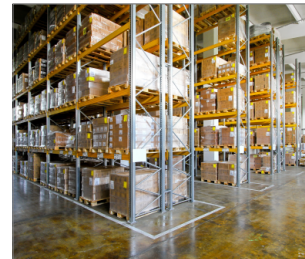


R-XPT Throughbolt

Throughbolt for non-cracked concrete



Product information

Features and benefits

- Design of R-XPT allows drilling and installing directly through the fixture and helps to reduce installation effort
- Embedment depth markings help to ensure precise installation
- R-XPT is suitable for reduced embedment to avoid contact with reinforcement
- Reduced anchorage depth means less drilling which minimises the amount of time needed for the installation
- Head marking helps to determine anchor length and setting depth after installation
- Cold formed body ensures consistent dimensional accuracy
- Optimized expander design with six grip features allows for a high load-bearing capacity

Applications

- Cladding restraint
- Curtain wall
- Balustrading
- Barriers
- Handrails
- Racking
- Structural steel
- Bollards

Base materials

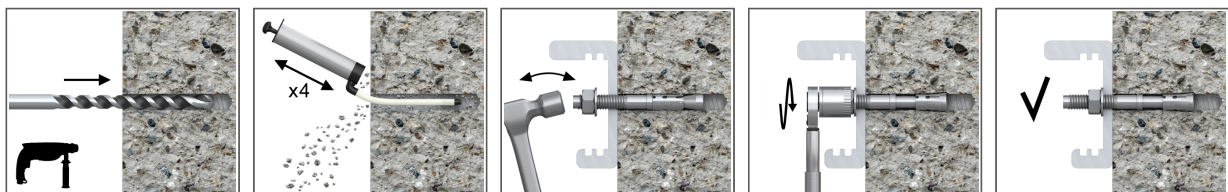
Approved for use in:

- Non-cracked concrete C20/25-C50/60
- Concrete

Also suitable for use in:

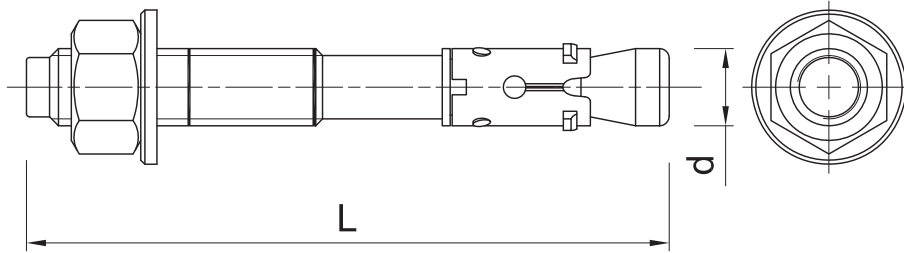
- Natural Stone

Installation guide



1. Drill a hole of required diameter and depth
2. Remove debris and thoroughly clean hole with brush and pump
3. Lightly tap the throughbolt through the fixture into hole with a hammer, until fixing depth is reached
4. Tighten to the recommended torque

