

Resin anchor R (Eurobond)

The expansion-free anchoring in non-cracked concrete.

OVERVIEW



Resin capsule R M



Threaded rod
RG M, zinc-plated
steel



Threaded rod
RG M A4 / C
stainless steel A4
or high corrosion-
resistant steel

Approved for:

- Non-cracked concrete \geq C12/15 and maximum C50/60

Also suitable for:

- Natural stone with dense structure

For fixing of:

- Steel constructions
- Railings
- Consoles
- Ladders
- Cable trays
- Machines
- Staircases
- Gates
- Facades
- High racks
- Stand-off installations
- Wooden constructions



DESCRIPTION

- This established fixing system consists of the RG M threaded rod and the resin capsule RM
- The 2-component resin capsule RM contains quick-setting styrene-free vinyl ester resin and hardener.
- During setting, the edges of the threaded rod destroy the capsule in the drill hole, which mix and activate the mortar.
- The resin adheres to the entire surface of the threaded rod, bonding it to the wall of the drilled hole.



Advantages/Benefits

- Threaded rods are supplied with an easy to use hexagonal installation drive or can be installed with an adapter.
- High-performance resin guarantees high loads in non-cracked concrete.
- The resin anchoring is free of expansion forces and permits small axial spacings and edge distances.
- Wide range for many applications.
- New European design method enables optimum use of the anchor system for cost-efficient fixing.

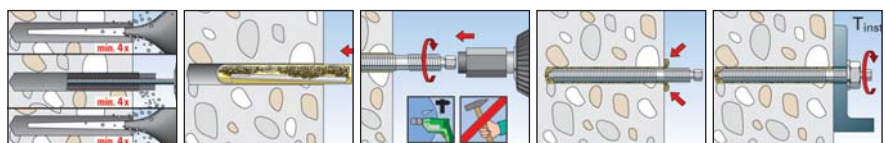
INSTALLATION

Type of installation

- Pre-positioned installation

Installation information

- Suitable for use in wet concrete and under water.
- Threaded rod must be placed with an impact-rotational process by using an electric tool (percussion drill, hammer drill).
- Brushes see page 54.



FIXING PRINCIPLES

In detail: The general principles for installation, the correct drilling procedure and much more on page 26.

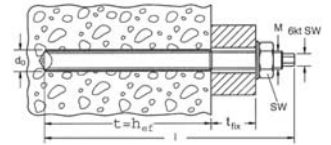
STANDARDS

You will find everything that has standards on page 34 under the keyword approvals.

TECHNICAL DATA

Resin capsule R M

Type	Art.-No.	ID	approval	drill	min. drill hole depth	effect. anchoring depth	fits	Qty. per box
			ETA	d_0	t	h_{ef}		pcs.
				[mm]	[mm]	[mm]		
R M 8	50270	9	■	10	80	80	RG M 8 / RG 8x75 M5I	10
R M 10	50271	6	■	12	90	90	RG M 10 / RG 10x75 M6 I	10
R M 12	50272	3	■	14	110	110	RG M 12 / RG 12x90 M8 I	10
R M 12 E	48501	9	■	14	150	150	RG M 12 E	10
R M 14	50278	5	■	16	120	120	RG M 14 / RG 14x90 M10 I	10
R M 16	50273	0	■	18	125	125	RG M 16 / RG 16x100M12I	10
R M 16 E	79838	6	■	18	190	190	RG M 16 E	10
R M 20	50274	7	■	25	170	170	RG M 20	10
R M 20 E	79840	9	■	25	240	240	RG M 20 E	5
R M 24	50275	4	■	28	210	210	RG M 24	5
R M 24 E	79842	3	■	28	290	290	RG M 24 E	5
R M 27	79843	0	■	32	250	250	RG M 27	5
R M 30	50276	1	■	35	280	280	RG M 30	5



