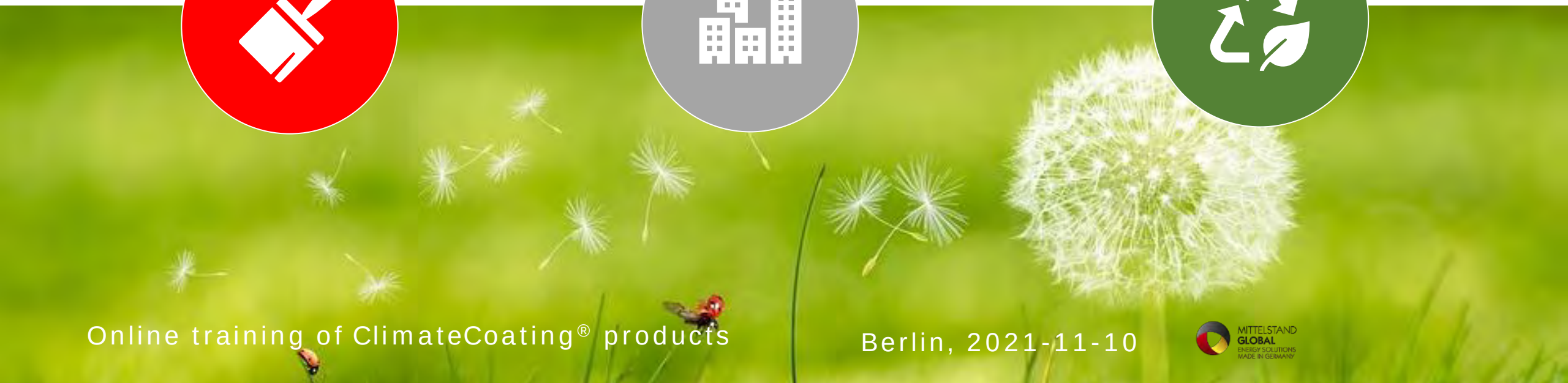
NOT A PAINT - BUT A PAINTABLE SOLUTION

Innovative coatings with added value.

For buildings, interiors and industrial applications.

Environmentally friendly. Powerful. Effectively.



Online training of ClimateCoating® products

Berlin, 2021-11-10

SICC Coatings GmbH:

- 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: ISO 9001:2015 and ISO 14001:2015
- has the headquarter in Berlin
- and currently 15 employees

Reflective Membran Technology


35.000 Projects

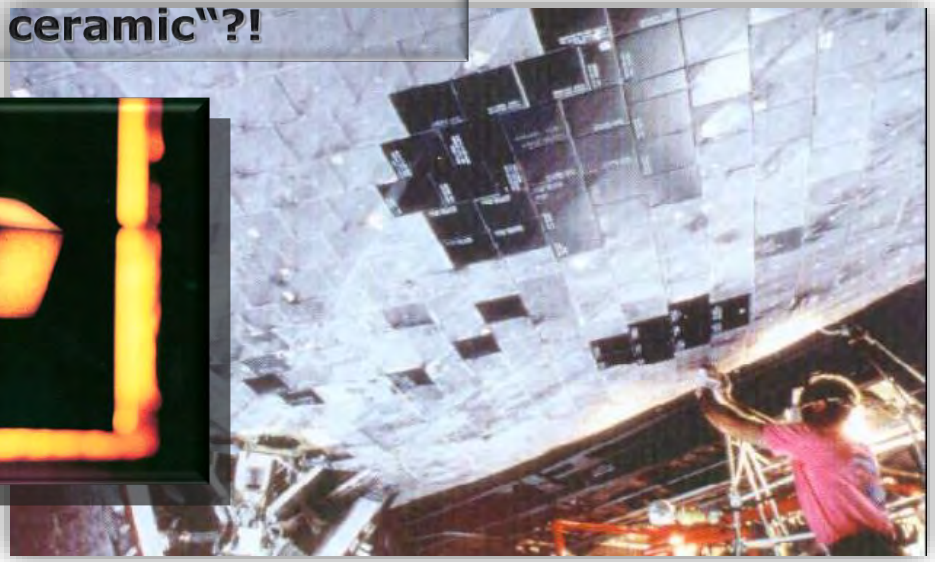
What is ClimateCoating®?

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:

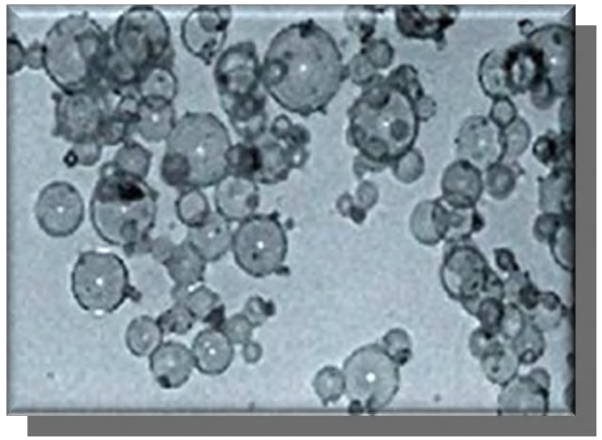
- membrane-impact
- emission, reflexion, scattering
- conductive properties

This includes:

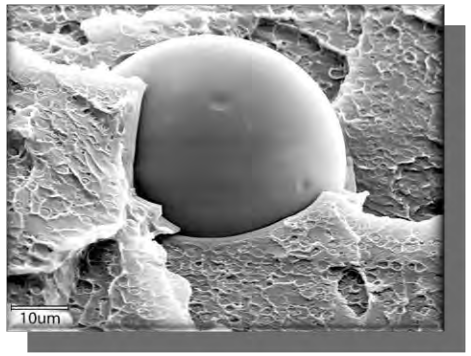
- humidity transport
- optical physics
- radiation physics
- thermodynamics
- fluidics

Reflective Membran Technology

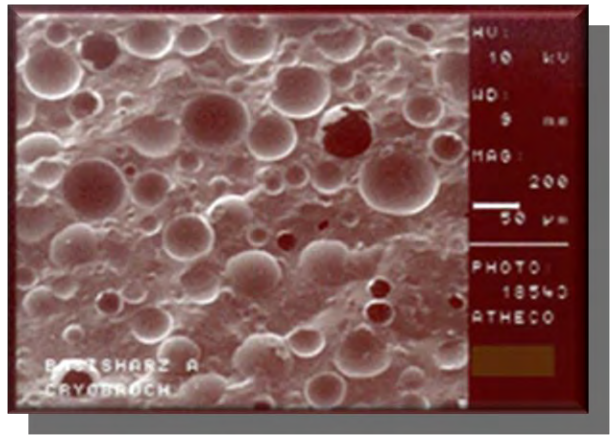
Composition of the ClimateCoating® membrane



