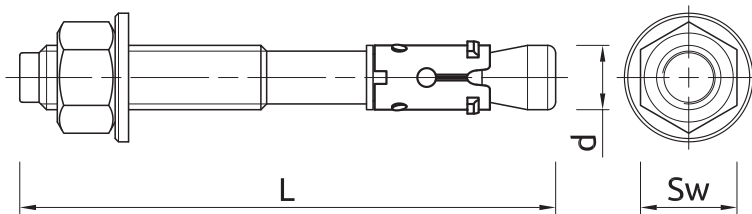


Product information

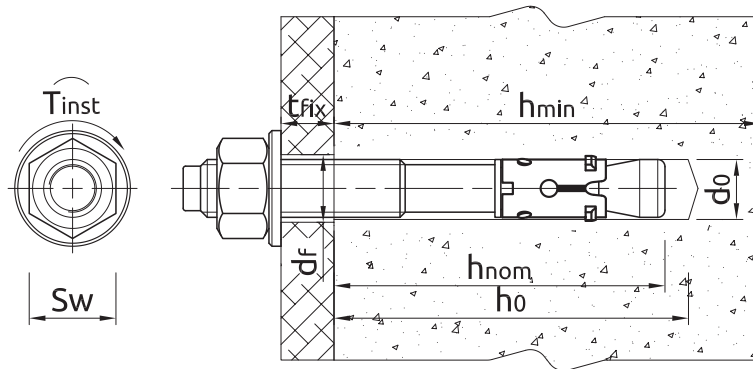


Size	Product Code	Approval type	Anchor		Fixture		
			Diameter	Length	Max. thickness t_{fix} for:		Hole diameter
			d	L	$h_{nom,red}$	$h_{nom,std}$	d_f
		-	[mm]	[mm]	[mm]	[mm]	[mm]
M6	R-XPT-06050/10	AT-15-9327/14	6	50	10	-	7
	R-XPT-06065/5	AT-15-9327/14	6	65	25	5	7
	R-XPT-06085/25	AT-15-9327/14	6	85	45	25	7
	R-XPT-06100/40	AT-15-9327/14	6	100	60	40	7
M8	R-XPT-08050/5	AT-15-9327/14	8	50	5	-	9
	R-XPT-08060/10	ETA 17/0183	8	60	10	-	9
	R-XPT-08065/15	ETA 17/0183	8	65	15	-	9
	R-XPT-08075/10	ETA 17/0183	8	75	25	10	9
	R-XPT-08080/15	ETA 17/0183	8	80	30	15	9
	R-XPT-08085/20	ETA 17/0183	8	85	35	20	9
	R-XPT-08095/30	ETA 17/0183	8	95	45	30	9
	R-XPT-08115/50	ETA 17/0183	8	115	65	50	9
	R-XPT-08140/75	ETA 17/0183	8	140	90	75	9
	R-XPT-08150/85	ETA 17/0183	8	150	100	85	9
M10	R-XPT-10065/5	ETA 17/0183	10	65	5	-	11
	R-XPT-10080/10	ETA 17/0183	10	80	20	10	11
	R-XPT-10095/25	ETA 17/0183	10	95	35	25	11
	R-XPT-10115/45	ETA 17/0183	10	115	55	45	11
	R-XPT-10130/60	ETA 17/0183	10	130	70	60	11
	R-XPT-10140/70	ETA 17/0183	10	140	80	70	11
	R-XPT-10150/80	ETA 17/0183	10	150	90	80	11
	R-XPT-10180/110	ETA 17/0183	10	180	120	110	11
M12	R-XPT-12080/5	ETA 17/0183	12	80	5	-	13
	R-XPT-12100/5	ETA 17/0183	12	100	25	5	13
	R-XPT-12120/25	ETA 17/0183	12	120	45	25	13
	R-XPT-12125/30	ETA 17/0183	12	125	50	30	13
	R-XPT-12135/40	ETA 17/0183	12	135	60	40	13
	R-XPT-12140/45	ETA 17/0183	12	140	65	45	13
	R-XPT-12150/55	ETA 17/0183	12	150	75	55	13
	R-XPT-12160/65	ETA 17/0183	12	160	85	65	13
	R-XPT-12180/85	ETA 17/0183	12	180	105	85	13
	R-XPT-12200/105	ETA 17/0183	12	200	125	105	13
	R-XPT-12220/125	ETA 17/0183	12	220	145	125	13
	R-XPT-12250/155	ETA 17/0183	12	250	175	155	13
M16	R-XPT-16100/5	ETA 17/0183	16	100	5	-	18
	R-XPT-16105/10	ETA 17/0183	16	105	10	-	18
	R-XPT-16125/5	ETA 17/0183	16	125	25	5	18
	R-XPT-16140/20	ETA 17/0183	16	140	40	20	18
	R-XPT-16150/30	ETA 17/0183	16	150	50	30	18
	R-XPT-16160/40	ETA 17/0183	16	160	60	40	18
	R-XPT-16180/60	ETA 17/0183	16	180	80	60	18
	R-XPT-16200/80	ETA 17/0183	16	200	100	80	18
	R-XPT-16220/100	ETA 17/0183	16	220	120	100	18

