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# Labor für Stahl- und Leichtmetallbau GmbH

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Bay 27

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## General building-authority test certificate

**Test certificate number:** P-2024-3063

**Object:** linearly mounted compound safety glazing

**System:** 680 Anker Kleber

**Intended purpose:** Barrier according to DIN 18008-4  
Technical Building Regulations for Bavaria  
(Bay TB)  
Type of construction acc. to C 4.12

**Barrier category:** B

**Applicant:** Ramsauer GmbH & Co KG  
Alte Bundesstraße 147  
A-5350 Strobl

**Date of issue:** 01.08.2024

**Valid until:** 31.07.2029

This general building-authority certificate conforms that the object named above can be used in accordance with the State Building Code.

The general building-authority test certificate consists of 7 pages and 5 appendices.

For the management and administrator

Dipl. -Ing. (FH) A. Lorenz



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## I. General regulations

1. The general building-authority test certificate does not replace the permits, approvals and certificates legally required for construction projects.
2. The general building-authority test certificate is issued without affect the rights, especially private property rights, of third parties.
3. Regardless of additional regulations under "Special regulations", the manufacturer of the design must provide the user of the construction with copies of the general building-authority test certificate and point out that the general building-authority test certificate must be available at the location of use. Upon request, the authorities involved must be provided with copies of the general building-authority test certificate.
4. The general building-authority test certificate must only be reproduced in its unshortened version. Publication in parts requires the approval of the Labor für Stahl- und Leichtmetallbau GmbH. Texts and drawings of advertising must not contradict the general building-authority test certificate. Translations of the general building-authority test certificate must contain the note "This translation of the German original version was not reviewed by the Labor für Stahl- und Leichtmetallbau GmbH".

## II. Special regulations

### 1. Object and scope of application

#### 1.1 Object

The object of the general building-authority test certificate are the glass barrier systems developed by Ramsauer GmbH & Co KG according to the Technical Building Regulations for Bavaria (Bay TB).

The glass panels are linearly clamped at the lower edge and connected with a handrail profile at the upper edge of the glass panel. The glass panels can be installed at a tilt of up to 10° from the vertical.

#### 1.2 Scope of application

The object named above is used in accordance with DIN 18008-4, Additional requirements for barrier glazing according to **Category B**.

#### 1.3 Basis of this certificate

Basis for this test certificate is the test report 2019-3007.



## 2 Requirements for the design

### 2.1 Description of the construction

#### 2.1.1 Glass mounting

The glass panes are supported linearly at the lower edge in a bed of Anker Kleber 680. The construction details can be found in the drawing in Annex 1. When constructing the bedding, the manufacturer's instructions for use [k] must be observed. The clamping depth of the glass pane must be at least 100 mm. The dead weight is supported by suitable glass blocks. The steel substructure must be verified with a statical calculation. The upper face of the upper bedding must be protected by a suitable seal (see Appendix 1). The composite grout system Anker Kleber 680 has the ETA-17/0679 and ETA-17/0680 for anchoring in masonry [i,j].

The panes are connected to a continuous handrail profile at the top edges of the glass. The profile must meet the static design requirements according to DIN 18008-4.

#### 2.1.2 Glazing

The following glass-built ups can be used:

Glass built up:

tempered glass (ESG)	10,00 mm
PVB interlayer	0,76 mm
tempered glass (ESG)	10,00 mm
<b>total glass thickness</b>	<b>20,8 mm</b>

Only glass products according to DIN 18008-4 are allowed. The glass and interlayer thicknesses listed above may be exceeded. All Interlayers with an appropriate general building-authority certificate may be used for laminated glass. Tempered glass according to DIN EN 12150 or DIN EN 14179 is allowed.

### 2.2 Test procedure to be used

The test of the barrier function of the glazing was done according to Appendix A of DIN 18008-4. The bearing capacity under impact loading was tested for the standard dimensions of the described glazing using the pendulum impact test. The test results are documented in test report 2019-3007.

### 2.3 Use, maintenance and service

The construction must be mounted and secured using suitable measures in such a way that it meets the specified requirements as barrier permanently. The proof of secure anchoring of the glazing construction at the building must follow the applicable technical building regulations.

