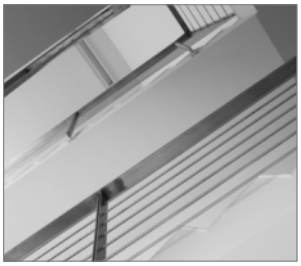
R-LX-H-ZP Zinc Plated Hex Concrete Screw Anchor

Self-tapping concrete screwbolt



Product information

Features and benefits

- Time-efficient installation through streamlined procedure - simply drill and drive
- Completely removable with possibility of reuse
- 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 both uncracked and 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

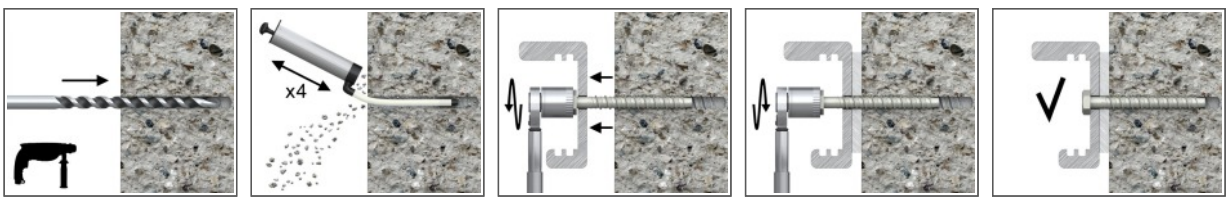
- Through-fixing
- Temporary anchorages
- Formwork support systems
- Balustrading & handrails
- Fencing & gates manufacturing and installation
- Racking systems
- Public seating
- Scaffolding

Base materials

Suitable for use in

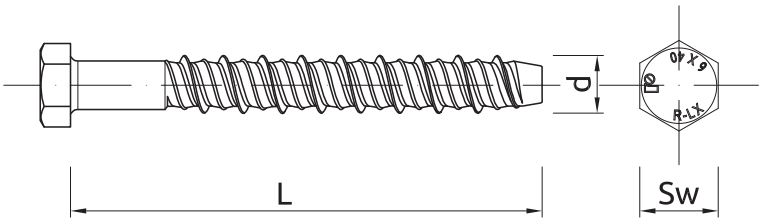
- Cracked concrete C20/25-C50/60
- Non-cracked concrete C20/25-C50/60
- Reinforced concrete
- Unreinforced concrete
- Natural Stone (after site testing)

Installation guide



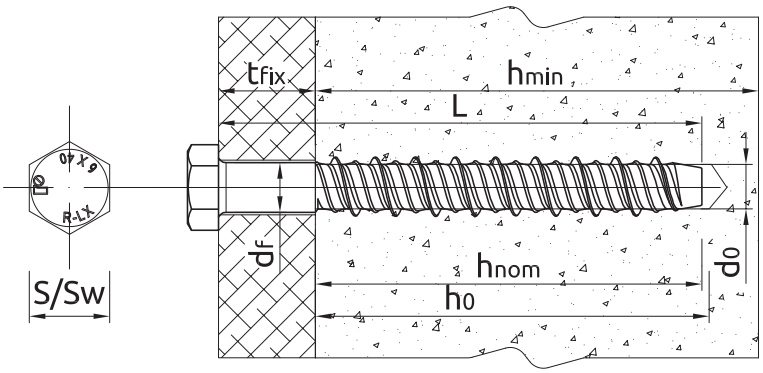
1. Drill the hole with rotary hammer drilling machine. Drill to a required depth.
2. Blow out dust at least 4 times with a hand pump.
3. Possibility of unscrewing and re-screwing.
4. Tighten to the recommended torque.
5. After installation.

