

R-KER-II Hybrid with Rebars as an Anchor

High performance vinylester resin approved for use with reinforcement bars



Approvals and Reports

- ETA-17/0594



Product information

Features and benefits

- Approved for use with rebar as an anchor for use in non-cracked concrete
- Winter version can be used in warmer temperatures for faster curing
- Suitable for use in dry and wet substrates as well as holes and substrates covered with water
- Rapid bonding time enables quick execution of works
- Very high load capacity
- Anchor does not generate tensions in the substrate which enables its installation in minimum distance and close to the edge of the substrate
- Suitable for multiple use. Partly used product can be reused after fitting new nozzle

Applications

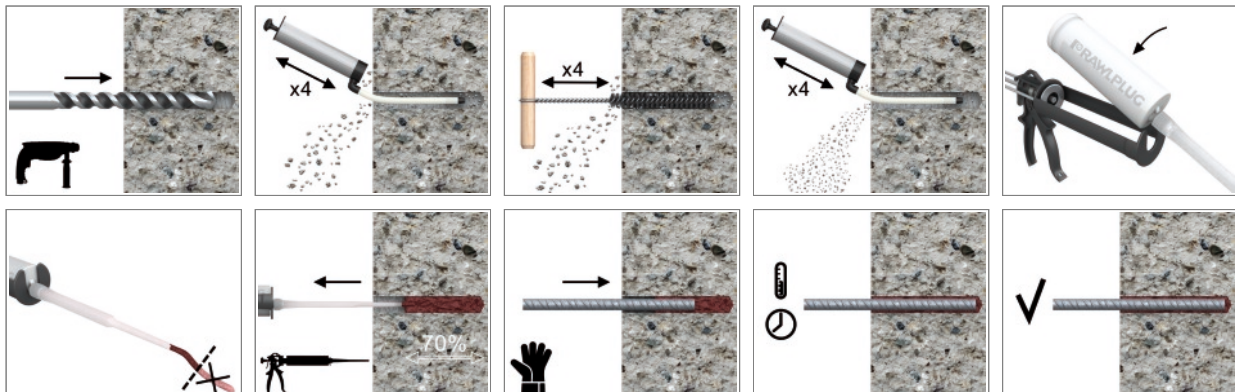
- Curtain walling
- Balustrading
- Barriers
- Cable trays
- Cladding restraints
- Structural steelwork
- Rebar dowelling
- Starter bars
- Rebar missed-outs

Base materials

Approved for use in:

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

Installation guide



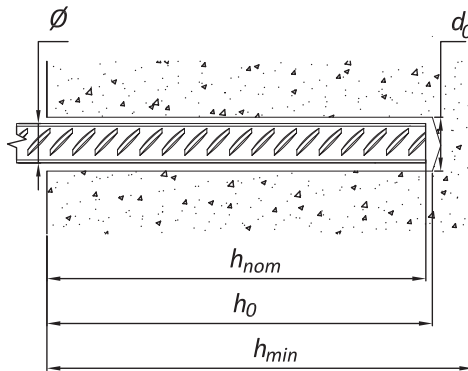
Product information

1. Drill hole to the required diameter and depth for rebar size being used.
2. Clean the hole with brush and hand pump at least four times each. It is very important and necessary before installation.
3. Insert cartridge into gun and attach nozzle.
4. Dispense to waste until even colour is obtained (min. 10cm)
5. Insert the mixing nozzle to the far end of the hole and inject resin, slowly withdrawing the nozzle as the hole is filled to 2/3 of its depth.
6. Immediately insert the rebar, slowly and with slight twisting motion. Remove any excess resin around the hole before it sets and leave it undisturbed until the curing time elapses. Attach fixture and tighten the nut to the required torque.

Product Code	Resin	Description / Resin Type	Volume
			[ml]
R-KER-II-300	R-KER-II	R-KER II Hybrid Resin	300
R-KER-II-345			345
R-KER-II-400			400
R-KER-II-300-S	R-KER-II-S	R-KER II Hybrid Resin for High Temperature (Summer) / Slow Cure Styrene Free Hybrid Resin	300
R-KER-II-400-S			400
R-KER-II-300-W	R-KER-II-W	R-KER II Hybrid Resin for Low Temperature (Winter) / Rapid Cure Styrene Free Hybrid Resin	300
R-KER-II-345-W			345
R-KER-II-400-W			400

