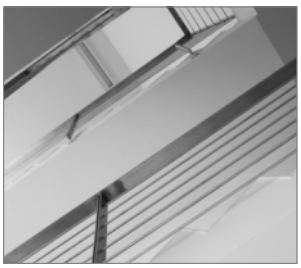
R-LX-HF-ZP Zinc plated Hex with Flange Concrete Screw Anchor

Self-tapping concrete screwbolt



Approvals and Reports

- ETA 17/0806

Product information

Features and benefits

- Time-efficient through-fixing installation with 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

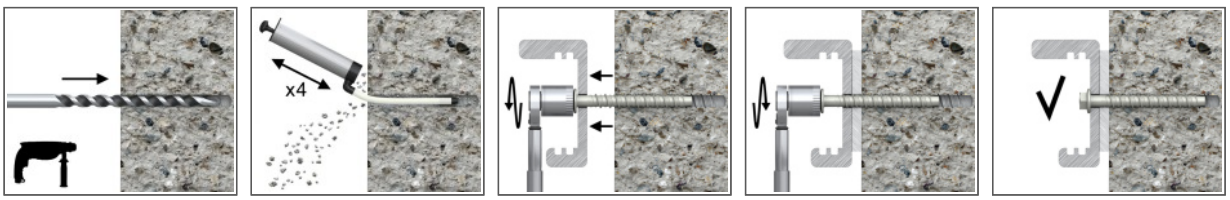
- Through-fixing
- Temporary anchorages
- Formwork support systems
- Balustrading & handrails
- Fencing & gates manufacturing and installation
- Racking systems
- Public seating
- Scaffolding

Base materials

Approved for use in:

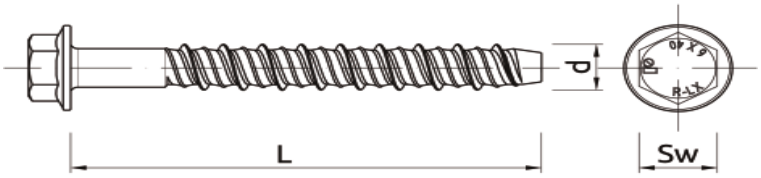
- Non-cracked concrete C20/25-C50/60
- Cracked concrete C20/25-C50/60

Installation guide



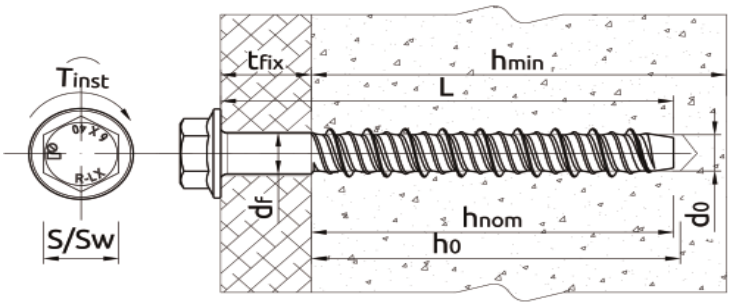
1. Drill the hole with rotary percussive machine. Drill to a required depth.
2. Blow out dust at least 4 times with a hand pump.
3. Possibility of unscrewing and re-screwing.
4. Tighten to the recommended torque.
5. After installation.

Product information



Size	Product Code	Anchor		Fixture		
		Diameter	Length	Max. thickness t_{fix} for:		Hole diameter
		d	L	$t_{fix,r}$	$h_{nom,std}$	d_f
		[mm]	[mm]	[mm]	[mm]	[mm]
5	R-LX-05X050-HF-ZP	6.3	50	-	7	7
	R-LX-05X075-HF-ZP	6.3	75	-	32	7
6	R-LX-06X050-HF-ZP	7.5	50	7	-	9
	R-LX-06X075-HF-ZP	7.5	75	32	20	9
	R-LX-06X100-HF-ZP	7.5	100	57	45	9
	R-LX-06X130-HF-ZP	7.5	130	87	75	9
	R-LX-06X150-HF-ZP	7.5	150	107	95	9
8	R-LX-08X060-HF-ZP	10	60	10	-	12
	R-LX-08X075-HF-ZP	10	75	25	5	12
	R-LX-08X090-HF-ZP	10	90	40	20	12
	R-LX-08X100-HF-ZP	10	100	50	30	12
	R-LX-08X130-HF-ZP	10	130	80	60	12
	R-LX-08X150-HF-ZP	10	150	100	80	12
10	R-LX-10X065-HF-ZP	12.5	65	10	-	14
	R-LX-10X075-HF-ZP	12.5	75	20	-	14
	R-LX-10X085-HF-ZP	12.5	85	30	-	14
	R-LX-10X100-HF-ZP	12.5	100	45	15	14
	R-LX-10X120-HF-ZP	12.5	120	65	35	14
	R-LX-10X140-HF-ZP	12.5	140	85	55	14
	R-LX-10X160-HF-ZP	12.5	160	105	75	14
14	R-LX-14X080-HF-ZP	17	80	5	-	18
	R-LX-14X105-HF-ZP	17	105	30	-	18
	R-LX-14X115-HF-ZP	17	115	40	-	18
	R-LX-14X135-HF-ZP	17	135	60	15	18

