

POLYESTER RESIN (PE310 & PE410) - TECHNICAL DATA



Product Information	Material	Typical Applications
<p>High quality general purpose Polyester resin for use in most masonry types.</p> <p>PE310 for standard skeleton gun</p> <p>PE410 for Co-axial gun</p>	<p>High quality Polyester Resin with very low levels of styrene.</p>	<p>General fixings into problem masonry substrates.</p> <p>For use with TIMco studs, or threaded bar.</p> <p>TIMco internally threaded sockets for removable applications.</p> <p>In hollow masonry use TIMco plastic sleeves</p>

RANGE DATA		
TIMco Code	Volume of Resin (ml)	Resin Type
PE310	310	Polyester Resin
PE410	410	Polyester Resin

PE GEL & LOADING TIMES		
Temp °C	Gel Time (mins)	Loading Time (min)
25	4	30
20	6	40
10	12	80
5	18	120

RANGE DATA - STUDS [5.8 grade steel]						
Size	Size	Drill Hole Size	Anchor Length	Maximum Fixture Thickness	Min Hole Depth/ embedment depth	Clearance Hole in Fixture
M8 x 110	M8	10	110	13	80	10
M10 x 130	M10	12	130	20	90	12
M12 x 160	M12	14	160	25	110	14
M16 x 190	M16	18	190	35	125	18
M20 x 260	M20	22/24*	260	55	170	24
M24 x 300	M24	26/28*	300	60	210	28

* 2mm smaller diameter hole should be used with TIMco EASF

PERFORMANCE IN CONCRETE

See page 2 for the performance of PE in concrete

INDICATIVE VALUES FOR VARIOUS MASONRY TYPES: REC. LOAD AT ANY ANGLE							
Anchor Size mm	Hole Depth mm	Block Work 2.8 to 3.5 N/mm ²	Block Work 7 to 10 N/mm ³	Sand Lime Perf. Brick 12N/mm ²	Sand Lime Solid Brick 12N/mm ²	Brickwork >12N/mm ²	Brickwork >20N/mm ²
8	80	0.4 / 0.6*	0.6	0.8 / 1.4*	1.4	1.4	1.5
10	80	0.6 / 0.8*	1.4	0.8 / 1.4*	1.5	1.8	3.0
12	80	0.9 / 1.3*	1.7	0.8 / 1.4*	1.7	2.0	4.0

*Depends on drilling technique for perforated bricks and hollow blocks use TIMco plastic sleeves

When fixing into brick avoid top three courses, edge bricks, part bricks and mortar joints.

POLYESTER RESIN (PE310 & PE410)- Performance Data

PERFORMANCE DATA							
Size	Clearance hole	Hole Depth mm	Performance at Standard Embedment C20/25 concrete *		Normal Centre Spacing	Normal Edge Distance	Installation torque
			Recommended Loads kN		mm	mm	Nm
			Tensile	Shear	Standard Embedment		
M8	9	80	4.2	5.5	160	80 / 120	10
M10	12	90	7.7	8.5	180	90 / 140	20
M12	14	110	10.0	12.5	220	110 / 160	30
M16	18	125	12.3	23.5	250	125 / 220	60
M20	22	170	17.8	36.5	340	170 / 250	120
M24	26	210	22.0	52.5	420	210 / 310	200

CENTRE TO CENTRE SPACING: For Tensile and Shear loads							
Standard embedment: Axial spacing Tension & Shear							
Axial mm	M8	M10	M12	M16	M20	M24	M30
40	0.63						
50	0.66	0.64					
60	0.69	0.67	0.64				
70	0.72	0.69	0.66	0.64			
80	0.75	0.72	0.68	0.66			
90	0.78	0.75	0.70	0.68	0.63		
100	0.81	0.78	0.73	0.70	0.65		
110	0.84	0.81	0.75	0.72	0.66	0.63	
120	0.88	0.83	0.77	0.74	0.68	0.64	
140	0.94	0.89	0.82	0.78	0.71	0.67	0.63
150	0.97	0.92	0.84	0.80	0.72	0.68	0.63
160	1.00	0.94	0.86	0.82	0.74	0.69	0.64
180		1.00	0.91	0.86	0.76	0.71	0.66
220			1.00	0.94	0.82	0.76	0.70
250				1.00	0.87	0.80	0.72
280					0.91	0.83	0.75
310					0.96	0.87	0.78
340					1.00	0.90	0.80
420						1.00	0.88
500							0.95
550							1.00
Smin	40	50	60	70	90	110	140
S _{cr,N}	160	180	220	255	340	420	550
H min	110	120	140	160	220	270	330
hef	80	90	110	125	170	210	280

Edge Distance							
TENSILE or load way from edge. Reduction Factors							
Edge mm	M8	M10	M12	M16	M20	M24	M30
40	0.75						
45	0.78	0.75					
55	0.84	0.81	0.75				
60	0.88	0.83	0.77				
70	0.94	0.89	0.82	0.78			
80	1.00	0.94	0.86	0.82			
90		1.00	0.91	0.86	0.76		
110			1.00	0.94	0.82	0.76	
125				1.00	0.87	0.80	
140					0.91	0.83	0.75
170					1.00	0.90	0.80
180						0.93	0.82
210						1.00	0.88
250							0.95
280							1.00
Cmin	40	45	55	70	90	110	140
C _{cr,N}	80	90	110	125	170	210	280
H min	110	120	140	160	220	270	330
hef	80	90	110	125	170	210	280

Notes

Edge Distance							
SHEAR or load towards edge. Reduction Factors							
Edge mm	M8	M10	M12	M16	M20	M24	M30
40	0.53						
45	0.56	0.53					
55	0.62	0.59	0.53				
60	0.65	0.61	0.55				
70	0.71	0.66	0.60	0.56			
80	0.77	0.71	0.64	0.60			
90	0.83	0.77	0.68	0.64	0.55		
100	0.88	0.82	0.72	0.67	0.57		
110	0.94	0.87	0.77	0.71	0.60	0.54	
120	1.00	0.92	0.81	0.75	0.63	0.57	
140		1.00	0.89	0.82	0.68	0.61	0.53
160			1.00	0.90	0.74	0.66	0.57
220				1.00	0.90	0.79	0.67
250					1.00	0.86	0.72
310						1.00	0.82
400							0.97
450							1.00
Cmin	40	45	55	70	90	110	140
C _{cr,V}	120	140	160	220	250	310	450
H min	110	120	140	160	220	270	330
hef	80	90	110	125	170	210	280