

AC500 v4 + ATR



Applications

- Concrete
- Stone
- Ytong (AAC)

Properties

- Epoxy adhesive
- Seismic approval C1 & C2



Single-Anchor Load Table (Concrete C30)

Rod diameter					M8	M10	M12	M16	M20	M24	M27	M30	
8.8 rods With steel threaded rods	Un-cracked concrete	Characteristic resistance	Tension	$N_{Rk,c}$	kN	43.1	51.4	69.5	84.2	133.5	183.4	224	282.3
			Tension	$N_{Rk,p}$		28.7	37.5	55	76.9	130.7	177.7	207.7	242.3
			Tension	$N_{Rk,s}$		29.3	46.4	67	126	196	282.5	367.1	448.8
			Shear	$V_{Rk,s}$		14.6	23.2	33.7	62.8	98	141.2	183.5	224.4
		Design resistance	Tension	N_{Rd}		19.1	25	36.7	51.3	87.2	118.4	115.4	134.6
			Shear	V_{Rd}		12	18.6	27.2	50.4	78.4	113	147.2	179.5
		Recommended / service load	Tension	N_{rec}		13.7	17.9	26.2	36.6	62.3	84.6	82.4	96.1
			Shear	V_{rec}		8.6	13.3	19.4	36	56	80.7	105.1	128.2
	Cracked concrete	Characteristic resistance	Tension	$N_{Rk,c}$	kN	30.2	36	48.7	58.9	93.5	128.3	156.8	197.6
			Tension	$N_{Rk,p}$		16.4	23.1	31.7	48.1	76.3	113.1	103.8	134.6
			Tension	$N_{Rk,s}$		29.3	46.4	67	126	196	282.5	367.1	448.8
			Shear	$V_{Rk,s}$		14.6	23.2	33.7	62.8	98	141.2	183.5	224.4
		Design resistance	Tension	N_{Rd}		10.9	15.4	21.2	32	50.8	75.4	57.7	74.8
			Shear	V_{Rd}		12	18.6	27	50.2	78.4	113	146.8	179.5
		Recommended / service load	Tension	N_{rec}		7.8	11	15.1	22.9	36.3	53.8	41.2	53.4
			Shear	V_{rec}		8.6	13.3	19.3	35.9	56	80.7	104.9	128.2
5.8 rods With steel threaded rods	Un-cracked concrete	Characteristic resistance	Tension	$N_{Rk,c}$	kN	43.1	51.4	69.5	84.2	133.5	183.4	224	282.3
			Tension	$N_{Rk,p}$		28.7	37.5	55	76.9	130.7	177.7	207.7	242.3
			Tension	$N_{Rk,s}$		18	29	42	79	122	176	230	280
			Shear	$V_{Rk,s}$		9	15	21	39	61	88	115	140
		Design resistance	Tension	N_{Rd}		12	19.3	28	51.3	81.3	117.3	115.4	134.6
			Shear	V_{Rd}		7.2	12	16.8	31.2	48.8	70.4	92	112
		Recommended / service load	Tension	N_{rec}		8.6	13.8	20	36.6	58.1	83.8	82.4	96.1
			Shear	V_{rec}		5.1	8.6	12	22.3	34.9	50.3	65.7	80

General data			M8	M10	M12	M16	M20	M24	M27	M30
Drill hole diameter	d_o	mm	10	12	14	18	22 (24)	26	30	35
Nominal embedment depth	h_{nom}	mm	80	90	110	125	170	210	240	280
Min. concrete thickness beyond drill depth		mm	20	20	30	30	40	40	40	40
Max. installation torque	T_{max}	Nm	10	20	40	80	150	200	270	300
Adhesive per hole (incl. 35% waste)		ml	5	7	11	17	45 (30)	46	75	89
Holes per 585 ml cartridge			76	55	37	23	9 (13)	12	5	4

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Anchor Spacing & Edge Distances by Selected Embedment Depth

