R-KEX-II

EPOXY BONDED CHEMICAL RESIN REBAR AS AN ANCHOR

High-quality bonded anchor based on epoxy resin, approved for cracked concrete, as well as reinforced and unreinforced concrete

FEATURES AND BENEFITS

- Approved for use with post-installed rebars concrete (EAD 330087-01-0601).
- Approved for use in non-cracked concrete (EAD 330499-02-0601), working life up to 100 years.
- Suitable for use in seismic applications.
- The extended open time allows bar insertion to the required depth even at high temperatures. The short curing time enables continuation of work on the same day.
- Extended working time ensures easy installation.
- Suitable for use in dry and wet substrates including under water.
- High parameter stability at elevated temperatures.

SUBSTRATES

- Cracked concrete C20/25-C50/60
- Non-cracked concrete C20/25-C50/60
- Reinforced concrete
- Unreinforced concrete
- High-density natural stone



R-KEX-II

EPOXY BONDED CHEMICAL RESIN REBAR AS AN ANCHOR



APPLICATIONS

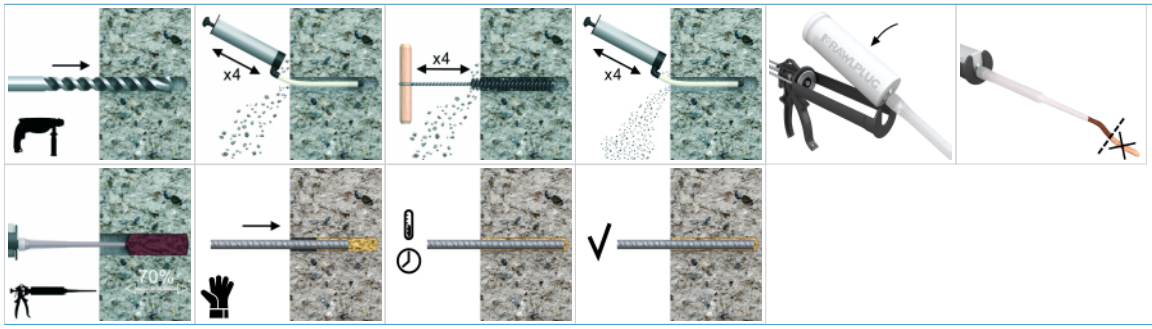
- Anchoring glued in with reinforcing bars
- Anchoring glued in with threaded rods
- Concrete structures
- Elevators and escalators
- Roads and bridges
- Steel structures





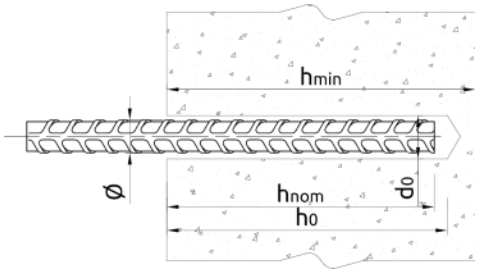
Abu Dhabi, United Arab Emirates
Louvre Abu Dhabi

INSTALLATION GUIDE



1. Drill a hole of required diameter and depth.
2. Clean the drill hole thoroughly with brush and hand pump at least four times before installation.
3. Insert cartridge into gun and attach nozzle.
4. When starting dispensing from a new package, discard a portion of the resin (approximately 10 cm) to ensure thorough mixing of the components.
5. Insert the mixer nozzle to the bottom of the drill hole and inject resin, slowly withdrawing the nozzle as the hole is filled to 70% 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.
7. Leave the fixing undisturbed until the curing time elapses.

INSTALLATION DATA



Size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
Thread diameter	d	[mm]	8	10	12	14	16	20	25	32
Hole diameter in substrate	d_0	[mm]	10 / 12	12 / 14	14 / 18	18	22	26	32	40
Min. hole depth in substrate	h_0	[mm]	1)	1)	1)	1)	1)	1)	1)	1)
Min. substrate thickness	h_{min}	[mm]	2)	2)	2)	2)	3)	3)	3)	3)
Min. edge distance	c_{min}	[mm]	40	40	40	40	50	60	70	85
Min. spacing	s_{min}	[mm]	40	40	40	40	50	60	70	85
Min. installation depth	$h_{nom,min}$	[mm]	60	70	80	80	100	120	140	165
Max. installation depth	$h_{nom,max}$	[mm]	160	200	240	280	320	400	500	640

1) h_{nom} +5

2) h_{nom} +30 ≥ 100

3) h_{nom} +2 · d_0

Processing and curing time						
Mortar temperature	-	[˚C]	+5	+10	+20	+25
Substrate (concrete) temperature	-	[˚C]	+5	+10	+20	+30
Max. processing time	-	[min]	150	120	35	12
Min. curing time 1)	-	[min]	2880 (48h)	1080 (18h)	480 (8h)	300 (5h)

1) For wet condition and flooded holes, the curing time must be doubled.