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]
M16	R-XPT-16250/130	ETA 17/0183	16	250	150	130	18
	R-XPT-16280/160	ETA 17/0183	16	280	180	160	18
	R-XPT-16300/180	ETA 17/0183	16	300	200	180	18
M20	R-XPT-20125/5	ETA 17/0183	20	125	5	-	22
	R-XPT-20160/20	ETA 17/0183	20	160	40	20	22
	R-XPT-20200/60	ETA 17/0183	20	200	80	60	22
	R-XPT-20250/110	ETA 17/0183	20	250	130	110	22
	R-XPT-20300/160	ETA 17/0183	20	300	180	160	22
M24	R-XPT-24180/20	AT-15-9327/14	24	180	35	20	26
	R-XPT-24260/100	AT-15-9327/14	24	260	115	100	26
	R-XPT-24300/140	AT-15-9327/14	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
Wrench size	Sw	[mm]	10	13	17	19	24	30	36
STANDARD EMBEDMENT DEPTH									
Min. hole depth in substrate	$h_{0,s}$	[mm]	55	55	59	80	100	119	140
Min. installation depth	$h_{nom,s}$	[mm]	50	55	59	80	100	119	135
Min. substrate thickness	$h_{min,s}$	[mm]	84	100	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]	35	40	49	60	80	100	125
Min. installation depth	$h_{nom,r}$	[mm]	30	40	49	60	80	100	120
Min. substrate thickness	$h_{min,r}$	[mm]	80	100	100	100	130	158	194
Min. spacing	$s_{min,r}$	[mm]	40	45	55	100	100	125	160
Min. edge distance	$c_{min,r}$	[mm]	45	40	65	100	100	125	160

Mechanical properties

Size			M6	M8	M10	M12	M16	M20	M24
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm ²]	620	620	620	620	620	620	620
Nominal yield strength - tension	f_{yk}	[N/mm ²]	531	531	531	531	531	531	531
Cross sectional area - tension	A_s	[mm ²]	14.25	25.5	40.7	60.1	106.6	162.9	234.52
Elastic section modulus	W_{el}	[mm ³]	13.15	31.2	62.3	109	276.4	539.9	940.9
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	7	17	35	61	154	301	525
Design bending resistance	M	[Nm]	5.6	13.6	28	48.8	123.2	240.8	420

Basic performance data

Performance data for single anchor without influence of edge distance and spacing - ETAG 001

Size		M6	M8	M10	M12	M16	M20	M24
MEAN ULTIMATE LOAD								
TENSION LOAD $N_{Ru,m}$								
Standard embedment depth	[kN]	8.70	18.10	19.80	28.00	49.70	65.30	67.60
Reduced embedment depth	[kN]	5.70	10.90	11.40	21.50	43.00	45.50	62.70
SHEAR LOAD $V_{Ru,m}$								
Standard embedment depth	[kN]	6.00	12.20	19.20	28.00	51.50	80.90	118.60
Reduced embedment depth	[kN]	6.00	12.20	19.06	28.00	51.50	94.70	118.60
CHARACTERISTIC LOAD								
TENSION LOAD N_{Rk}								
Standard embedment depth	[kN]	8.67	12.00	12.00	25.00	39.57	40.00	38.14
Reduced embedment depth	[kN]	4.27	9.00	9.00	16.00	26.46	35.00	31.92
SHEAR LOAD V_{Rk}								
Standard embedment depth	[kN]	5.50	10.10	16.00	23.30	43.00	67.40	97.10
Reduced embedment depth	[kN]	5.50	9.14	9.14	16.79	43.00	67.40	97.10
DESIGN LOAD								
TENSION LOAD N_{Rd}								
Standard embedment depth	[kN]	3.44	6.67	6.67	13.89	21.99	22.22	15.13
Reduced embedment depth	[kN]	1.69	5.00	5.00	8.89	14.70	19.44	12.67
SHEAR LOAD V_{Rd}								
Standard embedment depth	[kN]	4.40	8.08	11.55	18.64	34.40	53.92	77.68
Reduced embedment depth	[kN]	4.40	6.09	6.09	11.20	34.40	42.28	77.68
RECOMMENDED LOAD								
TENSION LOAD N_{rec}								
Standard embedment depth	[kN]	2.46	4.76	4.76	9.92	15.70	15.87	10.81
Reduced embedment depth	[kN]	1.21	3.57	3.60	6.35	10.50	13.89	9.05
SHEAR LOAD V_{rec}								
Standard embedment depth	[kN]	3.14	5.77	8.25	13.31	24.57	38.51	55.49
Reduced embedment depth	[kN]	3.14	4.35	4.35	8.00	24.57	33.77	55.49

