

EN

OPERATING MANUAL
CRH MEASURING CHAMBER

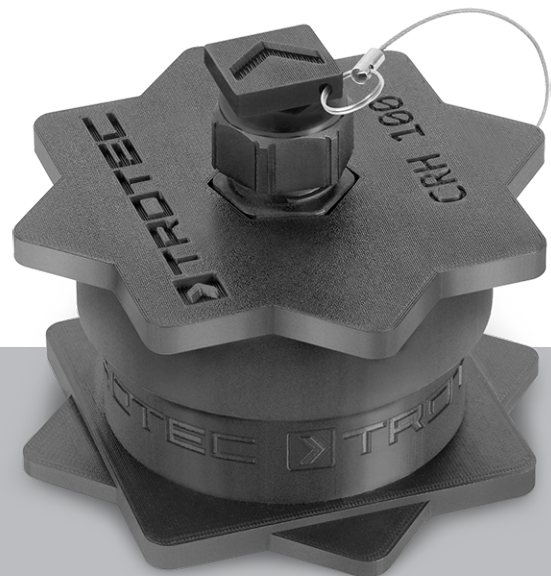




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Notes regarding the operating manual


Symbols

 **Warning**
 This signal word indicates a hazard with an average risk level which, if not avoided, can result in serious injury or death.

 **Caution**
 This signal word indicates a hazard with a low risk level which, if not avoided, can result in minor or moderate injury.

Note
 This signal word indicates important information (e.g. material damage), but does not indicate hazards.

 **Info**
 Information marked with this symbol helps you to carry out your tasks quickly and safely.

 **Follow the manual**
 Information marked with this symbol indicates that the operating manual must be observed.

You can download the current version of the operating manual and the EU declaration of conformity via the following link:




CRH100



<https://hub.trotec.com/?id=46087>

Safety

 **Warning**
Read all safety warnings and all instructions.
 Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.
Keep these instructions for future reference and ensure that the instructions are available when using the product.
 Children shall not play with the product. Cleaning and user maintenance shall not be made by children without supervision.

Intended use

Only use the product together with the multifunction measuring meter T3000 and the sensor TS230SDI for measuring the residual humidity in mineral screeds according to the KRL measuring method. Observe and comply with the technical data of the measuring chamber, the measuring device and the sensor.

Foreseeable misuse

Any unauthorised modifications, alterations or structural changes to the product are forbidden.


Any other use than the one described in the chapter "Intended use" is regarded as reasonably foreseeable misuse.


Personnel qualifications


People who use this product must:


- have read and understood the operating manual of the device with which you are using this accessory, especially the Safety chapter.

Residual risks

 **Warning**
 Risk of suffocation!
 Do not leave the packaging lying around. Children may use it as a dangerous toy.

 **Warning**
 The product is not a toy and does not belong in the hands of children.

 **Warning**
 Dangers can occur at the product when it is used by untrained people in an unprofessional or improper way!
 Observe the personnel qualifications!

 **Caution**
 Keep a sufficient distance from heat sources.

Note

To prevent damages to the product, do not expose it to extreme temperatures, extreme humidity or moisture.

Note

Do not use abrasive cleaners or solvents to clean the product.

Information about the product

Product description

Using the CRH measuring chamber CRH100 together with the multifunction measuring meter T3000 as well as the climate sensor TS 230 SDI allows you to measure the residual humidity in mineral screeds according to the CRH method and thus to check the mineral screed's readiness for covering.

CRH measuring method

When using the CRH measurement method, the corresponding relative humidity (CRH) of mineral screeds is determined with a test method suitable for construction sites and crafts. The corresponding relative humidity is the relative humidity in percent [% RH] that is measured in the air space via a mortar sample of the material in a state of equilibrium. The measuring method was co-developed by the Technical Commission on Construction Adhesives (TKB) and confirmed in extensive interlaboratory tests with experts.

