IKA-CV 380ml + 30ml Extra SPECIFICATION

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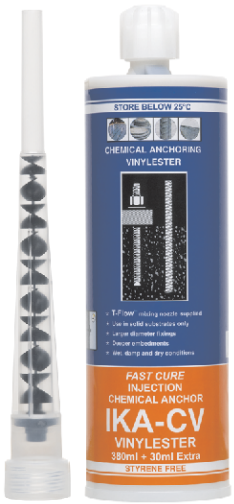

Product Description

IKA-CV 380ml + 30ml Extra Low Odour Resin is a high performance, rapid curing two part chemical anchoring system based on a high reactivity Vinylester. Applied in one single action this resin will produce a strong, chemical resistant fixing.

Key Features

- European Technical Approval (Option 1 & 7).
- High Load & Critical Loads (overhead applications).
- Guaranteed 50 years working life of anchor.
- Suitable for Underwater Applications.
- High Chemical Resistance.
- Fire Rated

Approvals

Tested by:

CSTB le futur en construction

CE Marking

CE 0679	CE 0679	CE 0679
12	12	14
0679-CPD-0746	0679-CPD-0746	
ETA-12/0024 ETAG 01-05 Option 7 M8 - M24 / rebar Ø 8 to 25mm	ETA-12/0024 ETAG 01-05 Option 1 M12 - M16 / threaded bars	ETA-14/0057 ETAG 01-01 TR 023 Post-Installed Rebar Ø 8 - 16mm
European Technical Approval - Option 7 for non-cracked concrete	European Technical Approval - Option 1 for Cracked Concrete	European Technical Approval -

VOC CLASSIFICATION*

A+ (A+ A B C)

*Information on the emission of volatile substances in indoor air, with a risk of inhalation toxicity, on a scale ranging from class A + (very low emissions) to C (high emissions) level.

FIRE RATED R240

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*

*Full cure is achieved after 24 hours. All specifications are based on use of a IKA Anchors™ Mixer.

BASE MATERIAL TEMPERATURE (°C)	35	25	15	5	-5**	-10**
TYPICAL GEL TIME (mins)	3	5	8	15	40	40
MIN. LOAD TIME (mins)	30	45	60	120	240	240

**Resin temperature must be at least 20°C

Typical Tensile (kN) Performance Data at Standard Embedment Depth

Size	Setting Data			5.8 Grade Steel Studding			A4-70 Grade Steel Studding			High Bond Reinforcing bars fyk=500N/mm²			
	Hole Diameter In Concrete (mm)	Standard Embedment In Concrete	Approx. No of Holes per 380 + 30mm Cartridge	Characteristic Resistance (N_{rk})	Design Resistance (N_{rd})	Recommended Load (N_{rec})	Characteristic Resistance (N_{rk})	Design Resistance (N_{rd})	Recommended Load (N_{rec})	Rebar Size (mm)	Steel Yield Load	Design Bond Load	Recommended Load
M8	10	80	90	19.0	12.7	9.0	25.6	13.7	9.8	8	21.9	11.7	8.3
M10	12	90	65	30.2	20.1	14.3	33.8	21.7	15.5	10	34.1	15.6	11.1
M12	14	110	42	43.8	29.2	20.8	46.8	31.2	22.3	12	49.2	21.6	15.4
M16	18	125	28	67.8	45.2	32.3	67.8	45.2	32.3	14	66.9	26.4	18.9
M20	24	125	10	104.1	69.4	49.5	104.1	69.4	49.5	16	81.0	27.6	19.7
M24	28	170	7	133.5	88.6	63.3	133.5	88.6	63.3	20	108.0	38.5	27.5
M30	35	210	3	182.0	121.3	86.7	182.0	121.3	86.7	25	140.0	59.4	42.4
		300								32	179.1	99.5	71.1
		360								40	244.3	149.3	106.6

Typical Ultimate Physical Properties

	N/mm²	TEST METHOD	STORAGE / SHELF LIFE	IMPORTANT
COMPRESSIVE STRENGTH	86.30	(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 IKA Anchors 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	29.47	(EN ISO 178) / (ASTM 790)		
FLEXURAL MODULUS	3852	"		
TENSILE STRENGTH	13.84	(EN ISO 527) / (ASTM 638)		
E MODULUS	10560	"		
VOC CONTENT	0.040 %	0.66 g / L		