**Threaded rod RG M,
zinc-plated steel 5.8**

Type	Art.-No.	ID	approval	effect. anchoring depth	max. usable length	width across nut	hexagon nut	fits capsules	Qty. per box
			ETA	h_{ef}	t_{fix}		SW		pcs.
				[mm]	[mm]	[mm]	[mm]		
RG M 8 x 110	50256	3	■	80	13	5	13	50270 RM 8	10
RG M 8 x 150	95698	4	■	80	60	5	13	50270 RM 8	10
RG M 8 x 250	95699	1	■	80	160	5	13	50270 RM 8	10
RG M 10 x 130	50257	0	■	90	20	7	17	50271 RM 10	10
RG M 10 x 165	50280	8	■	90	67	7	17	50271 RM 10	10
RG M 10 x 190	50281	5	■	90	82	7	17	50271 RM 10	10
RG M 10 x 250	2) 95703	5	■	90	150	7	17	50271 RM 10	10
RG M 10 x 350	2) 95718	9	■	90	250	7	17	50271 RM 10	10
RG M 12 x 160	50258	7	■	110	25	8	19	50272 RM 12	10
RG M 12 x 220	50283	9	■	110	90	8	19	50272 RM 12	10
RG M 12 x 250	50284	6	■	110	120	8	19	50272 RM 12	10
RG M 12 x 300	50285	3	■	110	170	8	19	50272 RM 12	10
RG M 12 x 380	2) 95720	2	■	110	255	-	19	50272 RM 12	10
RG M 12 x 200 E	50572	4	■	150	30	8	19	48501 RM 12 E	10
RG M 12 x 230 E	50574	8	■	150	60	8	19	48501 RM 12 E	10
RG M 12 x 290 E	50575	5	■	150	120	8	19	48501 RM 12 E	10
RG M 14 x 170	50286	0	■	120	38	10	22	50278 RM 14	10
RG M 16 x 165	50287	7	■	125	13	12	24	50273 RM 16	10
RG M 16 x 190	50259	4	■	125	35	12	24	50273 RM 16	10
RG M 16 x 250	50288	4	■	125	98	12	24	50273 RM 16	10
RG M 16 x 300	50289	1	■	125	148	12	24	50273 RM 16	10
RG M 16 x 380	2) 95722	6	■	125	235	-	24	50273 RM 16	10
RG M 16 x 500	2) 95723	3	■	125	355	-	24	50273 RM 16	10
RG M 16 x 235 E	90716	0	■	190	20	12	24	79838 RM 16 E	10
RG M 20 x 260	50260	0	■	170	65	12	30	50274 RM 20	10
RG M 20 x 350	1) 95707	3	■	170	155	12	30	50274 RM 20	10
RG M 20 x 500	1) 95725	7	■	170	305	-	30	50274 RM 20	10
RG M 20 x 330 E	90718	4	■	240	60	12	30	79840 RM 20 E	10
RG M 24 x 300	1) 50261	7	■	210	65	-	36	50275 RM 24	10
RG M 24 x 400	1) 95727	1	■	210	165	-	36	50275 RM 24	10
RG M 24 x 600	1) 95728	8	■	210	365	-	36	50275 RM 24	5
RG M 24 x 380 E	1) 90719	1	■	290	60	-	36	79842 RM 24 E	5
RG M 27 x 340	1) 90720	7	■	250	60	-	41	79843 RM 27	5
RG M 30 x 380	1) 50262	4	■	280	65	-	46	50276 RM 30	5
RG M 30 x 500	1) 95730	1	■	280	185	-	46	50276 RM 30	5

1) Straight cut, additional setting tool required

2) Straight cut, setting tool is enclosed

Resin anchor R (Eurobond)

