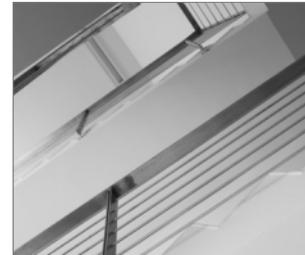
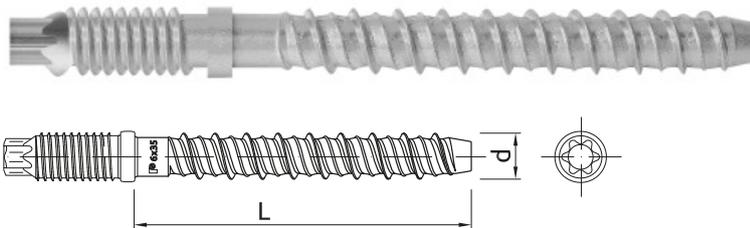


## R-LX-E-ZP Zinc plated Externally Threaded Concrete Screw Anchor

### 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:

- Cracked concrete C20/25-C50/60
- Non-cracked concrete C20/25-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. 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-E-ZP	7.5	55

## Installation data

Size	6		
Thread diameter	d	[mm]	7.5
Hole diameter in substrate	d <sub>0</sub>	[mm]	6
Wrench size	Sw	[mm]	13
External diameter of washer		[mm]	16
Max. torque for impact screw driver	T <sub>imp,max</sub>	[Nm]	400
<b>STANDARD EMBEDMENT DEPTH</b>			
Min. hole depth in substrate	h <sub>0,s</sub>	[mm]	65
Real hole depth in substrate	h <sub>0</sub>	[mm]	L + 10 - t <sub>fix</sub>
Min. installation depth	h <sub>nom,s</sub>	[mm]	55
Min. substrate thickness	h <sub>min,s</sub>	[mm]	100
Min. spacing	s <sub>min,s</sub>	[mm]	45
Min. edge distance	c <sub>min,s</sub>	[mm]	45
<b>REDUCED EMBEDMENT DEPTH</b>			
Min. hole depth in substrate	h <sub>0,r</sub>	[mm]	50
Real hole depth in substrate	h <sub>0</sub>	[mm]	L + 10 - t <sub>fix</sub>
Min. installation depth	h <sub>nom,r</sub>	[mm]	43
Min. substrate thickness	h <sub>min,r</sub>	[mm]	100
Min. spacing	s <sub>min,r</sub>	[mm]	45
Min. edge distance	c <sub>min,r</sub>	[mm]	45

## Mechanical properties

Size	6		
Nominal ultimate tensile strength - tension	F <sub>uk</sub>	[N/mm <sup>2</sup> ]	1250
Nominal yield strength - tension	F <sub>yk</sub>	[N/mm <sup>2</sup> ]	1100
Cross sectional area - tension	A <sub>s</sub>	[mm <sup>2</sup> ]	28.3
Elastic section modulus	W <sub>el</sub>	[mm <sup>3</sup> ]	21.2
Characteristic bending resistance	M <sup>0</sup> <sub>Rk,s</sub>	[Nm]	31.8
Design bending resistance	M	[Nm]	21.2

## Basic performance data

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

Size	6		
<b>NON-CRACKED CONCRETE C20/25</b>			
Standard embedment depth h <sub>nom</sub>	[mm]		55.00
Reduced embedment depth h <sub>nom</sub>	[mm]		43.00
<b>CRACKED CONCRETE C20/25</b>			
Standard embedment depth h <sub>nom</sub>	[mm]		55.00
Reduced embedment depth h <sub>nom</sub>	[mm]		43.00

### Basic performance data

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

## Design performance data

Standard embedment depth

(-) failure is not decisive

Size			6
Min. installation depth	$h_{nom}$	[mm]	55.00
Effective embedment depth	$h_{ef}$	[mm]	42.00
<b>TENSION LOAD</b>			
<b>STEEL FAILURE</b>			
Characteristic resistance	$N_{Rk,s}$	[kN]	35.40
Partial safety factor	$\gamma_{Ms}$	-	1.40
<b>PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25</b>			
Characteristic resistance	$N_{Rk,p}$	[kN]	12.00
<b>PULL-OUT FAILURE; CRACKED CONCRETE C20/25</b>			
Characteristic resistance	$N_{Rk,p}$	[kN]	7.00
<b>PULL-OUT FAILURE</b>			
Installation safety factor	$\gamma_2$	-	1.00
Increasing factors for $N_{Rd,p}$ - C30/37	$\psi_c$	-	1.08
Increasing factors for $N_{Rd,p}$ - C40/50	$\psi_c$	-	1.15
Increasing factors for $N_{Rd,p}$ - C50/60	$\psi_c$	-	1.19
<b>CONCRETE CONE FAILURE</b>			
Installation safety factor	$\gamma_2$	-	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
<b>CONCRETE SPLITTING FAILURE</b>			
Installation safety factor	$\gamma_2$	-	1.00
Spacing	$s_{cr,sp}$	[mm]	126.00
Edge distance	$c_{cr,sp}$	[mm]	63.00
<b>SHEAR LOAD</b>			
<b>STEEL FAILURE</b>			
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	$\gamma_{Ms}$	-	1.50
<b>CONCRETE PRY-OUT FAILURE</b>			
Factor	$k$	-	1.00
Installation safety factor	$\gamma_2$	-	1.00
<b>CONCRETE EDGE FAILURE</b>			
Effective length of anchor	$\ell_f$	[mm]	55.00
Anchor diameter	$d_{nom}$	[mm]	6.00
Installation safety factor	$\gamma_2$	-	1.00