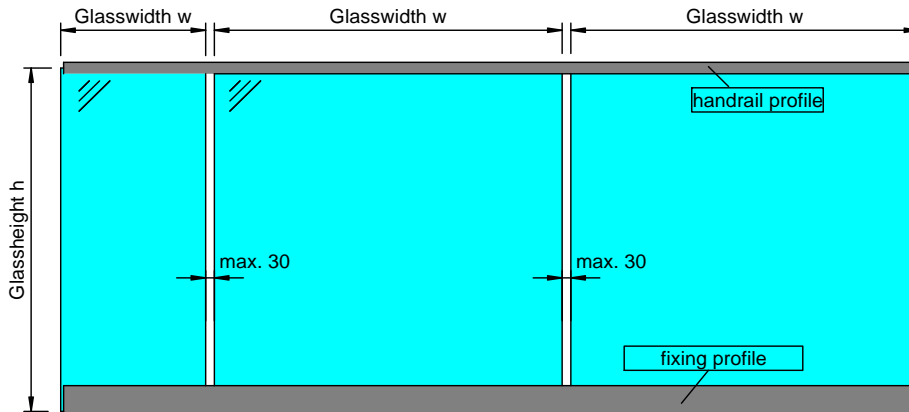


### 3. Validity and specifications for dimensioning

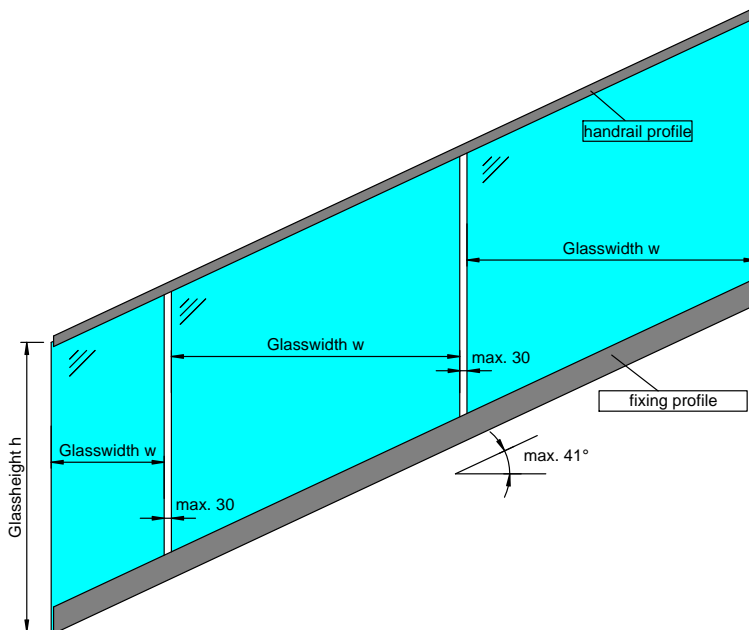
#### 3.1 Area of application

The general building-authority test certificate is valid for the design described in section 2. The glazing has a barrier function according to category B. The admissible dimensions for the corresponding installation situation are specified in the following tables and figures.

straight installation:



Deviations from rectangular shape (flight of stairs):



The following dimensions were allowed:

**Table 1:** admissible dimensions

Glaswidth [mm]		Glasheight [mm]*	
min.	max.	min	max.
500	any	900	1300



Other constructive specifications:

- At least 2 panels with the smallest glass width must be installed.
- If the handrail is anchored at the end, the glass barrier may also consist of one panel.

### 3.2 Calculation

For the application, a calculated proof of bearing capacity under static load according to DIN 18008-4, section 6.1 must be provided for the glazing and mounting constructions.

## 4. Declaration of conformity

The design described in this general building-authority test certificate requires a declaration of conformity by the user (contractor) in accordance with Building code for Bavaria (LBO). In this document, the contractor declares for the client that the described design complies with this general building-authority test certificate in all details.

## 5. Associated regulations

The provisions of DIN 18008-4, Additional requirements for barrier glazing, must be considered for the descriptions. Furthermore, the following standards and information sheets in their current version are referenced:

- [a] Building code for Bayern (LBO)
- [b] Technical Building Regulations for Bayern (Bay TB)
- [c] DIN EN 14449; Glass in building - Laminated glass and laminated safety glass
- [d] DIN 572, Part 1-2; Glass in building - Basic soda lime silicate glass products
- [e] DIN 12150, Part 1; Glass in building - Thermally toughened soda lime silicate safety glass
- [f] DIN 14179, Part 1; Glass in building – Heat Soaked thermally toughened soda lime silicate safety glass
- [g] DIN EN 1863, Part 1; Glass in building - Heat strengthened soda lime silicate glass
- [h] DIN 18008, Part 1-2; Glass in Building - Design and construction rules
- [i] ETA-17/0679; RAMSAUER Anker Kleber 680
- [j] ETA-17/0680; Injection system 680 ANKER KLEBER



