

Intelligent coatings for buildings, interiors and industrial applications.



#### Preface

Dear friends,

we thank you for making the right choice in choosing our personal productline. At this very moment you are holding in your hand our new catalog that will be your guide into a new world of coating technology. Products such as **StuccoTex**- a newly developed lightweight plaster, as well as internationally proven classics like ThermoProtect or ThermoPlus!

In keeping this catalog handy it will become the ultimate guide to all your coating needs. Whether you are painting a room for the first time, or restoring an old home from inside or outside. If you are having mold issues, no problem, our **ClimateCoatings**® products are at your service to meet your needs head on. With years of expertise and the finest quality of customer service we are working to bring your projects to life by our way of global services! A knowledgeable staff will be more than happy to answer any of your questions and walk you through our process. We would like to wish you a very enjoyable experience in doing business with us wherever your home or business might be...

Best regards from Waldemar Walczok and the team of SICC Coatings GmbH.





Superior Innovative Climate Coatings

### The Company

SICC Coatings GmbH is a leading provider in energy-saving color coatings and is also an inventor of a reflective membrane technology. The development, production and distribution of innovative, hightech paints have been for decades the core business of SICC Coatings GmbH. Our products go beyond the traditional use of decorative coatings. They are ceramic paints which are sustainable and ecologically sound which contribute towards you, and your family's health and well being. Our team of scientists, specialists and highly qualified staff operates worldwide and consistently develops these pioneering technologies for your benefit.

#### **Customer Service?**

Not a Problem!

Our pleasant staff is here to provide service and support to meet all your product needs, from consultation on our amazing product line to providing customer support to the delivery of your products.









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The Company



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# Introduction –

What is so special about ClimateCoating® - products?

#### Introduction

**ClimateCoating**® brings scientific technology to your home or place of business.



When space explorers needed a protective system on the space shuttle they depended on a heat-shield of only a few centimeters thick which kept the incredible temperatures away from the outer layer of the spacecraft.

The secret lies in a specially developed vacuumized ceramic sphere. This engineering technology is the foundation of all our products. Taking these ceramic hollow bodies and combining them with hightech adhesive, specially developed dispersions and activators, you might also refer to them as "Liquid Ceramic Tile". These liquid ceramic tiles have the ability to absorb heat what is scientifically referred to as an endothermic function.

# Can a 0.3 mm thick coating on the surface of a building save energy?

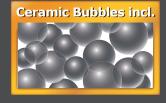
It certainly does not appear plausible for such a thin layer of paint to perform so well on a grand scale when it comes to saving energy. Yet, it is possible with **ClimateCoating®**, if we compare how thin layers protect and insulate materials we find that we have a better understanding of the roles they perform and their functions, for example: window films are used for protection against heat, emergency blankets are used for a protection against heat loss and windshield films for protection against freezing, therefore we can use these principles on the physics of a building.

# Why is SICC Coatings product technology so fascinating?

- excellent return on investment
- effective energy savings
- ISO 9001:2015 certified
- ISO 14001:2015 certified
- comprehensive design options more than 100,000 color shades
- easy to apply comparable to conventional paint
- validated in scientific studies and certifications
- multiple international awards

# And it's been proven for decades for Quality and Performance!









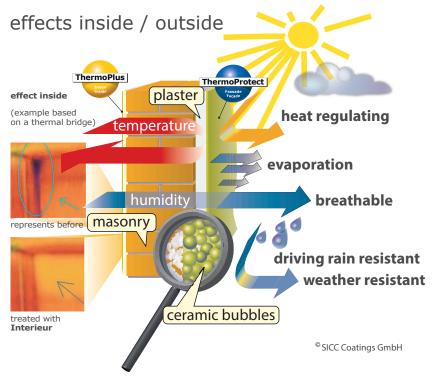






Introduction







For exterior uses, our coating protects your home or business against the harsh elements in all seasons as temperatures rise and fall throughout the year. In addition, it equalizes your energy consumption all the while keeping an aesthetically pleasing look to your home or business.













Introduction



# Interior coating that creates a pleasant room climate every single day –

## Indoor wall coating with ClimateCoating® ThermoPlus

# Healthy room climate due to ceramic sphere

Depending on seasonal conditions, the influx of outdoor temperatures can change a room dramatically. If climate changes in the room due to the result of intense sunlight, this can affect a person's breathing, concentration and cause an inability to get a good night sleep.

During the colder seasons the lower temperatures can cause a heat-pump to use an enormous amount of energy consumption to keep rooms at a comfortable and stable temperature, and yet despite a person's best efforts to maintain a constant temperature flow you may still find yourself suffering from cold feet or being uncomfortably warm.

