R-DCL Lipped Wedge Anchor

Internally threaded wedge anchor with lip for simple hammer-set installation

Approvals and Reports

- ETA-13/0584
- UKTA-22/6371

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

Applications

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

Base materials

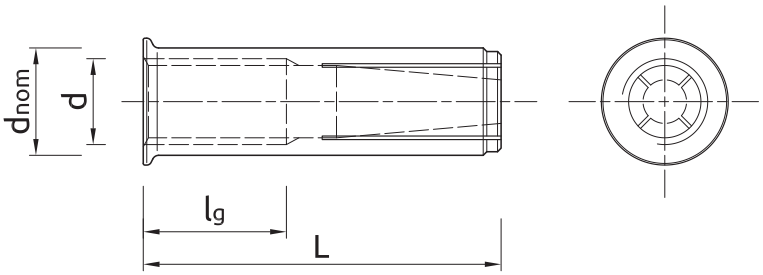
Approved for use in:

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

Installation guide

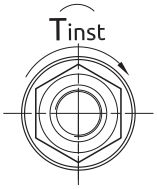
1. Drill a hole of required diameter and depth
2. Remove debris and thoroughly clean hole with pum
3. Insert wedge anchor, slotted end first
4. Use the setting tool to drive the internal wedge into the anchor
5. Insert bolt or stud through fixture and tighten to the recommended torque

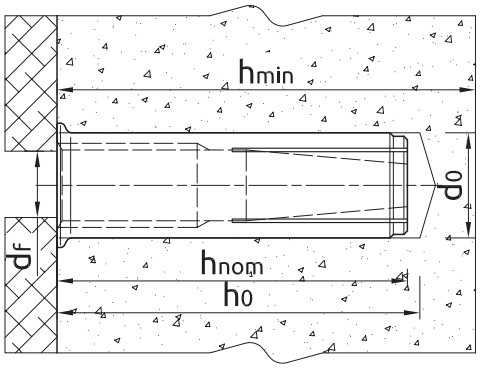
Product information



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-08-25	8	10	25	14	9
	R-DCL-08	8	10	30	14	9
M10	R-DCL-10-25	10	12	25	14	12
	R-DCL-10	10	12	40	19	12
M12	R-DCL-12-25	12	15	25	14	14
	R-DCL-12	12	15	50	25	14
M16	R-DCL-16	16	20	65	28	18

Installation data





Normal concrete

Size			M6	M8/25	M8	M10/25	M10	M12/25	M12	M16
Thread diameter	d	[mm]	6	8	8	10	10	12	12	16
Hole diameter in substrate	d_0	[mm]	8	10	10	12	12	15	15	20
Max. installation torque	T_{inst}	[Nm]	4.5	11	11	22	22	38	38	98
Min. hole depth in substrate	h_0	[mm]	27	27	32	27	42	27	52	67
Min. installation depth	h_{nom}	[mm]	25	25	30	25	40	25	50	65
Min. substrate thickness	h_{min}	[mm]	80	80	80	80	80	80	100	130
Min. spacing	s_{min}	[mm]	200	200	200	200	200	200	200	260
Min. edge distance	c_{min}	[mm]	150	150	150	150	150	150	150	195

Installation data

Hollow concrete slab

Size			M6	M8/25	M8	M10/25	M10	M12/25	M12
Thread diameter	d	[mm]	6	8	8	10	10	12	12
Hole diameter in substrate	d_0	[mm]	8	10	10	12	12	15	15
Max. installation torque	T_{inst}	[Nm]	4.5	11	11	22	22	38	38
Min. hole depth in substrate	h_0	[mm]	25	27	32	27	42	27	52
Min. installation depth	h_{nom}	[mm]	25	25	30	25	40	25	50
MINIMUM EMBEDMENT DEPTH									
Minimum distance between anchor groups	$a_{min,min}$	[mm]	100	100	100	100	100	100	100
Min. spacing	s_{min}	[mm]	200	200	200	200	200	200	200
Min. edge distance	c_{min}	[mm]	300	300	300	300	300	300	300

Mechanical properties

Size			M6	M8	M10	M12	M16
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm²]	450	450	450	450	450
Nominal yield strength - tension	f_{yk}	[N/mm²]	360	360	360	360	360
Cross sectional area - tension	A_s	[mm²]	20.1	36.6	58	84.3	157
Elastic section modulus	W_{el}	[mm³]	21.21	50.3	98.2	169.7	402.1

