

Injection System VME



Threaded Stud V-A



Threaded Stud VMU-A



Threaded Stud VM-A
1 meter length, to be cut to the required length



Reinforcement Bars BSt 500 S



Cartridge VME 385
Side-by-side cartridge
Content: 385ml
With big mixer VM-XL and reducers / extension tube for drill holes from 12mm diameter



Cartridge VME 585
Side-by-side cartridge
Content: 585ml
With big mixer VM-XL and reducers / extension tube for drill holes from 12mm diameter



Cartridge VME 1400
Side-by-side cartridge
Content: 1400ml
With big mixer VM-XL and reducers / extension tube for drill holes from 12mm diameter

Range of loading: 2,4 - 128 kN

Concrete quality: C20/25 - C50/60

Material: Steel zinc plated, hot dip galvanized, Stainless steel A4/316, Stainless steel HCR, BSt 500 S

Description

The Injection System VME is an approved system for fixings of threaded studs or reinforcement bars in cracked and non-cracked concrete. In the cartridge, the epoxy resin and the hardener are separated. By means of the dispenser gun VM-P the components are pushed through the mixer nozzle, activated and injected into the drill hole. The Injection System VME can be used with the threaded Studs V-A, VMU-A and also the internally threaded sleeves VMU-IG. It can also be used with VM-A studs, sold by meter to be cut to the required length or with standard reinforcement bars.



Applications

Fixing of rack systems, railings, steel structures, noise barriers, stairs and machines.
Subsequent closure of wall and ceiling openings, reinforcement of existing concrete structures, installation of reinforcement for the connection of the following concrete components (if the installation of reinforcement was missed or not possible because of the working process), connection of steel structures.

Advantages:

- approved in cracked and non-cracked concrete
- approved with threaded studs, internally threaded sleeves and reinforcement bars
- approved with standard threaded studs (test certificate required)
- approved to use under seismic action according to the performance category C1 and C2 (M12-M16)
- also approved for post-installed rebar connections according to ETA-07/0299 / Z-21.8-1872
- approved for diamond coring (ETA-13/0773) in non-cracked concrete
- ICC Evaluation Service listing for cracked and non-cracked concrete
- variable anchorage depth for less drilling efforts
- long curing times for an economic working process with serial installations and/or large drill holes
- suitable for dry and wet concrete and in water-filled drill holes
- styrene-free
- fire test report

Injection Cartridge VME



- Very high loads
- No shrinkage

Description	Ref. No.	Content ml	Content of master box pcs	Weight per master box kg	Weight per piece kg
Cartridge VME 385	28255501	385	12	8,5	0,70
Cartridge VME 585	28255601	585	12	12,09	0,98
Cartridge VME 1400	28255701	1400	5	12,34	2,40
Static mixer VM-XL ¹⁾	28305201	-	10	0,28	0,03
Static mixer VM-X ²⁾	28305111	-	12	0,12	0,01

One static mixer VM-XL as well as one screw-on cap comes with each cartridge.
¹⁾ Mixer VM-XL comes with a reducers / extension tube. Suitable for drill holes from 12mm diameter.
²⁾ Static mixer VM-X only required for drill hole diameter of 10mm (special accessories).

Chemical Anchors

Post-installed Rebar Connections with Injection System VME



Cartridge VME 385
Side-by-side cartridge
Content: 385ml
With big mixer VM-XL and reducers / extension tube for drill holes from 12mm diameter



Cartridge VME 585
Side-by-side cartridge
Content: 585ml
With big mixer VM-XL and reducers / extension tube for drill holes from 12mm diameter



Cartridge VME 1400
Side-by-side cartridge
Content: 1400ml
With big mixer VM-XL and reducers / extension tube for drill holes from 12mm diameter

Diameter of Rebar: 8 -28 mm
Range of Concrete Quality: C12/15 - C50/60
Material: Reinforcement Bars B 500 B

