



Product Model XP410 Polyester Resin

XP410 is a polyester based fixing resin designed as an economical solution for bolts, posts, threaded rods, studs and anchors. Suitable for installing a massive variety of fixings in masonry or blockwork. Ideal for hollow substrates with a nylon or metal perforated sleeve.

Key Features

- For use in Hollow Wall, Brickwork, Masonry and Concrete.
- Economical Fixing Resin
- Standard Duty Load Applications
- Fast Curing in Normal conditions

Technical data supplied by the manufacturer



Typical Gel and Curing Time*

Base Material Temperature (°C)	35	25	15	5	-5	-10**
Typical Gel Time (mins)	3	7	11	21	50	60
Minimum Load Time (mins)	20	20	20	30	90	180

*Figures are based on M12 fixings. Full cure is achieved after 24 hours

**Resin temperature must be at least 20°C

Typical Performance Data at Standard Embedment Depth

Concrete, fck, cube = 25N/mm ² (C20/25) 5.8 Grade Steel									
Size	Characteristic Resistance (kN)		Design Resistance (kN)		Recommended Load (kN)		Characteristic Edge Distance (mm)		Characteristic Spacing (mm)
	Tension (Nrk)	Shear (Vrk)	Tension (Nrd)	Shear (Vrd)	Tension (Nrec)	Shear (Vrec)	Tension (Ccr,N)	Shear (Ccr,V)	
M8	17.2	9.5	6.9	7.6	4.9	5.4	80	100	160
M10	26.2	15.1	10.5	12.1	7.5	8.6	90	130	180
M12	37.1	21.9	14.8	17.5	10.6	12.5	110	150	220
M16	43.1	40.8	17.2	32.7	12.3	23.3	125	170	250
M20	69.7	63.7	27.9	51.0	19.9	36.4	170	190	340
M24	95.9	91.8	38.4	73.4	27.4	52.4	210	240	420
M30	-	-	-	-	-	-	280	350	560

Important Note: Performance based on clean holes; HAMMER DRILLED - blown and then brushed with a stiff metal brush & blown again.

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Setting Data In Solid Substrate

Size	Hole Diameter In Concrete (mm)	Hole Diameter In Fixture (mm)	Standard Embedment In Concrete (mm)	Recommended Torque (Nm) Concrete - Brick	
M8	10	9	80	6	3
M10	12	11	90	17	13
M12	14	13	110	33	24
M16	18	17	125	75	43
M20	24	22	170	120	-
M24	28	26	210	198	-
M30	35	33	280	480	-

Typical Ultimate Physical Properties

	N/mm ²	Test Method	Storage / Shelf Life	Important
Compressive Strength	59.58	(EN ISO 604) / (ASTM 695)	This product should be stored between +5°C & +25°C. Avoid Direct Sunlight. The Shelf life of the product is 12 months from the manufacture date.	The information and data given is based on our own experience, research and testing and is believed to be reliable and accurate. However, as the manufacturer cannot know the varied uses to which its products may be applied, or the methods of application used, no warranty as to the fitness or suitability of its products is given or implied. It is the users responsibility to determine suitability of use. For further information please contact our Technical Department.
Flexural Strength	25.18	(EN ISO 178) / (ASTM 795)		
Flexural Modulus	3486.40	•		
Tensile Strength	13.38	(EN ISO 527) / (ASTM 638)		
E Modulus	8015.40	•		

Typical Performance in Hollow Substrate

Size	Recommended Load (kN)	
	Brickwork 20.5 N/mm ²	Blockwork 7 N/mm ²
M8	1.7	0.8
M10	3.4	1.7
M12	4.8	2.7
M16	5.6	3.6

Edge Distance (Concrete)

Edge (mm)	Shear Edge Reduction Factors						
	M8	M10	M12	M16	M20	M24	M30
60	0.65						
75	0.76	0.70					
90	0.88	0.80	0.69				
100	1.00	0.87	0.75	0.68			
115		0.97	0.83	0.75			
130		1.00	0.91	0.83	0.66		
150			1.00	0.92	0.73	0.63	
170				1.00	0.80	0.69	
190					1.00	0.74	
210						0.80	0.65
240						1.00	0.71
280							0.80
300							0.84
325							0.90
350							1.00

Edge Distance (Concrete)

Edge (mm)	Tensile Edge Reduction Factors						
	M8	M10	M12	M16	M20	M24	M30
50	0.65						
60	0.70	0.67					
70	0.75	0.71					
80	1.00	0.76	0.69				
90		1.00	0.73	0.69			
100			0.76	0.72	0.64		
110			1.00	0.75	0.60		
125				1.00	0.70	0.64	
150					0.75	0.69	
170					1.00	0.72	
190						0.76	0.67
210						1.00	0.70
240							0.74
260							0.77
280							1.00

Spacing (Concrete)

Edge (mm)	Tensile: Spacing Reduction Factors						
	M8	M10	M12	M16	M20	M24	M30
50	0.66						
60	0.69						
70	0.72	0.69					
80	0.75	0.72					
90	0.78	0.75	0.70				
100	1.00	0.78	0.73	0.70			
115		0.82	0.76	0.73			
130		1.00	0.80	0.76	0.69		
150			1.00	0.80	0.72	0.68	
170				1.00	0.75	0.70	
190					0.78	0.73	
210					1.00	0.75	0.69
240						1.00	0.71
280							0.75
300							0.77
325							0.79
350							1.00

Characteristic & Design Shear Loads for Various Rebar

Rebar Diameter (mm)	Rebar Diameter (mm)	
	Vrk,s (kN)	Vrd,s (kN)
8	16.6	11.1
10	25.9	17.3
12	37.3	24.9
14	50.8	33.9
16	66.4	44.3
20	103.9	69.3
25	162.0	108.0
32	265.1	176.7
40	414.6	276.4

Characteristic & Design Shear Loads for Various Stud Grades

Stud Diameter (mm)	Stud Grade 5.8		Stud Grade 8.8		Stud Grade 10.9		Stud Grade A4-70		Stud Grade A4-80	
	Vrk,s (kN)	Vrd,s (kN)	Vrk,s (kN)	Vrd,s (kN)	Vrk,s (kN)	Vrd,s (kN)	Vrk,s (kN)	Vrd,s (kN)	Vrk,s (kN)	Vrd,s (kN)
M8	9.5	7.6	14.6	11.7	19.0	15.2	12.8	8.2	14.6	9.4
M10	15.1	12.1	23.2	18.6	30.2	24.1	20.3	13.0	23.2	14.9
M12	21.9	17.5	33.7	27.0	43.8	35.1	29.5	18.9	33.7	21.6
M16	40.8	32.7	62.8	50.2	81.6	65.3	55.0	32.5	62.8	40.3
M20	63.7	51.0	98.0	78.7	127.4	101.9	85.8	55.0	98.0	62.8
M24	91.8	73.4	141.2	113.0	183.6	146.8	123.6	79.2	141.2	90.5
M30	207.1	166.1	207.6	166.1	269.9	215.9	129.8	64.9	207.6	103.8

Notes: All grades shown for information. M30 studding is 8.8 grade instead of 5.8 grade. M30 for A4-70 tensile strength of 500N/mm², instead of 700N/mm². Safety Factor is 1.25 for all carbon steel. Safety Factor is 1.56 for stainless steel, up to M24, M30 is 2.0. Safety Factor is 1.5 for BST 500 rebar.

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