

Declaration of Performance

DoP-13/0584-R-DCL

1. Unique identification code of the product-type:

R-DCL



The photo depicts an example of a product of the given type of goods

2. Intended use/es:

**general type
to be applied in**

Steel expansion anchors

Deformation-controlled steel expansion anchors in sizes M6, M8, M10, M12, M16 and M20, for multiple use for non-structural applications in concrete

option / category

Loading

subject to static or quasi-static

material

R-DCA, R-DCA-A4 and R-DCL Wedge Anchors are deformation-controlled expansion anchors in sizes of M6, M8, M10, M12, M16 and M20. The anchors R-DCA and R-DCL are made of galvanized steel and R-DCA-A4 are made of stainless steel.

3. Manufacturer:

Rawlplug S.A.

ul. Kwidzyńska 6, 51-416 Wrocław, PL

www.rawlplug.com

4. System/s of AVCP:

System 2+

5. European Assessment Document:

EAD-330747-00-0601 Metal anchors for use in concrete for multiple use for non-structural applications.
Utilization category:

6. European Technical Assessment:

ETA-13/0584 edition of 2019-12-30

7. Technical Assessment Body:

Instytut Techniki Budowlanej

8. Notified body/ies:

1488 on the basis of:

- initial inspection of the manufacturing plant and of factory production control
- continuing surveillance, assessment and evaluation of factory production control

issued a certificate **1488-CPR-0328/Z**

9. Declared performance/s:

Essential Characteristics:

Technical Specification	Basic requirements according to CPR		Remarks:
ETA-13/0584	[1]	Mechanical resistance and stability	Declared values on the page 2
	[4]	Operational safety	Such criteria as those significant for [1]

Characteristic resistance - R-DCA in solid concrete elements

R-DCA and R-DCL			Property class	M6	M8	M10	M12	M16	M20
All load directions (Fastening screw or threaded rod property class ≥ 4.8)									
Characteristic resistance in cracked and non-cracked concrete C20/25 to C50/60	F _{Rk}	[kN]	≥4.8	1,5	3	4,5	6	13	17
Characteristic resistance in cracked and non-cracked concrete C12/15	F _{Rk}	[kN]	≥4.8	1,2	2	3,5	5	10	13
Partial safety factor (installation safety factor γ ₂ = 1.4 included)	γ ₂	[-]	-	1,2					
Spacing	Scr	[mm]		200			260	320	
Edge distance	Ccr	[mm]		150			195	240	
Shear load with lever arm									
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	4.8	6	15	30	52	133	260
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	5.8	8	19	37	66	167	325
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	6.8	9	23	45	79	200	390
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	8.8	12	30	60	105	267	520
Partial safety factor	γ _{M5} 1	[-]	-	1,25					

Characteristic resistance - R-DCA-A4 in solid concrete elements

R-DCA-A4			Property class	M6	M8	M10	M12	M16
All load directions								
Characteristic resistance in cracked and non-cracked concrete C20/25 to C50/60	FRk	[kN]	A4-70	1,00	2,00	3,00	4,50	8,00
Characteristic resistance in cracked and non-cracked concrete C12/15	FRk	[kN]	A4-70	0,75	1,50	2,50	3,50	6,50
Partial safety factor	γ ²	[-]	-	1,2				
Spacing	Scr	[mm]		200				
Edge distance	Ccr	[mm]		150				
Shear load with lever arm								
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	A4-70	11	26	52	92	233
Partial safety factor	γ _{Ms1}	[-]	-	1,25				