Min. mortar temperature for installation +5˚C, max. +25˚C

MECHANICAL PROPERTIES

Size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm²]	540	540	540	540	540	540	540	540
Nominal yield strength	f_{yk}	[N/mm²]	500	500	500	500	500	500	500	500
Cross sectional area	A_s	[mm²]	50,3	78,5	113,1	153,9	201,1	314,2	490,9	804,2
Elastic section modulus	W_{el}	[mm³]	50,3	98,2	169,6	269,4	402,1	785,4	1534,0	3217,0
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	32,6	63,6	109,9	174,6	260,6	508,9	994,0	2084,6
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm²]	575	575	575	575	575	575	575	575
Nominal yield strength	f_{yk}	[N/mm²]	500	500	500	500	500	500	500	500
Cross sectional area	A_s	[mm²]	50,3	78,5	113,1	153,9	201,1	314,2	490,9	804,2
Elastic section modulus	W_{el}	[mm³]	50,3	98,2	169,6	269,4	402,1	785,4	1534,0	3217,0
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	34,7	67,7	117,1	185,9	277,5	541,9	1058,4	2219,7
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Nominal ultimate tensile strength - tension	f_{uk}	[N/mm²]	620	620	620	620	620	620	620	620
Nominal yield strength	f_{yk}	[N/mm²]	420	420	420	420	420	420	420	420
Cross sectional area	A_s	[mm²]	50,3	78,5	113,1	153,9	201,1	314,2	490,9	804,2
Elastic section modulus	W_{el}	[mm³]	50,3	98,2	169,6	269,4	402,1	785,4	1534,0	3217,0
Characteristic bending resistance	$M^0_{Rk,s}$	[Nm]	37,4	73,0	126,2	200,4	299,2	584,3	1141,3	2393,4

BASIC PERFORMANCE DATA

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

Anchorage in uncracked concrete

Size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
UNCRACKED CONCRETE C20/25										
Minimum embedment depth	$h_{ef,min}$	[mm]	60	70	80	80	100	120	140	165
Maximum embedment depth	$h_{ef,max}$	[mm]	160	200	240	280	320	400	500	640
MEAN ULTIMATE RESISTANCE										
TENSION LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	$N_{Ru,m}$	[kN]	28,5	39,5	48,3	48,3	67,5	88,7	111,8	143,1
Maximum embedment depth	$N_{Ru,m}$	[kN]	28,5	44,5	64,1	87,3	114,0	178,1	278,3	456,0
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	$N_{Ru,m}$	[kN]	30,3	39,5	48,3	48,3	67,5	88,7	111,8	143,1
Maximum embedment depth	$N_{Ru,m}$	[kN]	30,3	47,4	68,3	92,9	121,4	189,7	296,4	485,6
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	$N_{Ru,m}$	[kN]	31,4	39,5	48,3	48,3	67,5	88,7	111,8	143,1
Maximum embedment depth	$N_{Ru,m}$	[kN]	32,7	51,1	73,6	100,2	130,9	204,5	319,6	523,6
SHEAR LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	$V_{Ru,m}$	[kN]	17,1	26,7	38,5	52,4	68,4	106,9	167,0	273,6
Maximum embedment depth	$V_{Ru,m}$	[kN]	17,1	26,7	38,5	52,4	68,4	106,9	167,0	273,6
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	$V_{Ru,m}$	[kN]	18,2	28,5	41,0	55,8	72,8	113,8	177,8	286,1
Maximum embedment depth	$V_{Ru,m}$	[kN]	18,2	28,5	41,0	55,8	72,8	113,8	177,8	291,3
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	$V_{Ru,m}$	[kN]	19,6	30,7	44,2	60,1	78,5	122,7	191,7	286,1
Maximum embedment depth	$V_{Ru,m}$	[kN]	19,6	30,7	44,2	60,1	78,5	122,7	191,7	314,1
CHARACTERISTIC RESISTANCE										
TENSION LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	N_{Rk}	[kN]	16,6	26,4	35,2	35,2	49,2	64,7	81,5	104,3
Maximum embedment depth	N_{Rk}	[kN]	27,1	42,4	61,1	83,1	108,6	169,6	265,1	434,3
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	N_{Rk}	[kN]	16,6	26,4	35,2	35,2	49,2	64,7	81,5	104,3
Maximum embedment depth	N_{Rk}	[kN]	28,9	45,2	65,0	88,5	115,6	180,6	282,3	462,4
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	N_{Rk}	[kN]	16,6	26,4	35,2	35,2	49,2	64,7	81,5	104,3
Maximum embedment depth	N_{Rk}	[kN]	31,2	48,7	70,1	95,4	124,7	194,8	304,3	498,6
SHEAR LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	V_{Rk}	[kN]	13,6	21,2	30,5	41,6	54,3	84,8	132,5	208,5
Maximum embedment depth	V_{Rk}	[kN]	13,6	21,2	30,5	41,6	54,3	84,8	132,5	217,1
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	V_{Rk}	[kN]	14,5	22,6	32,5	44,3	57,8	90,3	141,1	208,5
Maximum embedment depth	V_{Rk}	[kN]	14,5	22,6	32,5	44,3	57,8	90,3	141,1	231,2

