

TECHNICAL DATASHEET

Gebifix SISMIK PRO styrene-free vinylester chemical anchor

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Certificates

ETA 16/0600 Certification Option 1 for use on non-cracked and cracked concrete with threaded bar; performance category C1 for seismic actions with threaded bars from M10 to M24; performance category C2 for seismic actions with threaded bars M12, M16, M20. Use on non-cracked concrete with reinforcing bars.

Certification of fire resistance

Complies with LEED® requirements, IEQ Credit 4.1

Class A+ for emission of volatile organic compounds (VOCs) in living spaces

Suitable for contact with drinking water

Base material

certified use	specific use
non-cracked concrete	natural stone
cracked concrete	wood

Sizes

art.	content	mixer	gun
CC27	410 ml	2 M17	CP01, CP11, CP15, CP16

Intended use

Dry or wet concrete

Flooded holes on concrete (bars M8 to M16 and Ø8 to Ø16)

Cartridge temperature: between +5 and +20 °C

Installation temperature: between +5 and +30 °C

Work temperature: I between -40 and +40 °C (maximum short term temperature +40 °C; long term +24 °C)

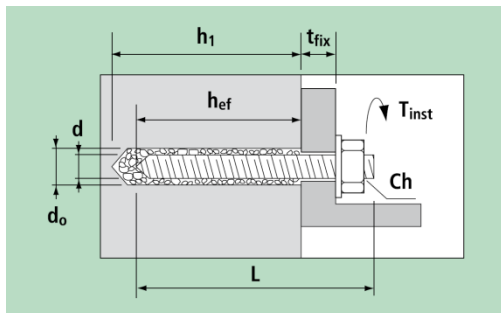
II between -40 and +80 °C (maximum short term temperature +80 °C; long term +50 °C)

Shelf life: 18 months (storage temperature between +5 and +25 °C)

Time and temperatures

temperature of base material	working time	full curing dry base material	full curing wet base material
-10 ÷ +4 °C *	20 min *	24 h *	48 h *
+5 ÷ +9 °C	10 min	145 min	290 min
+10 ÷ +19 °C	6 min	85 min	170 min
+20 ÷ +29 °C	4 min	50 min	100 min
+30 °C	4 min	40 min	80 min

* usage not covered by certification



- d = bar diameter
- L = bar length
- t_{fix} = fixable thickness
- d₀ = hole diameter
- h₁ = minimum hole depth
- h_{nom} = setting depth
- h_{ef} = effective anchorage depth
- T_{inst} = tightening torque

use without sleeve: h_{ef} = h₁ = h_{nom}

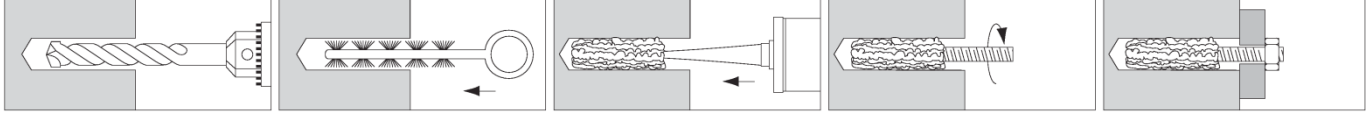
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• **Use on non-cracked and cracked concrete with threaded bars**

Installation



Setting parameters

bar size		M8	M10	M12	M16	M20	M24	M27	M30
hole diameter	d ₀ (mm)	10	12	14	18	22	26	30	35
hole depth	h _{ef,min} (mm)	64	80	96	128	160	192	216	240
	h _{ef,max} (mm)	160	200	240	320	400	480	540	600
minimum spacing	s _{min} (mm)	35	40	50	65	80	96	110	120
minimum edge distance	c _{min} (mm)	35	40	50	65	80	96	110	120
min. base material thickness	h _{min} (mm)	h _{ef} + 30 ≥ 100				h _{ef} + 2d ₀			
tightening torque	T _{inst} (Nm)	10	20	40	80	150	200	240	275

Strength data

For installation on dry or wet concrete and work temperature I (minimum temperature -40 °C, maximum short term temperature +40 °C; long term +24 °C)

Valid for a single anchor far from the edges, on a thick concrete member of class C20/25 with sparse reinforcing.

