

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

Self-tapping concrete screwbolt



### Approvals and Reports

- ETA 17/0783
- UKTA-22/6346



### 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

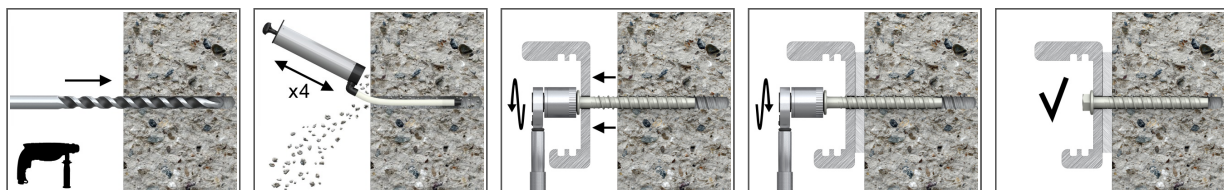
##### Approved for use in:

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

##### Also suitable for use in:

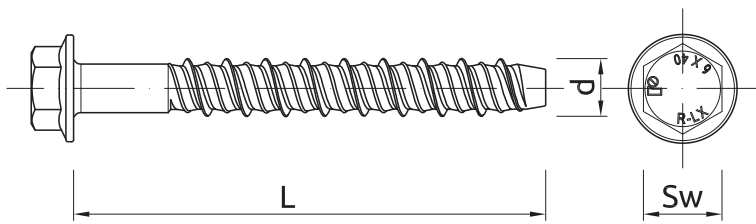
- Natural Stone (after site testing)

### Installation guide



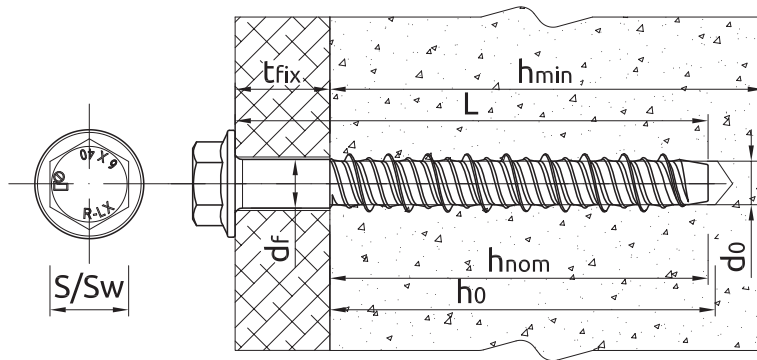
1. Drill the hole with rotary hammer drilling machine. Drill to a required depth.
2. Blow out dust at least 4 times with a hand pump.
3. Possibility of unscrewing and re-screwing.
4. Tighten to the recommended torque.
5. After installation.