Size	Product Code	Resin	Description / Resin Type	Volume
				[ml]
Ø32	R-KER-II-300	R-KER-II	R-KER II Hybrid Resin	300
	R-KER-II-345			345
	R-KER-II-400			400
Ø40	R-KER-II-300-S	R-KER-II-S	R-KER II Hybrid Resin for High Temperature (Summer) / Slow Cure Styrene Free Hybrid Resin	300
	R-KER-II-400-S			400
Ø32	R-KER-II-300-W	R-KER-II-W	R-KER II Hybrid Resin for Low Temperature (Winter) / Rapid Cure Styrene Free Hybrid Resin	300
	R-KER-II-345-W			345
	R-KER-II-400-W			400

Installation data



REBARS AS ANCHORS

Size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
Rebar diameter	d_s	[mm]	8	10	12	14	16	20	25	32
Hole diameter in substrate	d_0	[mm]	12	14	18	18	22	26	32	40
Min. hole depth in substrate	h_0	[mm]	$h_{nom} + 5$	$h_{nom} + 5$	$h_{nom} + 5$	$h_{nom} + 5$	$h_{nom} + 5$	$h_{nom} + 5$	$h_{nom} + 5$	$h_{nom} + 5$
Min. substrate thickness	h_{min}	[mm]	$h_{nom} + 30$ ≥ 100	$h_{nom} + 30$ ≥ 100	$h_{nom} + 30$ ≥ 100	$h_{nom} + 30$ ≥ 100	$h_{nom} + 2d_0$	$h_{nom} + 2d_0$	$h_{nom} + 2d_0$	$h_{nom} + 2d_0$
Min. spacing	s_{min}	[mm]	40	40	40	40	40	40	50	70
Min. edge distance	c_{min}	[mm]	40	40	40	40	40	40	50	70
MINIMUM EMBEDMENT DEPTH										
Installation depth	$h_{nom, min}$	[mm]	60	60	60	60	64	80	100	128
MAXIMUM EMBEDMENT DEPTH										
Installation depth	$h_{nom, max}$	[mm]	160	200	240	240	320	400	500	640

Minimum working and curing time

R-KER-II

Resin temperature	Concrete temperature	Curing time*	Working time
[°C]	[°C]	[min]	[min]
5	0	3 h	30
5	5	90	15
10	10	60	8
15	15	60	5
20	20	45	2.5
25	25	45	2
25	30	45	2
25	35	30	1.5
25	40	30	1.5

R-KER-II S

Resin temperature	Concrete temperature	Curing time*	Working time
[°C]	[°C]	[min]	[min]
5	5	12 h	40
10	10	8 h	20
15	15	6 h	15
20	20	4 h	13
25	25	3 h	9.5
25	30	2 h	7
25	35	2 h	6.5
25	40	1.5 h	6.5

Installation data

R-KER-II W

Resin temperature	Concrete temperature	Curing time*	Working time
[°C]	[°C]	[min]	[min]
5	0	2 h	14
5	5	60	9
10	10	45	5.5
15	15	30	3
20	20	15	2
25	25	10	1.5
25	30	10	1.5
25	35	5	1
25	40	5	1

