

## R-RBP Rawlbolt - Bolt Projecting for use in hollow core slab and ceramic substrates

World's most popular all-purpose expanding shield anchor - bolt projecting version



### Product information

#### Features and benefits

- RAWLBOLT® - first ever mechanical anchor in the world, forerunner of all of the later mechanical anchors
- For use in cracked and non-cracked concrete (ETA option 1), hollow-core slabs, flooring blocks and ceramics
- Product recommended for applications requiring fire resistance
- Three-pieces expanding sleeve of maximum expansion provides optimal load and safety of use in any substrate
- Wide range of diameters (M6 to M24)

#### Applications

- Roller shutter doors
- Fire doors
- Steelwork
- Security grills
- Heavy machinery
- Pipework/duct work support

#### Base materials

##### Approved for use in:

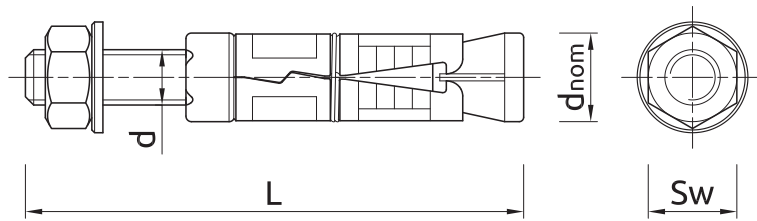
- Solid clay brick 20MPa
- Hollow Sand-lime Brick 15MPa
- Hollow Lightweight Concrete Block
- Concrete hollow floor block (eg. Teriva)
- Hollow-core Slab

### Installation guide



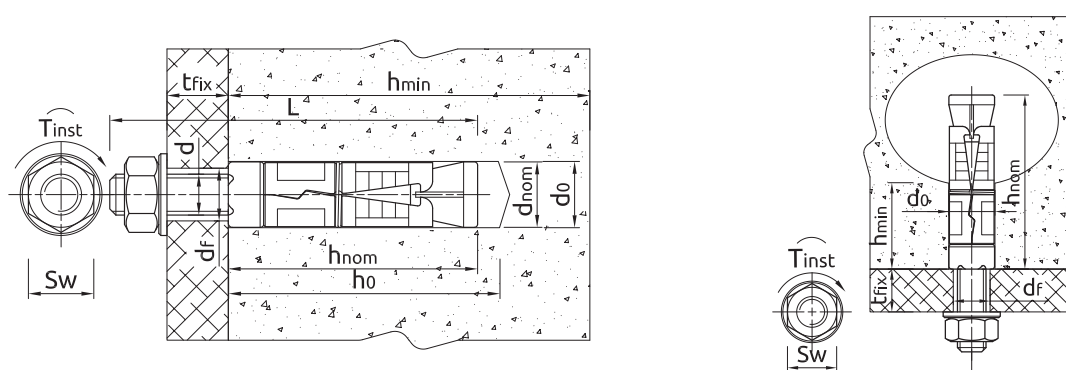
1. Drill a hole of required diameter and depth
2. Remove nut and washer and insert anchor into hole. Tap home with hammer until flush with surface
3. Position fixture over the projecting bolt
4. Add washer and nut and tighten to recommended torque