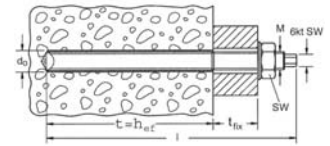
TECHNICAL DATA



Threaded rod **RG M**, stainless steel A4



Threaded rod **RG M**, high corrosion-resistant steel



Type	Art.-No.	ID	approval	effect. anchoring depth	max. usable length	width across nut	hexagon nut	fits capsules	Qty. per box
			ETA	h_{ef} [mm]	l_{fix} [mm]	[mm]	$\circ SW$ [mm]		pcs.
RG M 8 x 110 A4	50263	1	■	80	13	5	13	50270 RM 8	10
RG M 8 x 150 A4	50293	8	■	80	60	5	13	50270 RM 8	10
RG M 8 x 250 A4	95700	4	■	80	160	5	13	50270 RM 8	10
RG M 10 x 130 A4	50264	8	■	90	20	7	17	50271 RM 10	10
RG M 10 x 165 A4	50294	5	■	90	57	7	17	50271 RM 10	10
RG M 10 x 190 A4	50296	9	■	90	82	7	17	50271 RM 10	10
RG M 10 x 250 A4	95701	1	■	90	150	7	17	50271 RM 10	10
RG M 10 x 350 A4	2) 95709	7	■	90	250	7	17	50271 RM 10	10
RG M 12 x 160 A4	50265	5	■	110	25	8	19	50272 RM 12	10
RG M 12 x 220 A4	50297	6	■	110	90	8	19	50272 RM 12	10
RG M 12 x 250 A4	95702	8	■	110	120	8	19	50272 RM 12	10
RG M 12 x 300 A4	95705	9	■	110	170	8	19	50272 RM 12	10
RG M 12 x 380 A4	2) 95710	3	■	110	255	-	19	50272 RM 12	10
RG M 12 x 600 A4	2) 95711	0	■	110	475	-	19	50272 RM 12	10
RG M 12 x 200 E A4	50576	-	■	150	30	8	19	48501 RM 12 E	10
RG M 12 x 230 E A4	50577	-	■	150	60	8	19	48501 RM 12 E	10
RG M 12 x 290 E A4	50578	-	■	150	120	8	19	48501 RM 12 E	10
RG M 16 x 165 A4	95704	2	■	125	13	12	24	50273 RM 16	10
RG M 16 x 190 A4	50266	2	■	125	35	12	24	50273 RM 16	10
RG M 16 x 250 A4	50298	3	■	125	98	12	24	50273 RM 16	10
RG M 16 x 300 A4	50299	0	■	125	148	12	24	50273 RM 16	10
RG M 16 x 380 A4	2) 95712	7	■	125	235	-	24	50273 RM 16	10
RG M 16 x 500 A4	2) 95713	4	■	125	385	-	24	50273 RM 16	10
RG M 16 x 235 E A4	90721	4	■	190	20	12	24	79838 RM 16 E	10
RG M 16 x 275 E A4	90722	1	■	190	60	12	24	79838 RM 16 E	10
RG M 20 x 260 A4	50267	9	■	170	65	12	30	50274 RM 20	10
RG M 20 x 350 A4	1) 95706	6	■	170	155	12	30	50274 RM 20	10
RG M 24 x 300 A4	1) 50268	6	■	210	65	-	36	50275 RM 24	10
RG M 24 x 400 A4	1) 95715	8	■	210	165	-	36	50275 RM 24	10
RG M 27 x 340 A4	1) 90725	2	■	250	60	-	41	79843 RM 27	5
RG M 30 x 380 A4	1) 90726	9	■	280	65	-	46	50276 RM 30	5
RG M 8 x 110 C	96316	6	■	80	13	5	13	50270 RM 8	10
RG M 10 x 130 C	96217	6	■	90	20	7	17	50271 RM 10	10
RG M 12 x 160 C	96218	3	■	110	25	8	19	50272 RM 12	10
RG M 16 x 190 C	96219	0	■	125	35	12	24	50273 RM 16	10

1) Straight cut, additional setting tool required (see page 55).
2) Straight cut, setting tool is enclosed.



Cleaning brush for concrete



Compressed-air cleaning gun **ABP**

Type	Art.-No.	ID	for thread	qty. per box
			M	pcs.
BS ø 8	78177	7	M 6	1
BS ø 10	78178	4	M 8	1
BS ø 12	78179	1	M 10	1
BS ø 14	78180	7	M 12	1
BS ø 18	78181	4	M 16	1
BS ø 24	78182	1	M 20	1
BS ø 28	78183	8	M 24/27	1
BS ø 35	78184	5	M 30	1
ABP	59456	8	Compressed-air cleaning gun ABP	1

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CURING TIME

Curing time Resin capsule RM

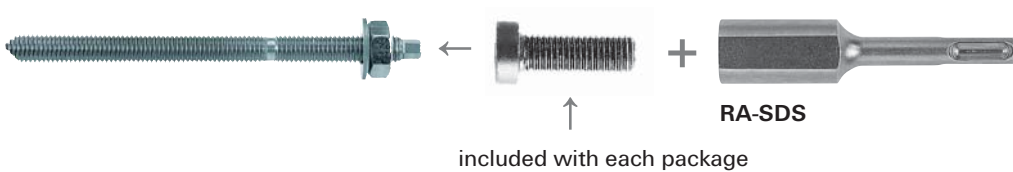
Temperature at anchoring base	Curing time
- 5°C - ± 0°C	240 min.
± 0°C - + 10°C	45 min.
+10°C - + 20°C	20 min.
≥ + 20°C	10 min.