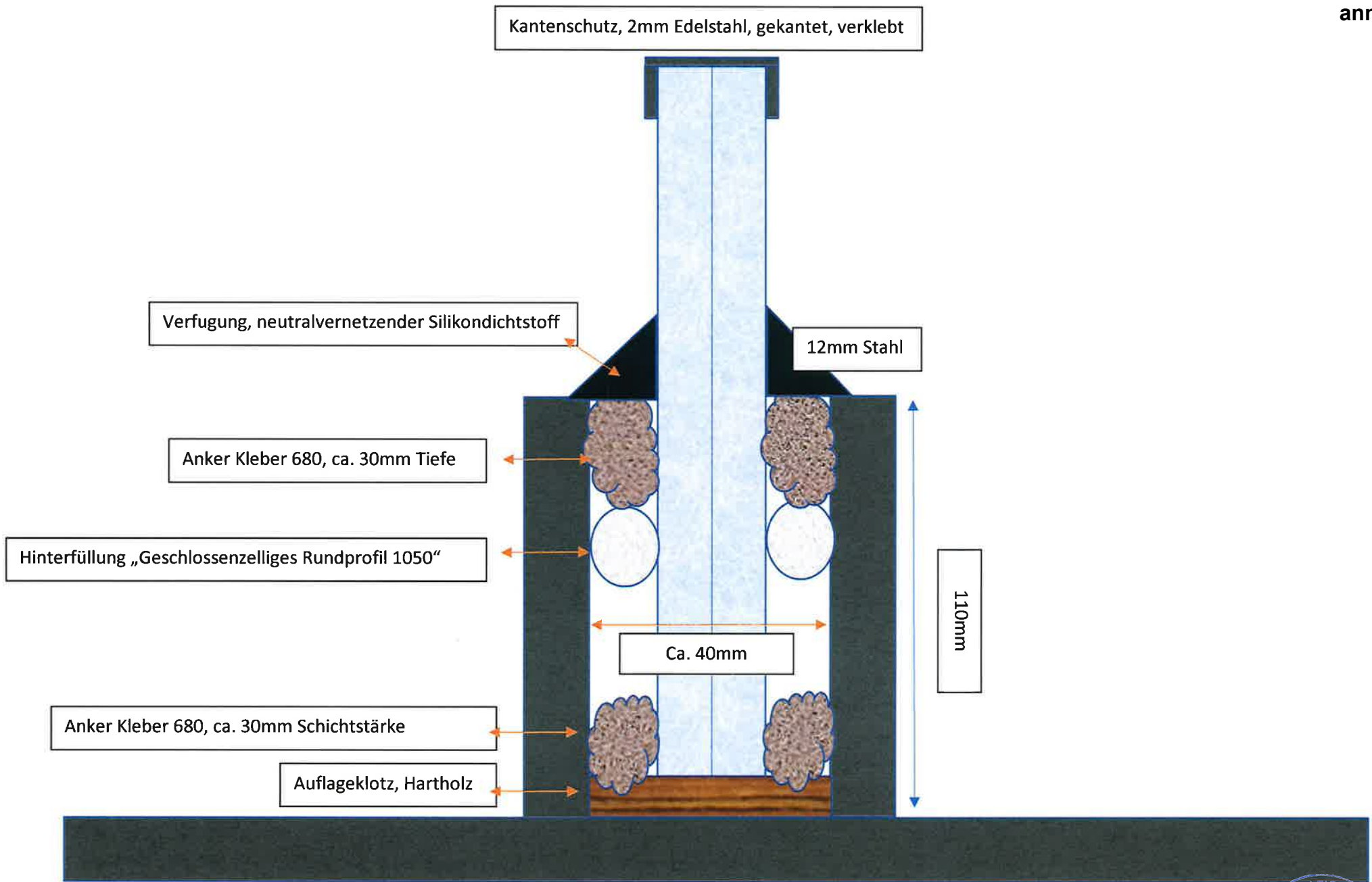
### **III. Legal basis**

This general building-authority test certificate was issued based on article 19 of the building code for Bayern in accordance with the Technical Building Regulations for Bayern (Bay TB).