Size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	V_{Rk}	[kN]	15,6	24,3	35,1	47,7	62,3	97,4	152,2	208,5
Maximum embedment depth	V_{Rk}	[kN]	15,6	24,3	35,1	47,7	62,3	97,4	152,2	249,3
DESIGN RESISTANCE										
TENSION LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	N_{Rd}	[kN]	9,2	14,7	19,6	19,5	27,3	35,9	45,3	57,9
Maximum embedment depth	N_{Rd}	[kN]	19,4	30,3	43,6	59,4	77,6	121,2	189,3	303,8
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	N_{Rd}	[kN]	9,2	14,7	19,6	19,5	27,3	35,9	45,3	57,9
Maximum embedment depth	N_{Rd}	[kN]	20,6	32,3	46,5	63,2	82,6	129,0	201,6	303,8
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	N_{Rd}	[kN]	9,2	14,7	19,6	19,5	27,3	35,9	45,3	57,9
Maximum embedment depth	N_{Rd}	[kN]	22,3	34,8	50,1	68,2	89,0	139,1	207,3	303,8
SHEAR LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	V_{Rd}	[kN]	9,0	14,1	20,4	27,7	36,2	56,5	88,4	139,0
Maximum embedment depth	V_{Rd}	[kN]	9,0	14,1	20,4	27,7	36,2	56,5	88,4	144,8
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	V_{Rd}	[kN]	9,6	15,1	21,7	29,5	38,5	60,2	94,1	139,0
Maximum embedment depth	V_{Rd}	[kN]	9,6	15,1	21,7	29,5	38,5	60,2	94,1	154,1
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	V_{Rd}	[kN]	10,4	16,2	23,4	31,8	41,6	64,9	101,4	139,0
Maximum embedment depth	V_{Rd}	[kN]	10,4	16,2	23,4	31,8	41,6	64,9	101,4	166,2
RECOMMENDED LOAD										
TENSION LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	N_{rec}	[kN]	6,6	10,5	14,0	14,0	19,5	25,7	32,3	41,4
Maximum embedment depth	N_{rec}	[kN]	13,8	21,6	31,2	42,4	55,4	86,6	135,2	217,0
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	N_{rec}	[kN]	6,6	10,5	14,0	14,0	19,5	25,7	32,3	41,4
Maximum embedment depth	N_{rec}	[kN]	14,7	23,0	33,2	45,2	59,0	92,2	144,0	217,0
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	N_{rec}	[kN]	6,6	10,5	14,0	14,0	19,5	25,7	32,3	41,4
Maximum embedment depth	N_{rec}	[kN]	15,9	24,8	35,8	48,7	63,6	99,4	148,0	217,0
SHEAR LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	V_{rec}	[kN]	6,5	10,1	14,5	19,8	25,9	40,4	63,1	99,3
Maximum embedment depth	V_{rec}	[kN]	6,5	10,1	14,5	19,8	25,9	40,4	63,1	103,4
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	V_{rec}	[kN]	6,9	10,8	15,5	21,1	27,5	43,0	67,2	99,3
Maximum embedment depth	V_{rec}	[kN]	6,9	10,8	15,5	21,1	27,5	43,0	67,2	110,1
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	V_{rec}	[kN]	7,4	11,6	16,7	22,7	29,7	46,4	72,5	99,3
Maximum embedment depth	V_{rec}	[kN]	7,4	11,6	16,7	22,7	29,7	46,4	72,5	118,7