So, for a pleasant indoor climate every day all year long – no matter how the weather is outside – use our reflective paint, **ThermoPlus**, from our **ClimateCoating**®-Product Family.

The surface-active interior finish contains tiny small ceramic bubbles (Microspheres) which create a reflective membrane (\*) after application. During the summer months, the membrane takes the excess moisture from the air and stores it, and then strives to balance this with the drier air (entropy principle\*) this results in the evaporation of the moisture in the environment which cools both the wall surfaces, and the room temperatures. In winter when humidity levels are lower the reflective coating takes heat energy and distributes it evenly in its membrane, without passing it to the wall behind it. The increased surface temperature provides now a reflection of energy in the near and short wave infrared range (IR reflection). The convection currents and thermal bridges are minimized and counteract the dispersion of dust and mold formation.

high temerature difference



with conventionelly paintings

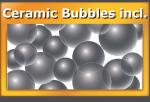


better heat distribution

with Interieur

As a result – people with allergies or asthma – have a pleasant indoor climate experience. Throughout the year the coating ensures a most pleasant experience maintaining physical properties, at a relative humidity of approximately 55%. This condition is perceived by most people as optimum.





for the love of the environment:

The coating contains only a low limit of volatile organic the environment: compounds regarding to Greenguard Gold standards.



ThermoPlus





## ThermoPlus

Art- exhibition in the Opelvilla, Rüsselsheim

Classroom of a school building, southern Germany



Restaurant, Slowakei



# One-two-three... mold free -

Long lasting prevention of fungus with the **ClimateCoating® ThermoVital** system!

### Why mold is so dangerous:

Mildew stains on a wall not only look ugly, they are a serious health hazard. Even small amounts of mold spores can trigger allergic reactions and larger quantities can damage your health.



For molds to grow they need nutrients and moisture. Since nutrients are more or less accessibly present in buildings, the humidity is the decisive factor. Molds can grow in a wide temperature and pH range, that is why temperature and pH levels play a subordinate role.

### We treat mold systematically:

1. Sanosil S010 mold-remover:

Treatment of visible mold cultures.

**Sanosil S010** has to be sprayed on the visible discolored spots. Allow the treatment to remain on the contaminated area for approximately 30 minutes.

2. Sanosil S003 mold spores-remover: treatment of the air and the secondary pollution.

**Sanosil S003** is sprayed in the room. When treating a room with **Sanosil S003** there is no need to remove furniture. The furniture remains in their space to deactivate the associating spores. Approximate waiting time for this treatment is 120 minutes. If any wall covering was treated during the application of **Sanosil S003**, if neccesary remove such covering and repeat step 1 to ensure a mold free room.

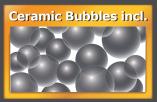
3. ThermoVital interior coating: a non-toxic mold preventive with long-lasting effects.

In order to permanently prevent the reappearance of mold, rooms are painted with **ThermoVital**.

**ThermoVital** consists of millions of microscopic hollow ceramic spheres, high-quality acrylic polymers, pigments, and synchronized activators, which create a moisture-regulating membrane, a so-called hygric diode (\*), after application. This unique membrane regulates the humidity, is variable diffusion (\*) and supporting the capillary transport of moisture out of the wall. The walls are drier, therefore preventing any chance for fungus to return. However, sufficient ventilation remains important! **ThermoVital** is to be applied in two layers. Allow first layer to dry for approximately 6 hours before applying the second coat.

ThermoVital is specifically developed from Climate-Coating® ThermoVital, with additional required properties for interior hygiene!

\*term definitions on page 28-29









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# ClimateCoating® ThermoVital

- reduces the risk of mould formation
- variable diffusion (\*)
- moisture regulating
- reduces the negative effects of thermal bridges
- improve room hygiene
- thermally comfortable
- does not contain harmful or allergenic substances
- free of fungicidal additives











# Sanosil S003 / Sanosil S010

- can be used in all living areas
- environmentally friendly and residue free
- harmless to health
- disinfects on contact
- deactivates long-term all know fungi and their allergens
- no development of resistance
- protects building structure











# Long-lasting protection for your facade -

with our facade coating ClimateCoating® ThermoProtect!

Provides protection against aging, algae, moss and mold growth, coupled with an arsenal of about 100,000 color shades and an improvement of the energy balance, both in hot and cold climate zones.

