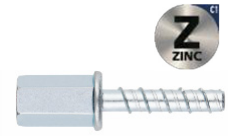
Technical Datasheet

Hex Head Concrete Bolt

Pan Head Concrete Bolt

Male Rod Hanger

Female Rod Hanger



Technical Datasheet

- Pilot hole in concrete needed, thread is created by the anchor during the installation process.
- Use for high loads.
- Assessed for 2 installation depths and 3 for Ø10.
- Use in cracked and non-cracked concrete.
- Comply with guideline VdS CEA 4001:2021-01(07) "Guidelines for sprinklers systems. Planning and installation".
- Suitable when reduced edge distances or spacing required.
- Qualified for static and cuasi-static.
- Easy installation.
- Installation through the fixture.
- Reusable.
- Removable, leaving concrete surface flat.
- Variety of lengths and sizes, assembly flexibility.
- VdS available from Ø6 to Ø18.

Base material

Size range

Ø6 - Ø8

Drill condition

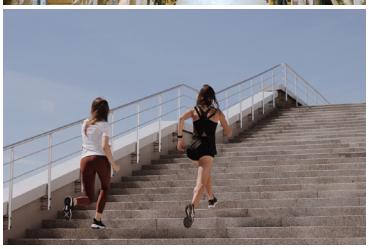
Dry Wet Flooded

Application

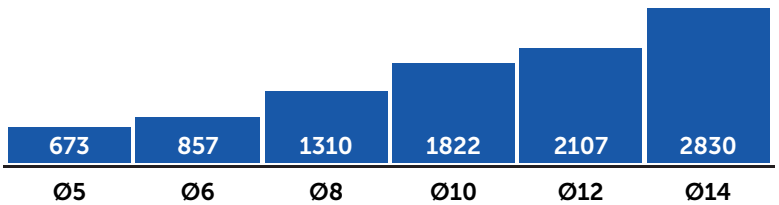
- Structural fixings in cracked and uncracked concrete subject to dry internal conditions.
- Glazing, windows and storefronts
- Racking and shelving
- Attaching railings, handrails and ledgers
- Fixings wood structures in concrete

Assessments

Kora in use



Maximum loads recommended for cracked and uncracked concrete (kg)

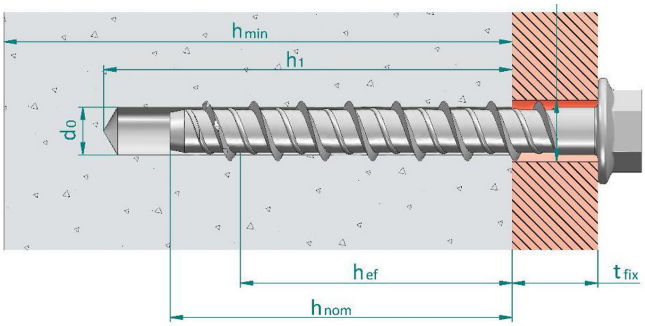


For more information visit www.korauk.com

Range

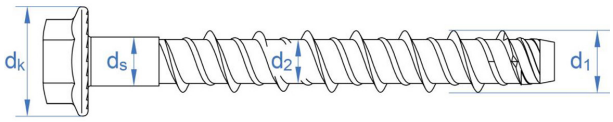
Code	Sizes	Photo	Description	Material	Covering
10175	Ø6 x 40		Hexagonal head with flange screw anchor	Carbon steel, zinc plated coating ≥ 5 µm	
10180	Ø6 x 50				
10185	Ø6 x 60				
10190	Ø8 x 60				
10195	Ø6 x 40		Pan head screw anchor	Carbon steel, ATLANTIS coating	
10650	Ø6 x 35 M8 - M10		Rod hanger internal thread screw anchor	Carbon steel, zinc plated coating ≥ 5 µm	
10655	Ø6 x 55 M8 - M10				
10640	Ø6 x 35 M8		Hexagonal head with flange and with external thread screw anchor	Carbon steel, zinc plated coating ≥ 5 µm	
10645	Ø6 x 55 M10				