Anchor embedment depth	h_{ef}	mm	80	90	100	110	125	150	170
Critical spacing	s_{cr}	mm	240	270	300	330	375	450	510
Minimum spacing	s_{min}	mm	40	45	50	55	62.5	75	85
Critical edge distance	c_{cr}	mm	120	135	150	165	187.5	225	255
Minimum edge distance	c_{min}	mm	40	45	50	55	62.5	75	85

Anchor embedment depth	h_{ef}	mm	200	210	240	280	300	340	400
Critical spacing	s_{cr}	mm	600	630	720	840	900	1020	1200
Minimum spacing	s_{min}	mm	100	105	120	140	150	170	200
Critical edge distance	c_{cr}	mm	300	315	360	420	450	510	600
Minimum edge distance	c_{min}	mm	100	105	120	140	150	170	200

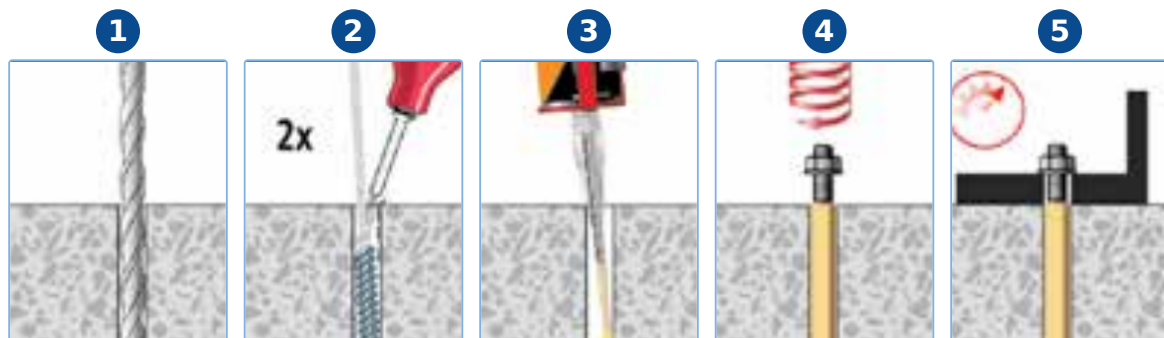
Minimum spacings/edge distances involve a reduction in load capacity. Critical (optimal) spacings apply to tension only; for shear resistance there is no optimal spacing – calculate per each anchor's application.

Single-Anchor Seismic Load Table (European standard EN/ENV)

Anchor type					M8	M10	M12	M16	M20	M24	M27	M30
C1 Seismic	Characteristic resistance	Tension	$N_{Rk,c}$	kN	30.2	36	48.7	58.9	93.5	128.3	156.8	197.6
		Tension	$N_{Rk,p}$		16.4	23.1	31.7	48.1	76.3	113.1	103.8	121.1
		Tension	$N_{Rk,s}$		29.3	46.4	67	126	196	282.5	367.1	448.8
		Shear	$V_{Rk,s}$		10.2	16.2	23.6	44	68.6	98.8	128.5	157.1
	Design resistance	Tension	N_{Rd}		10.9	15.4	21.2	32	50.8	75.4	69.2	80.8
		Shear	V_{Rd}		8.2	13	18.9	35.2	54.9	79.1	102.8	125.7
	Recommended / service load	Tension	N_{rec}		7.8	11	15.1	22.9	36.3	53.8	49.4	57.7
		Shear	V_{rec}		5.8	9.3	13.5	25.1	39.2	56.5	73.4	89.8
C2 Seismic	Characteristic resistance	Tension	$N_{Rk,c}$	kN	-	-	48.7	58.9	93.5	-	-	-
		Tension	$N_{Rk,p}$		-	-	13.5	23.7	45.8	-	-	-
		Tension	$N_{Rk,s}$		-	-	67	126	196	-	-	-
		Shear	$V_{Rk,s}$		-	-	23.6	44	68.6	-	-	-
	Design resistance	Tension	N_{Rd}		-	-	9	15.8	30.5	-	-	-
		Shear	V_{Rd}		-	-	18.9	35.2	54.9	-	-	-
	Recommended / service load	Tension	N_{rec}		-	-	6.4	11.3	21.8	-	-	-
		Shear	V_{rec}		-	-	13.5	25.1	39.2	-	-	-