Due to the unique compostition between polyacrylate dispersion with reflective microspheres (vacumized ceramic bubbles) and activators a reflective membrane occurs after application. As a hygric diode, it protects the surface against the penetration of precipitation and condensation. At the same time, the surface is dehumidified by the capillary action of the Climate-Coating® membrane (\*). Due to the dehydration of the wall, the performance of its heat properties, like for example: insulation, improves and its transmission heat loss is reduced. Even during Winter, the membrane continues to perform well, despite receiving little sunlight.

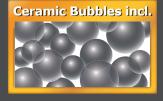
**ClimateCoating®** membranes continue to absorb heat more effectively indoor on dry wall surfaces, and thereby significantly improves the over all energy efficiency of a building.

In Summer, the endothermic properties of ClimateCoating®, membrane shortwave sunlight reflection, and specific evaporation processes allow the façade to cool. These processes allow the reduction of cooling costs and lead to significant energy savings. At the same time, the outside walls are kept dry, preventing any emergence of algae, especially protecting at insulated facades. When applied in warm climate zones the transmission of heat is reduced from outside to inside.



Housing development in Branta Bakken, Schweden

\*term definitions on page 28-29



for the love of the environment:

**ThermoProtect** 





## ThermoProtect

single-family house in Krakow, Poland

Villa in Epe, Netherlands

Siemens, Germany



# Modern monument protection -

### with our surface coating ClimateCoating® History!

Almost every mineral substrate in old buildings is impacted by water and salt. This explains the requirement of preservation for a perfect capillary- and vapor-permeable coating which is essential to prevent salt and moisture buildup and usually withstands all modern pollution. The primary dehumidifying mechanism is capillary drying, where water and salt are transported from the inside to the outer wall surface. Vapor permeable paints enable not only the evaporation of moisture, but also allow the penetration of moisture from the outside. In contrast, waterproof coatings prevent moisture from the outside, but do not allow capillary moisture transport from the inside.

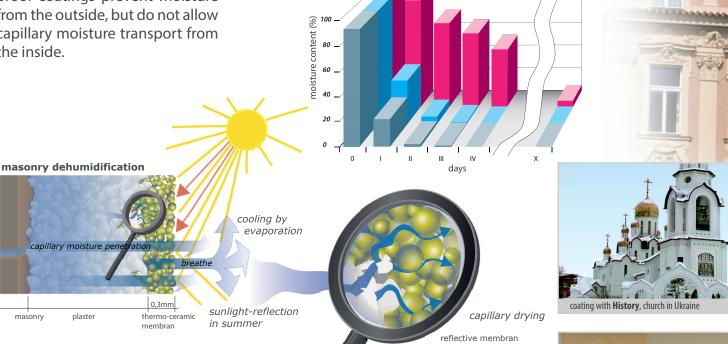
As a leading manufacturer of thermoceramic coatings with endothermic properties, we are familiar with the particular problems in the preservation of monuments. As a solution, we offer you one of the best products for all your coating needs:

**ClimateCoating® History!** 

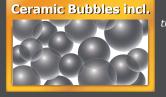
### Gentle capillary drying with History

**ClimateCoating**® **History** is capillary- and variable vaporpermeable (\*) and supports the water and salt transport from the inside out. The endothermic membrane of **ClimateCoating**® **History** creates a problem-free dehumidification to balance building moisture content and prevents new moisture supply while acting as a hygric diode (\*). Algae, moss and fungus do not find any breeding ground. **ClimateCoating**® **History** treated facades are preserved for many years and keep their valuable optical appearance.

dispersions-silicate paint silicon resin paint



ClimateCoating®



\*term definitions on page 28-29









ClimateCoating® History is extremely resistant to smog, ozone, acid rain, acids and salts, wich has been show in direct comparisons in various laboratory tests as well as in countless decades of practical applications.







# The ultimate finish –

with our lightweight decorative plaster- ClimateCoating® StuccoTex!

#### **Reduces thermal stresses**

**StuccoTex** is CE-certified according to EN 15824.

**StuccoTex** is a lightweight at only 0.8 kg/dm<sup>3</sup>.

**StuccoTex** with 1.5 kg/m<sup>2</sup> is very economical in its consumption.

**StuccoTex** is high-elastic and may also be applied on critical substratess.

**StuccoTex280** is simply apply with stainless steel trowel and smooth on the grain.

**StuccoTex80/280** can also be sprayed with a funnel spraygun.

**StuccoTex** withstands any frost-dew test at temperatures from - 30°C to + 80°C.

**StuccoTex** is to be mixed with water to the desired viscosity.

StuccoTex has no adverse influence on static surfaces because of its light dry mass of 0.8 kg/m<sup>2</sup>.

