

# NOT A PAINT - BUT A PAINTABLE SOLUTION

Innovative coatings  
with added value.



For buildings, interiors  
and industrial  
applications.



Environmentally friendly.  
Powerful. Effectively.



- development
- production
- distribution

of coatings with energy saving properties

Manufactured  
in Germany ...



... distributed  
worldwide

**SICC Coatings GmbH**

- was founded in March 2003
- has 28 exclusive country partners
- delivers products to more than 50 countries
- is certified according to:
- has the headquarter in Berlin
- and currently 15 employees

ISO 9001:2015 and  
ISO 14001:2015









# What is ClimateCoating®?

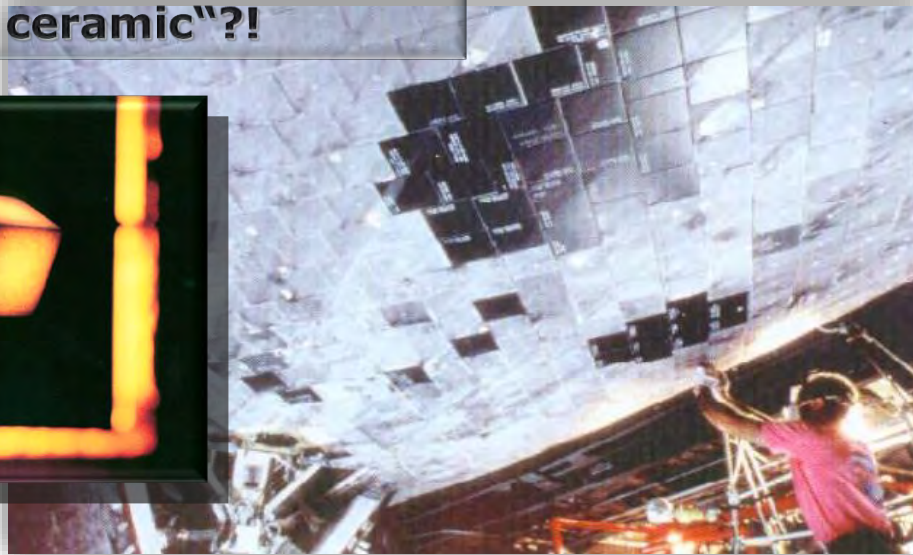
It is not just a coat of paint. It's a technology! It is the:

## Reflective Membrane Technology!

**The Origin –  
„Isolation by ceramic“?!**



Approx. 1300°C



Ceramic tiles on the space shuttle are being used as a heat shield.

The components act in complex:

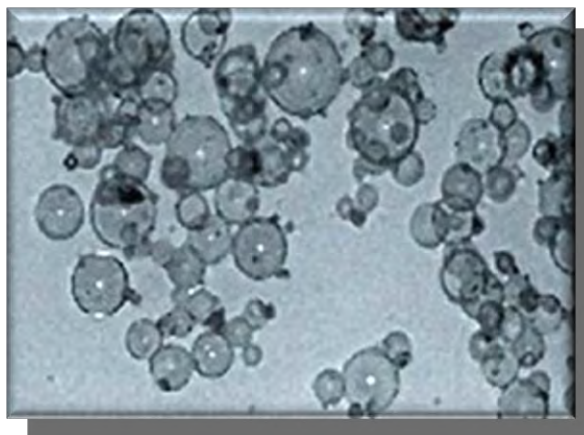
- membrane-impact
- emission, reflexion, scattering
- conductive properties

This includes:

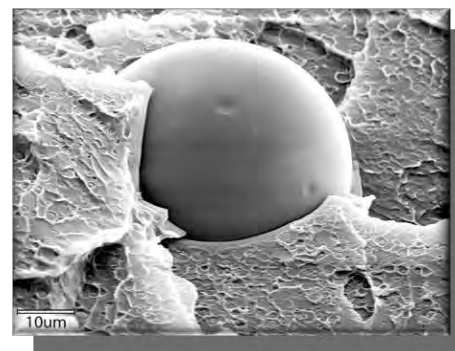
- humidity transport
- optical physics
- radiation physics
- thermodynamics
- fluidics



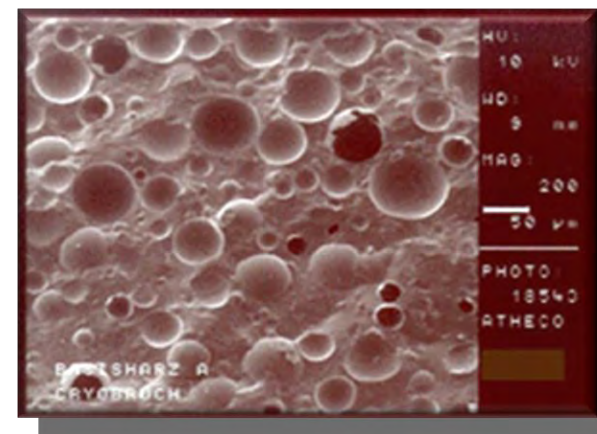
# Composition of the ClimateCoating® membrane



Micro spheres greatly enlarged



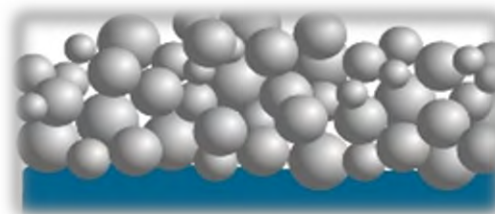
Single exposure



Cutting through the membrane


## Membrane scheme

Isopach of the membrane:  
~0,3 mm



## Dry film:

- approx. 50% Bubbles
- approx. 50% special binder with synchronize activators

The background features a light blue gradient with soft, ethereal sun rays emanating from the top center. At the bottom, there are wavy, shimmering patterns of fine white and light blue particles, creating a sense of depth and movement.

