

R-DCL Lipped Wedge Anchor

Internally threaded wedge anchor with lip 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 recommended for applications requiring fire resistance
- Internally threaded to be used with threaded stud or bolt
- Easy to install by hammer action
- Slotted sleeve and internal wedge component together facilitate easy setting and expansion

Applications

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

Base materials

Approved for use in:

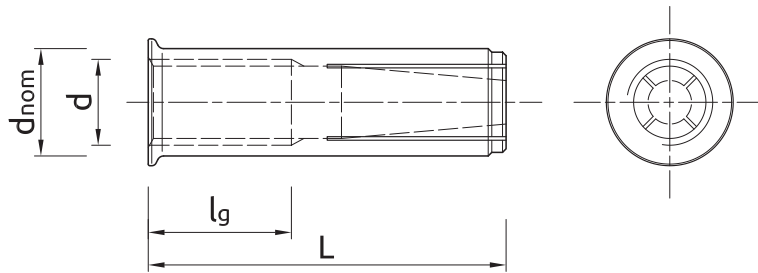
- Cracked concrete C20/25-C50/60
- Concrete C20/25-C50/60
- Concrete

Installation guide



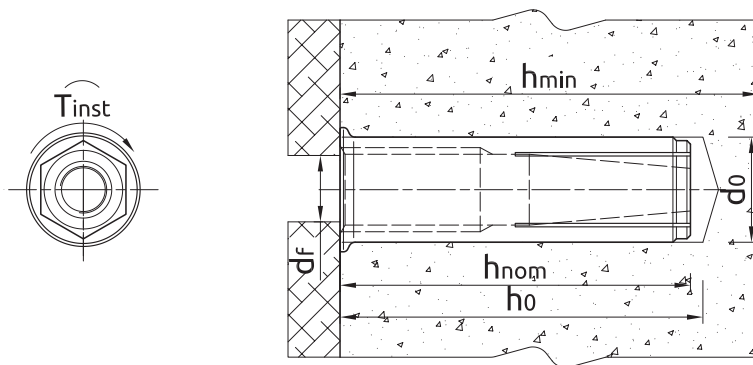
1. Drill a hole of required diameter and depth
2. Remove debris and thoroughly clean hole with brush and pum
3. Insert wedge anchor, slotted end first
4. Use the setting tool to drive the internal wedge into the anchor
5. Insert bolt or stud through fixture and tighten to the recommended torque

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-DCL-06	6	8	25	11	7
M8	R-DCL-08	8	10	30	13	9
M10	R-DCL-10	10	12	40	15	12
M12	R-DCL-12	12	15	50	20	14
M16	R-DCL-16	16	20	65	25	18

Installation data



Size			M6	M8	M10	M12	M16
Thread diameter	d	[mm]	6	8	10	12	16
Hole diameter in substrate	d ₀	[mm]	8	10	12	15	20
Installation torque	T _{inst}	[Nm]	4.5	11	22	38	98
Min. hole depth in substrate	h ₀	[mm]	30	32	42	53	70
Installation depth	h _{nom}	[mm]	25	30	40	50	65
Min. substrate thickness	h _{min}	[mm]	80	80	80	100	130
Min. spacing	s _{min}	[mm]	105	105	220	220	220
Min. edge distance	c _{min}	[mm]	105	105	220	220	220

Mechanical properties

Size			M6	M8	M10	M12	M16
Nominal ultimate tensile strength - tension	f _{uk}	[N/mm ²]	450	450	450	450	450
Nominal yield strength - tension	f _{yk}	[N/mm ²]	360	360	360	360	360
Cross sectional area - tension	A _s	[mm ²]	20.1	36.6	58	84.3	157
Elastic section modulus	W _{el}	[mm ³]	21.21	50.3	98.2	169.7	402.1
Characteristic bending resistance	M ⁰ _{Rk,s}	[Nm]	12.72	30.2	61	101.8	241.3
Design bending resistance	M	[Nm]	10.18	24.1	49	81.4	193

Basic performance data

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

Size		M6	M8	M10	M12	M16
Effective embedment depth h_{ef}	[mm]	25.00	30.00	40.00	50.00	65.00
CHARACTERISTIC LOAD						
TENSION LOAD N_{Rk}	[kN]	1.52	3.00	4.57	6.40	13.30
SHEAR LOAD V_{Rk}	[kN]	1.52	3.00	4.57	6.40	13.30
DESIGN LOAD						
TENSION LOAD N_{Rd}	[kN]	0.72	1.43	2.18	3.06	6.30
SHEAR LOAD V_{Rd}	[kN]	0.72	1.43	2.18	3.06	6.30
RECOMMENDED LOAD						
TENSION LOAD N_{rec}	[kN]	0.51	1.02	1.55	2.19	4.50
SHEAR LOAD V_{rec}	[kN]	0.51	1.02	1.55	2.19	4.50

Design performance data

Size			M6	M8	M10	M12	M16
Effective embedment depth	h_{ef}	[mm]	25.00	30.00	40.00	50.00	65.00
TENSION AND SHEAR LOAD							
Characteristic resistance	F_{Rk}	[kN]	1.50	3.00	4.57	6.40	13.30
Design resistance $V_{Rd}^+ = 2.1$	F_{Rd}	[kN]	0.70	1.40	2.18	3.06	6.30
Spacing	s_{cr}	-	200.00	200.00	200.00	200.00	260.00
Edge distance	c_{cr}	-	150.00	150.00	150.00	150.00	195.00
SHEAR LOAD							
STEEL FAILURE							
Characteristic resistance with lever arm	$M_{Rk,s}$	[kN]	6.00	15.00	30.00	52.00	133.00
Characteristic resistance with lever arm	$M_{Rk,s}$	[kN]	8.00	19.00	37.00	66.00	167.00
Characteristic resistance with lever arm	$M_{Rk,s}$	[kN]	9.00	23.00	45.00	79.00	200.00
Characteristic resistance with lever arm	$M_{Rk,s}$	[kN]	12.00	30.00	60.00	105.00	267.00
Design resistance $V_{Rd,s} = 1.25$	$M_{Rd,s}$	[kN]	4.80	12.00	24.00	41.60	106.40
Design resistance $V_{Rd,s} = 1.25$	$M_{Rd,s}$	[kN]	6.40	15.20	29.60	52.80	133.60
Design resistance $V_{Rd,s} = 1.25$	$M_{Rd,s}$	[kN]	7.20	18.40	36.00	63.20	160.00
Design resistance $V_{Rd,s} = 1.25$	$M_{Rd,s}$	[kN]	9.60	24.00	48.00	84.00	213.60

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

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

Product commercial data

Size	Product Code	Anchor		Quantity [pcs]			Weight [kg]			Bar Codes
		Diameter [mm]	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
M6	R-DCL-06 ¹⁾	6	25	100	1000	56000	0.71	7.1	427.6	5010445779084
M8	R-DCL-08 ¹⁾	8	30	100	1200	57600	1.24	14.9	744.2	5010445779206
M10	R-DCL-10 ¹⁾	10	40	50	600	36000	1.20	14.3	890.4	5010445779329
M12	R-DCL-12 ¹⁾	12	50	50	200	6000	2.4	9.5	315.0	5010445779411
M16	R-DCL-16 ¹⁾	16	65	25	150	6000	2.9	17.2	718.8	5010445779503

1) ETA-13/0584