Product information



Size	Product Code	Approval type	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]	[mm]
5	R-LX-05X050-HF-ZP	ETA-17/0783	6.2	50	-	7	7	
	R-LX-05X075-HF-ZP	ETA-17/0783	6.2	75	-	32	7	
6	R-LX-06X035-HF-ZP	ETA-17/0783	7.5	35	-	-	9	
	R-LX-06X040-HF-ZP	ETA-17/0783	7.5	40	1	-	9	
	R-LX-06X050-HF-ZP	ETA-17/0783	7.5	50	7	-	9	
	R-LX-06X060-HF-ZP	ETA-17/0783	7.5	60	17	5	9	
	R-LX-06X075-HF-ZP	ETA-17/0783	7.5	75	32	20	9	
	R-LX-06X090-HF-ZP	ETA-17/0783	7.5	90	47	35	9	
	R-LX-06X100-HF-ZP	ETA-17/0783	7.5	100	57	45	9	
	R-LX-06X130-HF-ZP	ETA-17/0783	7.5	130	87	75	9	
	R-LX-06X150-HF-ZP	ETA-17/0783	7.5	150	107	95	9	
8	R-LX-08X060-HF-ZP	ETA-17/0783	9.9	60	10	-	12	
	R-LX-08X075-HF-ZP	ETA-17/0783	9.9	75	25	5	12	
	R-LX-08X090-HF-ZP	ETA-17/0783	9.9	90	40	20	12	
	R-LX-08X100-HF-ZP	ETA-17/0783	9.9	100	50	30	12	
	R-LX-08X120-HF-ZP	ETA-17/0783	9.9	120	70	50	12	
	R-LX-08X130-HF-ZP	ETA-17/0783	9.9	130	80	60	12	
10	R-LX-10X060-HF-ZP	ETA-17/0783	12.4	60	5	-	14	
	R-LX-10X065-HF-ZP	ETA-17/0783	12.4	65	10	-	14	
	R-LX-10X075-HF-ZP	ETA-17/0783	12.4	75	20	-	14	
	R-LX-10X085-HF-ZP	ETA-17/0783	12.4	85	30	-	14	
	R-LX-10X090-HF-ZP	ETA-17/0783	12.4	90	35	5	14	
	R-LX-10X100-HF-ZP	ETA-17/0783	12.4	100	45	15	14	
	R-LX-10X110-HF-ZP	ETA-17/0783	12.4	110	55	25	14	
	R-LX-10X120-HF-ZP	ETA-17/0783	12.4	120	65	35	14	
	R-LX-10X130-HF-ZP	ETA-17/0783	12.4	130	75	45	14	
14	R-LX-14X080-HF-ZP	ETA-17/0783	17.4	80	5	-	18	
	R-LX-14X105-HF-ZP	ETA-17/0783	17.4	105	30	-	18	
	R-LX-14X115-HF-ZP	ETA-17/0783	17.4	115	40	-	18	
	R-LX-14X135-HF-ZP	ETA-17/0783	17.4	135	60	15	18	
	R-LX-14X160-HF-ZP	ETA-17/0783	17.4	160	85	40	18	

Installation data



Normal concrete

Size			5	6	8	10	14
Hole diameter in substrate	$d_0$	[mm]	5	6	8	10	14
Hole diameter in fixture	$d_f$	[mm]	7	9	12	14	18
Wrench size	Sw	[mm]	10	10	13	15	19
External diameter of washer		[mm]	13	14	18	22	32
Max. torque for impact screw driver	$T_{imp,max}$	[Nm]	200	400	900	950	950
<b>MINIMUM EMBEDMENT DEPTH</b>							
Min. hole depth in substrate	$h_{0,min}$	[mm]	-	45	-	-	-
Real hole depth in substrate	$h_0$	[mm]	-	$L + 10 - t_{fix}$	-	-	-
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	-	-	-
<b>REDUCED EMBEDMENT DEPTH</b>							
Min. hole depth in substrate	$h_{0,r}$	[mm]	35	50	60	65	85
Real hole depth in substrate	$h_0$	[mm]	$L + 10 - t_{fix}$	$L + 10 - t_{fix}$	$L + 10 - t_{fix}$	$L + 10$	$L + 10 - t_{fix}$
Min. installation depth	$h_{nom,r}$	[mm]	25	39	50	55	75
Min. substrate thickness	$h_{min,r}$	[mm]	80	80	80	80	110
Min. spacing	$s_{min,r}$	[mm]	40	45	50	60	100
Min. edge distance	$c_{min,r}$	[mm]	40	45	50	60	100
<b>STANDARD EMBEDMENT DEPTH</b>							
Min. hole depth in substrate	$h_{0,s}$	[mm]	50	65	80	95	130
Real hole depth in substrate	$h_0$	[mm]	$L + 10 - t_{fix}$	$L + 10 - t_{fix}$	$L + 10 - t_{fix}$	$L + 10 - t_{fix}$	$L + 10 - t_{fix}$
Min. installation depth	$h_{nom,s}$	[mm]	40	55	70	85	120
Min. substrate thickness	$h_{min,s}$	[mm]	80	84	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

