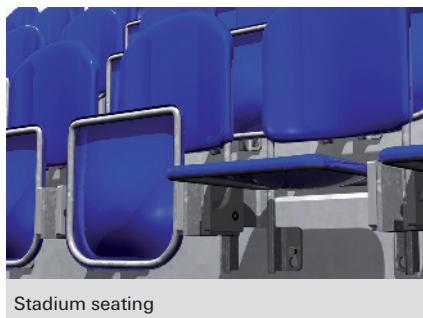


The bonded anchor for cracked concrete with internal threaded anchor RG MI without drill hole cleaning



Stadium seating



Fall protection devices

VERSIONS

- Zinc-plated steel
- Stainless steel

BUILDING MATERIALS

Approved for:

- Concrete C20/25 to C50/60, cracked and non-cracked

Also suitable for:

- Natural stone with dense structure

ASSESSMENT/APPROVAL



ADVANTAGES

- RM II in combination with RG MI is the first bonded anchor with internal threaded anchor for cracked and non-cracked concrete that does not require drill hole cleaning. This allows for a rapid working progress and an economic installation.
- The internal threaded anchor RG MI allows for the surface flush removal and reuse of the fixing point. It therefore offers great flexibility.
- The metric internal thread allows for the use of standard metric screws or threaded rods for the ideal adaptation to suit the intended use.

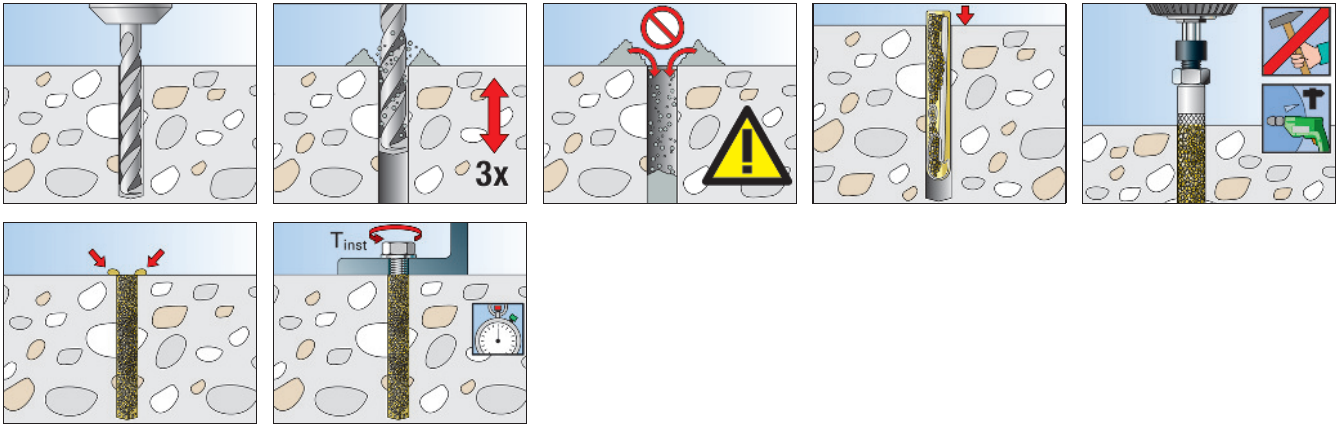
APPLICATIONS

- Removable fixings
- Temporary fixings, e.g. for machines
- Scaffold anchoring

FUNCTIONING

- The resin anchor RM II is suitable for pre-positioned installation when combined with the internal threaded anchor RG MI.
- The 2-component resin capsule RM II contains styrene-free vinyl ester resin and hardener.
- The internal threaded anchor RG MI is set using a hammer drill and the accompanying setting tool in rotating and hitting motions.
- During setting, the oblique edge of the internal threaded anchor destroys the capsule, and mixes and activates the mortar.
- The mortar bonds the entire surface of the internal threaded anchor with the drill hole wall and seals the drill hole.