**Product information**



Size	Product Code	Anchor			Fixture		
		Diameter	External diameter	Length	Max. thickness	Min. thickness	Hole diameter
		d	d <sub>nom</sub>	L	t <sub>fix</sub>		d <sub>i</sub>
		[mm]	[mm]	[mm]	[mm]	[mm]	
M6	R-RBP-M06/10W	6	12	65	10	-	6,5
	R-RBP-M06/25W	6	12	80	25	-	6,5
	R-RBP-M06/60W	6	12	115	60	-	6,5
M8	R-RBP-M08/10W	8	14	75	10	-	9
	R-RBP-M08/25W	8	14	90	25	-	9
	R-RBP-M08/60W	8	14	125	60	-	9
M10	R-RBP-M10/15W	10	16	90	15	-	11
	R-RBP-M10/30W	10	16	105	30	-	11
	R-RBP-M10/60W	10	16	135	60	-	11
M12	R-RBP-M12/15W	12	20	110	15	-	13
	R-RBP-M12/30W	12	20	125	30	-	13
	R-RBP-M12/75W	12	20	170	75	-	13
M16	R-RBP-M16/15W	16	25	150	15	-	17
	R-RBP-M16/35W	16	25	170	35	10	17
	R-RBP-M16/75W	16	25	210	75	35	17
M20	R-RBP-M20/15W	20	32	170	15	-	22
	R-RBP-M20/30W	20	32	185	30	10	22
	R-RBP-M20/100W	20	32	255	100	30	22

**Installation data**



Size	M6	M8	M10	M12	M16	M20		
Thread diameter	d	[mm]	6	8	10	12	16	20
Hole diameter in substrate	d <sub>0</sub>	[mm]	12	14	16	20	25	32
Wrench size	Sw	[mm]	10	13	17	19	24	30

## Installation data

Size			M6	M8	M10	M12	M16	M20
<b>SOLID SUBSTRATES</b>								
Installation torque	$T_{inst}$	[Nm]	6.5	15	27	50	120	230
Min. hole depth in substrate	$h_0$	[mm]	50	55	65	85	125	140
Installation depth	$h_{nom}$	[mm]	45	50	60	80	120	135
Min. substrate thickness	$h_{min}$	[mm]	100	100	100	100	142	172
Min. spacing	$s_{min}$	[mm]	35	40	50	60	95	115
Min. edge distance	$c_{min}$	[mm]	53	60	75	90	143	173
<b>CERAMIC AND HOLLOW SUBSTRATES</b>								
Installation torque	$T_{inst}$	[Nm]	3	5	8	10	15	20
Min. hole depth in substrate	$h_0$	[mm]	-	-	-	-	-	-
Installation depth	$h_{nom}$	[mm]	45	50	60	80	120	135
Min. substrate thickness	$h_{min}$	[mm]	23	23	35	40	50	50
Min. spacing	$s_{min}$	[mm]	100	100	100	100	100	115
Min. edge distance	$c_{min}$	[mm]	100	100	100	100	143	173

## Mechanical properties

Size			M6	M8	M10	M12	M16	M20
Nominal ultimate tensile strength - tension	$F_{uk}$	[N/mm <sup>2</sup> ]	500	500	500	500	500	500
Nominal yield strength - tension	$F_{yk}$	[N/mm <sup>2</sup> ]	400	400	400	400	400	400
Cross sectional area - tension	$A_s$	[mm <sup>2</sup> ]	20.1	36.6	58	84.3	157	245
Elastic section modulus	$W_{el}$	[mm <sup>3</sup> ]	12.7	31.2	62.3	109.2	277.5	540.9
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	7.6	19	37	66	166	325
Design bending resistance	M	[Nm]	6.1	15	30	52	133	260

## Basic performance data

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

Size			M6	M8	M10	M12	M16	M20
<b>MEAN ULTIMATE LOAD</b>								
<b>TENSION AND SHEAR LOAD <math>F_{Rk,m}</math></b>								
<b>Hollow core slab min. C20/25</b>								
Wall thickness	Material class							
23	C30/37	[kN]	8.91	10.40	-	-	-	-
	C35/45	[kN]	9.86	11.50	-	-	-	-
	C45/55	[kN]	10.93	12.75	-	-	-	-
	C50/60	[kN]	11.88	13.86	-	-	-	-
35	C30/37	[kN]	9.93	16.33	18.84	-	-	-
	C35/45	[kN]	10.99	18.07	20.85	-	-	-
	C45/55	[kN]	12.18	20.03	23.11	-	-	-
	C50/60	[kN]	13.24	21.77	25.12	-	-	-
40	C30/37	[kN]	9.52	18.46	28.04	34.82	-	-
	C35/45	[kN]	10.53	20.43	31.03	38.54	-	-
	C45/55	[kN]	11.67	22.64	34.39	42.72	-	-
	C50/60	[kN]	12.69	24.61	37.38	46.43	-	-
50	C20/25	[kN]	10.31	10.96	10.96	10.96	10.96	10.96
<b>Beam-and-block floor (eg.Terriva 4.0/2), min. 25mm wall thickness</b>		[kN]	2.07	2.65	-	-	-	-
<b>Lightweight concrete LAC class 5</b>		[kN]	8.34	8.78	8.78	8.78	8.78	8.78
<b>Solid clay brick class 20</b>		[kN]	9.97	9.64	9.64	9.64	9.64	9.64
<b>Silicate hollow block class 15</b>		[kN]	4.27	-	-	-	-	-

