



BIT-PE



Product Description

BIT-PE Polyester Resin is a high performance, rapid curing two part chemical anchoring system. Applied in one single action this resin will produce a chemical resistant fixing which is cost effective for usage in aerated concrete or hollow wall applications, as well as general purpose.

Key Features

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

Approvals



INSTYTUT TECHNIKI
BUDOWLANEJ
Aprobacje Technicznej
ITB nr AT-15-6895:2011
ITB-973/W



Approval nr.
CAZ 0833/1
Valid
2010-2013
For use
with hollow
masonry

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
MIN. 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

Size	Concrete, $f_{ck, cube} = 25N/mm^2$ (C20/25) 5.8 Grade Steel									SETTING DATA IN SOLID SUBSTRATE				
	Characteristic Resistance (kN)		Design Resistance (kN)		Recommended Load (kN)		Characteristic Edge Distance (mm)		Characteristic Spacing (mm)	Hole Diameter In Concrete	Hole Diameter In Fixture	Standard Embedment In Concrete	Recommended Torque (Nm)	
	Tension (N_{rk})	Shear (V_{rk})	Tension (N_{rd})	Shear (V_{rd})	Tension (N_{rec})	Shear (V_{rec})	Tension ($C_{cr,N}$)	Shear ($C_{cr,V}$)		(mm)	(mm)	(mm)	CONCRETE - BRICK	
M8	17.2	9.5	7.9	7.6	5.6	5.4	80	80	160	10	9	80	6	3
M10	26.2	15.1	12.1	12.1	8.6	8.6	100	90	200	12	11	90	17	13
M12	37.1	21.9	17.1	17.5	12.2	12.5	120	110	240	14	13	110	33	24
M16	43.1	40.8	19.9	32.7	14.2	23.3	160	125	320	18	17	125	75	43
M20	69.7	63.7	32.2	51.0	23.0	36.4	200	180	400	24	22	170	120	-
M24	95.9	91.8	44.4	73.4	31.7	52.4	240	220	480	28	26	210	198	-
M30	-	-	-	-	-	-	265	280	525	35	33	280	480	-

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

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 BIT 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	"		
VOC CONTENT	0.130 %	2.18 g / L		



Typical Performance in Hollow Substrate

SIZE	Recommended Load (kN) Tension or Shear (F_{ec})	
	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

Reduction factors: Spacings and Edge Distances

Spacing Reduction Factor f_A								Edge Distance Reduction Factor f_R																
Tensile Load / Shear Load								Tensile Load f_{RN}									Shear Load f_{RV}							
Spacing	Ø Anchors / Rebar (mm)							Edge Distance (mm)	Ø Anchors / Rebar (mm)															
	8	10	12	16	20	24	30		8	10	12	16	20	24	30	(mm)	8	10	12	16	20	24	30	
40	0.64							40	0.64							40	0.25							
50	0.67	0.63						50	0.73	0.63						50	0.44	0.30						
60	0.70	0.65	0.63					60	0.82	0.70	0.63					60	0.63	0.48	0.30					
70	0.73	0.68	0.64					70	0.90	0.77	0.68					70	0.81	0.65	0.44					
80	0.76	0.70	0.66	0.63				80	1.00	0.84	0.74	0.63				80	1.00	0.83	0.58	0.40				
90	0.79	0.73	0.68	0.64				90		0.91	0.80	0.67				90		1.00	0.72	0.53				
100	0.82	0.75	0.70	0.65	0.63			100		1.00	0.86	0.72	0.63			100			0.86	0.67	0.35			
125	0.89	0.81	0.75	0.69	0.66	0.63		110			0.92	0.77	0.66			110			1.00	0.80	0.44			
150	0.96	0.88	0.80	0.73	0.69	0.65	0.63	120			1.00	0.81	0.70	0.64		125				1.00	0.58	0.35		
160	1.00	0.90	0.82	0.74	0.70	0.66	0.64	140				0.91	0.78	0.67	0.63	140					0.72	0.46	0.30	
175		0.94	0.85	0.76	0.72	0.68	0.65	160				1.00	0.85	0.73	0.66	160					0.91	0.62	0.35	
200		1.00	0.90	0.80	0.75	0.70	0.68	180					0.93	0.80	0.72	180					1.00	0.77	0.46	
225			0.95	0.84	0.78	0.73	0.70	200					1.00	0.86	0.78	200						0.92	0.57	
240			1.00	0.86	0.80	0.75	0.72	220						0.92	0.84	220					1.00	0.68	0.35	
250				0.87	0.81	0.76	0.73	240						1.00	0.90	240						0.78	0.46	
275				0.91	0.84	0.78	0.75	265							1.00	280							1.00	
280				0.92	0.85	0.79	0.76																	
300				0.95	0.88	0.81	0.78																	
320				1.00	0.90	0.83	0.80																	
350					0.94	0.86	0.83																	
400					1.00	0.92	0.88																	
440						0.96	0.92																	
480						1.00	0.96																	
500							0.98																	
525							1.00																	

Characteristic ($V_{rk,s}$) & Design ($V_{rd,s}$) Shear Loads for Various Stud Grades + Rebar

Stud Diameter (mm)	Stud Grade 5.8		Stud Grade 8.8		Stud Grade 10.9		Stud Grade A4-70		Stud Grade A4-80		Rebar Diameter (mm)	BSt 500 Rebar	
	$V_{rk,s}$ (kN)	$V_{rd,s}$ (kN)	$V_{rk,s}$ (kN)	$V_{rd,s}$ (kN)	$V_{rk,s}$ (kN)	$V_{rd,s}$ (kN)	$V_{rk,s}$ (kN)	$V_{rd,s}$ (kN)	$V_{rk,s}$ (kN)	$V_{rd,s}$ (kN)		$V_{rk,s}$ (kN)	$V_{rd,s}$ (kN)
M8	9.5	7.6	14.6	11.7	19.0	15.2	12.8	8.2	14.6	9.4	8	16.6	11.1
M10	15.1	12.1	23.2	18.6	30.2	24.1	20.3	13.0	23.2	14.9	10	25.9	17.3
M12	21.9	17.5	33.7	27.0	43.8	35.1	29.5	18.9	33.7	21.6	12	37.3	24.9
M16	40.8	32.7	62.8	50.2	81.6	65.3	55.0	32.5	62.8	40.3	14	50.8	33.9
M20	63.7	51.0	98.0	78.4	127.4	101.9	85.8	55.0	98.0	62.8	16	66.4	44.3
M24	91.8	73.4	141.2	113.0	183.6	146.8	123.6	79.2	141.2	90.5	20	103.9	69.3
M30	142.5	114.0	207.6	166.1	269.9	215.9	129.8	64.9	207.6	103.8	25	162.0	108.0
											32	265.1	176.7
											40	414.6	276.4

Notes:

All grades shown for information. 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.