Micro spheres greatly enlarged



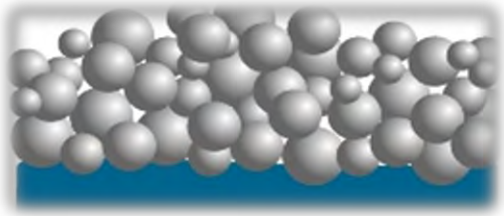
Single exposure



Cutting through the membrane

Membrane scheme

Isopach of the membrane:
~0,3 mm

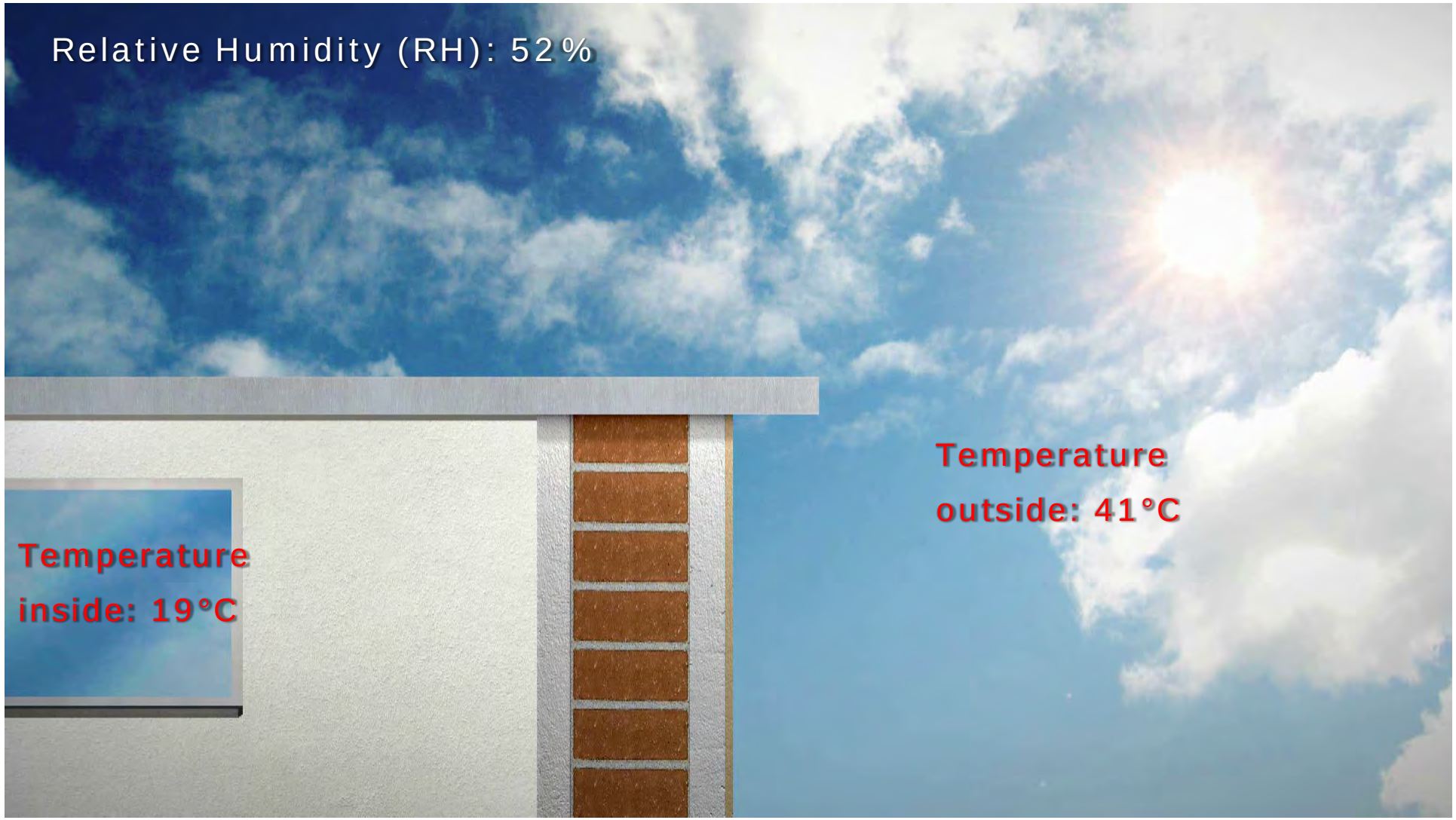


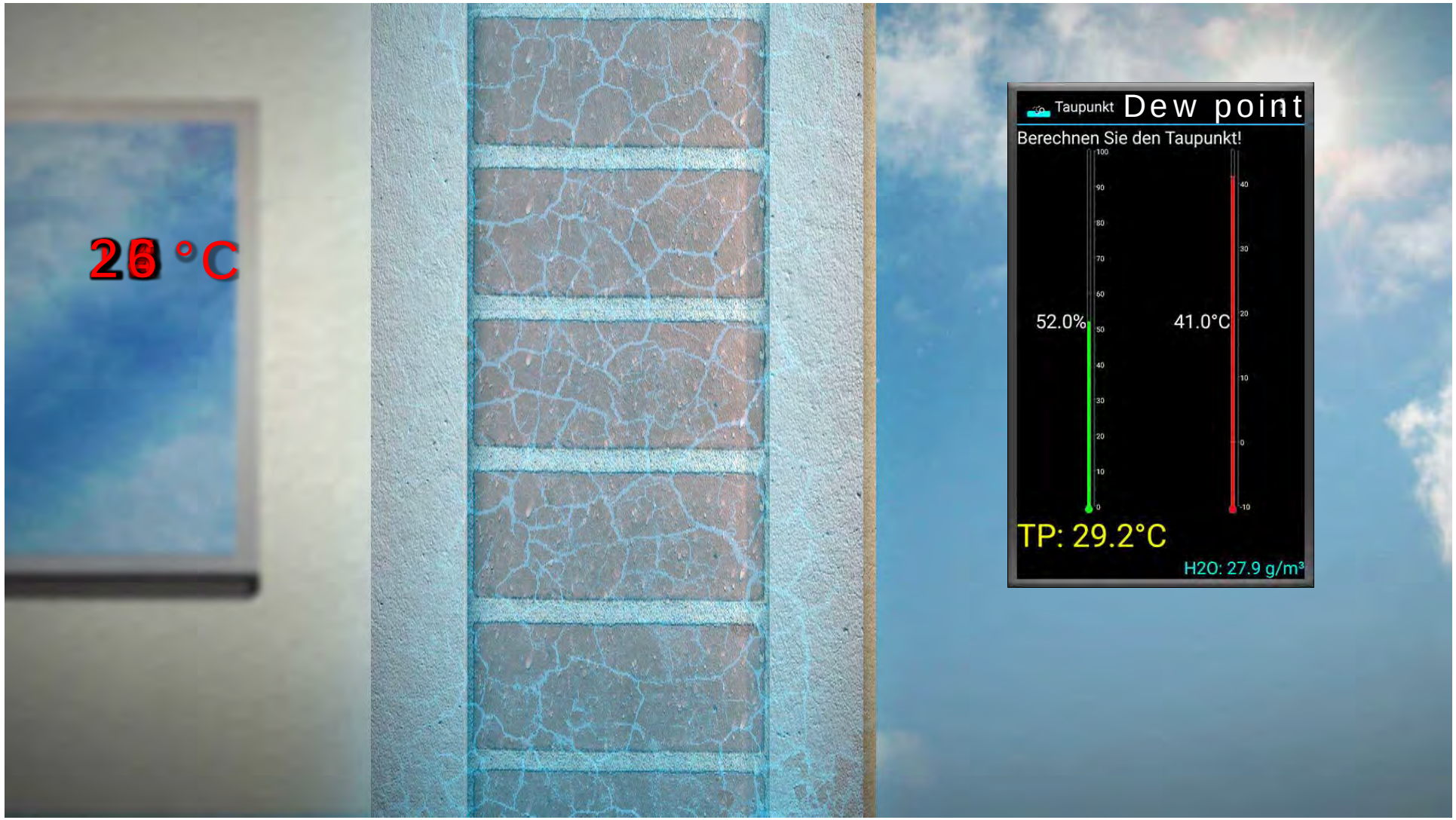
Dry film:

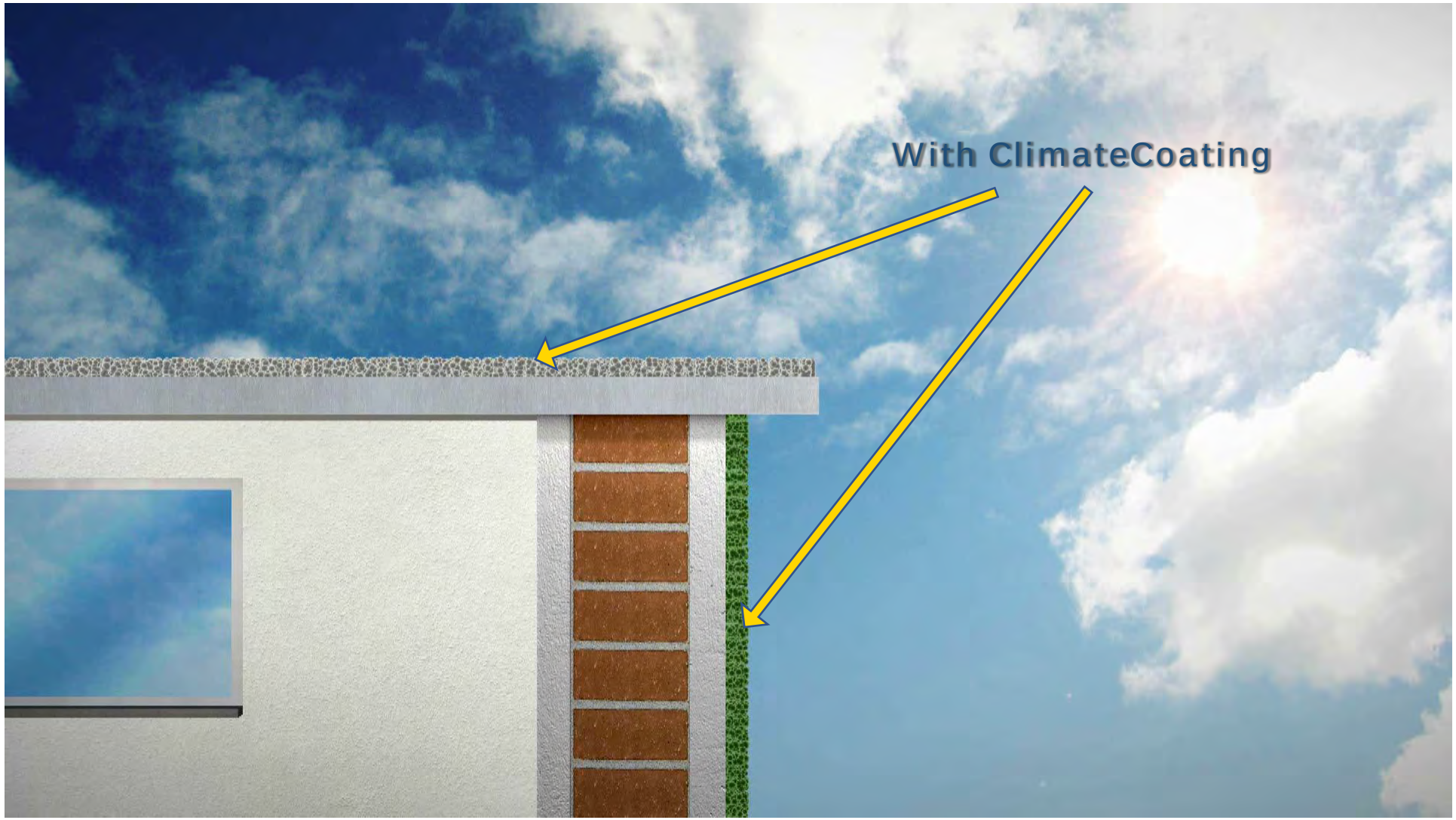
- approx. 50% Bubbles
- approx. 50% special binder with synchronize activators

