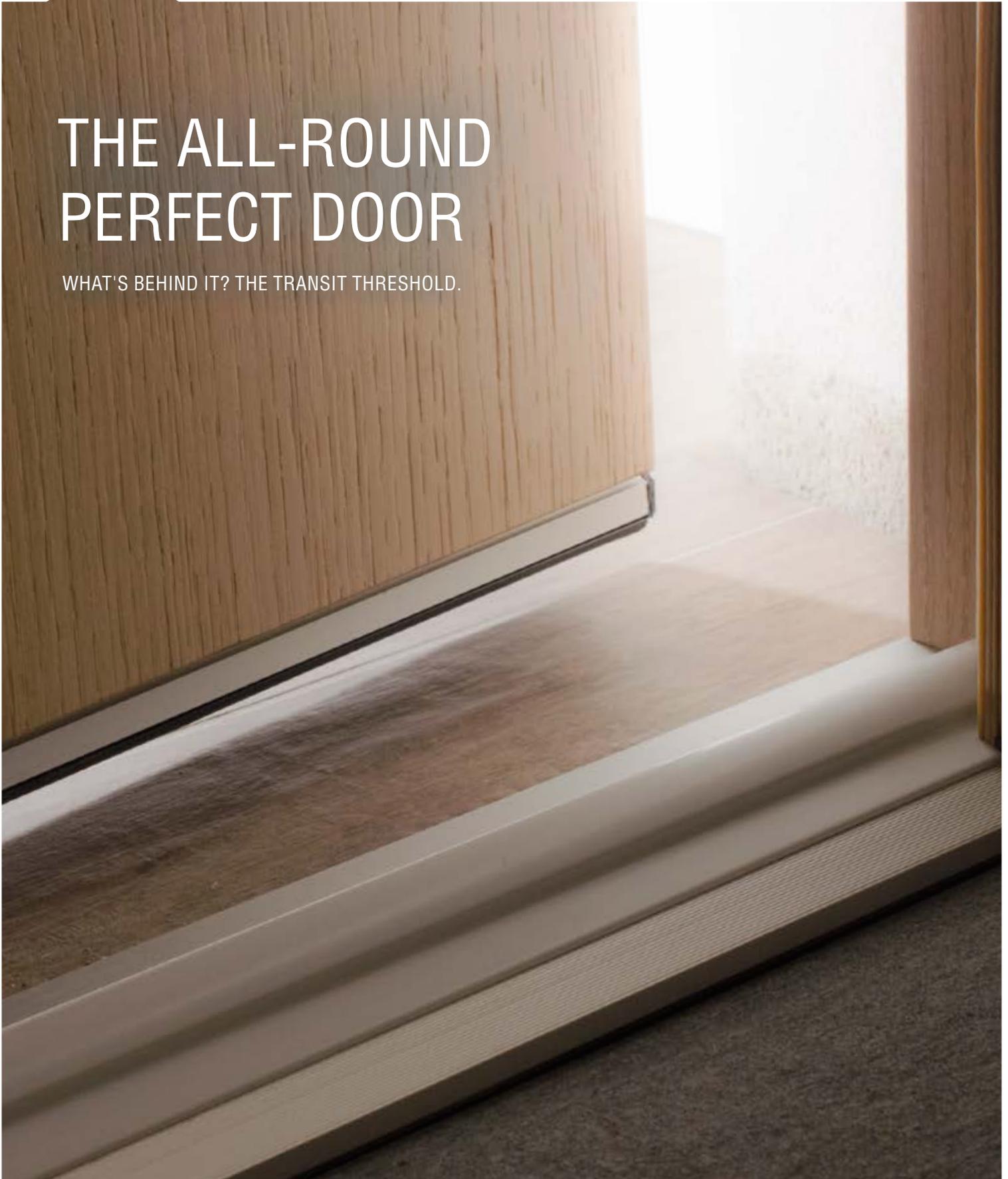




# THE ALL-ROUND PERFECT DOOR

WHAT'S BEHIND IT? THE TRANSIT THRESHOLD.



The difference between a good and a perfect door is plain to see.