Design performance data

Standard embedment depth

(-) failure is not decisive

Size			M6	M8	M10	M12	M16	M20	M24
Effective embedment depth	h_{ef}	[mm]	42.00	47.00	49.00	68.00	85.00	99.00	112.00
TENSION LOAD									
STEEL FAILURE									
Characteristic resistance	$N_{Rk,s}$	[kN]	8.84	15.80	25.20	37.30	66.10	101.00	145.40
Partial safety factor	γ_{Ms}	-	1.40	1.40	1.40	1.40	1.40	1.40	1.40
PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25									
Characteristic resistance	$N_{Rk,p}$	[kN]	8.67	12.00	12.00	25.00	40.00	40.00	38.14
PULL-OUT FAILURE									
Installation safety factor	γ_2	-	1.68	1.20	1.20	1.20	1.20	1.20	1.68
Increasing factors for $N_{Rd,p}$ - C30/37	ψ_c	-	1.00	1.10	1.37	1.16	1.17	1.30	1.00
Increasing factors for $N_{Rd,p}$ - C40/50	ψ_c	-	1.00	1.21	1.74	1.33	1.34	1.59	1.00
Increasing factors for $N_{Rd,p}$ - C50/60	ψ_c	-	1.00	1.32	2.10	1.49	1.50	1.89	1.00
CONCRETE CONE FAILURE									
Factor for non-cracked concrete	k	-	10.10	10.10	10.10	10.10	10.10	10.10	10.10
Factor for non-cracked concrete	$k_{ucr,N}$	-	11.00	11.00	11.00	11.00	11.00	11.00	11.00
Installation safety factor	γ_2	-	1.68	1.20	1.20	1.20	1.20	1.20	1.68
Spacing	$s_{cr,N}$	[mm]	126.00	141.00	147.00	204.00	255.00	297.00	336.00
Edge distance	$c_{cr,N}$	[mm]	63.00	71.00	74.00	102.00	128.00	149.00	168.00
CONCRETE SPLITTING FAILURE									
Spacing	$s_{cr,sp}$	[mm]	210.00	240.00	260.00	370.00	430.00	530.00	580.00
Edge distance	$c_{cr,sp}$	[mm]	105.00	120.00	130.00	185.00	215.00	265.00	290.00
Installation safety factor	γ_2	-	1.68	1.20	1.20	1.20	1.20	1.20	1.68
SHEAR LOAD									
STEEL FAILURE									
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	5.50	10.10	16.00	23.30	43.00	67.40	97.10
Ductility factor	k_γ	-	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	7.34	17.00	35.00	61.00	154.00	301.00	525.00
Partial safety factor	γ_{Ms}	-	1.25	1.25	1.25	1.25	1.25	1.25	1.25
CONCRETE PRY-OUT FAILURE									
Factor	k	-	1.00	1.00	1.00	2.00	2.00	2.00	2.00
Installation safety factor	γ_2	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CONCRETE EDGE FAILURE									
Effective length of anchor	ℓ_f	[mm]	42.00	47.00	49.00	68.00	85.00	99.00	112.00
Anchor diameter	d_{nom}	[mm]	6.00	8.00	10.00	12.00	16.00	20.00	24.00
Installation safety factor	γ_2	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Design performance data