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

Anchorage in cracked concrete

Size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
CRACKED CONCRETE C20/25										
Minimum embedment depth	$h_{ef,min}$	[mm]	60	70	80	80	100	120	140	165
Maximum embedment depth	$h_{ef,max}$	[mm]	160	200	240	280	320	400	500	640
MEAN ULTIMATE RESISTANCE										
TENSION LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	$N_{Ru,m}$	[kN]	22,1	27,8	34,0	34,0	47,5	62,4	78,7	100,7
Maximum embedment depth	$N_{Ru,m}$	[kN]	28,5	44,5	64,1	87,3	114,0	178,1	278,3	456,0
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	$N_{Ru,m}$	[kN]	22,1	27,8	34,0	34,0	47,5	62,4	78,7	100,7
Maximum embedment depth	$N_{Ru,m}$	[kN]	30,3	47,4	68,3	92,9	121,4	189,7	296,4	485,6
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	$N_{Ru,m}$	[kN]	22,1	27,8	34,0	34,0	47,5	62,4	78,7	100,7
Maximum embedment depth	$N_{Ru,m}$	[kN]	32,7	51,1	73,6	100,2	130,9	204,5	319,6	523,6
SHEAR LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	$V_{Ru,m}$	[kN]	17,1	26,7	38,5	52,4	68,4	106,9	157,4	201,3
Maximum embedment depth	$V_{Ru,m}$	[kN]	17,1	26,7	38,5	52,4	68,4	106,9	167,0	273,6
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	$V_{Ru,m}$	[kN]	18,2	28,5	41,0	55,8	72,8	113,8	157,4	201,3
Maximum embedment depth	$V_{Ru,m}$	[kN]	18,2	28,5	41,0	55,8	72,8	113,8	177,8	291,3