It is the MACO "Transit" that offers superior solutions in every aspect: high **insulation performance**, **luxury**, appealing **design**.

# IT GOES WITHOUT SAYING

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TRANSIT PRODUCT FAMILY

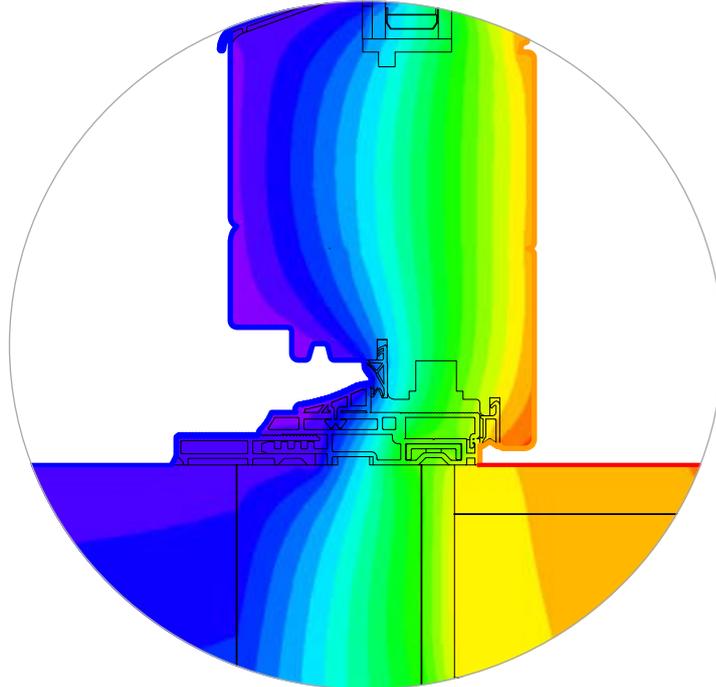


# UNITED AGAINST CONDENSATION

Behind a door worthy of its name, there is a threshold that complements it in an optimal manner, and makes key contribution to solving problems related to new, energy-efficient buildings and renovations – primarily mould and condensation.

## CAN CONDENSATION FORMATION BE ANTICIPATED?

ABSOLUTELY, BASED ON ISOTHERM CALCULATION. ISOTHERMS, I.E., THE LINES THAT CONNECT POINTS WITH IDENTICAL TEMPERATURES, ALLOW US TO CHECK WHERE THE DEW POINT IS LOCATED, AND WHERE THE CRITICAL TEMPERATURE LIES THAT TRANSFORMS HUMIDITY TO WATER. IF THE DEW POINT IS ON THE SURFACE OF THE DOOR, A WINDOW, OR A THRESHOLD, CONDENSATION FORMS EXACTLY THERE.



## WHERE DOES CONDENSATION COME FROM?

Condensation forms, when...

- ...a temperature difference exists between inside and outside.
- ...the interior is humid. Moisture forms as a result of the various activities carried out in indoor spaces; such as cooking, showering, ironing – but also, only when inhabited by people. **The higher the internal temperature, the larger the proportion of water vapour in the air.**

## HOW CAN I AVOID MOULD AND CONDENSATION?

The higher the relative humidity in a space, the higher the internal temperature must be on window, door, and threshold surfaces (interior surface temperature), to avoid condensation. The interior surface temperature is thus the temperature of walls, glass panes or frames, measured on the inside.

If this temperature moves into the area of the dew point for long periods of time, a risk exists of mould forming at these points. To prevent this, the minimum surface temperature must be higher than the dew point.

## TABLE ACCORDING TO UNI EN ISO 13788

The following table lists, based on temperature and relative humidity in a room, the interior surface temperatures at which condensation or mould can form. At an interior temperature of 20 °C and a humidity of 50 %, condensation forms if the surface temperature is lower than or equal to 9.3 °C (with a humidity of 40 %, it forms at 6 °C). As a result, the minimum surface temperature at constant room temperature conditions (20 °C), with an increasing moisture content (e.g., 70 %), also increases. This in turn causes condensation to form (14.4 °C).

