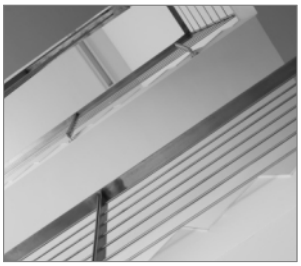
R-LX-I-ZP Zinc plated Internally Threaded Concrete Screw Anchor

Self-tapping concrete screwbolt



Approvals and Reports

- ETA 17/0806

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

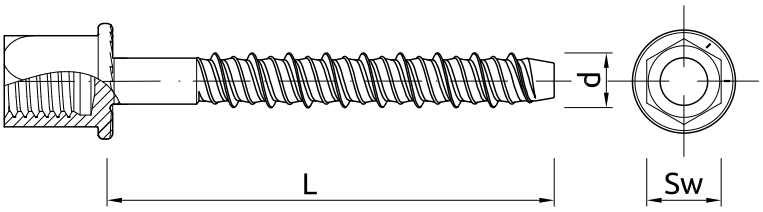
Approved for use in:

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

Installation guide

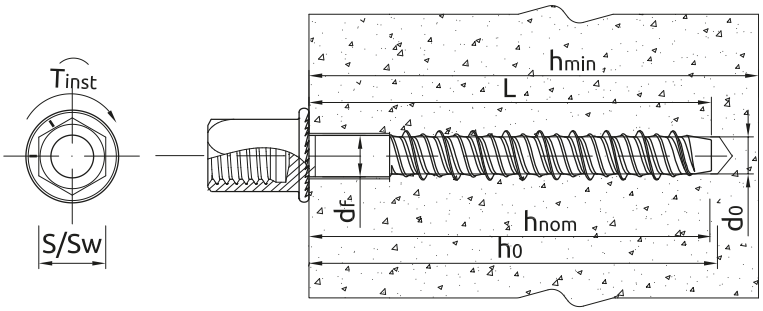
1. Drill the hole with rotary percussive machine. Drill to a required depth.
2. Blow out dust at least 4 times with a hand pump.
3. Possibility of unscrewing and re-screwing.
4. Tighten to the recommended torque.
5. After installation.

Product information



Size	Product Code	Anchor	
		Diameter	Length
		d	L
		[mm]	[mm]
6	R-LX-06X055-I08-ZP	7.5	55
	R-LX-06X055-I10-ZP	7.5	55

Installation data



Size			6
Thread diameter	d	[mm]	7.5
Hole diameter in substrate	d_0	[mm]	6
Wrench size	Sw	[mm]	13
STANDARD EMBEDMENT DEPTH			
Min. hole depth in substrate	$h_{o,s}$	[mm]	65
Installation depth	$h_{nom,s}$	[mm]	55
Min. substrate thickness	$h_{min,s}$	[mm]	100
Min. spacing	$s_{min,s}$	[mm]	45
Min. edge distance	$c_{min,s}$	[mm]	45
REDUCED EMBEDMENT DEPTH			
Min. hole depth in substrate	$h_{o,r}$	[mm]	50
Installation depth	$h_{nom,r}$	[mm]	43
Min. substrate thickness	$h_{min,r}$	[mm]	100
Min. spacing	$s_{min,r}$	[mm]	45
Min. edge distance	$c_{min,r}$	[mm]	45

Mechanical properties

Size			6
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm²]	1250
Nominal yield strength - tension	f_{yk}	[N/mm²]	1100
Cross sectional area - tension	A_s	[mm²]	28.3
Elastic section modulus	W_{el}	[mm³]	21.2
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	31.8
Design bending resistance	M	[Nm]	21.2

Basic performance data

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

Size		6
MEAN ULTIMATE LOAD		
TENSION LOAD $N_{Ru,m}$		
NON-CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	14.80
Reduced embedment depth	[kN]	11.09
CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	11.10
Reduced embedment depth	[kN]	7.81
SHEAR LOAD $V_{Ru,m}$		
NON-CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	14.80
Reduced embedment depth	[kN]	11.09
CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	11.10
Reduced embedment depth	[kN]	7.81
CHARACTERISTIC LOAD		
TENSION LOAD N_{Rk}		
NON-CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	12.00
Reduced embedment depth	[kN]	9.14
CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	7.00
Reduced embedment depth	[kN]	6.52
SHEAR LOAD V_{Rk}		
NON-CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	13.75
Reduced embedment depth	[kN]	9.14
CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	9.80
Reduced embedment depth	[kN]	6.52
DESIGN LOAD		
TENSION LOAD N_{Rd}		
NON-CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	8.00
Reduced embedment depth	[kN]	6.09
CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	4.67
Reduced embedment depth	[kN]	4.34
SHEAR LOAD V_{Rd}		
NON-CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	9.16
Reduced embedment depth	[kN]	6.09
CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	6.53
Reduced embedment depth	[kN]	4.34