Product information

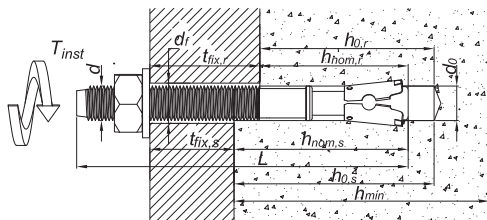


Size	Product Code	Anchor		Fixture		
		Diameter	Length	Max. thickness		Hole diameter
		d	L	$t_{fix,r}$	$t_{fix,s}$	d_f
		[mm]	[mm]	[mm]	[mm]	[mm]
M6	R-XPT-06050/10	6	50	10	0	7
	R-XPT-06065/5	6	65	25	5	7
	R-XPT-06085/25	6	85	45	25	7
	R-XPT-06100/40	6	100	60	40	7
M8	R-XPT-08050/5	8	50	5	0	9
	R-XPT-08060/10	8	60	10	0	9
	R-XPT-08065/15	8	65	15	0	9
	R-XPT-08075/10	8	75	25	10	9
	R-XPT-08080/15	8	80	30	15	9
	R-XPT-08085/20	8	85	35	20	9
	R-XPT-08095/30	8	95	45	30	9
	R-XPT-08115/50	8	115	65	50	9
	R-XPT-08140/75	8	140	90	75	9
M10	R-XPT-08150/85	8	150	100	85	9
	R-XPT-10065/5	10	65	5	0	11
	R-XPT-10080/10	10	80	20	10	11
	R-XPT-10085/15	10	85	25	15	11
	R-XPT-10095/25	10	95	35	25	11
	R-XPT-10115/45	10	115	55	45	11
	R-XPT-10130/60	10	130	70	60	11
	R-XPT-10140/70	10	140	80	70	11
M12	R-XPT-10150/80	10	150	90	80	11
	R-XPT-10180/110	10	180	120	110	11
	R-XPT-12080/5	12	80	5	0	13
	R-XPT-12100/5	12	100	25	5	13
	R-XPT-12120/25	12	120	45	25	13
	R-XPT-12125/30	12	125	50	30	13
	R-XPT-12135/40	12	135	60	40	13
	R-XPT-12140/45	12	140	65	45	13
	R-XPT-12150/55	12	150	75	55	13
M16	R-XPT-12180/85	12	180	105	85	13
	R-XPT-12220/125	12	220	145	125	13
	R-XPT-12300/205	12	300	225	205	13
	R-XPT-16100/5	16	100	5	0	18
	R-XPT-16105/10	16	105	10	0	18
	R-XPT-16125/5	16	125	25	5	18
	R-XPT-16140/20	16	140	40	20	18
	R-XPT-16150/30	16	150	50	30	18
R-XPT-16160/40	16	160	60	40	18	
	R-XPT-16180/60	16	180	80	60	18
	R-XPT-16220/100	16	220	120	100	18
	R-XPT-16280/160	16	280	180	160	18

Product information

Size	Product Code	Anchor		Fixture		
		Diameter	Length	Max. thickness		Hole diameter
		d	L	$t_{fix,r}$	$t_{fix,s}$	d_f
		[mm]	[mm]	[mm]	[mm]	[mm]
M20	R-XPT-20125/5	20	125	5	0	22
	R-XPT-20160/20	20	160	40	20	22
	R-XPT-20200/60	20	200	80	60	22
	R-XPT-20300/160	20	300	180	160	22
M24	R-XPT-24180/20	24	180	35	20	26
	R-XPT-24260/100	24	260	115	100	26
	R-XPT-24300/140	24	300	155	140	26

Installation data



Size	M6	M8	M10	M12	M16	M20	M24		
Thread diameter	d	[mm]	6	8	10	12	16	20	24
Hole diameter in substrate	d_0	[mm]	6	8	10	12	16	20	24
Installation torque	T_{inst}	[Nm]	5	15	30	50	100	200	300
STANDARD EMBEDMENT DEPTH									
Min. hole depth in substrate	$h_{0,s}$	[mm]	50	55	59	80	100	119	135
Installation depth	$h_{nom,s}$	[mm]	50	55	59	80	100	119	135
Min. substrate thickness	$h_{min,s}$	[mm]	84	100		136	170	198	224
Min. spacing	$S_{min,s}$	[mm]	45	50	55	75	90	140	180
Min. edge distance	$C_{min,s}$	[mm]	50	40	50	65	80	100	200
REDUCED EMBEDMENT DEPTH									
Min. hole depth in substrate	$h_{0,r}$	[mm]	30	40	49	60	80	99	120
Installation depth	$h_{nom,r}$	[mm]	30	40	49	60	80	99	120
Min. substrate thickness	$h_{min,r}$	[mm]	80	100		130	158	194	
Min. spacing	$S_{min,r}$	[mm]	40	45	55	100		125	160
Min. edge distance	$C_{min,r}$	[mm]	45	40	65	100		125	160