Reflective Membran Technology

REFLECTIVE MEMBRANE TECHNOLOGY


Relative Humidity (RH): 52%
Temperature
inside: 19°C
Temperature
outside: 41°C

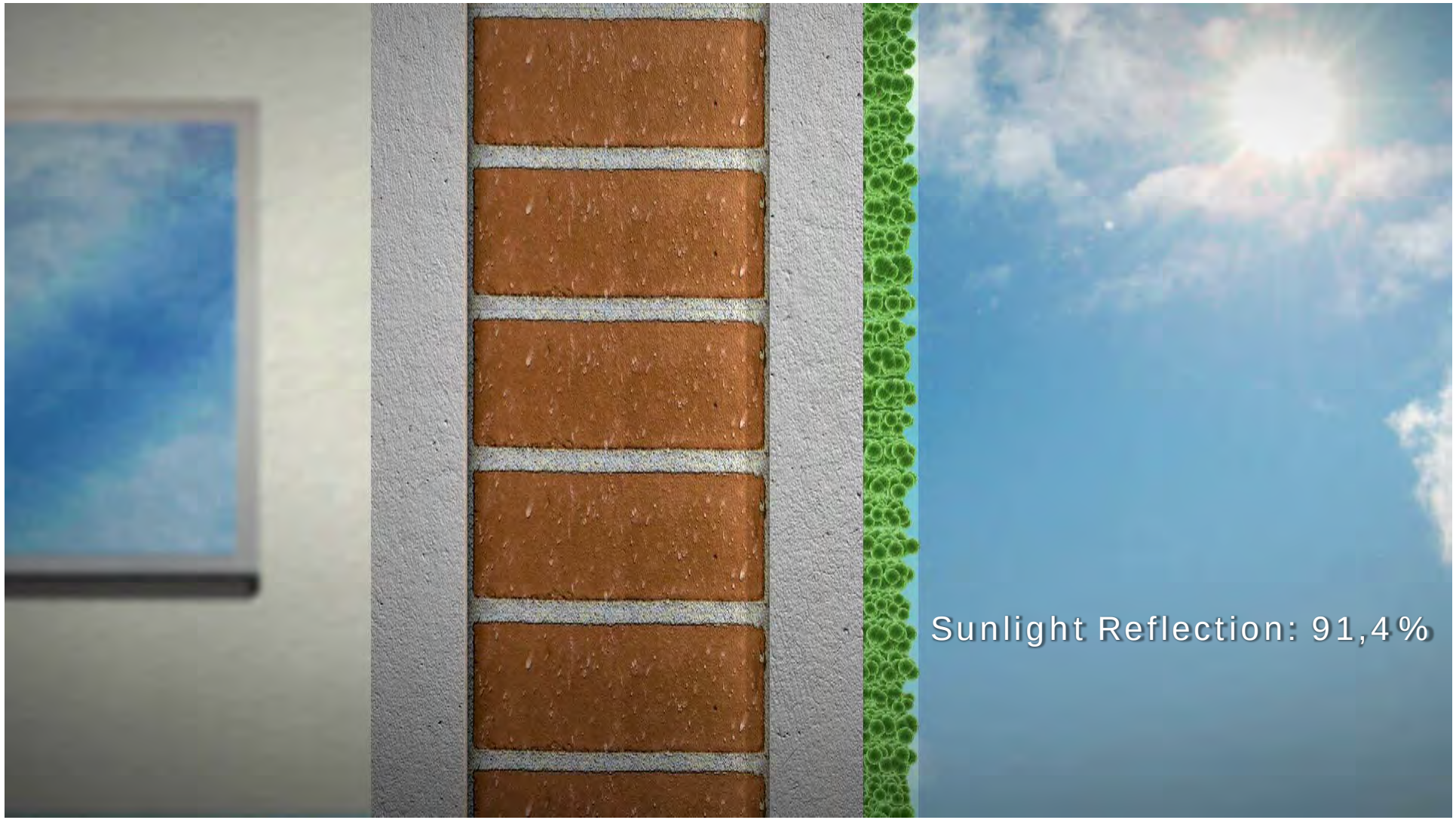

26 °C
Taupunkt Dew point
Berechnen Sie den Taupunkt!
52.0%
41.0°C
TP: 29.2°C
H2O: 27.9 g/m³



Reflective Membran Technology

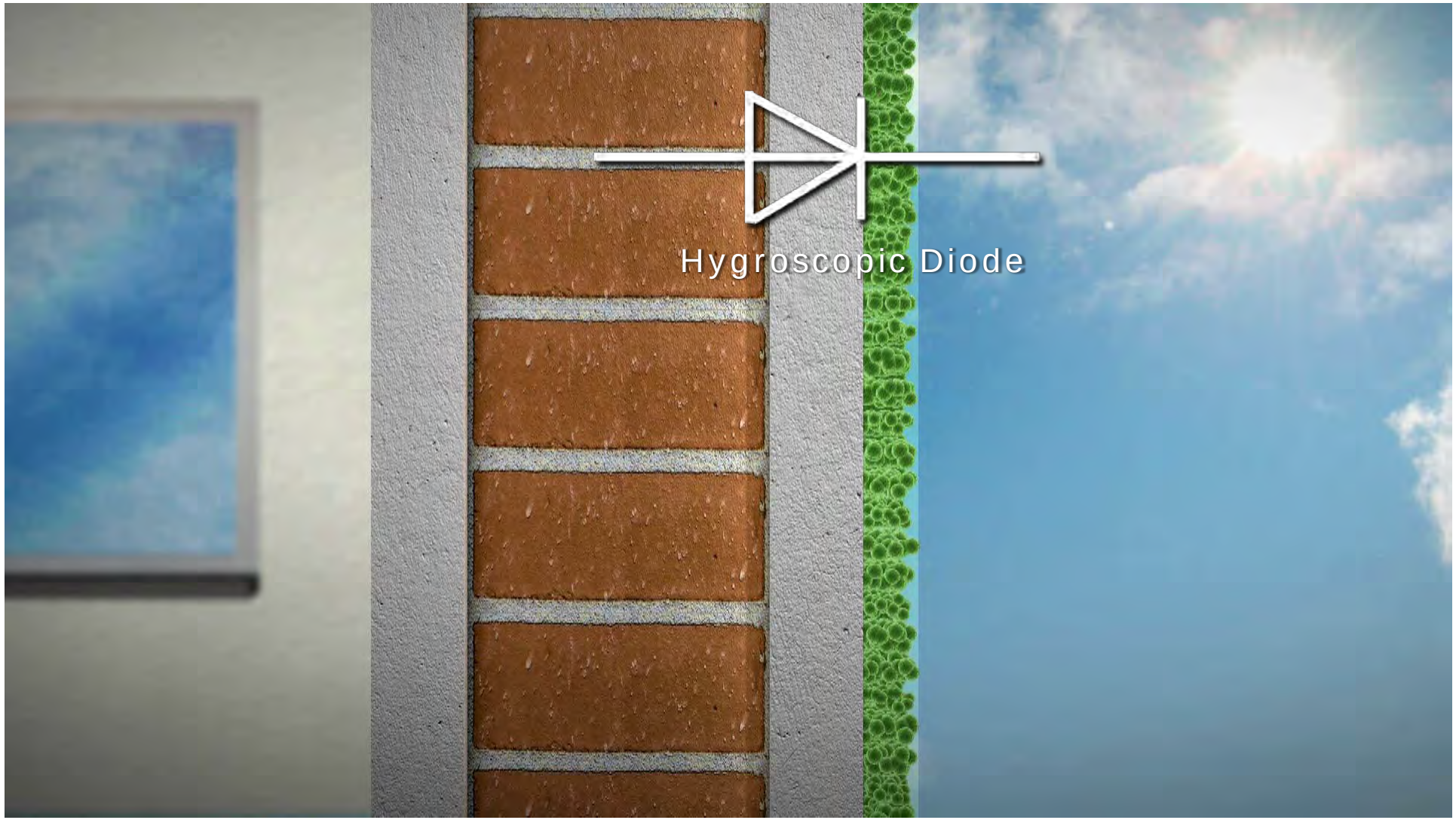
SICC Coatings
Superior Innovative Coating Concepts