### Prepare the surface - with StuccoPrimer!

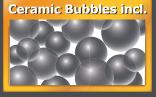
With **ClimateCoating® StuccoPrimer** the absorbency of the substrate is reduced and allows the adhesion of **Climate-Coating® StuccoTex** on almost all surfaces. The application is very easy: Just apply with a commercial painter brush or a wool roller. A decorative plaster should be easy, fast and extremely weather resistant in its handling and characteristics.

ClimateCoating® StuccoTex 280 is applied with a trowel to the wall. The decorative plaster, available in almost every pastel tint, is brought up and leveled over the grain, but not rubbed. The innovative decorative plaster with a high share of ceramic bubbles reduces thermal stress, so it may also be used on demanding substrates such as e.g. wood.

StuccoTex can be repainted with ClimateCoating® ThermoProtect or ClimateCoating® History in any colour. Colour limitations are not applicable.



**StuccoTex** is available in white and various pastel shades.





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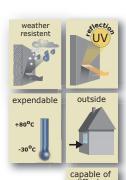
StuccoTex280

Leichtputz Light Plaster



**StuccoPrimer** 

Grundierung



# ClimateCoating® StuccoTex & StuccoPrimer

- reduces thermal stress
- fills and covers cracks
- variable vapor permeable and moistureregulating
- prevents algae, moss, fungus and lichens
- resistant against environmental pollution such as smog, ozone, salts, and acids
- thermal comfort in the summer
- saves energy during winter
- repells dirt
- extended intervals between renovations
- Iow VOC and free of organic solvents
- easy to apply











StuccoTex280 is applied with a trowel to the wall.



# Robust and durable –

high-tech coating for exterior wood applications!

**ClimateCoating® Nature** is a hightech coating for exterior non-dimensional wood. It consists of millions of microscopic, vacuumized, ceramic bubbles, which are embedded together evenly in polyacrylate dispersion with activators.



#### Natural wood

No other material combines, with respect to diversity, design, functionality, emotion, ecology, and quality of life, as advantageously as wood. Wood is the oldest and most natural building material, that is knows. Therefore, wood experienced in our high-tech world is a renaissance. Wood tends to react according to the weathering elements outside- elements such as moisture, UV radiation, air pollution as well as molding, rotting and insects, and this is precisely why wood requires regular maintenance to preserve its beauty and long-term function.

With our products, you can be rest assured that our products meet your wood surfacing needs. The basis for our complete quality assurance comes from decades of experience, innovation, carefully matched, high-quality materials and long-term field tests.

#### Perfect protection for your wood for a very long time.

Because of the high volume of ceramic content our **Climate-Coating® Nature**- coatings are highly resistant. Smog, acids, salts, ozone and UV rays have practically no effect. **Climate-Coating® Nature** is a covering coating and **ClimateCoating® NatureGlaze** is a thick, semi-transparent glaze. Both products are designed for dimensional stable wood such as tongue and groove boards, half-timbered, shutters and for non-dimensional stable wooden components such as bannisters, shingles, pergolas and fences. The use of high quality raw materials gives **ClimateCoating® Nature** coatings constant elasticity and a very good adhesion. This is optimized depending on the surface through the use of **ClimateCoating® NaturePrimer**. The interplay of adhesion, elasticity and extreme resilience, coupled with the reduction of swelling and shrinking behavior, delays the aging process of the wood in an ideal way.









Nature, NaturePrimer & NatureGlaze











# waterbased

# ClimateCoating® Nature, NaturePrimer & NatureLasur

- long-lasting UV and weather resistant
- resistant to acids, alkalis, ozone, nitrogen and sulfur oxides
- carries excess moisture gently outside until the moisture content equalizes
- reduces the formation of algae, moss, fungus and decay
- reduces moisture-related cracking (swelling and shrinkage cracks)
- fade resistant with more than 100,000 color shades
- easy to apply

wooden house nearly Berlin, Germany



single family house in Oberfranken, Germany





timbered house protection, southern Germany



Nature, NaturePrimer & NatureGlaze

timbered house in Konstanz, Germany



# All roofs - cool rooms under a hot sun -

High-tech roof coating with reflective properties: ClimateCoating® ThermoActive!

New roofing is usually up to 60% more expensive! The desire of many property owners is to have a roof that looks great and continues to perform as a well fitted roof should. Our high-tech roofing coat-ing will give you that professional look for many years to come with **Climate-Coating® ThermoActive.** 



Quality that is not fragile

High quality raw materials give the **ThermoActive** coating a high elasticity in the temperature range from -40°C to +150°C. The excellent flexible **ClimateCoating**® **Thermo-Active** enables materials to bridge smoothly.



Significant temperature reduction can be achieved indoors during the hot summer months. Sunlight reflections, and dissipation of the heat radiation and evaporative cooling, working together, act as free "air conditioning."