Mechanical properties

Size	M6	M8	M10	M12	M16	M20	M24	
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm ²]	630	620	620	620	620	580
Nominal ultimate tensile strength - shear	f_{uk}	[N/mm ²]	520	520	520	520	520	680
Nominal yield strength - tension	f_{yk}	[N/mm ²]	539	531	531	531	531	496
Nominal yield strength - shear	f_{yk}	[N/mm ²]	416	416	416	416	416	544
Cross sectional area - tension	A_s	[mm ²]	15.2	25.5	40.7	60.1	106.6	162.9
Cross sectional area - shear	A_s	[mm ²]	20.1	36.6	58	84.3	157	245
Elastic section modulus	W_{el}	[mm ³]	12.7	31.2	62.3	109.2	277.5	540.9
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	7.1	17	35	61	155	302
Design bending resistance	M	[Nm]	5.7	14	28	49	124	241

Basic performance data

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

Size		M6	M8	M10	M12	M16	M20	M24
Standard embedment depth h_{ef}	[mm]	42.0	47.0	49.0	68.0	85.0	99.0	112.0
Reduced embedment depth h_{ef}	[mm]	22.0	32.0	39.0	48.0	65.0	79.0	97.0
MEAN ULTIMATE LOAD								
TENSION LOAD $N_{Ru,m}$								
Standard embedment depth	[kN]	8.70	18.1	19.8	28.0	49.7	65.3	67.6
Reduced embedment depth	[kN]	5.70	11.9	11.4	21.5	43.0	45.5	62.7
SHEAR LOAD $V_{Ru,m}$								
Standard embedment depth	[kN]	6.66	12.2	19.2	28.0	51.5	80.8	152.3
Reduced embedment depth	[kN]	6.66	12.2	16.0	28.0	51.5	80.8	152.3
CHARACTERISTIC LOAD								
TENSION LOAD N_{Rk}								
Standard embedment depth	[kN]	6.80	12.0	12.0	25.0	40.0	40.0	50.0
Reduced embedment depth	[kN]	4.50	9.00	9.00	16.0	30.0	35.0	40.0
SHEAR LOAD V_{Rk}								
Standard embedment depth	[kN]	5.50	10.1	16.0	23.3	43.0	67.4	126.9
Reduced embedment depth	[kN]	5.50	10.1	12.0	23.3	43.0	67.4	126.9
DESIGN LOAD								
TENSION LOAD N_{Rd}								
Standard embedment depth	[kN]	3.78	6.67	6.67	13.9	22.2	22.2	27.8
Reduced embedment depth	[kN]	2.50	5.00	5.00	8.89	16.7	19.4	22.2
SHEAR LOAD V_{Rd}								
Standard embedment depth	[kN]	4.40	8.08	12.8	18.6	34.4	53.9	101.6
Reduced embedment depth	[kN]	4.40	8.08	6.67	18.6	34.4	53.9	101.6
RECOMMENDED LOAD								
TENSION LOAD N_{rec}								
Standard embedment depth	[kN]	2.70	4.76	4.76	9.92	15.9	15.9	19.8
Reduced embedment depth	[kN]	1.79	3.57	3.57	6.35	11.9	13.9	15.9
SHEAR LOAD V_{rec}								
Standard embedment depth	[kN]	3.14	5.77	9.14	13.3	24.6	38.5	72.5
Reduced embedment depth	[kN]	3.14	5.77	4.76	13.3	24.6	38.5	72.5

