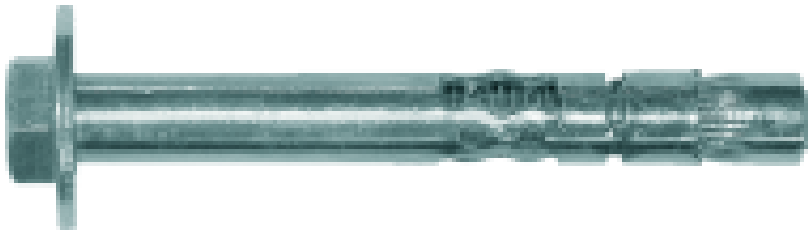


# R-RLK-L Rawlok - Loose Bolt

All purpose expansion anchor for use in medium weight applications



## Product information

### Features and benefits

- Medium weight applications anchor
- Anchor designed for optimum performance in most base materials
- Integral collapse feature to ensure maximum clamping force is applied to the fixture
- Bolt and drill size marked on sleeve for accurate installation

### Applications

- Radiators
- Signs
- Stadium seating
- Satellite dishes
- Wall plates
- Shutter
- Garage doors

### Base materials

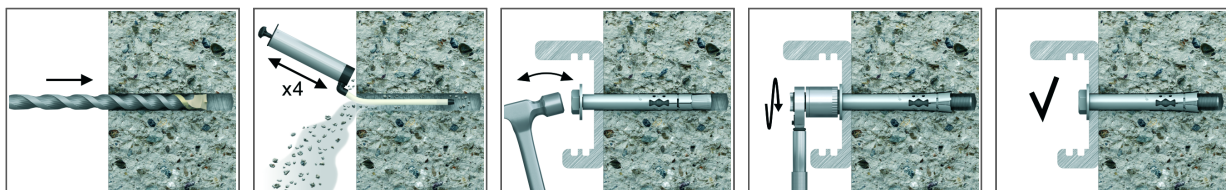
**Approved for use in:**

- Non-cracked concrete C20/25-C50/60
- Solid Brick
- Reinforced concrete

**Also suitable for use in:**

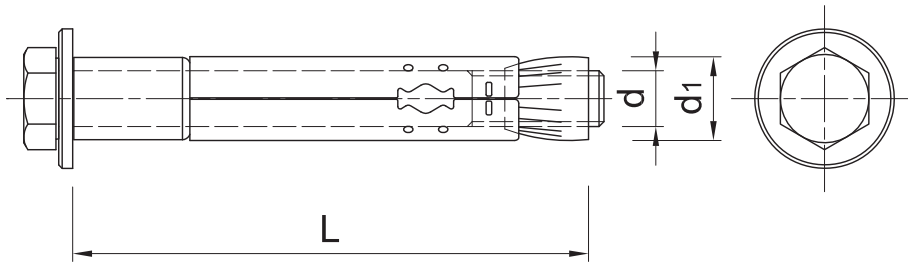
- Natural Stone

## Installation guide



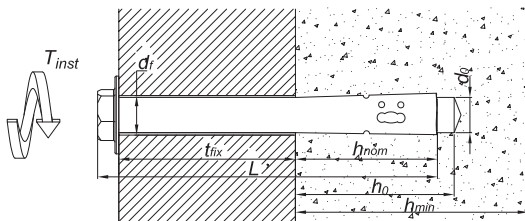
1. Drill a hole of required diameter and depth. Note: When fixing into brickwork, mortar joints should be avoided
2. Remove debris and thoroughly clean hole with brush and pum
3. Insert Rawlock through the fixture into the hole
4. Tighten to the recommended torque

### Product information



Size	Product Code	Anchor		Fixture	
		Diameter	Length	Max. thickness	Hole diameter
		$d$	$L$	$t_{fix}$	$d_f$
		[mm]	[mm]	[mm]	[mm]
M8	R-RLK-L-08060	8	60	15	12
	R-RLK-L-08080	8	80	35	12
M10	R-RLK-L-10070	10	70	14	14
	R-RLK-L-10100	10	100	44	14