Description

The Injection System VME for post-installed rebar connections has a European Technical Assessment (ETA-07/0299). Reinforcement bars from 8 to 28 mm diameter can be fastened in regular concrete from strength class C12/15 to C50/60. As usual the reinforcement can be designed in accordance with EN 1992-1-1:2004 (EC 2). Using the Tension Anchor ZA in sizes M12, M16 and M20 steel structures can be fixed at minimum edge distance. The hole cleaning procedure for the MKT Injection System VME is much easier when hammer drilling or air drilling. Just blow the holes out using compressed air and the specific MKT cleaning tools. The reduced cleaning results in quicker installation saving labor costs. Installer training is provided by MKT and a certificate will be issued by an independent institute, which is recognized by the DIBt.

Applications

Subsequent closing of wall- and ceiling openings, reinforcing existing concrete structures, installation of reinforcement to connect successive structural members, e.g. if reinforcement has been left out or could not be cast in due to the construction sequence, connection of steel structures.



Injection Cartridge VME



- ➔ Very high loads
- ➔ No shrinkage

Description	Ref. No.	Content ml	Content of master box pcs	Weight per master box kg	Weight per piece kg
Cartridge VME 385	28255501	385	12	8,5	0,70
Cartridge VME 585	28255601	585	12	12,09	0,98
Cartridge VME 1400	28255701	1400	5	12,34	2,40
Static mixer VM-XL	28305201	-	10	0,28	0,03

One static mixer VM-XL including a reducers/extension tube as well as one screw-on cap comes with each cartridge.



... a solid connection

Threaded studs for use in **cracked and non-cracked concrete**

Threaded Stud VMU-A

Steel, zinc plated 5.8
Dimensions see page 107



- For use in structures subject to dry internal conditions
- Steel, zinc plated 8.8 on demand

Threaded Stud VMU-A A4

Stainless steel A4
Dimensions see page 107



- For use in structures subject to dry internal conditions or external atmospheric exposure
- Stainless steel HCR on demand

Internally Threaded Sleeve VMU-IG

Steel, zinc plated 5.8
Dimensions see page 108



- For use in structures subject to dry internal conditions
- With internal thread

Internally Threaded Sleeve VMU-IG A4

Stainless steel A4
Dimensions see page 108



- For use in structures subject to dry internal conditions or external atmospheric exposure
- With internal thread

Threaded Stud V-A

Steel, zinc plated 5.8
Dimensions see page 144



- For use in structures subject to dry internal conditions

Threaded Stud V-A A4

Stainless steel A4
Dimensions see page 144

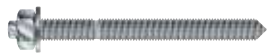


- For use in structures subject to dry internal conditions or external atmospheric exposure

NEW

Threaded Stud V-A 8.8

Steel, zinc plated 8.8
Dimensions see page 144



- For use in structures subject to dry internal conditions

Threaded Stud V-A HCR

Stainless steel HCR
Dimensions see page 144



- For use in particularly corrosive environments
- High corrosion resistant steel 1.4529 (HCR)

Threaded Stud V-A fvz

Steel, hot dip galvanized 5.8
Dimensions see page 144



- For use in structures subject to dry internal conditions

Threaded stud VM-A

Stainless steel A4
Dimensions see page 108



- For use in structures subject to dry internal conditions or external atmospheric exposure
- Threaded studs, of 1 meter length, to be cut to the required length
- Comes with manufacturer's certificate (3.1 EN 10204) in every package

Threaded stud VM-A

Steel 5.8, zinc plated
Dimensions see page 108



- For use in structures subject to dry internal conditions
- Threaded studs, of 1 meter length, to be cut to the required length
- Comes with manufacturer's certificate (3.1 EN 10204) in every package