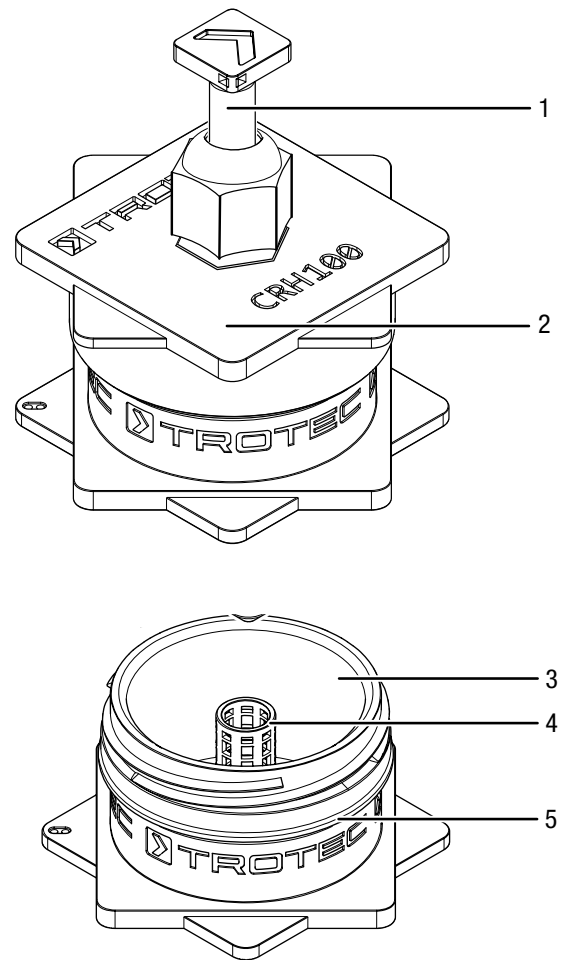
The great advantage of this measurement method is that general, material-independent statements on the moisture condition of mineral screeds can be made immediately after the measurement. This increases the reliability when determining the readiness for covering, especially for screeds mixed with aggregates (screed accelerators). With conventional cement screeds, not all of the water that is required for processing the screed is consumed by the setting/hydration process. Due to excess water, the drying time is delayed and thus also the readiness of the screed for covering.

This excess water is permanently bound in crystalline form by screed accelerators, resulting in a significantly faster readiness for covering. However, these aggregates may well result in significant deviations in a CM measurement, making the CRH measurement method an advantage.

The screed's readiness for covering is achieved once it can permanently accommodate a floor covering without any damages or defects caused.

To measure the relative humidity according to the CRH method, only measuring devices suitable for this purpose should be used which have been tested and approved for the CRH measuring method by the Technical Commission on Construction Adhesives (TKB).

Product depiction



No.	Operating element
1	Sealing plug
2	Cover
3	Test chamber
4	Measuring tube
5	Rubber seal

Technical data

Parameter	Value
Dimensions (length x width x height)	110 x 110 x 90 mm
Weight	138 g
Diameter of measuring tube	12 mm
Test material grain size	≤ 8 mm
Weighed quantity of test material	150 ± 20 g

Scope of delivery

- 1 × CRH100 CRH measuring chamber

Transport and storage

Note

If you store or transport the product improperly, the product may be damaged.
 Note the information regarding transport and storage of the product.

Transport

When transporting the product, ensure dry conditions and protect the device from external influences e.g. by using a suitable bag.

Storage

When the product is not being used, observe the following storage conditions:

- dry and protected from frost and heat
- protected from dust and direct sunlight
- the storage temperature complies with the values specified in the Technical data

Operation

Preparation of sample-taking



Wear safety glasses



Risk of injury when taking samples by hammer blows and flying sample material.

Allow sufficient time before taking the sample. The temperatures of the sample material, measuring chamber, measuring probe and ambient air must be almost the same.

