

R-LX-HF-ZF Zinc flake coated Hex with Flange Concrete Screw Anchor

Self-tapping concrete screwbolt



Approvals and Reports

- ETA 17/0806
- UKTA-22//6199



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
- Special zinc flake corrosion-resistant coating
- 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

Applications

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

Base materials

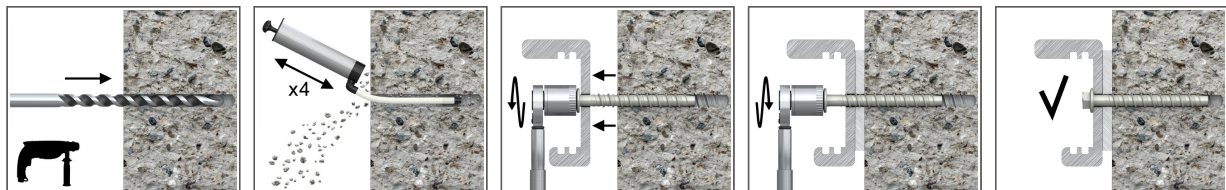
Approved for use in:

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

Also suitable for use in:

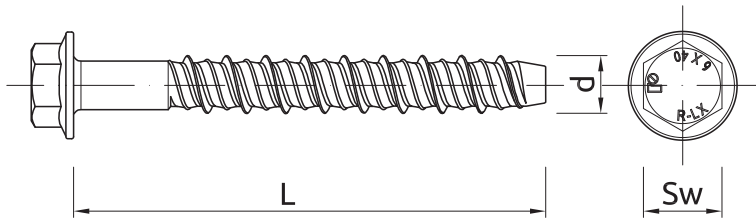
- Natural Stone (after site testing)

Installation guide



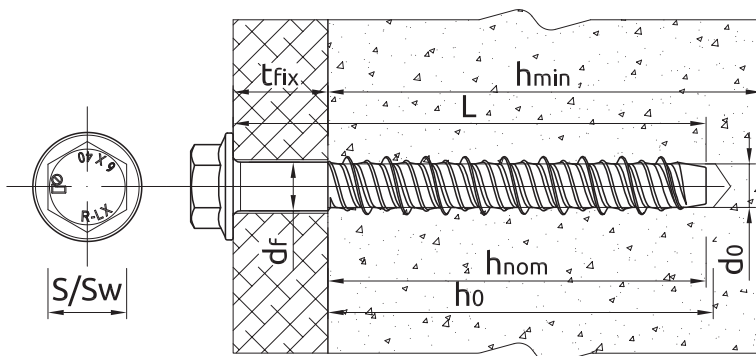
1. Drill the hole with rotary hammer drilling machine. Drill to a required depth.
2. Blow out dust at least 4 times with a hand pump.
3. Possibility of unscrewing and re-screwing.
4. Tighten to the recommended torque.
5. After installation.

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]
8	R-LX-08X060-HF-ZF	ETA-17/0806	9.9	60	10	-	12
	R-LX-08X075-HF-ZF	ETA-17/0806	9.9	75	25	5	12
	R-LX-08X090-HF-ZF	ETA-17/0806	9.9	90	40	20	12
	R-LX-08X100-HF-ZF	ETA-17/0806	9.9	100	50	30	12
	R-LX-08X130-HF-ZF	ETA-17/0806	9.9	130	80	60	12
	R-LX-08X150-HF-ZF	ETA-17/0806	9.9	150	100	80	12
10	R-LX-10X065-HF-ZF	ETA-17/0806	12.4	65	10	-	14
	R-LX-10X075-HF-ZF	ETA-17/0806	12.4	75	20	-	14
	R-LX-10X085-HF-ZF	ETA-17/0806	12.4	85	30	-	14
	R-LX-10X100-HF-ZF	ETA-17/0806	12.4	100	45	15	14
	R-LX-10X120-HF-ZF	ETA-17/0806	12.4	120	65	35	14
	R-LX-10X140-HF-ZF	ETA-17/0806	12.4	140	85	55	14
12	R-LX-12X075-HF-ZF	ETA-17/0806	14.9	75	15	-	16
	R-LX-12X100-HF-ZF	ETA-17/0806	14.9	100	40	-	16
	R-LX-12X130-HF-ZF	ETA-17/0806	14.9	130	70	30	16
	R-LX-12X150-HF-ZF	ETA-17/0806	14.9	150	90	50	16
14	R-LX-14X080-HF-ZF	ETA-17/0806	17.4	80	5	-	18
	R-LX-14X105-HF-ZF	ETA-17/0806	17.4	105	30	-	18
	R-LX-14X115-HF-ZF	ETA-17/0806	17.4	115	40	-	18
	R-LX-14X135-HF-ZF	ETA-17/0806	17.4	135	60	15	18
	R-LX-14X135-HF-ZF	ETA-17/0806	17.4	135	60	15	18