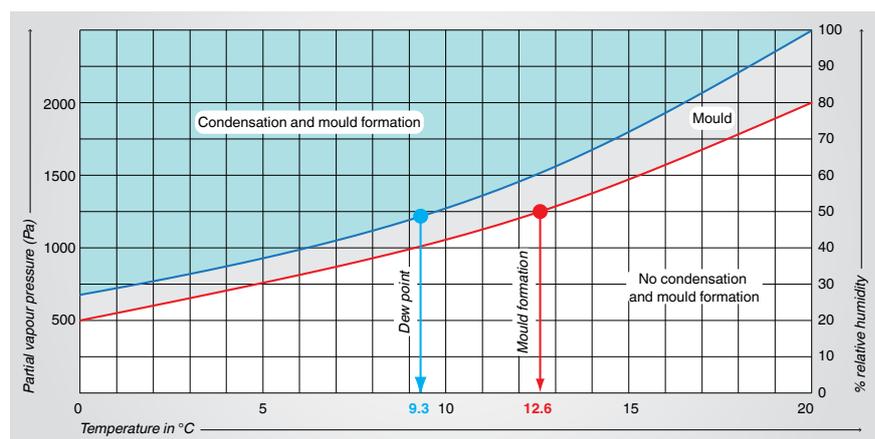
Humidity in % ▶ Room temperature in °C ▼	30 %	35 %	40 %	45 %	50 %	55 %	60 %	65 %	70 %	75 %	80 %
30	10,5	12,9	14,9	16,8	18,4	20,0	21,4	22,7	23,9	25,1	26,2
29	9,7	12,0	14,0	15,9	17,5	19,0	20,4	21,7	23,0	24,1	25,2
28	8,8	11,1	13,1	15,0	16,6	18,1	19,5	20,8	22,0	23,2	24,2
27	8,0	10,2	12,2	14,1	15,7	17,2	18,6	19,9	21,1	22,2	23,3
26	7,1	9,4	11,4	13,2	14,8	16,3	17,6	18,9	20,1	21,2	22,3
25	6,2	8,5	10,5	12,2	13,9	15,3	16,7	18,0	19,1	20,3	21,3
24	5,4	7,6	9,6	11,3	12,9	14,4	15,8	17,0	18,2	19,3	20,3
23	4,5	6,7	8,7	10,4	12,0	13,5	14,8	16,1	17,2	18,3	19,4
22	3,6	5,9	7,8	9,5	11,1	12,5	13,9	15,1	16,3	17,4	18,4
21	2,8	5,0	6,9	8,6	10,2	11,6	12,9	14,2	15,3	16,4	17,4
<b>20</b>	1,9	4,1	6,0	7,7	<b>9,3</b>	10,7	12,0	13,2	14,4	15,4	16,4
19	1,0	3,2	5,1	6,8	8,3	9,8	11,1	12,3	13,4	14,5	15,5
18	0,2	2,3	4,2	5,9	7,4	8,8	10,1	11,3	12,5	13,5	14,5

## HOW DOES CONDENSATION FORM?

At a certain temperature, referred to as the dew point, the water vapour in the air is purged and transformed back into water in the form of drops of condensation.

## WHERE DOES CONDENSATION WATER FORM?

Where humid, warm air in an interior space meets cold surface, condensation will form. Critical points are therefore the cold areas, such as windows, doors, and thresholds, where thermal bridges can occur.



# STRONG ARGUMENTS

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## IT PROTECTS AND INSULATES

MACO offers two threshold variants for windows and entry doors made of wood: the extensible threshold and the "Personal" threshold. Both provide excellent performance and results, which enhance and perfect your windows and doors.

- **Thermal separation**
  - **No ingress of water and air**
  - **Suitable for every fitting**
  - **Personalisation**
  - **Structural attachment**
  - **Remove obstacles from your path**
-



### THERMAL SEPARATION

A Transit threshold ensures that no thermal bridges can form below a door, thus increasing insulation and weathersealing performance. You can be confident that mould and condensation will no longer form. All Transit thresholds are manufactured from plastic and aluminium, and have optimal thermal separation: the surface temperature at the contact point between floor (internal) and threshold is thus constantly maintained at above 12.5 °C.