### Installation data



Size	M8	M10
Thread diameter	$d$ [mm]	10 12
Hole diameter in substrate	$d_o$ [mm]	10 12
Installation torque (Concrete)	$T_{inst}$ [Nm]	11 22
Installation torque (Blockwork 14.0MPa)	$T_{inst}$ [Nm]	6 11
Installation torque (Blockwork 7.0MPa)	$T_{inst}$ [Nm]	4 8
Min. hole depth in substrate	$h_o$ [mm]	45 55
Installation depth	$h_{nom}$ [mm]	45 55
Min. substrate thickness	$h_{min}$ [mm]	65 85
Min. spacing	$s_{min}$ [mm]	60 70
Min. edge distance	$c_{min}$ [mm]	60 70

### Basic performance data

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

Size	M8	M10
<b>BLOCKWORK 7.0MPA</b>		
Embedment depth $h_{ef}$ [mm]	36.0	43.0
<b>NON-CRACKED CONCRETE</b>		
Embedment depth $h_{ef}$ [mm]	36.0	43.0
<b>CHARACTERISTIC LOAD</b>		
<b>TENSION LOAD <math>N_{Rk}</math></b>		
BLOCKWORK 7.0MPA [kN]	3.50	4.50
NON-CRACKED CONCRETE [kN]	9.30	11.4
<b>SHEAR LOAD <math>V_{Rk}</math></b>		
BLOCKWORK 7.0MPA [kN]	2.70	3.10
NON-CRACKED CONCRETE [kN]	9.00	12.6

## Basic performance data

Size		M8	M10
<b>DESIGN LOAD</b>			
<b>TENSION LOAD <math>N_{Rd}</math></b>			
BLOCKWORK 7.0MPA	[kN]	1.62	2.08
NON-CRACKED CONCRETE	[kN]	4.31	5.28
<b>SHEAR LOAD <math>V_{Rd}</math></b>			
BLOCKWORK 7.0MPA	[kN]	1.50	1.72
NON-CRACKED CONCRETE	[kN]	5.00	7.00
<b>RECOMMENDED LOAD</b>			
<b>TENSION LOAD <math>N_{rec}</math></b>			
BLOCKWORK 7.0MPA	[kN]	1.16	1.49
NON-CRACKED CONCRETE	[kN]	3.08	3.77
<b>SHEAR LOAD <math>V_{rec}</math></b>			
BLOCKWORK 7.0MPA	[kN]	1.07	1.23
NON-CRACKED CONCRETE	[kN]	3.57	5.00

