

polyester resin **styrene free**

PRODUCT DESCRIPTION

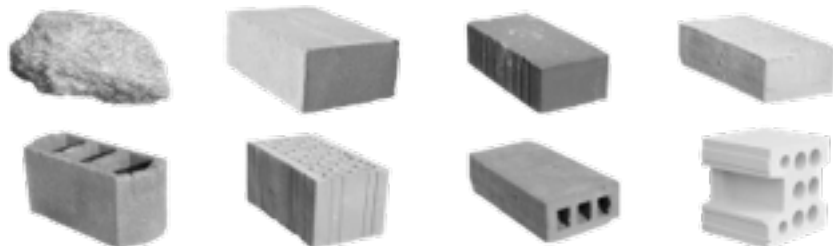
PESF Polyester Styrene Free Low Odour Resin is a high performance, rapid curing two part chemical anchoring system. Applied in one single action this resin will produce a cost effective, strong, chemical resistant fixing.

KEY FEATURES

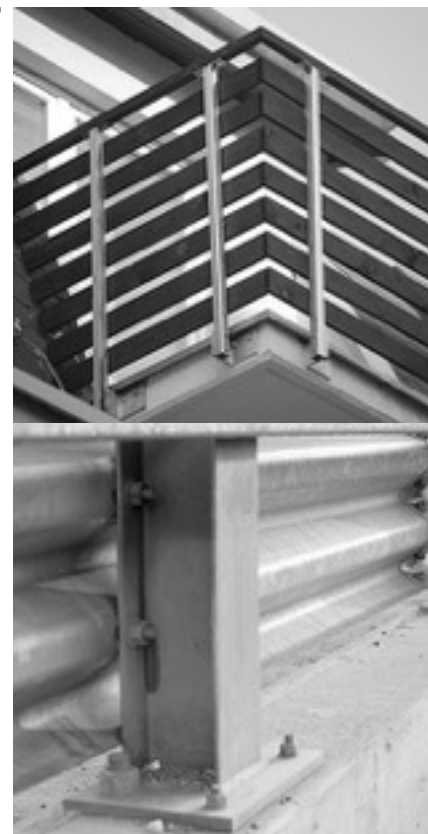
- best for use in hollow wall, brickwork, masonry and concrete
- can be used for both types of substrates: hollow and solid
- the fixing element can be anchored at different depth bearing higher loads
- for different types of fixing elements: threaded rods, rebars, bolts, hooks and others
- Non Flammable and non-hazardous
- ideal as well for indoor use
- high resistance to chemical compounds

Available Sizes

- 300ml
- 410ml



for concrete as well as hollow materials



TECHNICAL APPROVAL - warunki stosowania

substrates:

- concrete C20/25,
- ceramic bricks type 15
- hollow bricks type 7,5
- silicate type 15

threaded rods:

- steel grade 5,8 zinc min. 5 microns

approved diameters:

- concrete:
M8 - M24 - standard depth of anchoring
- other substrates:
M8 - M16 with plastic sleeves

INSTYTUT TECHNIKI BUDOWLANEJ
Technical Approval AT-15-8866:2012



Typical Gel and Curing Time*

BASE MATERIAL TEMP.	35	25	15	5	-5	-10**
TYPICAL GEL TIME (mins)	3	3	6	12	50	60
MIN. LOAD TIME (mins)	20	30	35	50	90	180

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

** Resin temperature must be at least 20 C

Certificate no ITB-2145/W
dated 10.04.2012
Zakład Certyfikacji ITB



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Typical performance at Standard Embedment Depth

size	Concrete, fck cube = 25N/mm ² (C20/25) 5.8 Grade Steel								
	Characteristic Resistance (kN)		Design Resistance (kN)		Recommended Load (kN)		Characteristic Edge Distance (mm)		Characteristic Spacing (mm)
	Tension (Nrk)	Shear (vrk)	Tension (Nrk)	Shear (vrk)	Tension (Nrk)	Shear (vrk)	Tension (Nrk)	Shear (vrk)	
M8	20.2	9.5	8.1	7.6	5.8	5.4	80	100	160
M10	28.5	15.1	11.4	12.1	8.1	8.6	90	130	180
M12	40.5	21.9	16.2	17.5	11.6	12.5	110	150	220
M16	69.2	40.8	27.7	32.7	19.8	23.3	125	170	250
M20	89.9	63.7	40.7	51.0	29.1	36.4	170	190	340
M24	112.6	91.8	46.3	73.4	33.1	52.4	210	240	420
M30	-	-	-	-	-	-	280	350	560