ClimateCoating®



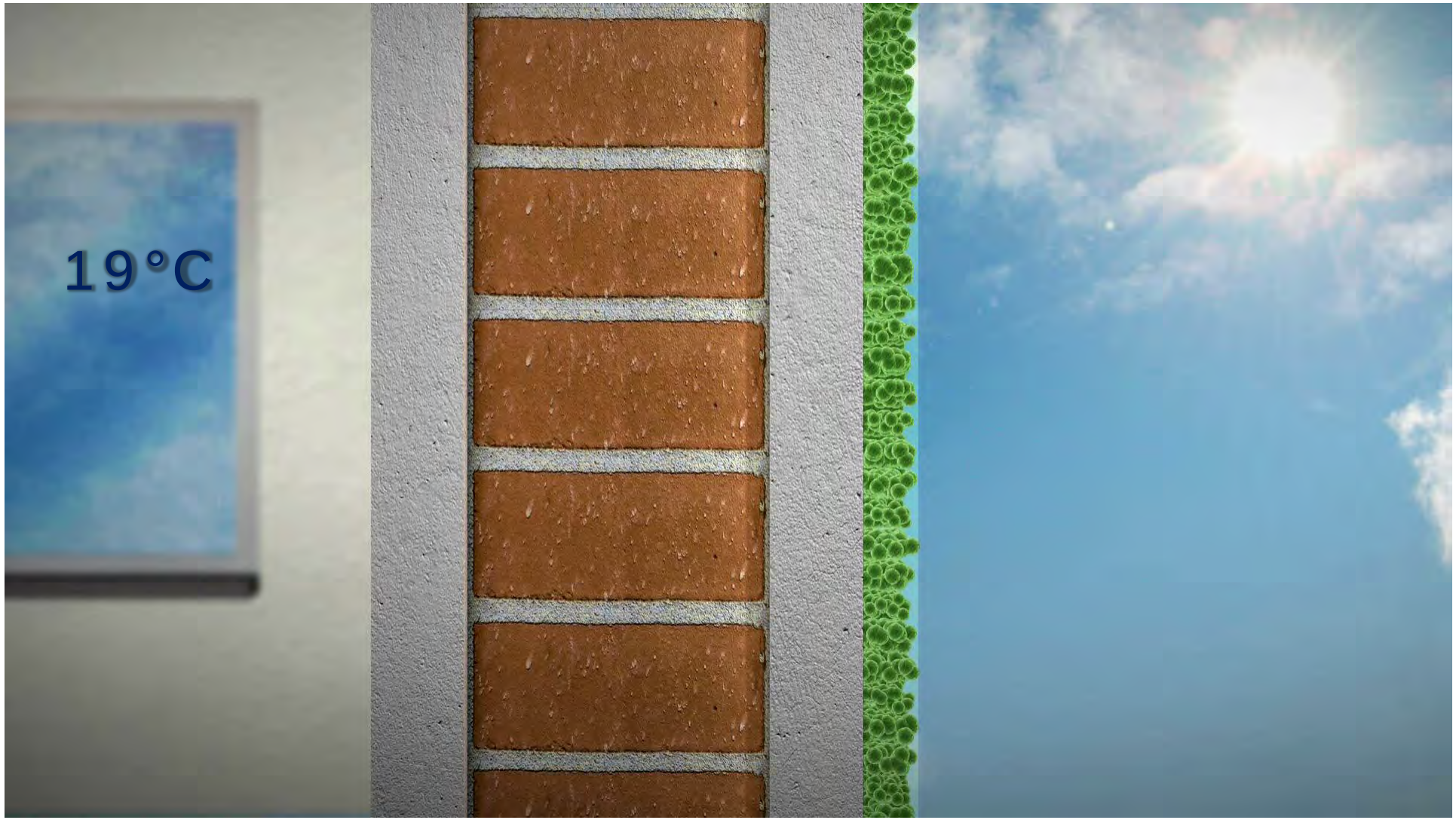
Reflective Membran Technology

MITTELSTAND GLOBAL
ENERGY SOLUTIONS MADE IN GERMANY


Hygroscopic Diode

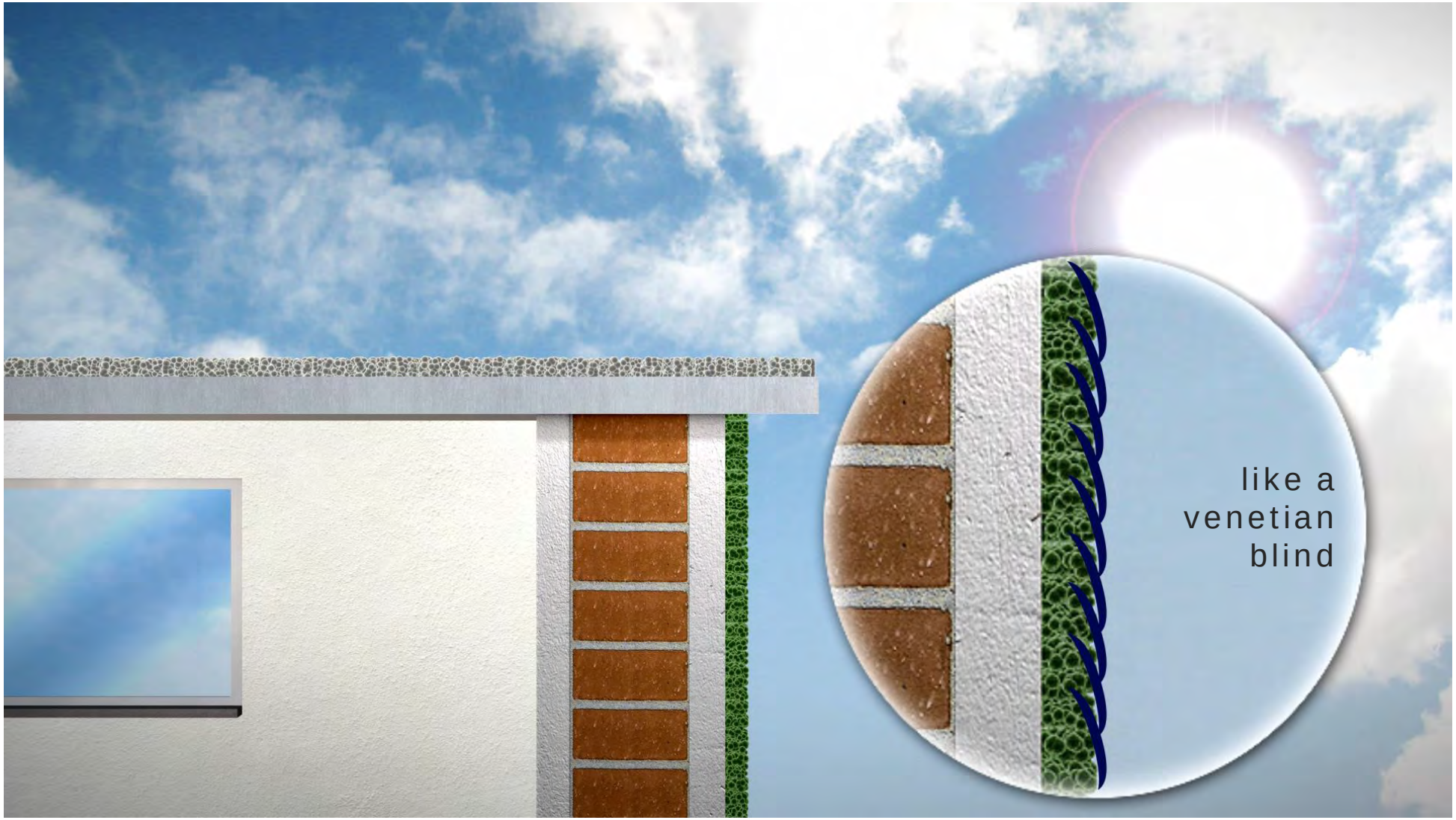
SICC Coatings
Superior Innovative Coating Concepts

ClimateCoating®



Reflective Membran Technology

MITTELSTAND GLOBAL
ENERGY SOLUTIONS MADE IN GERMANY



Reflective Membran Technology


ClimateCoating
THE ORIGINAL
StuccoPrimer
Grundierung
12,5 L
ClimateCoating
THE ORIGINAL
History
Denkmalschutz
Monument
12,5 L
ClimateCoating
THE ORIGINAL
IndustrySpecial
Beschichtung
Coating
12,5 L
ClimateCoating
THE ORIGINAL
Lumen
Innen
Inside
12,5 L
ClimateCoating
THE ORIGINAL
ThermoVital
Innen
Inside
12,5 L
ClimateCoating
THE ORIGINAL
ThermoProtect
Fassade
Facade
12,5 L
ClimateCoating
THE ORIGINAL
ThermoPlus
Innen
Inside
12,5 L
ClimateCoating
THE ORIGINAL
Nature
Holzschutz
Wood
19,0 L
5.02 GAL
ClimateCoating
THE ORIGINAL
PU SAFE
ClimateCoating
THE ORIGINAL
PU SAFE
ClimateCoating
THE ORIGINAL
ThermoActive
Dach
Roof
12,5 L

Product overview of ClimateCoating®:

Individual solutions for customers:

- IndustrySpecial (different application areas)

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

Reflective Membran Technology

Main products: 1. page

Outside: Facades				Roof	Outside: Wood protection		Outside and inside: Window seal		Inside: Walls and ceilings		
ThermoProtect	**History**	**StuccoTex 80 / 280**	**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 silicone modification	Lightweight structural plaster that reduces thermal stresses	Ready-to-use bonding agent for StuccoTex	Reflektierende Dachbeschichtung mit ausgezeichneter Kühlleistung	Coloured and weather-resistant wood protection – opaque / glazing	Ready-to-use adhesion promoter for outdoor wooden components	Efficient protective coating for PU-foam	Filler for PU-foam	Ideal room climate and wide range of colours	Excellent light reflection	Innovative paint-on system 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 2,50	19,00 12,50 5,00	19,00 12,50 5,00
Consumption (ml/m²) with 2 applications 330	330	1,5 kg/m²	150 (for one-time painting)	600 (with embedding material approx. 1.000)	Nature: 330 / NatureGlaze: 220	150 (with a single coat)	600 m²	ff. A.	330	330	330

Reflective Membran Technology

Main products: 2. page

Outside: Thermal insulation plaster		Outside: Industry
IsoTex R70	IsoTex E50	Industry-Special
Lightweight mineral-based thermal insulation and renovation plaster – Grain size up to 3 mm	Fine mineral-based thermal insulation plaster – Grain size up to 1.5 mm	Versatile coating in industry
		
Container sizes (l)		
follows later	follows later	19,00 12,50 5,00 2,80
∅ Consumption depending on the absorbency of the substrate		
follows later	follows later	600

Industry and special solutions
SpecialSolution
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. No matter what problem you are looking for a solution for, just contact us for coatings or related topics. Together, we will find a SpecialSolution for you.


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/m² per working step

Reflective Membran Technology

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

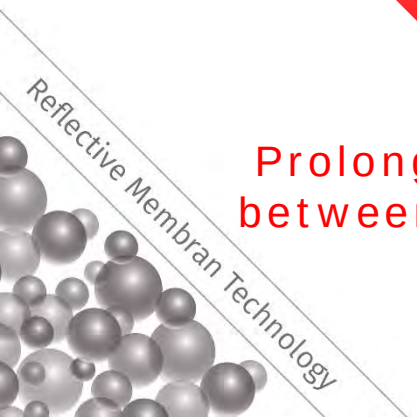
Durable elastisity from -50°C to +120°C

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

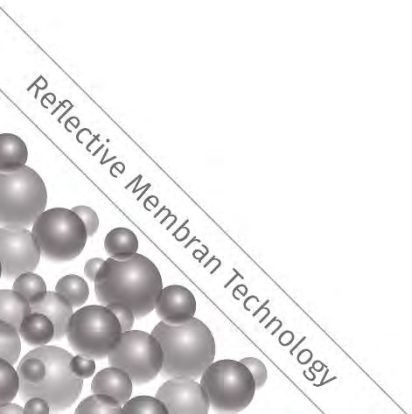
Water based

Without organic solvents

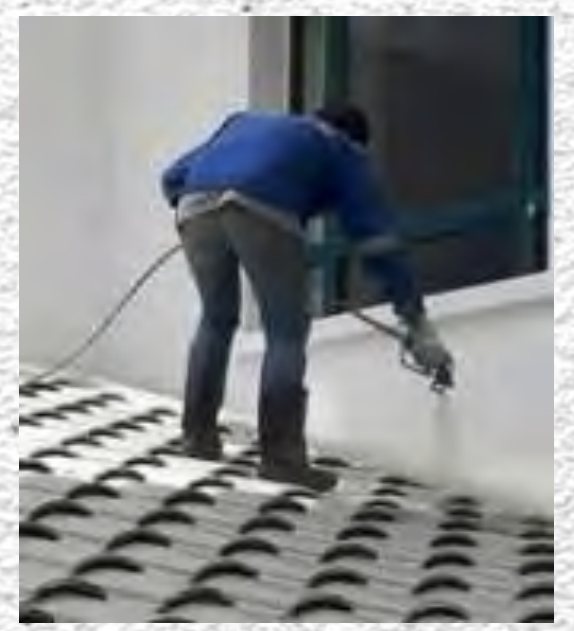
Free from aromatic compounds

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


ClimateCoating
THE ORIGINAL
ThermoVital

INSIDE


BETTER LIGHT SITUATION
ClimateCoating
THE ORIGINAL
Lumen


25°C
20°C
19°C
19°C
22°C
22°C
6°C
BETTER HEAT DISTRIBUTION
ClimateCoating
THE ORIGINAL
ThermoPlus