Design performance data

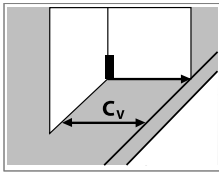
Standard embedment depth

Size			M6	M8	M10	M12	M16	M20	M24
Embedment depth	h_{ef}	[mm]	42.0	47.0	49.0	68.0	85.0	99.0	112.0
TENSION LOAD									
STEEL FAILURE									
Characteristic resistance	$N_{Rk,s}$	[kN]	9.58	15.8	25.2	37.3	66.1	101.0	180.4
Design resistance $V_{M6} = 1.4$	$N_{Rd,s}$	[kN]	6.84	11.3	18.0	26.6	47.2	72.1	128.9
PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25									
Characteristic resistance	$N_{Rk,p}$	[kN]	6.80	12.0	12.0	25.0	40.0	40.0	50.0
Design resistance $V_{M6} = 1.8$	$N_{Rd,p}$	[kN]	3.78	6.67	6.67	13.9	22.2	22.2	27.8
Increasing factors for $N_{Rd,p} - C30/37$	Ψ_c	-	1.10	1.10	1.37	1.16	1.17	1.30	1.10
Increasing factors for $N_{Rd,p} - C40/50$	Ψ_c	-	1.21	1.21	1.74	1.33	1.34	1.59	1.21
Increasing factors for $N_{Rd,p} - C50/60$	Ψ_c	-	1.32	1.32	2.10	1.49	1.50	1.89	1.32
Spacing	$s_{cr,N}$	[mm]	126.0	141.0	147.0	204.0	255.0	297.0	336.0
Edge distance	$c_{cr,N}$	[mm]	63.0	71.0	74.0	102.0	128.0	149.0	168.0
SHEAR LOAD									
CONCRETE EDGE FAILURE; NON-CRACKED CONCRETE C20/25									
Edge distance	c_1	[mm]	50.0	40.0	50.0	65.0	80.0	100.0	200.0
Characteristic resistance for c_1	$V_{Rk,c}$	[kN]	6.39	5.03	7.07	11.0	15.8	22.6	58.6
Design resistance $V_{M6} = 1.8$	$V_{Rd,c}$	[kN]	3.55	2.79	3.93	6.09	8.76	12.5	32.6
CONCRETE PRY-OUT FAILURE; NON-CRACKED CONCRETE C20/25									
	k	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Characteristic resistance	$V_{Rk,cp}$	[kN]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Design resistance $V_{M6} = 1.8$	$V_{Rd,cp}$	[kN]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STEEL FAILURE									
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	5.50	10.1	16.0	23.3	43.0	67.4	126.9
Design resistance $V_{M6} = 1.25$	$V_{Rd,s}$	[kN]	4.40	8.08	12.8	18.6	34.4	53.9	101.6

Design performance data

Reduction / increasing resistance factors for edge distance and spacing

Edge distance (shear)



Tables only valid for one edge
 $>c_{min}$ and $s \geq 3c_v$ For other cases
 use the Rawlplug Anchor
 Calculator

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

c_v [mm]	M6		M8		M10		M12		M16		M20		M24	
	$h \geq 1.5c_v$	h_{min}	$h \geq 1.5c_v$	h_{min}	$h \geq 1.5c_v$	h_{min}	$h \geq 1.5c_v$	h_{min}	$h \geq 1.5c_v$	h_{min}	$h \geq 1.5c_v$	h_{min}	$h \geq 1.5c_v$	h_{min}
40			1,00	1,00										
50	1,00	1,00	1,35	1,35	1,00	1,00								
60	1,28	1,28	1,72	1,72	1,28	1,28								
65			1,92	1,92	1,42	1,42	1,00	1,00						
80			2,55	2,33	1,88	1,72	1,32	1,32	1,00	1,00				
85			2,78	2,46	2,04	1,81	1,43	1,43	1,08	1,08				
100				2,84	2,55	2,08	1,77	1,69	1,34	1,34	1,00	1,00		
115					3,09	2,35	2,14	1,90	1,61	1,60	1,20	1,20		
150						2,98	3,07	2,39	2,29	1,99	1,69	1,59		
195								3,00	3,26	2,48	2,40	1,97		
200									3,37	2,54	2,48	2,02	1,00	0,86
220									3,84	2,75	2,82	2,18	1,13	0,93
300										3,61	4,29	2,85	1,72	1,21
320										3,82		3,01	1,87	1,28
385												3,53	2,41	1,50
465												4,17	3,11	1,76
480												4,29		1,81
650														2,37
700														2,53
750														2,69
800														2,85
880														3,10

Design performance data

Edge distance (tension)

