



ARTIVA
Mr. Ivars Gredzens
Sila iela 9.
LV - 1057 Riga

Ihr Zeichen/Ihre Nachricht vom: Unser Zeichen: Fon: 0 62 02 – 27 82. 45
Jens-Lüder Herms Fax: 0 62 02 – 27 82. 51
eMail: jens.lueder.herms@proclima.de

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Window connection gaps with pro clima SOLIDO tapes

Dear Ivars,

Our pro clima SOLIDO tape family exists of two tapes with different s_d -values for inside and outside use:

- pro clima SOLIDO EXO / s_d -value 0,7m / outside use
- pro clima SOLIDO SL / s_d -value 2,8m / inside use

On the outside we are working with the non porous MENTO TEEE technology which offers an active moisture transport and a very high resistance against wind driven rain. Together with the glue we achieve an s_d -value of app. 0,7m.

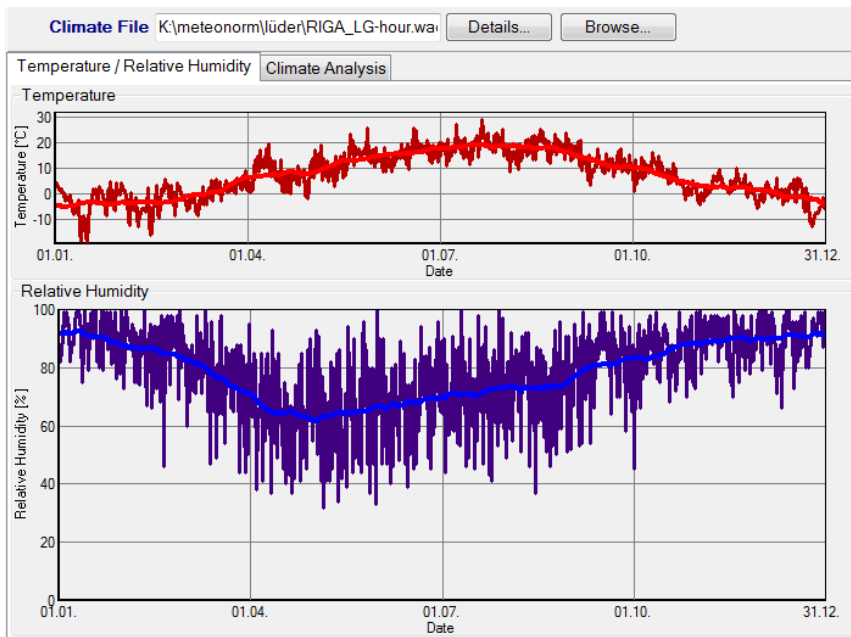
On the inside we are working with a light diffusion retarder, together with the glue we achieve an s_d -value of app. 2,8 m.

We find building damages if we have unforeseen moisture in the construction. This moisture could enter by convection or wind driven rain (for further information see our webpage: <http://www.proclima.com/building-physics/why-airtight/prevent-damage>)

Our safety demands for window gaps always demands the highest drying capacity to both sides. Due to the glue we could not get lower s_d -value on the outside. On the inside we have to protect the construction against diffusion in winter and offer in summer a high drying potential to the inside. Especially the drying potential to the inside is very important, because you can find due to the window sill and the plaster on the outside clearly higher diffusion resistances as the tape offers. In this cases the only drying possibility is to the inside. A value between 2,5 and 3m offers the best combination between drying in summer and diffusion retarding in winter.

To show the performance of the pro clima SOLIDO system we performed several modelings with the wufi simulation program. Further information can be found here: www.wufi.de.

