.00

Spacing (Concrete)

SPACING (mm)	TENSILE & SHEAR REDUCTION FACTORS						
	M6	M8	M10	M12	M16	M20	M24
30							
40	0.65						
50	0.77	0.65					
60	0.88	0.77	0.65				
80	1.00	0.88	0.77	0.65			
100		1.00	0.88	0.77	0.65		
120			1.00	0.88	0.77		
150				1.00	0.88	0.74	
180					1.00	0.83	0.74
190						0.91	0.83
220						1.00	0.91
260							1.00