# REFLECTIVE MEMBRANE TECHNOLOGY

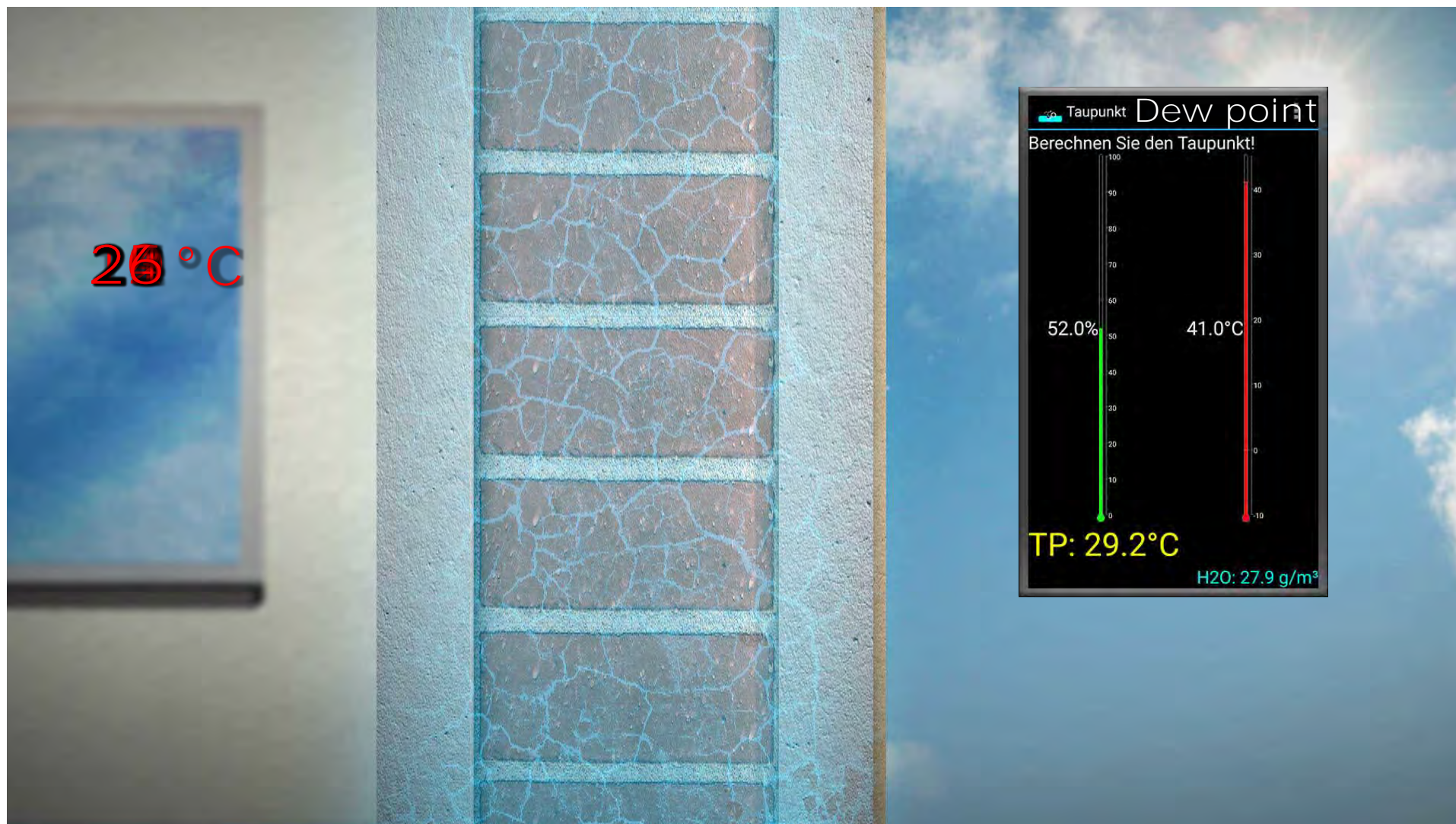


Relative Humidity (RH): 52%

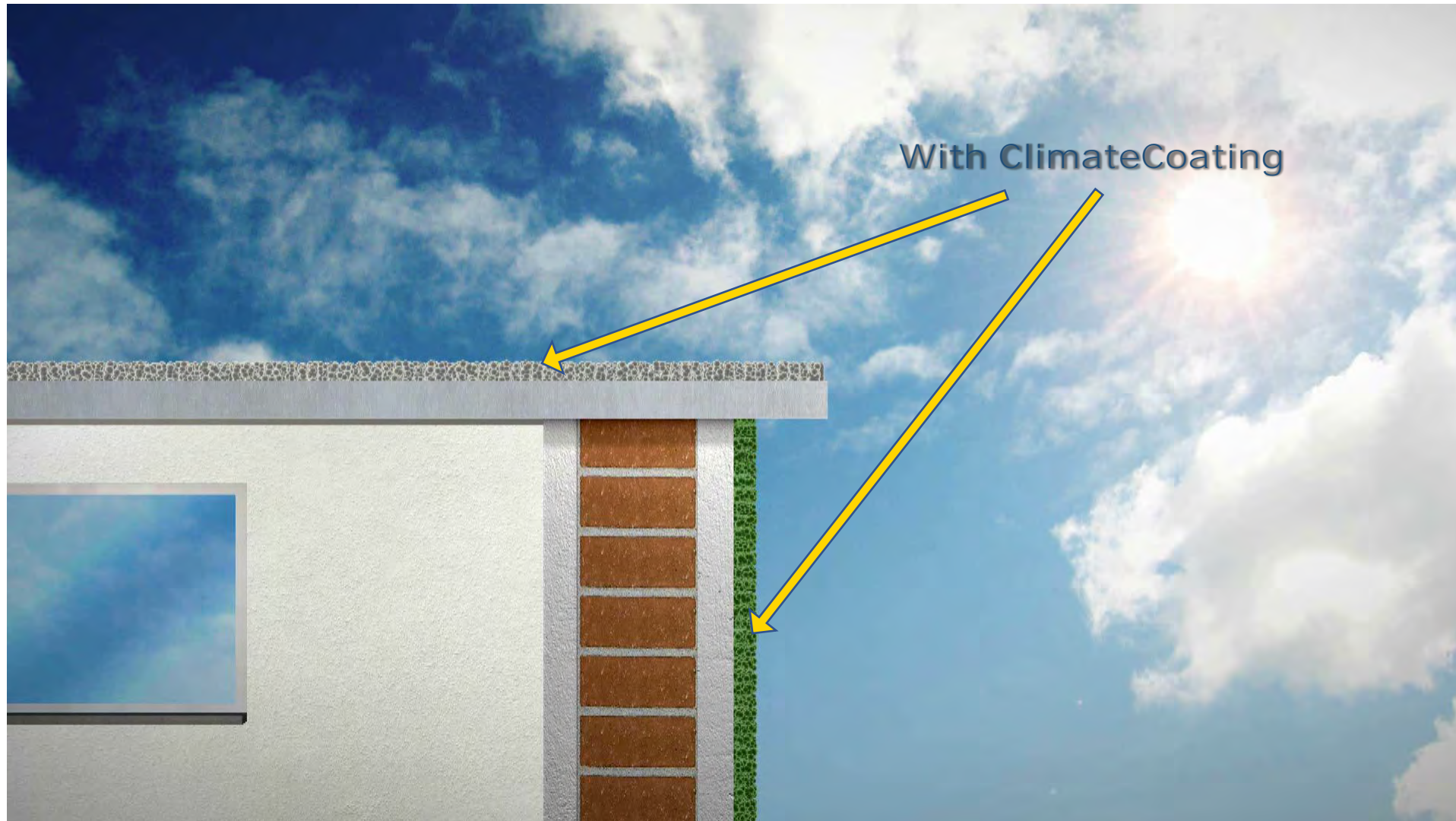
Temperature  
inside: 19°C

Temperature  
outside: 41°C

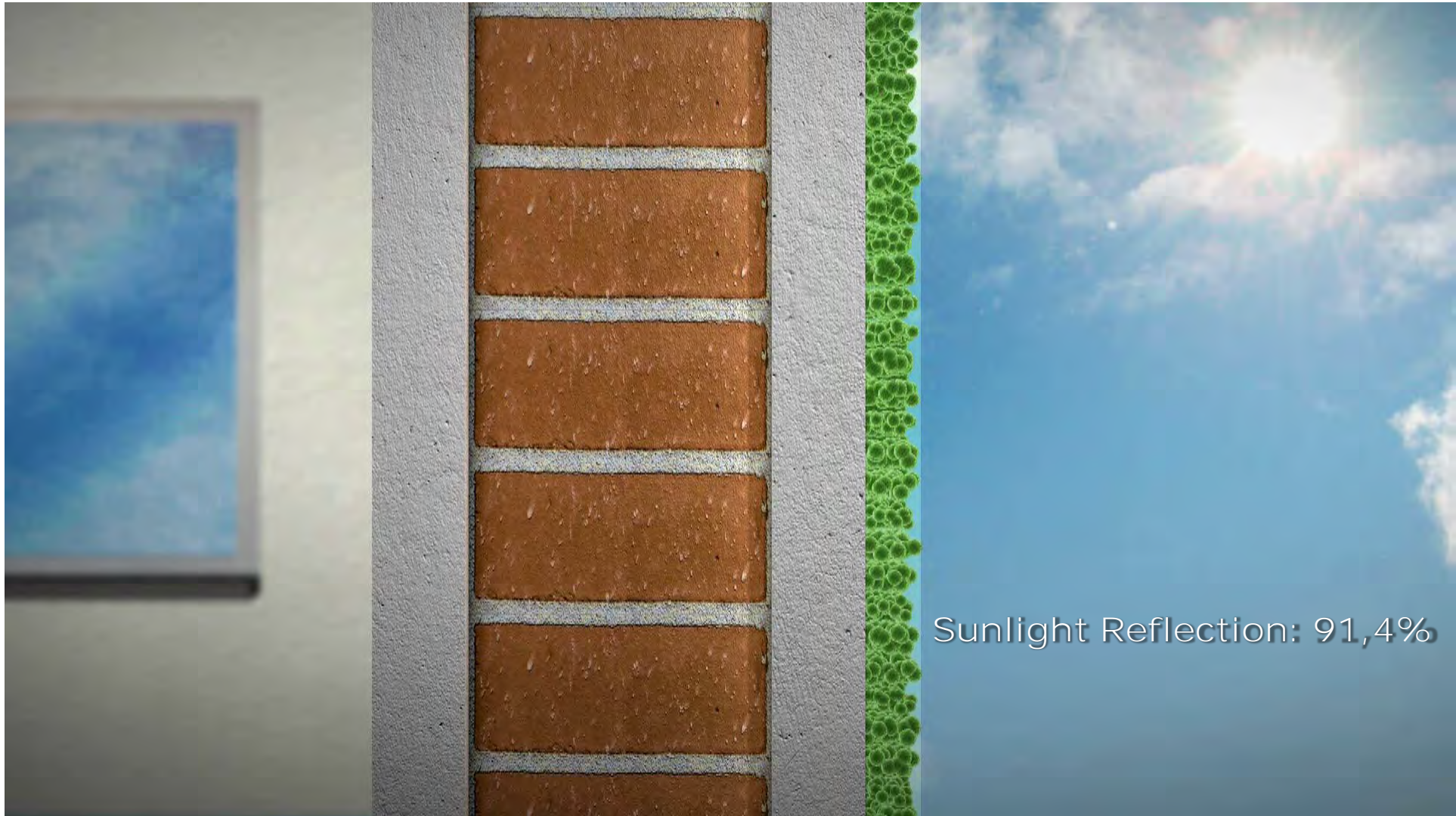




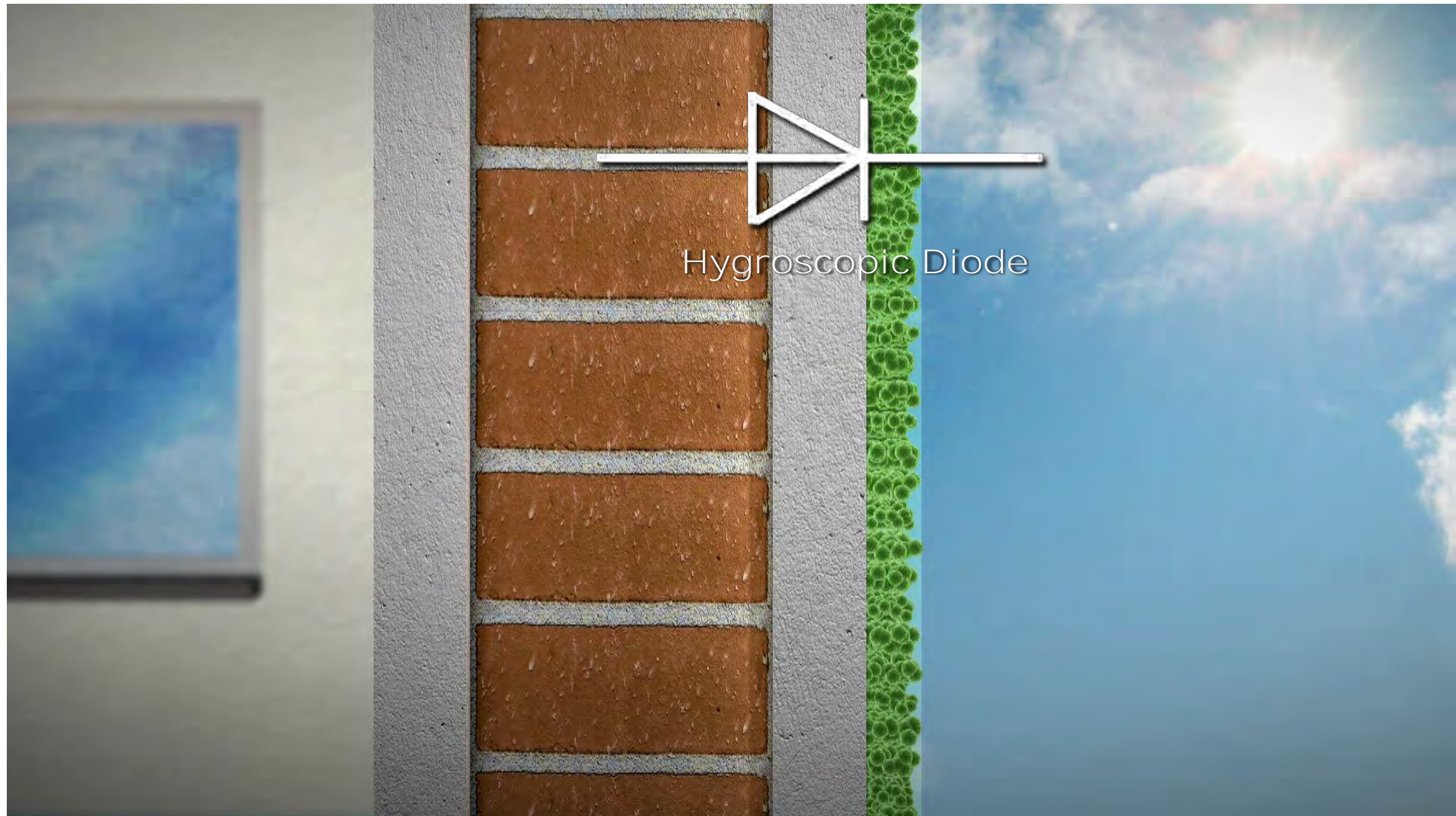




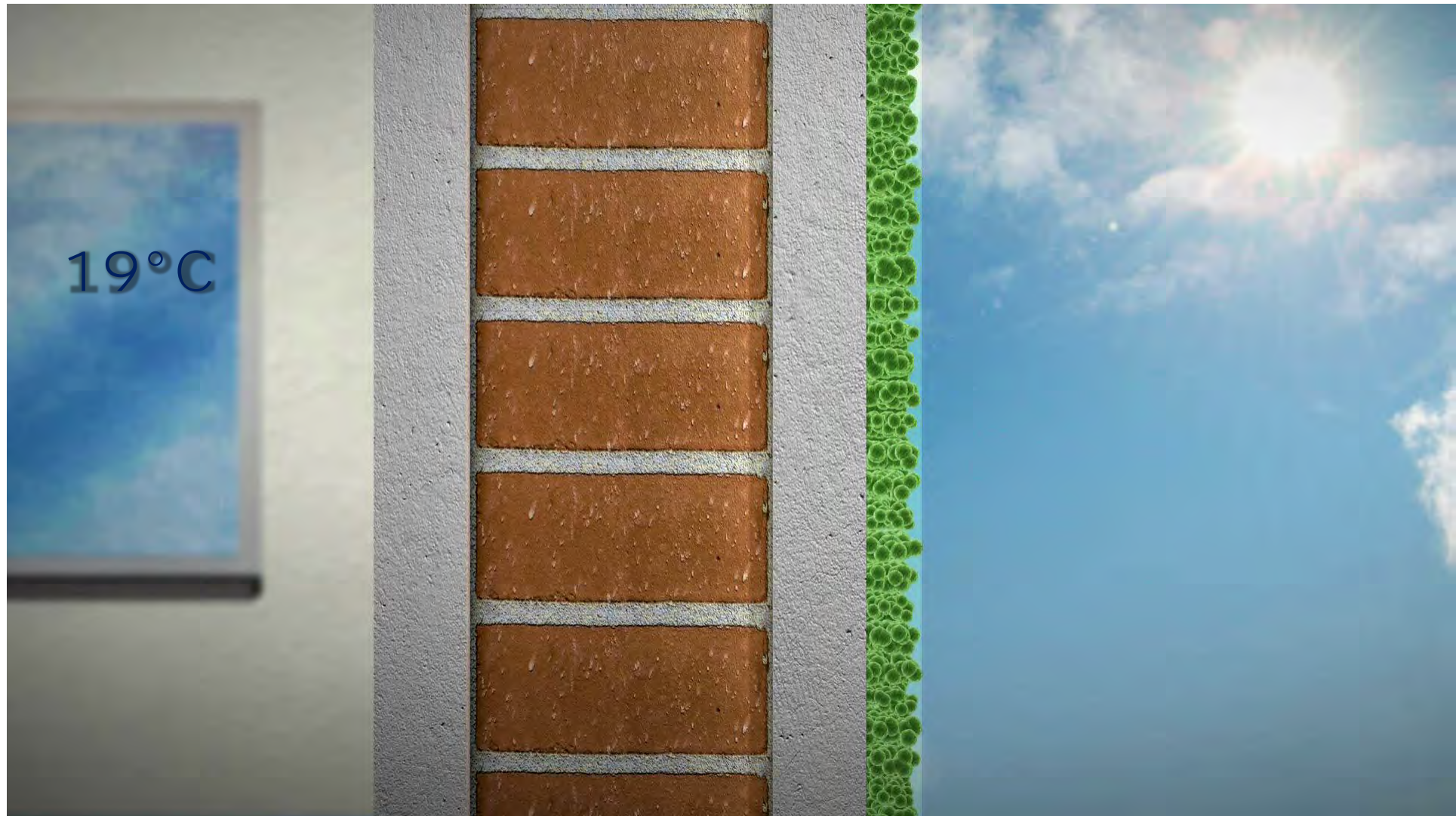




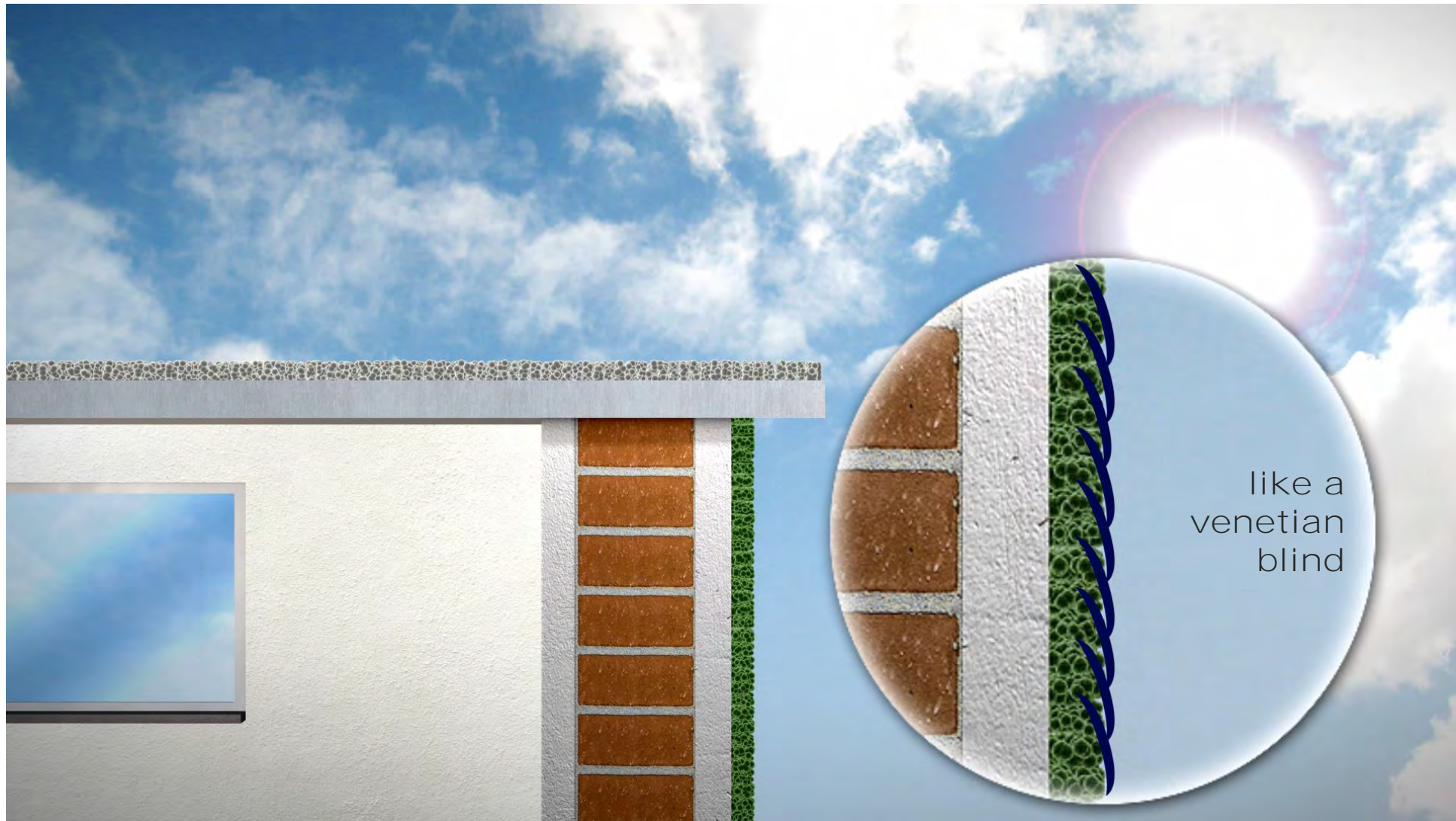


















# Product overview of ClimateCoating®:



## Inside coating:

- ThermoVital
- ThermoPlus
- Lumen

## Facades:

- ThermoProtect
- History
- StuccoTex (Structurely Lightweight)

## Wood:

- Nature
- NatureLasur (Glaze)

## Roof:

- ThermoActiv









## Additional products:

- FixPlus, GlossPluss, ZinkPrimer,
- RustPrimer, PU Safe, PU Safe Filler

## Individual solutions for customers:

- IndustrySpecial (different application areas)

# Main products: 1. page

Outside: Facades				Roof	Outside: Wood protection		Outside and inside: Window seal		Inside: Walls and ceilings		
ThermoProtect	History	StuccoTex 80 / 380	StuccoTex Primer	ThermoActive	Nature / NatureGlaze	NaturePrimer	PU Safe Coating	PU Safe Filler	ThermoPlus	Lumen	ThermoVital
Long-lasting facade protection with energy-saving property	Value-preserving facade protection with gentle dehumidification	Lightweight structural plaster that reduces thermal bridges	Ready-to-use bonding agent for StuccoTex	Self-activating Ba-Meerschichtung mit angereicherten KÜHLEffekten	Coloured and weather-resistant wood protection – sprays / glazes	Ready-to-use self-activating primer for natural wooden components	Efficient protective coating for PU-foam	Filler for PU-foam	Ideal room climate and wide range of colours	Excellent light reflection	Innovative protection against mould
											