Installation data



Size	8	10	12	14		
Thread diameter	d	[mm]	9.9	12.4	14.9	17.4
Hole diameter in substrate	d_0	[mm]	8	10	12	14
Wrench size	Sw	[mm]	13	15	16	19
External diameter of washer		[mm]	18	22	27	32
Max. torque for impact screw driver	$T_{imp,max}$	[Nm]	900	950	950	950

Installation data

Size			8	10	12	14
STANDARD EMBEDMENT DEPTH						
Min. hole depth in substrate	$h_{0,s}$	[mm]	80	95	110	130
Real hole depth in substrate	h_0	[mm]	$L + 10 - t_{fix}$	$L + 10 - t_{fix}$	$L + 10 - t_{fix}$	$L + 10 - t_{fix}$
Min. installation depth	$h_{nom,s}$	[mm]	70	85	100	120
Min. substrate thickness	$h_{min,s}$	[mm]	110	130	155	190
Min. spacing	$s_{min,s}$	[mm]	50	60	80	100
Min. edge distance	$c_{min,s}$	[mm]	50	60	80	100
REDUCED EMBEDMENT DEPTH						
Min. hole depth in substrate	$h_{0,r}$	[mm]	60	65	70	85
Real hole depth in substrate	h_0	[mm]	$L + 10 - t_{fix}$	$L + 10 - t_{fix}$	$L + 10 - t_{fix}$	$L + 10 - t_{fix}$
Min. installation depth	$h_{nom,r}$	[mm]	50	55	60	75
Min. substrate thickness	$h_{min,r}$	[mm]	100	100	110	110
Min. spacing	$s_{min,r}$	[mm]	50	60	80	100
Min. edge distance	$c_{min,r}$	[mm]	50	60	80	100

Mechanical properties

Size			8	10	12	14
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm ²]	1200	1050	1000	1020
Nominal yield strength - tension	f_{yk}	[N/mm ²]	1050	950	900	800
Cross sectional area - tension	A_s	[mm ²]	50.3	78.5	113	153.9
Elastic section modulus	W_{el}	[mm ³]	50.3	98.1	169.4	269.3
Characteristic bending resistance	$M_{Rk,s}$	[Nm]	72.4	123.6	203.3	329.6
Design bending resistance	M	[Nm]	48.3	82.4	135.5	219.7