Please note: The curing times apply for dry anchoring bases. In damp anchoring bases they should be doubled. Remove water from drill hole.

TECHNICAL DATA

Setting tool with SDS adapter

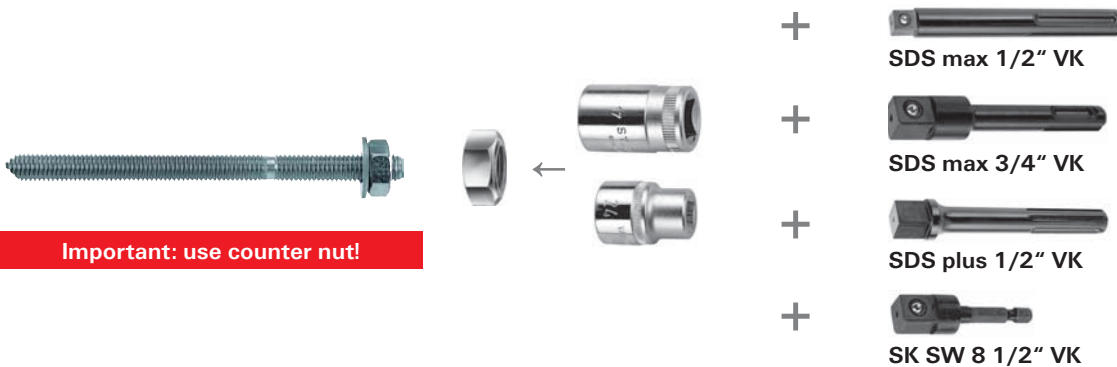
For simple installation of bonded anchors for example Resin anchor R (Eurobond), Highbond anchor FHB II



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Adapter for installing anchor rods

Threaded rods without external hex-drive (special lengths).



Type	Art.-No.	ID		qty. per box
RA-SDS	62420	3	Adapter suitable for set screw	1
SK SW 8 1/2" VK	01536	1	Adapter suitable fits threaded rods M8 - M22	1
SDS plus 1/2" VK	01537	8	Adapter suitable fits threaded rods M8 - M16	1
SDS max 1/2" VK	01538	5	Adapter suitable fits threaded rods M16 - M20	1
SDS max 3/4" VK	01539	2	Adapter suitable fits threaded rods M20-M30	1

Resin anchor R (Eurobond)

LOADS

Mean ultimate loads, design resistant and recommended loads for single anchors of fischer Resin anchor R used with fischer threaded rods RG M with large spacing and edge distance.

Non-cracked concrete																				
Anchor size	RG M 8						RG M 10						RG M 12							
	gvz			A4	C	gvz			A4	C	gvz			A4	C	gvz			A4	C
Kind of steel	5.8	8.8	10.9	A4-70	1.4529	5.8	8.8	10.9	A4-70	4529	5.8	8.8	10.9	A4-70	1.4529	5.8	8.8	10.9	A4-70	4529
Effektive anchorage depth h_{ef} [mm]	80						90						110							
Drill hole depth $h_0 \geq$ [mm]	80						90						110							
Drill hole diameter d_0 [mm]	10						12						14							
Mean ultimate loads N_u and V_u [kN]																				
Tensile 0° N_u [kN]	19.0*	29.0*	32.0	26.0*	30.0*	42.7	41.0*	44.0*	60.5	59.0*	44.0*	67.0*	82.6	59.0*						
Shear 90° V_u [kN]	9.2*	14.6*	17.0*	12.8*	14.5*	23.2*	27.0*	20.3*	21.1*	33.7*	40.0*	29.5*	21.1*	33.7*	40.0*	29.5*				
Design resistant loads N_{Rd} and V_{Rd} [kN]																				
Tensile 0° N_{Rd} [kN]	12.3						17.3						27.6							
Shear 90° V_{Rd} [kN]	7.4	11.7	11.3	8.2	10.2	11.6	18.6	18.0	13.0	16.2	16.9	27.0	26.7	18.9	23.6	16.9	27.0	26.7	18.9	23.6
Recommended loads N_{rec} and V_{rec} [kN]																				
Tensile 0° N_{rec} [kN]	8.8						12.3						19.7							
Shear 90° V_{rec} [kN]	5.3	8.3	8.1	5.9	7.3	8.3	13.3	12.9	9.3	11.6	12.1	19.3	19.0	13.5	16.9	12.1	19.3	19.0	13.5	16.9
Recommended bending moment M_{rec} [Nm]																				
M_{rec} [Nm]	11.4	17.1	17.6	11.9	14.9	22.3	34.3	35.7	23.8	29.7	38.9	60.0	62.4	42.1	52.6	38.9	60.0	62.4	42.1	52.6
Component dimensions, minimum axial spacings and edge distances																				
Characteristic axial spacing $s_{cr, Np}$ [mm]	195						250						280							
Characteristic edge distance $c_{cr, Np}$ [mm]	100						125						140							
Minimum axial spacing ¹⁾ s_{min} [mm]	40						45						55							
Minimum edge distance ¹⁾ c_{min} [mm]	40						45						55							
Minimum structural component thickness h_{min} [mm]	110						120						150							
Clearance-hole in fixture to be attached $d_f \leq$ [mm]	9						12						14							
Required torque T_{inst} [Nm]	10						20						40							
Corresponding mortar capsule	FEB RM 8						FEB RM 10						FEB RM 12							