SICC Coatings
Superior Innovative Coating Concepts

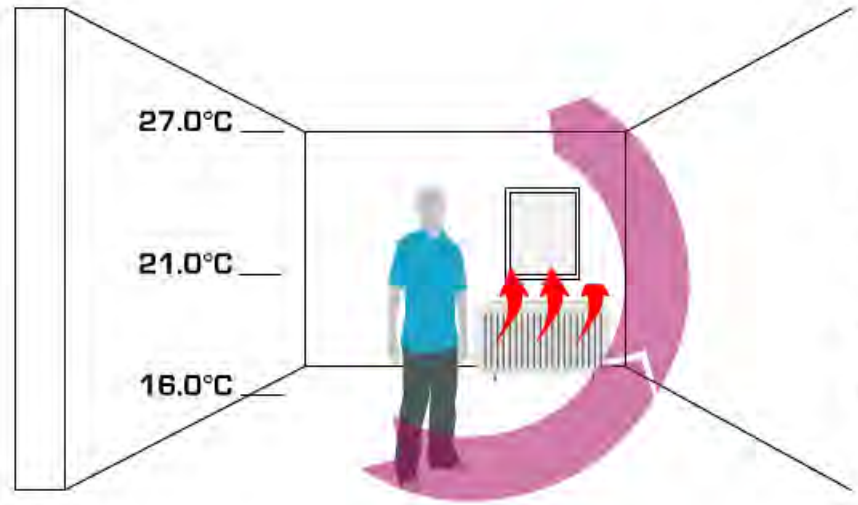
ClimateCoating®

Inside coating:

Reflective Membran Technology

MITTELSTAND GLOBAL
ENERGY SOLUTIONS MADE IN GERMANY

Usual situation with conventional paint

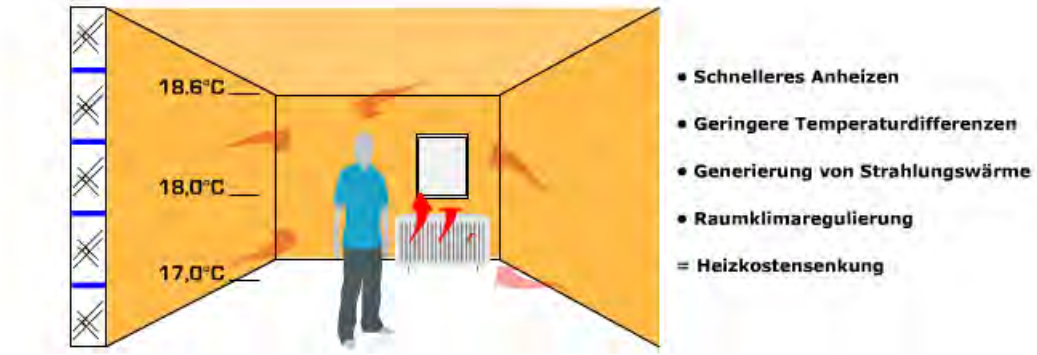


- Große Temperaturdifferenzen
- Energieaufwand zur Erwärmung von Luft
- Starke Konvektion
- Schimmelpilzrisiko

- 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)

Reflective Membran Technology

ClimateCoating® ThermoPlus in cold months

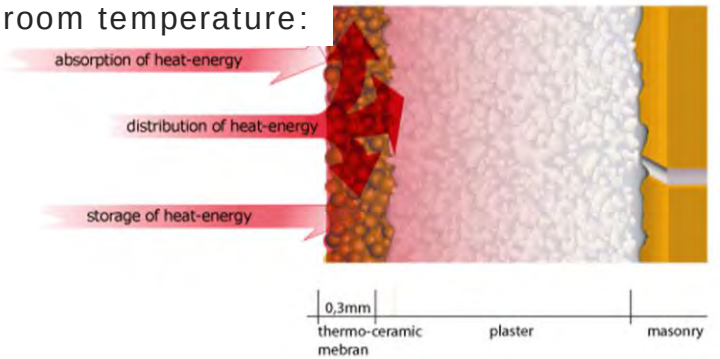


- ✓ IR Reflection / Radiation Heat
- ✓ Faster room warming
- ✓ Lower temperature differences
- ✓ Slower cooling / room climate regulation

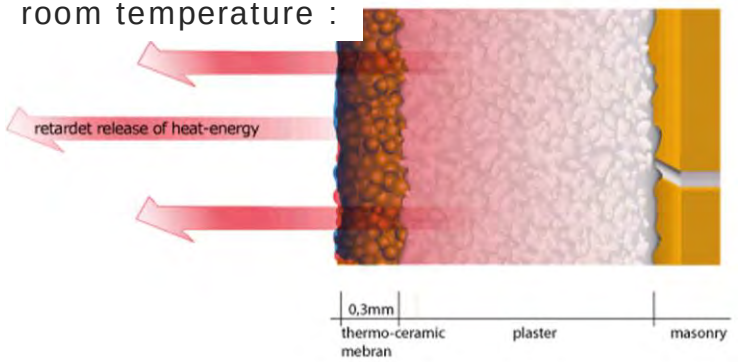
= Reducing heating energy consumption

Regulation of room temperature

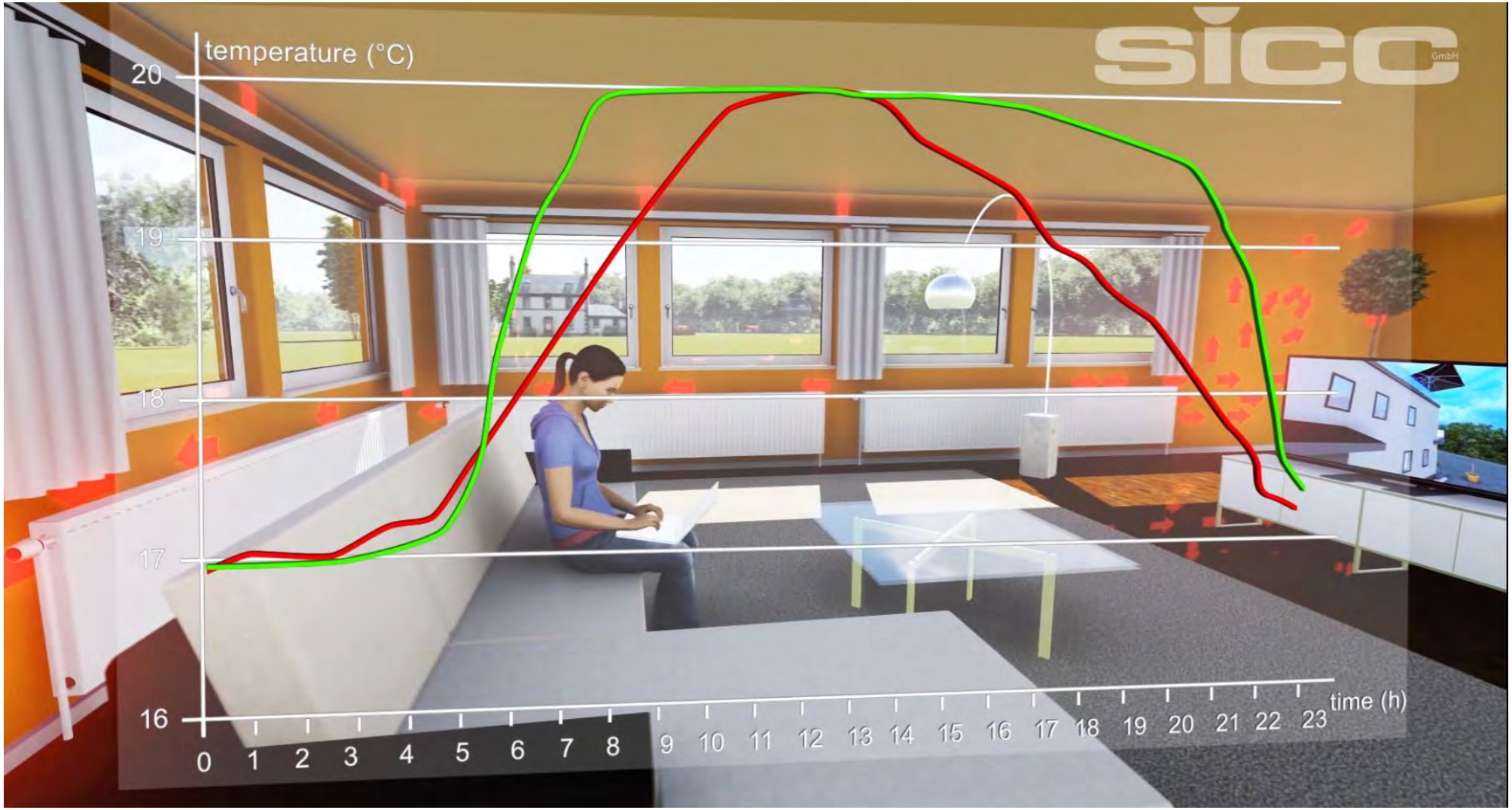
at high
room temperature:



at low
room temperature :

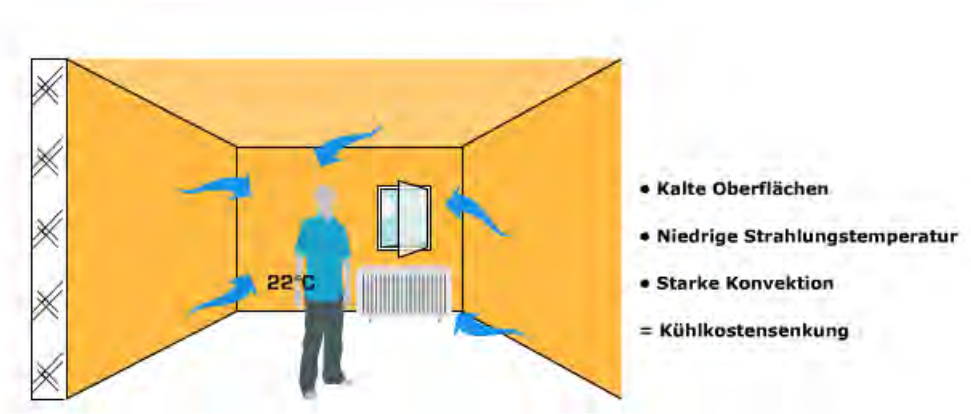


Reflective Membran Technology



Reflective Membran Technology

ClimateCoating® ThermoPlus in summer

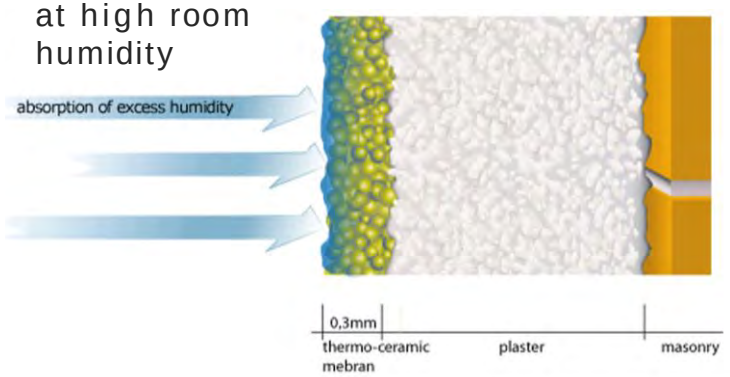


- ✓ Constant room humidity
- ✓ Cooling by evaporation
- ✓ Pleasant indoor climate

