CHEMFIX Total Service

PESF

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Product Description

Chemfix PESF - Polyester Styrene Free Low Odour Resin is a high performance, rapid curing two part chemical anchoring system. Applied in one single action this resin will produce a cost effective, strong, chemical resistant fixing.

Key Features

- For use in Hollow Wall, Brickwork, Masonry & Concrete.
- Economical Fixing Resin.
- Medium Duty Load Applications.
- Non Flammable and Non-Hazardous.
- Ideal as well for Indoor Usage.

Approvals

ITB WYRÓB BUDOWLANY

INSTYTUT TECHNIKI BUDOWLANEJ
Aprobacie Technicznej
ITB nr AT-15-6900:2011
ITB-978/W

ASSOCIATION SOCOTEC QUALITÉ 563

Approval nr. CAZ 0834/1
Valid 2010-2013
For use with hollow & masonry

Available Sizes

380ml / 400ml / 410ml 10:1 Co-axial Cartridge
825ml 10:1 Side by Side Cartridge
330ml / 345ml / 350ml 10:1 Side by Side Cartridge
150ml / 165ml / 280ml / 300ml 10:1 Foil Bag
380ml / 400ml / 410ml 10:1 Foil Bag

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

CE 1488
Chemfix Products Ltd
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ETA CE
1488-CPD-0195/W
Chemfix PESF
ETA-11/0032
ETAG 029
For Masonry & Hollow Walls
European Technical Approval

Typical Gel and Curing Time*

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

BASE MATERIAL TEMPERATURE (°C)	35	25	15	5	-5	-10**
TYPICAL GEL TIME (mins)	3	8	13	21	50	60
MIN. LOAD TIME (mins)	20	20	20	30	90	180

**Resin temperature must be at least 20ºC

Typical Performance Data at Standard Embedment Depth

Size	Concrete, $f_{ck,cube}$ = 25N/mm² (C20/25) 5.8 Grade Steel									SETTING DATA			
	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)	(mm)	Concrete/Brick
M8	20.2	9.5	8.1	7.6	5.8	5.4	80	100	160	10	9	80	11 / 5
M10	28.5	15.1	11.4	12.1	8.1	8.6	90	130	180	12	11	90	22 / 17
M12	40.5	21.9	16.2	17.5	11.6	12.5	110	150	220	14	13	110	38 / 28
M16	69.2	40.8	27.7	32.7	19.8	23.3	125	170	250	18	17	125	95 / 75
M20	89.9	63.7	40.7	51.0	29.1	36.4	170	190	340	24	22	170	170 / -
M24	112.6	91.8	46.3	73.4	33.1	52.4	210	240	420	28	26	210	260 / -
M30	-	-	-	-	-	-	280	350	560	35	33	280	480 / -

Typical Ultimate Physical Properties

	N/mm²	TEST METHOD	STORAGE / SHELF LIFE	IMPORTANT
COMPRESSIVE STRENGTH	53.55	(EN ISO 604) / (ASTM 695)	This product should be stored between +5˚C & +25˚C. 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 Chemfix Products 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	24.08	(EN ISO 178) / (ASTM 795)		
FLEXURAL MODULUS	2927.67	"		
TENSILE STRENGTH	12.48	(EN ISO 527) / (ASTM 638)		
E MODULUS	9651.33	"		

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Typical Performance in Hollow Substrate

SIZE	Recommended Load (kN) Tension or Shear (F_{ec})	
	Brickwork 20.5 N/mm²	Blockwork 7 N/mm²
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	8	10	12	16	20	24	30
40	0.64							40	0.64							0.25						
50	0.67	0.63						50	0.73	0.63						0.44	0.30					
60	0.70	0.65	0.63					60	0.82	0.70	0.63					0.63	0.48	0.30				
70	0.73	0.68	0.64					70	0.90	0.77	0.68					0.81	0.65	0.44				
80	0.76	0.70	0.66	0.63				80	1.00	0.84	0.74	0.63				1.00	0.83	0.58	0.40			
90	0.79	0.73	0.68	0.64				90		0.91	0.80	0.67					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					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					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					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					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					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					1.00	0.77	0.46
225			0.95	0.84	0.78	0.73	0.70	200					1.00	0.86	0.78						0.92	0.57
240			1.00	0.86	0.80	0.75	0.72	220						0.92	0.84						1.00	0.68
250				0.87	0.81	0.76	0.73	240						1.00	0.90							0.78
275				0.91	0.84	0.78	0.75	265							1.00							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 (Vrk,s) & Design (Vrd,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	
	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	78.4	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

Rebar Diameter (mm)	BSt 500 Rebar	
	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

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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