Hollow concrete slab

Size			6
Thread diameter	d	[mm]	7.5
Hole diameter in substrate	$d_0$	[mm]	6
Wrench size	Sw	[mm]	10
External diameter of washer		[mm]	14
Max. torque for impact screw driver	$T_{imp,max}$	[Nm]	400
<b>MINIMUM EMBEDMENT DEPTH</b>			
Min. hole depth in substrate	$h_{0,min}$	[mm]	45
Real hole depth in substrate	$h_0$	[mm]	$L + 10 - t_{fix}$
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]	100

## Mechanical properties

Size			5	6	8	10	14
Nominal ultimate tensile strength - tension	$f_{uk}$	[N/mm <sup>2</sup> ]	1300	1250	1200	1050	1020
Nominal yield strength - tension	$f_{yk}$	[N/mm <sup>2</sup> ]	1150	1100	1050	950	800
Cross sectional area - tension	$A_s$	[mm <sup>2</sup> ]	19.6	28.3	50.3	78.5	153.9
Elastic section modulus	$W_{el}$	[mm <sup>3</sup> ]	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]	12.7	21.2	48.3	82.4	219.7

## Basic performance data

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

Size			5	6	8	10	14
<b>CRACKED AND NON-CRACKED CONCRETE</b>							
Reduced embedment depth $h_{nom}$	[mm]		25.00	39.00	50.00	55.00	75.00
Standard embedment depth $h_{nom}$	[mm]		40.00	55.00	70.00	85.00	120.00
Minimum embedment depth $h_{nom}$	[mm]		-	35.00	-	-	-
<b>HOLLOW CORE SLAB</b>							
Minimum embedment depth $h_{nom}$	[mm]		-	35.00	-	-	-
<b>CHARACTERISTIC LOAD</b>							
<b>TENSION AND SHEAR LOAD <math>F_{Rk}</math></b>							
<b>CRACKED AND NON-CRACKED CONCRETE</b>							
Reduced embedment depth	[kN]		3.00	6.00	7.50	9.00	12.00
Standard embedment depth	[kN]		5.00	9.00	12.00	20.00	30.00
Minimum embedment depth	[kN]		-	3.00	-	-	-
<b>HOLLOW CORE SLAB</b>							
Minimum embedment depth	[kN]		-	6.00	-	-	-
<b>DESIGN LOAD</b>							
<b>TENSION AND SHEAR LOAD <math>F_{Rd}</math></b>							
<b>CRACKED AND NON-CRACKED CONCRETE</b>							
Reduced embedment depth	[kN]		1.67	4.00	5.00	6.00	8.00
Standard embedment depth	[kN]		2.77	6.00	8.00	13.30	20.00
Minimum embedment depth	[kN]		-	2.00	-	-	-
<b>HOLLOW CORE SLAB</b>							
Minimum embedment depth	[kN]		-	4.00	-	-	-
<b>RECOMMENDED LOAD</b>							
<b>TENSION AND SHEAR LOAD <math>F_{rec}</math></b>							
<b>CRACKED AND NON-CRACKED CONCRETE</b>							
Reduced embedment depth	[kN]		1.19	2.85	3.57	4.28	5.71
Standard embedment depth	[kN]		1.98	4.29	5.71	9.52	14.28
Minimum embedment depth	[kN]		-	1.42	-	-	-
<b>HOLLOW CORE SLAB</b>							
Minimum embedment depth	[kN]		-	2.85	-	-	-