Installation data



d0: Nominal diameter of drill bit
df: Fixture clearance hole diameter
hef: Effective anchorage depth
h1: Depth of drilled hole
hnom: Overall fastener embedment depth in the concrete
hmin: Minimum thickness of concrete member
tfix: Fixture thickness

Type	10175, 10180, 10185, 10190, 10195, 10640, 10645, 10650, 10655
Diameter (mm)	6
d1: Threaded outer diameter (mm)	7,35
d2: Core diameter (mm)	5,75
ds: Shaft diameter (mm)	5,95
dk: Diameter of integrated washer (mm)	14,00



Seismic load assessment

Product	Size	ETA Approved	C1
10175	Ø6 x 40	✓	
10180	Ø6 x 50	✓	✓
10185	Ø6 x 60	✓	✓
10190	Ø8 x 60	✓	✓
10195	Ø6 x 40	✓	
10650	Ø6 x 35 M8 - M10	✓	
10655	Ø6 x 55 M8 - M10	✓	✓
10640	Ø6 x 35 M8	✓	
10645	Ø6 x 55 M10	✓	

Installation parameters

General installation parameters									Standard installation depth ($h_{ef,\,std}$)									Reduced installation depth ($h_{ef,\,red}$)								
Product	Size	ETA Approved	Drill bit diameter	Fixture clearance hole	Spanner	Maximum torque	Minimum allowable spacing	Minimum allowable edge distance	Minimum concrete thickness	Depth of drill hole	Installation depth	Effective anchorage depth	Thickness of fixture	Critical spacing (concrete cone)	Critical edge distance (cone)	Critical spacing(splitting)	Critical edge distance (splitting)	Minimum concrete thickness	Depth of drill hole	Installation depth	Effective anchorage depth	Thickness of fixture	Critical spacing (concrete cone)	Critical edge distance (cone)	Critical spacing(splitting)	Critical edge distance (splitting)
10175	Ø6 x 40	✓	6	9	SW10	10	35	35	-	-	-	-	-	-	-	-	-	100	45	35	26,0	5	78	39	90	45
10180	Ø6 x 50	✓							-	-	-	-	-	-	-	-	-					15				
10185	Ø6 x 60	✓							100	65	55	43,0	5	129	65	170	85					25				
10190	Ø8 x 60	✓	8	12	SW13	20	35	35	-	-	-	-	-	-	-	-	-		60	50	37,5	10	113	57	130	65
10195	Ø6 x 40	✓	6	9	SW10	10	35	35	-	-	-	-	-	-	-	-	-		45	35	26,0	5	78	39	90	45
10650	Ø6 x 35 M8 - M10	✓		-	SW13				-	-	-	-	-	-	-	-	-					-				
10655	Ø6 x 55 M8 - M10	✓							100	65	55	43,0	-	129	65	170	85	-	-	-	-	-	-	-	-	-
10640	Ø6 x 35 M8	✓							-	-	-	-	-	-	-	-	-	100	65	55	26,0	-	78	39	90	45
10645	Ø6 x 55 M10	✓							100	65	55	43,0	-	129	65	170	85	-	-	-	-	-	-	-	-	-

Resistances

Resistances in concrete class C20/25 for an isolated anchor without spacing or concrete edge distance effects are indicated in the following table:

Values in green show Steel failure, blue values concrete failure and other indicate pull out failure.
1 KN ≈ 100 kg

Characteristics resistance (structural application) [kN]