### **IV. Instruction on right to appeal**

This general building-authority test certificate can be appealed within one month after issue. The appeal must be submitted in writing or for recording at the Labor für Stahl- und Leichtmetallbau GmbH.





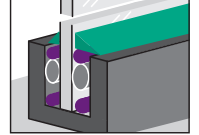



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# 680

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# Anker Kleber

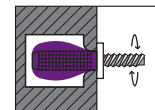
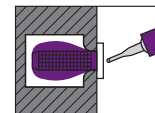
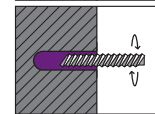
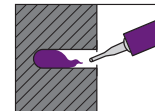
**Composite grout based on vinyl ester resin**


## Technical data sheet

Version: 07-2022

### Tests:

- Tested according to ETA-17/0679 and ETA-17/0680
- Tested in accordance with DIN 18008-4
- Tested in accordance with ÖNORM B 3716-3
- Test report according to ift GUIDELINE DI-02/1 No. 17-003701-PR1



## 1. Mechanical Properties

Basis	Vinyl ester resin
Relative density/comp. A (colour: white)	1.60 - 1.80 g/ml
Relative density/comp. B (colour: black)	1.50 - 1.70 g/ml
Shelf life	12 months, cool and dry in original packaging
Recommended storage temperature	+5 to +30 °C (store in dark conditions)
Colour	Grey
Packaging	280 ml and 400 ml cartridge

## 2. Properties

680 ANKER KLEBER is a high-performance composite grout with vinyl ester resin, styrene-free for solid or hollow material with a short curing time.

## 3. Priming table

## 4. Application

Suitable for concrete, stone, perforated stone and cavity material with many applications: fastening of gates, balustrades, stair railings, blinds, antennas, brackets, cable rails, industrial equipment, etc. Also suitable for building applications involving rebars or renovating buildings. Approved for bonding glass balustrades. Approved for use touching the edge of laminated glass and laminated safety glass.





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## 5. Meets the requirements of IVD instruction sheet

## 6. Processing

**General instructions:** The expiry date of the material must be observed, otherwise the stated mechanical properties of the product can no longer be guaranteed. Observe the ambient temperature and substrate temperature.

- The parts to be fastened must be free of dirt, grease, oil or other foreign matter.
- Grout injection starting at the bottom of the borehole, air inclusions must be avoided. Slowly pull out the static mixer during extrusion. Make sure that the colour of the material is uniform.
- The borehole must be filled with injection grout to approximately 2/3 of its depth.
- Rotate in the part to be anchored within the pot life. The borehole must be completely filled with grout in the process.
- Excess material must be removed immediately. If needed, hold in place with a suitable tool. Processing must comply with ETA-17/0679 or 17/680.
- Do not touch the steel parts until the curing time has elapsed.

### Processing and curing times

Betontemperatur	°C	-10	-5	0	+5	+10	+15	+20	+25	+30	+35	+40
Max. Verarbeitungszeit	Min.	105	65	45	25	16	11,5	7,5	5	3	2	1
Min. Aushärtezeit bei trockenem Beton	Std.	22	13	7	1,5	1	-	-	-	-	-	-
	Min.	-	-	-	-	-	45	40	35	30	25	20
Min. Aushärtezeit bei mit Wasser gefüllten Bohrlöchern	Std.	-	-	-	3	2	1,5	-	-	-	-	-
	Min.	-	-	-	-	-	-	80	70	60	50	40

### Using the cartridge

- Unscrew and remove the cap
- Screw the static mixer onto the cartridge.
- Insert the cartridge into the applicator gun.  
IMPORTANT: Not suitable for cartridge guns WITHOUT a push rod!
- Press out 680 ANKER KLEBER until a homogeneous grey material escapes.  
Discard the first bead.

### Preliminary work and borehole cleaning according to ETA specifications

- Select a suitable drill bit of a size appropriate for the part to be anchored and drill at 90°.
- Use an appropriate pump (or compressed air) and steel brush to clean the borehole to remove drilling dust, concrete fragments, oil, grease and other impurities prior to grout injection. Check the diameter of the steel brush before brushing.
- Clean compact materials, e.g., concrete/solid stone, as follows: blow out drill hole 4x , brush 4x and blow out 4x.
- Clean non compact materials, e.g., perforated bricks, as follows: blow out drill hole 4x , brush 2x and blow out 4x.