Cool roofs also allow builders, architects, engineers, energy consultants and policy makers, to optimize the energy and environmental performance of buildings in an urban environment.

The cooling **ClimateCoating® ThermoActive** roof coating can be used on many types of roofs, such as dwellings, industry, office buildings, hospitals, etc.

The benefits of cooling rooftop products can be summarized as follows:

### For building owners

- reduces cooling costs for indoor
- reduces thermal stresses and expands the life of the roof system
- improves the thermal building comfort
- reduces operational and maintenance costs

#### For the policy makers

 ThermoActive offers, because of the reduction of the cooling energy for indoor and thus a lower greenhouse effect, a positive impact on the environment

Th

• reduction of the "Urban Heat-Island" phenomenon





**ThermoActive** 





# **ClimateCoating® ThermoActive**

- reduces thermal stresses
- flexible and material bridging
- fills and covers cracks
- thermally comfortable in the summer
- resistant to acids, alkalis, ozone, nitrogen and sulfur oxide
- reduces cracking (expansion/shrinkage cracks)
- 100,000 shades of colors to choose from...
- energy saving





For ferrous metal - we recommend our **RustPrimer** and **ZincPrimer** for non-ferrous metals such as zinc, galvanized steel, stainless steel, copper and aluminums.

successfully against heat-up-effect: ThermoActive-coating

ThermoActive-smooth handling



ThermoActive-coating in Izmir, Turkey



# We have the solution for your problem -

A customer-driven feature makes a wide range of applications possible.

Industry Special-surface coatings... tailored to the specific customer wishes and can therefore be optimized or newly composed.

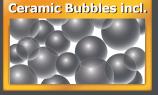
A wide variety of application with our paints and coating can enhance a number of projects and meet endless possibilities. For instance, say you want to cover a few simple storage tanks in order to better monitor their temperatures, these coating will provide protection against humidity and condensation, anti-static properties, heat-and sound-insulating protection to surface magnification and light reflection...

For a part of our newly created compositions, as well as for its special properties and application areas, we can offer our clients in europe, written exclusivity.

In doing so, it goes without saying, that we offer our clients not only our products but also assist them providing the required application techniques.



\*\*\*













# ClimateCoating® IndustrySpecial

- make your project uniquely and exclusively yours!
- covers cracks and helps to avoid cracks
- long-term protection due to high UV-resistance
- temperature-resistant from -40°C up to +150°C
- ono embrittlement
- easy to apply















# For all purposes –

the additional products of ClimateCoating®!

### Everything for before and after.

Many subtrates require special preparation and treatment. Whether absorbent or sandy plaster, exposed corrosive metals or a special finish - we offer the complete solution.

# The glossy appearance at the building.

# **ClimateCoating® GlossPlus**

**ClimateCoating**<sup>®</sup> **GlossPlus** is a colorless, aqueous protection for **ClimateCoating**<sup>®</sup> coatings with UV-blocker for outdoor applications. **GlossPlus** improves the cleaning capabilities of **ClimateCoating**<sup>®</sup> coatings and increases the mechanical resistance.

#### - easy application

**GlossPlus** is ready for use and applied unthinned. The application can be done with brush, roller or spray equipment.

#### - fast drying

The drying time for a second layer of **GlossPlus** is approximately 4-5 hours (20°C/60% relative humidity). **GlossPlus** crosslinks by natural UV radiation (daylight) and obtains sufficient blocking resistance after several days, depending on layer thickness and climatic conditions.

- processing temperature
- Do not apply **GlossPlus** below 5°C.
- cleaning tools

 $Brushes, rollers \ and \ spray \ equipment \ are \ to \ be \ cleaned \ immediately \ after \ use, rinse \ thoroughly \ with \ water.$ 



### Primer concentrate for absorbant, mineral surfaces.

# Climate Coating® Fix Plus

**FixPlus** strengthens all substrates according to DIN 18500, when the adhesion capacity is not sufficient. It also regulates the absorption capacity. **FixPlus** has a very good intrusion into the substrate, dries quickly, is vaporopen, solvent-free and offers a strong stabiltiy.

#### - water soluabl

FixPlus has to be diluted, depending on the substrate, with 1:1 to 1:4 parts by volume with water.

- easy application
- FixPlus can be applied with brush, roller or spray.
- fast drying
- FixPlus can be repainted after 4-5 hours.
- processing temperature
- Do not apply FixPlus below 5°C.
- cleaning tools

Brushes, rollers and spray equipment are to be cleaned immediately after use, rinse thoroughly with water.