You will need the following to take the sample:

- Protective gloves and eye protection
- Hammer and chisel/jack hammer
- Freezer bag/small sturdy plastic bag
- Tray (for dirty/non resilient surfaces)
- Spoon
- Scales
- Test protocol (specification of construction site, floor, room, test date, investigator and test result)
- Multifunction measuring meter T3000 with measuring cable TC30
- Climate sensor TS 230 SDI
- CRH measuring chamber CRH100



Info

Make sure that the sensor is free of dust and other residues. Soiling of the sensor causes incorrect measurement results. If necessary, brush the sensor with a brush or clean it with a damp cloth. Make sure that the sensor is completely dry before starting the measurement.

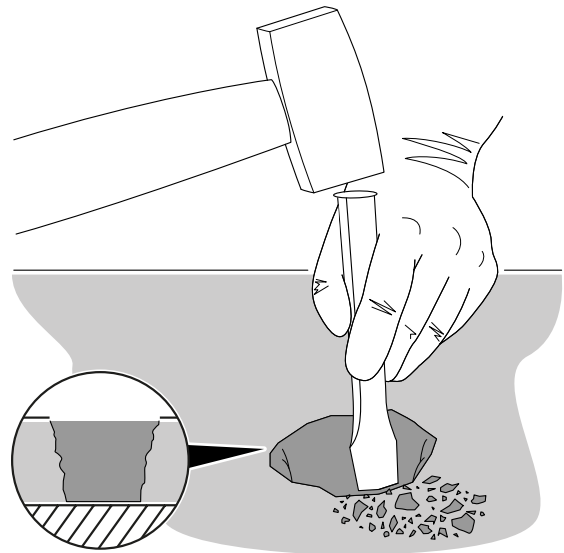
Taking the sample

When taking the sample, please observe the following:

- Taking the sample, sample comminution and measurement must be carried out as quickly as possible.
- When taking the sample, do not use any methods that involve strong heat generation, e.g. drilling or cutting, or that involve the introduction of water.
- Avoid direct sunlight and draught when taking samples

Please proceed as follows for taking samples:

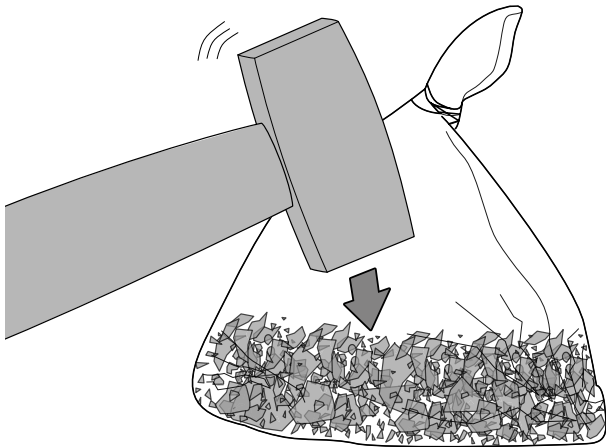
1. Take the sample with a hammer and chisel of the entire cross-section of the screed. If required, use a jack hammer. Avoid funnel formation!