### NO INGRESS OF WATER AND AIR

In laboratory tests, the Transit threshold achieved outstanding results against air and driving rain. They are all certified to QM 340 of the ift Rosenheim Institute. If you have already fitted your door with another CE threshold, you can switch to Maco without having to repeat the tests.



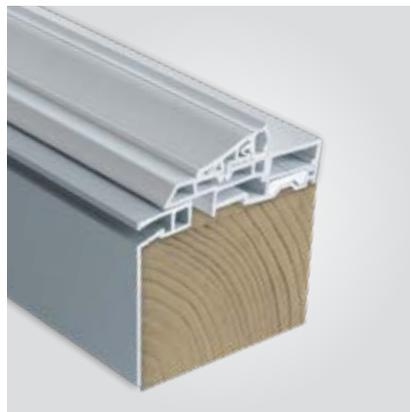
### SUITABLE FOR EVERY FITTING

The Personal threshold offers a multitude of application possibilities. For example, the metal reinforcement for screwing in the locking parts and concealed corner bearing, providing additional support and security. The cover strip guarantees a pleasing design.



### PERSONALISATION

Both the threshold and adjustment shims for the frame are adapted to the geometry of the various profiles.



### STRUCTURAL ATTACHMENT

The Personal threshold with connection bracket enables straightforward weathersealing against the outside, thus guaranteeing a high quality installation of the doorset.



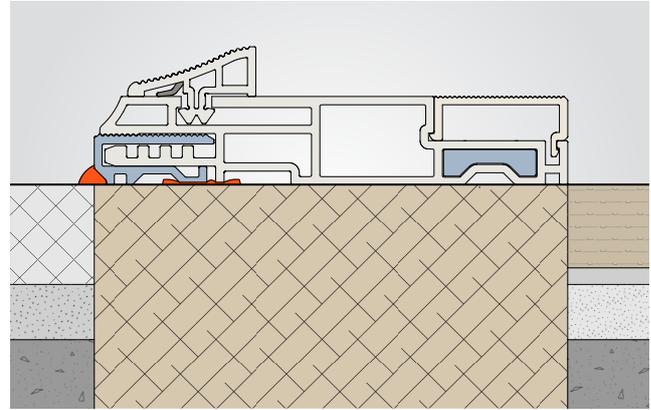
### REMOVE OBSTACLES FROM YOUR PATH

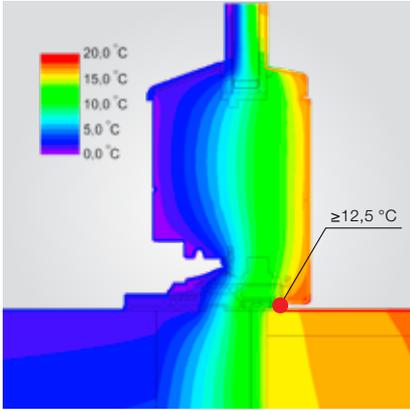
Transit thresholds offer the limiting dimensions necessary for the manufacture of doors without architectural barriers. Standards compliant in the various EU member states with structural dimensions from 20 up to a maximum of 25 mm.

# PERSONAL THRESHOLD

## ADAPTED TO YOUR DOOR

Adapted to the geometry of your profile, the Transit Personal is the only threshold that completes perfection, as it is produced based not on the adjustment principle; but rather far more on the basis of your needs and the structural conditions. The Transit Personal provides the advantages of a tailor-made product, without risk and without significant investments. A product, manufactured specifically for you, and thus always a perfect fit: for entry and window doors of all kinds – whether sash or frame weathersealed.