## Design performance data

Normal concrete

Size			5		6			8		10		14	
Min. installation depth	$h_{nom}$	[mm]	25.00	40.00	35.00	39.00	55.00	50.00	70.00	55.00	80.00	75.00	120.0
Effective embedment depth	$h_{ef}$	[mm]	17.50	30.00	24.70	30.00	42.00	37.00	53.00	40.00	65.00	55.00	92.00
<b>TENSION AND SHEAR LOAD</b>													
Characteristic resistance	$F_{Rk}$	[kN]	3.00	5.00	3.00	6.00	9.00	7.50	12.00	9.00	20.00	12.00	30.00
Installation safety factor	$\gamma_{inst}$	-	1.20	1.20	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Increasing factors for $N_{Rd,p}$ - C30/37	$\psi_c$	-	1.08	1.08	1.00	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Increasing factors for $N_{Rd,p}$ - C40/50	$\psi_c$	-	1.15	1.15	1.00	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Increasing factors for $N_{Rd,p}$ - C50/60	$\psi_c$	-	1.19	1.19	1.00	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
Spacing	$s_{cr,N}$	-	70.00	90.00	100.0	90.00	126.0	120.0	160.0	120.0	196.0	180.0	276.0
Edge distance	$c_{cr,N}$	-	35.00	45.00	50.00	45.00	63.00	60.00	80.00	60.00	98.00	90.00	138.0
<b>SHEAR LOAD</b>													
<b>STEEL FAILURE</b>													
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	19.00	19.00	31.80	31.80	31.80	72.40	72.40	123.6	123.6	329.6	329.6
Partial safety factor	$\gamma_{Ms}$	-	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50

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

Size			5		6			8		10		14	
<b>TENSION AND SHEAR LOAD</b>													
Spacing	$s_{cr}$	[mm]	120.00	120.00	168.00	148.00	212.00	160.00	260.00	220.00	368.00		
Edge distance	$c_{cr}$	[mm]	60.00	60.00	84.00	74.00	106.00	80.00	130.00	110.00	184.00		
<b>R (for EI) = 30 min</b>													
Effective embedment depth	$h_{ef}$	[mm]	30.00	30.00	42.00	37.00	53.00	40.00	65.00	55.00	92.00		
<b>TENSION AND SHEAR LOAD</b>													
Characteristic resistance	$F_{Rk}$	[kN]	0.20	0.28	0.28	0.75	0.75	1.57	1.57	3.00	3.00		
<b>R (for EI) = 60 min</b>													
Effective embedment depth	$h_{ef}$	[mm]	30.00	30.00	42.00	37.00	53.00	40.00	65.00	55.00	92.00		
<b>TENSION AND SHEAR LOAD</b>													
Characteristic resistance	$F_{Rk}$	[kN]	0.18	0.25	0.25	0.65	0.75	1.18	1.18	2.31	2.31		
<b>R (for EI) = 90 min</b>													
Effective embedment depth	$h_{ef}$	[mm]	30.00	30.00	42.00	37.00	53.00	40.00	65.00	55.00	92.00		
<b>TENSION AND SHEAR LOAD</b>													
Characteristic resistance	$F_{Rk}$	[kN]	0.14	0.20	0.20	0.50	0.75	1.02	1.02	2.00	2.00		
<b>R (for EI) = 120 min</b>													
Effective embedment depth	$h_{ef}$	[mm]	30.00	30.00	42.00	37.00	53.00	40.00	65.00	55.00	92.00		
<b>TENSION AND SHEAR LOAD</b>													
Characteristic resistance	$F_{Rk}$	[kN]	0.10	0.14	0.14	0.40	0.75	0.79	0.79	1.54	1.54		