Basic performance data

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

Size		8	10	12	14
NON-CRACKED CONCRETE C20/25					
Standard embedment depth h_{nom}	[mm]	70.00	85.00	100.00	120.00
Reduced embedment depth h_{nom}	[mm]	50.00	55.00	60.00	75.00
CRACKED CONCRETE C20/25					
Standard embedment depth h_{nom}	[mm]	70.00	85.00	100.00	120.00
Reduced embedment depth h_{nom}	[mm]	50.00	55.00	60.00	75.00
MEAN ULTIMATE LOAD					
TENSION LOAD $N_{Ru,m}$					
NON-CRACKED CONCRETE C20/25					
Standard embedment depth	[kN]	26.04	35.37	44.72	59.96
Reduced embedment depth	[kN]	14.58	17.08	18.37	26.79
CRACKED CONCRETE C20/25					
Standard embedment depth	[kN]	16.10	24.89	31.47	41.92
Reduced embedment depth	[kN]	10.10	10.70	10.80	17.40
SHEAR LOAD $V_{Ru,m}$					
NON-CRACKED CONCRETE C20/25					
Standard embedment depth	[kN]	26.04	51.91	71.19	98.91
Reduced embedment depth	[kN]	14.58	17.08	18.37	26.79
CRACKED CONCRETE C20/25					
Standard embedment depth	[kN]	18.33	49.78	62.94	83.83
Reduced embedment depth	[kN]	10.26	12.02	12.93	18.85

Basic performance data

Size		8	10	12	14
CHARACTERISTIC LOAD					
TENSION LOAD N_{Rk}					
NON-CRACKED CONCRETE C20/25					
Standard embedment depth	[kN]	18.98	25.78	32.59	43.41
Reduced embedment depth	[kN]	10.63	12.45	13.39	19.52
CRACKED CONCRETE C20/25					
Standard embedment depth	[kN]	13.00	18.05	22.82	30.39
Reduced embedment depth	[kN]	7.00	8.00	7.00	13.00
SHEAR LOAD V_{Rk}					
NON-CRACKED CONCRETE C20/25					
Standard embedment depth	[kN]	18.98	41.20	57.00	78.50
Reduced embedment depth	[kN]	10.63	12.45	13.39	19.52
CRACKED CONCRETE C20/25					
Standard embedment depth	[kN]	13.29	36.09	45.63	60.77
Reduced embedment depth	[kN]	7.44	8.71	9.37	13.66
DESIGN LOAD					
TENSION LOAD N_{Rd}					
NON-CRACKED CONCRETE C20/25					
Standard embedment depth	[kN]	12.65	17.19	21.73	28.94
Reduced embedment depth	[kN]	7.08	8.30	8.93	13.01
CRACKED CONCRETE C20/25					
Standard embedment depth	[kN]	8.67	12.03	15.21	20.26
Reduced embedment depth	[kN]	4.67	5.33	4.67	8.67
SHEAR LOAD V_{Rd}					
NON-CRACKED CONCRETE C20/25					
Standard embedment depth	[kN]	12.65	27.47	38.00	52.33
Reduced embedment depth	[kN]	7.08	8.30	8.93	13.01
CRACKED CONCRETE C20/25					
Standard embedment depth	[kN]	8.86	24.06	30.42	40.52
Reduced embedment depth	[kN]	4.96	5.81	6.25	9.11