Foundation with thermal separation made from PURENIT (56 mm)

Outside temperature	Sash/frame thickness		
	68 mm	78 mm	92 mm
0 °C	15,89 °C	15,65 °C	15,56 °C
-10 °C	14,15 °C	13,79 °C	13,65 °C

Foundation with thermal separation made from WOOD (56 mm)

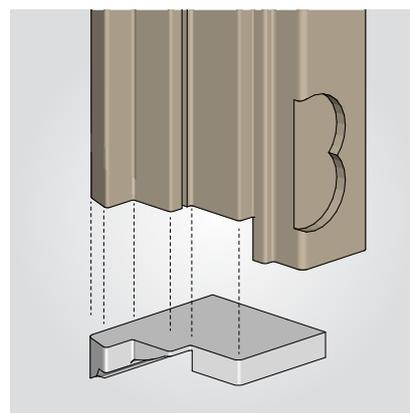
Outside temperature	Sash/frame thickness		
	68 mm	78 mm	92 mm
0 °C	15,45 °C	15,23 °C	15,10 °C
-10 °C	13,51 °C	13,03 °C	12,99 °C

Calculation according to KlimaHaus specifications for windows and doors



### MADE TO MEASURE

The Personal threshold is available in two designs: for sash and floor weatherseals. Thanks to the extensible profile (A) and the variably positionable stop (B), frame widths from 68 up to 113 mm and sash rebate depths from 24 to 56 mm are covered. On request, we can also adapt the adjustment shims for frames to any profiling.



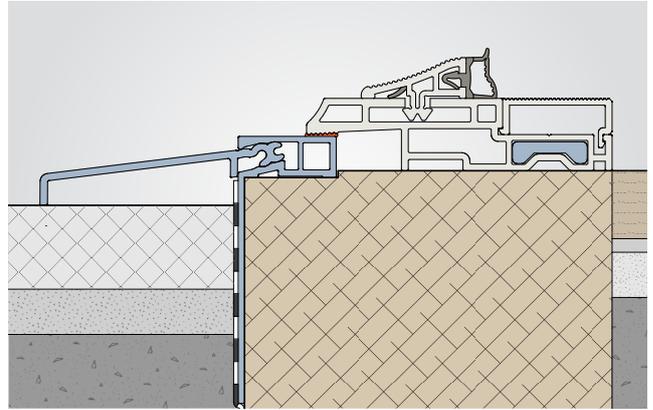
### NO INGRESS OF WATER AND AIR

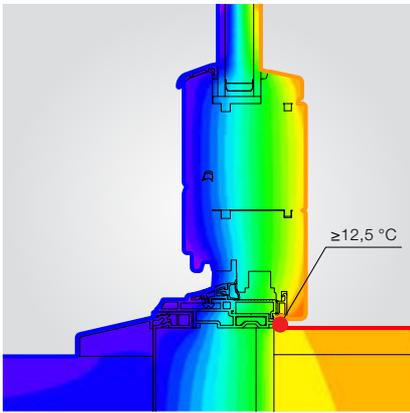
Air and driving rain tightness are ensured by the threshold geometry, above all also by the perfect interaction with the centre weatherseal of the window system. A circumferential weatherseal ensures maximum leak proofing even in the corners.

# PERSONAL THRESHOLD WITH CONNECTION BRACKET

## FOR INSULATION

The Transit Personal with connection bracket is a variation on the standard version, which is not adapted to the geometry of your profile, but which still also enables easy outward weathersealing. The integrated aluminium bracket serves as a connecting surface for both the weathersealing membranes and also for liquid plastic, thus guaranteeing a high quality windowset or doorset fitting.





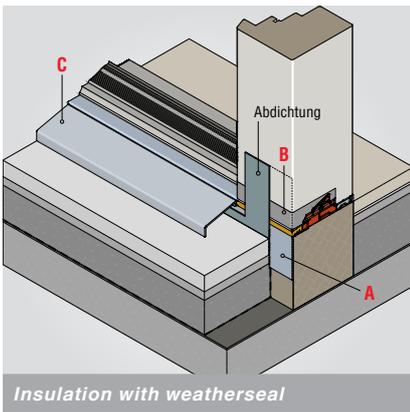
Foundation with thermal separation made from PURENIT (56 mm)

Outside temperature	Sash/frame thickness		
	68 mm	78 mm	92 mm
0 °C	15,89 °C	15,65 °C	15,56 °C
-10 °C	14,15 °C	13,79 °C	13,65 °C

Foundation with thermal separation made from WOOD (56 mm)

Outside temperature	Sash/frame thickness		
	68 mm	78 mm	92 mm
0 °C	15,45 °C	15,23 °C	15,10 °C
-10 °C	13,51 °C	13,03 °C	12,99 °C