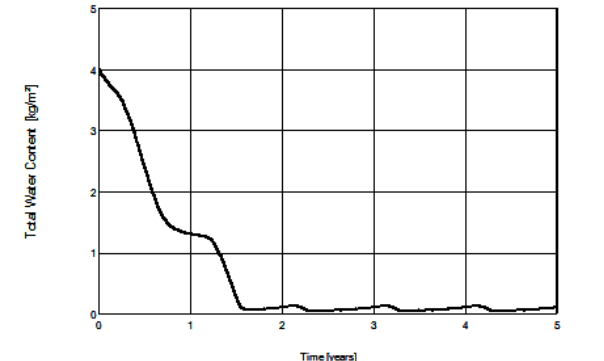
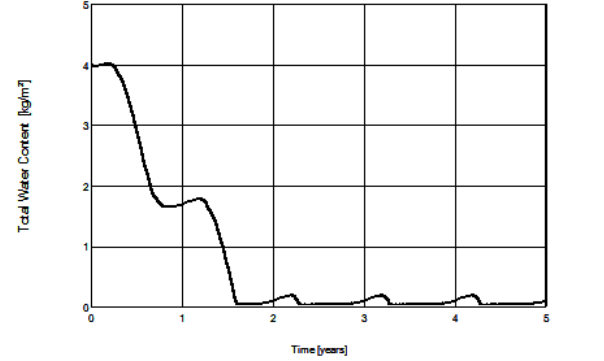
As outside climate we have chosen RIGA:

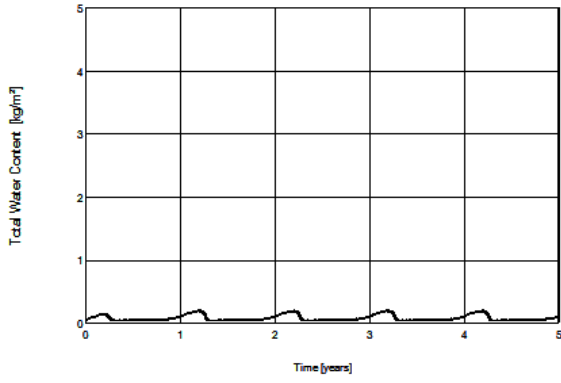
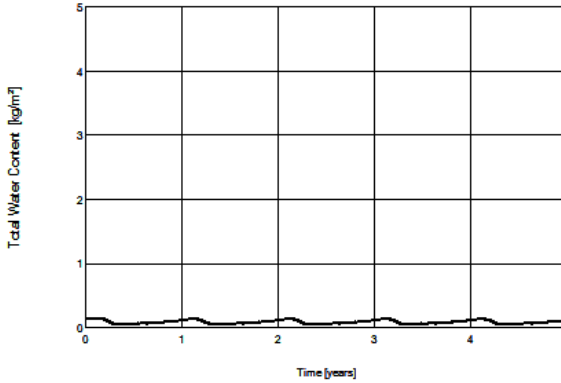


We researched the following component (from the inside to outside)

- gypsum plaster
- pro clima CONTEGA SOLIDO SL
- Insulation
 - o a.) PU foam 0,075 m
 - o b.) mineral wool 0,075 m
- pro clima CONTEGA SOLIDO EXO
- lime plaster

To show that unforeseen moisture has the possibility to dry out fast, we added the insulation material 4l water, with both materials the 4l could left the component within one year. To show that the inner 2,8m sd-value are enough to protect the insulation against diffusion in winter, we performed the modelling without additional water.

PU foam plus 4l additional water	Mineral wool plus 4l additional water
	
<p>We achieve a drying potential of $>2,600\text{g}/(\text{m}^2\cdot\text{a})$ and by this a high security level against unforeseen moisture and building damages</p>	<p>We achieve a drying potential of $>2,400\text{g}/(\text{m}^2\cdot\text{a})$ and by this a high security level against unforeseen moisture and building damages</p>

PU foam – normal situation without additional water	Mineral wool – normal situation without additional water
	
We have all over the year a very low water content in the construction, the amount which enters in wintertime by diffusion is not dangerous for the component and can dry easily out in summer	We have all over the year a very low water content in the construction, the amount which enters in wintertime by diffusion is not dangerous for the component and can dry easily out in summer

The results clearly show the performance of the pro clima CONTEGA SOLIDO family for sealing and protecting window gaps. The s_d -values are optimised to the rise the safety potential of the construction. Higher s_d -values on the outside and on the inside are not creating safer constructions but reducing the drying capacities of the component.

In all constructions a high level of airtightness is vital. Hence, we recommend to control the airtightness with a pro clima WINCON or a BLOWER DOOR measurement

For further information do not hesitate to contact me by phone under: 0049-(0)6202-2782.41
Or by email: jens.lueder.herms@proclima.de

Best regards
MOLL bauökologische Produkte GmbH



i.A. Jens Lüder Herms
Dipl.-Ing. (FH)
Project Manager