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Non-cracked concrete																							
Anchor size	RG M 16						RG M 16 E						RG M 20										
	gvz			A4	C	gvz			A4	C	gvz			A4	C	gvz			A4	C			
Kind of steel	5.8	8.8	10.9	A4-70	1.4529	5.8	8.8	10.9	A4-70	4529	5.8	8.8	10.9	A4-70	1.4529	5.8	8.8	10.9	A4-70	4529			
Effektive anchorage depth h_{ef} [mm]	125						190						170										
Drill hole depth $h_0 \geq$ [mm]	125						190						170										
Drill hole diameter d_0 [mm]	18						18						25										
Mean ultimate loads N_u and V_u [kN]																							
Tensile 0° N_u [kN]	82.0*			86.1	82.0*	126.0*	130.8	110.0*	127.0*	138.9	127.0*	196.0*	196.0	171.0*									
Shear 90° V_u [kN]	39.2*	62.8*	74.0*	54.8*	39.2*	62.8*	74.0*	54.8*	61.2*	98.0*	115.0*	85.7*	61.2*	98.0*	115.0*	85.7*							
Design resistant loads N_{Rd} and V_{Rd} [kN]																							
Tensile 0° N_{Rd} [kN]	39.8						55.4	60.5	58.8	60.5	64.1						85.8	90.5					
Shear 90° V_{Rd} [kN]	31.4	50.2	49.3	35.1	43.8	31.4	50.2	49.3	35.1	43.8	49.0	78.4	76.7	54.9	68.6	49.0	78.4	76.7	54.9	68.6			
Recommended loads N_{rec} and V_{rec} [kN]																							
Tensile 0° N_{rec} [kN]	28.4						39.6	43.2	42.0	43.2	45.8						61.3	64.6					
Shear 90° V_{rec} [kN]	22.4	35.9	35.2	25.1	31.3	22.4	35.9	35.2			35.0	56.0	54.8	39.2	49.0	35.0	56.0	54.8	39.2	49.0			
Recommended bending moment M_{rec} [Nm]																							
M_{rec} [Nm]	98.9	152.0	158.1	106.7	133.1	98.9	152.0	158.1	106.7	133.1	193.1	296.6	308.6	207.9	259.4	193.1	296.6	308.6	207.9	259.4			
Component dimensions, minimum axial spacings and edge distances																							
Characteristic axial spacing $s_{cr, Np}$ [mm]	370						370						450										
Characteristic edge distance $c_{cr, Np}$ [mm]	185						185						225										
Minimum axial spacing ¹⁾ s_{min} [mm]	65						95						85										
Minimum edge distance ¹⁾ c_{min} [mm]	65						95						85										
Minimum structural component thickness h_{min} [mm]	160						250						220										
Clearance-hole in fixture to be attached $d_f \leq$ [mm]	18						18						22										
Required torque T_{inst} [Nm]	60						60						120										
Corresponding mortar capsule	FEB RM 16						FEB RM 16 E						FEB RM 20										

* Steel failure decisive.

¹⁾ For minimum axial spacing and minimum edge distance the above described loads have to be reduced (See "fischer Technical Handbook" or design software "CC-COMPUFIX")!