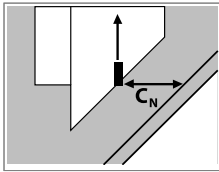


Table only valid for one edge
 $c_{cr,N} < c_N$ and $S \geq S_{cr,N}$. For other cases use the Rawlplug Anchor Calculator

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

c_N [mm]	M6		M8		M10		M12		M16		M20		M24	
	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}
40			0,68	0,53										
50	0,84	0,58	0,78	0,58	0,76	0,56								
55	0,90	0,61	0,83	0,61	0,81	0,59								
65	1,00	0,66	0,94	0,66	0,91	0,64	0,73	0,54						
70		0,69	1,00	0,69	0,96	0,66	0,76	0,56						
75		0,72		0,72	1,00	0,69	0,80	0,58						
80		0,75		0,75		0,71	0,83	0,59	0,72	0,56				
90		0,81		0,81		0,77	0,91	0,63	0,78	0,59				
100		0,87		0,87		0,82	0,98	0,66	0,83	0,62	0,78	0,56		
105		0,90		0,90		0,85	1,00	0,68	0,86	0,63	0,80	0,57		
120		1,00		1,00		0,94		0,74	0,95	0,68	0,87	0,61		
130						1,00		0,78	1,00	0,71	0,92	0,63		
160								0,89		0,81	1,00	0,71		
170								0,94		0,84		0,73		
185								1,00		0,89		0,77		
200										0,94		0,81	1,00	0,75
215										1,00		0,85		0,79
265												1,00		0,91
300														1,00

Design performance data

Spacing

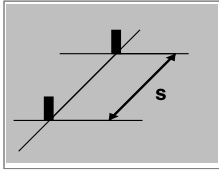


Table only valid for one spacing $< s_{cr,N}$ and $c \geq c_{cr,N}$. For other cases use the Rawlplug Anchor Calculator

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	M6		M8		M10		M12		M16		M20		M24	
	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}
45	0,68	0,59												
50	0,70	0,60	0,68	0,60										
55	0,72	0,61	0,70	0,61	0,69	0,61								
75	0,80	0,66	0,77	0,66	0,76	0,64	0,68	0,60						
90	0,86	0,69	0,82	0,69	0,81	0,67	0,72	0,62	0,68	0,60				
100	0,90	0,71	0,85	0,71	0,84	0,69	0,75	0,64	0,70	0,62				
125	1,00	0,76	0,94	0,76	0,93	0,74	0,81	0,67	0,75	0,65				
140		0,79	1,00	0,79	0,98	0,77	0,84	0,69	0,77	0,66	0,74	0,63		
150		0,81		0,81	1,00	0,79	0,87	0,70	0,79	0,67	0,75	0,64		
180		0,88		0,88		0,85	0,94	0,74	0,85	0,71	0,80	0,67	0,77	0,65
200		0,92		0,92		0,88	0,99	0,77	0,89	0,73	0,84	0,69	0,80	0,67
205		0,93		0,93		0,89	1,00	0,78	0,90	0,74	0,85	0,69	0,81	0,67
240		1,00		1,00		0,96		0,82	0,97	0,78	0,90	0,73	0,86	0,70
255						0,99		0,84	1,00	0,80	0,93	0,74	0,88	0,71
260						1,00		0,85		0,80	0,94	0,75	0,89	0,72
300								0,91		0,85	1,00	0,78	0,95	0,75
335								0,95		0,89		0,82	1,00	0,78
370								1,00		0,93		0,85		0,81
430										1,00		0,91		0,86
530												1,00		0,94
600														1,00