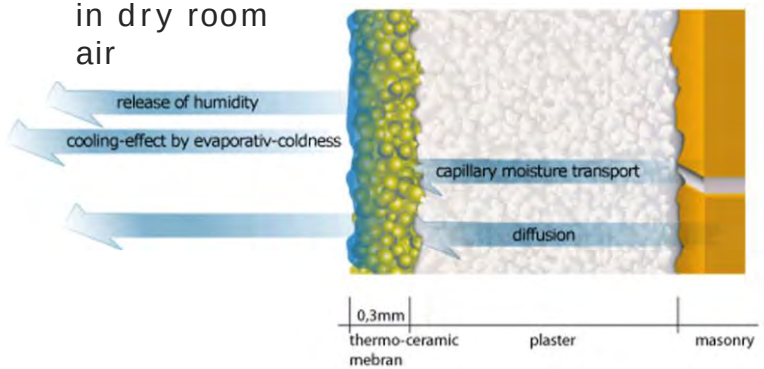
= Reducing cooling energy consumption

Optimal humidity approx. 55 %

at high room humidity

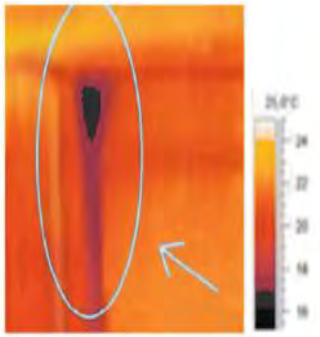


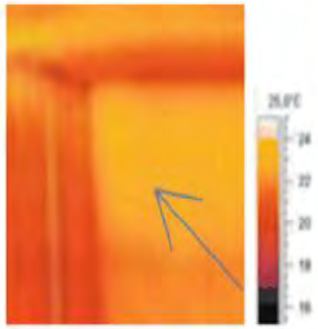
in dry room air

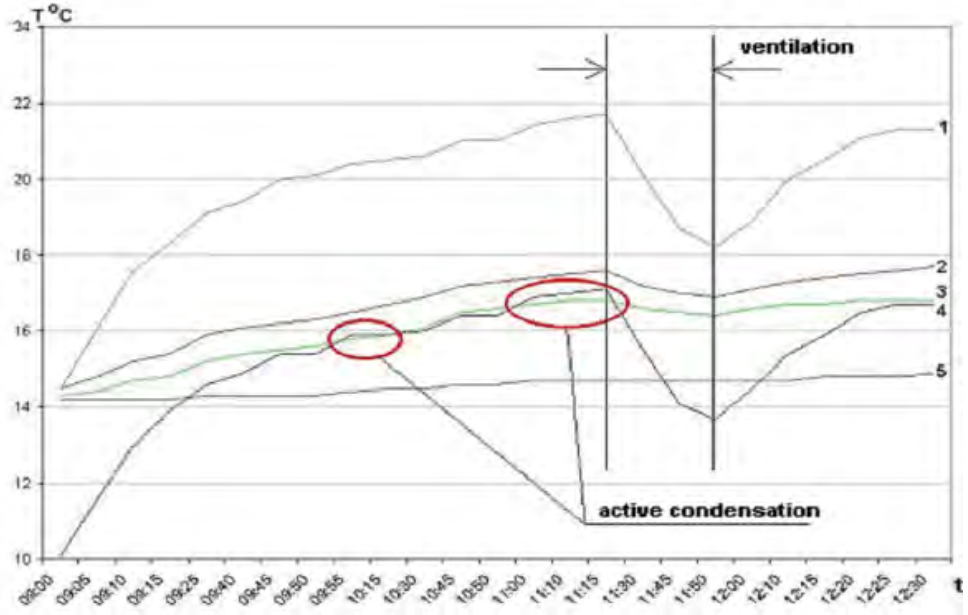


Reflective Membran Technology

"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

Reflective Membran Technology

ThermoPlus for interior coating

Reflective Membran Technology


ClimateCoating
THE ORIGINAL
ThermoProtect
Fassade
Facade

FACADE


ClimateCoating
THE ORIGINAL
History

Action on the facade and in the protection of monuments

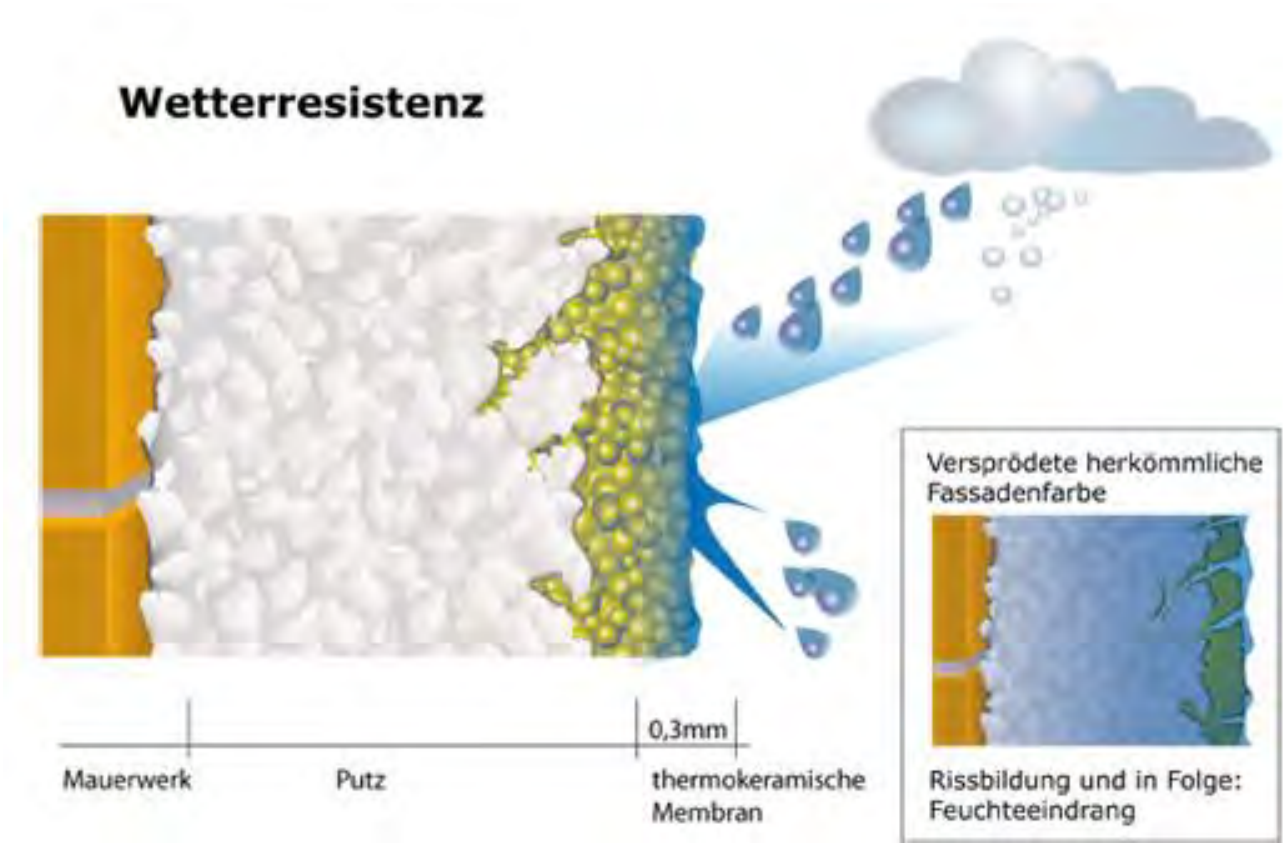
Reflective Membran Technology

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®

Reflective Membran Technology

ClimateCoating® ThermoProtect for facades

Reflective Membran Technology

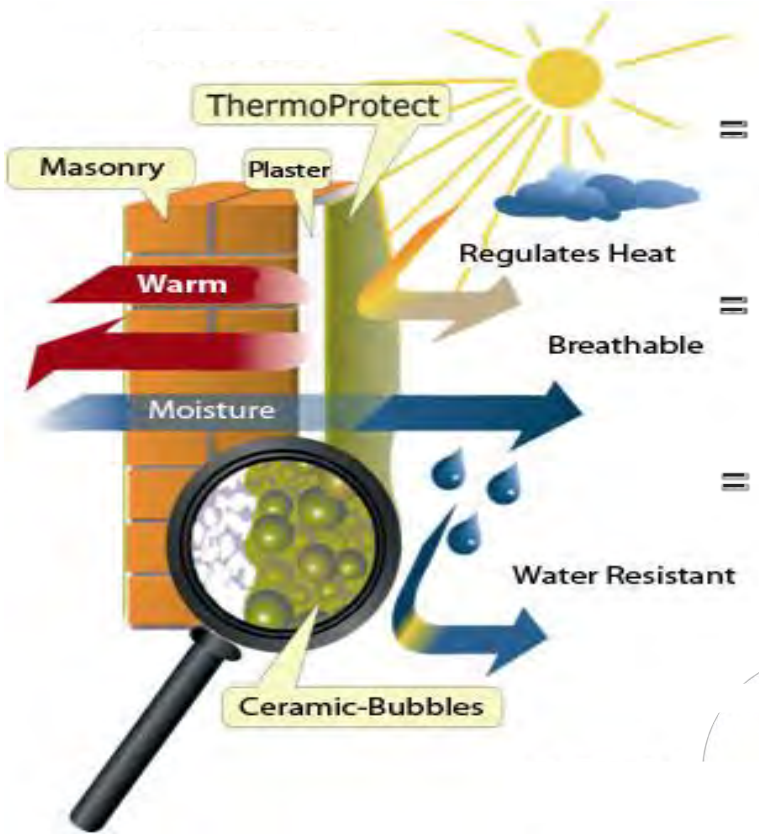
ClimateCoating® ThermoProtect in comparison to usual paints

