

RESICON³

high performance chemical injection anchoring

epoxy acrylate styrene free

Product Description

Resicon 3 Epoxy Acrylate 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 Wet holes and underwater.
- Good Chemical Resistance.
- Medium & Heavy Duty Load Applications.
- High Durability.
- Ideal as well for Indoor Usage.

Approvals



INSTYTUT TECHNIKI BUDOWLANEJ

Aprobacje Technicznej ITB nr AT-15-6835:2005

Available Sizes

345ml 10:1 Side by Side Cartridge

Tested by:

**Imperial College
London**
Consultants

IMPORTANT NOTE:

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

Typical Gel and Curing Time*

*Figures are based on M12 fixings. Full cure is achieved after 24 hours. All Specifications are based on use of a Resicon Mixer 14

BASE MATERIAL TEMPERATURE (°C)	35	25	15	5	-5	-10**
TYPICAL GEL TIME (mins)	3	6	8	18	50	60
MIN. LOAD TIME (mins)	20	20	20	30	90	180

Typical Performance Data at Standard Embedment Depth

**Resin temperature must be at least 20°C

Size	Concrete, $f_{ck, cube} = 25N/mm^2$ (C20/25) 5.8 Grade Studding									SETTING DATA			
	Characteristic Resistance (kN)		Design Resistance (kN)		Recommended Load (kN)		Characteristic Edge Distance (mm)		Characteristic Spacing (mm)	Hole Diameter In Concrete (mm)	Hole Diameter In Fixture (mm)	Standard Embedment In Concrete (mm)	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 ($C_{cr,V}$)					
M8	19.0	9.5	12.7	7.6	9.1	5.4	80	100	160	10	9	80	11
M10	30.2	15.1	16.0	12.1	11.4	8.6	90	130	180	12	11	90	22
M12	43.8	21.9	20.3	17.5	14.5	12.5	110	150	220	14	13	110	38
M16	61.4	40.8	28.4	32.7	20.3	23.3	125	170	250	18	17	125	95
M20	97.6	63.7	38.9	51.0	27.8	27.7	170	190	340	24	22	170	170
M24	127.1	91.8	50.4	73.4	36.0	52.4	210	240	420	28	26	210	260
M30	179.7	207.1	71.3	166.1	50.9	118.6	280	350	560	35	33	280	480

Typical Ultimate Physical Properties

	N/mm ²	TEST METHOD	STORAGE / SHELF LIFE	IMPORTANT
COMPRESSIVE STRENGTH	62.70	(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 Heads and All threads 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	23.88	(ASTM 795)		
FLEXURAL MODULUS	3250.33	-		
TENSILE STRENGTH	12.85	(ASTM 638)		
E MODULUS	6860.33	-		

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Performance Data for Various Stud Strengths, Material and Rebar

Concrete Strength Class: C20/25 (25N/mm² Cylinder; 30N/mm² 150mm cube).

IMPORTANT NOTE:

Performance based on clean holes;

HAMMER DRILLED - Blown and then brushed with a stiff metal brush & blown again.

5.8 Grade Studding

Stud Diameter (mm)	Hole Diameter (mm)	Design Resistance (N _{rd}) (kN)																		Fd,s						
																				hef failure (mm)	design load (kN)					
8	10	12.7																		78	12.7					
10	12		16.0	17.8	19.6	20.1														=	Steel	Failure	113	20.1		
12	14				20.3	22.1	24.0	25.8	27.7	29.2													159	29.2		
16	18					27.0	29.3	31.5	33.8	36.0	38.3	40.5	42.8	45.0	49.5	54.1	54.4							242	54.4	
Depth (mm)		80	90	100	110	120	130	140	150	160	170	180	190	200	220	240	260	280	300	350						
20	24	38.9	41.2	43.5	45.7	50.3	54.9	59.5	64.0	68.6	80.1	84.9												371	84.9	
24	28				48.0	52.8	57.6	62.4	67.2	72.1	84.1	96.1	108.1	120.1	122.4										510	122.4
30	40								71.3	76.4	89.1	101.8	114.5	127.3	140.0	152.7	178.2	203.6	229.1	254.5				1096	278.9	
Depth (mm)		170	180	190	200	220	240	260	280	300	350	400	450	500	550	600	700	800	900	1000						

