

## 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  
≥ 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.

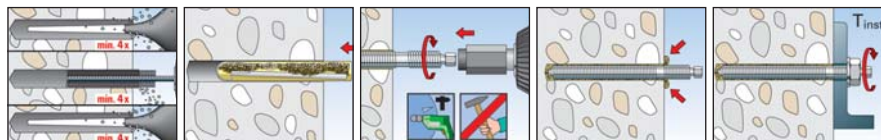
### INSTALLATION

#### 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

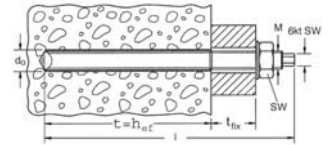
You will find everything that has standards on page 34 under the keyword approvals.

## 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)

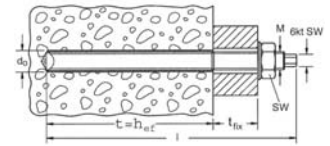
## TECHNICAL DATA



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		$h_{ef}$	$l_{fix}$		SW		pcs.
					[mm]	[mm]	[mm]	[mm]		
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

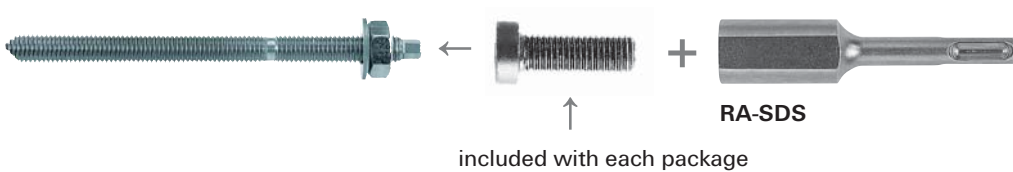
Temperature at anchoring base	Curing time
- 5°C - ± 0°C	240 min.
± 0°C - + 10°C	45 min.
+10°C - + 20°C	20 min.
≥ + 20°C	10 min.

**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

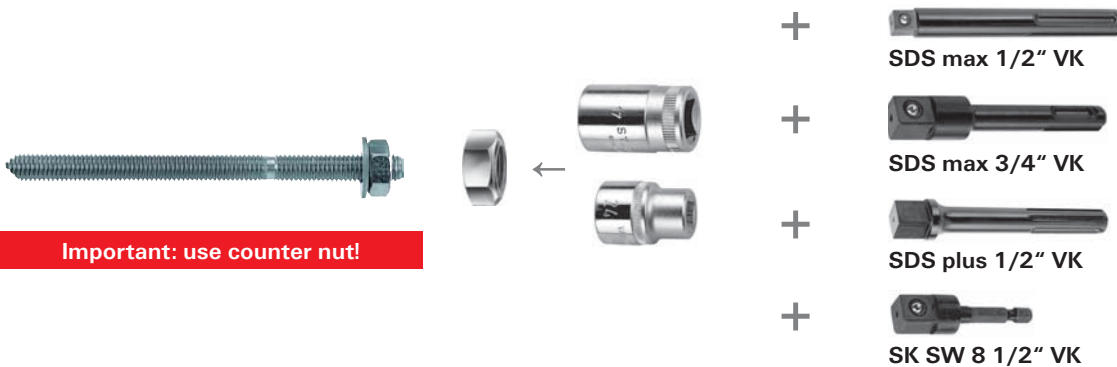
For simple installation of bonded anchors for example Resin anchor R (Eurobond), Highbond anchor FHB II



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### Adapter for installing anchor rods

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



**Important: use counter nut!**

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
Effective 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							
<b>Mean ultimate loads <math>N_u</math> and <math>V_u</math> [kN]</b>																				
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*				
<b>Design resistant loads <math>N_{Rd}</math> and <math>V_{Rd}</math> [kN]</b>																				
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
<b>Recommended loads <math>N_{rec}</math> and <math>V_{rec}</math> [kN]</b>																				
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
<b>Recommended bending moment <math>M_{rec}</math> [Nm]</b>																				
$M_{rec}$ [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
<b>Component dimensions, minimum axial spacings and edge distances</b>																				
Characteristic axial spacing $s_{cr, Np}$ [mm]	195						250						280							
Characteristic edge distance $c_{cr, Np}$ [mm]	100						125						140							
Minimum axial spacing <sup>1)</sup> $s_{min}$ [mm]	40						45						55							
Minimum edge distance <sup>1)</sup> $c_{min}$ [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 [-]	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			
Effective 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										
<b>Mean ultimate loads <math>N_u</math> and <math>V_u</math> [kN]</b>																							
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*							
<b>Design resistant loads <math>N_{Rd}</math> and <math>V_{Rd}</math> [kN]</b>																							
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			
<b>Recommended loads <math>N_{rec}</math> and <math>V_{rec}</math> [kN]</b>																							
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			
<b>Recommended bending moment <math>M_{rec}</math> [Nm]</b>																							
$M_{rec}$ [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			
<b>Component dimensions, minimum axial spacings and edge distances</b>																							
Characteristic axial spacing $s_{cr, Np}$ [mm]	370						370						450										
Characteristic edge distance $c_{cr, Np}$ [mm]	185						185						225										
Minimum axial spacing <sup>1)</sup> $s_{min}$ [mm]	65						95						85										
Minimum edge distance <sup>1)</sup> $c_{min}$ [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 [-]	FEB RM 16						FEB RM 16 E						FEB RM 20										

\* Steel failure decisive.

<sup>1)</sup> 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  $\gamma_M$  is included. Material safety factor  $\gamma_M$  depends on the type of anchor.

Recommended loads: material safety factor  $\gamma_M$  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							
<b>Mean ultimate loads <math>N_U</math> and <math>V_U</math> [kN]</b>																					
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*				
<b>Design resistant loads <math>N_{Rd}</math> and <math>V_{Rd}</math> [kN]</b>																					
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
<b>Recommended loads <math>N_{rec}</math> and <math>V_{rec}</math> [kN]</b>																					
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
<b>Recommended bending moment <math>M_{rec}</math> [Nm]</b>																					
	$M_{rec}$ [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
<b>Component dimensions, minimum axial spacings and edge distances</b>																					
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 <sup>1)</sup>	$s_{min}$ [mm]	105				145				125				140							
Minimum edge distance <sup>1)</sup>	$c_{min}$ [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.

<sup>1)</sup> 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  $\gamma_M$  is included. Material safety factor  $\gamma_M$  depends on the type of anchor.

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

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