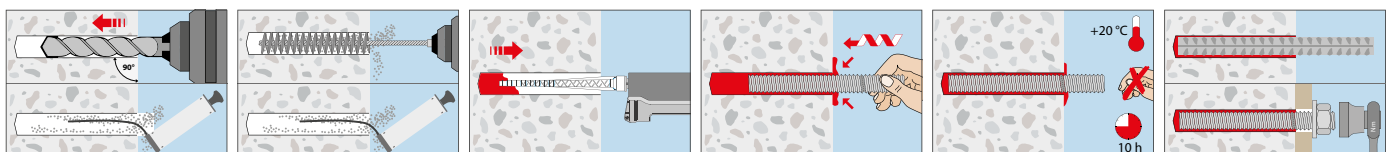
Threaded stud VM-A

Steel 8.8, zinc plated
Dimensions see page 108



- For use in structures subject to dry internal conditions
- Threaded studs, of 1 meter length, to be cut to the required length
- Comes with manufacturer's certificate (3.1 EN 10204) in every package

Installation





Extract from Permissible Service Conditions of ETA-09/0350.

Approved loads for single anchor without influence of spacing and edge distance in dry or wet concrete for temperature range I to -40°C to +24°C/+40°C¹⁾ and for temperature range III -40°C to +43°C/+72°C (For temperature range II -40°C to +43°C/60°C and loads for threaded studs 4.6/4.8/5.6/ see ETA-09/350). Total safety factor as per ETAG 001 included (γ_M and γ_P). Load capacities under fire exposure see page 168.

Loads and performance data

Injection System VME, threaded stud steel grade 5.8				M8	M10	M12	M16	M20	M24	M27	M30	
Range of anchorage depths	$h_{ef,min} - h_{ef,max}$	[mm]		60 - 96	60 - 120	70 - 144	80 - 192	90 - 240	96 - 288	108 - 324	120 - 360	
Approved loads, tension for $h_{ef,min} - h_{ef,max}$ cracked concrete												
Range of temperature	24°C/40°C ¹⁾	C20/25	appr. N	[kN]	4,2-6,7	5,2-10,5	7,9-16,2	10,2-24,9	10,5-30,8	11,5-40,6	13,7-51,4	16,1-63,5
	43°C/72°C ¹⁾	C20/25	appr. N	[kN]	2,4-3,8	3,0-6,0	4,2-8,6	5,6-13,4	5,8-15,4	7,4-22,2	9,3-28,0	11,5-34,6
non-cracked concrete												
Range of temperature	24°C/40°C ¹⁾	C20/25	appr. N	[kN]	8,6	9,3-13,8	11,7-20,0	14,3-37,1	14,7-58,1	16,2-83,8	19,3-100,2	22,6-117,3
	43°C/72°C ¹⁾	C20/25	appr. N	[kN]	5,1-8,1	6,4-12,7	8,4-17,2	12,0-28,7	13,5-35,9	16,2-51,7	19,3-60,8	22,6-75,0
Approved loads, shear for $h_{ef,min} - h_{ef,max}$ cracked concrete												
Range of temperature	24°C/40°C ¹⁾	C20/25	appr. V	[kN]	5,1	8,6	12,0	22,3	29,3-34,9	32,3-50,3	38,5-65,7	45,1-80,0
	43°C/72°C ¹⁾	C20/25	appr. V	[kN]	5,1	7,2-8,6	10,1-12,0	13,4-22,3	16,2-34,9	20,7-50,3	26,2-65,7	32,3-80,0
non-cracked concrete												
Range of temperature	24°C/40°C ¹⁾	C20/25	appr. V	[kN]	5,1	8,6	12,0	22,3	34,9	45,2-50,3	54,0-65,7	63,2-80,0
	43°C/72°C ¹⁾	C20/25	appr. V	[kN]	5,1	8,6	12,0	22,3	34,9	45,2-50,3	54,0-65,7	63,2-80,0