Container sizes (l)											
↳ 19,00 12,50 5,00	19,00 12,50 5,00	15,00 kg	19,00 12,50 5,00	19,00 12,50 5,00	19,00 5,00 (only Nature) 2,50 0,75	19,00 5,00 2,50 0,75	2,80 1,00	300 ml	19,00 12,50 5,00 2,80	19,00 12,50 5,00	19,00 12,50 5,00
2° Consumption (ml/m²) with 2 applications:											
↳ 330	330	1,5 kg/m²	150 (for one-time priming)	600 (with embedding material approx. 1mm)	Nature: 330 / NatureGlaze: 220	150 (with 1 single coat)	600 m²	lit. A	330	330	330



# Main products: 2. page

Outside: Thermal insulation plaster		Outside: Industry
		<b>Industry-Special</b>
Lightweight mineral-based thermal insulation plaster (renovation plaster) - Grain size up to 4 mm Fine mineral-based thermal insulation plaster - Grain size up to 0.5 mm		Versatile coating in industry
		
<b>Container sizes (l)</b> ↳ follows later		19,00 12,50 5,00 2,80
<b>Consumption depending on the absorbency of the substrate</b> ↳ follows later		600

Industry and special solutions
<b>SpecialSolution</b> <p>There are challenges that do not fit into any category, for example the coating of plastics or textiles. Or it is about special parameters, properties or effects, such as acoustics, material flexibility or catalysis.</p> <p>No matter what problem you are looking for a solution for, just contact us for coatings or related topics.</p> <p>Together, we will find a SpecialSolution for you.</p> 