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Performance Data for Various Stud Strengths, 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	Hole Diameter (mm)	Design Resistance (N_{rd}) (kN)																			Fd,s hef failure (mm)	Fd,s design load (kN)
M8	10	12.7																			60	12.7
M10	12		20.1														=	Steel Failure			80	20.1
M12	14				29.2																103	29.2
M16	18					43.3	46.9	50.5	54.1	54.4											151	54.4
Depth (mm)		80	90	100	110	120	130	140	150	160	170	180	190	200	220	240	260	280	300	350		
M20	24	69.4	73.5	77.6	81.7	84.9															208	84.9
M24	28				84.5	92.9	101.3	109.8	118.2	122.4											290	122.4
M30	35								121.4	130.1	151.8	173.4	181.3								418	181.3
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	Hole Diameter (mm)	Design Resistance (N_{rd}) (kN)																			Fd,s hef failure (mm)	Fd,s design load (kN)
M8	10	16.9	19.0	19.5																	93	19.5
M10	12		22.5	25.0	27.5	30.1	30.9										=	Steel Failure			124	30.9
M12	14				31.4	34.2	37.1	39.9	42.8	45.0											158	45.0
M16	18					43.3	46.9	50.5	54.1	57.7	61.3	64.9	68.5	72.1	79.3	83.7					232	83.7
Depth (mm)		80	90	100	110	120	130	140	150	160	170	180	190	200	220	240	260	280	300	350		
M20	24	69.4	73.5	77.6	81.7	89.9	98.0	106.2	114.4	122.5	130.7										320	130.7
M24	28				84.5	92.9	101.3	109.8	118.2	126.7	147.8	168.9	188.3								446	188.3
M30	35								121.4	130.1	151.8	173.4	195.1	216.8	238.5	260.2	278.9				643	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	Hole Diameter (mm)	Design Resistance (N_{rd}) (kN)																			Fd,s hef failure (mm)	Fd,s design load (kN)
M8	10	16.9	19.0	21.1	23.2	25.3	27.2														129	27.2
M10	12		22.5	25.0	27.5	30.1	32.6	35.1	37.6	40.1	42.6	43.1						=	Steel Failure		172	43.1
M12	14				31.4	34.2	37.1	39.9	42.8	45.6	48.5	51.3	54.2	57.0	62.6						220	62.6
M16	18					43.3	46.9	50.5	54.1	57.7	61.3	64.9	68.5	72.1	79.3	86.5	93.7	116.6			324	116.6
Depth (mm)		80	90	100	110	120	130	140	150	160	170	180	190	200	220	240	260	350				
M20	24	69.4	73.5	77.6	81.7	89.9	98.0	106.2	114.4	122.5	143.0	163.4	182.0								446	182.0
M24	28				84.5	92.9	101.3	109.8	118.2	126.7	147.8	168.9	190.0	211.1	232.3	253.4	262.2				621	262.2
M30	35								121.4	130.1	151.8	173.4	195.1	216.8	238.5	260.2	303.5	388.5			896	388.5
Depth (mm)		170	180	190	200	220	240	260	280	300	350	400	450	500	550	600	700	1000				

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A4-70 Stainless Steel Studding

Stud Diameter	Hole Diameter (mm)	Design Resistance (N_{rd}) (kN)																		Fd,s	
																				hef failure (mm)	design load (kN)
M8	10	13.7																		65	13.7
M10	12		21.7													=	Steel Failure			87	21.7
M12	14				31.4	31.6														111	31.6
M16	18					43.3	46.9	50.5	54.1	57.7	58.8									163	58.8
Depth (mm)		80	90	100	110	120	130	140	150	160	170	180	190	200	220	240	260	280	300	350	
M20	24	69.4	73.5	77.6	81.7	89.9	91.7													225	91.7
M24	28				84.5	92.9	101.3	109.8	118.2	126.7	132.1									313	132.1
M30	35								121.4	130.1	151.8	173.4	195.1	195.8						452	195.8
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	Hole Diameter (mm)	Design Resistance (N_{rd}) (kN)																		Fd,s	
																				hef failure (mm)	design load (kN)
M8	10	15.7																		74	15.7
M10	12		22.5	24.8												=	Steel Failure			99	24.8
M12	14				31.4	34.2	36.1													127	36.1
M16	18					43.3	46.9	50.5	54.1	57.7	61.3	64.9	67.2							186	67.2
Depth (mm)		80	90	100	110	120	130	140	150	160	170	180	190	200	220	240	260	280	300	350	
M20	24	69.4	73.5	77.6	81.7	89.9	98.0	104.8												257	104.8
M24	28				84.5	92.9	101.3	109.8	118.2	126.7	147.8	151.0								358	151.0
M30	35								121.4	130.1	151.8	173.4	195.1	216.8	223.7					516	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	10-12	11.7	14.6	17.5	20.4	21.9														150	21.9
10	12-14		17.3	20.7	24.2	27.6	31.1	34.1								=	Steel Failure			198	34.1
12	16-18			23.5	27.4	31.4	35.3	39.2	43.1	47.1	49.2									251	49.2
14	18-20				29.6	33.8	38.0	42.2	46.5	50.7	54.9	59.1	63.3	66.9						317	66.9
16	20-22					35.4	39.8	44.2	48.7	53.1	57.5	61.9	66.4	70.8	75.2	79.6	84.1	87.4		395	87.4
Depth (mm)		80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	500			
20	25-28	45.2	50.9	56.6	62.2	67.9	79.2	90.5	101.8	113.1	124.4	136.6								604	136.6
25	30-32			70.7	77.8	84.8	99.0	113.1	127.3	141.4	155.5	169.7	197.9	213.4						755	213.4
32	39-42					99.5	116.1	132.7	149.3	165.9	182.5	199.1	232.3	265.4	298.6	331.8	349.7			1054	349.7
40	48-52							165.9	186.6	207.4	228.1	248.8	290.3	331.8	373.3	414.7	456.2	546.3		1317	546.3
Depth (mm)		200	225	250	275	300	350	400	450	500	550	600	700	800	900	1000	1100	1400			