Size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	$V_{Ru,m}$	[kN]	19,6	30,7	44,2	60,1	78,5	122,7	157,4	201,3
Maximum embedment depth	$V_{Ru,m}$	[kN]	19,6	30,7	44,2	60,1	78,5	122,7	191,7	314,1
CHARACTERISTIC RESISTANCE										
TENSION LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	N_{Rk}	[kN]	8,3	11,0	16,6	19,4	25,1	37,7	57,0	66,4
Maximum embedment depth	N_{Rk}	[kN]	22,1	31,4	49,8	67,7	80,4	125,7	212,1	257,4
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	N_{Rk}	[kN]	8,3	11,0	16,6	19,4	25,1	37,7	57,0	66,4
Maximum embedment depth	N_{Rk}	[kN]	22,1	31,4	49,8	67,7	80,4	125,7	212,1	257,4
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	N_{Rk}	[kN]	8,3	11,0	16,6	19,4	25,1	37,7	57,0	66,4
Maximum embedment depth	N_{Rk}	[kN]	22,1	31,4	49,8	67,7	80,4	125,7	212,1	257,4
SHEAR LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	V_{Rk}	[kN]	13,6	21,2	30,5	38,7	50,3	75,4	114,1	132,7
Maximum embedment depth	V_{Rk}	[kN]	13,6	21,2	30,5	41,6	54,3	84,8	132,5	217,1
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	V_{Rk}	[kN]	14,5	22,0	32,5	38,7	50,3	75,4	114,1	132,7
Maximum embedment depth	V_{Rk}	[kN]	14,5	22,6	32,5	44,3	57,8	90,3	141,1	231,2
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	V_{Rk}	[kN]	15,6	22,0	33,2	38,7	50,3	75,4	114,1	132,7
Maximum embedment depth	V_{Rk}	[kN]	15,6	24,3	35,1	47,7	62,3	97,4	152,2	249,3
DESIGN RESISTANCE										
TENSION LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	N_{Rd}	[kN]	4,6	6,1	9,2	10,8	14,0	20,9	31,7	36,9
Maximum embedment depth	N_{Rd}	[kN]	12,3	17,5	27,6	37,6	44,7	69,8	117,8	143,0
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	N_{Rd}	[kN]	4,6	6,1	9,2	10,8	14,0	20,9	31,7	36,9
Maximum embedment depth	N_{Rd}	[kN]	12,3	17,5	27,6	37,6	44,7	69,8	117,8	143,0
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	N_{Rd}	[kN]	4,6	6,1	9,2	10,8	14,0	20,9	31,7	36,9
Maximum embedment depth	N_{Rd}	[kN]	12,3	17,5	27,6	37,6	44,7	69,8	117,8	143,0
SHEAR LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	V_{Rd}	[kN]	9,0	14,1	20,4	25,8	33,5	50,3	76,1	88,5
Maximum embedment depth	V_{Rd}	[kN]	9,0	14,1	20,4	27,7	36,2	56,5	88,4	144,8
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	V_{Rd}	[kN]	9,6	14,7	21,7	25,8	33,5	50,3	76,1	88,5
Maximum embedment depth	V_{Rd}	[kN]	9,6	15,1	21,7	29,5	38,5	60,2	94,1	154,1
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	V_{Rd}	[kN]	10,4	14,7	22,1	25,8	33,5	50,3	76,1	88,5
Maximum embedment depth	V_{Rd}	[kN]	10,4	16,2	23,4	31,8	41,6	64,9	101,4	166,2
RECOMMENDED LOAD										
TENSION LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	N_{rec}	[kN]	3,3	4,4	6,6	7,7	10,0	15,0	22,6	26,3
Maximum embedment depth	N_{rec}	[kN]	8,8	12,5	19,7	26,9	31,9	49,9	84,1	102,1
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	N_{rec}	[kN]	3,3	4,4	6,6	7,7	10,0	15,0	22,6	26,3
Maximum embedment depth	N_{rec}	[kN]	8,8	12,5	19,7	26,9	31,9	49,9	84,1	102,1
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	N_{rec}	[kN]	3,3	4,4	6,6	7,7	10,0	15,0	22,6	26,3
Maximum embedment depth	N_{rec}	[kN]	8,8	12,5	19,7	26,9	31,9	49,9	84,1	102,1
SHEAR LOAD										
f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Minimum embedment depth	V_{rec}	[kN]	6,5	10,1	14,5	18,4	23,9	35,9	54,3	63,2
Maximum embedment depth	V_{rec}	[kN]	6,5	10,1	14,5	19,8	25,9	40,4	63,1	103,4
f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Minimum embedment depth	V_{rec}	[kN]	6,9	10,5	15,5	18,4	23,9	35,9	54,3	63,2
Maximum embedment depth	V_{rec}	[kN]	6,9	10,8	15,5	21,1	27,5	43,0	67,2	110,1
f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Minimum embedment depth	V_{rec}	[kN]	7,4	10,5	15,8	18,4	23,9	35,9	54,3	63,2
Maximum embedment depth	V_{rec}	[kN]	7,4	11,6	16,7	22,7	29,7	46,4	72,5	118,7