General parameters			Non-cracked concrete				Cracked concrete			
Product	Size	ETA Approved	Tension $N_{rk, ucr}$		Shear $V_{rk, ucr}$		Tension $N_{rk, ucr}$		Shear $V_{rk, ucr}$	
			($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)
10175	Ø6 x 40	✓	-	5,00	-	12,53	-	4,57	-	9,36
10180	Ø6 x 50	✓	-	5,00	-	12,53	-	4,57	-	9,36
10185	Ø6 x 60	✓	13,87	5,00	12,53	12,53	9,71	4,57	11,17	9,36
10190	Ø8 x 60	✓	-	11,30	-	19,57	-	7,91	-	14,23
10195	Ø6 x 40	✓	-	5,00	-	-	-	4,57	-	-
10650	Ø6 x 35 M8 - M10	✓	-	5,00	-	-	-	4,57	-	-
10655	Ø6 x 55 M8 - M10	✓	13,87	-	-	-	9,71	-	-	-
10640	Ø6 x 35 M8	✓	-	5,00	-	-	-	4,57	-	-
10645	Ø6 x 55 M10	✓	13,87	-	-	-	9,71	-	-	-

Design resistances (structural application) [kN]

General parameters			Non-cracked concrete				Cracked concrete			
Product	Size	ETA Approved	Tension $N_{rk, ucr}$		Shear $V_{rk, ucr}$		Tension $N_{rk, ucr}$		Shear $V_{rk, ucr}$	
			($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)
10175	Ø6 x 40	✓	-	2,78	-	8,35	-	2,54	-	6,24
10180	Ø6 x 50	✓	-	2,78	-	8,35	-	2,54	-	6,24
10185	Ø6 x 60	✓	9,25	2,78	8,35	8,35	6,47	2,54	7,44	6,24
10190	Ø8 x 60	✓	-	6,28	-	13,05	-	4.39	-	9,49
10195	Ø6 x 40	✓	-	2,78	-	8,35	-	2,54	-	6,24
10650	Ø6 x 35 M8 - M10	✓	-	2,78	-	-	-	2,65	-	-
10655	Ø6 x 55 M8 - M10	✓	9,25	-	-	-	6,47	-	-	-
10640	Ø6 x 35 M8	✓	-	2,78	-	-	-	2,54	-	-
10645	Ø6 x 55 M10	✓	9,25	-	-	-	6,47	-	-	-

Maximum Loads Recommended (structural application) [kN] (with $\gamma_F = 1.4$)

General parameters			Non-cracked concrete				Cracked concrete			
Product	Size	ETA Approved	Tension $N_{rk, ucr}$		Shear $V_{rk, ucr}$		Tension $N_{rk, ucr}$		Shear $V_{rk, ucr}$	
			($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)	($h_{ef, std}$)	($h_{ef, red}$)
10175	Ø6 x 40	✓	-	1,98	-	5,97	-	1,81	-	4,46
10180	Ø6 x 50	✓	-	1,98	-	5,97	-	1,81	-	4,46
10185	Ø6 x 60	✓	6,61	1,98	5,97	5,97	4,62	1,81	5,32	4,46
10190	Ø8 x 60	✓	-	4,48	-	9,32	-	3,14	-	6,78
10195	Ø6 x 40	✓	-	1,98	-	5,97	-	1,81	-	4,46
10650	Ø6 x 35 M8 - M10	✓	-	1,98	-	-	-	1,81	-	-
10655	Ø6 x 55 M8 - M10	✓	6,61	-	-	-	4,62	-	-	-
10640	Ø6 x 35 M8	✓	-	1,98	-	-	-	1,81	-	-
10645	Ø6 x 55 M10	✓	6,61	-	-	-	4,62	-	-	-

Official documentation

- European assessment ETA 20/0046 for Installation in cracked and non-cracked concrete according to guideline EAD 330232-00-0601, Option 1, from Ø6 to Ø18.
- European assessment ETA 20/0494 for use in concrete and prestressed hollow core slabs for redundant non-structural systems according to guideline EAD 330747-00-0601 from Ø5 to Ø6.
- Declaration of performance DoP THE.
- VdS certificate CEA 4001:2021-01(07) Guidelines for sprinklers systems. Planning and installation for applications of water extinguising systems on concrete elements from Ø6 to Ø18.