Primers			Finishing	For the systematic removal of mold	
FixPlus	RustPrimer	ZincPrimer	GlossPlus	Sanosil 003	Sanosil 010
Primer concentrate to adjust the absorbency of mineral substrates	Ready-to-use corrosion protection primer for ferrous metals	Ready-to-use adhesion agent for non-ferrous metals	Clear and glossy protective coating with UV blocker	Surface and aerosol disinfection (Mould spores remover)	Mould prevention (Mould killer)
					
Gebindegrößen (l)					
↳ 10,00 5,00	12,00 kg	10,00 2,50	10,00 5,00	1,00 (carton = 6 bottles)	1,00 (carton = 6 bottles)
⊗ Consumption depending on the absorbency of the substrate					
↳ 120 ml/m²	140 g/m² at a coat thickness of 50 µm	110 ml/m² at a coat thickness of 20 µm	45 ml/m²	15-30 ml/m³ per room fogging and according to inventory	100 ml/m³ per working step

## Certified product-advantage in endurance test

Resistant against  
kerosine, saltwater, smog  
and ozon, flame

Very high color stability

Repells dirt

Preventive against  
mold growth

Prolonged intervals  
between renovations

Outclass in sun-reflection

Improves the thermal  
building comfort

Comfort and well-being  
for people

Energy saving

Lower costs for  
air conditioning  
of the building

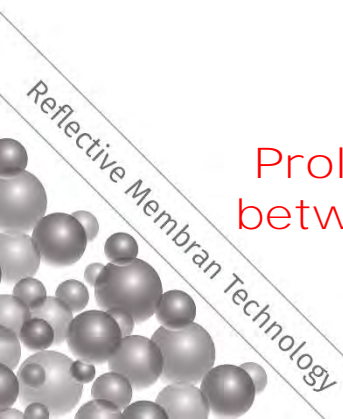
Durable elasticity  
from -50°C to +120°C

Reduction of cracking  
(expansion/shrinking cracks)

Waterproof and  
material bridging

High UV-resistance

Long-term and  
long-life protection





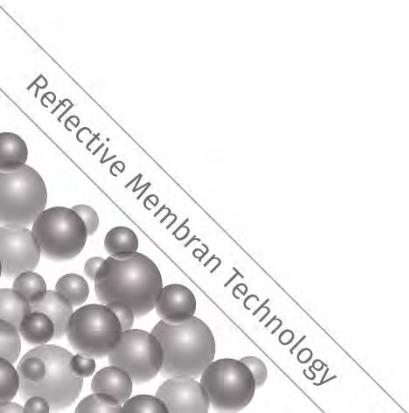
## Further features and advantages of the certified product family

Binder for asbestos fiber  
Anti-electrostatic effect  
Improved acoustics  
Prevents the heating of  
living tents  
Reduces storage losses  
(for example with tank contents)

Wide range of applications  
in the construction and  
industrial sectors

Open for diffusion  
Water based  
Without organic solvents  
Free from aromatic compounds  
Very low VOC value

Compatible for humans  
(also for allergic subjects)  
and the environment





EASY TO USE





## In view of paints:

- ClimateCoating® is an emulsion paint
- tests have been made by DIN 13300
- water is solvent
- binder is a pure acrylate
- aggregates are titanium dioxide and pigments
- the standards for surfaces are the same as for usual paints
- processing is the same as for usual paints



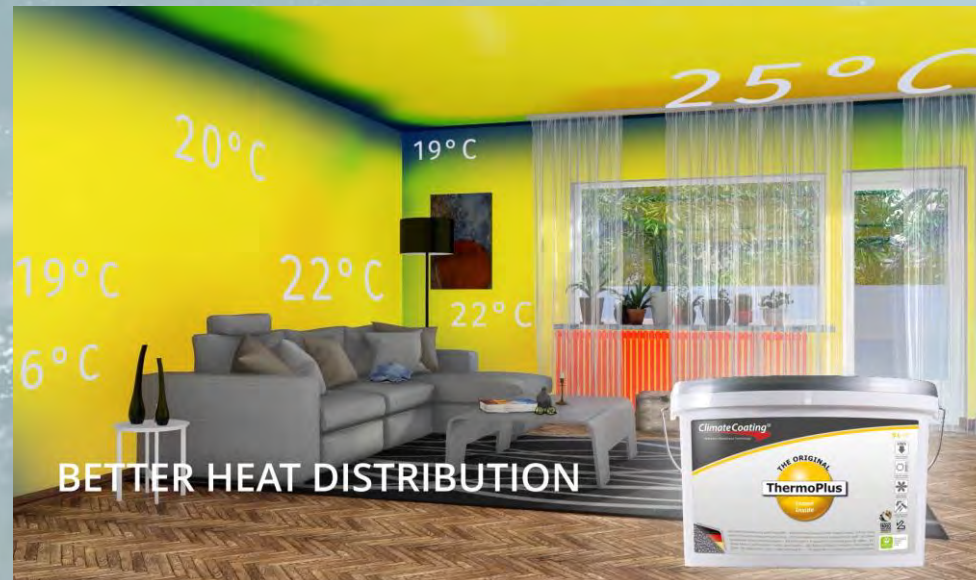
almost all  
colours are possible



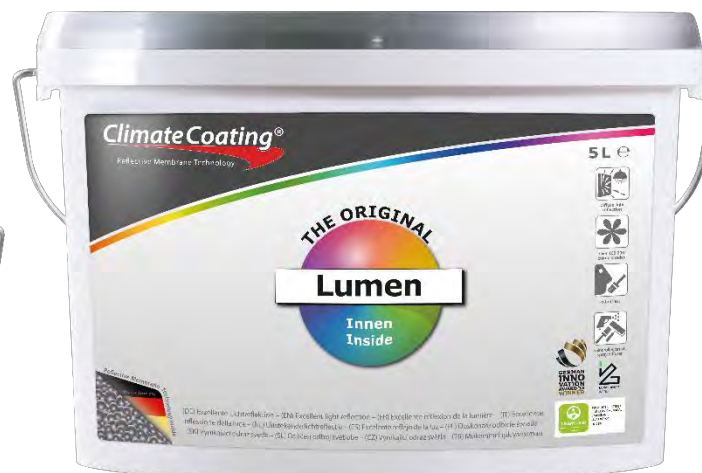
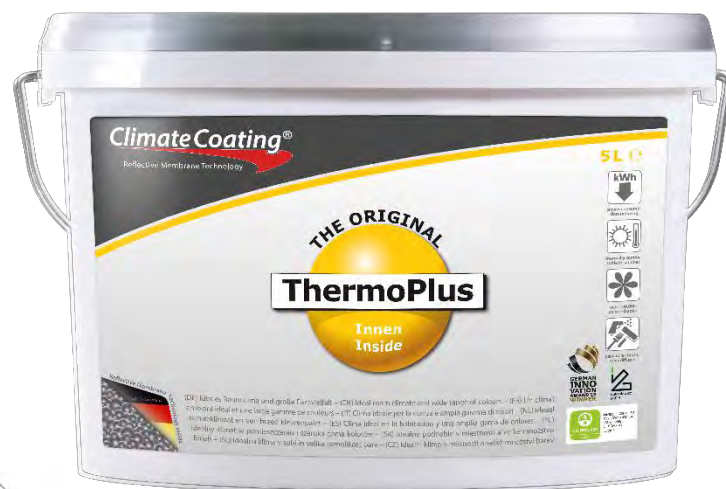




INSIDE

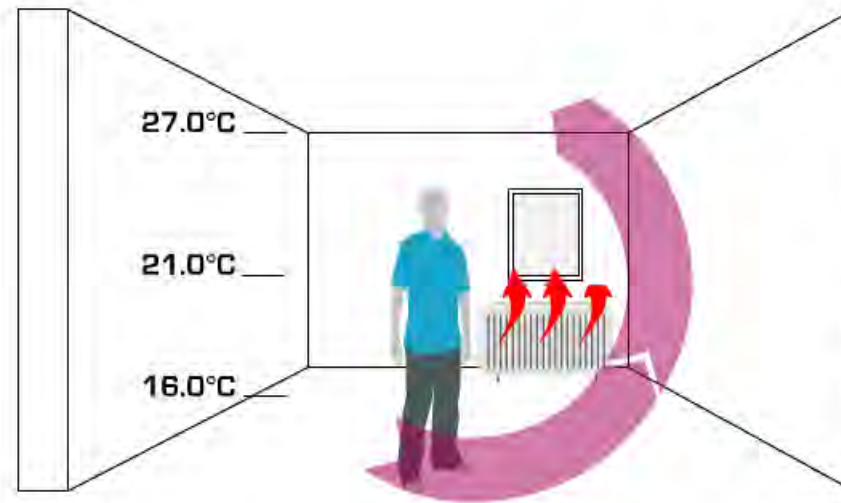


# Inside coating:





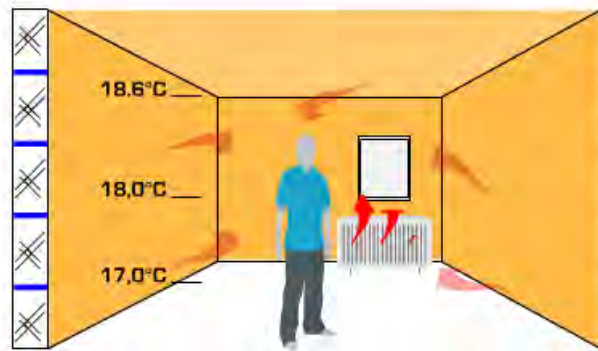
## Usual situation with conventional paint



- Große Temperaturdifferenzen
- Energieaufwand zur Erwärmung von Luft
- Starke Konvektion
- Schimmelpilzrisiko

- Temperature differences increase the higher the room
- High energy expenditure for heating the room
- Strong particle turbulence due to convection currents
- Risk of mould in the corners (Ixel)

# ClimateCoating® ThermoPlus in cold months

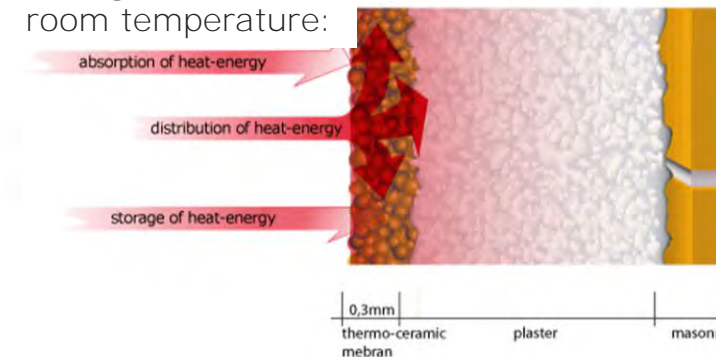


- Schnelleres Anheizen
  - Geringere Temperaturdifferenzen
  - Generierung von Strahlungswärme
  - Raumklimaregulierung
- = Heizkostensenkung