SETTING DATA				
Rozmiar	Hole Diameter in Concrete (mm)	Hole Diameter in Fixture (mm)	Standard Embedment in Concrete (mm)	Recommended Torque (Nm) Concrete/Brick
M8	10	9	80	11 / 5
M10	12	11	90	22 / 17
M12	14	13	110	38 / 28
M16	18	17	125	95 / 75
M20	24	22	170	170 / -
M24	28	26	210	260 / -
M30	35	33	280	480 / -

	N/mm ²	TEST METHOD	STORAGE / SHELF LIFE	IMPORTANT
COMPRESSIVE STRENGTH	53.55	(EN ISO 604) / (ASTM 695)	this product should be stored between +5°C and +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 Amex 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)		
FLEXULAR MODULUS	2927.67	-		
TENSILE STRENGTH	12.48	(EN ISO 527) / (ASTM 638)		
E MODULUS	9651.33	-		

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Typical performance at Standard Embedment Depth in ceramic brick



SIZE threaded rod	SIZE nylon sleeve	ceramic brick solid class 15		
		minimal embedment depth [mm]	Characteristic Resistance (kN)	Design Resistance (kN)
			load at every angle	load at every angle
M8	12 x 50	50	8,1	2,9
M10	15 x 85	85	13,2	4,7
M12	20 x 85	85	16,4	5,8
M16	20 x 85	85	17,3	6,2



Typical performance at Standard Embedment Depth in silka brickwork



SIZE threaded rod	SIZE nylon sleeve	silka solid class 15		
		minimal embedment depth [mm]	Characteristic Resistance (kN)	Design Resistance (kN)
			load at every angle	load at every angle
M8	12 x 50	50	6,3	2,2
M10	15 x 85	85	12,8	4,6
M12	20 x 85	85	15,2	5,4
M16	20 x 85	85	15,8	5,6



Typical performance at Standard Embedment Depth in ceramic hollow brick



SIZE threaded rod	SIZE nylon sleeve	ceramic brick hollow class 7,5		
		minimal embedment depth [mm]	Characteristic Resistance (kN)	Design Resistance (kN)
			load at every angle	load at every angle
M8	12 x 50	50	1,5	0,5
M10	15 x 85	85	4,1	1,5
M12	20 x 85	85	7,5	2,7
M16	20 x 85	85	7,6	2,7

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Edge Distance and Spacing (Concrete)

The edge distance as well as the spacing are the minimal acceptable distances to achieve the characteristic as well as the recommended loads values as stated in approval. If the distances can not be met the loads must be decreased by the reduction factors according to the tables below.



REDUCTION FACTORS

edge distance (concrete)

EDGE (mm)	TENSILE 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)	SHEAR EDGE REDUCTION FACTORS							EDGE (mm)	TENSILE SPACING REDUCTION FACTORS						
	M8	M10	M12	M16	M20	M24	M30		M8	M10	M12	M16	M20	M24	M30
60	0.65							50	0.66						
75	0.76	0.70						60	0.69						
90	0.88	0.80	0.69					70	0.72	0.69					
100	1.00	0.87	0.75	0.68				80	0.75	0.72					
115		0.97	0.83	0.75				90	0.78	0.75	0.70				
130		1.00	0.91	0.83	0.66			100	1.00	0.78	0.73	0.70			
150			1.00	0.92	0.73	0.63		115		0.82	0.76	0.73			
170				1.00	0.80	0.69		130		1.00	0.80	0.76	0.69		
190					1.00	0.74		150			1.00	0.80	0.72	0.68	
210						0.80	0.65	170				1.00	0.75	0.70	
240							1.00	0.71	190				0.78	0.73	
280								0.80	210				1.00	0.75	0.69
300								0.84	240					1.00	0.71
325								0.90	280						0.75
350								1.00	300						0.77
									325						0.79
									350						1.00

Characteristic & Design Shear Loads for various stud grades

Stud diameter (mm)	klasa stali 5.8		klasa stali 8.8		klasa stali 10.9		klasa stali A4-70		klasa stali 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	32.2	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

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