Values given above are valid under the following assumptions:

- Premium cleaning process according to European technical approval ETA.
 - Dry concrete, temperature range from - 40 °C up to + 50 °C long term temperature and + 80 °C short term temperature.
- All values apply for concrete C20/25 without edge or spacing influences.

Design resistant loads: material safety factor γ_M is included. Material safety factor γ_M depends on the type of anchor.

Recommended loads: material safety factor γ_M and safety factor for load $\gamma_L = 1.4$ are included.

Continued next page.

LOADS

Mean ultimate loads, design resistant and recommended loads for single anchors of fischer Resin anchor R used with fischer threaded rods RG M with large spacing and edge distance.

Anchor size		Non-cracked concrete																								
		RG M 24					RG M 24 E					RG M 27					RG M 30									
Kind of steel		gvz			A4	C	gvz			A4	C	gvz			A4	C	gvz			A4	C					
Steel grade		5.8	8.8	10.9	A4-70	1.4529	5.8	8.8	10.9	A4-70	4529	5.8	8.8	10.9	A4-70	1.4529	5.8	8.8	10.9	A4-70	4529					
Effektive anchorage depth	h_{ef} [mm]	210					290					250					280									
Drill hole depth	$h_0 \geq$ [mm]	210					290					250					280									
Drill hole diameter	d_0 [mm]	28					28					32					35									
Mean ultimate loads N_U and V_U [kN]																										
Tensile	0° N_U [kN]	183.0*	197.9				183.0*	273.2				247.0*	239.0*				258.7	292.0*				314.0				
Shear	90° V_U [kN]	88.2*	141.2*	166.0*	123.4*		88.2*	141.2*	166.0*	123.4*		105.1*	161.7*	202.1*	160.8*		140.2*	224.4*	264.0*	196.2*						
Design resistant loads N_{Rd} and V_{Rd} [kN]																										
Tensile	0° N_{Rd} [kN]	89.7					123.6					123.9					120.2					140.7				
Shear	90° V_{Rd} [kN]	70.6	113.0	110.7	79.1	98.7	70.6	113.0	110.7	79.1	98.7	84.1	129.4	134.7	103.1	128.6	112.2	179.5	176.0	125.8	157.0					
Recommended loads N_{rec} and V_{rec} [kN]																										
Tensile	0° N_{rec} [kN]	64.1					87.7					88.5					85.8					100.5				
Shear	90° V_{rec} [kN]	50.4	80.7	79.0	56.5	70.5	50.4	80.7	79.0	56.5	70.5	60.1	92.4	96.2	73.6	91.9	80.1	128.2	125.7	89.8	112.1					
Recommended bending moment M_{rec} [Nm]																										
M_{rec} [Nm]		333.1	512.0	533.3	359.4	448.6	333.1	512.0	533.3	359.4	448.6	495.4	761.7	793.8	534.3	666.9	668.0	1026.9	1070.0	720.7	899.4					
Component dimensions, minimum axial spacings and edge distances																										
Characteristic axial spacing	$s_{cr, Np}$ [mm]	530					530					600					640									
Characteristic edge distance	$c_{cr, Np}$ [mm]	265					265					300					320									
Minimum axial spacing ¹⁾	s_{min} [mm]	105					145					125					140									
Minimum edge distance ¹⁾	c_{min} [mm]	105					145					125					140									
Minimum structural component thickness	h_{min} [mm]	280					380					330					370									
Clearance-hole in fixture to be attached	$d_f \leq$ [mm]	26					26					30					33									
Required torque	T_{inst} [Nm]	150					150					200					300									
Corresponding mortar capsule	FEB RM [-]	FEB RM 24					FEB RM 24 E					FEB RM 27					FEB RM 30									

* Steel failure decisive.

¹⁾ For minimum axial spacing and minimum edge distance the above described loads have to be reduced (See "fischer Technical Handbook" or design software "CC-COMPUFIX")!

Values given above are valid under the following assumptions:

- Premium cleaning process according to European technical approval ETA.
- Dry concrete, temperature range from - 40 °C up to + 50 °C long term temperature and + 80 °C short term temperature.

All values apply for concrete C20/25 without edge or spacing influences.

Design resistant loads: material safety factor γ_M is included. Material safety factor γ_M depends on the type of anchor.

Recommended loads: material safety factor γ_M and safety factor for load $\gamma_L = 1.4$ are included.

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