DESIGN PERFORMANCE DATA

Static loads

Size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
Min effective embedment depth	$h_{ef,min}$	[mm]	60	70	80	80	100	120	140	165
Max effective embedment depth	$h_{ef,max}$	[mm]	160	200	240	280	320	400	500	650
TENSION LOAD										
STEEL FAILURE, f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Characteristic resistance	$N_{Rk,s}$	[kN]	27,1	42,4	61,1	83,1	108,6	169,6	265,1	434,3
Partial safety factor	γ_{MS}	[-]	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40
STEEL FAILURE, f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Characteristic resistance	$N_{Rk,s}$	[kN]	28,9	45,2	65,0	88,5	115,6	180,6	282,3	462,4
Partial safety factor	γ_{MS}	[-]	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40
STEEL FAILURE, f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Characteristic resistance	$N_{Rk,s}$	[kN]	31,2	48,7	70,1	95,4	124,7	194,8	304,3	498,6
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; WORKING LIFE OF 50 YEARS										
NON-CRACKED CONCRETE C20/25 - HAMMER DRILLING										
Characteristic bond resistance (40°C/24°C)	$\tau_{Rk,ucr}$	[N/mm²]	11,0	12,0	12,0	10,0	12,0	12,0	9,5	8,5
Characteristic bond resistance (80°C/50°C)	$\tau_{Rk,ucr}$	[N/mm²]	10,0	11,0	11,0	9,0	11,0	11,0	8,5	7,5
NON-CRACKED CONCRETE C20/25 - DIAMOND CORE DRILLING										
Characteristic bond resistance (40°C/24°C)	$\tau_{Rk,ucr}$	[N/mm²]	9,5	11,0	10,0	10,0	10,5	11,0	9,0	8,0
Characteristic bond resistance (80°C/50°C)	$\tau_{Rk,ucr}$	[N/mm²]	8,5	10,0	9,0	9,0	9,0	10,0	8,0	7,0
CRACKED CONCRETE C20/25 - HAMMER DRILLING										
Characteristic bond resistance (40°C/24°C)	$\tau_{Rk,cr}$	[N/mm²]	5,5	5,0	5,5	5,5	5,0	5,0	5,4	4,0
Characteristic bond resistance (80°C/50°C)	$\tau_{Rk,cr}$	[N/mm²]	5,0	4,5	5,0	5,0	4,5	4,5	5,0	3,0
CRACKED CONCRETE C20/25 - DIAMOND CORE DRILLING										
Characteristic bond resistance (40°C/24°C)	$\tau_{Rk,cr}$	[N/mm²]	5,5	5,5	6,0	6,0	5,0	5,5	4,5	4,0
Characteristic bond resistance (80°C/50°C)	$\tau_{Rk,cr}$	[N/mm²]	5,0	5,0	5,5	5,5	4,5	5,0	4,0	4,0
FACTORS										
Increasing factors for concrete C30/37	Ψ_c	[-]	1,04	1,04	1,04	1,04	1,04	1,04	1,04	1,04
Increasing factors for concrete C40/50	Ψ_c	[-]	1,07	1,07	1,07	1,07	1,07	1,07	1,07	1,07
Increasing factors for concrete C50/60	Ψ_c	[-]	1,09	1,09	1,09	1,09	1,09	1,09	1,09	1,09
Sustained factor (40˚C / 24˚C)	ψ^0_{sus}	[-]	0,75	0,74	0,74	0,74	0,74	0,74	0,74	0,74
Sustained factor (80˚C / 50˚C)	ψ^0_{sus}	[-]	0,72	0,73	0,73	0,73	0,73	0,73	0,73	0,73
Installation safety factor	γ_{inst}	[-]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]
COMBINED PULL-OUT AND CONCRETE CONE FAILURE; WORKING LIFE OF 100 YEARS										
NON-CRACKED CONCRETE C20/25 - HAMMER DRILLING										
Characteristic bond resistance (40°C/24°C)	$\tau_{Rk,ucr}$	[N/mm²]	17,0	16,0	17,0	15,0	15,0	13,0	12,0	12,0