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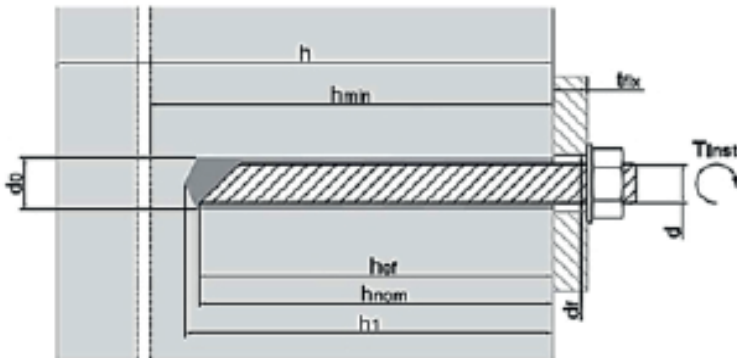


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# Anker Kleber

Befestigung in Beton oder Vollstein			Befestigung in Lochziegel		
Gewindestangen Größe	Bohrloch	Bohrloch zu 2/3 befüllt. *Anker kalkuliert	Gewindestangen Größe	Siebhülse	Siebhülsen befüllt *Anker kalkuliert
	do [mm] x h1 [mm]			Dnom [mm] x L [mm]	
M8	10 x 90	56	M8	12 x 80	28
M10	12 x 95	37	M8	15 x 85	16
M12	14 x 115	25	M10	15 x 85	16
M14	16 x 120	20	M12	15 x 85	16
M16	18 x 130	16	M12	20 x 85	10
M20	24 x 175	6	M16	20 x 85	9
M24	28 x 215	3			



Legende: d [mm] Stangendurchmesser  
 hmin [mm] Mindestbaudicke  
 d0 [mm] Bohrlochdurchmesser  
 h1 [mm] Bohrlochtiefe  
 hnom [mm] Setztiefe  
 hef [mm] Effektivtiefe Verankerungstiefe

df [mm] Bohrlochdurchmesser Anbauteil  
 tfix [mm] Anbaudicke  
 Tinst [Nm] Drehmoment beim Verankern.

Anmerkung: Die auf Seite 3 genannte Anzahl der Anker (\*Anker kalkuliert) wurden nach dem theoretischen Volumen für die Bohrlochfüllung bzw. Siebhülsenfüllung abzüglich dem Volumen der Gewindestangen berechnet. Bei der theoretischen Berechnung ist eine Zuschlagmenge einkalkuliert. Die tatsächliche Einsatzmenge kann anwendungsspezifisch von der kalkulierten Menge abweichen.

The characteristic values for rebars under tensile load in non-cracked concrete or in cracked concrete are given in ETA-17/0679, tables C1 and C2 on pages 19 and 20.

ETA approvals 17/0679 and 17/0680 can be downloaded from our website at [www.ramsauer.at](http://www.ramsauer.at).





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# Anker Kleber

## 7. Accessories

- Static mixing tube (280 ml)
- Static mixing tube (400 ml)
- Screen sleeve 12 x 50 mm - PU: 5 pcs./bag
- Screen sleeve 15 x 85 mm - PU: 5 pcs./bag
- Screen sleeve 15 x 100 mm - PU: 5 pcs./bag
- Screen sleeve 15 x 135 mm - PU: 5 pcs./bag
- Screen sleeve 20 x 85 mm - PU: 5 pcs./bag
- Blow-out pump

## 8. Safety instructions

Please refer to the current EC safety data sheets. Data sheets are available at any time from our website at [www.ramsauer.eu](http://www.ramsauer.eu).

**Occupational health and safety:** Avoid swallowing, prolonged or repeated contact with the skin. Keep out of the reach of children. Request a safety data sheet!

## 9. Application notes

Good ventilation must be ensured during processing and curing. Before processing, always check the expiry date, the load-bearing capacity and outside temperature. Setting or readjustment is only possible during the pot life! Ensure a uniformly grey adhesive mix. Generally well suited for use with natural stone. Depending on the type, thickness and capillary activity of the stone, resin can escape around the adhesive. However, this does not impair the adhesive strength.

## 10. Liability for defects

The information, in particular the suggestions for the processing and use of our products, is based on our knowledge and experience in normal use cases at the time of printing. Depending on the specific circumstances, with regard to the substrate, processing and environmental conditions, the results may differ from our information. No warranty or liability claim for any reason whatsoever arises from these instructions or from any instructions issued verbally. Ramsauer guarantees that its products comply with the technical properties specified in the technical data sheets until the expiry date.

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