Characteristic resistance R-DCL in solid concrete elements

R-DCL			Property class	M6	M8	M10	M12	M16	M20
All load directions									
Characteristic resistance in cracked and non-cracked concrete C20/25 to C50/60	FRk	[kN]	≥4.8	1,5	3	4,5	6	13	17
Characteristic resistance in cracked and non-cracked concrete C12/15	FRk	[kN]	≥4.8	1,2	2	3,5	5	10	13
Partial safety factor	γ2	[-]	-	1,2					
Spacing	Scr	[mm]		200			260	320	
Edge distance	Ccr	[mm]		150			195	240	
Shear load with lever arm									
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	4.8	6	15	30	52	133	260
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	5.8	8	19	37	66	167	325
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	6.8	9	23	45	79	200	390
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	8.8	12	30	60	105	267	520
Partial safety factor	γ _M 1	[-]	-	1,25					

Characteristic resistance R-DCL in precast prestressed hollow core slabs

R-DCL			Klasa własności	M6/25	M8/25	M8/30	M10/2 5	M10/30	M10/40
All load directions (fastening screw or threaded rod property class ≥ 4.8)									
Bottom flange thickness	d _o	[mm]	-	30	40	30	40	40	30
Characteristic resistance in hollow concrete slab class C20/25 to C50/60	FRk	[kN]	≥4.6	3,5	4,5	4	5,5	12	14
Partial safety factor	γ ²	[-]	-	1,4	1,4	1,4	1,4	1	1,4
Spacing	Scr	[mm]		200					
Edge distance	Ccr	[mm]		150					
Shear load with lever arm									
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	04.cze	6	15	15	30	30	30
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	4.8	6	15	15	30	30	30
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	5.8	8	19	19	37	37	37
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	6.8	9	23	23	45	45	45
Characteristic resistance	M ⁰ R _{k,S} ²	[Nm]	8.8	12	30	30	60	60	60
Partial safety factor	γ _{M5} ¹	[-]	-	1,25					

Characteristic resistance under fire exposure in concrete C20/25 to C50/60 - R-DCA and R-

Fire resistance class	R-DCA i R-DCL	M8/25	M8/30	M10/25	M10/40	M12/25	M12/50	
All load directions (Fastening screw or threaded rod property class 4.8)								
R30	Characteristic resistance $F_{Rk,fi}$	[kN]	0,1	0,4	0,2	0,9	0,3	1,6
R60		[kN]	0,1	0,3	0,2	0,8	0,3	1,3
R90		[kN]	0,1	0,3	0,2	0,6	0,3	1,1
R120		[kN]	0,1	0,2	0,2	0,5	0,2	0,8
Spacing	$s_{cr,fi}$	[mm]	4 x h_{ef}					
Edge distance	$c_{cr,fi}$	[mm]	2 x h_{ef}					
The design method covers anchors with a fire attack from one side only. In case of fire attack from more than one side, the edge distance shall be ≥ 300 mm								

**Characteristic resistance under fire exposure in concrete C20/25 to C50/60 - R-DCA-A4
(design acc. to ETAG 001, Annex C, method C)**

Fire resistance class	R-DCA-A4	M8	M10	M12	M16	
All load directions (fastening screw or threaded rod property class A4-70)						
R30	Characteristic resistance $F_{Rk,fi}^1$	[kN]	0,5	0,8	1,1	2,1
R60		[kN]	0,5	0,8	1,1	2,1
R90		[kN]	0,5	0,8	1,1	2,1
R120		[kN]	0,4	0,6	0,9	1,6
Spacing	$s_{cr,fi}$	[mm]	4 x h_{ef}			
Edge distance	$c_{cr,fi}$	[mm]	2 x h_{ef}			
The design method covers anchors with a fire attack from one side only. In case of fire attack from more than one side, the edge distance shall be ≥ 300 mm.						

¹ in the absence of other national regulations a partial safety factor $\gamma_{m,fi} = 1,0$ is recommended

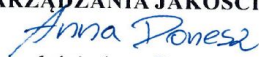
The performance of the product identified above is in conformity with the set of declared performance/s.
This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of manufacturer:

Anna Donesz

Wrocław, 02.07.2020.

PEŁNOMOCNIK SYSTEMU
ZARZĄDZANIA JAKOŚCIĄ


dr inż. Anna Donesz