Design performance data

(-) failure is not decisive

Size			8	10	12	14				
Min. installation depth	h_{nom}	[mm]	50.00	70.00	55.00	85.00	60.00	100.0	75.00	120.0
Effective embedment depth	h_{ef}	[mm]	36.00	53.00	40.00	65.00	42.00	76.00	54.00	92.00
TENSION LOAD										
STEEL FAILURE										
Characteristic resistance	$N_{Rk,s}$	[kN]	60.40	60.40	82.40	82.40	113.0	113.0	157.0	157.0
Partial safety factor	γ_{Ms}	-	1.40	1.40	1.40	1.40	1.40	1.40	1.50	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]	7.00	13.00	8.00	-	7.00	-	13.00	-
PULL-OUT FAILURE										
Installation safety factor	γ_{inst}	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Increasing factors for $N_{Rd,p}$ - C30/37	ψ_c	-	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Increasing factors for $N_{Rd,p}$ - C40/50	ψ_c	-	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Increasing factors for $N_{Rd,p}$ - C50/60	ψ_c	-	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
CONCRETE CONE FAILURE										
Installation safety factor	γ_{inst}	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Factor for cracked concrete	$k_{cr,N}$	-	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70
Factor for non-cracked concrete	$k_{ucr,N}$	-	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
Spacing	$s_{cr,N}$	[mm]	112.0	160.0	120.0	196.0	126.0	228.0	165.0	276.0
Edge distance	$c_{cr,N}$	[mm]	56.00	80.00	60.00	98.00	63.00	114.0	83.00	138.0
CONCRETE SPLITTING FAILURE										
Installation safety factor	γ_{inst}	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Spacing	$s_{cr,sp}$	[mm]	112.0	160.0	136.0	222.0	126.0	228.0	188.0	312.0
Edge distance	$c_{cr,sp}$	[mm]	56.00	80.00	68.00	111.0	63.00	114.0	94.00	156.0
SHEAR LOAD										
STEEL FAILURE										
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	30.20	30.20	41.20	41.20	57.00	57.00	78.50	78.50
Ductility factor	k_γ	-	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	72.40	72.40	123.6	123.6	203.3	203.3	329.6	329.6
Partial safety factor	γ_{Ms}	-	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
CONCRETE PRY-OUT FAILURE										
Factor	k	-	1.00	1.00	1.00	2.00	1.00	2.00	1.00	2.00
Installation safety factor	γ_{inst}	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CONCRETE EDGE FAILURE										
Effective length of anchor	ℓ_f	[mm]	50.00	70.00	55.00	85.00	60.00	100.0	75.00	120.0
Anchor diameter	d_{nom}	[mm]	8.00	8.00	10.00	10.00	12.00	12.00	14.00	14.00
Installation safety factor	γ_{inst}	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Design performance data

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

Size			8	10	12	14				
R (for EI) = 30 min										
Effective embedment depth	h_{ef}	[mm]	36.00	53.00	40.00	65.00	42.00	76.00	54.00	92.00
TENSION LOAD										
STEEL FAILURE										
Characteristic resistance	$N_{Rk,s}$	[kN]	0.75	0.75	1.57	1.57	2.26	2.26	3.08	3.08
PULL-OUT FAILURE										
Characteristic resistance	$N_{Rk,p}$	[kN]	1.88	3.25	2.00	4.75	1.75	6.50	3.25	8.50
SHEAR LOAD										
STEEL FAILURE										
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.75	0.75	1.57	1.57	2.26	2.26	3.08	3.08
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.90	0.90	2.36	2.36	4.07	4.07	6.47	6.47
R (for EI) = 60 min										
Effective embedment depth	h_{ef}	[mm]	36.00	53.00	40.00	65.00	42.00	76.00	54.00	92.00
TENSION LOAD										
STEEL FAILURE										
Characteristic resistance	$N_{Rk,s}$	[kN]	0.65	0.65	1.18	1.18	1.70	1.70	2.31	2.31
PULL-OUT FAILURE										
Characteristic resistance	$N_{Rk,p}$	[kN]	1.88	3.25	2.00	4.75	1.75	6.50	3.25	8.50
SHEAR LOAD										
STEEL FAILURE										
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.65	0.65	1.18	1.18	1.70	1.70	2.31	2.31
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.78	0.78	1.77	1.77	3.05	3.05	4.85	4.85
R (for EI) = 90 min										
Effective embedment depth	h_{ef}	[mm]	36.00	53.00	40.00	65.00	42.00	76.00	54.00	92.00
TENSION LOAD										
STEEL FAILURE										
Characteristic resistance	$N_{Rk,s}$	[kN]	0.50	0.50	1.02	1.02	1.47	1.47	2.00	2.00
PULL-OUT FAILURE										
Characteristic resistance	$N_{Rk,p}$	[kN]	1.88	3.25	2.00	4.75	1.75	6.50	3.25	8.50
SHEAR LOAD										
STEEL FAILURE										
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.50	0.50	1.02	1.02	1.47	1.47	2.00	2.00
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.60	0.60	1.53	1.53	2.65	2.65	4.20	4.20
R (for EI) = 120 min										
Effective embedment depth	h_{ef}	[mm]	36.00	53.00	40.00	65.00	42.00	76.00	54.00	92.00
TENSION LOAD										
STEEL FAILURE										
Characteristic resistance	$N_{Rk,s}$	[kN]	0.40	0.40	0.79	0.79	1.13	1.13	1.54	1.54
PULL-OUT FAILURE										
Characteristic resistance	$N_{Rk,p}$	[kN]	1.50	2.60	1.60	3.80	1.40	5.20	2.60	6.80
SHEAR LOAD										
STEEL FAILURE										
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	0.40	0.40	0.79	0.79	1.13	1.13	1.54	1.54
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	0.48	0.48	1.18	1.18	2.04	2.04	3.23	3.23