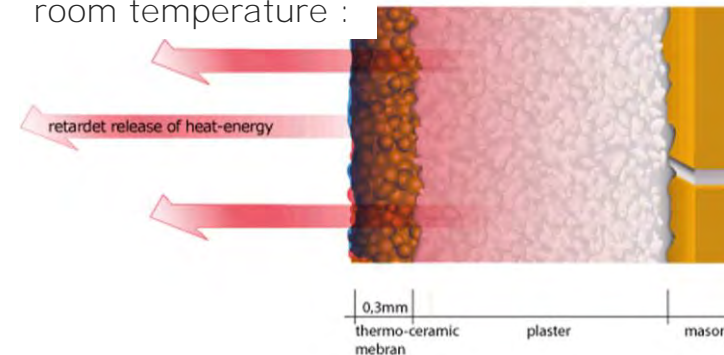
- ✓ IR Reflection / Radiation Heat
  - ✓ Faster room warming
  - ✓ Lower temperature differences
  - ✓ Slower cooling / room climate regulation
- = Reducing heating energy consumption

## Regulation of room temperature

at high room temperature:



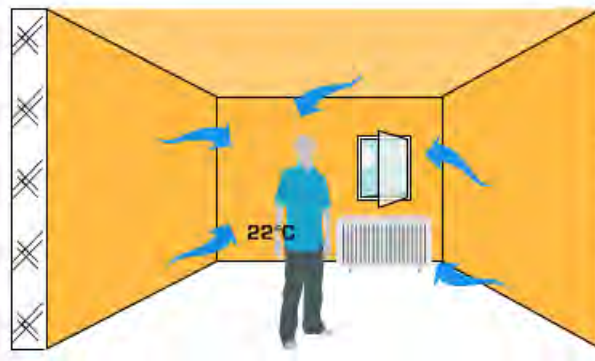
at low room temperature :







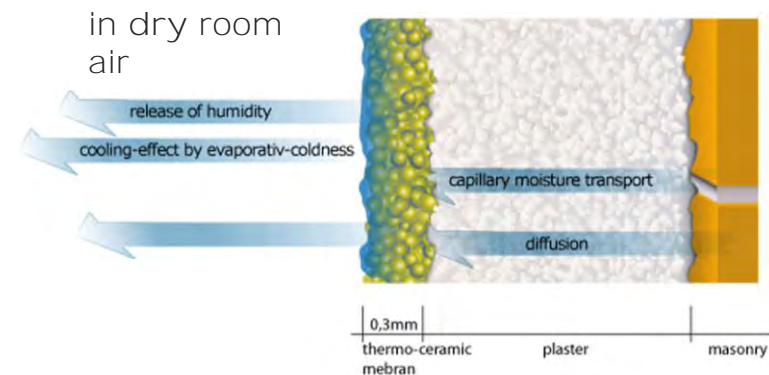
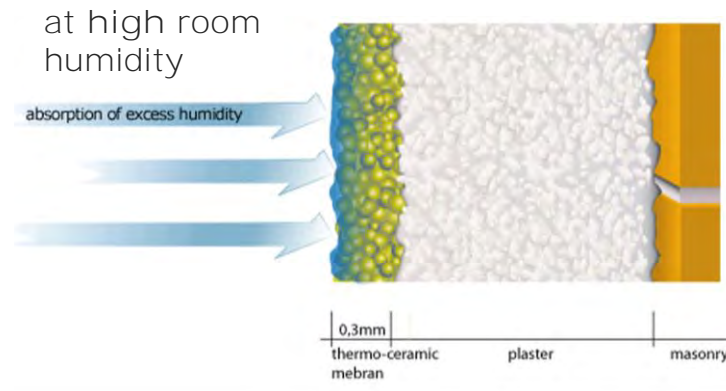
# ClimateCoating® ThermoPlus in summer



- Kälte Oberflächen
  - Niedrige Strahlungstemperatur
  - Starke Konvektion
- = Kühlkostensenkung

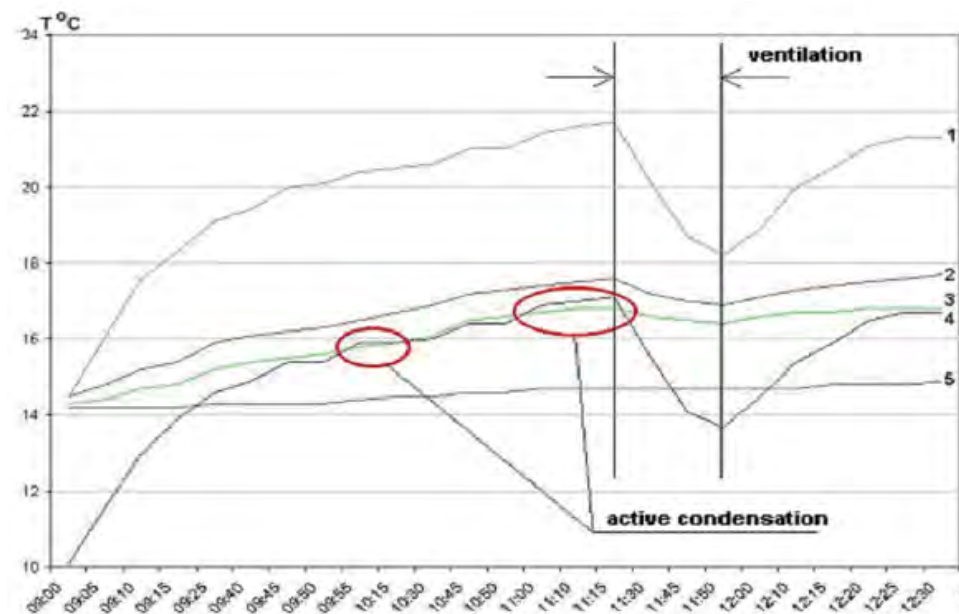
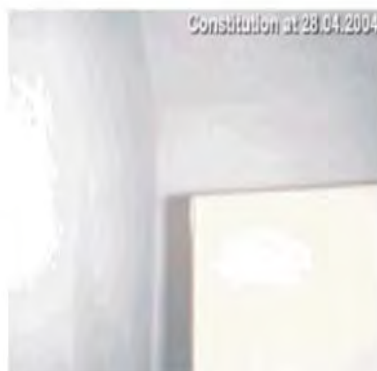
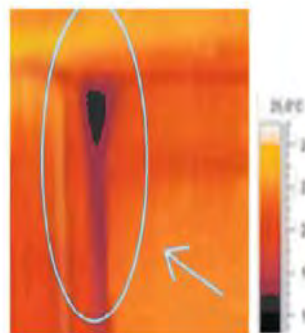
- ✓ Constant room humidity
  - ✓ Cooling by evaporation
  - ✓ Pleasant indoor climate
- = Reducing cooling energy consumption

Optimal humidity approx. 55%



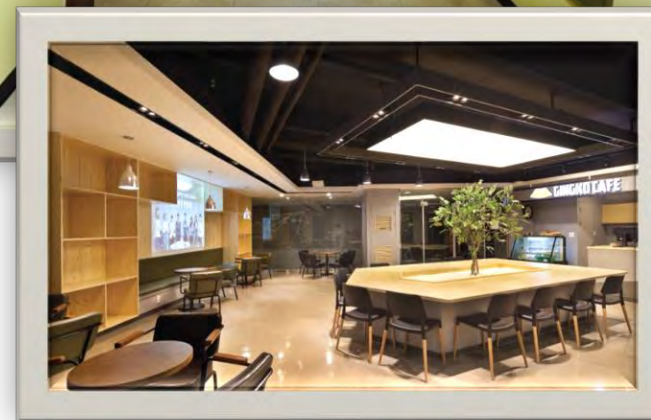


# "Heat Bridge Removal" with ClimateCoating® ThermoVital



- 1 = room temperature
  - 2 = Surface temperature of the wall with ClimateCoating®
  - 3 = Surface temperature of the wall with conventional paint
  - 4 = dew point temperature at 75% rel. Humidity
  - 5 = wall temperature 5 cm below the surface (identical)
- Source: Prof. Simov, University of Sofia

# ThermoPlus for interior coating







# FACADE



# Action on the facade and in the protection of monuments

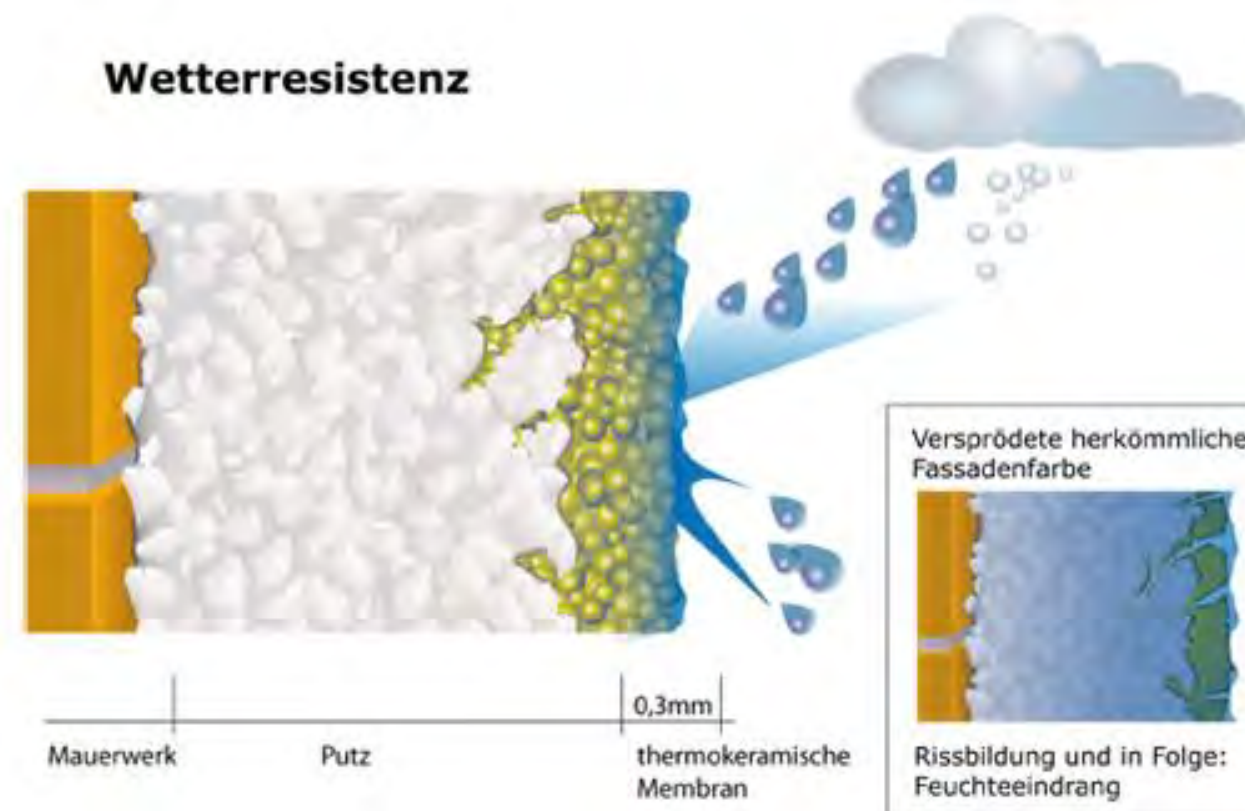


Reflective Membran Technology



# The robust difference to conventional paints

- ✓ Impact rain protection
- ✓ Blocks UV radiation
- ✓ Reduces cracking
- ✓ In summer, the vapour pressure gradient is directed from the outside to the inward; Condensation occurs in the wall.
- ✓ ClimateCoating® counteracts this process.