## 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-05X050-HF-ZP <sub>1)</sub>	50	100	100	38400	1.02	1.02	421.7	5906675112947
R-LX-05X075-HF-ZP <sub>1)</sub>	75	100	100	38400	1.17	1.17	479.3	5906675112961
R-LX-06X035-HF-ZP <sub>1)</sub>	35	100	100	38400	1.26	1.26	513.8	5906675391083
R-LX-06X040-HF-ZP <sub>1)</sub>	40	100	100	38400	1.37	1.37	556.1	5906675391090
R-LX-06X050-HF-ZP <sub>1)</sub>	50	100	100	38400	1.59	1.59	640.6	5906675112978
R-LX-06X060-HF-ZP <sub>1)</sub>	60	100	100	38400	1.83	1.83	732.7	5906675442396
R-LX-06X075-HF-ZP <sub>1)</sub>	75	100	100	38400	2.1	2.1	847.9	5906675119175
R-LX-06X090-HF-ZP <sub>1)</sub>	90	100	100	25600	2.5	2.5	672.6	5906675442402
R-LX-06X100-HF-ZP <sub>1)</sub>	100	100	100	25600	2.7	2.7	716.1	5906675119182
R-LX-06X130-HF-ZP <sub>1)</sub>	130	100	100	25600	3.3	3.3	882.5	5906675119199
R-LX-06X150-HF-ZP <sub>1)</sub>	150	100	100	25600	3.8	3.8	992.6	5906675119205
R-LX-08X060-HF-ZP <sub>1)</sub>	60	100	100	25600	3.4	3.4	892.7	5906675119212
R-LX-08X075-HF-ZP <sub>1)</sub>	75	100	100	25600	3.9	3.9	1028.4	5906675119236
R-LX-08X090-HF-ZP <sub>1)</sub>	90	100	100	19200	4.5	4.5	899.8	5906675119243
R-LX-08X100-HF-ZP <sub>1)</sub>	100	100	100	19200	4.9	4.9	974.6	5906675119250
R-LX-08X120-HF-ZP <sub>1)</sub>	120	50	50	12800	2.9	2.9	773.4	5906675442389
R-LX-08X130-HF-ZP <sub>1)</sub>	130	50	50	12800	3.0	3.0	808.2	5906675119267
R-LX-08X150-HF-ZP <sub>1)</sub>	150	50	50	12800	3.4	3.4	903.0	5906675119274
R-LX-10X060-HF-ZP <sub>1)</sub>	60	50	50	14400	2.7	2.7	801.3	5906675442334

## Product commercial data

Product Code	Anchor	Quantity [pcs]			Weight [kg]			Bar Codes
	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
R-LX-10X065-HF-ZP <sub>1)</sub>	65	50	50	14400	2.8	2.8	829.2	5906675119281
R-LX-10X075-HF-ZP <sub>1)</sub>	75	50	50	12800	3.1	3.1	817.2	5906675119304
R-LX-10X085-HF-ZP <sub>1)</sub>	85	50	50	12800	3.4	3.4	895.3	5906675119311
R-LX-10X090-HF-ZP <sub>1)</sub>	90	50	50	12800	3.6	3.6	951.6	5906675442341
R-LX-10X100-HF-ZP <sub>1)</sub>	100	50	50	12800	3.8	3.8	1010.5	5906675119335
R-LX-10X110-HF-ZP <sub>1)</sub>	110	25	25	6400	2.2	2.2	580.4	5906675442358
R-LX-10X120-HF-ZP <sub>1)</sub>	120	25	25	6400	2.2	2.2	597.0	5906675119342
R-LX-10X130-HF-ZP <sub>1)</sub>	130	25	25	7200	2.4	2.4	731.3	5906675442365
R-LX-10X140-HF-ZP <sub>1)</sub>	140	25	25	7200	2.5	2.5	758.6	5906675119410
R-LX-10X150-HF-ZP <sub>1)</sub>	150	25	25	7200	2.7	2.7	820.3	5906675442372
R-LX-14X080-HF-ZP <sub>1)</sub>	80	20	20	5120	2.7	2.7	731.4	5906675292861
R-LX-14X105-HF-ZP <sub>1)</sub>	105	20	20	5120	3.3	3.3	879.9	5906675119953
R-LX-14X115-HF-ZP <sub>1)</sub>	115	20	20	5120	3.6	3.6	941.4	5906675312118
R-LX-14X135-HF-ZP <sub>1)</sub>	135	20	20	5120	4.0	4.0	1059.1	5906675119977
R-LX-14X160-HF-ZP <sub>1)</sub>	160	15	15	3840	3.6	3.6	955.7	5906675442419

1) ETA 17/0783