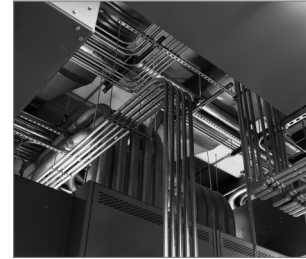
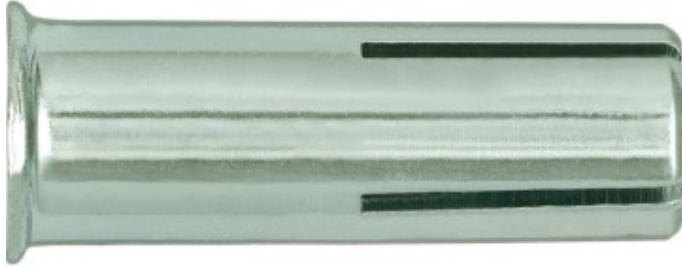


R-DCL Lipped Wedge Anchor

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 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:

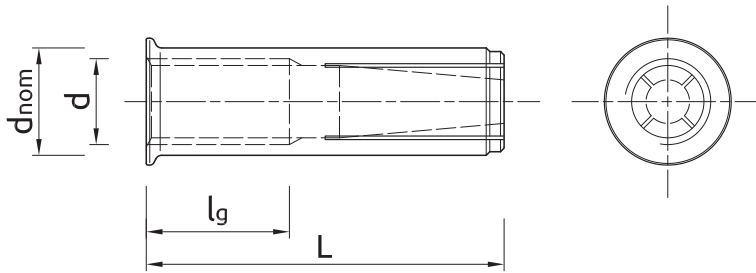
- Cracked concrete C20/25-C50/60
- Non-cracked concrete C20/25-C50/60
- Unreinforced concrete
- Reinforced concrete

Installation guide



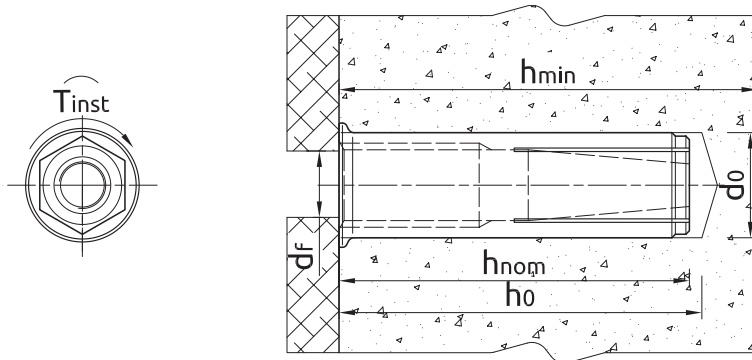
1. Drill a hole of required diameter and depth
2. Remove debris and thoroughly clean hole with pump
3. Insert wedge anchor, slotted end first
4. Use the setting tool to drive the internal wedge into the anchor
5. Insert bolt or stud through fixture and tighten to the recommended torque

Product information



| Size | Product Code | Anchor | | | | Fixture |
|------|--------------|-------------|-------------------|-------------|------------------------|---------------|
| | | Diameter | External diameter | Length | Internal thread length | Hole diameter |
| | | d [mm] | d_{nom} [mm] | L [mm] | l_g [mm] | d_f [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] | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Min. edge distance | c _{min} | [mm] | 50 | 50 | 50 | 50 | 50 | 50 | 50 |

