

R-LX-HF-ZF Zinc flake coated 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 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

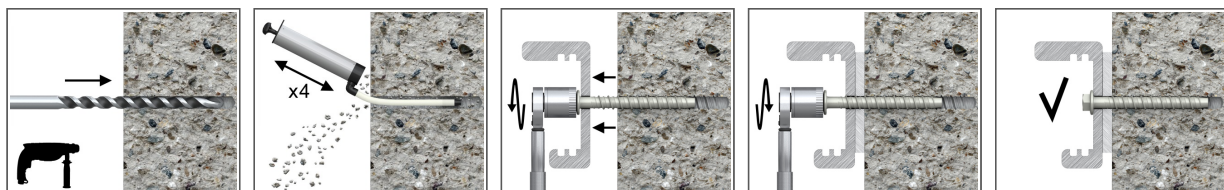
Approved for use in:

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

Also suitable for use in:

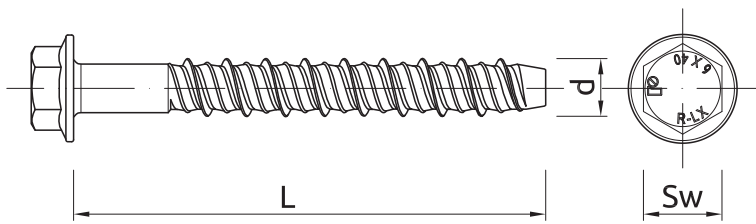
- Natural Stone (after site testing)

Installation guide



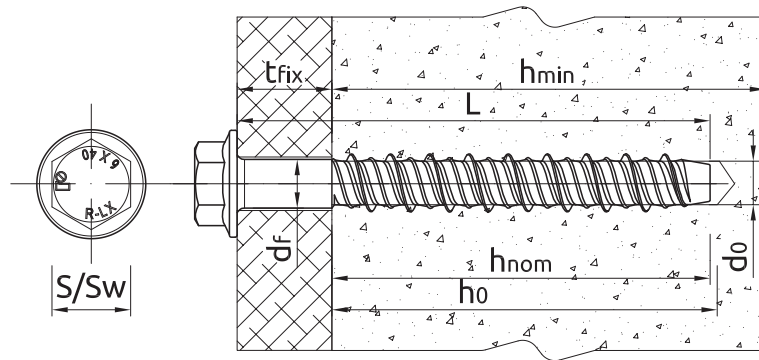
1. Drill the hole with rotary hammer drilling machine. Drill to a required depth.
2. Blow out dust at least 4 times with a hand pump.
3. Possibility of unscrewing and re-screwing.
4. Tighten to the recommended torque.
5. After installation.

