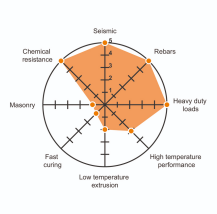
Technical Sheet

KEM EP

Premium Epoxy High Strength Anchoring Adhesive with Seismic Certification

KEM EP is a high performance epoxy anchoring adhesive for heavy-duty structural fixings in seismic areas.
KEM EP provides excellent adhesive properties and low shrinkage, suitable for use with smooth/diamond cored holes.
Working temperature: from -40 up to +72°C short period and from -40 up to +50°C long period.





Features

Material

Epoxy

Applications

Applications

- Steel constructions
- Wood to concrete structural fixings
- Industrial construction
- Steel and metal construction (railings, brackets, etc.)
- Anchorages for gates and machines
- Large post-installed rebar connections

Suitable for

- For cracked and uncracked concrete with threaded rods and rebar
- Diamond drilled holes

Suitable base materials:

- Concrete
- Solid brick
- Honeycomb
- Cell like clay brick
- Light weight honeycomb brick
- Hollow dense aggregate block
- Hollow light aggregate block
- Aerated concrete (partially suitable)
- Solid stone[1)]
- Wood

1) For application on natural stone or marble, carry out test and wait 24/48 hours for any reactions

For installation instructions and information please refer to technical documents

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Technical Data

KEM EP

Reference	Chemical fixings dimensions				
	Info product				
	Title	Color	Content[ml]	Storage months	Qty[pcs]
9340200000300	KEM EP 934	Grey	585	24.0	12

Spacing, edge distance and member thickness - Concrete

Reference	Chemical fixings Installation data				
	Spacing, edge distance and member thickness				
	BFK embedment depths[kN]				
	Characteristic spacing - scr,N[mm]	Min. spacing - smin[mm]	Characteristic edge distance - ccr,N[mm]	Min. edge distance - cmin[mm]	Min. member thickness - hmin[mm]
KEM EP + M8	240	40	120	35	110
KEM EP + M10	270	50	135	40	120
KEM EP + M12	330	60	165	45	140
KEM EP + M16	380	75	190	50	161
KEM EP + M20	510	95	255	60	214
KEM EP + M24	630	115	315	65	266
KEM EP + M27	720	125	360	75	300
KEM EP + M30	810	140	405	80	340

Design resistance - Tension - NRd [kN] – Carbon steel 5.8

Reference	Chemical fixings Installation data	Chemical fixings Loads	
	Embedment depth[mm]	Design resistance – Carbon steel 5.8[kN]	
	hef	Tension - NRd (1)[kN]	
		Cracked concrete	Non-cracked concrete
		C20/25	C20/25
KEM EP + M8	80	9.4	12.2
KEM EP + M10	90	13.2	19.3
KEM EP + M12	110	23.5	28.1
KEM EP + M16	125	32.1	45.8
KEM EP + M20	170	50.9	72.7
KEM EP + M24	210	69.9	99.8
KEM EP + M27	240	85.4	121.9
KEM EP + M30	270	101.9	145.5

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Design resistance - Shear - VRd [kN]

Reference	Chemical fixings Installation data	Chemical fixings Loads		
	Embedment depth[mm]	Design resistance[kN]		
	hef	Shear - VRd (1-2)[kN]		
		Static and quasi-static loads[kN]		
		Carbon steel 5.8	Carbon steel 8.8	Stainless steel A4 70
KEM EP + M8	80	8.8	11.8	8.3
KEM EP + M10	90	13.9	18.6	13.1
KEM EP + M12	110	20.2	26.9	19
KEM EP + M16	125	37.7	50.2	35.4
KEM EP + M20	170	58.8	78.4	55.3
KEM EP + M24	210	84.7	113	79.7
KEM EP + M27	240	110.1	146.9	48.2
KEM EP + M30	270	134.6	179.5	58.9

Design resistance seismic C1 - Tension - NRd,eq,c1 [kN] – Carbon steel 5.8

Reference	Chemical fixings Installation data	Chemical fixings Loads
	Embedment depth[mm]	Design resistance[kN]
	hef	Seismic C1
		Tension - NRd,eq,c1[kN]
		C20/25
KEM EP + M8	80	9.4
KEM EP + M10	90	13.2
KEM EP + M12	110	22.5
KEM EP + M16	125	27.3
KEM EP + M20	170	43.3
KEM EP + M24	210	59.4
KEM EP + M27	240	72.6
KEM EP + M30	270	86.6

Design resistance seismic C1 - Shear - with seismic washer - VRd,eq,c1 [kN]