Injection System VME, threaded stud steel grade 8.8				M8	M10	M12	M16	M20	M24	M27	M30	
Range of anchorage depths	$h_{ef,min} - h_{ef,max}$	[mm]		60 - 96	60 - 120	70 - 144	80 - 192	90 - 240	96 - 288	108 - 324	120 - 360	
Approved loads, tension for $h_{ef,min} - h_{ef,max}$ cracked concrete												
Range of temperature	24°C/40°C ¹⁾	C20/25	appr. N	[kN]	4,2-6,7	5,2-10,5	7,9-16,2	10,2-24,9	10,5-30,8	11,5-40,6	13,7-51,4	16,1-63,5
	43°C/72°C ¹⁾	C20/25	appr. N	[kN]	2,4-3,8	3,0-6,0	4,2-8,6	5,6-13,4	5,8-15,4	7,4-22,2	9,3-28,0	11,5-34,6
non-cracked concrete												
Range of temperature	24°C/40°C ¹⁾	C20/25	appr. N	[kN]	9,0-13,8	9,3-21,9	11,7-31,9	14,3-53,3	14,7-63,9	16,2-84,0	19,3-100,2	22,6-117,3
	43°C/72°C ¹⁾	C20/25	appr. N	[kN]	5,1-8,1	6,4-12,7	8,4-17,2	12-28,7	13,5-35,9	16,2-51,7	19,3-60,8	22,6-75,0
Approved loads, shear for $h_{ef,min} - h_{ef,max}$ cracked concrete												
Range of temperature	24°C/40°C ¹⁾	C20/25	appr. V	[kN]	8,6	12,6-13,1	18,8-19,4	24,5-36,0	29,3-56,0	32,3-80,6	38,5-105,1	45,1-128,0
	43°C/72°C ¹⁾	C20/25	appr. V	[kN]	5,7-8,6	7,2-13,1	10,1-19,4	13,4-32,2	16,2-43,1	20,7-62,0	26,2-78,5	32,3-96,9
non-cracked concrete												
Range of temperature	24°C/40°C ¹⁾	C20/25	appr. V	[kN]	8,6	13,1	19,4	34,4-36,0	41,1-56,0	45,2-80,6	54,0-105,1	63,2-128,0
	43°C/72°C ¹⁾	C20/25	appr. V	[kN]	8,6	13,1	19,4	28,7-36,0	37,7-56,0	45,2-80,6	54,0-105,1	63,2-128,0

Injection System VME, threaded stud stainless steel A4-70²⁾, HCR-70²⁾				M8	M10	M12	M16	M20	M24	M27	M30	
Range of anchorage depths	$h_{ef,min} - h_{ef,max}$	[mm]		60 - 96	60 - 120	70 - 144	80 - 192	90 - 240	96 - 288	108 - 324	120 - 360	
Approved loads, tension for $h_{ef,min} - h_{ef,max}$ cracked concrete												
Range of temperature	24°C/40°C ¹⁾	C20/25	appr. N	[kN]	4,2-6,7	5,2-10,5	7,9-16,2	10,2-24,9	10,5-30,8	11,5-40,6	13,7-51,4	16,1-63,5
	43°C/72°C ¹⁾	C20/25	appr. N	[kN]	2,4-3,8	3,0-6,0	4,2-8,6	5,6-13,4	5,8-15,4	7,4-22,2	9,3-28,0	11,5-34,6
non-cracked concrete												
Range of temperature	24°C/40°C ¹⁾	C20/25	appr. N	[kN]	9,0-9,9	9,3-15,7	11,7-22,5	14,3-42,0	14,7-63,9	16,2-84,0	19,3-57,4	22,6-70,2
	43°C/72°C ¹⁾	C20/25	appr. N	[kN]	5,1-8,1	6,4-12,7	8,4-17,2	12,0-28,7	13,5-35,9	16,2-51,7	19,3-57,4	22,6-70,2
Approved loads, shear for $h_{ef,min} - h_{ef,max}$ cracked concrete												
Range of temperature	24°C/40°C ¹⁾	C20/25	appr. V	[kN]	6,0	9,2	13,7	24,5-25,2	29,3-39,4	32,2-56,8	34,5	42,0
	43°C/72°C ¹⁾	C20/25	appr. V	[kN]	5,7-6,0	7,2-9,2	10,1-13,7	13,4-25,2	16,2-39,4	20,7-56,8	26,2-34,5	32,3-42,0
non-cracked concrete												
Range of temperature	24°C/40°C ¹⁾	C20/25	appr. V	[kN]	6,0	9,2	13,7	25,2	39,4	45,2-56,8	34,5	42,0
	43°C/72°C ¹⁾	C20/25	appr. V	[kN]	6,0	9,2	13,7	25,2	37,7-39,4	45,2-56,8	34,5	42,0

