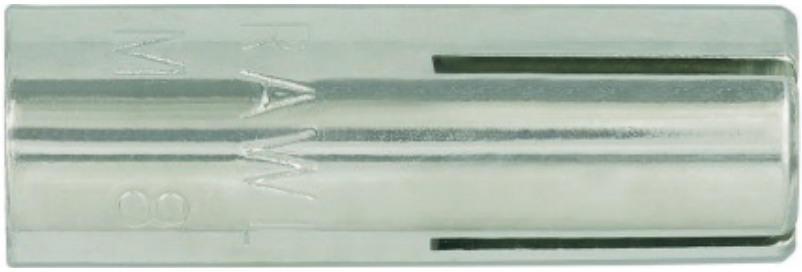
R-DCA Wedge Anchor

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

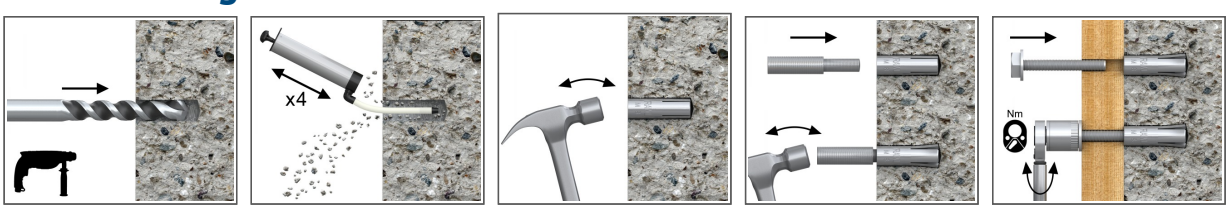
- Pipelines systems
- Ventilation systems
- Sprinkler systems
- Cable conduits and wires
- Gratings

Base materials

Approved for use in:

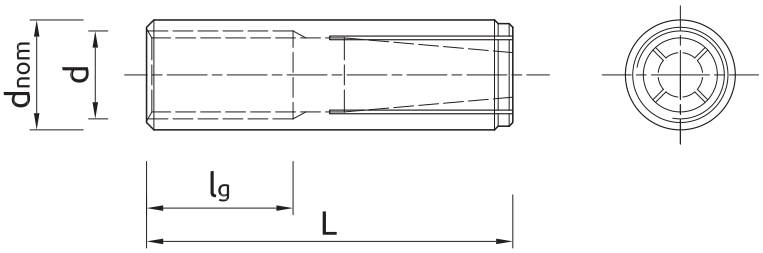
- Cracked concrete C20/25-C50/60
- Non-cracked concrete C20/25-C50/60
- Unreinforced concrete
- Reinforced concrete

Installation guide



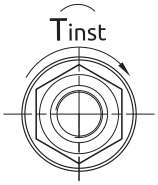
1. Drill a hole of required diameter and depth
2. Clear the hole of drilling dust and debris (using blowpump or equivalent method)
3. Insert wedge anchor, slotted end first
4. Use the setting tool to drive the internal wedge into the anchor
5. Insert bolt or stud through fixture and tighten to the recommended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

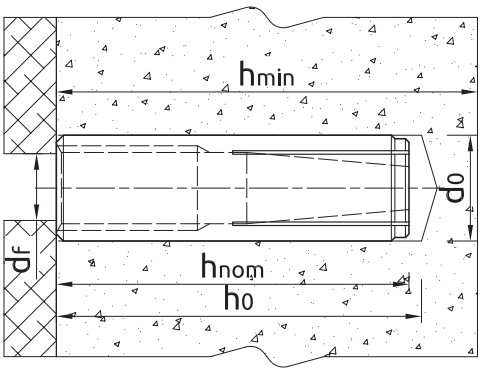
Product information



Size	Product Code	Anchor				Fixture
		Diameter	External diameter	Length	Internal thread length	Hole diameter
		d	d_{nom}	L	l_g	d_f
		[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_0	[mm]	8	10	12	15	20	25
Max. installation torque	T_{inst}	[Nm]	4.5	11	22	38	98	130
Min. hole depth in substrate	h_0	[mm]	27	32	42	52	67	82
Min. installation depth	h_{nom}	[mm]	25	30	40	50	65	80
Min. substrate thickness	h_{min}	[mm]	80	80	80	100	130	160
Min. spacing	s_{min}	[mm]	200	200	200	200	260	320
Min. edge distance	c_{min}	[mm]	150	150	150	150	195	240