Basic performance data

Size		6
RECOMMENDED LOAD		
TENSION LOAD N_{rec}		
NON-CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	5.71
Reduced embedment depth	[kN]	4.35
CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	3.33
Reduced embedment depth	[kN]	3.10
SHEAR LOAD V_{rec}		
NON-CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	6.55
Reduced embedment depth	[kN]	4.35
CRACKED CONCRETE C20/25		
Standard embedment depth	[kN]	4.67
Reduced embedment depth	[kN]	3.10

Design performance data

Standard embedment depth

(-) failure is not decisive

Size			6
Installation depth	h_{nom}	[mm]	55.00
Effective embedment depth	h_{ef}	[mm]	42.00
TENSION LOAD			
STEEL FAILURE			
Characteristic resistance	$N_{Rk,s}$	[kN]	35.40
Partial safety factor	γ_{Ms}	-	1.40
PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25			
Characteristic resistance	$N_{Rk,p}$	[kN]	12.00
PULL-OUT FAILURE; CRACKED CONCRETE C20/25			
Characteristic resistance	$N_{Rk,p}$	[kN]	7.00
PULL-OUT FAILURE			
Installation safety factor	γ_2	-	1.00
Increasing factors for $N_{Rd,p}$ - C30/37	Ψ_c	-	1.08
Increasing factors for $N_{Rd,p}$ - C40/50	Ψ_c	-	1.15
Increasing factors for $N_{Rd,p}$ - C50/60	Ψ_c	-	1.19
CONCRETE CONE FAILURE			
Installation safety factor	γ_2	-	1.00
Factor for cracked concrete	k	-	7.20
Factor for cracked concrete	$k_{cr,N}$	-	7.70
Factor for non-cracked concrete	k	-	10.10
Factor for non-cracked concrete	$k_{ucr,N}$	-	11.00
Spacing	$s_{cr,N}$	[mm]	126.00
Edge distance	$c_{cr,N}$	[mm]	63.00
CONCRETE SPLITTING FAILURE			
Installation safety factor	γ_2	-	1.00
Spacing	$s_{cr,sp}$	[mm]	126.00
Edge distance	$c_{cr,sp}$	[mm]	63.00

Design performance data

Size			6
SHEAR LOAD			
STEEL FAILURE			
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	17.70
Ductility factor	k_7	-	0.80
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	31.80
Partial safety factor	γ_{Ms}	-	1.50
CONCRETE PRY-OUT FAILURE			
Factor	k	-	1.00
Installation safety factor	γ_2	-	1.00
CONCRETE EDGE FAILURE			
Effective length of anchor	ℓ_f	[mm]	42.00
Anchor diameter	d_{nom}	[mm]	6.00
Installation safety factor	γ_2	-	1.00

Design performance data

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

Size			6
TENSION LOAD			
Edge distance	c_{cr}	[mm]	84.00
Spacing	s_{cr}	[mm]	168.00
R (for EI) = 30 min			
TENSION LOAD			
STEEL FAILURE			
Characteristic resistance	$N_{Rk,s}$	[kN]	0.28
PULL-OUT FAILURE			
Characteristic resistance	$N_{Rk,p}$	[kN]	1.75
SHEAR LOAD			
STEEL FAILURE			
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.28
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.25
R (for EI) = 60 min			
TENSION LOAD			
STEEL FAILURE			
Characteristic resistance	$N_{Rk,s}$	[kN]	0.25
PULL-OUT FAILURE			
Characteristic resistance	$N_{Rk,p}$	[kN]	1.75
SHEAR LOAD			
STEEL FAILURE			
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.25
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.23
R (for EI) = 90 min			
TENSION LOAD			
STEEL FAILURE			
Characteristic resistance	$N_{Rk,s}$	[kN]	0.20
PULL-OUT FAILURE			
Characteristic resistance	$N_{Rk,p}$	[kN]	1.75
SHEAR LOAD			
STEEL FAILURE			
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.20
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.18
R (for EI) = 120 min			
TENSION LOAD			
STEEL FAILURE			
Characteristic resistance	$N_{Rk,s}$	[kN]	0.14
PULL-OUT FAILURE			
Characteristic resistance	$N_{Rk,p}$	[kN]	1.40
SHEAR LOAD			
STEEL FAILURE			
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.14
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.13