Installation data



Size			5	6	8	10	14
Thread diameter	d	[mm]	6.3	7.5	10	12.5	17
Hole diameter in substrate	d_0	[mm]	5	6	8	10	14
Wrench size	Sw	[mm]	8	10	13	15	19
STANDARD EMBEDMENT DEPTH							
Min. hole depth in substrate	$h_{0,s}$	[mm]	50	65	80	95	130
Installation depth	$h_{nom,s}$	[mm]	43	55	70	85	120
Min. substrate thickness	$h_{min,s}$	[mm]	100	100	110	130	190
Min. spacing	$s_{min,s}$	[mm]	40	45	50	60	100
Min. edge distance	$c_{min,s}$	[mm]	40	45	50	60	100
REDUCED EMBEDMENT DEPTH							
Min. hole depth in substrate	$h_{0,r}$	[mm]	-	50	60	65	85
Installation depth	$h_{nom,r}$	[mm]	-	43	50	55	75
Min. substrate thickness	$h_{min,r}$	[mm]	-	100	100	100	110
Min. spacing	$s_{min,r}$	[mm]	-	45	50	60	100
Min. edge distance	$c_{min,r}$	[mm]	-	45	50	60	100

Mechanical properties

Size			5	6	8	10	14
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm²]	1300	1250	1200	1050	1020
Nominal yield strength - tension	f_{yk}	[N/mm²]	1150	1100	1050	950	800
Cross sectional area - tension	A_s	[mm²]	19.6	28.3	50.3	78.5	153.9
Elastic section modulus	W_{el}	[mm³]	12.2	21.2	50.3	98.1	269.3
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	19	31.8	72.4	123.6	329.6
Design bending resistance	M	[Nm]	12.67	21.2	48.27	82.4	219.73

Basic performance data

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

Size		5	6	8	10	14
MEAN ULTIMATE LOAD						
TENSION LOAD $N_{Ru,m}$						
NON-CRACKED CONCRETE C20/25						
Standard embedment depth	[kN]	10.10	14.80	26.04	35.37	59.96
Reduced embedment depth	[kN]	-	11.09	15.19	17.08	27.53
CRACKED CONCRETE C20/25						
Standard embedment depth	[kN]	7.10	11.10	18.33	24.89	41.92
Reduced embedment depth	[kN]	-	7.81	10.69	12.02	19.37
SHEAR LOAD $V_{Ru,m}$						
NON-CRACKED CONCRETE C20/25						
Standard embedment depth	[kN]	10.10	14.80	26.04	49.46	94.19
Reduced embedment depth	[kN]	-	11.09	15.19	17.08	27.53
CRACKED CONCRETE C20/25						
Standard embedment depth	[kN]	7.10	11.10	18.33	49.46	83.83
Reduced embedment depth	[kN]	-	7.81	10.69	12.02	19.37
CHARACTERISTIC LOAD						
TENSION LOAD N_{Rk}						
NON-CRACKED CONCRETE C20/25						
Standard embedment depth	[kN]	7.00	12.00	19.49	26.46	44.56
Reduced embedment depth	[kN]	-	9.14	10.91	12.78	20.04
CRACKED CONCRETE C20/25						
Standard embedment depth	[kN]	4.50	7.00	13.00	18.87	31.77
Reduced embedment depth	[kN]	-	6.52	7.50	8.00	13.00
SHEAR LOAD V_{Rk}						
NON-CRACKED CONCRETE C20/25						
Standard embedment depth	[kN]	9.14	13.75	19.49	41.20	78.50
Reduced embedment depth	[kN]	-	9.14	10.91	12.78	20.04
CRACKED CONCRETE C20/25						
Standard embedment depth	[kN]	6.52	9.80	13.89	37.73	63.54
Reduced embedment depth	[kN]	-	6.52	7.78	9.11	14.29
DESIGN LOAD						
TENSION LOAD N_{Rd}						
NON-CRACKED CONCRETE C20/25						
Standard embedment depth	[kN]	3.89	8.00	12.99	17.64	29.71
Reduced embedment depth	[kN]	-	6.09	7.27	8.52	13.36
CRACKED CONCRETE C20/25						
Standard embedment depth	[kN]	2.50	4.67	8.67	12.58	21.18
Reduced embedment depth	[kN]	-	4.34	5.00	5.33	8.67
SHEAR LOAD V_{Rd}						
NON-CRACKED CONCRETE C20/25						
Standard embedment depth	[kN]	6.09	9.16	12.99	27.47	52.33
Reduced embedment depth	[kN]	-	6.09	7.27	8.52	13.36
CRACKED CONCRETE C20/25						
Standard embedment depth	[kN]	4.34	6.53	9.26	25.15	42.36
Reduced embedment depth	[kN]	-	4.34	5.18	6.07	9.52