General data — Nominal embedment depth h_{nom}					mm	80	90	110	125	170	210	240	280
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Installation Guide



1 Drill the hole to the required diameter and depth.

2 Clean the hole with compressed air and a brush (2x).

3 Inject the adhesive from the bottom of the hole.

4 Insert the rod with a twisting motion.

5 Wait 8-12 hours for full curing.

AC500 v4 + ATR

Dimensions & Part Numbers



Part No.	Item description
8620	AC500 v4 585 ml cartridge
8562	585 ml manual gun
8561	585 ml electric injection gun

ATR — Threaded Rod

Steel grade	f_{yk} (N/mm ²)	f_{uk} (N/mm ²)	L (mm)	SW (mm)	d (mm)	Part No.	Item description
ST37	370	500	1000	10	6	03761000	ATR 37 M6×1000
				13	8	03781000	ATR 37 M8×1000
				17	10	03710100	ATR 37 M10×1000
				19	12	03712100	ATR 37 M12×1000
				22	14	03714100	ATR 37 M14×1000
				24	16	03716100	ATR 37 M16×1000
				27	18	03718100	ATR 37 M18×1000
				30	20	03720100	ATR 37 M20×1000
				32	22	03722100	ATR 37 M22×1000
				36	24	03724100	ATR 37 M24×1000
				41	27	03727100	ATR 37 M27×1000
				46	30	03730100	ATR 37 M30×1000
8.8	640	800	1000	10	6	08861000	ATR 8.8 M6×1000
				13	8	08881000	ATR 8.8 M8×1000
				17	10	08810100	ATR 8.8 M10×1000
				19	12	08812100	ATR 8.8 M12×1000
				22	14	08814100	ATR 8.8 M14×1000
				24	16	08816100	ATR 8.8 M16×1000
				27	18	08818100	ATR 8.8 M18×1000
				30	20	08820100	ATR 8.8 M20×1000
				32	22	08822100	ATR 8.8 M22×1000
				36	24	08824100	ATR 8.8 M24×1000
				41	27	08827100	ATR 8.8 M27×1000
				46	30	08830100	ATR 8.8 M30×1000
SS316 (A4)	450	700	1000	10	6	31661000	ATR SS316 M6×1000
				13	8	31681000	ATR SS316 M8×1000
				17	10	31610100	ATR SS316 M10×1000
				19	12	31612100	ATR SS316 M12×1000
				19	14	31614100	ATR SS316 M14×1000
				24	16	31616100	ATR SS316 M16×1000
				19	18	31618100	ATR SS316 M18×1000
				30	20	31620100	ATR SS316 M20×1000
				19	22	31622100	ATR SS316 M22×1000
				36	24	31624100	ATR SS316 M24×1000
				41	27	31627100	ATR SS316 M27×1000
				46	30	31630100	ATR SS316 M30×1000

Rods are also available with 30 µm thermo-diffusion galvanizing by advance order – add “GG” after the product name (e.g. ATR 5.8 M16×230 GG).

AC500 v4 + rebar



Applications

- Concrete
- Blocks
- Stone
- Ytong (AAC)

Properties

- Epoxy adhesive
- Seismic approval C1



Single-Anchor Load Table (Concrete C30)

