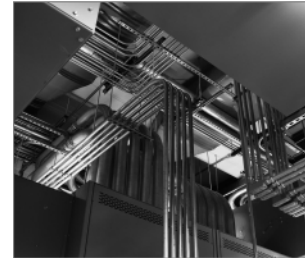
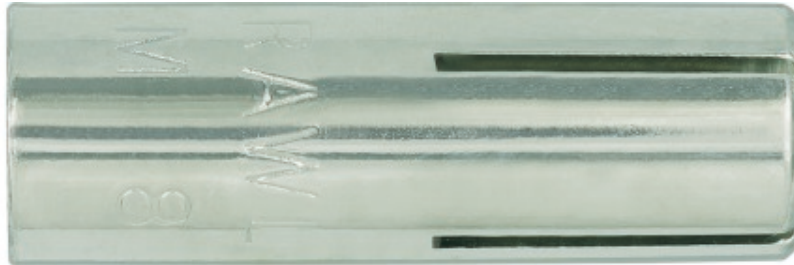


# R-DCA Wedge Anchor

Internally threaded wedge anchor for simple hammer-set installation



## Approvals and Reports

- ETA-13/0584



## Product information

### Features and benefits

- High performance in cracked and non-cracked concrete confirmed by ETA
- Product is covered with European Technical Assessment for multi-point non-structural fixings
- Product recommended for applications requiring fire resistance
- Internally threaded to be used with threaded stud or bolt
- Easy to install by hammer action and manual setting tool
- Slotted sleeve and internal wedge component together facilitate easy setting and expansion
- Product was tested for construction fixing

### Applications

- Pipelines systems
- Ventilation systems
- Sprinkler systems
- Cable conduits and wires
- Gratings

### Base materials

#### Approved for use in:

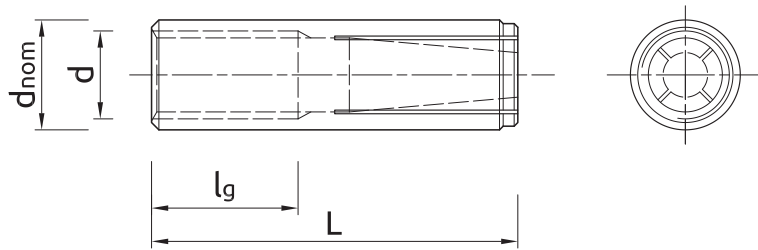
- Cracked concrete C20/25-C50/60
- Non-cracked concrete C20/25-C50/60
- Unreinforced concrete
- Reinforced concrete

## Installation guide



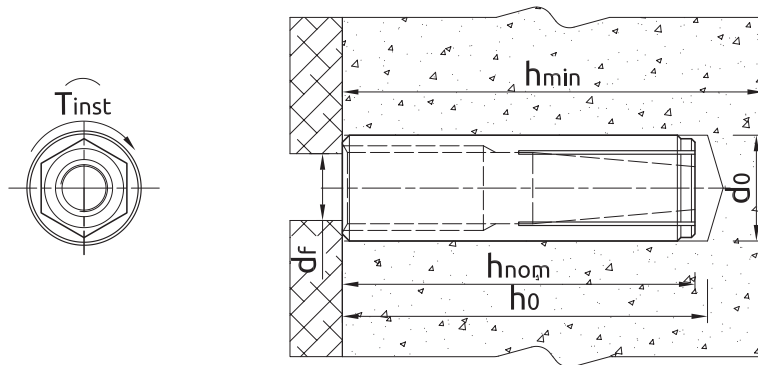
1. Drill a hole of required diameter and depth
2. Clear the hole of drilling dust and debris (using blowpump or equivalent method)
3. Insert wedge anchor, slotted end first
4. Use the setting tool to drive the internal wedge into the anchor
5. Insert bolt or stud through fixture and tighten to the recommended torque

**Product information**



Size	Product Code	Anchor				Fixture
		Diameter	External diameter	Length	Internal thread length	Hole diameter
		d	d <sub>nom</sub>	L	l <sub>g</sub>	d <sub>f</sub>
		[mm]	[mm]	[mm]	[mm]	[mm]
M6	R-DCA-06-25	6	8	25	11	7
	R-DCA-06-25-100B	6	8	25	11	7
M8	R-DCA-08-30	8	10	30	14	9
	R-DCA-08-30-100B	8	10	30	14	9
M10	R-DCA-10-40	10	12	40	19	12
	R-DCA-10-40-50B	10	12	40	19	12
M12	R-DCA-12-50	12	15	50	25	14
	R-DCA-12-50-30B	12	15	50	25	14
M16	R-DCA-16-65	16	20	65	28	18
	R-DCA-16-65-15B	16	20	65	28	18
M20	R-DCA-20-80	20	25	80	38	22