Basic performance data

Design performance data

Standard embedment depth

Size			5	6	8	10	14
Installation depth	h_{nom}	[mm]	43.00	55.00	70.00	85.00	120.00
Effective embedment depth	h_{ef}	[mm]	32.00	42.00	53.00	65.00	92.00
TENSION LOAD							
STEEL FAILURE							
Characteristic resistance	$N_{Rk,s}$	[kN]	25.50	35.40	60.40	82.40	157.00
Partial safety factor	γ_{Ms}	-	1.40	1.40	1.40	1.40	1.50
PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25							
Characteristic resistance	$N_{Rk,p}$	[kN]	7.00	12.00	-	-	-
CONCRETE CONE FAILURE; NON-CRACKED CONCRETE C20/25							
Characteristic resistance	$N_{Rk,c}$	[kN]	-	-	19.49	26.46	44.56
PULL-OUT FAILURE; CRACKED CONCRETE C20/25							
Characteristic resistance	$N_{Rk,p}$	[kN]	4.50	7.00	13.00	-	-
CONCRETE CONE FAILURE; CRACKED CONCRETE C20/25							
Characteristic resistance	$N_{Rk,c}$	[kN]	-	-	-	18.87	31.77
Partial safety factor	y2	-	1.20	1.00	1.00	1.00	1.00
Increasing factors for $N_{Rd,p}$ - C30/37	Ψ_c	-	-	-	-	-	-
Increasing factors for $N_{Rd,p}$ - C40/50	Ψ_c	-	-	-	-	-	-
Increasing factors for $N_{Rd,p}$ - C50/60	Ψ_c	-	-	-	-	-	-
Spacing	$s_{cr,N}$	[mm]	90.00	126.00	160.00	196.00	276.00
Edge distance	$c_{cr,N}$	[mm]	45.00	63.00	80.00	98.00	138.00
SHEAR LOAD							
STEEL FAILURE							
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	12.70	17.70	30.20	41.20	78.50
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	19.00	31.80	72.40	123.60	329.60
Partial safety factor	γ_{Ms}	-	1.50	1.50	1.50	1.50	1.50
CONCRETE PRY-OUT FAILURE; NON-CRACKED CONCRETE C20/25							
Characteristic resistance	$V_{Rk,cp}$	[kN]	9.14	13.75	19.49	52.93	89.13
CONCRETE PRY-OUT FAILURE; CRACKED CONCRETE C20/25							
Characteristic resistance	$V_{Rk,cp}$	[kN]	6.52	9.80	13.89	37.73	63.54
	k	-	1.00	1.00	1.00	2.00	2.00
Partial safety factor	y2	-	1.20	1.00	1.00	1.00	1.00