Characteristic bond resistance (80°C/50°C)	$\tau_{Rk,ucr}$	[N/mm²]	15,0	14,0	15,0	13,0	13,0	12,0	10,0	10,0
NON-CRACKED CONCRETE C20/25 - DIAMOND CORE DRILLING										
Characteristic bond resistance (40°C/24°C)	$\tau_{Rk,ucr}$	[N/mm²]	14,0	15,0	16,0	14,0	14,0	12,0	11,0	11,0
Characteristic bond resistance (80°C/50°C)	$\tau_{Rk,ucr}$	[N/mm²]	12,0	14,0	14,0	13,0	13,0	11,0	10,0	10,0
CRACKED CONCRETE C20/25 - HAMMER DRILLING										
Characteristic bond resistance (40°C/24°C)	$\tau_{Rk,cr}$	[N/mm²]	8,0	8,0	6,5	7,0	7,0	6,0	5,0	5,0
Characteristic bond resistance (80°C/50°C)	$\tau_{Rk,cr}$	[N/mm²]	6,5	7,0	6,0	6,0	6,0	5,0	4,0	4,0
CRACKED CONCRETE C20/25 - DIAMOND CORE DRILLING										
Characteristic bond resistance (40°C/24°C)	$\tau_{Rk,cr}$	[N/mm²]	5,5	7,0	8,0	7,0	7,0	6,0	4,0	4,0
Characteristic bond resistance (80°C/50°C)	$\tau_{Rk,cr}$	[N/mm²]	5,0	6,5	7,5	6,5	6,5	5,0	3,5	3,5
FACTORS										
Increasing factors for concrete C30/37	Ψ_c	[-]	1,04	1,04	1,04	1,04	1,04	1,04	1,04	1,04
Increasing factors for concrete C40/50	Ψ_c	[-]	1,07	1,07	1,07	1,07	1,07	1,07	1,07	1,07
Increasing factors for concrete C50/60	Ψ_c	[-]	1,09	1,09	1,09	1,09	1,09	1,09	1,09	1,09
Installation safety factor	γ_{inst}	[-]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]
CONCRETE CONE FAILURE										
Factor for uncracked concrete	$k_{ucr,N}$	[-]	11,0	11,0	11,0	11,0	11,0	11,0	11,0	11,0
Factor for cracked concrete	$k_{cr,N}$	[-]	7,7	7,7	7,7	7,7	7,7	7,7	7,7	7,7
Edge distance	$c_{cr,N}$	[mm]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
Spacing	$s_{cr,N}$	[mm]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]
Installation safety factor	γ_{inst}	[-]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]
CONCRETE SPLITTING FAILURE										
Edge distance	$c_{cr,sp}$	[mm]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]
Spacing	$s_{cr,sp}$	[mm]	[4]	[4]	[4]	[4]	[4]	[4]	[4]	[4]
Installation safety factor	γ_{inst}	[-]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]
SHEAR LOAD										
STEEL FAILURE, f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	13,6	21,2	30,5	41,6	54,3	84,8	132,5	217,1
Ductility factor	k_7	[-]	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Characteristic resistance with lever arm	$M^0_{Rk,s}$	[Nm]	32,6	63,6	109,9	174,6	260,6	508,9	994,0	2084,6
Partial safety factor	γ_{MS}	[-]	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50
STEEL FAILURE, f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	14,5	22,6	32,5	44,3	57,8	90,3	141,1	231,2
Ductility factor	k_7	[-]	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Characteristic resistance with lever arm	$M^0_{Rk,s}$	[Nm]	34,7	67,7	117,1	185,9	277,5	541,9	1058,4	2219,7
Partial safety factor	γ_{MS}	[-]	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50
STEEL FAILURE, f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										