Basic performance data

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

Size		M6	M8/25	M8	M10/25	M10	M12/25	M12	M16
CRACKED AND NON-CRACKED CONCRETE									
Effective embedment depth h_{ef}	[mm]	25.00	25.00	30.00	25.00	40.00	25.00	50.00	65.00
HOLLOW CORE SLAB									
Effective embedment depth h_{ef}	[mm]	25.00	25.00	30.00	25.00	40.00	25.00	50.00	-
MEAN ULTIMATE LOAD									
TENSION AND SHEAR LOAD $F_{Ru,m}$									
CRACKED AND NON-CRACKED CONCRETE	[kN]	-	-	-	-	-	-	-	-
HOLLOW CORE SLAB	[kN]	-	-	-	-	-	-	-	-
CHARACTERISTIC LOAD									
TENSION AND SHEAR LOAD F_{Rk}									
CRACKED AND NON-CRACKED CONCRETE	[kN]	1.50	1.00	3.00	1.50	4.50	2.00	6.00	13.00
HOLLOW CORE SLAB	[kN]	3.50	4.50	4.00	5.50	14.00	7.00	16.00	-
DESIGN LOAD									
TENSION AND SHEAR LOAD F_{Rd}									
CRACKED AND NON-CRACKED CONCRETE	[kN]	0.83	0.60	1.67	0.83	2.50	1.10	3.33	7.22
HOLLOW CORE SLAB	[kN]	1.66	2.14	1.90	2.61	6.66	3.33	8.88	-
RECOMMENDED LOAD									
TENSION AND SHEAR LOAD F_{rec}									
CRACKED AND NON-CRACKED CONCRETE	[kN]	0.60	0.40	1.19	0.60	1.79	0.80	2.38	5.16
HOLLOW CORE SLAB	[kN]	1.19	1.53	1.36	1.87	4.76	2.38	6.34	-

Design performance data

Normal concrete

Size			M6	M8	M10	M12	M16	M8/25	M10/25	M12/25
Effective embedment depth	h_{ef}	[mm]	25.00	30.00	40.00	50.00	65.00	25.00	25.00	25.00
TENSION AND SHEAR LOAD										
Characteristic resistance	F_{Rk}	[kN]	1.50	3.00	4.50	6.00	13.00	1.00	1.50	2.00
Installation safety factor	γ_{inst}	-	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Spacing	s_{cr}	[mm]	200.0	200.0	200.0	200.0	260.0	200.0	200.0	200.0
Edge distance	c_{cr}	[mm]	150.0	150.0	150.0	150.0	195.0	150.0	150.0	150.0
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	133.0	15.00	30.00	52.00
Partial safety factor	γ_{Ms}	-	1.25	1.25	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	167.0	19.00	37.00	66.00
Partial safety factor	γ_{Ms}	-	1.25	1.25	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	200.0	23.00	45.00	79.00
Partial safety factor	γ_{Ms}	-	1.25	1.25	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	105.0	267.0	30.00	60.00	105.0
Partial safety factor	γ_{Ms}	-	1.25	1.25	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	M8/25	M10/25	M12/25
TENSION AND SHEAR LOAD									
Spacing	s_{cr}	[mm]	120.00	160.00	200.00	260.00	100.00	100.00	100.00
Edge distance	c_{cr}	[mm]	60.00	80.00	100.00	130.00	50.00	50.00	50.00
R (for EI) = 30 min									
TENSION AND SHEAR LOAD									
Characteristic resistance	F_{Rk}	[kN]	0.40	0.90	1.60	3.10	0.10	0.20	0.30
R (for EI) = 60 min									
TENSION AND SHEAR LOAD									
Characteristic resistance	F_{Rk}	[kN]	0.30	0.80	1.30	2.40	0.10	0.20	0.30
R (for EI) = 90 min									
TENSION AND SHEAR LOAD									
Characteristic resistance	F_{Rk}	[kN]	0.30	0.60	1.10	2.00	0.10	0.23	0.30
R (for EI) = 120 min									
TENSION AND SHEAR LOAD									
Characteristic resistance	F_{Rk}	[kN]	0.20	0.50	0.80	1.60	0.10	0.20	0.20

Design performance data

Hollow concrete slab

Size			M6	M8	M10	M12	M8/25	M10/25	M12/25
Effective embedment depth	h_{ef}	[mm]	25.00	30.00	40.00	50.00	25.00	25.00	25.00
Min. bottom flange thickness	d_b	[mm]	30.00	30.00	30.00	30.00	40.00	40.00	40.00
TENSION AND SHEAR LOAD									
Characteristic resistance	F_{Rk}	[kN]	3.50	4.00	14.00	16.00	4.50	5.50	7.00
Installation safety factor	γ_{inst}	-	1.40	1.40	1.40	1.20	1.40	1.40	1.40
Spacing	s_{cr}	[mm]	200.00	200.00	200.00	200.00	200.00	200.00	200.00
Edge distance	c_{cr}	[mm]	300.00	300.00	300.00	300.00	300.00	300.00	300.00
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	15.00	30.00	52.00
Partial safety factor	γ_{Ms}	-	1.25	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	19.00	37.00	66.00
Partial safety factor	γ_{Ms}	-	1.25	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	23.00	45.00	79.00
Partial safety factor	γ_{Ms}	-	1.25	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	30.00	60.00	105.00
Partial safety factor	γ_{Ms}	-	1.25	1.25	1.25	1.25	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-DCL-06 [1]	6	25	100	1000	56000	0.71	7.1	427.6	5010445779084
R-DCL-08-25 [1]	8	25	100	100	57600	1.06	1.06	637.7	5906675397320
R-DCL-08 [1]	8	30	100	1200	57600	1.24	14.9	744.2	5010445779206
R-DCL-10-25 [1]	10	25	50	50	37500	0.72	0.72	570.0	5906675397337
R-DCL-10 [1]	10	40	50	600	36000	1.20	14.3	890.4	5010445779329
R-DCL-12-25 [1]	12	25	50	200	6000	0.90	3.6	138.0	5906675431505
R-DCL-12 [1]	12	50	50	200	6000	2.4	9.5	315.0	5010445779411
R-DCL-16 [1]	16	65	25	150	6000	2.9	17.2	718.8	5010445779503

1) ETA-13/0584