Reduced embedment depth

(-) failure is not decisive

Size			M6	M8	M10	M12	M16	M20	M24
Effective embedment depth	h_{ef}	[mm]	22.00	32.00	39.00	48.00	65.00	79.00	97.00
TENSION LOAD									
STEEL FAILURE									
Characteristic resistance	$N_{Rk,s}$	[kN]	8.84	15.80	25.20	37.30	66.10	101.00	145.40
Partial safety factor	γ_{Ms}	-	1.40	1.40	1.40	1.40	1.40	1.40	1.40
PULL-OUT FAILURE; NON-CRACKED CONCRETE C20/25									
Characteristic resistance	$N_{Rk,p}$	[kN]	4.27	9.00	9.00	16.00	30.00	35.00	31.92
PULL-OUT FAILURE									
Installation safety factor	γ_2	-	1.68	1.20	1.20	1.20	1.20	1.20	1.68
Increasing factors for $N_{Rd,p}$ - C30/37	ψ_c	-	1.00	1.25	1.36	1.20	1.12	1.18	1.00
Increasing factors for $N_{Rd,p}$ - C40/50	ψ_c	-	1.00	1.50	1.72	1.40	1.23	1.36	1.00
Increasing factors for $N_{Rd,p}$ - C50/60	ψ_c	-	1.00	1.76	2.08	1.60	1.34	1.54	1.00
CONCRETE CONE FAILURE									
Factor for non-cracked concrete	k	-	10.10	10.10	10.10	10.10	10.10	10.10	10.10
Factor for non-cracked concrete	$k_{ucr,N}$	-	11.00	11.00	11.00	11.00	11.00	11.00	11.00
Installation safety factor	γ_2	-	1.68	1.20	1.20	1.20	1.20	1.20	1.68
Spacing	$s_{cr,N}$	[mm]	66.00	96.00	117.00	144.00	195.00	237.00	291.00
Edge distance	$c_{cr,N}$	[mm]	33.00	48.00	59.00	72.00	98.00	119.00	156.00
CONCRETE SPLITTING FAILURE									
Spacing	$s_{cr,sp}$	[mm]	110.00	160.00	200.00	250.00	360.00	410.00	500.00
Edge distance	$c_{cr,sp}$	[mm]	55.00	80.00	100.00	125.00	180.00	205.00	250.00
Installation safety factor	γ_2	-	1.68	1.20	1.20	1.20	1.20	1.20	1.68
SHEAR LOAD									
STEEL FAILURE									
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	5.50	10.10	16.00	23.30	43.00	67.40	97.10
Ductility factor	k_γ	-	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	7.34	17.00	35.00	61.00	154.00	301.00	525.00
Partial safety factor	γ_{Ms}	-	1.25	1.25	1.25	1.25	1.25	1.25	1.25
CONCRETE PRY-OUT FAILURE									
Factor	k	-	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Installation safety factor	γ_2	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CONCRETE EDGE FAILURE									
Effective length of anchor	ℓ_f	[mm]	22.00	32.00	39.00	48.00	65.00	79.00	97.00
Anchor diameter	d_{nom}	[mm]	6.00	8.00	10.00	12.00	16.00	20.00	24.00
Installation safety factor	γ_2	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00

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-XPT-06050/10	6	50	100	100	16000	1.27	1.27	233.2	5906675233499
	R-XPT-06065/5	6	65	100	100	16000	1.55	1.55	278.0	5906675233505
	R-XPT-06085/25	6	85	100	100	16000	1.85	1.85	326.0	5906675233512
	R-XPT-06100/40	6	100	100	100	16000	2.1	2.1	370.8	5906675250311
M8	R-XPT-08050/5 ¹⁾	8	50	100	100	16000	2.3	2.3	396.4	5906675250328
	R-XPT-08060/10 ¹⁾	8	60	100	100	16000	2.6	2.6	446.0	5906675234601
	R-XPT-08065/15 ¹⁾	8	65	100	100	16000	2.7	2.7	465.2	5906675250335
	R-XPT-08075/10 ¹⁾	8	75	100	100	16000	3.1	3.1	518.0	5906675233536
	R-XPT-08080/15 ¹⁾	8	80	100	100	16000	3.2	3.2	542.0	5906675250342
	R-XPT-08085/20 ¹⁾	8	85	100	100	16000	3.4	3.4	578.8	5906675249636
	R-XPT-08095/30 ¹⁾	8	95	100	100	12000	3.7	3.7	469.2	5906675233543