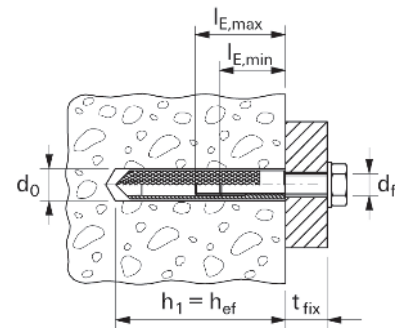
INSTALLATION



TECHNICAL DATA



RM II



Item	Art.-No.	Approval ETA	Drill diameter d_0 [mm]	Min. drill hole depth h_1 [mm]	Effect. anchorage depth h_{ef} [mm]	Suitable for internal- threaded anchor	Sales unit [pcs]
RM II 10	539797	■	14	90	90	RG M8 I	10
RM II 12	539798	■	18	90	90	RG M10 I	10
RM II 16	539800	■	20	125	125	RG M12 I	10
RM II 16 E	539801	■	24	160	160	RG M16 I	10
RM II 24	539803	■	32	200	200	RG M20 I	5

CURING TIME

Temperature at anchoring base	Curing time
-15 °C - -10 °C	30 hrs.
- 9 °C - - 5 °C	16 hrs.
- 4 °C - ± 0 °C	10 hrs.
+ 1 °C - + 5 °C	45 min.
+ 6 °C - +10 °C	30 min.
+11 °C - +20 °C	20 min.
+21 °C - +30 °C	5 min.
+31 °C - +40 °C	3 min.

Resin anchor RM II: Resin capsule RM II with Internal threaded anchor RGM zinc plated steel / stainless steel A4

Permissible loads of a single anchor in non-cracked normal concrete (concrete compression zone) of strength class C20/25 (~B25) ^{1) 2) 3)}										Minimum spacings while reducing the load	
Type	Screw steel property/surface	Min. member thickness h_{min} [mm]	Effective anchorage depth h_{ef} [mm]	Maximum installation torque T_{max} [Nm]	Permissible tension load $N_{perm}^{4)}$ [kN]	Permissible shear load $V_{perm}^{4)}$ [kN]	Required edge distance (with one edge) for		Required spacing Max. load s_{cr} [mm]	Min. spacing $s_{min}^{5)}$ [mm]	Min. edge distance $c_{min}^{5)}$ [mm]
							Max. tension load c [mm]	Max. shear load c [mm]			
RG M8 I	5.8	120	90	10	9.0	5.3	65	65	270	55	55
	8.8						150	95			
	A4-70						85	70			
RG M10 I	5.8	130	90	20	13.8	8.3	140	90	270	65	65
	8.8						190	155			
	A4-70						170	100			
RG M12 I	5.8	170	125	40	20.5	12.1	180	110	375	75	75
	8.8						280	190			
	A4-70						210	125			
RG M16 I	5.8	210	160	80	37.6	22.4	330	180	480	95	95
	8.8						365	265			
	A4-70							205			
RG M20 I	5.8	270	200	120	56.7	35.4	445	250	600	125	125
	8.8							400			
	A4-70							285			

For the design the complete assessment ETA-16/0340 has to be considered. ⁶⁾

1) The partial safety factors for material resistance as regulated in the ETA-16/0340 as well as a partial safety factor for load actions of $\gamma_L = 1.4$ are considered. As a single anchor counts e.g. an anchor with a spacing $s \geq 3 \cdot h_{ef}$ and an edge distance $c \geq 1.5 \cdot h_{ef}$.

2) For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

3) Drill method hammer drilling. For further allowable application conditions see ETA-16/0340.

4) For combinations of tensile loads and shear loads or for shear loads with lever arm (bending moments) as well as reduced edge distances or spacings (anchor groups) we recommend to use our anchor design software C-FIX.

5) Minimum possible axial spacings resp. edge distance while reducing the permissible load.

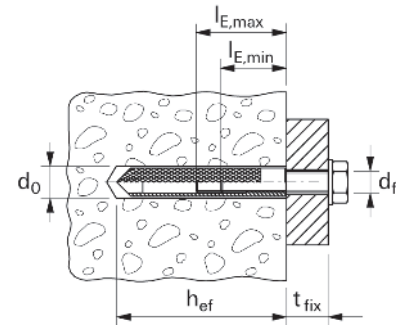
6) The given loads refer to the European Technical Assessment ETA-16/0340, issue date 14/02/2017. Design of the loads according ETAG 001, Technical Report TR 029 (for static resp. quasi-static loads).