Product information



Size	Product Code	Anchor		Fixture		
		Diameter	Length	Max. thickness t_{fix} for:		Hole diameter
		d	L	$h_{nom,red}$	$h_{nom,std}$	d_f
		[mm]	[mm]	[mm]	[mm]	[mm]
8	R-LX-08X060-H-ZP	10	60	10	-	12
	R-LX-08X075-H-ZP	10	75	25	5	12
	R-LX-08X090-H-ZP	10	90	40	20	12
	R-LX-08X100-H-ZP	10	100	50	30	12
	R-LX-08X130-H-ZP	10	130	80	60	12
	R-LX-08X150-H-ZP	10	150	100	80	12
10	R-LX-10X065-H-ZP	12.5	65	10	-	14
	R-LX-10X075-H-ZP	12.5	75	20	-	14
	R-LX-10X085-H-ZP	12.5	85	30	-	14
	R-LX-10X100-H-ZP	12.5	100	45	15	14
	R-LX-10X120-H-ZP	12.5	120	65	35	14
	R-LX-10X140-H-ZP	12.5	140	85	55	14
	R-LX-10X160-H-ZP	12.5	160	105	75	14
14	R-LX-14X105-H-ZP	17	105	30	-	18
	R-LX-14X135-H-ZP	17	135	60	15	18

Installation data



Size			8	10	14
Thread diameter	d	[mm]	10	12.5	17
Hole diameter in substrate	d_0	[mm]	8	10	14
Wrench size	Sw	[mm]	15	17	22
Max. installation torque	T_{inst}	[Nm]	40	-	-
Max. torque for impact screw driver	$T_{imp,max}$	[Nm]	900	950	950
STANDARD EMBEDMENT DEPTH					
Real hole depth in substrate	h_0	[mm]	L + 10 - t_{fix}	L + 10 - t_{fix}	L + 10 - t_{fix}
Min. installation depth	$h_{nom,s}$	[mm]	70	85	120
Min. substrate thickness	$h_{min,s}$	[mm]	110	130	190
Min. spacing	$s_{min,s}$	[mm]	50	60	100
Min. edge distance	$c_{min,s}$	[mm]	50	60	100

Installation data

Size			8	10	14
REDUCED EMBEDMENT DEPTH					
Min. hole depth in substrate	$h_{0,r}$	[mm]	60	65	85
Real hole depth in substrate	h_0	[mm]	L + 10 - t_{fix}	L + 10 - t_{fix}	L + 10 - t_{fix}
Min. installation depth	$h_{nom,r}$	[mm]	50	55	75
Min. substrate thickness	$h_{min,r}$	[mm]	100	100	110
Min. spacing	$s_{min,r}$	[mm]	50	60	100
Min. edge distance	$c_{min,r}$	[mm]	50	60	100
STANDARD EMBEDMENT DEPTH					
Min. hole depth in substrate	$h_{0,s}$	[mm]	-	95	130

Mechanical properties

Size			8	10	14
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm²]	1200	1050	1020
Nominal yield strength - tension	f_{yk}	[N/mm²]	1050	950	800
Cross sectional area - tension	A_s	[mm²]	50.3	78.5	153.9
Elastic section modulus	W_{el}	[mm³]	50.3	98.1	269.3
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	72.4	123.6	329.6
Design bending resistance	M	[Nm]	48.3	82.4	219.7

Basic performance data

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

Size		8	10	14
NON-CRACKED CONCRETE C20/25				
Standard embedment depth h_{nom}	[mm]	70.00	85.00	120.00
Reduced embedment depth h_{nom}	[mm]	50.00	55.00	75.00
CRACKED CONCRETE C20/25				
Standard embedment depth h_{nom}	[mm]	70.00	85.00	120.00
Reduced embedment depth h_{nom}	[mm]	50.00	55.00	75.00
MEAN ULTIMATE LOAD				
TENSION LOAD $N_{Ru,m}$				
NON-CRACKED CONCRETE C20/25				
Standard embedment depth	[kN]	26.04	35.37	59.96
Reduced embedment depth	[kN]	15.19	17.08	27.53
CRACKED CONCRETE C20/25				
Standard embedment depth	[kN]	18.33	24.89	41.92
Reduced embedment depth	[kN]	10.69	12.02	19.37
SHEAR LOAD $V_{Ru,m}$				
NON-CRACKED CONCRETE C20/25				
Standard embedment depth	[kN]	26.04	49.46	94.19
Reduced embedment depth	[kN]	15.19	17.08	27.53
CRACKED CONCRETE C20/25				
Standard embedment depth	[kN]	18.33	49.46	83.83
Reduced embedment depth	[kN]	10.69	12.02	19.37