○ **Threaded bars on non-cracked concrete**

Characteristic resistance of resin (kN)

at standard embedment depth

bar size		M8	M10	M12	M16	M20	M24	M27	M30
embedment depth	h _{ef} (mm)	80	90	110	128	170	210	240	270
tension	N _{Rk,p} (kN)	20.1	25.4	35.2	51.5	80.1	110.8	112.0	127.2

Design resistance (kN)

at standard embedment depth, for threaded bars in steel class 5.8 and 8.8

bar size		M8	M10	M12	M16	M20	M24	M27	M30
embedment depth	h _{ef} (mm)	80	90	110	128	170	210	240	270
tension	N _{Rd} (kN)	11.2	14.1	19.6	28.6	44.5	61.6	53.3	60.6
shear	V _{Rd} (kN)	7.3	11.6	16.9	31.4	49.0	70.6	91.8	112.2
		11.7	18.6	27.0	50.2	78.4	113.0	146.9	179.5

Recommended load (kN)

at standard embedment depth, for threaded bars in steel class 5.8 and 8.8

bar size		M8	M10	M12	M16	M20	M24	M27	M30
embedment depth	h _{ef} (mm)	80	90	110	128	170	210	240	270
tension	N _{rec} (kN)	8.0	10.1	14.0	20.4	31.8	44.0	38.1	43.3
shear	V _{rec} (kN)	5.2	8.3	12.0	22.4	35.0	50.4	65.6	80.1
		8.4	13.3	19.3	35.9	56.0	80.7	104.9	128.2

1 kN ≈ 100 kg

steel failure class 5.8 – steel failure class 8.8

○ **Threaded bars on cracked concrete**

Characteristic resistance of resin (kN)

at standard embedment depth

bar size		M10	M12	M16	M20	M24
embedment depth	h _{ef} (mm)	90	110	128	170	210
tension	N _{Rk,p} (kN)	14.1	20.7	32.2	53.4	79.2

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Design resistance (kN)

at standard embedment depth, for threaded bars in steel class 5.8 and 8.8

bar size		M10	M12	M16	M20	M24
embedment depth	h_{ef} (mm)	90	110	128	170	210
tension	N_{Rd} (kN)	7.9	11.5	17.9	29.7	44.0
shear	V_{Rd} (kN)	11.6	16.9	31.4	49.0	70.6
		18.6	27.0	42.9	71.2	105.6

Recommended load (kN)

at standard embedment depth, for threaded bars in steel class 5.8 and 8.8

bar size		M10	M12	M16	M20	M24
embedment depth	h_{ef} (mm)	90	110	128	170	210
tension	N_{rec} (kN)	5.6	8.2	12.8	21.2	31.4
shear	V_{rec} (kN)	8.3	12.0	22.4	35.0	50.4
		13.3	19.3	30.6	50.9	75.4

1 kN \approx 100 kg

steel failure class 5.8 – steel failure class 8.8

○ **Threaded bars under seismic actions, performance category C1**

Characteristic resistance of resin (kN)

at standard embedment depth

bar size		M10	M12	M16	M20	M24
embedment depth	h_{ef} (mm)	90	110	128	170	210
tension	$N_{Rk,p}$ (kN)	8.8	15.3	23.8	39.5	60.2

Design resistance (kN)

at standard embedment depth, for threaded bars in steel class 5.8 and 8.8

bar size		M10	M12	M16	M20	M24
embedment depth	h_{ef} (mm)	90	110	128	170	210
tension	N_{Rd} (kN)	4.9	8.5	13.2	22.0	33.4
shear	V_{Rd} (kN)	4.1	5.9	11.0	17.2	24.7
		5.0	8.7	13.5	22.4	34.1

Recommended load (kN)

at standard embedment depth, for threaded bars in steel class 5.8 and 8.8

bar size		M10	M12	M16	M20	M24
embedment depth	h_{ef} (mm)	90	110	128	170	210
tension	N_{rec} (kN)	3.5	6.1	9.4	15.7	23.9
shear	V_{rec} (kN)	2.9	4.2	7.9	12.3	17.7
		3.5	6.2	9.6	16.0	24.4

1 kN \approx 100 kg

steel failure class 5.8 – steel failure class 8.8

○ **Threaded bars under seismic actions, performance category C2**

Characteristic resistance of resin (kN)

at standard embedment depth

bar size		M12	M16	M20
embedment depth	h_{ef} (mm)	110	128	170
tension	$N_{Rk,p}$ (kN)	4.6	8.4	16.0