Calculation according to KlimaHaus specifications for windows and doors



Insulation with weatherseal



Insulation with liquid plastic



Insulation with EPDM membrane

## STRUCTURAL ATTACHMENT

The 50 mm high connection bracket (A) provides an adequate adhesive surface for liquid plastic and EPDM membrane, ensuring standards-compliant weathersealing:

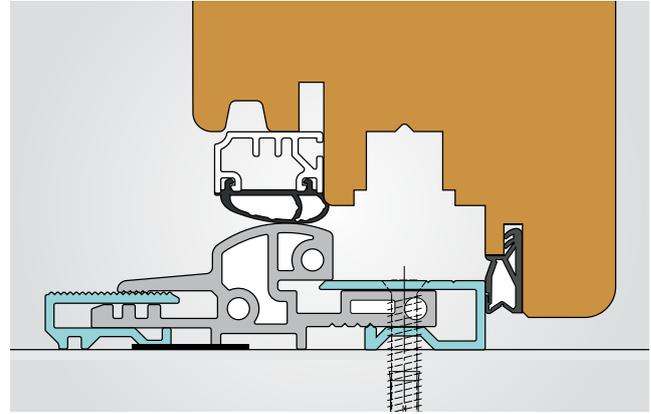
- ÖNORM B 3691: Planning and design of roof waterproofing
- SIA 271: 2007 Waterproofing of building constructions
- DIN 18195 Waterproofing of buildings – Part 9: Penetrations, transitions, connections and endings

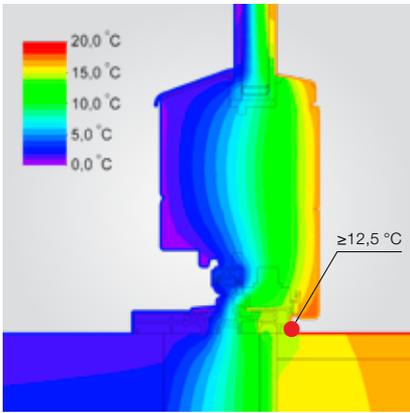
The adjustment shims for the frame (B) are manufactured from liquid plastic-compatible material (PA6), in addition the threshold has an attachment for the weatherboard flexo coupling (C).

# EXTENSIBLE THRESHOLD

## MAXIMUM PERFORMANCE ON THE TEST RIG

The extensible Transit guarantees first class weathersealing properties against air and driving rain. These properties are the result of the interaction of multiple elements – the sash side weatherseal, the end pieces, the rubber covers – develops with the aim of providing maximum performance with minimum processing. But apart from the technical properties, the design hasn't been overlooked: harmonious and appealing, it enhances every entrance and window door.





Foundation with thermal separation made from PURENIT (56 mm)

Outside temperature	Sash/frame thickness		
	68 mm	78 mm	92 mm
0 °C	13,64 °C	14,09 °C	14,20 °C

Foundation with thermal separation made from WOOD (56 mm)

Outside temperature	Sash/frame thickness		
	68 mm	78 mm	92 mm
0 °C	13,19 °C	13,68 °C	13,77 °C

Calculation according to KlimaHaus specifications for windows and doors



Double sided adhesive tape



End pieces



Rubber cover

### FIRST CLASS WEATHERSEALING

The sash-side hose weatherseal, fitted with double sided adhesive tape for easy installation, increases the surface contact with the threshold to a maximum. This ensures improved weathersealing against weather influences. In conjunction with the profile system, windowsets and doorsets can therefore be constructed that meet the most demanding of weathersealing requirements.

### SMALL, BUT POWERFUL!

The end pieces weatherseal those connection points that are vulnerable in weathersealing terms – between two sashes, or between the sash and the floor. They are manufactured in two parts: a hard part that is screwed to the profile, and a soft part that is inserted into the weatherseal.

### GOODBYE MOISTURE!

The rubber covers make a significant contribution to insulation, as they prevent moisture from rising and attacking the wood on the floor. They are adapted to the floor profile, so that uncompromising compatibility with the threshold profile is guaranteed. As they cannot be seen from the interior, the existing design remains unchanged.





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