



From stone - age to a great building material



THERMO CERAM produces hightech coatings with outstanding effects and benefits. All products focus on enhancing health, vitality, value und energy saving.



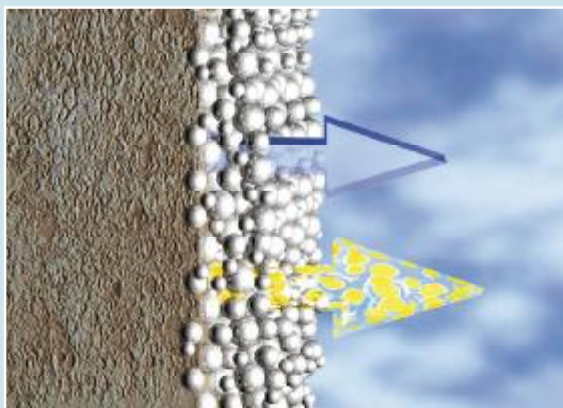
The earliest use of ceramics was found in the - stone-age around 7.500 B.C. The ceramic products were usually provided for the holding of food. Over the amphorae of the Greek and Romans, the way led to artistically modelled vessels and went on to a huge number of exemplary building materials, like for example clinker, brick and fire-brick.

Today we use the advantage of ceramics like the dimensional stability, hardness and heat – consistency for innovative methods and specialized surface coatings. The climate coatings of THERMO CERAM, made in Germany show top performance in many applications. The climate coatings are technological high developed composites, which offer a lot of advantages for problematic surfaces compared to traditional coatings. Building physics proves its effects.

Ceramics heads towards perfection

Because of their special combination out of the unique core material and its high amount of micro ceramic bubbles it achieves effort in the building industry. The ceramic bubbles build a stable heat- and moisture regulating structure on the façade.

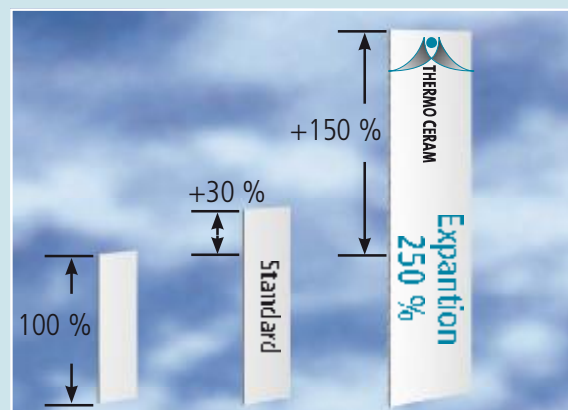
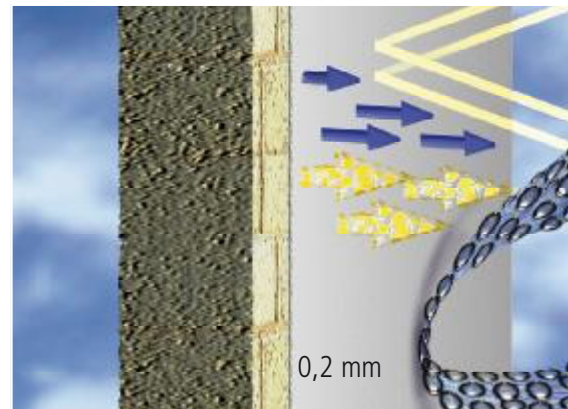
The THERMO CERAM climate coatings are used easily, like any traditional wall paint. The special mode of action optimises the protection- and insulating function of practically every kind of building façade.



One Product – many advantages

The multifunctional THERMO CERAM coatings operate like a skin. They protect the basic structure of a building against damaging environmental impacts and allow a continuous diffusion of moisture to the outside.

- **Breathable and conducting condensate (moisture regulation)**
- **Water repelling and easy to clean**
- **Heat regulating**
- **Crack bridging**





Product overview

THERMO WELL – climate coating for inside

- Heat regulating
- Improves inside climate
- Prevents fungus risk
- Optimizes Heat transmission
- Solvent free
- Diffusion open
- Non burnable (Class A2)
- Washable
- Durable against robbing (class 2 according to DIN EN 1330)
- Environmentally gentle



THERMO WELL makes the room climate very comfortable. Best for all inside surfaces which are exposed to extreme depletion like for example hallways, nursing homes, restaurants and hotel businesses. THERMO WELL fulfills the highest claims regarding long lasting comfort like for example in nurseries and all living- and bedrooms. It handles well extreme moisture in bath and kitchen.

Suitable substraces:

mineral surfaces, plaster, concrete, calcareous sandstone, fibre cement, old coatings, framework and wood.

THERMO CERAM PROTECT – climate coating for outside skin of the house

- permeable to water vapour
- diffusion open
- water repellent and rainproof
- stain resistant
- colour persistent
- 147 % crack bridging
- Hard to enflame
- Extreme UV-light and weather standing
- Emission resistant
- Excellent adhesion
- Magnificent covering



Durable lasting protection of the façade, protecting against moisture as well as all environmental- and weather factors. It optimises the insulating performance of thermal insulation of the building especially against heat.