Design performance data

Reduced embedment depth

(-) failure is not decisive

Size			6
Installation depth	h_{nom}	[mm]	43.00
Effective embedment depth	h_{ef}	[mm]	32.00
TENSION LOAD			
STEEL FAILURE			
Characteristic resistance	$N_{Rk,s}$	[kN]	35.40
Partial safety factor	γ_{Ms}	-	1.40
PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25			
Characteristic resistance	$N_{Rk,p}$	[kN]	-
PULL-OUT FAILURE; CRACKED CONCRETE C20/25			
Characteristic resistance	$N_{Rk,p}$	[kN]	-
PULL-OUT FAILURE			
Installation safety factor	γ_2	-	1.00
Increasing factors for $N_{Rd,p}$ - C30/37	Ψ_c	-	1.08
Increasing factors for $N_{Rd,p}$ - C40/50	Ψ_c	-	1.15
Increasing factors for $N_{Rd,p}$ - C50/60	Ψ_c	-	1.19
CONCRETE CONE FAILURE			
Installation safety factor	γ_2	-	1.00
Factor for cracked concrete	k	-	7.20
Factor for cracked concrete	$k_{cr,N}$	-	7.70
Factor for non-cracked concrete	k	-	10.10
Factor for non-cracked concrete	$k_{ucr,N}$	-	11.00
Spacing	$s_{cr,N}$	[mm]	90.00
Edge distance	$c_{cr,N}$	[mm]	45.00
CONCRETE SPLITTING FAILURE			
Installation safety factor	γ_2	-	1.00
Spacing	$s_{cr,sp}$	[mm]	90.00
Edge distance	$c_{cr,sp}$	[mm]	45.00
SHEAR LOAD			
STEEL FAILURE			
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	17.70
Ductility factor	k_7	-	0.80
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	31.80
Partial safety factor	γ_{Ms}	-	1.50
CONCRETE PRY-OUT FAILURE			
Factor	k	-	1.00
Installation safety factor	γ_2	-	1.00
CONCRETE EDGE FAILURE			
Effective length of anchor	ℓ_f	[mm]	32.00
Anchor diameter	d_{nom}	[mm]	6.00
Installation safety factor	γ_2	-	1.00

Design performance data

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

Size			6
TENSION LOAD			
Edge distance	c_{cr}	[mm]	84.00
Spacing	s_{cr}	[mm]	168.00
R (for EI) = 30 min			
TENSION LOAD			
STEEL FAILURE			
Characteristic resistance	$N_{Rk,s}$	[kN]	0.28
PULL-OUT FAILURE			
Characteristic resistance	$N_{Rk,p}$	[kN]	1.38
SHEAR LOAD			
STEEL FAILURE			
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.28
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.25
R (for EI) = 60 min			
TENSION LOAD			
STEEL FAILURE			
Characteristic resistance	$N_{Rk,s}$	[kN]	0.25
PULL-OUT FAILURE			
Characteristic resistance	$N_{Rk,p}$	[kN]	1.38
SHEAR LOAD			
STEEL FAILURE			
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.25
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.23
R (for EI) = 90 min			
TENSION LOAD			
STEEL FAILURE			
Characteristic resistance	$N_{Rk,s}$	[kN]	0.20
PULL-OUT FAILURE			
Characteristic resistance	$N_{Rk,p}$	[kN]	1.38
SHEAR LOAD			
STEEL FAILURE			
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.20
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.18
R (for EI) = 120 min			
TENSION LOAD			
STEEL FAILURE			
Characteristic resistance	$N_{Rk,s}$	[kN]	0.14
PULL-OUT FAILURE			
Characteristic resistance	$N_{Rk,p}$	[kN]	1.10
SHEAR LOAD			
STEEL FAILURE			
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.14
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.13

Product commercial data

Size	Product Code	Anchor	Quantity [pcs]			Weight [kg]			Bar Codes
		Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
6	R-LX-06X055-I08-ZP[1)]	55	100	100	31200	3.1	3.1	985.3	5906675416083
	R-LX-06X055-I10-ZP[1)]	55	100	100	31200	3.1	3.1	985.3	5906675416090

1) ETA 17/0806

** the remaining range of anchoring depth includes ETA-17/0783*