Basic performance data

Size		8	10	14
CHARACTERISTIC LOAD				
TENSION LOAD N_{Rk}				
NON-CRACKED CONCRETE C20/25				
Standard embedment depth	[kN]	19.49	26.46	44.56
Reduced embedment depth	[kN]	10.91	12.78	20.04
CRACKED CONCRETE C20/25				
Standard embedment depth	[kN]	13.00	18.87	31.77
Reduced embedment depth	[kN]	7.50	8.00	13.00
SHEAR LOAD V_{Rk}				
NON-CRACKED CONCRETE C20/25				
Standard embedment depth	[kN]	19.49	41.20	78.50
Reduced embedment depth	[kN]	10.91	12.78	20.04
CRACKED CONCRETE C20/25				
Standard embedment depth	[kN]	13.89	37.73	63.54
Reduced embedment depth	[kN]	7.78	9.11	14.29
DESIGN LOAD				
TENSION LOAD N_{Rd}				
NON-CRACKED CONCRETE C20/25				
Standard embedment depth	[kN]	12.99	17.64	29.71
Reduced embedment depth	[kN]	7.27	8.52	13.36
CRACKED CONCRETE C20/25				
Standard embedment depth	[kN]	8.67	12.58	21.18
Reduced embedment depth	[kN]	5.00	5.33	8.67
SHEAR LOAD V_{Rd}				
NON-CRACKED CONCRETE C20/25				
Standard embedment depth	[kN]	12.99	27.47	52.33
Reduced embedment depth	[kN]	7.27	8.52	13.36
CRACKED CONCRETE C20/25				
Standard embedment depth	[kN]	9.26	25.15	42.36
Reduced embedment depth	[kN]	5.18	6.07	9.52

Design performance data

Standard embedment depth

(-) failure is not decisive

Size			8	10	14
Min. installation depth	h_{nom}	[mm]	70.00	85.00	120.00
Effective embedment depth	h_{ef}	[mm]	53.00	65.00	92.00
TENSION LOAD					
STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	60.40	82.40	157.00
Partial safety factor	γ_{Ms}	-	1.40	1.40	1.50
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]	13.00	-	-
PULL-OUT FAILURE					
Installation safety factor	γ_2	-	1.00	1.00	1.00
Increasing factors for $N_{Rd,p}$ - C30/37	Ψ_c	-	1.08	1.08	1.08
Increasing factors for $N_{Rd,p}$ - C40/50	Ψ_c	-	1.15	1.15	1.15
Increasing factors for $N_{Rd,p}$ - C50/60	Ψ_c	-	1.19	1.19	1.19
CONCRETE CONE FAILURE					
Installation safety factor	γ_2	-	1.00	1.00	1.00
Factor for cracked concrete	k	-	7.20	7.20	7.20
Factor for cracked concrete	$k_{cr,N}$	-	7.70	7.70	7.70
Factor for non-cracked concrete	k	-	10.10	10.10	10.10
Factor for non-cracked concrete	$k_{ucr,N}$	-	11.00	11.00	11.00
Spacing	$s_{cr,N}$	[mm]	160.00	196.00	276.00
Edge distance	$c_{cr,N}$	[mm]	80.00	98.00	138.00
CONCRETE SPLITTING FAILURE					
Installation safety factor	γ_2	-	1.00	1.00	1.00
Spacing	$s_{cr,sp}$	[mm]	160.00	222.00	312.00
Edge distance	$c_{cr,sp}$	[mm]	80.00	111.00	156.00
SHEAR LOAD					
STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	30.20	41.20	78.50
Ductility factor	k_7	-	0.80	0.80	0.80
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	72.40	123.60	329.60
Partial safety factor	γ_{Ms}	-	1.50	1.50	1.50
CONCRETE PRY-OUT FAILURE					
Factor	k	-	1.00	2.00	2.00
Installation safety factor	γ_2	-	1.00	1.00	1.00
CONCRETE EDGE FAILURE					
Effective length of anchor	ℓ_f	[mm]	70.00	85.00	120.00
Anchor diameter	d_{nom}	[mm]	8.00	10.00	14.00
Installation safety factor	γ_2	-	1.00	1.00	1.00