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Loads, Edge and Spacings based on characteristic bond strengths

Size	Characteristic Resistance (kN)		Design Resistance (kN)		Recommended Load (kN)		Characteristic Distances (mm)			Min Edge and Spacing (mm)	Nominal Embedment (mm)	Hole Diameter concrete (mm)	Hole Diameter fixture (mm)	Max Torque (Nm)
	Tension	Shear	Tension	Shear	Tension	Shear	Edge	Spacing	Edge					
	Nrk	Vrk	Nrd	Vrd	Nrec	Vrec	Ccr,N	Scr,N	Ccr,V	Cmin Smin				
M8	19.30	9.00	12.87	7.20	9.19	5.14	80	160	80	40	60	10	9	10
	25.74		17.16		12.26						80			
	51.47		34.31		24.51						160			
M10	22.54	15.00	15.03	12.00	10.74	8.57	100	200	90	50	60	12	12	20
	33.82		22.54		16.10						90			
	75.15		50.10		35.78						200			
M12	29.82	21.00	19.88	16.80	14.20	12.00	120	240	110	60	70	14	14	30
	46.86		31.24		22.31						110			
	102.24		68.16		48.69						240			
M16	43.43	39.00	28.95	31.20	20.68	22.29	160	320	175	80	80	18	18	60
	67.86		45.24		32.31						125			
	173.72		115.81		82.72						320			
M20	55.14	61.00	36.76	48.80	26.25	34.86	200	400	225	100	90	24	22	90
	104.14		69.43		49.59						170			
	245.04		163.36		116.69						400			
M24	63.33	88.00	42.22	70.40	30.16	50.29	230	460	280	120	100	28	26	140
	133.00		88.67		63.33						210			
	304.01		202.67		144.76						480			
M30	78.04	142.50	52.02	114.0	37.16	81.42	280	560	460	150	120	35	32	260
	182.09		121.39		86.71						280			
	390.19		260.12		185.80						600			

Shear values based on 5.8 grade steel

Characteristic (Vrk,s) & Design (Vrd,s) Shear Loads for Various Stud Grades + Rebar

Stud Diameter	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	9.0	7.2	14.6	11.7	19.0	15.2	12.8	8.2	14.6	9.4
M10	15.0	12.0	23.2	18.6	30.2	24.1	20.3	13.0	23.2	14.9
M12	21.0	16.8	33.7	27.0	43.8	35.1	29.5	18.9	33.7	21.6
M16	39.0	31.2	62.8	50.2	81.6	65.3	55.0	32.5	62.8	40.3
M20	61.0	48.8	98.0	78.4	127.4	101.9	85.8	55.0	98.0	62.8
M24	88.0	70.4	141.2	113.0	183.6	146.8	123.6	79.2	141.2	90.5
M30	142.5	114.0	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 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.

Typical Performance in Hollow Substrate

Size	Recommended Load (kN)	
	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)							(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							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	0.67	0.64					70	0.90	0.77	0.68					70	0.81	0.65	0.44				
80	0.76	0.69	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	0.72	0.68	0.64				90		0.91	0.80	0.67				90		1.00	0.72	0.46			
100	0.82	0.74	0.70	0.65	0.63			100		1.00	0.86	0.71	0.63			100			0.86	0.51	0.35		
120	0.87	0.79	0.74	0.68	0.65	0.63		110			0.92	0.76	0.66			110			1.00	0.57	0.40		
150	0.96	0.86	0.80	0.73	0.68	0.65	0.63	120			1.00	0.80	0.70	0.64		120				0.63	0.45	0.35	
160	1.00	0.88	0.82	0.74	0.70	0.66	0.63	140				0.89	0.77	0.67	0.63	150				0.80	0.61	0.45	0.30
175		0.92	0.85	0.76	0.71	0.67	0.64	150				1.00	0.80	0.70	0.63	175				1.00	0.74	0.56	0.36
200		1.00	0.90	0.80	0.74	0.69	0.66	180					0.91	0.78	0.70	200					0.87	0.66	0.42
225			0.95	0.84	0.77	0.72	0.68	200					1.00	0.84	0.76	225					1.00	0.76	0.47
240			1.00	0.86	0.79	0.72	0.69	220						0.89	0.81	280						1.00	0.60
250				0.87	0.80	0.74	0.70	240						1.00	0.86	360							0.79
275				0.91	0.83	0.76	0.72	280							1.00	460							1.00
280				0.92	0.84	0.77	0.73																
300				0.95	0.86	0.79	0.74																
320				1.00	0.88	0.81	0.76																
350					0.92	0.83	0.78																
400					1.00	0.88	0.82																
440						0.92	0.85																
460						1.00	0.87																
500							0.90																
560							1.00																

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