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

Reflective Membran Technology

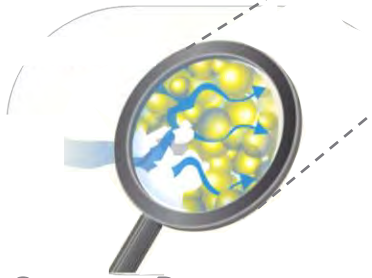
Function of the reflective membrane



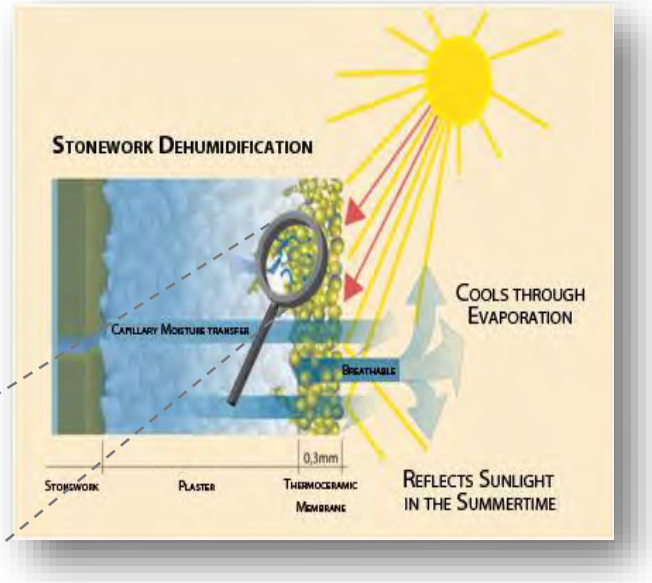
= moisture proofing and active dehumidification

= cooling by reflexion and evaporation

= drying by capillary water transfer



CAPILLARY DRYING



Adaptive membrane in summer
=
cooling effects by evaporation

Reflective Membran Technology

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

Reflective Membran Technology

From practice to theory and calculation value

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

usual U-value formula

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

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

Baustoff	Rohdichte ρ in kg/m³ [1)] [2)]	Rechenwert der Wärmeleitfähigkeit λ_R in W/m.K [3)]	Wasserdampf-Diffusionswider-standszahl μ [4)]	Beschichtungs-faktor f_{TS} [15)]
Mauerwerk einschließlich Mörtelfugen				
Vollklinker, Hochlochklinker, Keramikklinker nach DIN 105	1800 2000 2200	0,81 0,96 1,20	50/100	0,30 0,25 0,20
Vollziegel, Lochziegel, Hoch-lochziegel nach DIN 105	1200 1400 1600 1800 2000	0,50 0,58 0,68 0,81 0,96	5/10	0,35 0,35 0,35 0,30 0,25
Leichtlochziegel, Lochung A und B nach DIN 105 T2	700 800 900	0,36 0,39 0,42	5/10	0,40 0,40

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

Reflective Membran Technology

Practical example between calculation and measurement

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

				Ri	fTS	f *	λeff	Reff	
			Rsi =	0,130				0,130	m²K/W
			R1 =	0,000		0,00	0,000	0,000	m²K/W
		d2 = 0,015 m							
Layer 2	Plaster		R2 =	0,021	0,60	0,40	0,280	0,054	m²K/W
		λ2 = 0,700 W/mK							
		d3 = 0,380 m							
Layer 3	Brick 1.600		R3 =	0,559	0,35	0,65	0,442	0,860	m²K/W
		λ3 = 0,680 W/mK							
		d4 = 0,025 m							
Layer 4	Plaster		R4 =	0,180	0,60	0,40	0,400	0,063	m²K/W
		λ4 = 1,000 W/mK							
		d5 = 0,000 m							
Layer 5	empty		R5 =	0,000		0,00	0,000	0,000	m²K/W
		00 W/mK							
		00 m							
		00 W/mK	R6 =	0,000		0,00	0,000	0,000	m²K/W
		00 m							
		00 W/mK	R6 =	0,000		0,00	0,000	0,000	m²K/W
			Rse =	0,040				0,040	m²K/W
			Σ Ri =	0,930				1,146	m²K/W
			U =	1,075				0,873	W/m²K

Δ = 19%

f * = fTS

Better than calculated!

Update 03.2014:
13,2 % Energy saving

2011: ΔQ_{pract} = 15/18%

2009: $\Delta Q_{calc} \approx$ 12%

2009: ΔU_{calc} = 19%

Reflective Membran Technology

ClimateCoating® ThermoProtect for facade ...

Reflective Membran Technology

SICC Coatings
Superior Innovative Coating Concepts

ClimateCoating®

Many years in use with nameable customers!

Reflective Membran Technology

MITTELSTAND GLOBAL
ENERGY SOLUTIONS MADE IN GERMANY

SICC Coatings
Superior Innovative Coating Concepts

ClimateCoating®

ThermoProtect for facade renovation

Reflective Membran Technology

MITTELSTAND GLOBAL
ENERGY SOLUTIONS MADE IN GERMANY

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.

Reflective Membran Technology

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

Reflective Membran Technology

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

Sporenstraße 6,
Potsdam,
Germany

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

Reflective Membran Technology

Refurbishment of old buildings

Althoffstraße,
Berlin,
Germany

Reflective Membran Technology

France, 2014

before

after

Reflective Membran Technology

Netherlands, Tongerenseweg 118, Epe

Kolthoven Castle

Reflective Membran Technology

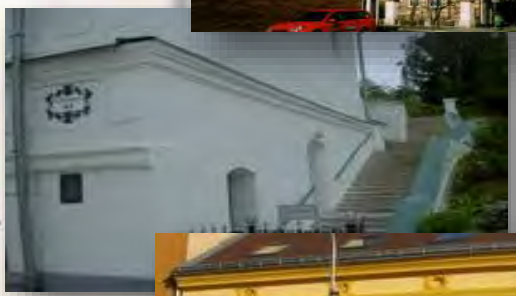
Germany, Station building in Hameln - a building in the course of time

Reflective Membran Technology

SICC Coatings
Superior Innovative Coating Concepts

ClimateCoating®

History for historical buildings



GREENGUARD
PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS
UL.COM/GG
UL 2818
GOLD

Reflective Membran Technology

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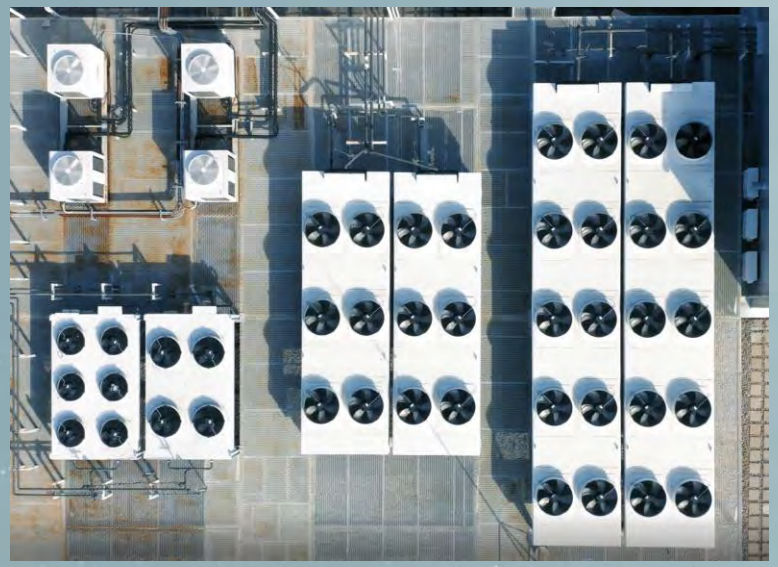


COOLING


PASSIVE COOLING
ClimateCoating
THE ORIGINAL
ThermoActive
Dach
Roof

ThermoActive reflective roof coating with excellent COOLING PERFORMANCE

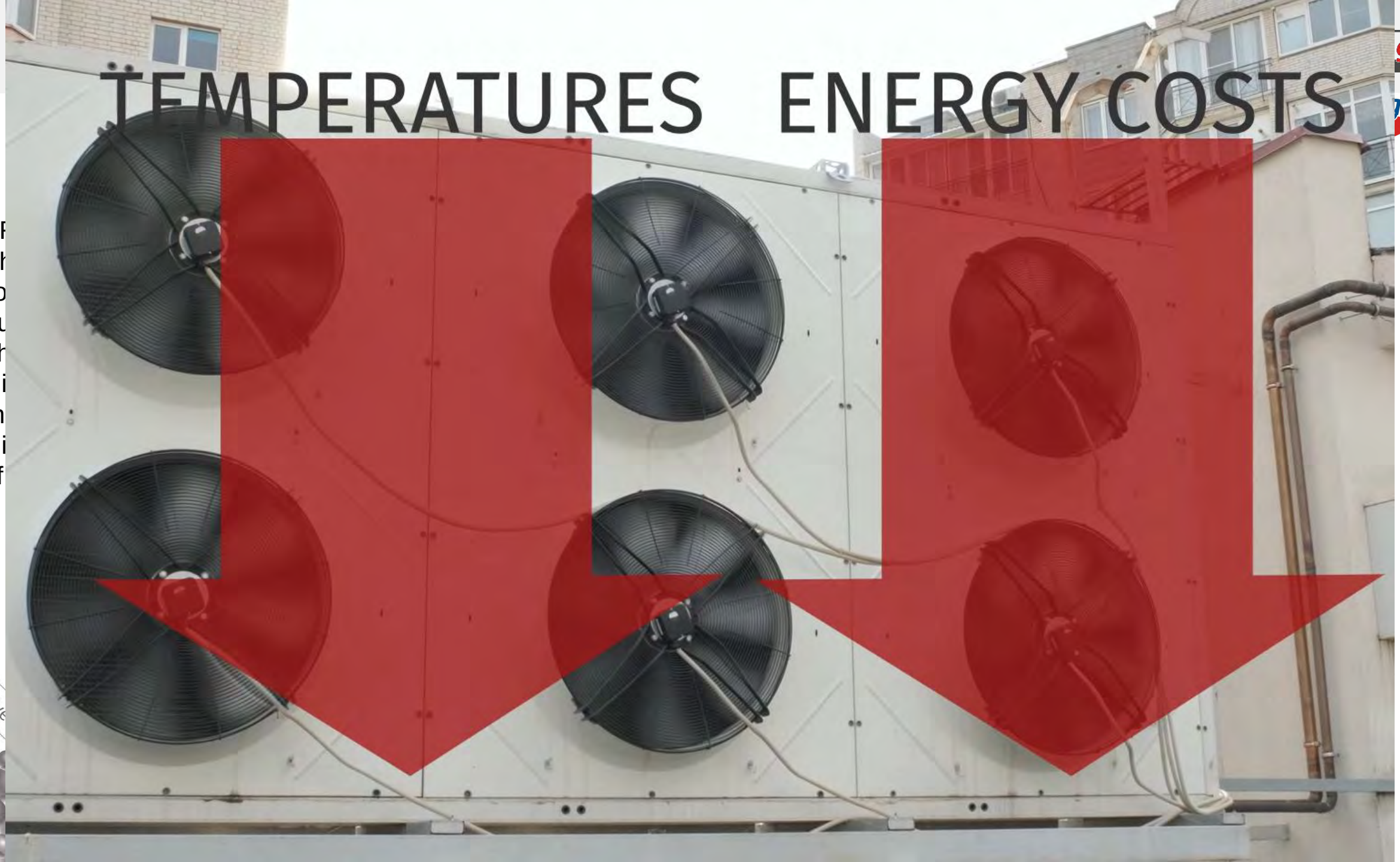
PROPERTIES:

