

R-LX-I-ZP Zinc plated Internally Threaded Concrete Screw Anchor, Part 6

Self-tapping concrete screwbolt



Approvals and Reports

- ETA 17/0783



Product information

Features and benefits

- Time-efficient installation through streamlined procedure - simply drill and drive
- Completely removable
- Unique design with patented threadform ensures high performance for relatively small hole diameter
- Non-expansion functioning ensures low risk of damage to base material and makes R-LX ideal for installation near edges and adjacent anchors
- High performance in non-cracked concrete
- Different head types for any application
- Oversize head for fixtures with elongated holes
- Excellent product for temporary fixing
- Suitable for standard and reduced embedment depth

Applications

- Through-fixing
- Temporary anchorages
- Formwork support systems
- Balustrading & handrails
- Fencing & gates manufacturing and installation
- Racking systems
- Public seating
- Scaffolding

Base materials

Approved for use in:

- Cracked concrete C20/25-C50/60
- Non-cracked concrete C20/25-C50/60
- Hollow-core Slab C30/37-C50/60
- Reinforced concrete
- Unreinforced concrete

Also suitable for use in:

- Natural Stone (after site testing)

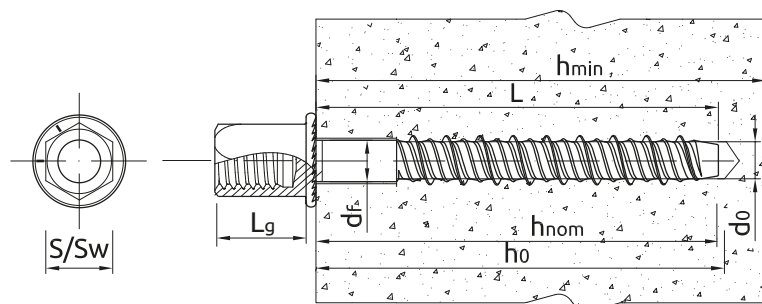
Installation guide



1. Drill the hole with rotary hammer drilling machine. Drill to a required depth.
2. Blow out dust at least 4 times with a hand pump.
3. Tighten the anchor to the substrate.
4. Install the fastening element.
5. After installation a further turning of the screw must not be possible. The head of the screw must be in contact with the substrate and is not damaged.

Technical drawing of a bolt. The side view shows a bolt with a hexagonal head and a threaded shank. The length of the shank is labeled L . The diameter of the shank is labeled d . The end view shows a hexagonal head with a width across flats labeled Sw .

Installation data



Size			5	6	8	10
Thread diameter	d	[mm]	6.3	7.5	10	12.5
Hole diameter in substrate	d ₀	[mm]	5	6	8	10
Wrench size	Sw	[mm]	10	13	15	21
External diameter of washer		[mm]	13	16	18	24
Max. torque for impact screw driver	T _{imp,max}	[Nm]	200	400	900	950
REDUCED EMBEDMENT DEPTH						
Min. hole depth in substrate	h _{0,r}	[mm]	35	-	60	65
Real hole depth in substrate	h ₀	[mm]	L + 10	-	L + 10	L + 10
Min. installation depth	h _{nom,r}	[mm]	25	-	50	55
Min. substrate thickness	h _{min,r}	[mm]	80	-	80	80
Min. spacing	s _{min,r}	[mm]	40	-	50	60
Min. edge distance	c _{min,r}	[mm]	40	-	50	60
MINIMUM EMBEDMENT DEPTH						
Min. hole depth in substrate	h _{0,min}	[mm]	-	45	-	-
Real hole depth in substrate	h ₀	[mm]	-	L + 10	-	-
Min. installation depth	h _{nom,min}	[mm]	-	35	-	-
Min. substrate thickness	h _{min,min}	[mm]	-	80	-	-
Min. spacing	s _{min,min}	[mm]	-	45	-	-
Min. edge distance	c _{min,min}	[mm]	-	45	-	-

Installation data

Hollow concrete slab

Size			6
Thread diameter	d	[mm]	7.5
Hole diameter in substrate	d ₀	[mm]	6
Wrench size	Sw	[mm]	13
External diameter of washer		[mm]	16
Max. torque for impact screw driver	T _{imp,max}	[Nm]	400
MINIMUM EMBEDMENT DEPTH			
Min. hole depth in substrate	h _{0,min}	[mm]	45
Real hole depth in substrate	h ₀	[mm]	L + 10
Min. installation depth	h _{nom,min}	[mm]	35
Minimum distance between anchor groups	a _{min,min}	[mm]	100
Min. spacing	s _{min,min}	[mm]	100
Min. edge distance	c _{min,min}	[mm]	50

Mechanical properties

Size			5	6	8	10
Nominal ultimate tensile strength - tension	f _{uk}	[N/mm ²]	1300	1250	1200	1050
Nominal yield strength - tension	f _{yk}	[N/mm ²]	1150	1100	1050	950
Cross sectional area - tension	A _s	[mm ²]	19.6	28.3	50.3	78.5
Elastic section modulus	W _{el}	[mm ³]	12.2	21.2	50.3	98.1
Characteristic bending resistance	M _{Rk,s}	[Nm]	19	31.8	72.4	123.6
Design bending resistance	M	[Nm]	12.7	21.2	48.3	82.4