Design performance data

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

Size			8	10	14
TENSION LOAD					
Edge distance	c_{cr}	[mm]	106.00	130.00	184.00
Spacing	s_{cr}	[mm]	212.00	260.00	368.00
R (for EI) = 30 min					
TENSION LOAD					
STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	0.75	1.57	3.08
PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	3.25	4.75	8.50
SHEAR LOAD					
STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.75	1.57	3.08
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.90	2.36	6.47
R (for EI) = 60 min					
TENSION LOAD					
STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	0.65	1.18	2.31
PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	3.25	4.75	8.50
SHEAR LOAD					
STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.65	1.18	2.31
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.78	1.77	4.85
R (for EI) = 90 min					
TENSION LOAD					
STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	0.50	1.02	2.00
PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	3.25	4.75	8.50
SHEAR LOAD					
STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.50	1.02	2.00
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.60	1.53	4.20
R (for EI) = 120 min					
TENSION LOAD					
STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	0.40	0.79	1.54
PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	2.60	3.80	6.80
SHEAR LOAD					
STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.40	0.79	1.54
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.48	1.18	3.23

Design performance data

Allowable values for resistance in case of Seismic performance category C1 - Standard embedment depth

Size			8	10	14
Effective embedment depth	h_{ef}	[mm]	53.00	65.00	92.00
TENSION LOAD, STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	60.40	82.40	157.00
Partial safety factor	$\gamma_{MsN,seisC1}$	-	1.40		1.50
TENSION LOAD, PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	5.40	13.50	19.20
Partial safety factor	$\gamma_{Mp,seisC1}$	-	1.50		
SHEAR LOAD, STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	15.10	27.40	52.30
Partial safety factor	$\gamma_{MsV,seisC1}$	-	1.50		

Allowable values for resistance in case of Seismic performance category C2 - Standard embedment depth

Size			8	10	14
Effective embedment depth	h_{ef}	[mm]	53.00	65.00	92.00
TENSION LOAD, STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	60.40	82.40	157.00
Partial safety factor	$\gamma_{MsN,seisC2}$	-	1.40		1.50
TENSION LOAD, PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	1.57	4.91	14.87
Partial safety factor	$\gamma_{Mp,seisC2}$	-	1.50		
SHEAR LOAD, STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	9.90	20.60	35.10
Partial safety factor	$\gamma_{MsV,seisC2}$	-	1.50		

Design performance data

Reduced embedment depth

(-) failure is not decisive

Size			8	10	14
Min. installation depth	h_{nom}	[mm]	50.00	55.00	75.00
Effective embedment depth	h_{ef}	[mm]	36.00	40.00	54.00
TENSION LOAD					
STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	60.40	82.40	157.00
Partial safety factor	γ_{Ms}	-	1.40	1.40	1.50
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]	7.50	8.00	13.00
PULL-OUT FAILURE					
Installation safety factor	γ_2	-	1.00	1.00	1.00
Increasing factors for $N_{Rd,p}$ - C30/37	Ψ_c	-	1.08	1.08	1.08
Increasing factors for $N_{Rd,p}$ - C40/50	Ψ_c	-	1.15	1.15	1.15
Increasing factors for $N_{Rd,p}$ - C50/60	Ψ_c	-	1.19	1.19	1.19
CONCRETE CONE FAILURE					
Installation safety factor	γ_2	-	1.00	1.00	1.00
Factor for cracked concrete	k	-	7.20	7.20	7.20
Factor for cracked concrete	$k_{cr,N}$	-	7.70	7.70	7.70
Factor for non-cracked concrete	k	-	10.10	10.10	10.10
Factor for non-cracked concrete	$k_{ucr,N}$	-	11.00	11.00	11.00
Spacing	$s_{cr,N}$	[mm]	112.00	120.00	165.00
Edge distance	$c_{cr,N}$	[mm]	56.00	60.00	83.00
CONCRETE SPLITTING FAILURE					
Installation safety factor	γ_2	-	1.00	1.00	1.00
Spacing	$s_{cr,sp}$	[mm]	112.00	136.00	188.00
Edge distance	$c_{cr,sp}$	[mm]	56.00	68.00	94.00
SHEAR LOAD					
STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	30.20	41.20	78.50
Ductility factor	k_7	-	0.80	0.80	0.80
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	72.40	123.60	329.60
Partial safety factor	γ_{Ms}	-	1.50	1.50	1.50
CONCRETE PRY-OUT FAILURE					
Factor	k	-	1.00	1.00	1.00
Installation safety factor	γ_2	-	1.00	1.00	1.00
CONCRETE EDGE FAILURE					
Effective length of anchor	ℓ_f	[mm]	50.00	55.00	75.00
Anchor diameter	d_{nom}	[mm]	8.00	10.00	14.00
Installation safety factor	γ_2	-	1.00	1.00	1.00