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]	
5	R-LX-05X075-HF-ZF	ETA-17/0783	6.2	75	-	32	7
6	R-LX-06X035-HF-ZF	ETA-17/0783	7.5	35	-	-	9
	R-LX-06X075-HF-ZF.	ETA-17/0783	7.5	75	32	20	9
	R-LX-06X100-HF-ZF	ETA-17/0783	7.5	100	57	45	9
	R-LX-06X130-HF-ZF	ETA-17/0783	7.5	130	87	75	9
	R-LX-06X150-HF-ZF	ETA-17/0783	7.5	150	107	95	9
	R-LX-06X050-HF-ZF	ETA-17/0783	7.5	50	7	-	9
8	R-LX-08X075-HF-ZF	ETA-17/0783	9.9	75	25	5	12
	R-LX-08X060-HF-ZF	ETA-17/0783	9.9	60	10	-	12
	R-LX-08X090-HF-ZF	ETA-17/0783	9.9	90	40	20	12
	R-LX-08X100-HF-ZF	ETA-17/0783	9.9	100	50	30	12
	R-LX-08X130-HF-ZF	ETA-17/0783	9.9	130	80	60	12
	R-LX-08X150-HF-ZF	ETA-17/0783	9.9	150	100	80	12
10	R-LX-10X060-HF-ZF	ETA-17/0783	12.4	65	10	-	14
	R-LX-10X075-HF-ZF	ETA-17/0783	12.4	75	20	-	14
	R-LX-10X085-HF-ZF	ETA-17/0783	12.4	85	30	-	14
	R-LX-10X100-HF-ZF	ETA-17/0783	12.4	100	45	15	14
	R-LX-10X120-HF-ZF	ETA-17/0783	12.4	120	65	35	14
	R-LX-10X140-HF-ZF	ETA-17/0783	12.4	140	85	55	14
14	R-LX-14X080-HF-ZF	ETA-17/0783	17.4	80	5	-	18
	R-LX-14X105-HF-ZF	ETA-17/0783	17.4	105	30	-	18
	R-LX-14X115-HF-ZF	ETA-17/0783	17.4	115	40	-	18
	R-LX-14X135-HF-ZF	ETA-17/0783	17.4	135	60	15	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
MINIMUM EMBEDMENT DEPTH							
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	-	-	-
REDUCED EMBEDMENT DEPTH							
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
STANDARD EMBEDMENT DEPTH							
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
MINIMUM EMBEDMENT DEPTH			
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 ²]	1300	1250	1200	1050	1020
Nominal yield strength - tension	f_{yk}	[N/mm ²]	1150	1100	1050	950	800
Cross sectional area - tension	A_s	[mm ²]	19.6	28.3	50.3	78.5	153.9
Elastic section modulus	W_{el}	[mm ³]	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
CRACKED AND NON-CRACKED CONCRETE						
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	-	-	-
HOLLOW CORE SLAB						
Minimum embedment depth h_{nom}	[mm]	-	35.00	-	-	-
CHARACTERISTIC LOAD						
TENSION AND SHEAR LOAD F_{Rk}						
CRACKED AND NON-CRACKED CONCRETE						
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	-	-	-
HOLLOW CORE SLAB						
Minimum embedment depth	[kN]	-	6.00	-	-	-
DESIGN LOAD						
TENSION AND SHEAR LOAD F_{Rd}						
CRACKED AND NON-CRACKED CONCRETE						
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	-	-	-
HOLLOW CORE SLAB						
Minimum embedment depth	[kN]	-	4.00	-	-	-
RECOMMENDED LOAD						
TENSION AND SHEAR LOAD F_{rec}						
CRACKED AND NON-CRACKED CONCRETE						
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	-	-	-
HOLLOW CORE SLAB						
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
TENSION AND SHEAR LOAD													
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	γ_{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	ψ_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	ψ_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	ψ_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
SHEAR LOAD													
STEEL FAILURE													
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	γ_{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	
TENSION AND SHEAR LOAD													
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		
R (for EI) = 30 min													
Effective embedment depth	h_{ef}	[mm]	30.00	30.00	42.00	37.00	53.00	40.00	65.00	55.00	92.00		
TENSION AND SHEAR LOAD													
Characteristic resistance	F_{Rk}	[kN]	0.20	0.28	0.28	0.75	0.75	1.57	1.57	3.00	3.00		
R (for EI) = 60 min													
Effective embedment depth	h_{ef}	[mm]	30.00	30.00	42.00	37.00	53.00	40.00	65.00	55.00	92.00		
TENSION AND SHEAR LOAD													
Characteristic resistance	F_{Rk}	[kN]	0.18	0.25	0.25	0.65	0.75	1.18	1.18	2.31	2.31		
R (for EI) = 90 min													
Effective embedment depth	h_{ef}	[mm]	30.00	30.00	42.00	37.00	53.00	40.00	65.00	55.00	92.00		
TENSION AND SHEAR LOAD													
Characteristic resistance	F_{Rk}	[kN]	0.14	0.20	0.20	0.50	0.75	1.02	1.02	2.00	2.00		
R (for EI) = 120 min													
Effective embedment depth	h_{ef}	[mm]	30.00	30.00	42.00	37.00	53.00	40.00	65.00	55.00	92.00		
TENSION AND SHEAR LOAD													
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