Spacing and edge distance

Min. thickness of concrete slab for $h_{ef,min} - h_{ef,max}$	h_{min}	[mm]	100-126	100-150	100-174	116-228	138-288	152-344	172-388	190-430
Minimum spacing	s_{min}	[mm]	40	50	60	80	100	120	135	150
Minimum edge distance	c_{min}	[mm]	40	50	60	80	100	120	135	150

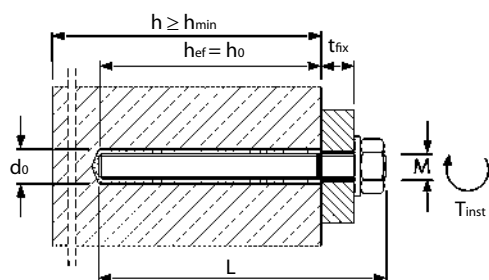
Installation parameters

Drill hole diameter	d_o	[mm]	10	12	14	18	24	28	32	35
Clearance hole in the fixture	d_f	[mm]	9	12	14	18	22	26	30	33
Range of drill hole depth for $h_{ef,min} - h_{ef,max}$	h_o	[mm]	60 - 96	60 - 120	70 - 144	80 - 192	90 - 240	96 - 288	108 - 324	120 - 360
Installation torque	$T_{inst \leq}$	[Nm]	10	20	40	80	120	160	180	200

¹⁾ Max long term temperature / max short term temperature
Higher concrete strength may lead to higher approved loads.

²⁾M27, M30: A4-50, HCR-50

For anchor designing an easy to operate CD-ROM is available on request or can be downloaded at www.mkt.de.



Curing time Injection Adhesive VME

→ Cartridge temperature when installing min. +5°C - +40°C

Temperature (°C) of the base material	maximum working time	minimum curing time	
		dry base material	wet base material
+5°C to +9°C	120 min	50 h	100 h
+10°C to +19°C	90 min	30 h	60 h
+20°C to +29°C	30 min	10 h	20 h
+30°C to +39°C	20 min	6 h	12 h
40°C	12 min	4 h	8 h


Extract from Permissible Service Conditions of ETA-09/0350.

Approved loads for single anchor without influence of spacing and edge distance in dry or wet concrete for temperature range I to -40°C to +24°C/+40°C¹⁾ and for temperature range III -40°C to +43°C/+72°C¹⁾ (For temperature range II -40°C to +43°C/60°C¹⁾ see ETA-09/350). Total safety factor as per ETAG 001 included (γ_M and γ_F).

Loads and performance data
Internally threaded sleeves

				IG M6 x 80	IG M6 x 90	IG M8 x 80	IG M8 x 100	IG M10 x 80	IG M10 x 100	IG M12 x 125	IG M16 x 170	IG M20 x 200
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Effective anchorage depth h_{ef}	[mm]			80	90	80	100	80	100	125	170	200
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Injection System VME, Internally threaded sleeve VMU-IG, Steel 5.8