Reference	Chemical fixings Installation data	Chemical fixings Loads		
	Embedment depth[mm]	Design resistance with seismic washer (αgap = 1,0)		
	hef	Seismic C1[kN]		
		Shear - VRd,eq,c1		
		Carbon steel 5.8	Carbon steel 8.8	Stainless steel A4 70
KEM EP + M8	80	6.1	8.2	5.8
KEM EP + M10	90	9.7	13	9.1
KEM EP + M12	110	14.2	18.8	13.2
KEM EP + M16	125	26.4	35.2	24.7
KEM EP + M20	170	41.2	54.9	38.5
KEM EP + M24	210	59.3	79.1	55.4
KEM EP + M27	240	77.1	102.8	33.8
KEM EP + M30	270	94.2	125.7	41.3

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Design resistance seismic C1 - Shear - without seismic washer - VRd,eq,c1 [kN]

Reference	Chemical fixings Installation data	Chemical fixings Loads		
	Embedment depth[mm]	Design resistance without seismic washer (αgap = 0,5)		
	hef	Seismic C1		
		Shear - VRd,eq,c1		
		Carbon steel 5.8	Carbon steel 8.8	Stainless steel A4 70
KEM EP + M8	80	3.1	4.1	2.9
KEM EP + M10	90	4.9	6.5	4.6
KEM EP + M12	110	7.1	9.4	6.6
KEM EP + M16	125	13.2	17.6	12.4
KEM EP + M20	170	20.6	27.5	19.3
KEM EP + M24	210	29.7	39.6	27.7
KEM EP + M27	240	38.6	51.4	16.9
KEM EP + M30	270	47.1	62.9	20.7

Design resistance seismic C2 - Tension - NRd,eq,c2 [kN] – Carbon steel 8.8 /stainless steel 70

Reference	Chemical fixings Installation data	Chemical fixings Loads
	Embedment depth[mm]	Design resistance (8.8 or A4 70)[kN]
	hef	Seismic C2
		Tension - NRd,eq,c2
		C20/25
KEM EP + M12	110	16
KEM EP + M16	125	20.1
KEM EP + M20	170	35.6
KEM EP + M24	210	53.8

Design resistance seismic C2 - Shear - with seismic washer - VRd,eq,c2 [kN]

Reference	Chemical fixings Installation data	Chemical fixings Loads	
	Embedment depth[mm]	Design resistance with seismic washer (αgap = 1,0)	
	hef	Seismic C2	
		Shear - VRd,eq,c2	
		Carbon steel 8.8	Stainless steel A4 70
KEM EP + M12	110	18.9	13.2
KEM EP + M16	125	34.2	24.7
KEM EP + M20	170	54.9	38.5
KEM EP + M24	210	79.1	55.4

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Design resistance seismic C2 - Shear - without seismic washer - VRd,eq,c2 [kN]

Reference	Chemical fixings Installation data	Chemical fixings Loads	
	Embedment depth[mm]	Design resistance without seismic washer (αgap = 0,5)	
	hef	Seismic C2	
		Shear - VRd,eq,c2	
		Carbon steel 8.8	Stainless steel A4 70
KEM EP + M12	110	9.5	6.6
KEM EP + M16	125	17.1	12.4
KEM EP + M20	170	27.5	19.3
KEM EP + M24	210	39.6	27.7

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Installation

Installation parameters - Concrete

Reference	Chemical fixings Installation data					
	Embedment depth[mm]	Installation parameters				
	hef	Ø drilling diameter[mm]	Depth of the drilling hole[mm]	Ø max. fixture hole[mm]	Ouverture de clé sur plat[kN]	Installation Torque[Nm]
KEM EP + M8	80	10	80	9	13	10
KEM EP + M10	90	12	90	12	17	20
KEM EP + M12	110	14	110	14	19	40
KEM EP + M16	125	18	125	18	24	60
KEM EP + M20	170	22	170	22	30	100
KEM EP + M24	210	28	210	26	36	170
KEM EP + M27	240	30	240	30	41	250
KEM EP + M30	270	35	270	33	46	300

Notes to the load charts of threaded rods on concrete:
1kN ≈ 100 kgf
(1) Single anchor without influence from anchor spacing and edge distances in concrete C20/25
(2) Design Method acc. to EN 1992-4:2018 (γc= 1,5; ψsus= 1)
(3) The design loads Nrd and Vrd derive from the characteristic loads on the ETA certification and are inclusive of the partial safety factors ym
(4) The recommended loads N and V derive from the characteristic loads on the ETA certification and are inclusive of the partial safety factors γf=1.4 and γm
(5) Values for cracked concrete are valid for 50 years working life, for 100 years please refer to Technical Sheet or ETA certificate
(6) Values valid for temperature 24°C on the long term and up to 40°C on the short term. For higher temperatures see the certification ETA
(7) M27 and M30 stainless steel threaded rods class A4 50
(8) Value of pure shear with distance from the edge C ≥ 10xhnom
(9) Seismic resistances include the factors αeq = 0,85 (single anchor under tension in the case of concrete cone failure)
(10) Seismic C2 tension resistances refer to threaded rods min class 8.8 for carbon steel and 70 for stainless steel
(11) Diamond coring covered by certification only on uncracked concrete
(12) For all other conditions and more detailed information please refer to Technical Sheet and ETA certifications

Technical Sheet

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