R-KEX-II EPOXY BONDED CHEMICAL RESIN REBAR AS AN ANCHOR

Size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
Characteristic resistance without lever arm	$V_{Rk,s}$	[kN]	15,6	24,3	35,1	47,7	62,3	97,4	152,2	249,3
Ductility factor	k_7	[-]	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
Characteristic resistance with lever arm	$M^0_{Rk,s}$	[Nm]	26,0	52,0	92,0	233,0	454,0	786,0	1574,0	1574,0
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_8	[-]	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0
Installation safety factor	γ_{inst}	[-]	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
CONCRETE EDGE FAILURE										
Anchor diameter	d_{nom}	[mm]	8	10	12	14	16	20	25	32
Effective length of anchor	ℓ_f	[mm]	[6]	[6]	[6]	[6]	[6]	[6]	[7]	[7]
Installation safety factor	γ_{inst}	[-]	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0

[1] $c_{cr,N}=1,5 \cdot h_{ef}$

[2] $s_{cr,N}=3,0 \cdot h_{ef}$

[3] $c_{cr,sp}$= based on relevant ETA

[4] $s_{cr,sp}=2,0 \cdot c_{cr,sp}$

[5] $\gamma_{inst}=1,2$ (for use category I2)

[6] $l_f = \min (h_{ef}; 12 \cdot d_{nom})$

[7] $l_f = \min (h_{ef}; 8 \cdot d_{nom})$

Allowable values for resistance in case of Seismic performance category C1

Size			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø32
TENSION LOAD										
STEEL FAILURE, f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Characteristic resistance	$N_{Rk,s,seis,C1}$	[kN]	27,1	42,4	61,1	83,1	108,6	169,6	265,1	434,3
Partial safety factor	$\gamma_{MsN,seis,C1}$	[-]	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40
STEEL FAILURE, f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Characteristic resistance	$N_{Rk,s,seis,C1}$	[kN]	28,9	45,2	65,0	88,5	115,6	180,6	282,3	462,4
Partial safety factor	$\gamma_{MsN,seis,C1}$	[-]	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40
STEEL FAILURE, f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Characteristic resistance	$N_{Rk,s,seis,C1}$	[kN]	31,2	48,7	70,1	95,4	124,7	194,8	304,3	498,6
Partial safety factor	$\gamma_{MsN,seis,C1}$	[-]	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40
COMBINED PULL-OUT AND CONCRETE CONE FAILURE; WORKING LIFE OF 50 YEARS										
Characteristic bond resistance (40˚C / 24˚C)	$\tau_{Rk,seis,C1}$	[N/mm²]	4,0	4,5	5,0	5,0	5,0	5,0	5,0	3,0
Characteristic bond resistance (80˚C / 50˚C)	$\tau_{Rk,seis,C1}$	[N/mm²]	3,5	4,0	4,5	4,5	4,5	4,5	4,5	2,5
COMBINED PULL-OUT AND CONCRETE CONE FAILURE; WORKING LIFE OF 100 YEARS										
Characteristic bond resistance (40˚C / 24˚C)	$\tau_{Rk,seis,C1}$	[N/mm²]	3,5	4,5	5,0	5,0	5,0	3,5	5,0	3,0
Characteristic bond resistance (80˚C / 50˚C)	$\tau_{Rk,seis,C1}$	[N/mm²]	3,5	4,0	4,5	4,5	4,5	4,0	4,5	2,5
Installation safety factor	γ_{inst}	[-]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]	1,2[5]
SHEAR LOAD										
STEEL FAILURE, f_{uk} = 540 (e.g. 500 B acc. to BS 4449; B 500 B acc. to SS 560)										
Characteristic resistance without lever arm	$V_{Rk,s,seis,C1}$	[kN]	9,5	14,8	21,4	29,1	38,0	59,4	92,8	152,0
Partial safety factor	$\gamma_{MsV,seis,C1}$	[-]	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50
STEEL FAILURE, f_{uk} = 575 (e.g. B 500 SP acc. to EC2)										
Characteristic resistance without lever arm	$V_{Rk,s,seis,C1}$	[kN]	10,1	15,8	22,8	31,0	40,5	63,2	98,8	161,9
Partial safety factor	$\gamma_{MsV,seis,C1}$	[-]	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50
STEEL FAILURE, f_{uk} = 620 (e.g. G-60 acc. to ASTM 615)										
Characteristic resistance without lever arm	$V_{Rk,s,seis,C1}$	[kN]	10,9	17,0	24,5	33,4	43,6	68,2	106,5	174,5
Partial safety factor	$\gamma_{MsV,seis,C1}$	[-]	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50

[5] $\gamma_{inst}=1,2$ (for use category I2)

LOGISTICAL DATA

SKU	Base-sales unit	Unit pack	Bulk pack	Pallet	Single Package - Gross Weight	Bulk Package - Gross Weight	Palette - Gross Weight	Barcode
R-KEX-II-385	pcs.	10.0	10.0	560.0	6.7	6.7	389.0	5906675028538
R-KEX-II-600	pcs.	7.0	7.0	588.0	7.0	7.0	590.3	5906675293721

RELATED PRODUCTS

SAFETY	Protective gloves for power tools **R-PGL** 			
DRILLING	Rotary Hammer Drill SDS plus; 850W; 26mm; 2.5J **R-PRH-26850** 	Cordless Hammer 18V SDS plus **R-PRH18** 	Drill bits Aggressor SDS plus **RT-SDSA** 	Drill bits Rebardrill SDS plus **RT-SDSR** 
CLEANING	Blow Pump **R-BLOWPUMP** 	Steel wire brushes for cleaning holes **R-BRUSH-TC** 	Blow nozzle for cleaning holes **R-NOZ-ADAPTER** 	Extension hose for the applications **R-NOZ-EXT** 
DOZING	Manual gun for bonded anchors in cartridge **R-GUN-MULTI** 	Extension hose for the applications **R-NOZ-EXT** 	Piston plug **R-NOZ-P-16-26** 	RawlDispenser for R-KEX-II **R-PCG18-SBS600-XS** 
ANCHORING	Hammer **RT-HAM-0500** 			