Mechanical properties

REBARS AS ANCHORS

Size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
18G2										
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm ²]	480	480	480	480	480	480	480	480
Nominal yield strength - tension	f_{yk}	[N/mm ²]	355	355	355	355	355	355	355	355
Cross sectional area - tension	A_s	[mm ²]	50.3	78.5	113.1	153.9	201.1	314.2	490.9	804.2
Elastic section modulus	W_{el}	[mm ³]	50.3	98.2	169.6	269.4	402.1	785.4	1534	3217
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	29	57	98	155	232	452	884	1853
Design bending resistance	M	[Nm]	19	38	65	103	154	302	589	1235
Allowable bending resistance	M_{rec}	[Nm]	14	27	47	74	110	215	421	882
34GS										
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm ²]	500	500	500	500	500	500	500	500
Nominal yield strength - tension	f_{yk}	[N/mm ²]	410	410	410	410	410	410	410	410
Cross sectional area - tension	A_s	[mm ²]	50.3	78.5	113.1	153.9	201.1	314.2	490.9	804.2
Elastic section modulus	W_{el}	[mm ³]	50.3	98.2	169.6	269.4	402.1	785.4	1534	3217
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	30	59	102	162	241	471	920	1930
Design bending resistance	M	[Nm]	20	39	68	108	161	314	614	1287
Allowable bending resistance	M_{rec}	[Nm]	14	28	48	77	115	224	438	919
B500SP										
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm ²]	575	575	575	575	575	575	575	575
Nominal yield strength - tension	f_{yk}	[N/mm ²]	500	500	500	500	500	500	500	500
Cross sectional area - tension	A_s	[mm ²]	50.3	78.5	113.1	153.9	201.1	314.2	490.9	804.2
Elastic section modulus	W_{el}	[mm ³]	50.3	98.2	169.6	269.4	402.1	785.4	1534	3217
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	35	68	117	186	277	542	1059	2220
Design bending resistance	M	[Nm]	23	45	78	124	185	361	706	1480
Allowable bending resistance	M_{rec}	[Nm]	17	32	56	89	132	258	504	1057
RB500/BS500S										
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm ²]	550	550	550	550	550	550	550	550
Nominal yield strength - tension	f_{yk}	[N/mm ²]	500	500	500	500	500	500	500	500
Cross sectional area - tension	A_s	[mm ²]	50.3	78.5	113.1	153.9	201.1	314.2	490.9	804.2
Elastic section modulus	W_{el}	[mm ³]	50.3	98.2	169.6	269.4	402.1	785.4	1534	3217
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	33	65	112	178	265	518	1012	2123
Design bending resistance	M	[Nm]	22	43	75	119	177	346	675	1415
Allowable bending resistance	M_{rec}	[Nm]	16	31	53	85	126	247	482	1011

Basic performance data

REBARS AS ANCHORS

Size		Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
Substrate		Non-cracked concrete								Cracked concrete							
CHARACTERISTIC LOAD																	
TENSION LOAD N_{Rk}																	
A-II (e.g. 18G2)																	
Minimum embedment depth	[kN]	19.6	23.5	23.5	23.5	25.9	36.1	50.5	73.1	12.1	16.7	16.7	16.7	18.4	25.8	36.0	45.0
Maximum embedment depth	[kN]	24.0	37.0	54.0	73.0	96.0	150.0	235.0	386.0	24.0	37.0	54.0	73.0	96.0	150.0	235.0	225.2
A-III (e.g. 34GS)																	
Minimum embedment depth	[kN]	19.6	23.5	23.5	23.5	25.9	36.1	50.5	73.1	12.1	16.7	16.7	16.7	18.4	25.8	36.0	45.0
Maximum embedment depth	[kN]	25.0	39.0	56.0	77.0	100.0	157.0	245.0	402.0	25.0	39.0	56.0	77.0	100.0	157.0	235.6	225.2
A-III-N (e.g. RB500, BST500S, B500SP)																	
Minimum embedment depth	[kN]	19.6	23.5	23.5	23.5	25.9	36.1	50.5	73.1	12.1	16.7	16.7	16.7	18.4	25.8	36.0	45.0
Maximum embedment depth	[kN]	27.0	43.0	62.0	84.0	110.0	172.0	270.0	442.0	27.0	43.0	62.0	84.0	110.0	172.0	235.6	225.2
SHEAR LOAD V_{Rk}																	
A-II (e.g. 18G2)																	
Minimum embedment depth	[kN]	12.0	18.5	27.0	36.5	48.0	75.0	117.5	193.0	12.0	18.5	27.0	36.5	48.0	75.0	94.3	90.1
Maximum embedment depth	[kN]	12.0	18.5	27.0	36.5	48.0	75.0	117.5	193.0	12.0	18.5	27.0	36.5	48.0	75.0	117.5	193.0
A-III (e.g. 34GS)																	
Minimum embedment depth	[kN]	12.5	19.5	28.0	38.5	50.0	78.5	122.5	193.0	12.5	19.5	28.0	38.5	50.0	75.4	94.3	90.1
Maximum embedment depth	[kN]	12.5	19.5	28.0	38.5	50.0	78.5	122.5	201.0	12.5	19.5	28.0	38.5	50.0	78.5	122.5	201.0
A-III-N (e.g. RB500, BST500S, B500SP)																	
Minimum embedment depth	[kN]	13.5	21.5	31.0	42.0	55.0	86.0	135.0	193.0	13.5	21.5	31.0	42.0	54.7	75.4	94.3	90.8
Maximum embedment depth	[kN]	13.5	21.5	31.0	42.0	55.0	86.0	135.0	221.0	13.5	21.5	31.0	42.0	55.0	86.0	135.0	221.0