Design performance data

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

Size			5	6	8	10	14
TENSION LOAD							
Edge distance	c_{cr}	[mm]	64.00	84.00	106.00	130.00	184.00
Spacing	s_{cr}	[mm]	128.00	168.00	212.00	260.00	368.00
R (for EI) = 30 min							
TENSION LOAD							
STEEL FAILURE							
Characteristic resistance	$N_{Rk,s}$	[kN]	0.20	0.28	0.75	1.57	3.08
PULL-OUT FAILURE							
Characteristic resistance	$N_{Rk,p}$	[kN]	1.13	1.75	3.25	4.75	8.50
SHEAR LOAD							
STEEL FAILURE							
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.20	0.28	0.75	1.57	3.08
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.15	0.25	0.90	2.36	6.47
R (for EI) = 60 min							
TENSION LOAD							
STEEL FAILURE							
Characteristic resistance	$N_{Rk,s}$	[kN]	0.18	0.25	0.65	1.18	2.31
PULL-OUT FAILURE							
Characteristic resistance	$N_{Rk,p}$	[kN]	1.13	1.75	3.25	4.75	8.50
SHEAR LOAD							
STEEL FAILURE							
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.18	0.25	0.65	1.18	2.31
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.13	0.23	0.78	1.77	4.85
R (for EI) = 90 min							
TENSION LOAD							
STEEL FAILURE							
Characteristic resistance	$N_{Rk,s}$	[kN]	0.14	0.20	0.50	1.02	2.00
PULL-OUT FAILURE							
Characteristic resistance	$N_{Rk,p}$	[kN]	1.13	1.75	3.25	4.75	8.50
SHEAR LOAD							
STEEL FAILURE							
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.14	0.20	0.50	1.02	2.00
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.10	0.18	0.60	1.53	4.20
R (for EI) = 120 min							
TENSION LOAD							
STEEL FAILURE							
Characteristic resistance	$N_{Rk,s}$	[kN]	0.10	0.14	0.40	0.79	1.54
PULL-OUT FAILURE							
Characteristic resistance	$N_{Rk,p}$	[kN]	0.90	1.40	2.60	3.80	6.80
SHEAR LOAD							
STEEL FAILURE							
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.10	0.14	0.40	79.00	1.54
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.07	0.13	0.48	1.18	3.23

Design performance data

Reduced embedment depth

Size			5	6	8	10	14
Installation depth	h_{nom}	[mm]	-	43.00	50.00	55.00	75.00
Effective embedment depth	h_{ef}	[mm]	-	32.00	36.00	40.00	54.00
TENSION LOAD							
STEEL FAILURE							
Characteristic resistance	$N_{Rk,s}$	[kN]	-	35.40	60.40	82.40	157.00
Partial safety factor	γ_{Ms}	-	-	1.40	1.40	1.40	1.50
PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25							
Characteristic resistance	$N_{Rk,p}$	[kN]	-	-	-	-	-
CONCRETE CONE FAILURE; NON-CRACKED CONCRETE C20/25							
Characteristic resistance	$N_{Rk,c}$	-	-	9.14	10.91	12.78	20.04
PULL-OUT FAILURE; CRACKED CONCRETE C20/25							
Characteristic resistance	$N_{Rk,p}$	[kN]	-	-	7.50	8.00	13.00
CONCRETE CONE FAILURE; CRACKED CONCRETE C20/25							
Characteristic resistance	$N_{Rk,c}$	-	-	6.52	-	-	-
Partial safety factor	y2	-	-	1.00	1.00	1.00	1.00
Increasing factors for $N_{Rd,p}$ - C30/37	Ψ_c	-	-	-	-	-	-
Increasing factors for $N_{Rd,p}$ - C40/50	Ψ_c	-	-	-	-	-	-
Increasing factors for $N_{Rd,p}$ - C50/60	Ψ_c	-	-	-	-	-	-
Spacing	$s_{cr,N}$	[mm]	-	90.00	112.00	120.00	166.00
Edge distance	$c_{cr,N}$	[mm]	-	45.00	56.00	60.00	83.00
SHEAR LOAD							
STEEL FAILURE							
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	-	17.70	30.20	41.20	78.50
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	-	31.80	72.40	123.60	329.60
Partial safety factor	γ_{Ms}	-	-	1.50	1.50	1.50	1.50
CONCRETE PRY-OUT FAILURE; NON-CRACKED CONCRETE C20/25							
Characteristic resistance	$V_{Rk,cp}$	[kN]	-	9.14	10.91	12.78	20.04
CONCRETE PRY-OUT FAILURE; CRACKED CONCRETE C20/25							
Characteristic resistance	$V_{Rk,cp}$	[kN]	-	6.52	7.78	9.11	14.29
	k	-	-	1.00	1.00	1.00	1.00
Partial safety factor	y2	-	-	1.00	1.00	1.00	1.00