## Design performance data

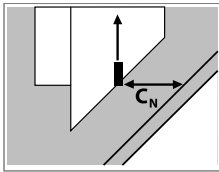
Data based on AT-15-7555/2011

Size			M8	M10
Embedment depth	$h_{ef}$	[mm]	36.0	43.0
<b>TENSION LOAD</b>				
<b>PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25</b>				
Characteristic resistance	$N_{Rk,p}$	[kN]	9.30	11.4
Design resistance $V_{M}^* = 2.16$	$N_{Rd,p}$	[kN]	4.31	5.28
<b>PULL-OUT FAILURE; BLOCKWORK 7.0MPA</b>				
Characteristic resistance	$N_{Rk,p}$	[kN]	3.50	4.50
Design resistance $V_{M}^* = 2.16$	$N_{Rd,p}$	[kN]	1.62	2.08
<b>PULL-OUT FAILURE; BLOCKWORK 14.0MPA</b>				
Characteristic resistance	$N_{Rk,p}$	[kN]	4.50	5.60
Design resistance $V_{M}^* = 2.16$	$N_{Rd,p}$	[kN]	2.08	2.59
<b>PULL-OUT FAILURE; BLOCKWORK 20.5MPA</b>				
Characteristic resistance	$N_{Rk,p}$	[kN]	5.00	6.00
Design resistance $V_{M}^* = 2.16$	$N_{Rd,p}$	[kN]	2.31	2.78
<b>SHEAR LOAD</b>				
<b>NON-CRACKED CONCRETE C20/25</b>				
Characteristic resistance	$V_{Rk}$	[kN]	9.00	12.6
Design resistance $V_{Mc} = 1.8$	$V_{Rd}$	[kN]	5.00	7.00
<b>BLOCKWORK 7.0MPA</b>				
Characteristic resistance	$V_{Rk}$	[kN]	2.70	3.10
Design resistance $V_{Mc} = 1.8$	$V_{Rd}$	[kN]	1.50	1.72
<b>BLOCKWORK 14.0MPA</b>				
Characteristic resistance	$V_{Rk}$	[kN]	8.60	10.3
Design resistance $V_{Mc} = 1.8$	$V_{Rd}$	[kN]	4.78	5.72
<b>BLOCKWORK 20.5MPA</b>				
Characteristic resistance	$V_{Rk}$	[kN]	8.60	10.3
Design resistance $V_{Mc} = 1.8$	$V_{Rd}$	[kN]	4.78	5.72

## Design performance data

Reduction / increasing resistance factors for edge distance and spacing

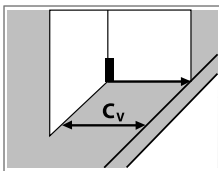
Edge distance (tension)



Reduction factors for edge distance  $< C_{cr,N}$  applicable to  $N_{Rd}$  or  $N_{rec}$  for non-cracked and cracked concrete from 'Basic Performance' table

$C_N$ [mm]	M5	M6	M8	M10	M12
40	0.75				
50	0.87	0.79			
60	1.00	0.89	0.81		
70		1.00	0.91	0.77	
80			1.00	0.85	
90				0.92	0.81
100				1.00	0.87
120					1.00

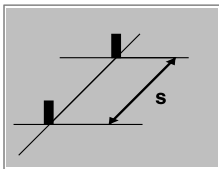
Edge distance (shear)



Increasing factors for edge distance  $> C_{min}$  applicable to  $V_{Rd,c}$  for non-cracked concrete from 'Design Performance' table

$C_V$ [mm]	M5	M6	M8	M10	M12
40	0.58				
50	0.79	0.53			
60	1.00	0.69	0.50		
70		0.84	0.62	0.48	
80		1.00	0.75	0.58	
90			0.87	0.69	0.45
100			1.00	0.79	0.53
120				1.00	0.69
140					0.84
160					1.00

Spacing



Reduction factors for spacing  $< S_{cr,N}$  applicable to  $N_{Rd} / V_{Rd}$  or  $N_{rec} / V_{rec}$  for non-cracked concrete from 'Basic Performance' table

$s$ [mm]	M5	M6	M8	M10	M12
40	0.80				
50	0.90	0.77			
60	1.00	0.85	0.76		
70		0.92	0.82	0.75	
80		1.00	0.88	0.80	
90			0.94	0.85	0.74
100			1.00	0.90	0.77
120				1.00	0.85
140					0.92
160					1.00

### Product commercial data

Size	Product Code	Anchor		Quantity [pcs]			Weight [kg]			Bar Codes	Art No.
		Diameter [mm]	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet		
M8	R-RLK-L-08060	8	60	50	50	9000	1.80	1.80	354.0	5010445697159	55177
	R-RLK-L-08080	8	80	50	50	9000	2.7	2.7	507.0	5010445697166	55178
M10	R-RLK-L-10070	10	70	25	25	7500	2.0	2.0	615.0	5010445697227	55179
	R-RLK-L-10100	10	100	25	25	4500	1.40	1.40	282.0	5010445697210	55180