**Installation data**



Normal concrete

Size		M6	M8	M10	M12	M16	M20
Thread diameter	d [mm]	6	8	10	12	16	20
Hole diameter in substrate	d <sub>o</sub> [mm]	8	10	12	15	20	25
Max. installation torque	T <sub>inst</sub> [Nm]	4.5	11	22	38	98	130
Min. hole depth in substrate	h <sub>o</sub> [mm]	27	32	42	52	67	82
Min. installation depth	h <sub>nom</sub> [mm]	25	30	40	50	65	80
Min. substrate thickness	h <sub>min</sub> [mm]	80	80	80	100	130	160
Min. spacing	s <sub>min</sub> [mm]	200	200	200	200	260	320
Min. edge distance	c <sub>min</sub> [mm]	150	150	150	150	195	240

## Installation data

Hollow concrete slab

Size			M8	M10	M12
Thread diameter	d	[mm]	8	10	12
Hole diameter in substrate	d <sub>0</sub>	[mm]	10	12	15
Max. installation torque	T <sub>inst</sub>	[Nm]	11	22	38
Min. hole depth in substrate	h <sub>0</sub>	[mm]	32	42	52
Min. installation depth	h <sub>nom</sub>	[mm]	30	40	50
<b>MINIMUM EMBEDMENT DEPTH</b>					
Minimum distance between anchor groups	a <sub>min,min</sub>	[mm]	100	100	100
Min. spacing	s <sub>min</sub>	[mm]	100	100	100
Min. edge distance	c <sub>min</sub>	[mm]	50	50	50

## Mechanical properties

Size			M6	M8	M10	M12	M16	M20
Nominal ultimate tensile strength - tension	F <sub>uk</sub>	[N/mm <sup>2</sup> ]	450	450	450	450	450	450
Nominal yield strength - tension	F <sub>yk</sub>	[N/mm <sup>2</sup> ]	360	360	360	360	360	360
Cross sectional area - tension	A <sub>s</sub>	[mm <sup>2</sup> ]	20.1	36.6	58	84.3	157	245
Elastic section modulus	W <sub>el</sub>	[mm <sup>3</sup> ]	21.21	50.3	98.2	169.7	402.1	785.4

## Basic performance data

Performance data for single anchor without influence of edge distance and spacing

Size		M6	M8	M10	M12	M16	M20
<b>CRACKED AND NON-CRACKED CONCRETE</b>							
Effective embedment depth h <sub>ef</sub>	[mm]	25.00	30.00	40.00	50.00	65.00	80.00
<b>HOLLOW CORE SLAB</b>							
Effective embedment depth h <sub>ef</sub>	[mm]	-	30.00	40.00	50.00	-	-
<b>MEAN ULTIMATE LOAD</b>							
<b>TENSION AND SHEAR LOAD F<sub>Ru,m</sub></b>							
CRACKED AND NON-CRACKED CONCRETE	[kN]	-	-	-	-	-	-
HOLLOW CORE SLAB	[kN]	-	-	-	-	-	-
<b>CHARACTERISTIC LOAD</b>							
<b>TENSION AND SHEAR LOAD F<sub>Rk</sub></b>							
CRACKED AND NON-CRACKED CONCRETE	[kN]	1.52	3.01	4.57	6.43	13.31	17.38
HOLLOW CORE SLAB	[kN]	-	4.00	14.00	16.00	-	-
<b>DESIGN LOAD</b>							
<b>TENSION AND SHEAR LOAD F<sub>Rd</sub></b>							
CRACKED AND NON-CRACKED CONCRETE	[kN]	0.84	1.67	2.54	3.57	7.39	9.65
HOLLOW CORE SLAB	[kN]	-	1.90	6.66	8.88	-	-
<b>RECOMMENDED LOAD</b>							
<b>TENSION AND SHEAR LOAD F<sub>rec</sub></b>							
CRACKED AND NON-CRACKED CONCRETE	[kN]	0.60	1.19	1.81	2.55	5.28	6.89
HOLLOW CORE SLAB	[kN]	-	1.36	4.76	6.34	-	-

## Design performance data

Normal concrete

Size			M6	M8	M10	M12	M16	M20
Effective embedment depth	$h_{ef}$	[mm]	25.00	30.00	40.00	50.00	65.00	80.00
<b>TENSION AND SHEAR LOAD</b>								
Characteristic resistance	$F_{Rk}$	[kN]	1.52	3.01	4.57	6.43	13.31	17.38
Installation safety factor	$\gamma_2$	-	1.20	1.20	1.20	1.20	1.20	1.20
Spacing	$s_{cr}$	[mm]	200.00	200.00	200.00	200.00	260.00	320.00
Edge distance	$c_{cr}$	[mm]	150.00	150.00	150.00	150.00	195.00	240.00
<b>SHEAR LOAD</b>								
<b>STEEL FAILURE; [ENGLISH]: STAL KLASY 4.8</b>								
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	6.00	15.00	30.00	52.00	133.00	260.00
Partial safety factor	$\gamma_{Ms}$	-	1.25	1.25	1.25	1.25	1.25	1.25
<b>STEEL FAILURE; STEEL CLASS 5.8</b>								
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	8.00	19.00	37.00	66.00	167.00	325.00
Partial safety factor	$\gamma_{Ms}$	-	1.25	1.25	1.25	1.25	1.25	1.25
<b>STEEL FAILURE; [ENGLISH]: STAL KLASY 6.8</b>								
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	9.00	23.00	45.00	79.00	200.00	390.00
Partial safety factor	$\gamma_{Ms}$	-	1.25	1.25	1.25	1.25	1.25	1.25
<b>STEEL FAILURE; STEEL CLASS 8.8</b>								
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	12.00	30.00	60.00	105.00	267.00	520.00
Partial safety factor	$\gamma_{Ms}$	-	1.25	1.25	1.25	1.25	1.25	1.25