Rebar diameter				Ø8	Ø10	Ø12	Ø14	Ø16	Ø18	Ø20	Ø22	Ø25	Ø28	Ø32
Un-cracked concrete	Characteristic resistance	Tension	$N_{Rk,c}$	43.1	51.4	69.5	84.2	84.2	110.7	133.5	183.4	183.4	344.9	411.5
		Tension	$N_{Rk,p}$	24.6	34.6	50.8	67.3	70.5	95.2	119.9	162.9	185.1	315.8	258.4
		Tension	$N_{Rk,s}$	28	43	62	84.4	111	139.5	173	208.3	270	338.7	442
		Shear	$V_{Rk,s}$	14	21.5	31.1	42.5	55.5	70	86.6	104.5	135	168.8	221
	Design resistance	Tension	N_{Rd}	16.4	23.1	33.8	44.9	47	63.5	79.9	108.6	122.2	210.6	172.3
		Shear	V_{Rd}	9.3	14.3	20.7	28.3	37	46.7	57.7	69.7	90	112.5	147.3
	Recommended / service load	Tension	N_{rec}	11.7	16.5	24.2	32	33.6	45.3	57.1	77.6	87.3	150.4	123.1
		Shear	V_{rec}	6.7	10.2	14.8	20.2	26.4	33.4	41.2	49.8	64.3	80.4	105.2
Cracked concrete	Characteristic resistance	Tension	$N_{Rk,c}$	30.2	36	48.7	58.9	58.9	77.5	93.5	128.3	128.3	241.4	288.1
		Tension	$N_{Rk,p}$	14.4	28.8	38.1	50.5	57.7	77.9	87.2	118.4	134.6	229.7	184.6
		Tension	$N_{Rk,s}$	28	43	62	84.4	111	139.5	173	208.3	270	338.7	442
		Shear	$V_{Rk,s}$	14	21.5	31.1	42.5	55.5	70	86.6	104.5	135	168.8	221
	Design resistance	Tension	N_{Rd}	9.6	19.2	25.4	33.6	38.5	51.7	58.1	79	85.6	153.1	123.1
		Shear	V_{Rd}	9.3	14.3	20.7	28.3	37	46.7	57.7	69.7	90	112.5	147.3
	Recommended / service load	Tension	N_{rec}	6.8	13.7	18.1	24	27.5	36.9	41.5	56.4	61.1	109.4	87.9
		Shear	V_{rec}	6.7	10.2	14.8	20.2	26.4	33.4	41.2	49.8	64.3	80.4	105.2
Seismic C1	Characteristic resistance	Tension	$N_{Rk,c}$	-	36	48.7	58.9	58.9	77.5	93.5	128.3	128.3	241.4	288.1
		Tension	$N_{Rk,p}$	-	25.2	37.3	49.5	56.6	76.3	85.5	116.1	123.7	211.1	173.7
		Tension	$N_{Rk,s}$	-	43	62	84.4	111	139.5	173	208.3	270	338.7	442
		Shear	$V_{Rk,s}$	-	16	23	32	41	53	69	78	89	107	111
	Design resistance	Tension	N_{Rd}	-	16.8	24.9	33	37.7	50.9	57	77.4	82.5	140.8	115.8
		Shear	V_{Rd}	-	10.7	15.3	21.3	27.3	35.3	46	52	59.3	71.3	74
	Recommended / service load	Tension	N_{rec}	-	12	17.8	23.6	26.9	36.4	40.7	55.3	58.9	100.5	82.7
		Shear	V_{rec}	-	7.6	11	15.2	19.5	25.2	32.9	37.1	42.4	51	52.9

General data			Ø8	Ø10	Ø12	Ø14	Ø16	Ø18	Ø20	Ø22	Ø25	Ø28	Ø32
Drill hole diameter	d_0	mm	10	12	(14) 16	18	20	22	25	27	30	35	40
Nominal embedment depth	h_{nom}	mm	80	90	110	125	125	150	170	210	210	320	360
Min. concrete thickness beyond drill depth		mm	30	30	30	40	40	50	50	60	60	80	80
Adhesive per hole (incl. 35% waste)		ml	3.3	4.6	(6.6) 13	17	19	25	39	53	59	141	229
Holes per 585 ml cartridge			100 ²	100 ²	(80) 45	36	32	24	15	11	10	4	3

² The theoretical quantity is higher, but small quantities are difficult to dose precisely during injection.