2. Use the spoon to fill the loosened sample material into the freezer bag.

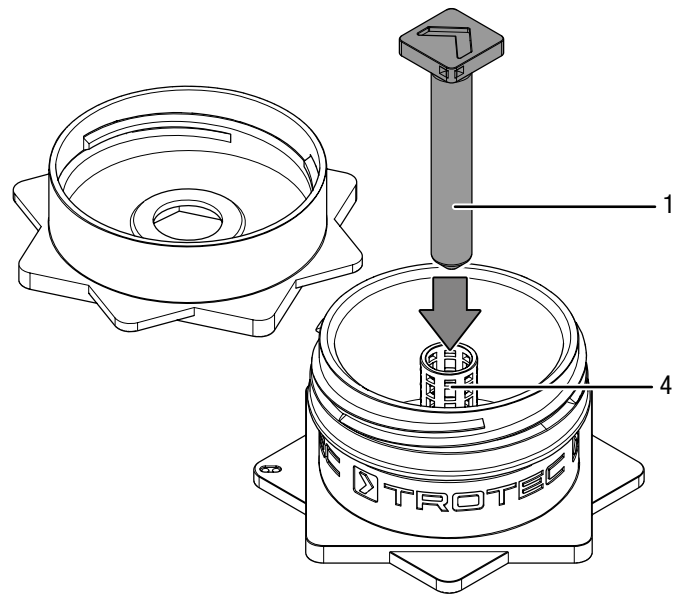


3. Crush the sample material so that the entire test material has a grain size smaller than 8 mm.
 ⇒ If the floor is dirty or not resilient, place the freezer bag in a tray before starting to comminute the sample.

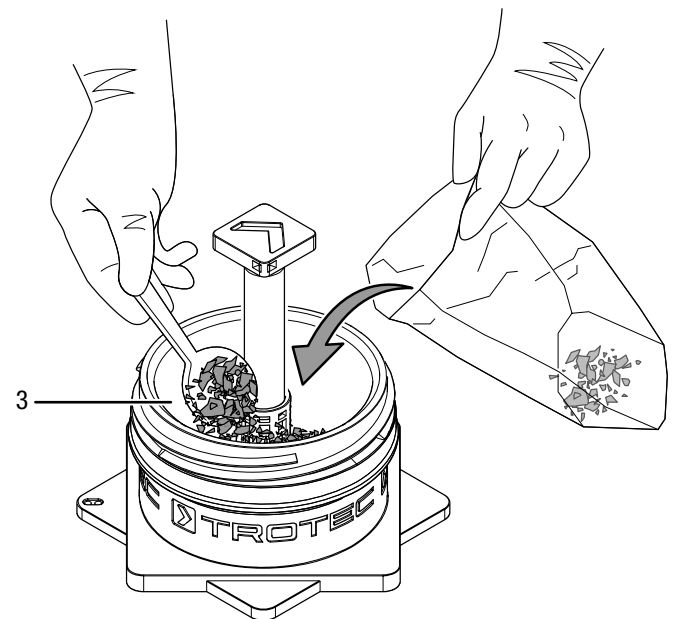
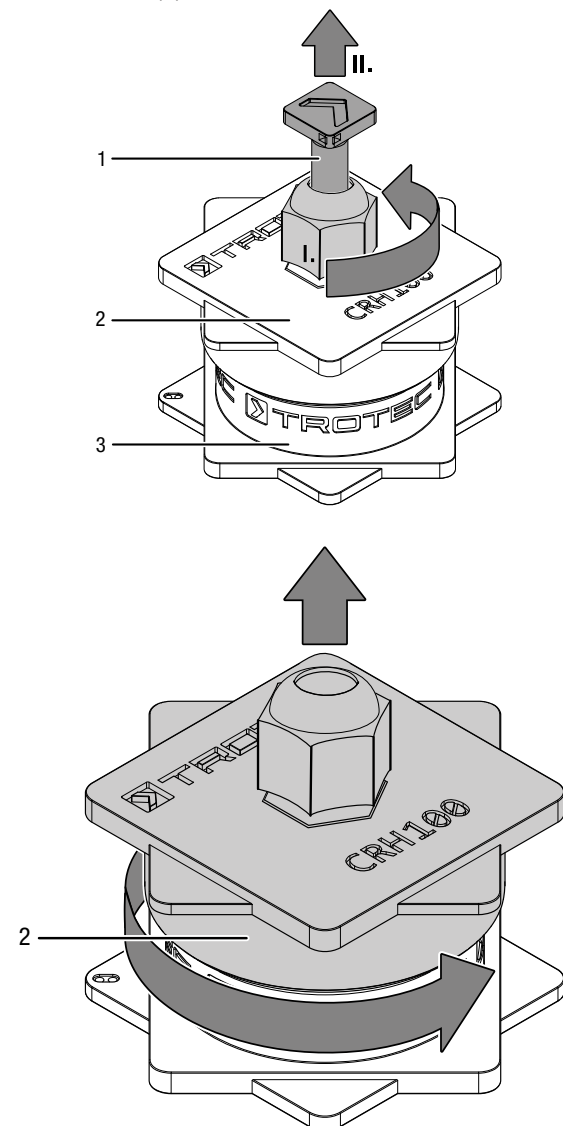