Adaptive membrane ClimateCoating®

# ClimateCoating® ThermoProtect for facades



Reflective Membran Technology



# ClimateCoating® ThermoProtect in comparison to usual paints

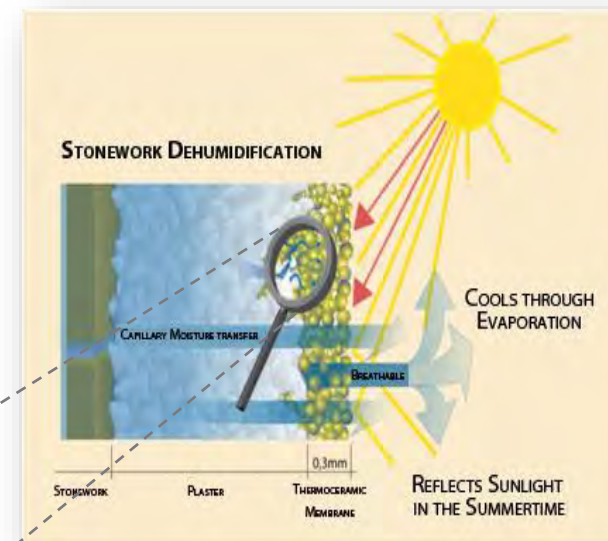
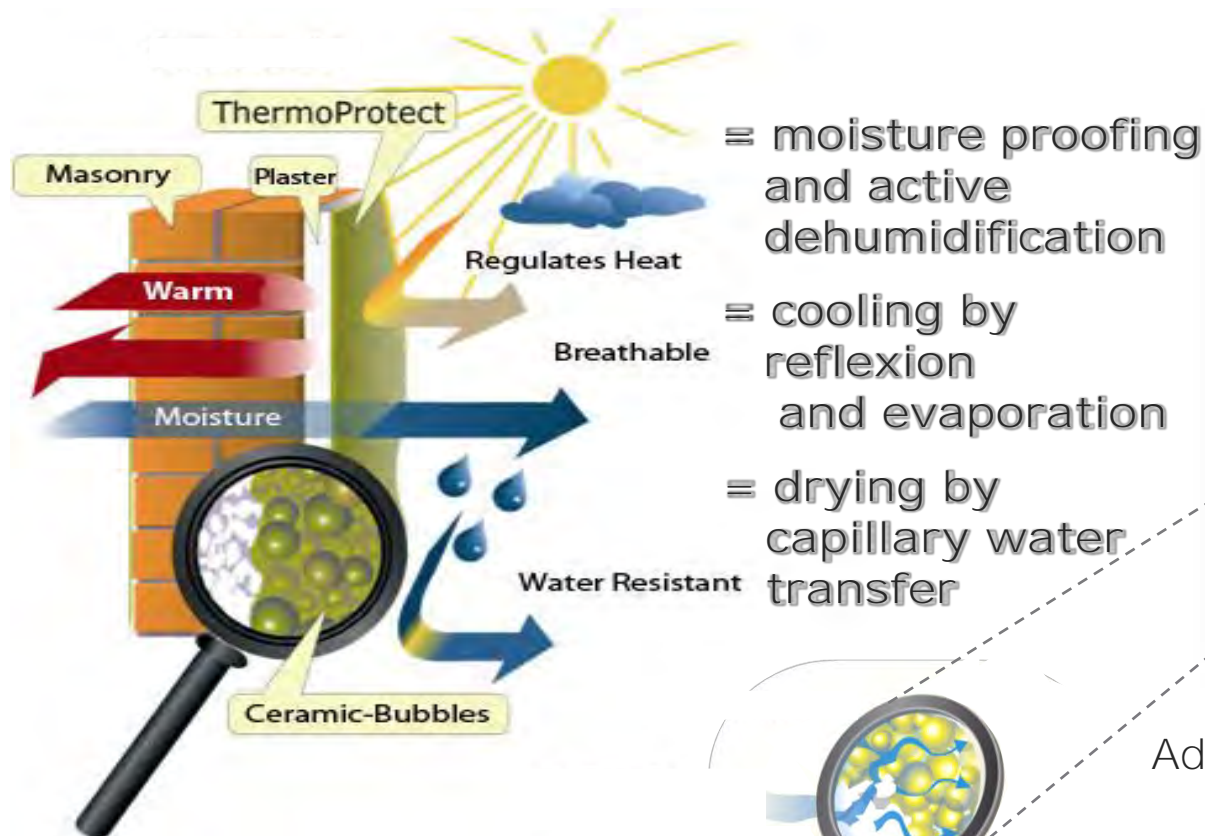


Facade painted with ClimateCoating ThermoProtect  
1998 - Str. d. Freundschaft 11 - 17 Karstedt

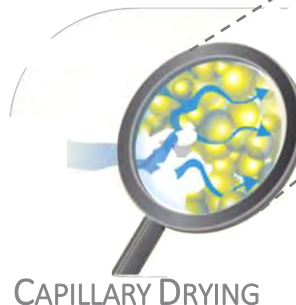


Façade painted with standard paint in 1998  
Str. d. Freundschaft 18 - 24 Karstedt

# Function of the reflective membrane

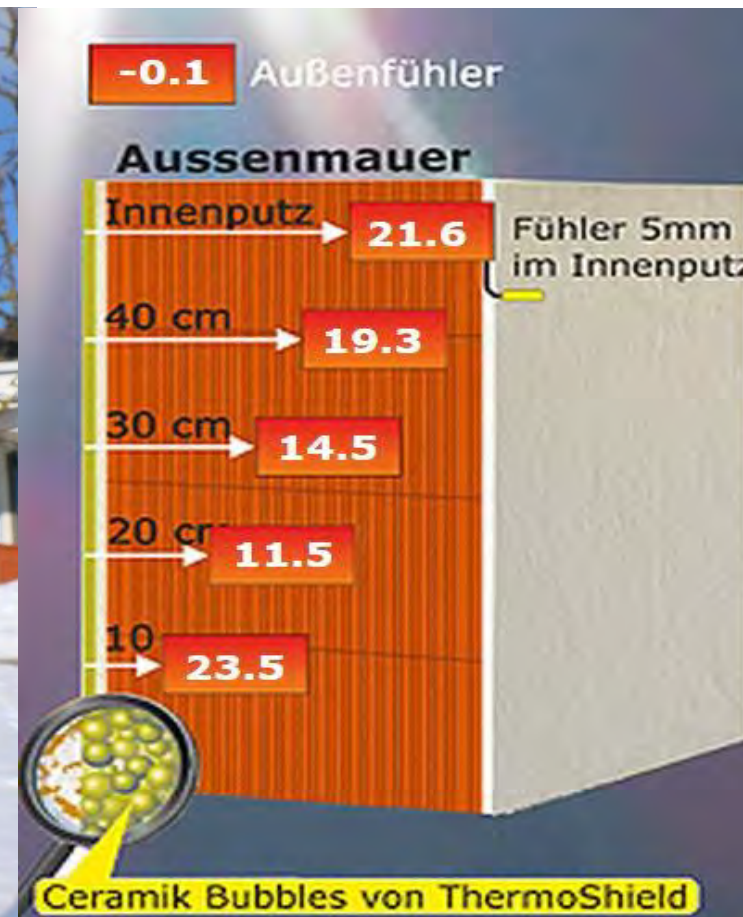


Adaptive membrane in summer  
=  
cooling effects by evaporation





-0,1°C Outdoor temperature 14.02.2015 approx. 1 p.m.!



# From practice to theory and calculation value

$$U = \frac{1}{R_{Si} + \frac{d_1}{\lambda_1} + \frac{d_2}{\lambda_2} + \dots + R_{Se}}$$

usual U-value formula

The U-value formula with the factor fTS according to Prof. Dr. Sohn, Berlin.

$$U = \frac{1}{R_{Si} + \sum \left( \frac{d}{\lambda_R (1 - f_{TS})} \right) + R_{Se}}$$

Baustoff	Rohdichte $\rho$ in kg/m <sup>3</sup> <sup>1)</sup> 2)	Rechenwert der Wärmeleitfähigkeit $\lambda_R$ in W/m.K <sup>3)</sup>	Wasserdampf- Diffusionswider- standszahl $\mu$ <sup>4)</sup>	Beschichtungs- faktor $f_{TS}$ <sup>5)</sup>
<b>Mauerwerk einschließlich Mörtelfugen</b>				
Vollklinker, Hochlochklinker, Keramikklinker nach DIN 105	1800	0,81	50/100	0,30
	2000	0,96		0,25
	2200	1,20		0,20
Vollziegel, Lochziegel, Hoch- lochziegel nach DIN 105	1200	0,50	5/10	0,35
	1400	0,58		0,35
	1600	0,68		0,35
	1800	0,81		0,30
	2000	0,96		0,25
Leichtlochziegel, Lochung A und B nach DIN 105 T2	700	0,36	5/10	0,40
	800	0,39		0,40
	900	0,42		0,35

Conclusion: As a rule of thumb, a 35% U-value improvement can be set for a plastered 38 brick wall. More is certainly possible (DIMaGB).