Basic performance data

Size		Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
DESIGN LOAD																	
TENSION LOAD N_{Rd}																	
A-II (e.g. 18G2)																	
Minimum embedment depth	[kN]	13.1	15.7	15.7	15.7	17.2	24.1	33.7	48.8	8.04	11.2	11.2	11.2	12.3	17.2	24.0	30.0
Maximum embedment depth	[kN]	17.1	26.4	38.6	52.1	68.6	107.1	167.9	275.7	17.1	26.4	38.6	52.1	68.6	107.1	157.1	150.1
A-III (e.g. 34GS)																	
Minimum embedment depth	[kN]	13.1	15.7	15.7	15.7	17.2	24.1	33.7	48.8	8.06	11.2	11.2	11.2	12.3	17.2	24.0	30.0
Maximum embedment depth	[kN]	17.9	27.9	40.0	55.0	71.4	112.1	175.0	287.1	17.9	27.9	40.0	55.0	71.4	112.1	157.1	150.1
A-III-N (e.g. RB500, BST500S, B500SP)																	
Minimum embedment depth	[kN]	13.1	15.7	15.7	15.7	17.2	24.1	33.7	48.8	8.04	11.2	11.2	11.2	12.3	17.2	24.0	30.0
Maximum embedment depth	[kN]	19.3	30.7	44.3	60.0	78.6	122.9	192.9	300.3	19.3	30.7	44.3	60.0	78.6	122.9	157.1	150.1
SHEAR LOAD V_{Rd}																	
A-II (e.g. 18G2)																	
Minimum embedment depth	[kN]	8.57	13.2	19.3	26.1	34.3	53.6	83.9	128.7	8.57	13.2	19.3	26.1	34.3	50.3	62.8	60.1
Maximum embedment depth	[kN]	8.57	13.2	19.3	26.1	34.3	53.6	83.9	137.9	8.57	13.2	19.3	26.1	34.3	53.6	83.9	137.9
A-III (e.g. 34GS)																	
Minimum embedment depth	[kN]	8.93	13.9	20.0	27.5	35.7	56.1	87.5	128.7	8.93	13.9	20.0	27.5	35.7	50.3	62.8	60.1
Maximum embedment depth	[kN]	8.93	13.9	20.0	27.5	34.7	56.1	87.5	143.6	8.93	13.9	20.0	27.5	34.7	56.1	87.5	143.6
A-III-N (e.g. RB500, BST500S, B500SP)																	
Minimum embedment depth	[kN]	9.64	15.4	22.1	30.0	39.3	61.4	94.3	128.7	9.64	15.4	22.1	30.0	36.5	50.3	62.8	60.1
Maximum embedment depth	[kN]	9.64	15.4	22.1	30.0	39.3	61.4	96.3	157.9	9.64	15.4	22.1	30.0	39.3	61.4	96.3	157.9
RECOMMENDED LOAD																	
TENSION LOAD N_{rec}																	
A-II (e.g. 18G2)																	
Minimum embedment depth	[kN]	9.34	11.2	11.2	11.2	12.3	17.2	24.1	34.8	5.74	7.97	7.97	7.97	8.78	12.3	17.1	21.5
Maximum embedment depth	[kN]	12.2	18.9	27.6	37.2	49.0	76.5	119.9	196.9	12.2	18.9	27.6	37.2	49.0	76.5	112.2	107.2
A-III (e.g. 34GS)																	
Minimum embedment depth	[kN]	9.34	11.2	11.2	11.2	12.3	17.2	24.1	34.8	5.74	7.97	7.97	7.97	8.78	12.3	17.1	21.5
Maximum embedment depth	[kN]	12.8	19.9	28.6	39.3	51.0	80.1	125.0	205.1	12.8	19.9	28.6	39.3	51.0	80.1	112.2	107.2
A-III-N (e.g. RB500, BST500S, B500SP)																	
Minimum embedment depth	[kN]	9.34	11.2	11.2	11.2	12.3	17.2	24.1	34.8	5.74	7.97	7.97	7.97	8.78	12.3	17.1	21.5
Maximum embedment depth	[kN]	13.8	21.9	31.6	42.9	56.1	87.8	137.8	214.5	13.8	21.9	31.6	42.9	56.1	87.8	112.2	107.2
SHEAR LOAD V_{rec}																	
A-II (e.g. 18G2)																	
Minimum embedment depth	[kN]	6.12	9.44	13.8	18.6	24.5	38.3	60.0	91.9	6.12	9.44	13.8	18.6	24.5	35.9	44.9	42.9
Maximum embedment depth	[kN]	6.12	9.44	13.8	18.6	24.5	38.3	60.0	98.5	6.12	9.44	13.8	18.6	24.5	38.3	60.0	98.5
A-III (e.g. 34GS)																	
Minimum embedment depth	[kN]	6.38	9.95	14.3	19.6	25.5	40.1	62.5	91.9	6.38	9.95	14.3	19.6	25.5	35.9	44.9	42.9
Maximum embedment depth	[kN]	6.38	9.95	14.3	19.6	25.5	40.1	62.5	102.6	6.38	9.95	14.3	19.6	25.5	40.1	62.5	102.6
A-III-N (e.g. RB500, BST500S, B500SP)																	
Minimum embedment depth	[kN]	6.89	11.0	15.8	21.4	28.1	43.9	67.3	91.9	6.89	11.0	15.8	21.4	26.0	35.9	44.9	42.9
Maximum embedment depth	[kN]	6.89	11.0	15.8	21.4	28.1	43.9	68.9	112.8	6.89	11.0	15.8	21.4	28.1	43.9	68.9	112.8