8.8 Grade Studding

Stud Diameter (mm)	Hole Diameter (mm)	Design Resistance (N _{rd}) (kN)																		Fd,s							
																				hef failure (mm)	design load (kN)						
8	10	13.0	14.6	16.2	17.8	19.5																	121	19.5			
10	12		16.0	17.8	19.6	21.3	23.1	24.9	26.7	28.5	30.2	30.9									=	Steel	Failure	174	30.9		
12	14				20.3	22.1	24.0	25.8	27.7	29.5	31.3	33.2	35.0	36.9	40.6	44.2	45.0								244	45.0	
16	18					27.0	29.3	31.5	33.8	36.0	38.3	40.5	42.8	45.0	49.5	54.1	58.6	63.1	67.6	78.8				372	83.7		
Depth (mm)		80	90	100	110	120	130	140	150	160	170	180	190	200	220	240	260	280	300	350							
20	24	38.9	41.2	43.5	45.7	50.3	54.9	59.5	64.0	68.6	80.1	91.5	102.9	114.4	125.8	130.7									571	130.7	
24	28				48.0	52.8	57.6	62.4	67.2	72.1	84.1	96.1	108.1	120.1	132.1	144.1	168.1	188.3								784	188.3
30	40								71.3	76.4	89.1	101.8	114.5	127.3	140.0	152.7	178.2	203.6	229.1	254.5				1096	278.9		
Depth (mm)		170	180	190	200	220	240	260	280	300	350	400	450	500	550	600	700	800	900	1000							

10.9 Grade Studding

Stud Diameter (mm)	Hole Diameter (mm)	Design Resistance (N _{rd}) (kN)																		Fd,s							
																				hef failure (mm)	design load (kN)						
8	10	13.0	14.6	16.2	17.8	19.4	21.0	22.7	24.3	25.9	27.2									=	Steel	Failure	168	27.2			
10	12		16.0	17.8	19.6	21.3	23.1	24.9	26.7	28.5	30.2	32.0	33.8	35.6	39.1	43.1									242	43.1	
12	14				20.3	22.1	24.0	25.8	27.7	29.5	31.3	33.2	35.0	36.9	40.6	44.2	47.9	51.6	55.3	62.6				340	62.6		
16	18					27.0	29.3	31.5	33.8	36.0	38.3	40.5	42.8	45.0	49.5	54.1	58.6	63.1	67.6	78.8				518	116.6		
Depth (mm)		80	90	100	110	120	130	140	150	160	170	180	190	200	220	240	260	280	300	350							
20	24	38.9	41.2	43.5	45.7	50.3	54.9	59.5	64.0	68.6	80.1	91.5	102.9	114.4	125.8	137.2	160.1	182.0								796	182.0
24	28				48.0	52.8	57.6	62.4	67.2	72.1	84.1	96.1	108.1	120.1	132.1	144.1	168.1	192.1	216.2	240.2				1092	262.2		
30	40								71.3	76.4	89.1	101.8	114.5	127.3	140.0	152.7	178.2	203.6	229.1	254.5				1527	388.5		
Depth (mm)		170	180	190	200	220	240	260	280	300	350	400	450	500	550	600	700	800	900	1000							

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A4-70 Stainless Steel Studding