Mechanical properties

Size			M6	M8	M10	M12	M16	M20
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm²]	450	450	450	450	450	450
Nominal yield strength - tension	f_{yk}	[N/mm²]	360	360	360	360	360	360
Cross sectional area - tension	A_s	[mm²]	20.1	36.6	58	84.3	157	245
Elastic section modulus	W_{el}	[mm³]	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
Effective embedment depth h_{ef}	[mm]	25.00	30.00	40.00	50.00	65.00	80.00
MEAN ULTIMATE LOAD							
TENSION AND SHEAR LOAD $F_{Ru,m}$	[kN]	-	-	-	-	-	-
CHARACTERISTIC LOAD							
TENSION AND SHEAR LOAD F_{Rk}	[kN]	1.50	3.00	4.50	6.00	13.00	17.00
DESIGN LOAD							
TENSION AND SHEAR LOAD F_{Rd}	[kN]	0.83	1.67	2.50	3.33	7.22	9.44
RECOMMENDED LOAD							
TENSION AND SHEAR LOAD F_{rec}	[kN]	0.60	1.19	1.79	2.38	5.16	6.75

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
TENSION AND SHEAR LOAD								
Characteristic resistance	F_{Rk}	[kN]	1.50	3.00	4.50	6.00	13.00	17.00
Installation safety factor	γ_{inst}	-	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
SHEAR LOAD								
STEEL FAILURE; STEEL CLASS 4.8								
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	6.00	15.00	30.00	52.00	133.00	260.00
Partial safety factor	γ_{Ms}	-	1.25	1.25	1.25	1.25	1.25	1.25
STEEL FAILURE; STEEL CLASS 5.8								
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	8.00	19.00	37.00	66.00	167.00	325.00
Partial safety factor	γ_{Ms}	-	1.25	1.25	1.25	1.25	1.25	1.25
STEEL FAILURE; STEEL CLASS 6.8								
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	9.00	23.00	45.00	79.00	200.00	390.00
Partial safety factor	γ_{Ms}	-	1.25	1.25	1.25	1.25	1.25	1.25
STEEL FAILURE; STEEL CLASS 8.8								
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	12.00	30.00	60.00	105.00	267.00	520.00
Partial safety factor	γ_{Ms}	-	1.25	1.25	1.25	1.25	1.25	1.25

Design performance data

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

Size			M8	M10	M12	M16	M20
TENSION AND SHEAR LOAD							
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
R (for EI) = 30 min							
TENSION AND SHEAR LOAD							
Characteristic resistance	F_{Rk}	[kN]	0.40	0.90	1.60	3.10	4.30
R (for EI) = 60 min							
TENSION AND SHEAR LOAD							
Characteristic resistance	F_{Rk}	[kN]	0.30	0.80	1.30	2.40	3.70
R (for EI) = 90 min							
TENSION AND SHEAR LOAD							
Characteristic resistance	F_{Rk}	[kN]	0.30	0.60	1.10	2.00	3.20
R (for EI) = 120 min							
TENSION AND SHEAR LOAD							
Characteristic resistance	F_{Rk}	[kN]	0.20	0.50	0.80	1.60	2.50

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 [1)]	6	25	100	1000	36000	0.67	6.7	271.2	5010445771088
R-DCA-06-25-100B [1)]	6	25	100	1700	54400	0.70	11.9	410.8	5906675441221
R-DCA-08-30 [1)]	8	30	100	1000	60000	1.19	11.9	744.0	5010445771200
R-DCA-08-30-100B [1)]	8	30	100	1600	64000	1.20	19.2	798.0	5906675439112
R-DCA-10-40 [1)]	10	40	50	500	37500	1.15	11.5	892.5	5906675151687
R-DCA-10-40-50B [1)]	10	40	50	900	28800	1.15	20.7	692.4	5906675439136
R-DCA-12-50 [1)]	12	50	50	400	18000	2.3	18.3	854.4	5906675152004
R-DCA-12-50-30B [1)]	12	50	30	360	11520	1.50	18.0	606.0	5906675438108
R-DCA-16-65 [1)]	16	65	25	100	6000	2.7	10.8	680.4	5010445771507
R-DCA-16-65-15B [1)]	16	65	15	180	5760	1.53	18.4	617.5	5906675438115
R-DCA-20-80 [1)]	20	80	15	90	3240	3.0	18.1	680.9	5010445002298

1) ETA-13/0584