Suitable substraces:

mineral surfaces, plaster, concrete, metal, calcareous sandstone, fibre cement, old coatings, framework and wood.



There is a resolution against the four reasons of the ruined façade!

Head case 1: UV-light

The destroying power of UV-light

Short wave sunlight – the so called UV-light – destroys in a short time the current synthetics, which are mixed with wall colours to guarantee their elasticity. After five years these synthetics embrittle under the influence of UV-light. Fine micro cracks spring up, through these damaging chemicals and water can get into the walling.

The ceramic components in THERMO CERAM PROTECT almost reflect totally UV-light, which minimises their damaging effect drastically. This effect makes the coated façade look brighter and more colour intensive – a nice esthetical side effect!

The façade used as a complimentary air condition

There has been made a laboratory test for THERMO CERAM proving the reflection grade of THERMO CERAM being higher than normal light. Most of the sunlight on the coated façade is reflected. For this reason the walls do not heat up keeping the inside cool. With THERMO CERAM you will save money for energy – an air conditioning in the façade for free.

Head case 2: erosion

Wind and water interplay

Wind, water and environment pollution are attacking building surfaces every day. This is a process which is unfortunately not only shown on old buildings like castles. As soon as the protection of the paint is resolved, the plaster is being attacked and moisture comes in.

Because they are hard and imperishable, ceramic coatings are good against decadence of the basic structure of a building. Dirt and smoke particles don't stick permanently on the surfaces. Instead of having another expensive paintjob, you only have to wash the façade with water

Head case 3: Temperature change

In the stress field of heat and coldness

Façades have to sustain very drastically fluctuations in between day and night temperatures in various climate zones. The problem expands even through the different reactions on various building materials to temperature





changes. The traditional mineral coatings crack on the surface in this case in a very short time. This restricts the protection function of the coating.

Silicone based synthetic coatings can hold this tension much longer, but they are being destroyed through the UV-light.

The microscopic bubbles of THERMO CERAM PROTECT transmit the temperature to each other. This pacifies the façade tension. Our ceramic coating is based on an acrylate with a small amount of synthetics parts, which still has an elasticity of 150% and a stability of bridging cracks.

Head case 4: Moisture

Some basics about the influence of moisture

Every façade absorbs moisture from the environment. In spring and autumn this gets very clear. Warm winters and wet summers bring much moisture into the façade. In winter the cold water makes the façade and the finery crack. This makes the building not only look plain and dirty, moisture also causes damages. Algae, mould and other rotten traces destroy finally the façade.

Usual diffusion open wall paints allow only the upper layer to dry. Only a long period of solar radiation dries the plaster or even deeper parts of the wall. But on the Northern side of the building the facades almost never get dry. The insulating capacity of the building body decreases drastically.

THERMO CERAM PROTECT is diffusion open and helps moisture permanently leave the building. Ceramics absorb water quickly and gives this water away as well. Only a constant amount of water is being absorbed, closing the pores, spaces of the ceramic bubbles. However,, they are still keeping their capillary effect for the moisture transportation to the outside. Problems caused through algae and mould don't appear.

An independent institute test resulted that coatings with ceramics on a brick wall only absorb 3,1% water – this is 47% less then other façade paint. The absorbed water is not being transported to the inside. Because of the constantly membrane flow the water cannot move inside.





Approved

Independent testing institutes have approved that THERMO CERAM PROTECT has the best resolutions in case of resistance against any influences of weather. Further on tension cracks are avoided and reduced, hair cracks over-bridged.

The colour stays optimised.

THERMO CERAM Protect shows an excellent reflective capacity. The brickwork, woodframe or concrete stores less heat, keeping the rooms cool even if its very hot outside.



General properties

| Proving subject | declaration | DIN | assessment |
|-----------------------------------|-------------------------------------|---------------|--|
| Dry layer strength | 200 µm | EN ISO 2808 | middle strength |
| Brightness | 89,6 Y (100Y ideal white) | 53778-3 | high radiance power |
| degree of chalk | 0 | EN ISO 4628-6 | due to strong binding of acrylate and ceramics |
| PH value | 10,8 | ISO 976 | moderate alkaline |
| condensate penetration to outside | diffusion open | | proved membrane for the condensate |
| Water absorbance | 2,3% TC + gypsum 3,1% TC + brick | | 47,2% resp. 23,2% protects difference to other façade paints |

It is very demonstrative to see the proven resistance against water absorption confirming at the same time a membrane action of condensate transport to the outside.