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TECHNICAL DATA



Internal threaded anchor **RG MI**



	zinc-plated steel	stainless steel	Approval ETA	Drill hole diameter d_0 [mm]	Effect. anchorage depth h_{ef} [mm]	Min. bolt penetration $l_{E,min}$ [mm]	Max. bolt penetration $l_{E,max}$ [mm]	Fits capsules	Sales unit [pcs]
Item	Art.-No.	Art.-No.							
	gvz	A4							
RG 12 x 90 M8 I	050552	050565	■	14	90	8	18	539797 RM II 10	10
RG 16 x 90 M10 I	050553	050566	■	18	90	10	23	539798 RM II 12	10
RG 18 x 125 M12 I	050562	050567	■	20	125	12	26	539800 RM II 16	10
RG 22 x 160 M16 I	050563	050568	■	24	160	16	35	539801 RM II 16 E	5
RG 28 x 200 M20 I	050564	050569	■	32	200	20	45	539803 RM II 24	5

LOADS

Resin anchor RM II with internal threaded anchor RG MI⁵⁾ (property class fixing screw 5.8)

Highest permissible load for a single anchor¹⁾ in normal weight concrete C20/25^{4) 6)}

For the design the complete assessment⁷⁾ ETA-16/0340 has to be considered.

Type	effective anchorage depth h_{ef} [mm]	min. member thickness h_{min} [mm]	maximum torque moment $T_{inst,max}$ [Nm]	Cracked concrete				Non-cracked concrete			
				permissible tensile load $N_{perm}^{3)}$ [kN]	permissible shear load $V_{perm}^{3)}$ [kN]	min. spacing $s_{min}^{2)}$ [mm]	min. edge distance $c_{min}^{2)}$ [mm]	permissible tensile load $N_{perm}^{3)}$ [kN]	permissible shear load $V_{perm}^{3)}$ [kN]	min. spacing $s_{min}^{2)}$ [mm]	min. edge distance $c_{min}^{2)}$ [mm]
RG M8 I	90	120	10	4,7	5,3	55	55	9,0	5,3	55	55
RG M10 I	90	125	20	6,3	8,3	65	65	13,8	8,3	65	65
RG M12 I	125	165	40	9,8	12,1	75	75	20,5	12,1	75	75
RG M16 I	160	205	80	15,4	22,4	95	95	37,6	22,4	95	95
RG M20 I	200	260	120	24,4	35,4	125	125	56,7	35,4	125	125

¹⁾ The partial safety factors for material resistance as regulated in the assessment as well as a partial safety factor for load actions of $\gamma_F = 1,4$ are considered. As a single anchor counts e.g. an anchor with a spacing $s \geq 3 \times h_{ef}$ and an edge distance $c \geq 1,5 \times h_{ef}$. Accurate data see assessment.

²⁾ Minimum possible axial spacings resp. edge distance while reducing the permissible load.

³⁾ For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see assessment.

⁴⁾ For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

⁵⁾ The given loads are valid for the glass capsule RM II for fixations in dry and humid concrete for temperatures in the substrate up to 72 °C (resp. short term up to 120 °C).

⁶⁾ Drill method hammer drilling. For further allowable drill methods and application conditions see assessment.

⁷⁾ The given loads refer to the assessment ETA-16/0340, issue date 14/02/2017. Design of the loads according 'ETAG 001, Technical Report TR 029' (for static resp. quasi-static loads).

LOADS

Resin anchor RM II with internal threaded anchor RG MI⁵⁾ (property class fixing screw 8.8)

Highest permissible load for a single anchor¹⁾ in normal weight concrete C20/25^{4) 6)}

For the design the complete assessment⁷⁾ ETA-16/0340 has to be considered.