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

Reflective Membran Technology


TEMPERATURES ENERGY COSTS

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

Reflective Membran Technology

SICC Coatings
Superior Innovative Coating Concepts

ClimateCoating®

ThermoActiv for Roof coating...

Reflective Membran Technology

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IndustrySpecial

SICC Coatings
Superior Innovative Coating Concepts

ClimateCoating®

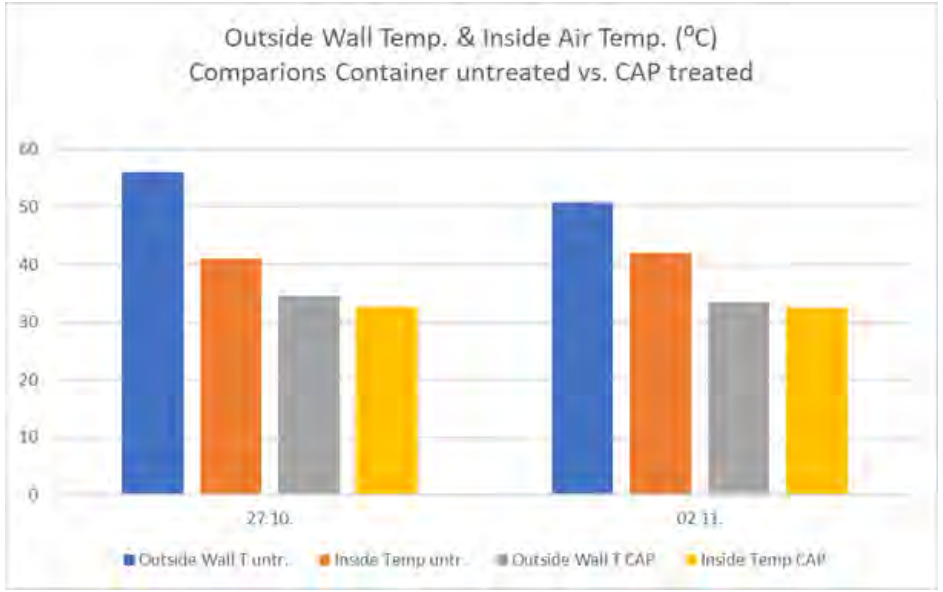
ThermoActive reflective roof coating with excellent COOLING PERFORMANCE

Reflective Membran Technology

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

MITTELSTAND GLOBAL
ENERGY SOLUTIONS MADE IN GERMANY

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

Reflective Membran Technology

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)

Reflective Membran Technology

International certificate

FixPlus ThermoPlus ThermoActive ThermoProtect IndustrySpecial

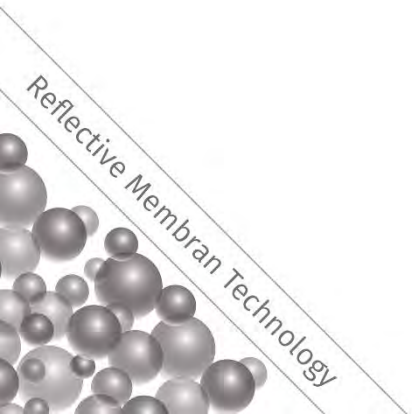
Nature Nature Primer ThermoVital History

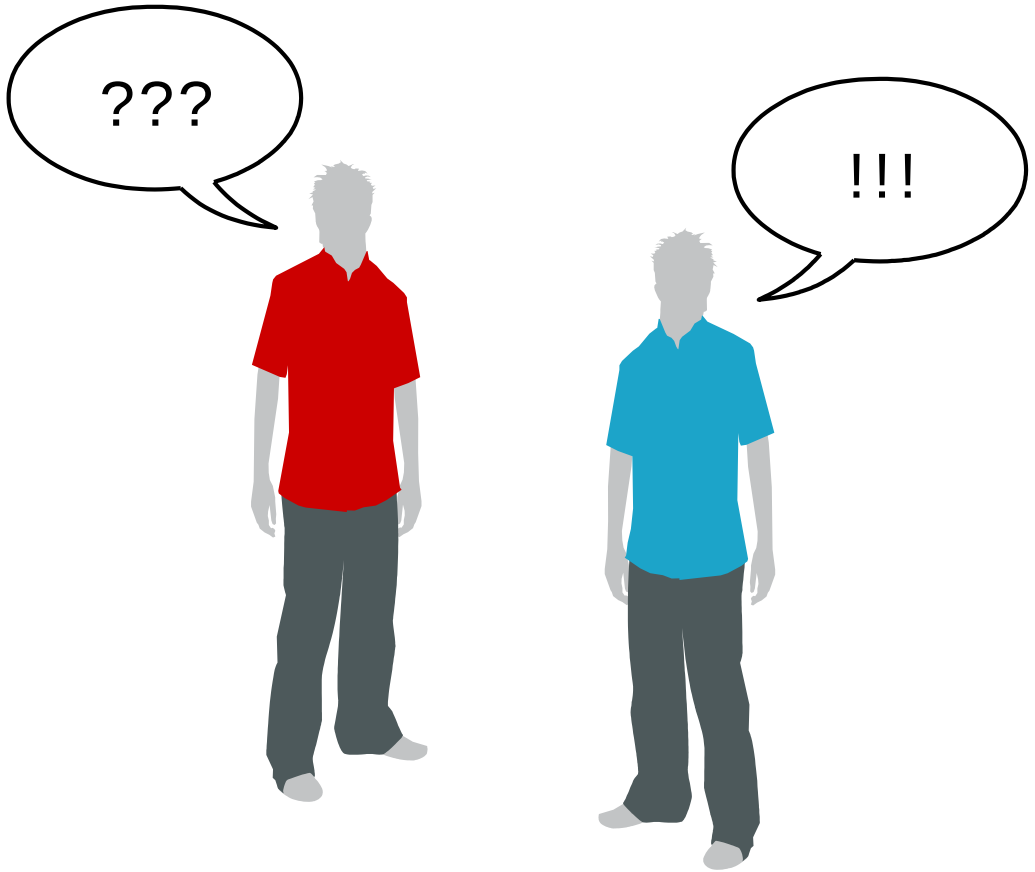
Reflective Membran Technology

Summary of advantages of the certified product family

ClimateCoating®

- Long-life protection
- Comfort and well-being
- Energy saving
- Environmental awareness





ZERTIFIKAT

Hiermit wird bescheinigt, dass

SICC Coatings GmbH
Wackenbergstraße 78 - 82
13158 Berlin
Deutschland

mit den im Anhang gelisteten Standorten

ein **Qualitätsmanagementsystem** eingeführt

Geltungsbereich:
Entwicklung, Herstellung und Vertrieb von Oberfläc
Eigenschaften

Durch ein Audit, dokumentiert in einem Bericht, wu
dass das Managementsystem die Forderungen des

ISO 9001 : 2015

Zertifikat-Registrier-Nr.	407331 QM15
Gültig ab	2020-08-25
Gültig bis	2023-05-20
Zertifizierungsdatum	2020-08-25

DQS GmbH

Markus Bleher
Geschäftsführer

Akkreditierte Stelle: DQS GmbH August-Schanz-Straße 21, 604

ZERTIFIKAT

Hiermit wird bescheinigt, dass

SICC Coatings GmbH
Wackenbergstraße 78 - 82
13158 Berlin
Deutschland

ein **Umweltmanagementsystem** eingeführt hat und anwendet.

Geltungsbereich:
Entwicklung, Herstellung und Vertrieb von Oberflächenbeschichtungen mit endothermischen Eigenschaften

Durch ein Audit, dokumentiert in einem Bericht, wurde der Nachweis erbracht, dass das Managementsystem die Forderungen des folgenden Regelwerks erfüllt

ISO 14001 : 2015

Zertifikat-Registrier-Nr.	407331 UM15
Gültig ab	2019-08-09
Gültig bis	2022-08-08
Zertifizierungsdatum	2019-08-08

DQS GmbH

Stefan Heinloth
Geschäftsführer

Akkreditierte Stelle: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main

For questions I am still available!

Reflective Membran Technology

SICC Coatings GmbH stands for innovative coatings
with added value – for buildings, interiors and industrial applications.
Founded in 2003. Manufacturer in Berlin. Globally active.

Developer and manufacturer:

SICC Coatings GmbH
Wackenbergstraße 78-82
13156 Berlin/Germany
Phone: +49 30 500196-0
E-Mail: info@sicc.de

www.climatecoating.com

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