## Basic performance data

Size			M6	M8	M10	M12	M16	M20
<b>CHARACTERISTIC LOAD</b>								
<b>TENSION AND SHEAR LOAD <math>F_{Rk}</math></b>								
<b>Hollow core slab min. C20/25</b>								
Wall thickness	Material class							
23	C30/37	[kN]	4.36	5.44	-	-	-	-
	C35/45	[kN]	4.82	6.02	-	-	-	-
	C45/55	[kN]	5.35	6.67	-	-	-	-
	C50/60	[kN]	5.81	7.25	-	-	-	-
35	C30/37	[kN]	6.61	11.42	16.07	-	-	-
	C35/45	[kN]	7.31	12.64	17.78	-	-	-
	C45/55	[kN]	8.11	14.01	19.71	-	-	-
	C50/60	[kN]	8.81	15.23	21.42	-	-	-
40	C30/37	[kN]	7.30	16.94	19.19	25.46	-	-
	C35/45	[kN]	8.08	18.75	21.23	28.18	-	-
	C45/55	[kN]	8.95	20.78	23.53	31.23	-	-
	C50/60	[kN]	9.73	22.59	25.58	33.95	-	-
50	C20/25	[kN]	8.45	8.93	8.93	8.93	8.93	8.93
<b>Beam-and-block floor (eg.Terriva 4.0/2), min. 25mm wall thickness</b>		[kN]	1.21	2.02	-	-	-	-
<b>Lightweight concrete LAC class 5</b>		[kN]	5.98	5.99	5.99	5.99	5.99	5.99
<b>Solid clay brick class 20</b>		[kN]	6.25	6.37	6.37	6.37	6.37	6.37
<b>Silicate hollow block class 15</b>		[kN]	1.90	-	-	-	-	-
<b>DESIGN LOAD</b>								
<b>TENSION AND SHEAR LOAD <math>F_{Rd}</math></b>								
<b>Hollow core slab min. C20/25</b>								
Wall thickness	Material class							
23	C30/37	[kN]	1.73	2.16	-	-	-	-
	C35/45	[kN]	1.91	2.39	-	-	-	-
	C45/55	[kN]	2.12	2.65	-	-	-	-
	C50/60	[kN]	2.31	2.88	-	-	-	-
35	C30/37	[kN]	2.62	4.53	6.38	-	-	-
	C35/45	[kN]	2.90	5.02	7.06	-	-	-
	C45/55	[kN]	3.22	5.56	7.82	-	-	-
	C50/60	[kN]	3.50	6.04	8.50	-	-	-
40	C30/37	[kN]	2.90	6.72	7.62	10.10	-	-
	C35/45	[kN]	3.21	7.44	8.42	11.18	-	-
	C45/55	[kN]	3.55	8.25	9.34	12.39	-	-
	C50/60	[kN]	3.86	8.96	10.15	13.47	-	-
50	C20/25	[kN]	3.35	3.54	3.54	3.54	3.54	3.54
<b>Beam-and-block floor (eg.Terriva 4.0/2), min. 25mm wall thickness</b>		[kN]	0.48	0.80	-	-	-	-
<b>Lightweight concrete LAC class 5</b>		[kN]	1.95	1.96	1.96	1.96	1.96	1.96
<b>Solid clay brick class 20</b>		[kN]	2.16	2.20	2.20	2.20	2.20	2.20
<b>Silicate hollow block class 15</b>		[kN]	0.75	-	-	-	-	-