**Additional Products** 







Once it becomes very rusty **ClimateCoating® RustPrimer** works wonderful and offers a proper adhesion.

# ClimateCoating® RustPrimer

**ClimateCoating® RustPrimer** is an aqueous, solvent-, lead- and chromate-free anticorrosion primer on acrylic resin basis for indoor and outdoor application. **RustPrimer** is as an average anti-corrosion protection on metal substrates.





- easy application

RustPrimer can be applied with brush, roller or sprayer.

- fast drying

After being applied for approxitemately 2 hours **RustPrimer** can be repainted, is fully dried after being applied for 24 hours and has reached its final curing after 3-5 days.

- processing temperature
- Do not apply **RustPrimer** below 8°C.
- cleaning tools

Brushes, rollers and spray equipment are to be cleaned immediately after use, rinse thoroughly with water.



Good adhesion requires a strong partner. ZincPrimer is the ideal addition for all following ClimateCoating®- coatings on non-ferrous substrates.

# ClimateCoating® ZincPrimer

**ClimateCoating® ZincPrimer** is an aqueous, solvent-, lead- and chrome–free adhesion product, based on acrylic resin for indoor and outdoor applications. **ZincPrimer** is used on non-ferrous metals such as zinc, galvanized steel, stainless steel, aluminium steel, aluminium and copper and can also serve as a limited anti-corrosion protection on iron and steel surfaces.



- easy application
- **ZincPrimer** can be applied with brush, roller or sprayer.
- fast drying
- Approximately 2 hours after application **ZincPrimer** can be painted over.
- It will be fully dried in approximately 24 hours and will reach its final curing after 5-7 days.
- processing temperature
- Do not apply ZincPrimer below 8°C.
- cleaning tools

Brushes, rollers and spray equipment are to be cleaned immediately after use, rinse thoroughly with water.











ClimateCoating® products, ideal for any application!

manufactured by

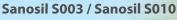


Wackenbergstr. 78-82, 13156 Berlin/Germany





ThermoVital - inside coating Innovative protection against mould



surface and aerosol disinfection-/mold remediation

#### **ThermoActive**

Reflective roof coating with excellent cooling performance



#### **FixPlus - Primer**

Primer concentrate to adjust the absorbency of mineral substrates



### GlossPlus - Finish

Clear and glossy protective coating with UV blocker



for the love of the environment:







**StuccoPrimer**Ready-to-use adhesion agent for **StuccoTex** 



that reduces therm



# The Complete Program





The Complete Program



# ClimateCoating® - our products in practical comparison -

cost savings through longer renovation intervals with **ClimateCoating®** - products!

### Gelsenkirchen, Ehmsenhof

Both projects were completed in the same time period. These circumstances and the corresponding positions of these structures allows for a direct comparison between **ClimateCoating® Thermo-Protect** and the paint of another market leader.

#### Teltow, residential estate in Berlin

Several painting companies with different products were given by the respective owners these jobs -so this created a truly practical comparison!



completely intact coating

meets the protection requirements

coated with ClimateCoating®
ThermoProtect



paint of another market leader

## significant cracking

the heat and moisture protection is only partially available, cracks accelerate the aging process, the building structure is at a foreseeable risk

paint of a different manufacturer

weathered, partially already chipped paint

protective function practically no longer existing, the wooden facade is exposed to weathering



for the love of the environment:



In Practical Comparison



### Striegauer Straße, Berlin

A single-family house was coated with **ClimateCoating® Thermo- Protect** and another house in direct neighbourhood was coated with a product from another manufacturer, both in the same year.



with **ClimateCoating® Nature** coated

intact coating, appears with slightly divergent color variations

fully complied with its protective function, determined no embrittleness



first conditions for algae

gray and dirty facade



# Explanation of terms –

#### what we mean when we write:

hygro-diode

The term of the diode in the conventional sense: The diode (Greek di., two double; hodos way) is an electronic device with two poles. The term diode is used as a synonym for the term "uncontrolled rectifier". A hygroscopic diode is for example a membrane which shows a narrowing effect on the water transport. It comes to the rectification of water transport (one-way), since the water can pass through the hygroscopic diode in one direction only. The hygroscopic diode can be compared with a mechanical check valve, as this allows the mass flow in one direction only.

(Source: DIMaGB)

**Entropie** 

Entropy must be thought of as a lot like size imagine (energy content) that flow or may be contained in articles: Of two otherwise identical bodies contains one more entropy, whose temperature is higher. When two bodies of different temperature contact each other, so entropy flows from the warmer to the colder body; thereby the temperatures of the two bodies become equal.