## Practical example between calculation and measurement



Calculated 2009

Object Branta Baking,  
Botkyrka (near Stockholm)  
Energy saving only by  
coating the facade with  
ThermoShield® exterior  
Comparison of the  
calculation (2009) with the  
measured values (2011)

First readings from  
2011

Updated readings  
from 2014

# Practical example between calculation and measurement



$$U = \frac{1}{R_{si} + \sum \left( \frac{d}{\lambda_R (1 - f_{TS})} \right) + R_{se}}$$

	Ri	frs	f *	λ <sub>eff</sub>	R <sub>eff</sub>
R <sub>si</sub> =	0,130 m²K/W				0,130 m²K/W
R <sub>1</sub> =	0,000 m²K/W		0,00	0,000	0,000 m²K/W
Layer 2 Plaster					
d <sub>2</sub> = 0,015 m	R <sub>2</sub> = 0,021 m²K/W	0,60	0,40	0,280	0,054 m²K/W
λ <sub>2</sub> = 0,700 W/mK					
Layer 3 Brick 1.600					
d <sub>3</sub> = 0,380 m	R <sub>3</sub> = 0,559 m²K/W	0,35	0,65	0,442	0,860 m²K/W
λ <sub>3</sub> = 0,680 W/mK					
Layer 4 Plaster					
d <sub>4</sub> = 0,025 m	R <sub>4</sub> = 0,180 m²K/W	0,60	0,40	0,400	0,063 m²K/W
λ <sub>4</sub> = 1,000 W/mK					
Layer 5 empty					
d <sub>5</sub> = 0,000 m	R <sub>5</sub> = 0,000 m²K/W		0,00	0,000	0,000 m²K/W
λ <sub>5</sub> = 0,200 W/mK					
R <sub>6</sub> = 0,000 m²K/W			0,00	0,000	0,000 m²K/W
R <sub>6</sub> = 0,000 m²K/W			0,00	0,000	0,000 m²K/W
R <sub>se</sub> = 0,040 m²K/W					0,040 m²K/W
Σ Ri = 0,930 m²K/W					1,146 m²K/W
U = 1,075 W/m²K					0,873 W/m²K

f \* = frs



Better than calculated!

Update 03.2014:  
13,2 % Energy saving

2011: ΔQ<sub>pract</sub> = 15/18%

2009: ΔQ<sub>calc</sub> ≈ 12%

2009: ΔU<sub>calc</sub> = 19%



# ClimateCoating® ThermoProtect for facade ...



Reflective Membran Technology

Many years in use with nameable customers!





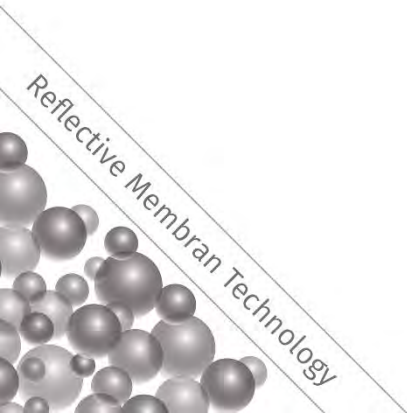
# ThermoProtect for facade renovation



# Modern monument protection with our facade coating ClimateCoating® History!



ClimateCoating® History has an extreme resistance to smog, ozone, acid rain, acids and salts, which has been shown in direct comparisons in various laboratory tests as well as in countless decades of practice situations.





## Highlights:

- run off smoothly to a balanced humidity moisture content
- reduces the formation of algae, moss, fungus and pollution
- reduces moisture caused by cracks (due to expansion and contraction)
- robust against acids, alkalis, ozone, nitrogen and sulfur oxide
- long lasting UV and wheatering resistant
- very colour fast in more than 100,000 shades
- dries mat
- improves the moisture balance



A specially developed facade coating, which both protects the historic buildings as well as contributes to a better energy balance.



The photo was taken in July 2011 and documents the condition of the facades after 4 years.



Sporenstraße 6,  
Potsdam,  
Germany



## Refurbishment of old buildings



Althoffstraße,  
Berlin,  
Germany



# France, 2014

before



after



Reflective Membran Technology



Netherlands, Tongerenseweg 118, Epe



Kolthoven Castle



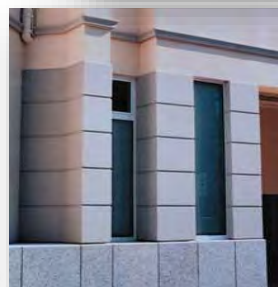
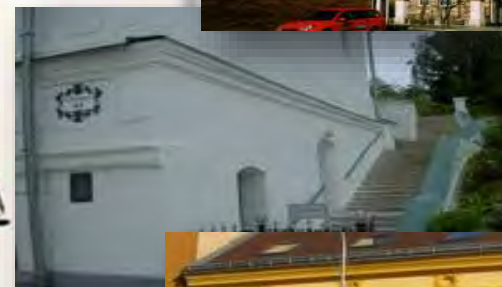
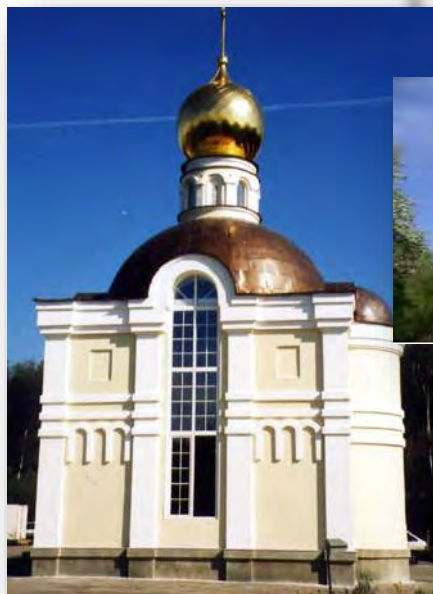


# Germany, Station building in Hameln - a building in the course of time



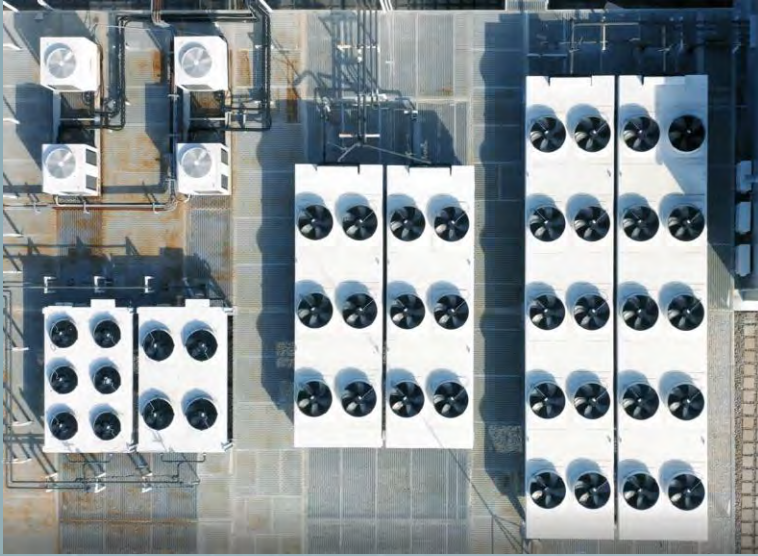


# History for historical buildings



Reflective Membran Technology





# COOLING





# ThermoActive reflective roof coating with excellent COOLING PERFORMANCE

## PROPERTIES:

ThermoActive acts like a passive air conditioner due to its properties and ensures cooler rooms under hot sun.

The innovative formula in combination with its high-quality materials ensure that a flexible and reflective membrane with excellent properties is formed after the coating is applied:

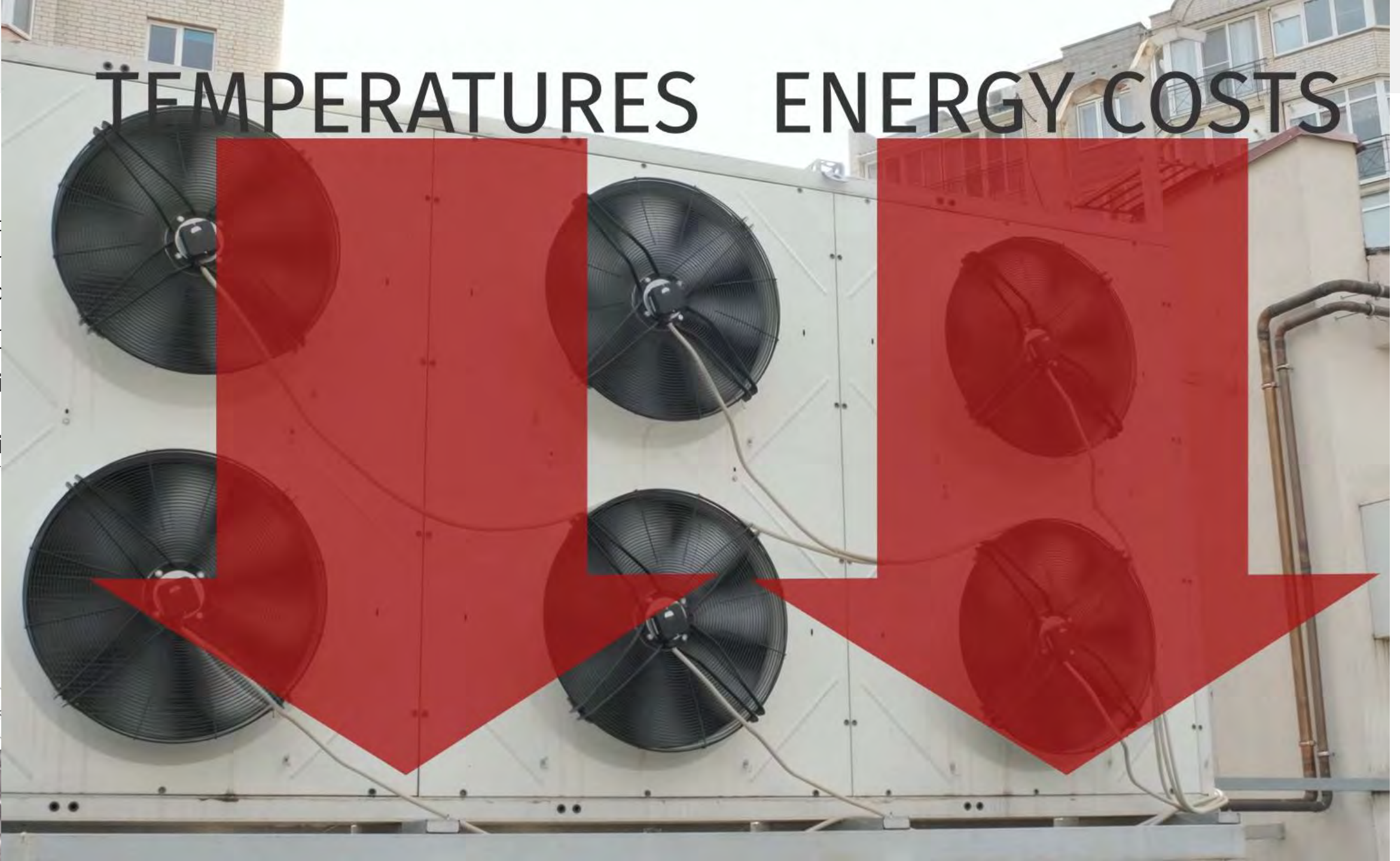
- very high sunlight reflection
- long-term material durability
- above-average elasticity and robustness
- waterproof and able to withstand heavy rainfall
- temperature resistance from -40 to + 150°C