Design performance data

REBARS AS ANCHORS

Size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
TENSION LOAD										
STEEL FAILURE; A-II (E.G. 18G2)										
Characteristic resistance	$N_{Rk,s}$	[kN]	24.10	37.70	54.30	73.90	96.50	150.80	235.60	386.00
Partial safety factor	γ_{Ms}	-	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
STEEL FAILURE; A-III (E.G. 34GS)										
Characteristic resistance	$N_{Rk,s}$	[kN]	25.10	39.20	56.50	76.90	100.50	157.10	245.40	402.00
Partial safety factor	γ_{Ms}	-	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
STEEL FAILURE; A-III-N (E.G. RB500, BST500S, B500SP)										
Characteristic resistance	$N_{Rk,s}$	[kN]	27.60	43.20	62.20	84.60	110.60	172.80	270.00	442.00
Partial safety factor	γ_{Ms}	-	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
COMBINED PULL-OUT AND CONCRETE CONE FAILURE; NON-CRACKED CONCRETE, K1=10,1, C20/25 (40°C/24°C)										
Characteristic bond resistance	T_{Rk}	[N/mm ²]	13.00	14.00	14.00	13.00	13.00	10.00	9.00	7.50
COMBINED PULL-OUT AND CONCRETE CONE FAILURE; NON-CRACKED CONCRETE, K1=10,1, C20/25 (80°C/50°C)										
Characteristic bond resistance	T_{Rk}	[N/mm ²]	13.00	14.00	14.00	13.00	13.00	10.00	9.00	7.50
COMBINED PULL-OUT AND CONCRETE CONE FAILURE; NON-CRACKED CONCRETE, K1=10,1, C20/25 (120°C/80°C)										
Characteristic bond resistance	T_{Rk}	[N/mm ²]	7.00	7.00	7.00	7.00	7.00	5.50	5.00	4.00
COMBINED PULL-OUT AND CONCRETE CONE FAILURE; CRACKED CONCRETE, K1=7,2, C20/25 (40°C/24°C)										
Characteristic bond resistance	T_{Rk}	[N/mm ²]	8.00	9.00	10.00	10.00	8.50	7.50	6.00	3.50
COMBINED PULL-OUT AND CONCRETE CONE FAILURE; CRACKED CONCRETE, K1=7,2, C20/25 (80°C/50°C)										
Characteristic bond resistance	T_{Rk}	[N/mm ²]	8.00	9.00	10.00	10.00	8.50	7.50	6.00	3.50
COMBINED PULL-OUT AND CONCRETE CONE FAILURE; CRACKED CONCRETE, K1=7,2, C20/25 (120°C/80°C)										
Characteristic bond resistance	T_{Rk}	[N/mm ²]	4.50	5.00	5.00	5.00	4.50	4.00	3.00	2.00
CONCRETE CONE FAILURE										
Installation safety factor	γ_2	-	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	-	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Increasing factors for $N_{Rd,p}$ - C40/50	ψ_c	-	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Increasing factors for $N_{Rd,p}$ - C50/60	ψ_c	-	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
CONCRETE CONE FAILURE										
Installation safety factor	γ_2	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Factor for cracked concrete	k	-	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20
Factor for cracked concrete	$k_{cr,N}$	-	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70
Factor for non-cracked concrete	k	-	10.10	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	11.00
Edge distance	$c_{cr,N}$	[mm]	1.5*h _{ef}	1.5*h _{ef}	1.5*h _{ef}	1.5*h _{ef}	1.5*h _{ef}	1.5*h _{ef}	1.5*h _{ef}	1.5*h _{ef}
Spacing	$s_{cr,N}$	[mm]	3.0*h _{ef}	3.0*h _{ef}	3.0*h _{ef}	3.0*h _{ef}	3.0*h _{ef}	3.0*h _{ef}	3.0*h _{ef}	3.0*h _{ef}
CONCRETE SPLITTING FAILURE										
Installation safety factor	γ_2	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Design performance data