## Basic performance data

Size	M6	M8	M10	M12	M16	M20
<b>RECOMMENDED LOAD</b>						
<b>TENSION AND SHEAR LOAD <math>F_{rec}</math></b>						
<b>Hollow core slab min. C20/25</b>						
Wall thickness	Material class		[kN]			
23	C30/37	[kN]	1.24	1.54	-	-
	C35/45	[kN]	1.37	1.71	-	-
	C45/55	[kN]	1.52	1.89	-	-
	C50/60	[kN]	1.65	2.05	-	-
35	C30/37	[kN]	1.87	3.24	4.55	-
	C35/45	[kN]	2.07	3.58	5.04	-
	C45/55	[kN]	2.30	3.97	5.59	-
	C50/60	[kN]	2.50	4.32	6.07	-
40	C30/37	[kN]	2.07	4.80	5.44	7.22
	C35/45	[kN]	2.29	5.31	6.02	7.99
	C45/55	[kN]	2.54	5.89	6.67	8.85
	C50/60	[kN]	2.76	6.40	7.25	9.62
50	C20/25	[kN]	2.40	2.53	2.53	2.53
<b>Beam-and-block floor (eg.Terriva 4.0/2), min. 25mm wall thickness</b>		[kN]	0.34	0.57	-	-
<b>Lightweight concrete LAC class 5</b>		[kN]	1.40	1.40	1.40	1.40
<b>Solid clay brick class 20</b>		[kN]	1.54	1.57	1.57	1.57
<b>Silicate hollow block class 15</b>		[kN]	0.54	-	-	-

## Product commercial data

Size	Product Code	Anchor		Quantity [pcs]			Weight [kg]			Bar Codes
		Diameter [mm]	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
M6	R-RBP-M06/10W	6	65	50	400	16000	1.59	12.7	538.8	5906675283593
	R-RBP-M06/25W	6	80	50	400	16000	1.73	13.8	582.0	5906675283616
	R-RBP-M06/60W	6	115	50	50	8000	2.0	2.0	354.0	5906675283630
M8	R-RBP-M08/10W	8	75	50	400	16000	2.9	22.9	946.8	5906675283654
	R-RBP-M08/25W	8	90	50	50	8000	3.1	3.1	528.4	5906675283678
	R-RBP-M08/60W	8	125	50	50	8000	3.7	3.7	614.8	5906675283692
M10	R-RBP-M10/15W	10	90	50	50	8000	5.0	5.0	825.2	5906675283715
	R-RBP-M10/30W	10	105	50	50	6000	5.3	5.3	666.0	5906675283739
	R-RBP-M10/60W	10	135	50	50	8000	6.1	6.1	998.0	5906675283753
M12	R-RBP-M12/15W	12	110	25	25	4000	4.6	4.6	767.2	5906675283760
	R-RBP-M12/30W	12	125	25	25	4000	4.9	4.9	818.4	5906675283777
	R-RBP-M12/75W	12	170	25	25	3000	5.8	5.8	721.8	5906675283784
M16	R-RBP-M16/15W	16	150	10	10	1600	4.4	4.4	733.5	5906675283791
	R-RBP-M16/35W	16	170	10	10	1600	4.7	4.7	773.5	5906675283807
	R-RBP-M16/75W	16	210	10	10	1200	5.3	5.3	662.9	5906675283814
M20	R-RBP-M20/15W	20	170	10	10	1200	8.0	8.0	985.1	5906675283821
	R-RBP-M20/30W	20	185	10	10	1200	8.3	8.3	1030.4	5906675283838
	R-RBP-M20/100W	20	255	10	10	1200	9.9	9.9	1219.2	5906675284781