# TEMPERATURES ENERGY COSTS

Pr  
Th  
to  
su  
Th  
wi  
th  
wi  
af

Reflective





# Results of reflective membrane on roofs



before: 64,7°C      after: 40,0°C  
reduced by: 24,6°C



before: 57,1°C      after: 37,8°C  
reduced by: 19,3°C

## ThermoActiv for Roof coating...







# IndustrySpecial





# ThermoActive reflective roof coating with excellent COOLING PERFORMANCE

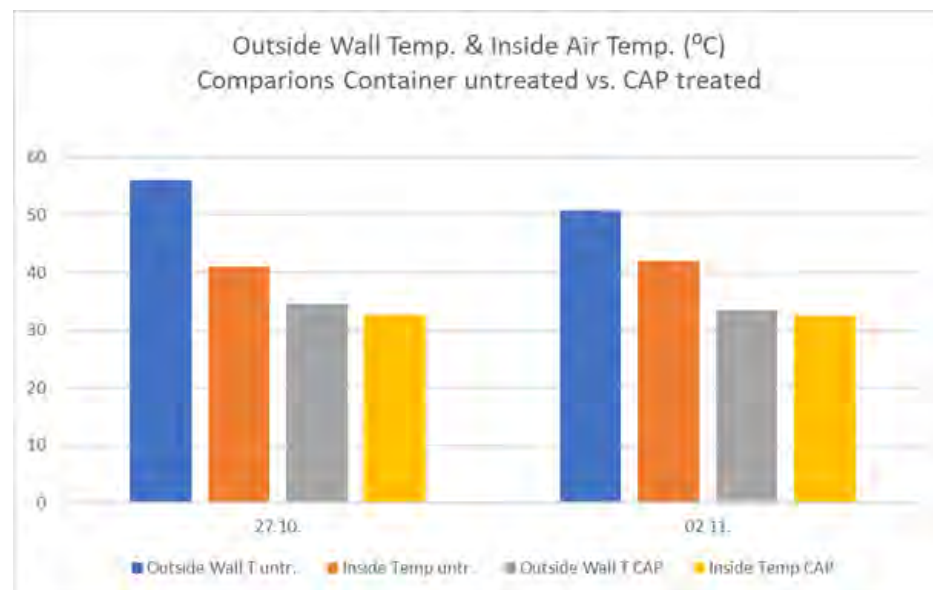


Reflective Membran Technology

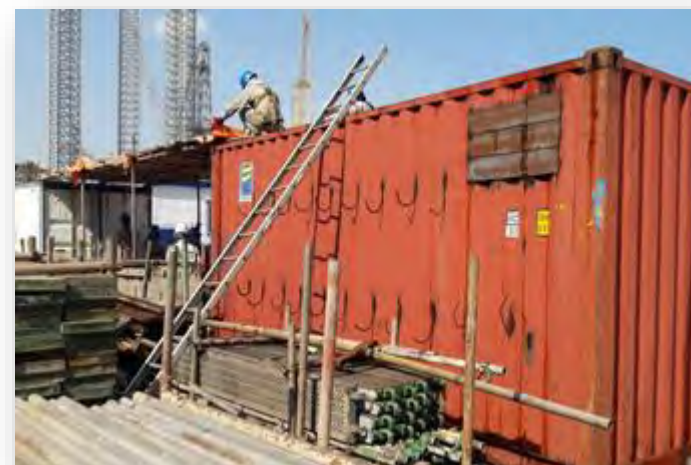
**We have the solution for customer problem.  
A customer-driven feature makes a wide range of applications possible.**



# Results of reflective membrane for containers



Container Test 2016, Doha, Qatar,  
by CLAVON ENGINEERING QATAR W.L.L



before coating:

Container outside wall temp.  
55,2°C  
Container inside wall temp.  
46,6°C



after coating:

Container outside wall temp.  
32,6°C  
Container inside wall temp.  
31,6°C

# ClimateCoating® for industrial use ...



Reflective Membran Technology



## Two awards in 2018



*... with that product line, it becomes clear that heating and cooling energy can be saved with a thermo-caramic coating in a simple, economically compatible and resource-friendly way ...  
In the long term, material-energy and workers resources are saved, expensive building materials are protected sustainably, value for future generations are preserved and the environment is spared.*

(Statement of the jury of German Innovation Award, 2018)

# International certificate

## CERTIFICATE OF COMPLIANCE



**SICC Coatings GmbH – Berlin / Germany**  
ClimateCoating® - ThermoPlus

UL 2818 - 2013 Gold Standard for Chemical Emissions for Building Materials

Test finishes are determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V-11-1001 using a Classroom Environment (20°C/68°F) and real finishes are determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V-11-1001 using an Office Setting (23°C/73°F).

Product tested in accordance with UL 2818 test method to show compliance to emission limits on UL 2818, Section 3.4 and 3.5.



UL investigated representative samples of the identified products in the identified conditions or other requirements in accordance with the agreement and any applicable program service fee agreement. The certificate holder is authorized to use the UL mark for the identified products manufactured at the production sites covered by this UL Test Report, in accordance with the applicable conditions of compliance with the agreement.

## CERTIFICATE OF COMPLIANCE



**SICC Coatings GmbH – Berlin / Germany**  
ClimateCoating® - ThermoProtect

UL 2818 - 2013 Gold Standard for Chemical Emissions for Building Materials

Test finishes are determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V-11-1001 using a Classroom Environment (20°C/68°F) and real finishes are determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V-11-1001 using an Office Setting (23°C/73°F).

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## CERTIFICATE OF COMPLIANCE



**SICC Coatings GmbH – Berlin / Germany**  
ClimateCoating® - IndustrySpecial

UL 2818 - 2013 Gold Standard for Chemical Emissions for Building Materials

Test finishes are determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V-11-1001 using a Classroom Environment (20°C/68°F) and real finishes are determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V-11-1001 using an Office Setting (23°C/73°F).

Product tested in accordance with UL 2818 test method to show compliance to emission limits on UL 2818, Section 3.4 and 3.5.



UL investigated representative samples of the identified products in the identified conditions or other requirements in accordance with the agreement and any applicable program service fee agreement. The certificate holder is authorized to use the UL mark for the identified products manufactured at the production sites covered by this UL Test Report, in accordance with the applicable conditions of compliance with the agreement.

## CERTIFICATE OF COMPLIANCE



**SICC Coatings GmbH – Berlin / Germany**  
ClimateCoating® - ThermoActive

UL 2818 - 2013 Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings

Test finishes are determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V-11-1001 using a Classroom Environment with an air change of 0.5 h<sup>-1</sup> and a loading of 0.5 kg m<sup>-2</sup> and real finishes are determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V-11-1001 using an Office Environment with an air change of 0.5 h<sup>-1</sup> and a loading of 0.5 kg m<sup>-2</sup>.

Product tested in accordance with UL 2818 test method to show compliance to emission limits on UL 2818, Section 3.4 and 3.5.



UL investigated representative samples of the identified products in the identified conditions or other requirements in accordance with the agreement and any applicable program service fee agreement. The certificate holder is authorized to use the UL mark for the identified products manufactured at the production sites covered by this UL Test Report, in accordance with the applicable conditions of compliance with the agreement.

62392420  
Certificate Number  
07/30/2014 - 07/30/2023  
Certificate Period  
Certified  
Status

FixPlus

Nature

ThermoPlus

Nature Primer

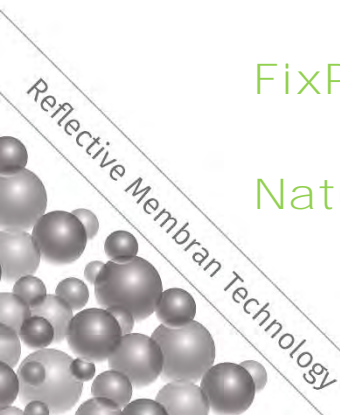
ThermoActive

ThermoVital

ThermoProtect

History

IndustrySpecial





# Summary of advantages of the certified product family



Long-life  
protection



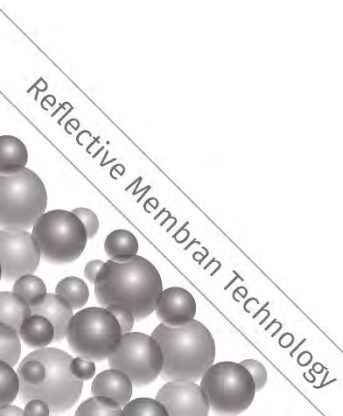
Comfort and  
well-being

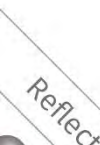
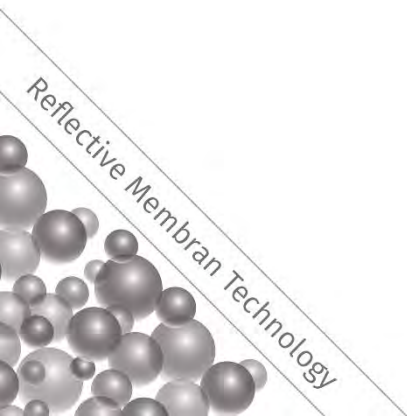
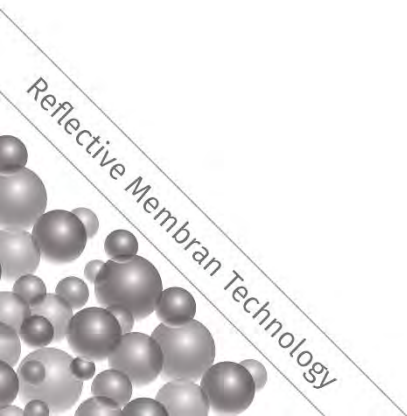


Energy saving



Environmental  
awareness





Reflective Membran Technology



Mit freundlichen Grüßen  
Best Regards

Samir Al Memar

Seestr. 6  
D 83700 Rottach-Egern

memar@dync.de

Mobil: +49 152 - 540 975 21  
Tel: +49 8022 - 706212  
Fax: +49 8022 - 8596584

Thank you for your attention.  
We will be happy to answer your questions personally.