4. Weigh a quantity of approx. 150 g (\pm 20 g).
5. Remove the sealing plug (1) and the cover (2) of the test chamber (3).

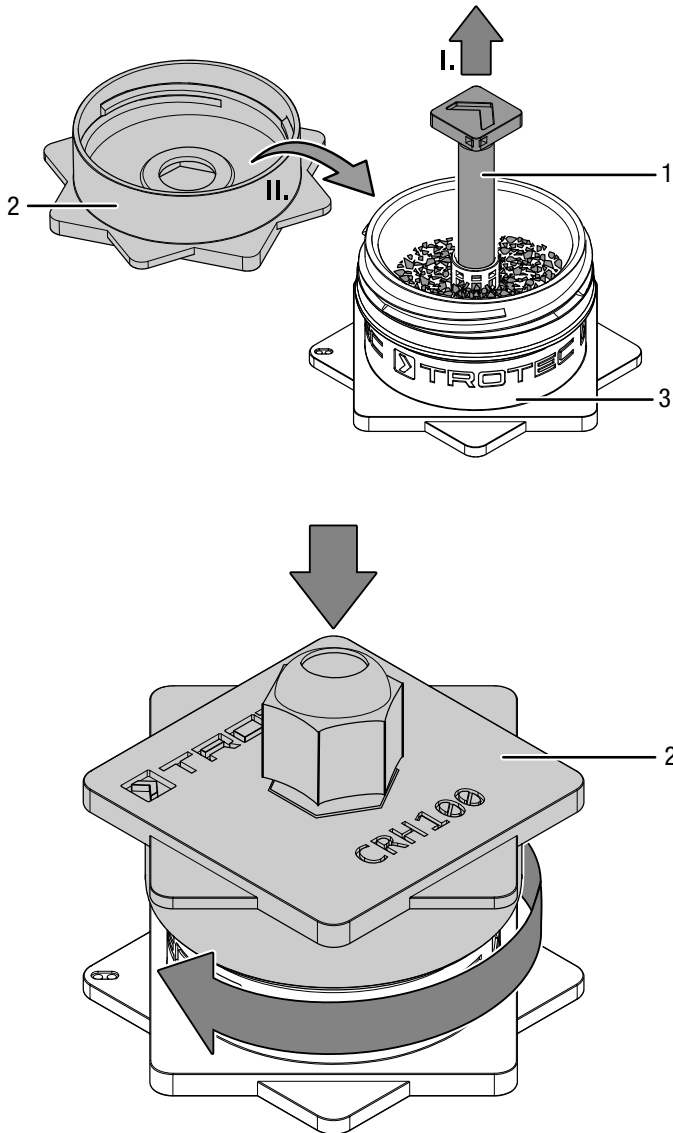
6. Insert the sealing plug (1) into the measuring tube (4) in a way that no sample material can enter the measuring tube (4) during the filling process.