Stud Diameter (mm)	Hole Diameter (mm)	Design Resistance (N _{rd}) (kN)																		Fd,s				
																				hef failure (mm)	design load (kN)			
8	10	13.0	13.7																		85	13.7		
10	12		16.0	17.8	19.6	21.3	21.7													=	Steel	Failure	122	21.7
12	14				20.3	22.1	24.0	25.8	27.7	29.5	31.3	31.6											171	31.6
16	18					27.0	29.3	31.5	33.8	36.0	38.3	40.5	42.8	45.0	49.5	54.1	58.8						261	58.8
Depth (mm)		80	90	100	110	120	130	140	150	160	170	180	190	200	220	240	260	280	300	350				

20	24	38.9	41.2	43.5	45.7	50.3	54.9	59.5	64.0	68.6	80.1	91.7											401	91.7
24	28				48.0	52.8	57.6	62.4	67.2	72.1	84.1	96.1	108.1	120.1	132.1								550	132.1
30	40								71.3	76.4	89.1	101.8	114.5	127.3	139.8								549	139.8
Depth (mm)		170	180	190	200	220	240	260	280	300	350	400	450	500	550	600	700	800	900	1000				

A4-80 Stainless Steel Studding

Stud Diameter (mm)	Hole Diameter (mm)	Design Resistance (N _{rd}) (kN)																		Fd,s				
																				hef failure (mm)	design load (kN)			
8	10	13.0	14.6	15.7																		97	15.7	
10	12		16.0	17.8	19.6	21.3	23.1	24.8												=	Steel	Failure	140	24.8
12	14				20.3	22.1	24.0	24.8	27.7	29.5	31.3	33.2	35.0	36.1									196	36.1
16	18					27.0	29.3	31.5	33.8	36.0	38.3	40.5	42.8	45.0	49.5	54.1	58.6	63.1	67.2				298	67.2
Depth (mm)		80	90	100	110	120	130	140	150	160	170	180	190	200	220	240	260	280	300	350				

20	24	38.9	41.2	43.5	45.7	50.3	54.9	59.5	64.0	68.5	80.1	91.5	102.9	104.8									458	104.8
24	28				48.0	52.8	57.6	62.4	67.2	72.1	84.1	96.1	108.1	120.1	132.1	144.1	151.0						629	151.0
30	40								71.3	76.4	89.1	101.8	114.5	127.3	140.0	152.7	187.2	203.6	223.7				879	223.7
Depth (mm)		170	180	190	200	220	240	260	280	300	350	400	450	500	550	600	700	800	900	1000				

High Bond Reinforcing Bars fyk=500N/mm²

Rebar Diameter (mm)	Hole Diameter (mm)	Design Resistance (N _{rd}) (kN)																		Fd,s				
																				hef failure (mm)	design load (kN)			
8	12	13.0	16.2	19.4	21.9																		135	21.9
10	14		17.8	21.4	24.9	28.5	32.1	34.1												=	Steel	Failure	192	34.1
12	16				22.2	25.9	29.6	33.3	36.9	40.6	44.3	48.0	49.2										266	49.2
14	18					28.9	33.1	37.2	41.3	45.5	49.6	53.8	57.9	62.0	66.2	66.9							324	66.9
16	22						36.0	40.5	45.0	49.5	54.1	58.6	63.1	67.6	72.1	76.6	81.1	85.6	87.4				388	87.4
Depth (mm)		80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	450	500				

20	28	45.7	51.5	57.2	62.9	68.6	80.1	91.5	102.9	114.4	125.8	136.6											597	136.6
25	32			62.5	68.8	75.1	87.6	100.1	112.6	125.1	137.6	150.1	175.1	200.1	213.4								853	213.4
32	40					81.4	95.0	108.6	122.2	135.7	149.3	162.9	190.0	217.2	244.3	271.5	298.6	325.8	349.7				1288	349.7
40	50							123.2	138.6	154.0	169.4	184.7	215.5	246.3	277.1	307.9	338.7	369.5	400.3	431.1			1774	546.3
Depth (mm)		200	225	250	275	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400				

Characteristic & Design 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)	Rebar Diameter (mm)	
	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)		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	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	207.1	166.1	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 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