Bond Resistance Design — European Standard EAD 33087-00-0601

Rebar diameter	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø28	Ø32
Drill hole diameter d_0 (mm)	(10) 12	(12) 14	(14) 16	(17) 18	(19) 20	25	32	35	40

AC500 v4 + rebar

N°_{Rd,c} — Basic bond resistance for rebar in cracked & uncracked concrete C25/30 (kN)

l_{bd} / d_s (mm)	8	10	12	14	16	20	25	28	32
100	5.90	7.37	8.85	10.32	11.80	14.75	18.44	20.65	23.60
120	7.09	8.85	10.62	12.39	14.16	17.70	22.13	24.78	28.32
140	8.27	10.32	12.39	14.45	16.53	20.66	25.82	28.92	33.04
160	9.45	11.80	14.16	16.52	18.89	23.61	29.51	33.05	37.76
200	11.81	14.74	17.70	20.65	23.61	29.51	36.88	41.31	47.20
250	14.76	18.43	22.13	25.81	29.51	36.88	46.10	51.64	59.00
280	16.53	20.64	24.78	28.91	33.05	41.31	51.63	57.83	66.08
300	17.71	22.12	26.55	30.97	35.41	44.26	55.32	61.96	70.80
320	18.90	23.59	28.32	33.04	37.77	47.21	59.01	66.09	75.52
360	21.26	26.54	31.86	37.17	42.49	53.11	66.39	74.35	84.97
400	23.62	29.49	35.41	41.29	47.21	59.01	73.76	82.62	94.41
450	26.57	33.17	39.83	46.46	53.12	66.39	82.98	92.94	106.21
500	29.52	36.86	44.26	51.62	59.02	73.77	92.20	103.27	118.01

Outside the scope of the European standard | l_{bd} = embedment depth (mm), d_s = rebar diameter (mm)

N°_{Rd,c,seismic} — Bond resistance for seismic design of rebar, concrete C25/30 (kN)

l_{bd} / d_s (mm)	8	10	12	14	16	20	25	28	32
100	5.25	6.55	7.87	9.18	10.49	13.11	16.39	18.36	20.98
120	5.90	7.37	8.85	10.32	11.80	14.75	18.44	20.65	23.60
140	7.09	8.85	10.62	12.39	14.16	17.70	22.13	24.78	28.32
160	8.27	10.32	12.39	14.45	16.53	20.66	25.82	28.92	33.04
200	9.45	11.80	14.16	16.52	18.89	23.61	29.51	33.05	37.76
250	11.81	14.74	17.70	20.65	23.61	29.51	36.88	41.31	47.20
280	14.76	18.43	22.13	25.81	29.51	36.88	46.10	51.64	59.00
300	16.53	20.64	24.78	28.91	33.05	41.31	51.63	57.83	66.08
320	17.71	22.12	26.55	30.97	35.41	44.26	55.32	61.96	70.80
360	18.90	23.59	28.32	33.04	37.77	47.21	59.01	66.09	75.52
400	21.26	26.54	31.86	37.17	42.49	53.11	66.39	74.35	84.97
450	23.62	29.49	35.41	41.29	47.21	59.01	73.76	82.62	94.41

Outside the scope of the European standard

Spacing influence factor f_s (s / d_s , mm)

s / d_s	8	10	12	14	16	20	25	28	32
50	1.43	1.29	1.19	1.13	1.09	1.04	1.00	1.00	1.00
70	1.43	1.43	1.40	1.29	1.22	1.13	1.06	1.04	1.01
80	1.43	1.43	1.43	1.39	1.29	1.18	1.10	1.07	1.04
100	1.43	1.43	1.43	1.43	1.43	1.29	1.18	1.13	1.09
120	1.43	1.43	1.43	1.43	1.43	1.43	1.27	1.21	1.15
140	1.43	1.43	1.43	1.43	1.43	1.43	1.37	1.29	1.22
150	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.34	1.25
175	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.35
200	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43