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Design resistance (kN)

at standard embedment depth, for threaded bars in steel class **5.8** and **8.8**

bar size		M12	M16	M20
embedment depth	h_{ef} (mm)	110	128	170
tension	N_{Rd} (kN)	2.5	4.6	8.9
shear	V_{Rd} (kN)	2.6	4.7	9.1

Recommended load (kN)

at standard embedment depth, for threaded bars in steel class **5.8** and **8.8**

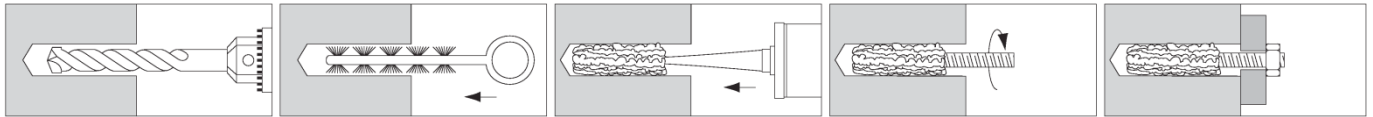
bar size		M12	M16	M20
embedment depth	h_{ef} (mm)	110	128	170
tension	N_{rec} (kN)	1.8	3.3	6.4
shear	V_{rec} (kN)	1.8	3.4	6.5

1 kN \approx 100 kg

steel failure class **5.8** – steel failure class **8.8**

- **Use on non-cracked concrete with reinforcing bars (used as anchors)**

Installation



Setting parameters

bar size		Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
hole diameter	d_0 (mm)	12	14	16	20	25	32	40
hole depth	$h_{ef,min}$ (mm)	64	80	96	128	160	200	256
	$h_{ef,max}$ (mm)	160	200	240	320	400	500	640
minimum spacing	s_{min} (mm)	35	40	50	6	80	100	130
minimum edge distance	c_{min} (mm)	35	40	50	6	80	100	130
min. base material thickness	h_{min} (mm)	$h_{ef} + 30 \geq 100$				$h_{ef} + 2d_0$		

Strength data

For installation on dry or wet concrete and work temperature I (minimum temperature $-40\text{ }^\circ\text{C}$, maximum short term temperature $+40\text{ }^\circ\text{C}$; long term $+24\text{ }^\circ\text{C}$)

Valid for a single anchor far from the edges, on a thick concrete member of class C20/25 with sparse reinforcing.

- **Reinforcing bars on non-cracked concrete**

Characteristic resistance of resin (kN)

at standard embedment depth

bar size		Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
embedment depth	h_{ef} (mm)	80	90	110	145	170	210	300
tension	$N_{Rk,p}$ (kN)	17.1	25.4	37.3	58.3	85.5	131.9	150.8

Design resistance (kN)

at standard embedment depth, for reinforcing bars with $f_{uk} = 550\text{ N/mm}^2$

bar size		Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
embedment depth	h_{ef} (mm)	80	90	110	145	170	210	300
tension	N_{Rd} (kN)	9.5	14.1	20.7	32.4	47.5	73.3	83.8
shear	V_{Rd} (kN)	9.2	14.4	20.7	36.9	57.6	90.0	147.4

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Recommended load (kN)

at standard embedment depth, for reinforcing bars with $f_{uk} = 550 \text{ N/mm}^2$

bar size		Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32
embedment depth	h_{ef} (mm)	80	90	110	145	170	210	300
tension	N_{rec} (kN)	6.8	10.1	14.8	23.1	33.9	52.4	59.8
shear	V_{rec} (kN)	6.6	10.3	14.8	26.3	41.1	64.3	105.3

1 kN \approx 100 kg

steel failure

Load values derive from parameters certified in European Technical Assessment ETA 19/0699. Characteristic resistance N_{Rk} refers uniquely to the resin resistance to failure due to pull-out and concrete cone. Design resistances N_{Rd} and V_{Rd} refer to all failure modes and include partial safety factors on strengths. Recommended loads N_{rec} and V_{rec} include the further 1.4 safety factor.

For the design of fixing with reduced spacing, near the edge or on concrete with increased resistance, reduced thickness or dense reinforcement refer to ETA 19/0699 or to Declaration of Performance DPGE1010 and use the design method outlined in EN 1992-4. In the same way, for anchors installed in flooded holes and for different working temperatures (II, between -40 and +80 °C) refer to ETA. One can also calculate and verify the fixings made with Gebofix SISMIK PRO by means of *G&B Calculation Program* available on the website www.gebfissaggi.com.