Design performance data

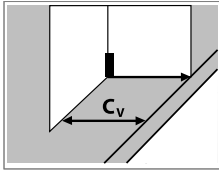
Reduced embedment depth

Size			M6	M8	M10	M12	M16	M20	M24
Embedment depth	h_{ef}	[mm]	22.0	32.0	39.0	48.0	65.0	79.0	97.0
TENSION LOAD									
STEEL FAILURE									
Characteristic resistance	$N_{Rk,s}$	[kN]	9.58	15.8	25.2	37.3	66.1	101.0	186.6
Design resistance $V_{M6} = 1.4$	$N_{Rd,s}$	[kN]	6.84	11.3	18.0	26.6	47.2	72.1	133.3
PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25									
Characteristic resistance	$N_{Rk,p}$	[kN]	4.50	9.00	9.00	16.0	30.0	35.0	40.0
Design resistance $V_{M6} = 1.8$	$N_{Rd,p}$	[kN]	2.50	5.00	5.00	8.89	16.7	19.4	22.2
Increasing factors for $N_{Rd,p} - C30/37$	Ψ_c	-	1.25	1.25	1.36	1.20	1.12	1.18	1.25
Increasing factors for $N_{Rd,p} - C40/50$	Ψ_c	-	1.50	1.50	1.72	1.40	1.23	1.36	1.50
Increasing factors for $N_{Rd,p} - C50/60$	Ψ_c	-	1.76	1.76	2.08	1.60	1.34	1.54	1.76
Spacing	$s_{cr,N}$	[mm]	66.0	96.0	117.0	144.0	195.0	237.0	291.0
Edge distance	$c_{cr,N}$	[mm]	33.0	48.0	59.0	72.0	98.0	119.0	146.0
SHEAR LOAD									
CONCRETE EDGE FAILURE; NON-CRACKED CONCRETE C20/25									
Edge distance	c_1	[mm]	45.0	40.0	65.0	100.0	100.0	125.0	160.0
Characteristic resistance for c_1	$V_{Rk,c}$	[kN]	5.05	4.70	9.67	18.4	20.0	28.8	42.5
Design resistance $V_{M6} = 1.8$	$V_{Rd,c}$	[kN]	2.80	2.61	5.37	10.2	11.1	16.0	23.6
CONCRETE PRY-OUT FAILURE; NON-CRACKED CONCRETE C20/25									
	k	-	0.00	0.00	1.00	0.00	0.00	2.00	0.00
Characteristic resistance	$V_{Rk,cp}$	[kN]	0.00	0.00	12.0	0.00	0.00	68.7	0.00
Design resistance $V_{M6} = 1.8$	$V_{Rd,cp}$	[kN]	0.00	0.00	6.67	0.00	0.00	38.2	0.00
STEEL FAILURE									
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	5.50	10.1	16.0	23.3	43.0	67.4	126.9
Design resistance $V_{M6} = 1.25$	$V_{Rd,s}$	[kN]	4.40	8.08	12.8	18.6	34.4	53.9	101.6

Design performance data

Reduction / increasing resistance factors for edge distance and spacing

Edge distance (shear)



Tables only valid for one edge $>c_{min}$ and $s \geq 3c_v$ For other cases use the Rawlplug Anchor Calculator

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

c_v [mm]	M6		M8		M10		M12		M16		M20		M24	
	$h \geq 1.5c_v$	h_{min}	$h \geq 1.5c_v$	h_{min}	$h \geq 1.5c_v$	h_{min}	$h \geq 1.5c_v$	h_{min}	$h \geq 1.5c_v$	h_{min}	$h \geq 1.5c_v$	h_{min}	$h \geq 1.5c_v$	h_{min}
40			1,00	1,00										
45	1,00	1,00	1,17	1,17										
60	1,50	1,50	1,74	1,74										
65			1,94	1,94	0,98	0,98								
75			2,37	2,23	1,22	1,15								
80			2,59	2,37	1,18	1,18								
90			3,06	2,63	1,22	1,21								
100				2,89			1,00	0,82	1,00	0,93				
105				3,02			1,07	0,85	1,07	0,97				
125							1,36	0,99	1,35	1,12	1,00	0,92		
155							1,83	1,20	1,80	1,35	1,33	1,10		
160								1,23	1,88	1,38	1,39	1,13	1,00	0,90
230								1,70	3,09	1,90	2,26	1,53	1,62	1,21
240								1,77		1,97	2,40	1,59	1,71	1,26
250										2,04		1,65	1,81	1,30
380										2,96		2,37	3,19	1,86
390										3,03			3,31	1,91
470													4,27	2,24
600														2,78
700														3,19
800														3,60
970														4,28