Edge-distance influence factor f_c (c / d_s , mm)

c / d_s	8	10	12	14	16	20	25	28	32
50	1.43	1.29	1.19	1.13	1.09	1.04	1.00	1.00	1.00
60	1.43	1.43	1.40	1.29	1.22	1.13	1.06	1.04	1.01
70	1.43	1.43	1.43	1.39	1.29	1.18	1.10	1.07	1.04
80	1.43	1.43	1.43	1.43	1.43	1.29	1.18	1.13	1.09
90	1.43	1.43	1.43	1.43	1.43	1.43	1.27	1.21	1.15
100	1.43	1.43	1.43	1.43	1.43	1.43	1.37	1.29	1.22
125	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.34	1.25
150	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.35
200	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43

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Concrete-grade influence factor f_b

Concrete grade		C16/20	C20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
Static	8-20 mm	0.74	0.85	1.00	1.11	1.26	1.37	1.48	1.75
	24 mm	0.74	0.85	1.00	1.11	1.26	1.37	1.48	1.75
	25 mm	0.74	0.85	1.00	1.11	1.26	1.37	1.48	1.75
	28 mm	0.74	0.85	1.00	1.11	1.26	1.37	1.37	1.48
	30 mm	0.74	0.85	1.00	1.11	1.26	1.37	1.37	1.48
	32 mm	0.74	0.85	1.00	1.11	1.26	1.37	1.37	1.48
Seismic	8-20 mm	0.74	0.85	1.00	1.11	1.26	1.37	1.48	1.59
	24 mm	0.74	0.85	1.00	1.11	1.26	1.37	1.37	1.37
	25 mm	0.74	0.85	1.00	1.11	1.26	1.37	1.26	1.26
	28 mm	0.74	0.85	1.00	1.11	1.26	1.26	1.26	1.26
	30 mm	0.74	0.85	1.00	1.11	1.11	1.11	1.11	1.11
	32 mm	0.74	0.85	1.00	1.11	1.11	1.00	1.00	1.00

$N_{Rd,s}$ — Steel resistance (kN)

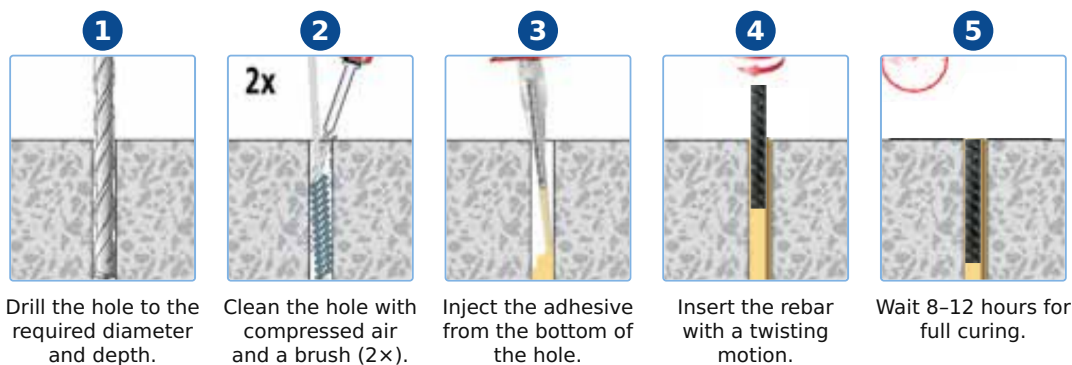
d_s (mm)		8	10	12	14	16	20	25	28	32
A_s (mm ²)		50.3	78.5	113.1	153.9	201.1	314.2	490.9	615.8	804.2
Steel grade	ST400	16.0	24.6	35.4	48.6	63.4	98.9	154.3	193.7	252.6
	ST500	20	30.7	44.3	60.7	79.3	123.6	192.9	242.1	315.7

How is it calculated?

$$N_{Rdc} = N^{\circ}_{Rdc} \text{ (or } N^{\circ}_{Rdc, seismic}) \times (f_c \text{ or } f_s) \times f_b$$

$$N_{Rd} = \text{Minimum} (N_{Rdc} , N_{Rd,s})$$

Installation Guide



Part Numbers



Part No.	Item description
8620	AC500 v4 585 ml cartridge
8562	585 ml manual gun
8561	585 ml electric injection gun

For further assistance, contact Adit's engineering department — Tel. +972 54 797 6110