Product commercial data

Size	Product Code	Anchor		Quantity [pcs]			Weight [kg]			Bar Codes
		Diameter [mm]	Length [mm]	Box	Outer	Pallet	Box	Outer	Pallet	
M8	R-XPT-08115/50 ¹⁾	8	115	100	100	12000	4.3	4.3	540.0	5906675233550
	R-XPT-08140/75 ¹⁾	8	140	100	100	16000	5.2	5.2	855.6	5906675233567
	R-XPT-08150/85 ¹⁾	8	150	100	100	16000	5.4	5.4	887.6	5906675250359
M10	R-XPT-10065/5 ¹⁾	10	65	50	50	8000	2.4	2.4	408.4	5906675233574
	R-XPT-10080/10 ¹⁾	10	80	50	50	8000	2.7	2.7	468.4	5906675233581
	R-XPT-10095/25 ¹⁾	10	95	50	50	8000	3.1	3.1	527.6	5906675233598
	R-XPT-10115/45 ¹⁾	10	115	50	50	6000	3.6	3.6	463.2	5906675233604
	R-XPT-10130/60 ¹⁾	10	130	50	50	8000	4.0	4.0	664.4	5906675249643
	R-XPT-10140/70 ¹⁾	10	140	50	50	8000	4.2	4.2	705.2	5906675233611
	R-XPT-10150/80 ¹⁾	10	150	50	50	8000	4.5	4.5	742.0	5906675249650
	R-XPT-10180/110 ¹⁾	10	180	50	50	6000	5.2	5.2	654.6	5906675250366
M12	R-XPT-12080/5 ¹⁾	12	80	50	50	8000	4.1	4.1	678.0	5906675233628
	R-XPT-12100/5 ¹⁾	12	100	50	50	8000	4.8	4.8	792.4	5906675233635
	R-XPT-12120/25 ¹⁾	12	120	50	50	6000	5.5	5.5	690.0	5906675250373
	R-XPT-12125/30 ¹⁾	12	125	50	50	6000	5.7	5.7	709.2	5906675233642
	R-XPT-12135/40 ¹⁾	12	135	50	50	6000	6.1	6.1	757.8	5906675250380
	R-XPT-12140/45 ¹⁾	12	140	50	50	6000	6.2	6.2	769.2	5906675249667
	R-XPT-12150/55 ¹⁾	12	150	50	50	4000	6.6	6.6	558.4	5906675233659
	R-XPT-12160/65 ¹⁾	12	160	50	50	4000	6.9	6.9	584.4	5906675216416
	R-XPT-12180/85 ¹⁾	12	180	50	50	4000	7.6	7.6	639.2	5906675233666
	R-XPT-12200/105 ¹⁾	12	200	50	50	4000	8.3	8.3	696.4	5906675312132
	R-XPT-12220/125 ¹⁾	12	220	50	50	4000	9.1	9.1	755.2	5906675233673
	R-XPT-12250/155 ¹⁾	12	250	25	25	3000	5.1	5.1	637.8	5906675312149
M16	R-XPT-12280/185 ¹⁾	12	280	20	20	1600	4.6	4.6	395.8	5906675312156
	R-XPT-16100/5 ¹⁾	16	100	25	25	4000	4.4	4.4	731.6	5906675233680
	R-XPT-16105/10 ¹⁾	16	105	25	25	4000	4.6	4.6	763.6	5906675250403
	R-XPT-16125/5 ¹⁾	16	125	25	25	4000	5.3	5.3	869.6	5906675233697
	R-XPT-16140/20 ¹⁾	16	140	25	25	4000	5.7	5.7	948.4	5906675249063
	R-XPT-16150/30 ¹⁾	16	150	25	25	4000	6.1	6.1	1001.2	5906675249674
	R-XPT-16160/40 ¹⁾	16	160	25	25	3000	6.4	6.4	792.9	5906675250410
	R-XPT-16180/60 ¹⁾	16	180	25	25	3000	7.0	7.0	873.3	5906675249681
	R-XPT-16200/80 ¹⁾	16	200	25	25	3000	7.6	7.6	946.8	5906675312163
	R-XPT-16220/100 ¹⁾	16	220	25	25	3000	8.4	8.4	1037.4	5906675233727
	R-XPT-16250/130 ¹⁾	16	250	25	25	3000	9.3	9.3	1148.1	5906675312170
	R-XPT-16280/160 ¹⁾	16	280	15	15	1200	6.3	6.3	532.3	5906675250427
M20	R-XPT-16300/180 ¹⁾	16	300	10	10	650	4.4	4.4	318.5	5906675312187
	R-XPT-20125/5 ¹⁾	20	125	25	25	3000	8.3	8.3	1020.0	5906675233734
	R-XPT-20160/20 ¹⁾	20	160	25	25	2000	10.1	10.1	836.0	5906675233741
	R-XPT-20200/60 ¹⁾	20	200	10	10	1200	4.9	4.9	619.7	5906675233758
	R-XPT-20250/110 ¹⁾	20	250	10	10	1200	6.0	6.0	748.2	5906675312194
M24	R-XPT-20300/160 ¹⁾	20	300	10	10	800	7.1	7.1	593.7	5906675233765
	R-XPT-24180/20	24	180	10	10	1200	7.0	7.0	872.2	5906675233772
	R-XPT-24260/100	24	260	10	10	1200	9.3	9.3	1148.8	5906675233789
	R-XPT-24300/140	24	300	10	10	800	10.5	10.5	872.7	5906675233796

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