7. Fill a quantity of approx. 150 g (\pm 20 g) into the test chamber (3).



8. Remove the sealing plug (1) and close the test chamber (3) with the cover (2).



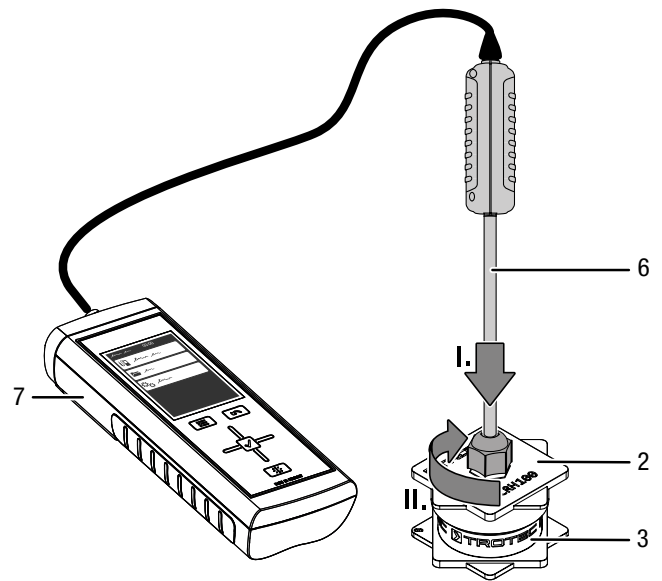
- Info**
Temperature changes of the sample may influence the humidity measurement performed above the sample.

Carrying out a measurement

- Info**
When measuring according to the CRH method, maximum fluctuations of $\pm 2\%$ RH are to be expected in the temperature range $20\text{ }^\circ\text{C} \pm 5\text{ }^\circ\text{C}$.

Please proceed as follows to perform the measurement:

1. Insert the sensor (6) of the measuring device (7) through the opening in the cover (2) into the measuring tube (4) inside the container all the way to the stop.
2. Fix the sensor (6) in a way that it is positioned in the centre of the test chamber (3).



3. Set the humidity measurement mode according to the operating manual of the measuring device.
4. Read the measurement result on the measuring device (7) once the measurement value display no longer changes.
⇒ The measuring device (7) displays the result of the measurement after at least 30 minutes.

Determining the readiness for covering

For laying materials and floor coverings, no harmful effects are to be expected up to a relative humidity of 75 %.

CRH limit values for the readiness for covering:

Screed	Guide value
unheated	$\leq 80\%$ RH
heated	$\leq 75\%$ RH

Disposal

The product does not contain any electrical or electronic elements. At the end of its life, please dispose of this product according to the valid legal requirements.

Test protocol

Information on the location of the screed in the building					
Building / property: address of building section / building component / floor / apartment no. / room no.					
Contractor for parquet/floor covering works					
Name, address, contact person					
Client of parquet/floor covering works					
Name, address, contact person					
Details of client on the screed (if required, after consultation with screed manufacturer) The details must be provided for each room individually!					
Screed construction / type of installation	a) floating screed b) screed on separating layer				
Binder type	a) cement screed (CT) a) 1. type of cement (e.g. CEM I, CEM II/A-LL) a) 2. admixture used b) calcium sulphate screed (CA/CAF) c) rapid cement screed				
Date of screed installation	Differentiated according to sub-areas, if applicable				
Nominal screed thickness	[mm]				
Maximum screed thickness	[mm]				
Hot water underfloor heating	yes/no				
Documentation of the measurement results for screed moisture					
Measuring point no.		1	2	3	4
Date					
Investigator					
Air temperature	[°C]				
Relative humidity	[%]				
Substrate surface temperature	[°C]				
with underfloor heating: heating protocol available?	yes/no				
Measuring points for underfloor heating marked / identified?	yes/no				
Screed thickness	[mm]				
Weighed portion	[g]				
Corresponding relative humidity (CRH value)	[%]				
CRH value read after	[min]				
Sample container (PE bag/B, PE bottle/F, steel bottle/S, CRH measuring cup/M)					
Measuring device type					
Humidity limit value complied with	yes/no				
Comments					
Confirmation of the measurement results					
Date / signature of the investigator			Date / signature of the client		

Trotec GmbH

Grebener Str. 7
D-52525 Heinsberg

☎ +49 2452 962-400

☎ +49 2452 962-200

✉ info@trotec.com

www.trotec.com