(Source: Wikipedia)

variable-diffusion

The vapor pressure of the air depends on the amount of water in the air and the temperature. With increasing temperature, the vapor pressure increases, we know that from a kettle, it whistles when the water becomes hot enough. Because of the air humidity and temperatures of the vapor pressure it is different from the inside to the outside. The steam moves from high to low pressure, it follows the slope and through the outer wall, it diffuses through. In summer, the steam moves inward, in the winter, outside. That's why external walls become dry in the winter and humid in summer. The ClimateCoating®-membrane hinders the movement of water vapor into the building in summer and facilitates the steam emission outward in winter. Because of this variable permeable property, the walls become drier.

(Source: SICC Coatings GmbH)

IR-reflection

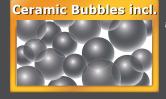
IR is the invisible part of the long-wave thermal radiation between visible light and microwaves. The wavelengths of IR are 780 nm to 1000  $\mu m$ . The range from 3 to 50  $\mu m$  is called MIR (mid-IR) as part of the IR-C. Of these, the range from 9.25 to 11.45  $\mu m$  is relevant, which corresponds to temperatures of +40 to -20 ° C. Heat radiation is absorbed by opaque components and reflects (A + R = 1). In the ClimateCoating®-membrane - unlike in case of conventional paints – are operations of optical physics (radiation physics) due to the hollow ceramic spheres, which are simplistically referred to as IR reflection. The result is higher and more uniform surface temperatures inside or reduced radiation losses outside - hence more thermal comfort and less heating energy demand.

(Source: SICC Coatings GmbH)

Convection-currents

The term convection comes from the Late Latin convectio which can be translated as bring or carry. In this respect, the term referred to a physical flow of movement that takes place within a gaseous medium (fluid), and on the other hand, the phenomenon that smallest particles of a flow carry energy with them, such as heat energy. Convection can rise because air in the lower part of a living space is heated by a heater and the result is a temperature difference between top and bottom parts of the room.

The upwardly streaming warm parts cool down under the ceiling and sink to the botton again. This creates convection. This process takes place both inside and outside of the walls. In this case, heat is transferred, internally to the wall surface, on the outside to the surrounding air. (Source: SICC Coatings GmbH)



for the love of the environment:

# **Explanation of Terms**



#### **Thermal bridges**

A thermal bridge (often colloquially referred to as a cold bridge) is an area in parts of a building, through which the heat is transported outwards faster than through the adjacent components. A distinction is constructive and geometric thermal bridges. Constructive thermal bridges caused by constructions with materials of different thermal conductivity. Examples include reinforced concrete slabs attached to exterior walls, I-beam or radiator niches.

Geometric thermal bridges arise if the inner surface of the outer surface is uneven, for example by projections or corners in an otherwise homogeneous component. Example is the house outside corner at the increasingly cold outer wall influences the warm inner wall portion at different percentages.

Source: Wikipedia)

#### Thermal Streaking or "Ghosting"

Deposits of dark particles (black dust) on interior walls. In severe cases, the impression of sooting arises. The causes are not yet clear. Since this effect is amplified in the heating season, it is assumed that this is deposits of low volatile organic compounds (so-called plasticizers) are swirled and settle on walls and ceilings and caused by other issuers by convection currents. (Source: SICC Coatings GmbH)

#### Transmission heat transport / Transmission losses

Transport of (heat) energy between regions of different temperature due to thermal conduction in solids as in a wall (the molecules repel each other). The heat current always flows from areas with higher energy to areas with lower energy, for example: from warm to cold. The energy loss in this transport is also called heat transmission losses. These are determined by the heat transfer coefficiency. Other forms of energy transfer are convection and radiation. Reduced radiation on the facade reduces the overall transmission.

(Source: SICC Coatings GmbH)

#### **Capillary drying**

Capillarity refers to the behavior of liquids in passageways, also called capillaries. If the adhesive forces between the liquid and the capillary wall is greater than the cohesive forces between the molecules of the liquid, the liquid "crawls" into the capillaries, even against gravity and even more, the more narrowly the capillaries are/become. If liquid through this process from the material (for example masonry) transported to the surface where it can evaporate, a person calls this capillary drying. The exterior plaster has a finer capillary system compared to masonry. The ClimateCoating®-membrane has a finer capillary than the external plaster. These directed transports result in drier walls.