Characteristic Resistance under fire exposure in concrete C20/25 to C50/60

Size			M8	M10	M12	M16	M20	
<b>TENSION AND SHEAR LOAD</b>								
Spacing	$s_{cr}$	[mm]	120.00	160.00	200.00	260.00	320.00	
Edge distance	$c_{cr}$	[mm]	60.00	80.00	100.00	130.00	160.00	
<b>R (for EI) = 30 min</b>								
<b>TENSION AND SHEAR LOAD</b>								
Characteristic resistance	$F_{Rk}$	[kN]	0.40	0.90	1.60	3.10	4.30	
<b>R (for EI) = 60 min</b>								
<b>TENSION AND SHEAR LOAD</b>								
Characteristic resistance	$F_{Rk}$	[kN]	0.30	0.80	1.30	2.40	3.70	
<b>R (for EI) = 90 min</b>								
<b>TENSION AND SHEAR LOAD</b>								
Characteristic resistance	$F_{Rk}$	[kN]	0.30	0.60	1.10	2.00	3.20	
<b>R (for EI) = 120 min</b>								
<b>TENSION AND SHEAR LOAD</b>								
Characteristic resistance	$F_{Rk}$	[kN]	0.20	0.50	0.80	1.60	2.50	

## Design performance data

Hollow concrete slab

Size			M8	M10	M12
Effective embedment depth	$h_{ef}$	[mm]	30.00	40.00	50.00
Min. bottom flange thickness	$d_b$	[mm]	30.00	30.00	30.00
TENSION AND SHEAR LOAD					
Characteristic resistance	$F_{Rk}$	[kN]	4.00	14.00	16.00
Installation safety factor	$V_2$	-	1.40	1.40	1.20
Spacing	$s_{cr}$	[mm]	200.00	200.00	200.00
Edge distance	$c_{cr}$	[mm]	300.00	300.00	300.00
SHEAR LOAD					
STEEL FAILURE; [ENGLISH]: STAL KLASY 4.8					
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	15.00	30.00	52.00
Partial safety factor	$V_{Ms}$	-	1.25	1.25	1.25
STEEL FAILURE; STEEL CLASS 5.8					
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	19.00	37.00	66.00
Partial safety factor	$V_{Ms}$	-	1.25	1.25	1.25
STEEL FAILURE; [ENGLISH]: STAL KLASY 6.8					
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	23.00	45.00	79.00
Partial safety factor	$V_{Ms}$	-	1.25	1.25	1.25
STEEL FAILURE; STEEL CLASS 8.8					
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	30.00	60.00	105.00
Partial safety factor	$V_{Ms}$	-	1.25	1.25	1.25

## Product commercial data

Product Code	Anchor		Quantity [pcs]			Weight [kg]			Bar Codes
	Diameter [mm]	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
R-DCA-06-25 <sup>1)</sup>	6	25	100	1000	36000	0.67	6.7	271.2	5010445771088
R-DCA-06-25-100B <sup>1)</sup>	6	25	100	1700	54400	0.70	11.9	410.8	5906675441221
R-DCA-08-30 <sup>1)</sup>	8	30	100	1000	60000	1.19	11.9	744.0	5010445771200
R-DCA-08-30-100B <sup>1)</sup>	8	30	100	1700	54400	1.20	20.4	682.8	5906675439112
R-DCA-10-40 <sup>1)</sup>	10	40	50	500	37500	1.15	11.5	892.5	5906675151687
R-DCA-10-40-50B <sup>1)</sup>	10	40	50	900	28800	1.15	20.7	692.4	5906675439136
R-DCA-12-50 <sup>1)</sup>	12	50	50	400	18000	2.3	18.3	854.4	5906675152004
R-DCA-12-50-30B <sup>1)</sup>	12	50	30	360	11520	1.50	18.0	606.0	5906675438108
R-DCA-16-65 <sup>1)</sup>	16	65	25	100	6000	2.7	10.8	680.4	5010445771507
R-DCA-16-65-15B <sup>1)</sup>	16	65	15	180	5760	1.53	18.4	617.5	5906675438115
R-DCA-20-80 <sup>1)</sup>	20	80	15	90	3240	3.0	18.1	680.9	5010445002298

1) ETA-13/0584