Type				Cracked concrete				Non-cracked concrete			
	effective anchorage depth	min. member thickness	maximum torque moment	permissible tensile load	permissible shear load	min. spacing	min. edge distance	permissible tensile load	permissible shear load	min. spacing	min. edge distance
	h_{ef} [mm]	h_{min} [mm]	$T_{inst,max}$ [Nm]	$N_{perm}^{3)}$ [kN]	$V_{perm}^{3)}$ [kN]	$s_{min}^{2)}$ [mm]	$c_{min}^{2)}$ [mm]	$N_{perm}^{3)}$ [kN]	$V_{perm}^{3)}$ [kN]	$s_{min}^{2)}$ [mm]	$c_{min}^{2)}$ [mm]
RG M8 I	90	120	10	4,7	8,3	55	55	12,8	8,3	55	55
RG M10 I	90	125	20	6,3	13,3	65	65	17,1	13,3	65	65
RG M12 I	125	165	40	9,8	19,3	75	75	26,6	19,3	75	75
RG M16 I	160	205	80	15,4	30,9	95	95	40,6	30,9	95	95
RG M20 I	200	260	120	24,4	51,4	125	125	56,7	51,4	125	125

¹⁾ The partial safety factors for material resistance as regulated in the assessment as well as a partial safety factor for load actions of $\gamma_F = 1,4$ are considered. As an single anchor counts e.g. an anchor with a spacing $s \geq 3 \times h_{ef}$ and an edge distance $c \geq 1,5 \times h_{ef}$. Accurate data see assessment.

²⁾ Minimum possible axial spacings resp. edge distance while reducing the permissible load.

³⁾ For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see assessment.

⁴⁾ For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

⁵⁾ The given loads are valid for the glass capsule RM II for fixations in dry and humid concrete for temperatures in the substrate up to 72 °C (resp. short term up to 120 °C).

⁶⁾ Drill method hammer drilling. For further allowable drill methods and application conditions see assessment.

⁷⁾ The given loads refer to the assessment ETA-16/0340, issue date 14/02/2017. Design of the loads according 'ETAG 001, Technical Report TR 029' (for static resp. quasi-static loads).

LOADS

Resin anchor RM II with internal threaded anchor RG MI⁵⁾ (property class fixing screw A4-70)

Highest permissible load for a single anchor¹⁾ in normal weight concrete C20/25^{4) 6)}

For the design the complete assessment⁷⁾ ETA-16/0340 has to be considered.

Type				Cracked concrete				Non-cracked concrete			
	effective anchorage depth	min. member thickness	maximum torque moment	permissible tensile load	permissible shear load	min. spacing	min. edge distance	permissible tensile load	permissible shear load	min. spacing	min. edge distance
	h_{ef} [mm]	h_{min} [mm]	$T_{inst,max}$ [Nm]	$N_{perm}^{3)}$ [kN]	$V_{perm}^{3)}$ [kN]	$s_{min}^{2)}$ [mm]	$c_{min}^{2)}$ [mm]	$N_{perm}^{3)}$ [kN]	$V_{perm}^{3)}$ [kN]	$s_{min}^{2)}$ [mm]	$c_{min}^{2)}$ [mm]
RG M8 I	90	120	10	4,7	5,9	55	55	9,9	5,9	55	55
RG M10 I	90	125	20	6,3	9,3	65	65	15,7	9,3	65	65
RG M12 I	125	165	40	9,8	13,5	75	75	22,5	13,5	75	75
RG M16 I	160	205	80	15,4	25,1	95	95	40,6	25,1	95	95
RG M20 I	200	260	120	24,4	39,4	125	125	56,7	39,4	125	125

¹⁾ The partial safety factors for material resistance as regulated in the assessment as well as a partial safety factor for load actions of $\gamma_F = 1,4$ are considered. As an single anchor counts e.g. an anchor with a spacing $s \geq 3 \times h_{ef}$ and an edge distance $c \geq 1,5 \times h_{ef}$. Accurate data see assessment.

²⁾ Minimum possible axial spacings resp. edge distance while reducing the permissible load.

³⁾ For combinations of tensile loads, shear loads, bending moments as well as reduced edge distances or spacings (anchor groups) see assessment.

⁴⁾ For higher concrete strength classes up to C50/60 higher permissible loads may be possible.

⁵⁾ The given loads are valid for the glass capsule RM II for fixations in dry and humid concrete for temperatures in the substrate up to 72 °C (resp. short term up to 120 °C).

⁶⁾ Drill method hammer drilling. For further allowable drill methods and application conditions see assessment.

⁷⁾ The given loads refer to the assessment ETA-16/0340, issue date 14/02/2017. Design of the loads according 'ETAG 001, Technical Report TR 029' (for static resp. quasi-static loads).