Approved loads, tension for h_{ef} cracked concrete

Temperature range	24°C/40°C ¹⁾	C20/25	appr. N	[kN]	4,8	4,8	8,6	8,6	10,2	13,0	16,0	24,0	34,6
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	43°C/72°C ¹⁾	C20/25	appr. N	[kN]	4,0	4,5	4,8	6,0	5,6	7,0	8,0	13,1	19,2
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Approved loads, tension for h_{ef} non-cracked concrete

Temperature range	24°C/40°C ¹⁾	C20/25	appr. N	[kN]	4,8	4,8	8,6	8,6	13,8	13,8	20,0	37,6	48,6
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	43°C/72°C ¹⁾	C20/25	appr. N	[kN]	4,8	4,8	8,6	8,6	12,0	13,8	18,7	30,5	41,7
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Approved loads, tension for h_{ef} cracked concrete

Temperature range	24°C/40°C ¹⁾	C20/25	appr. V	[kN]	2,9	2,9	5,1	5,1	8,6	8,6	12,0	22,3	34,9
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	43°C/72°C ¹⁾	C20/25	appr. V	[kN]	2,9	2,9	5,1	5,1	8,6	8,6	12,0	22,3	34,9
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Approved loads, tension for h_{ef} non-cracked concrete

Temperature range	24°C/40°C ¹⁾	C20/25	appr. V	[kN]	2,9	2,9	5,1	5,1	8,6	8,6	12,0	22,3	34,9
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	43°C/72°C ¹⁾	C20/25	appr. V	[kN]	2,9	2,9	5,1	5,1	8,6	8,6	12,0	22,3	34,9
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Injection System VME, Internally threaded sleeve VMU-IG, Stainless steel A4-70²⁾, HCR-70²⁾

Approved loads, tension for h_{ef} cracked concrete

Temperature range	24°C/40°C ¹⁾	C20/25	appr. N	[kN]	5,3	5,3	9,0	9,9	10,2	13,0	16,0	24,0	31,0
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	43°C/72°C ¹⁾	C20/25	appr. N	[kN]	4,0	4,5	4,8	6,0	5,6	7,0	8,0	13,1	19,2
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Approved loads, tension for h_{ef} non-cracked concrete

Temperature range	24°C/40°C ¹⁾	C20/25	appr. N	[kN]	5,3	5,3	9,9	9,9	14,3	15,7	22,5	38,1	31,0
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	43°C/72°C ¹⁾	C20/25	appr. N	[kN]	5,3	5,3	9,6	9,9	12,0	15,0	18,7	30,5	31,0
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Approved loads, tension for h_{ef} cracked concrete

Temperature range	24°C/40°C ¹⁾	C20/25	appr. V	[kN]	3,2	3,2	6,0	6,0	9,2	9,2	13,7	25,2	18,6
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	43°C/72°C ¹⁾	C20/25	appr. V	[kN]	3,2	3,2	6,0	6,0	9,2	9,2	13,7	25,2	18,6
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Approved loads, tension for h_{ef} non-cracked concrete

Temperature range	24°C/40°C ¹⁾	C20/25	appr. V	[kN]	3,2	3,2	6,0	6,0	9,2	9,2	13,7	25,2	18,6
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	43°C/72°C ¹⁾	C20/25	appr. V	[kN]	3,2	3,2	6,0	6,0	9,2	9,2	13,7	25,2	18,6
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Spacing and edge distance

Minimum thickness of concrete slab for h_{ef}	h_{min}	[mm]		110	120	110	130	116	136	169	226	270
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Minimum spacing	s_{min}	[mm]		50	50	60	60	80	80	100	120	150
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Minimum edge distance	c_{min}	[mm]		50	50	60	60	80	80	100	120	150
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Installation parameters

Diameter of drill hole	d_o	[mm]		12	12	14	14	18	18	24	28	35
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Clearance hole in the fi ture	$d_f \leq$	[mm]		7	7	9	9	12	12	14	18	22
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Range of drill hole depth for h_{ef}	h_o	[mm]		80	90	80	100	80	100	125	170	200
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Installation torque	$T_{inst} \leq$	[Nm]		10	10	10	10	20	20	40	60	100
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Amount of adhesive per drill hole	[ml]			6,6	7,4	7,9	9,9	10,9	13,6	33,4	54,9	97,4
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Injection System VME, reinforcement bars B 500 B