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 |

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 | M8/25 | M8 | M10/25 | M10 | M12/25 | M12 | M16 |
|--|-----------------|------|--------|--------|--------|--------|--------|--------|--------|--------|
| Effective embedment depth | h_{ef} | [mm] | 25.00 | 25.00 | 30.00 | 25.00 | 40.00 | 25.00 | 50.00 | 65.00 |
| TENSION AND SHEAR LOAD | | | | | | | | | | |
| Characteristic resistance | F_{Rk} | [kN] | 1.50 | 1.00 | 3.00 | 1.50 | 4.50 | 2.00 | 6.00 | 13.00 |
| 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] | 200.00 | 200.00 | 200.00 | 200.00 | 200.00 | 200.00 | 200.00 | 260.00 |
| Edge distance | c_{cr} | [mm] | 150.00 | 150.00 | 150.00 | 150.00 | 150.00 | 150.00 | 150.00 | 195.00 |
| SHEAR LOAD | | | | | | | | | | |
| STEEL FAILURE; STEEL CLASS 4.8 | | | | | | | | | | |
| Characteristic resistance with lever arm | $M_{Rk,s}$ | [Nm] | 6.00 | 15.00 | 15.00 | 30.00 | 30.00 | 52.00 | 52.00 | 133.00 |
| 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 | 19.00 | 37.00 | 37.00 | 66.00 | 66.00 | 167.00 |
| 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 | 23.00 | 45.00 | 45.00 | 79.00 | 79.00 | 200.00 |
| 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 | 30.00 | 60.00 | 60.00 | 105.00 | 105.00 | 267.00 |
| 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 | | | M8/25 | M8 | M10/25 | M10 | M12/25 | M12 | M16 | |
|-------------------------------|----------|------|--------|--------|--------|--------|--------|--------|--------|--|
| TENSION AND SHEAR LOAD | | | | | | | | | | |
| Spacing | s_{cr} | [mm] | 100.00 | 120.00 | 100.00 | 160.00 | 100.00 | 200.00 | 260.00 | |
| Edge distance | c_{cr} | [mm] | 50.00 | 60.00 | 50.00 | 80.00 | 50.00 | 100.00 | 130.00 | |
| R (for EI) = 30 min | | | | | | | | | | |
| TENSION AND SHEAR LOAD | | | | | | | | | | |
| Characteristic resistance | F_{Rk} | [kN] | 0.10 | 0.40 | 0.20 | 0.90 | 0.30 | 1.60 | 3.10 | |
| R (for EI) = 60 min | | | | | | | | | | |
| TENSION AND SHEAR LOAD | | | | | | | | | | |
| Characteristic resistance | F_{Rk} | [kN] | 0.10 | 0.30 | 0.20 | 0.80 | 0.30 | 1.30 | 2.40 | |
| R (for EI) = 90 min | | | | | | | | | | |
| TENSION AND SHEAR LOAD | | | | | | | | | | |
| Characteristic resistance | F_{Rk} | [kN] | 0.10 | 0.30 | 0.23 | 0.60 | 0.30 | 1.10 | 2.00 | |
| R (for EI) = 120 min | | | | | | | | | | |
| TENSION AND SHEAR LOAD | | | | | | | | | | |
| Characteristic resistance | F_{Rk} | [kN] | 0.10 | 0.20 | 0.20 | 0.50 | 0.20 | 0.80 | 1.60 | |

Design performance data

Hollow concrete slab

| Size | | | M6 | M8/25 | M8 | M10/25 | M10 | M12/25 | M12 |
|--|-----------------|------|--------|--------|--------|--------|--------|--------|--------|
| Effective embedment depth | h_{ef} | [mm] | 25.00 | 25.00 | 30.00 | 25.00 | 40.00 | 25.00 | 50.00 |
| Min. bottom flange thickness | d_b | [mm] | 30.00 | 40.00 | 30.00 | 40.00 | 30.00 | 40.00 | 30.00 |
| TENSION AND SHEAR LOAD | | | | | | | | | |
| Characteristic resistance | F_{Rk} | [kN] | 3.50 | 4.50 | 4.00 | 5.50 | 14.00 | 7.00 | 16.00 |
| Installation safety factor | γ_{inst} | - | 1.40 | 1.40 | 1.40 | 1.40 | 1.40 | 1.40 | 1.20 |
| 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 | 15.00 | 30.00 | 30.00 | 52.00 | 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 | 19.00 | 37.00 | 37.00 | 66.00 | 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 | 23.00 | 45.00 | 45.00 | 79.00 | 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 | 30.00 | 60.00 | 60.00 | 105.00 | 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 | | 1.06 | 1.06 | | 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 | | 0.72 | 0.72 | | 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 | 5906675418285 |
| 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