## Design performance data

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

Size				6
<b>TENSION LOAD</b>				
Edge distance	$c_{cr}$	[mm]		84.00
Spacing	$s_{cr}$	[mm]		168.00
<b>R (for EI) = 30 min</b>				
<b>TENSION LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance	$N_{Rk,s}$	[kN]		0.28
<b>PULL-OUT FAILURE</b>				
Characteristic resistance	$N_{Rk,p}$	[kN]		1.75
<b>SHEAR LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]		0.28
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]		0.25
<b>R (for EI) = 60 min</b>				
<b>TENSION LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance	$N_{Rk,s}$	[kN]		0.25
<b>PULL-OUT FAILURE</b>				
Characteristic resistance	$N_{Rk,p}$	[kN]		1.75
<b>SHEAR LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]		0.25
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]		0.23
<b>R (for EI) = 90 min</b>				
<b>TENSION LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance	$N_{Rk,s}$	[kN]		0.20
<b>PULL-OUT FAILURE</b>				
Characteristic resistance	$N_{Rk,p}$	[kN]		1.75
<b>SHEAR LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]		0.20
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]		0.18
<b>R (for EI) = 120 min</b>				
<b>TENSION LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance	$N_{Rk,s}$	[kN]		0.14
<b>PULL-OUT FAILURE</b>				
Characteristic resistance	$N_{Rk,p}$	[kN]		1.40
<b>SHEAR LOAD</b>				
<b>STEEL FAILURE</b>				
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
Min. installation depth	$h_{nom}$	[mm]	43.00
Effective embedment depth	$h_{ef}$	[mm]	32.00
<b>TENSION LOAD</b>			
<b>STEEL FAILURE</b>			
Characteristic resistance	$N_{Rk,s}$	[kN]	35.40
Partial safety factor	$\gamma_{Ms}$	-	1.40
<b>PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25</b>			
Characteristic resistance	$N_{Rk,p}$	[kN]	-
<b>PULL-OUT FAILURE; CRACKED CONCRETE C20/25</b>			
Characteristic resistance	$N_{Rk,p}$	[kN]	-
<b>PULL-OUT FAILURE</b>			
Installation safety factor	$\gamma_2$	-	1.00
Increasing factors for $N_{Rd,p}$ - C30/37	$\psi_c$	-	1.08
Increasing factors for $N_{Rd,p}$ - C40/50	$\psi_c$	-	1.15
Increasing factors for $N_{Rd,p}$ - C50/60	$\psi_c$	-	1.19
<b>CONCRETE CONE FAILURE</b>			
Installation safety factor	$\gamma_2$	-	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
<b>CONCRETE SPLITTING FAILURE</b>			
Installation safety factor	$\gamma_2$	-	1.00
Spacing	$s_{cr,sp}$	[mm]	90.00
Edge distance	$c_{cr,sp}$	[mm]	45.00
<b>SHEAR LOAD</b>			
<b>STEEL FAILURE</b>			
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	$\gamma_{Ms}$	-	1.50
<b>CONCRETE PRY-OUT FAILURE</b>			
Factor	$k$	-	1.00
Installation safety factor	$\gamma_2$	-	1.00
<b>CONCRETE EDGE FAILURE</b>			
Effective length of anchor	$\ell_f$	[mm]	43.00
Anchor diameter	$d_{nom}$	[mm]	6.00
Installation safety factor	$\gamma_2$	-	1.00

## Design performance data

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

Size				6
<b>TENSION LOAD</b>				
Edge distance	$c_{cr}$	[mm]		64.00
Spacing	$s_{cr}$	[mm]		128.00
<b>R (for EI) = 30 min</b>				
<b>TENSION LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance	$N_{Rk,s}$	[kN]		0.28
<b>PULL-OUT FAILURE</b>				
Characteristic resistance	$N_{Rk,p}$	[kN]		1.38
<b>SHEAR LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]		0.28
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]		0.25
<b>R (for EI) = 60 min</b>				
<b>TENSION LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance	$N_{Rk,s}$	[kN]		0.25
<b>PULL-OUT FAILURE</b>				
Characteristic resistance	$N_{Rk,p}$	[kN]		1.38
<b>SHEAR LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]		0.25
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]		0.23
<b>R (for EI) = 90 min</b>				
<b>TENSION LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance	$N_{Rk,s}$	[kN]		0.20
<b>PULL-OUT FAILURE</b>				
Characteristic resistance	$N_{Rk,p}$	[kN]		1.38
<b>SHEAR LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]		0.20
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]		0.18
<b>R (for EI) = 120 min</b>				
<b>TENSION LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance	$N_{Rk,s}$	[kN]		0.14
<b>PULL-OUT FAILURE</b>				
Characteristic resistance	$N_{Rk,p}$	[kN]		1.10
<b>SHEAR LOAD</b>				
<b>STEEL FAILURE</b>				
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]		0.14
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]		0.13