Range of anchorage depths	$h_{ef,min} - h_{ef,max}$	[mm]		Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø28	Ø32
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					60 - 96	60 - 120	70 - 144	75 - 168	80 - 192	90 - 240	100 - 300	112 - 336	128 - 384
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Approved loads, tension for $h_{ef,min} - h_{ef,max}$ cracked concrete

Range of temperature	24°C/40°C ¹⁾	C20/25	appr. N	[kN]	4,2-6,7	5,2-10,5	7,9-16,2	9,2-20,5	10,2-24,9	10,5-30,8	12,2-44,1	14,5-55,3	17,7-72,2
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	43°C/72°C ¹⁾	C20/25	appr. N	[kN]	2,4-3,8	3,0-6,0	4,2-8,6	4,6-10,3	5,6-13,4	5,8-15,4	8,0-24,0	10,1-30,2	13,1-39,4
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Approved loads, tension for $h_{ef,min} - h_{ef,max}$ non-cracked concrete

Range of temperature	24°C/40°C ¹⁾	C20/25	appr. N	[kN]	8,4-13,4	9,3-20,9	11,7-28,0	13,0-38,1	14,3-46,0	14,7-61,5	17,2-88,2	20,4-105,8	24,9-129,3
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	43°C/72°C ¹⁾	C20/25	appr. N	[kN]	4,5-7,2	5,6-11,2	7,9-16,2	9,2-20,5	11,2-26,8	12,5-33,3	16,0-48,1	20,1-60,3	24,9-78,8
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Approved loads, shear for $h_{ef,min} - h_{ef,max}$ cracked concrete

Range of temperature	24°C/40°C ¹⁾	C20/25	appr. V	[kN]	6,5	10,1	14,5	19,8	24,5-25,9	29,3-40,4	34,3-63,1	40,6-79,2	49,7-103,4
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	43°C/72°C ¹⁾	C20/25	appr. V	[kN]	5,7-6,5	7,2-10,1	10,1-14,5	11,0-19,8	13,4-25,9	16,2-40,4	22,4-63,1	28,1-79,2	36,8-103,4
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Approved loads, shear for $h_{ef,min} - h_{ef,max}$ non-cracked concrete

Range of temperature	24°C/40°C ¹⁾	C20/25	appr. V	[kN]	6,5	10,1	14,5	19,8	25,9	40,4	48,1-63,1	57,0-79,2	69,6-103,4
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	43°C/72°C ¹⁾	C20/25	appr. V	[kN]	6,5	10,1	14,5	19,8	25,9	35,0-40,4	44,9-63,1	56,3-79,2	69,6-103,4
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Spacing and edge distance

Min. thickness of concrete slab for $h_{ef,min} - h_{ef,max}$	h_{min}	[mm]		100-126	100-150	102-176	111-204	120-232	138-288	164-364	182-406	208-464
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Minimum spacing	s_{min}	[mm]		40	50	60	70	80	100	125	140	160
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Minimum edge distance	c_{min}	[mm]		40	50	60	70	80	100	125	140	160
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Installation parameters

Drill hole diameter	d_o	[mm]		12	14	16	18	20	24	32	35	40
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Range of drill hole depth for $h_{ef,min} - h_{ef,max}$	h_o	[mm]		60 - 96	60 - 120	70 - 144	75 - 168	80 - 192	90 - 240	100 - 300	112 - 336	128 - 384
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¹⁾ Max long term temperature / max short term temperature

²⁾M27, M30: A4-50, HCR-50

Higher concrete strength may lead to higher approved loads.

For anchor designing an easy to operate CD-ROM is available on request or can be downloaded at www.mkt.de.