Design performance data

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

Size			8	10	14
TENSION LOAD					
Edge distance	c_{cr}	[mm]	72.00	80.00	108.00
Spacing	s_{cr}	[mm]	144.00	160.00	216.00
R (for EI) = 30 min					
TENSION LOAD					
STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	0.75	1.57	3.08
PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	1.88	2.00	3.25
SHEAR LOAD					
STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.75	1.57	3.08
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.90	2.36	6.47
R (for EI) = 60 min					
TENSION LOAD					
STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	0.65	1.18	2.31
PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	1.88	2.00	3.25
SHEAR LOAD					
STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.65	1.18	2.31
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.78	1.77	4.85
R (for EI) = 90 min					
TENSION LOAD					
STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	0.50	1.02	2.00
PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	1.88	2.00	3.25
SHEAR LOAD					
STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.50	1.02	2.00
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.60	1.53	4.20
R (for EI) = 120 min					
TENSION LOAD					
STEEL FAILURE					
Characteristic resistance	$N_{Rk,s}$	[kN]	0.40	0.79	1.54
PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	1.50	1.60	2.60
SHEAR LOAD					
STEEL FAILURE					
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.40	0.79	1.54
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.48	1.18	3.23

Product commercial data

Product Code	Anchor	Quantity [pcs]			Weight [kg]			Bar Codes
	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
R-LX-08X060-H-ZP	60	100	100	25600	3.1	3.1	815.9	5906675120768
R-LX-08X075-H-ZP	75	100	100	25600	3.7	3.7	964.4	5906675120812
R-LX-08X090-H-ZP	90	100	100	19200	4.2	4.2	842.2	5906675120843
R-LX-08X100-H-ZP	100	100	100	19200	4.6	4.6	917.0	5906675121055
R-LX-08X130-H-ZP	130	50	50	12800	2.9	2.9	769.8	5906675121185
R-LX-08X150-H-ZP	150	50	50	12800	3.3	3.3	869.7	5906675121192
R-LX-10X065-H-ZP	65	50	50	15600	2.6	2.6	830.3	5906675121208
R-LX-10X075-H-ZP	75	50	50	12800	2.9	2.9	764.7	5906675121482
R-LX-10X085-H-ZP	85	50	50	12800	3.2	3.2	842.8	5906675122076
R-LX-10X100-H-ZP	100	50	50	12800	3.6	3.6	960.6	5906675122557
R-LX-10X120-H-ZP	120	25	25	6400	2.1	2.1	573.4	5906675123141
R-LX-10X140-H-ZP	140	25	25	7800	2.4	2.4	787.4	5906675123615
R-LX-10X160-H-ZP	160	20	20	6240	2.2	2.2	710.2	5906675124209
R-LX-14X105-H-ZP	105	20	20	5120	0.02	0.02	35.1	5906675127521
R-LX-14X135-H-ZP	135	20	20	5120	0.02	0.02	35.1	5906675127545