Size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
SHEAR LOAD										
STEEL FAILURE; A-II (E.G. 18G2)										
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	12.10	18.80	27.10	36.90	48.30	75.40	117.80	193.00
Ductility factor	k_f	-	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	29.00	57.00	98.00	155.00	232.00	452.00	884.00	1853.00
Partial safety factor	γ_{Ms}	-	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
STEEL FAILURE; A-III (E.G. 34GS)										
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	12.60	19.60	28.30	34.50	50.30	78.50	122.70	201.00
Ductility factor	k_f	-	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	30.00	59.00	102.00	162.00	241.00	471.00	920.00	1930.00
Partial safety factor	γ_{Ms}	-	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
STEEL FAILURE; A-III-N (E.G. RB500, BST500S, B500SP)										
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	13.80	21.60	31.10	42.30	55.30	86.40	135.00	221.00
Ductility factor	k_f	-	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Characteristic resistance with lever arm	$M_{Rk,s}$	[Nm]	33.00	65.00	112.00	178.00	265.00	518.00	1012.00	2123.00
Partial safety factor	γ_{Ms}	-	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
CONCRETE PRY-OUT FAILURE										
Factor	k	-	2.00	2.00	2.00	2.00	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	1.00
CONCRETE EDGE FAILURE										
Anchor diameter	d_{nom}	[mm]	8.00	10.00	12.00	14.00	16.00	20.00	25.00	32.00
Effective length of anchor	l_f	[mm]	min ($h_{ef}; 8d_{nom}$)	min ($h_{ef}; 8d_{nom}$)	min ($h_{ef}; 8d_{nom}$)	min ($h_{ef}; 8d_{nom}$)	min ($h_{ef}; 8d_{nom}$)	min ($h_{ef}; 8d_{nom}$)	min ($h_{ef}; 8d_{nom}$)	min ($h_{ef}; 8d_{nom}$)
Installation safety factor	γ_2	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Combined pull-out and concrete cone failure (TR 029, p.5.2.2.3. acc. to formula 5.2a - $N_{Rk,p}^0 = n \cdot d \cdot h_{ef} \cdot \tau_{Rk}$).

Concrete cone failure (TR 029, p.5.2.2.4. acc. to formula 5.3a - $N_{Rk,c}^0 = k_1 \cdot f_{ck,cube}^{0.5} \cdot h_{ef}^{1.5}$).

$h_{ef} = h_{nom}$

Product commercial data

Size	Product Code	Volume [m ³]	Quantity [pcs]			Weight [kg]			Bar Codes
			Box	Outer	Pallet	Box	Outer	Pallet	
Ø32	R-KER-II-300 ¹⁾	300	10	10	840	5.2	5.2	466.8	5906675293738
	R-KER-II-345 ¹⁾	345	10	10	840	7.6	7.6	668.4	5906675395203
	R-KER-II-400 ¹⁾	400	10	10	560	8.2	8.2	489.2	5906675392103
Ø40	R-KER-II-300-S ¹⁾	300	10	10	840	5.2	5.2	466.8	5906675432045
Ø32	R-KER-II-400-S ¹⁾	400	10	10	560	8.2	8.2	489.2	5906675432076
	R-KER-II-300-W ¹⁾	300	10	10	840	5.2	5.2	466.8	5906675432038
	R-KER-II-345-W ¹⁾	345	10	10	840	7.6	7.6	668.4	5906675432052
	R-KER-II-400-W ¹⁾	400	10	10	560	8.2	8.2	489.2	5906675432069

1) ETA-17/0594