Design performance data

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

Size			5	6	8	10	14
TENSION LOAD							
Edge distance	c_{cr}	[mm]	-	84.00	72.00	80.00	108.00
Spacing	s_{cr}	[mm]	-	168.00	144.00	160.00	216.00
R (for EI) = 30 min							
TENSION LOAD							
STEEL FAILURE							
Characteristic resistance	$N_{Rk,s}$	[kN]	-	0.28	0.75	1.57	3.08
PULL-OUT FAILURE							
Characteristic resistance	$N_{Rk,p}$	[kN]	-	1.38	1.88	2.00	3.25
SHEAR LOAD							
STEEL FAILURE							
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	-	0.28	0.75	1.57	3.08
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	-	0.25	0.90	2.36	6.47
R (for EI) = 60 min							
TENSION LOAD							
STEEL FAILURE							
Characteristic resistance	$N_{Rk,s}$	[kN]	-	0.25	0.65	1.18	2.31
PULL-OUT FAILURE							
Characteristic resistance	$N_{Rk,p}$	[kN]	-	1.38	1.88	2.00	3.25
SHEAR LOAD							
STEEL FAILURE							
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	-	0.25	0.65	1.18	2.31
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	-	0.23	0.78	1.77	4.85
R (for EI) = 90 min							
TENSION LOAD							
STEEL FAILURE							
Characteristic resistance	$N_{Rk,s}$	[kN]	-	0.20	0.50	1.02	2.00
PULL-OUT FAILURE							
Characteristic resistance	$N_{Rk,p}$	[kN]	-	1.38	1.88	2.00	3.25
SHEAR LOAD							
STEEL FAILURE							
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	-	0.20	0.50	1.02	2.00
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	-	0.18	0.60	1.53	4.20
R (for EI) = 120 min							
TENSION LOAD							
STEEL FAILURE							
Characteristic resistance	$N_{Rk,s}$	[kN]	-	0.14	0.40	0.79	1.54
PULL-OUT FAILURE							
Characteristic resistance	$N_{Rk,p}$	[kN]	-	1.10	1.50	1.60	2.60
SHEAR LOAD							
STEEL FAILURE							
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	-	0.14	0.40	0.79	1.54
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	-	0.13	0.48	1.18	3.23

Product commercial data

Size	Product Code	Anchor	Quantity [pcs]			Weight [kg]			Bar Codes
		Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
5	R-LX-05X050-HF-ZP[1)]	50	100	100	41600	1.11	1.11	492.2	5906675112947
	R-LX-05X075-HF-ZP[1)]	75	100	100	41600	1.47	1.47	643.2	5906675112961
6	R-LX-06X050-HF-ZP[1)]	50	100	100	41600	1.50	1.50	654.8	5906675112978
	R-LX-06X075-HF-ZP[1)]	75	100	100	35200	2.2	2.2	788.9	5906675119175
	R-LX-06X100-HF-ZP[1)]	100	100	100	25600	2.7	2.7	732.5	5906675119182
	R-LX-06X130-HF-ZP[1)]	130	100	100	25600	3.4	3.4	901.4	5906675119199
	R-LX-06X150-HF-ZP[1)]	150	100	100	25600	3.8	3.8	1013.0	5906675119205
8	R-LX-08X060-HF-ZP[1)]	60	100	100	25600	3.4	3.4	890.7	5906675119212
	R-LX-08X075-HF-ZP[1)]	75	100	100	25600	4.0	4.0	1057.8	5906675119236
	R-LX-08X090-HF-ZP[1)]	90	100	100	19200	4.6	4.6	906.9	5906675119243
	R-LX-08X100-HF-ZP[1)]	100	100	100	19200	5.0	5.0	980.8	5906675119250
	R-LX-08X130-HF-ZP[1)]	130	50	50	12800	3.1	3.1	826.2	5906675119267
	R-LX-08X150-HF-ZP[1)]	150	50	50	12800	3.5	3.5	925.0	5906675119274
10	R-LX-10X065-HF-ZP[1)]	65	50	50	15600	2.9	2.9	921.1	5906675119281
	R-LX-10X075-HF-ZP[1)]	75	50	50	12800	3.2	3.2	836.9	5906675119304
	R-LX-10X085-HF-ZP[1)]	85	50	50	12800	3.5	3.5	923.2	5906675119311
	R-LX-10X100-HF-ZP[1)]	100	50	50	12800	3.9	3.9	1037.6	5906675119335
	R-LX-10X120-HF-ZP[1)]	120	25	25	6400	2.3	2.3	621.6	5906675119342
	R-LX-10X140-HF-ZP[1)]	140	25	25	7800	2.6	2.6	845.3	5906675119410
	R-LX-10X160-HF-ZP[1)]	160	20	20	6240	2.4	2.4	769.4	5906675119489
14	R-LX-14X080-HF-ZP[1)]	80	20	20	5120	2.8	2.8	750.9	5906675292861
	R-LX-14X105-HF-ZP[1)]	105	20	20	5120	3.4	3.4	908.3	5906675119953
	R-LX-14X115-HF-ZP[1)]	115	20	20	5120	3.7	3.7	976.4	5906675312118
	R-LX-14X135-HF-ZP[1)]	135	20	20	5120	4.2	4.2	1095.7	5906675119977

1) ETA 17/0806