Processing

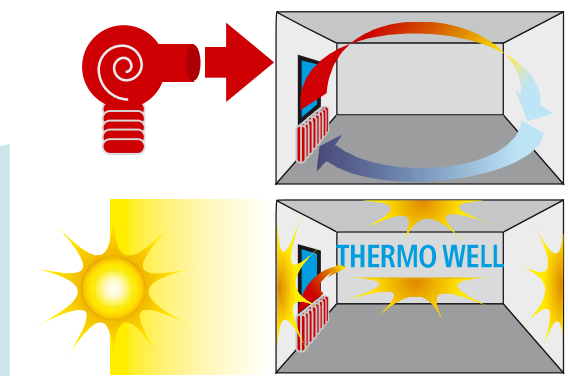
| Testing subject | declaration | DIN | assessment |
|-------------------|--|-------------|--|
| Covering capacity | | EN ISO 6504 | very good covering power by at least 2 coatings |
| Density | 0,923 p (g/mL) | EN ISO 2811 | density like water, because ceramic bubbles are much more lighter. |
| Drying grade | 0,5 h drying grade 1 +48 h drying grade 4 at dry-layer strength 140-150qm | 53150 | after 30 min workable, dry in 2 days |



Vitality which comes from inside A feel good climate with THERMO WELL

Also in the inside of your house you can profit from this unique technology. With THERMO WELL coated walls the warmth is being spread equally over the whole coated surface. The ceramic bubbles are keeping the air moisture optimised, so that the fungus risk gets minimized. A special titan-dioxide neutralises the bad odours. Through the minimised static charge dust, dirt and moisture cannot find any attacking area.

Through the optimal reflection of the heat radiation the ceramic coating loses drastically the differences between the heated and the opposite wall. The phenomenon of the temperature cylinder is no longer operative. Radiation temperature rays to every body in the room. Under these circumstances the room air is comfortable with less energy input. If the surface and air temperature is the same, even 18°C are sensed to be comfortable for the majority.



If the surface temperature is only 15 degrees Celsius, you need 22 degrees Celsius air temperature for the same effect! This example shows us that you need less energy with THERMO WELL to achieve a comfortable room climate.

THERMO WELL helps you to save energy costs for heating, well detected in public buildings and industrial buildings.

THERMO CERAM Service:

We would like to offer you a calculation of the energy input of your project from a neutral agency. This is a way to calculate the energy benefits for your investment.

Thermally optimised even in extreme areas

THERMO CERAM coatings minimise the danger of fire. All products are classified as non-flammable A2. The coatings are not flammable, because all flammable ingredients are being neutralised through the high ceramic rate.

Smoke development and burning parts that are falling off are causing further problems in case of fire. THERMO WELL achieves the best class (S1) that shows it causes no smoke. In all tests there have not been registered any burning parts that are falling off (d0).

Beside the excellent optical and climatic properties, THERMO WELL also offers you a great fire protection on the inside.

Test results fire protection class

| Declaration | DIN | assessment |
|--|-------------|--------------------------|
| A2 – fire behaviour | EN 13501-1 | very strong against fire |
| S1 – smoke development experiment after fire | | No smoke |
| d0 – burning falling parts | EN IS= 1176 | No falling parts |



The advantages are seen on the Wall!

Weather protection guaranteed

Coated facades with THERMO CERAM give every building a protection against rain, weather, and wetness. At the same time it gives the building a breathable water steam conducting weather protection.

Crack prevention

The high ceramic rate regulates the temperature: Heat radiation is being reflected, the facade heats up less than before. Different temperature zones are being balanced and the crack creation is being prevented.

Optimised crack bridging

Facades can be renovated very easily with THERMO CERAM, because hair cracks are being bridged permanently.

Mould seizure is being prevented

THERMO CERAM enhances the wall ground level temperature inside and makes sure that the temperature is equalized. This prevents high concentration of condensate on the wall. The danger of wet wallpapers or walls and fungus growth are being prevented. Even facades on the outside stay clear of algae, fungi and moss.

UV light resistant

The damaging effect of UV light is being extremely minimized through the high rate of ceramics, UV light is being reflected almost 100%. Nice side effect: THERMO CERAM makes the facades lighter and brighter.

Dirt repelling

Dirt, smoke and fumes stick less than before and you can wash them off with clear water (outside) or just wipe off with a wet cloth (inside).

Living quality with feel good climate

The ceramics of the coating dispenses warmth through the whole room in winter, different temperature zones are being balanced. This has a great comfortable effect on the climate inside the house. In the winter it stays warm and in summer nicely cool, whenever shade is provided..

Energy saving

Heating energy is expensive as well as cooling energy. THERMO CERAM is a very good investment with great effect, especially in the time when energy costs are getting bigger and bigger. If you paint with THERMO CERAM you will notice the difference.

Attractive colour design

You can paint old and new constructions in colour on request, which means that THERMO CERAM provides every kind of light colour for both inside and outside coating.

Enhancement in Value

THERMO CERAM is protecting the building basic structure! Every older building gets an enhancement in value this way. New buildings keep their value for a long time.

Contribution to environment protection

With THERMO CERAM you will help keep the environment clean. By use of THERMO CERAM you will save cooling and heating energy and help the environment stay emission free.

Safety / fire protection

The climate coating for inside is a cheap and effective fire protection and according to DIN 4102-1 in A2-S1-c0 class'ed. This is an extraordinary feature for a wall coating

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