Source: SICC Coatings GmbH)

#### **Endothermic properties**

Is the synonym for processes, which occur within ClimateCoating®-coatings and vary depending on external factors such as temperature and humidity. Endotherm means in chemistry: energy is absorbed, resp. gained. (Source: SICC Coatings GmbH)

#### the Bright reference limit

The bright reference value is the degree of reflection of a particular hue between black = 0 and white = 100. His value indicates how far the color in question is removed from the black or white point in its brightness. In color fans the bright reference value is shown next to the color number. The crucial point to the lightness value is neither gloss nor the binder used, but only the type and level of color pigmentation. (Source: SICC Coatings GmbH)

#### reflective membrane

Is a collective term for a high-quality dispersion enriched with only 20-120-micron ceramic hollow spheres and activators, which - in conjunction with monolithic masonry - trigger mutually dependent complex processes of building physics. These have a positive effect on the moisture and heat transport and thus on the energy balance of the building. (Source: SICC Coatings GmbH)



# Trade Fairs / Events –

### of SICC Coatings GmbH

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#### www.sicc-coatings.com



Or you can use our QR code below:

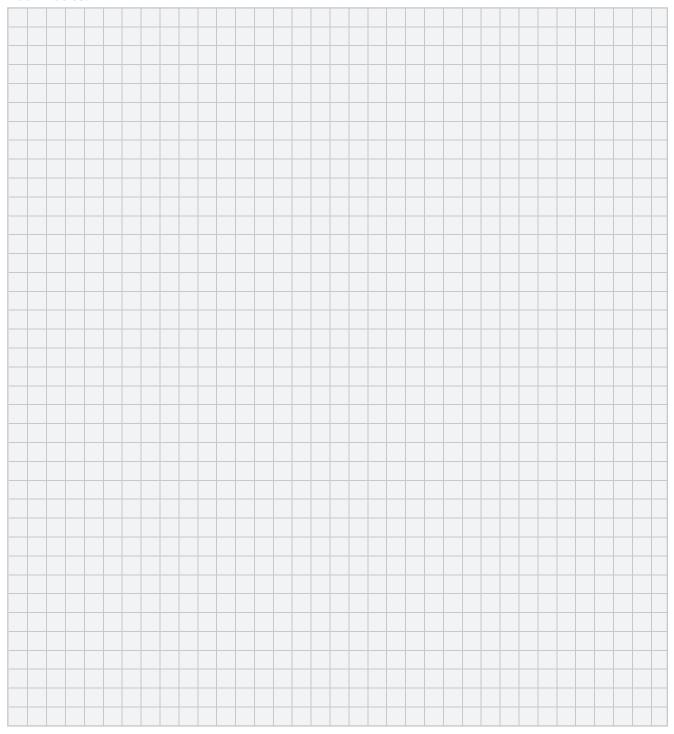
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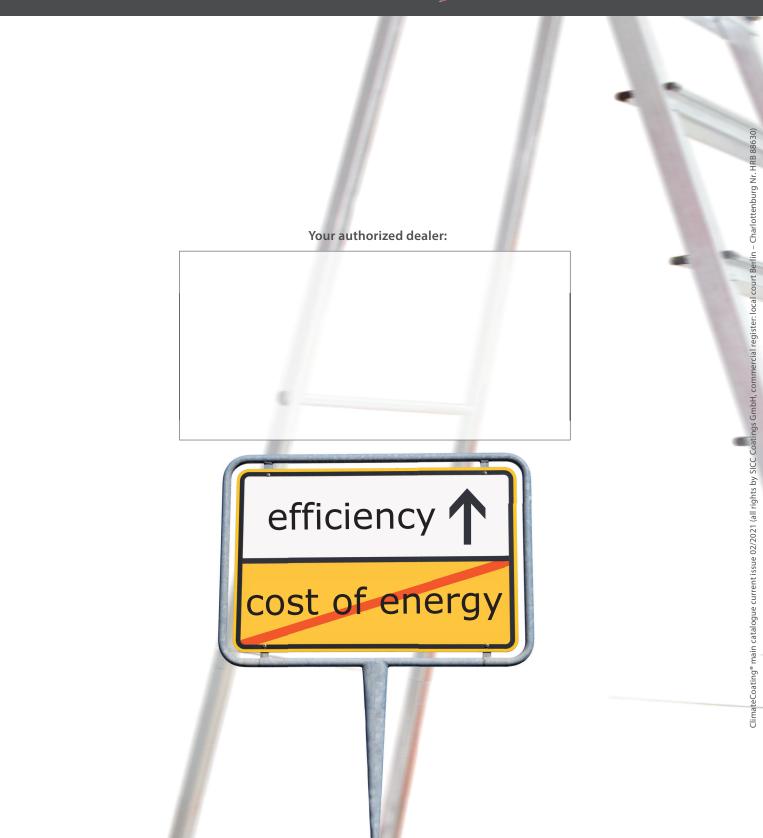
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