Design performance data

Edge distance (tension)

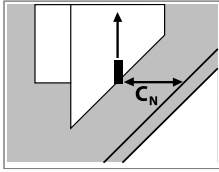


Table only valid for one edge $< c_{cr,N}$ and $S \geq S_{cr,N}$. For other cases use the Rawlplug Anchor Calculator

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

c_N [mm]	M6		M8		M10		M12		M16		M20		M24	
	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}
40			0,87	0,64										
45	1,00	0,68	0,95	0,68										
50		0,72	1,00	0,72										
65		0,86		0,86	1,00	0,74								
80		1,00		1,00		0,85								
90						0,92								
100						1,00	1,00	0,85	1,00	0,67				
120								0,97		0,75				
125								1,00		0,77	1,00	0,71		
150										0,87		0,80		
160										0,91		0,83	1,00	0,71
180										1,00		0,90		0,77
205												1,00		0,84
240														0,94
260														1,00

Spacing

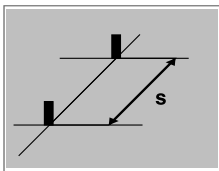


Table only valid for one spacing $< s_{cr,N}$ and $c \geq c_{cr,N}$. For other cases use the Rawlplug Anchor Calculator

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]	M6		M8		M10		M12		M16		M20		M24	
	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}	$h \geq 1.84h_{min}$	h_{min}
40	0,80	0,63												
45	0,84	0,64	0,73	0,64										
55	0,92	0,67	0,79	0,67	0,74	0,64								
65	1,00	0,70	0,84	0,70	0,78	0,66								
95		0,80	1,00	0,80	0,91	0,74								
100		0,81		0,81	0,93	0,75	0,85	0,70	0,76	0,64				
120		0,88		0,88	1,00	0,80	0,92	0,74	0,81	0,67				
125		0,89		0,89		0,81	0,93	0,75	0,82	0,67	0,76	0,65		
145		0,95		0,95		0,86	1,00	0,79	0,87	0,70	0,81	0,68		
160		1,00		1,00		0,90		0,82	0,91	0,72	0,84	0,70	0,77	0,65
195						1,00		0,89	1,00	0,77	0,91	0,74	0,84	0,69
200								0,90		0,78	0,92	0,74	0,84	0,69
240								0,98		0,83	1,00	0,79	0,91	0,73
250								1,00		0,85		0,80	0,93	0,74
290										0,90		0,85	1,00	0,78
360										1,00		0,94		0,85
410												1,00		0,89
520														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			
M6	R-XPT-06050/10	6	50	100	100	21000	1.22	1.22	287.0	5906675233499	73772	
	R-XPT-06065/5	6	65	100	100	21000	1.47	1.47	339.5	5906675233505	73773	
	R-XPT-06085/25	6	85	100	100	21000	1.81	1.81	410.1	5906675233512	73774	
	R-XPT-06100/40	6	100	100	100	6400	2.1	2.1	163.4	5906675250311	74875	
M8	R-XPT-08050/5	8	50	100	100	21000	2.3	2.3	513.0	5906675250328	74876	
	R-XPT-08060/10	8	60	100	100	21000	2.0	2.0	450.0	5906675234601	73539	
	R-XPT-08065/15	8	65	100	100	12000	2.8	2.8	366.0	5906675250335	74877	
	R-XPT-08075/10	8	75	100	100	12000	3.3	3.3	426.0	5906675233536	73544	
	R-XPT-08080/15	8	80	100	100	12000	3.3	3.3	426.0	5906675250342	74878	
	R-XPT-08085/20	8	85	100	100	12000	3.4	3.4	438.0	5906675249636	74668	