Design performance data

Allowable values for resistance in case of Seismic performance category C1

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	1.40	1.50
TENSION LOAD, PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	5.40	13.50	19.20
Installation safety factor	γ_{inst}	-	1.00	1.00	1.00
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	1.50	1.50

Allowable values for resistance in case of Seismic performance category C2

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	1.40	1.50
TENSION LOAD, PULL-OUT FAILURE					
Characteristic resistance	$N_{Rk,p}$	[kN]	1.57	4.91	14.87
Installation safety factor	γ_{inst}	-	1.00	1.00	1.00
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	1.50	1.50

Product commercial data

Product Code	Anchor	Quantity [pcs]			Weight [kg]			Bar Codes
	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
R-LX-08X060-HF-ZF ₁₎	60	100	100	25600	3.4	3.4	892.7	5906675129648
R-LX-08X075-HF-ZF ₁₎	75	100	100	25600	4.0	4.0	1041.2	5906675129655
R-LX-08X090-HF-ZF ₁₎	90	100	100	19200	4.5	4.5	899.8	5906675129662
R-LX-08X100-HF-ZF ₁₎	100	100	100	19200	4.9	4.9	974.6	5906675129679
R-LX-08X130-HF-ZF ₁₎	130	50	50	12800	3.1	3.1	823.3	5906675129686
R-LX-08X150-HF-ZF ₁₎	150	50	50	12800	3.4	3.4	903.0	5906675129693
R-LX-10X065-HF-ZF ₁₎	65	50	50	14400	2.8	2.8	841.6	5906675129709
R-LX-10X075-HF-ZF ₁₎	75	50	50	12800	3.1	3.1	817.2	5906675129716
R-LX-10X085-HF-ZF ₁₎	85	50	50	12800	3.4	3.4	894.0	5906675129723
R-LX-10X100-HF-ZF ₁₎	100	50	50	12800	3.8	3.8	1010.5	5906675129730
R-LX-10X120-HF-ZF ₁₎	120	25	25	6400	2.3	2.3	620.8	5906675129747
R-LX-10X140-HF-ZF ₁₎	140	25	25	7200	2.5	2.5	757.2	5906675129754
R-LX-12X075-HF-ZF	75	50	50	9600	4.6	4.6	921.6	5906675431925
R-LX-12X100-HF-ZF	100	50	50	6400	5.8	5.8	772.3	5906675431932
R-LX-12X130-HF-ZF	130	50	50	6400	6.9	6.9	913.2	5906675431949
R-LX-12X150-HF-ZF	150	50	50	6400	8.0	8.0	1048.4	5906675423753

Product commercial data

Product Code	Anchor	Quantity [pcs]			Weight [kg]			Bar Codes
	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
R-LX-14X080-HF-ZF ₁₎	80	20	20	5120	2.7	2.7	731.4	5906675292854
R-LX-14X105-HF-ZF ₁₎	105	20	20	5120	3.4	3.4	910.1	5906675129839
R-LX-14X115-HF-ZF ₁₎	115	20	20	5120	3.6	3.6	941.4	5906675271668
R-LX-14X135-HF-ZF ₁₎	135	20	20	5120	4.1	4.1	1088.3	5906675129853
R-LX-14X135-HF-ZF ₁₎	135	20	20	5120	4.1	4.1	1088.3	5906675129853

1) ETA 17/0806