Basic performance data

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

Size		5	6	8	10
CRACKED AND NON-CRACKED CONCRETE					
Reduced embedment depth h _{nom}	[mm]	25.00	-	50.00	55.00
Minimum embedment depth h _{nom}	[mm]	-	35.00	-	-
HOLLOW CORE SLAB					
Minimum embedment depth h _{nom}	[mm]	-	35.00	-	-
CHARACTERISTIC LOAD					
TENSION AND SHEAR LOAD F_{Rk}					
CRACKED AND NON-CRACKED CONCRETE					
Reduced embedment depth	[kN]	3.00	-	7.50	9.00
Minimum embedment depth	[kN]	-	3.00	-	-
HOLLOW CORE SLAB					
Minimum embedment depth	[kN]	-	6.00	-	-
DESIGN LOAD					
TENSION AND SHEAR LOAD F_{Rd}					
CRACKED AND NON-CRACKED CONCRETE					
Reduced embedment depth	[kN]	1.67	-	5.00	6.00
Minimum embedment depth	[kN]	-	2.00	-	-
HOLLOW CORE SLAB					
Minimum embedment depth	[kN]	-	4.00	-	-

Basic performance data

Size		5	6	8	10
RECOMMENDED LOAD					
TENSION AND SHEAR LOAD F_{rec}					
CRACKED AND NON-CRACKED CONCRETE					
Reduced embedment depth	[kN]	1.19	-	3.57	4.28
Minimum embedment depth	[kN]	-	1.42	-	-
HOLLOW CORE SLAB					
Minimum embedment depth	[kN]	-	2.85	-	-

Design performance data

Normal concrete

Size			5	6	8	10
Min. installation depth	h_{nom}	[mm]	25.00	35.00	50.00	55.00
Effective embedment depth	h_{ef}	[mm]	17.50	24.70	37.00	40.00
TENSION AND SHEAR LOAD						
Characteristic resistance	F_{Rk}	[kN]	3.00	3.00	7.50	9.00
Installation safety factor	γ_{inst}	-	1.20	1.00	1.00	1.00
Increasing factors for N_{Rdp} - C30/37	ψ_c	-	1.08	1.00	1.08	1.08
Increasing factors for N_{Rdp} - C40/50	ψ_c	-	1.15	1.00	1.15	1.15
Increasing factors for N_{Rdp} - C50/60	ψ_c	-	1.19	1.00	1.19	1.19
Spacing	$s_{cr,N}$	-	70.00	100.00	120.00	120.00
Edge distance	$c_{cr,N}$	-	35.00	50.00	60.00	60.00
SHEAR LOAD						
STEEL FAILURE						
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	19.00	31.80	72.40	123.60
Partial safety factor	γ_{Ms}	-	1.50	1.50	1.50	1.50

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

Size			8	10
TENSION AND SHEAR LOAD				
Spacing	s_{cr}	[mm]	148.00	160.00
Edge distance	c_{cr}	[mm]	74.00	80.00
R (for EI) = 30 min				
TENSION AND SHEAR LOAD				
Characteristic resistance	F_{Rk}	[kN]	0.75	1.57
R (for EI) = 60 min				
TENSION AND SHEAR LOAD				
Characteristic resistance	F_{Rk}	[kN]	0.65	1.18
R (for EI) = 90 min				
TENSION AND SHEAR LOAD				
Characteristic resistance	F_{Rk}	[kN]	0.50	1.02
R (for EI) = 120 min				
TENSION AND SHEAR LOAD				
Characteristic resistance	F_{Rk}	[kN]	0.40	0.79

Design performance data

Hollow concrete slab

Size			6
Min. installation depth	h_{nom}	[mm]	35.00
Effective embedment depth	h_{ef}	[mm]	24.70
Min. bottom flange thickness	d_b	[mm]	35.00
TENSION AND SHEAR LOAD			
HOLLOW CONCRETE SLAB C30/37			
Characteristic resistance	F_{Rk}	[kN]	5.00
HOLLOW CONCRETE SLAB C40/50			
Characteristic resistance	F_{Rk}	[kN]	6.00
HOLLOW CONCRETE SLAB C50/60			
Characteristic resistance	F_{Rk}	[kN]	6.00
Installation safety factor	V_{inst}	-	1.00
Spacing	$s_{cr,N}$	[mm]	100.00
Edge distance	$c_{cr,N}$	[mm]	50.00
SHEAR LOAD			
STEEL FAILURE			
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	31.80
Partial safety factor	V_{Ms}	-	1.50

Product commercial data

Product Code	Anchor	Quantity [pcs]			Weight [kg]			Bar Codes
	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
R-LX-05X025-I06-ZP ₁₎	25	100	100	38400	1.20	1.20	490.8	5906675460734
R-LX-06X035-I06-ZP ₁₎	35	100	100	38400	2.3	2.3	924.7	5906675430836
R-LX-06X035-I08-ZP ₁₎	35	100	100	38400	2.2	2.2	867.9	5906675416069
R-LX-06X035-I8/10Z ₁₎	35	100	100	25600	2.6	2.6	686.6	5906675468983
R-LX-06X035-I10-ZP ₁₎	35	100	100	38400	2.0	2.0	778.8	5906675416076
R-LX-08X050-I12-ZP ₁₎	50	100	100	19200	3.9	3.9	778.8	5906675460741
R-LX-10X055-I16-ZP ₁₎	50	100	100		4.1	4.1		5906675468976

1) ETA 17/0783

** the remaining range of anchoring depth includes ETA-17/0806*