	R-XPT-08095/30	8	95	100	100	12000	3.7	3.7	474.0	5906675233543	73546	
	R-XPT-08115/50	8	115	100	100	12000	4.4	4.4	558.0	5906675233550	73548	
	R-XPT-08140/75	8	140	100	100	10800	2.0	2.0	246.0	5906675233567	73549	
	R-XPT-08150/85	8	150	100	100	10800	4.4	4.4	505.2	5906675250359	74879	
	M10	R-XPT-10065/5	10	65	50	50	10500	2.0	2.0	450.0	5906675233574	73555
		R-XPT-10080/10	10	80	50	50	6000	6.0	6.0	750.0	5906675233581	73557
R-XPT-10085/15		10	85									
R-XPT-10095/25		10	95	50	50	6000	3.3	3.3	420.6	5906675233598	73560	
R-XPT-10115/45		10	115	50	50	6000	6.0	6.0	750.0	5906675233604	73563	
R-XPT-10130/60		10	130	50	50	6000	4.0	4.0	510.0	5906675249643	74669	
R-XPT-10140/70		10	140	50	50	6000	6.0	6.0	750.0	5906675233611	73566	
R-XPT-10150/80		10	150	50	50	5400	4.2	4.2	478.7	5906675249650	74670	
R-XPT-10180/110	10	180	50	50	5400	6.0	6.0	678.0	5906675250366	74880		
M12	R-XPT-12080/5	12	80	50	50	6000	5.0	5.0	630.0	5906675233628	73568	
	R-XPT-12100/5	12	100	50	50	6000	4.8	4.8	603.0	5906675233635	73570	
	R-XPT-12120/25	12	120	50	50	6000	5.0	5.0	630.0	5906675250373	74881	
	R-XPT-12125/30	12	125	50	50	3800	6.0	6.0	486.0	5906675233642	73572	
	R-XPT-12135/40	12	135	50	50	5400	6.0	6.0	678.0	5906675250380	74882	
	R-XPT-12140/45	12	140	50	50	5400	6.0	6.0	678.0	5906675249667	74671	
	R-XPT-12150/55	12	150	50	50	3800	6.0	6.0	486.0	5906675233659	73576	
	R-XPT-12180/85	12	180	50	50	3800	7.0	7.0	562.0	5906675233666	73580	
R-XPT-12220/125	12	220	50	50	3800	9.1	9.1	721.6	5906675233673	73584		
R-XPT-12300/205	12	300	10	10	760	2.5	2.5	222.0	5906675251424	74883		
M16	R-XPT-16100/5	16	100	25	25	3600	4.5	4.5	672.2	5906675233680	73586	
	R-XPT-16105/10	16	105	25	25	3600	6.0	6.0	894.0	5906675250403	74885	
	R-XPT-16125/5	16	125	25	25	2700	5.2	5.2	591.1	5906675233697	73587	
	R-XPT-16140/20	16	140	25	25	1900	6.0	6.0	486.0	5906675249063	74512	
	R-XPT-16150/30	16	150	25	25	1900	6.0	6.0	486.0	5906675249674	74672	
	R-XPT-16160/40	16	160	25	25	2700	6.0	6.0	678.0	5906675250410	74886	
	R-XPT-16180/60	16	180	25	25	1900	6.0	6.0	486.0	5906675249681	74673	
	R-XPT-16220/100	16	220	25	25	1900	8.2	8.2	656.2	5906675233727	73593	
R-XPT-16280/160	16	280	15	15	1140	6.4	6.4	514.4	5906675250427	74905		
M20	R-XPT-20125/5	20	125	25	25	1900	10.0	10.0	790.0	5906675233734	73775	
	R-XPT-20160/20	20	160	25	25	1900	12.5	12.5	980.0	5906675233741	73776	
	R-XPT-20200/60	20	200	10	10	1200	4.1	4.1	520.4	5906675233758	73777	
	R-XPT-20300/160	20	300	10	10	760	7.3	7.3	585.3	5906675233765	73778	
M24	R-XPT-24180/20	24	180	10	10	760	7.1	7.1	567.2	5906675233772	73779	
	R-XPT-24260/100	24	260	10	10	760	9.9	9.9	783.1	5906675233789	73780	
	R-XPT-24300/140	24	300	10	10	760	11.1	11.1	872.8	5906675233796	73781	