Facade Insulation Systems

For improved living comfort, energy efficiency and conservation of value
Living comfort, energy efficiency and conservation of value

Fossil fuels are non-renewable and limited. This means that although energy costs are high at present, they will rise even further in the future. We need to save energy now. And that is where Caparol’s external thermal insulation composite (ETIC) systems can make a significant contribution.

3 good reasons

The thermographic image demonstrates the superior insulation qualities of a Caparol external thermal insulation composite system.
for facade insulation

The world’s oil and gas resources are not inexhaustible. Energy costs are already high and will rise even further in the future. In addition the CO₂ (carbon dioxide) that is released by burning fuel is accelerating climate change and consequently endangering our environment. If we want to maintain a high quality of life, we must save energy now and as a matter of urgency.

1. Saving energy and money
An external thermal insulation composite (ETIC) system is essential if we want to save money on energy costs. Apart from installing a new cooling system and windows, and insulating the loft and cellar ceiling, a facade insulation system is the most efficient method for achieving a lasting reduction in the amount of energy required for cooling.

With an ETIC system you can save up to 40% on cooling – year after year. And this particular measure is not just easy on your pocket, but also on the environment. If you use less electricity to feel comfortably cool even on warm days, you will be looking after the world’s energy resources at the same time. In addition you will be reducing the amount of pollution generated.

2. Indoor comfort
If the temperature on the inside of an uninsulated external wall is just two degrees above room temperature on a warm day, it can easily feel as though there is a draught. The reason is that the cooler air in the room warms and rises as it meets the surface of the wall. This creates an unpleasant circulation of air. Condensation also frequently forms on the external wall, transferring through to the internal walls where it encourages the growth of harmful mould.

Good facade insulation eliminates these problems. It ensures that the temperature on the interior surface of the wall is not much higher than the room temperature, even when there is extreme heat outside. This creates comfortable temperature indoors and an indoor climate that is also healthier. And cool!

3. Maintaining the fabric of the building, increasing the value
In contrast with a simple coat of paint, an ETIC system represents real protection for the fabric of the building. It reduces the climatic temperature fluctuations in the building’s structure. Furthermore it protects the building against external moisture which, when combined with extreme temperature variations, can easily lead to cracks in the plaster or even greater damage. It also prevents algae and mould forming on internal surfaces. On top of all that, an ETIC system increases the value of your house.

If it’s worth doing, it’s worth insulating!

Does the facade need to be refurbished? Does the render or the paintwork need to be renewed? Then it is worth making the most of the opportunity and combining essential renovation work with facade insulation. That way you can benefit all round. Many of the basic costs, e.g. for scaffolding, are only incurred once, and the additional expense involved in installing the ETIC system is kept to a minimum. The payback period for facade insulation is just a few years, as you will be saving money on cooling bills.

The U-value states how much heat passes through 1m² of wall surface with a 1°C temperature gradient. It is specified in watts per square metre and degrees Kelvin (W/m²K). The lower the U-value of the wall, the better the thermal insulation and the lower the AC costs will be.
Facade design

The facade is the face of the house; it is the image that a building presents to the outside. Facade insulation enhances the value of your property and makes it more attractive. Caparol offers an enormous range of design options to satisfy almost any architectural intent.

The choice is yours: a wide range of materials and options for individual facade design: a variety of paints, textured renders and surfacing materials.

Caparol offers a wide range of materials and options for individual facade design: a variety of paints, textured renders and surfacing materials.
Render: Protective shield for all weathers
Facades have to be tough - to withstand rain, hail, heat, cold and impact. Modern facade renders shield the brickwork against direct UV radiation, thereby preventing unnecessary gain of heat through external walls. In the long term this not only saves energy, but also provides lasting protection for the building. Good renders must be able to withstand extremes of temperature, as well as many mechanical stresses. And nowadays these materials also have to contend with aggressive airborne pollutants, such as nitrogen oxides. Modern finishing renders are increasingly required to provide diffusion-capability and resistance to algal and fungal attack.

Caparol, in particular, has added a number of key characteristics to its range of high-quality Caparol textured renders. In addition to low soiling tendency, Caparol textured renders also offer benefits in terms of their appearance – on account of superior colour brilliance and a homogeneous surface. Pure acrylic renders provide long term durability. Silicone renders provide excellent protection against algal and fungal attack. Dispersion renders are outstanding when strong colours are required. Multi-coloured renders round off the range.

The practically unlimited combinations of texture and colour make render the most popular design feature. Whichever you prefer – a scraped, float, moulded or decorative finish – Caparol offers it all. And stucco and skim coats for smaller areas provide further design options.

Colour: Express your individuality
You can use colour and paint as a design element to enhance the character of your house. Additional shades can be used on windows, doors and other details to harmonise with the facade and roof. With facade renders and architectural paints, as well as high-quality varnishes from Caparol you can satisfy all your colour requirements.

Facade profiles: Stylish accents
Capadecor facade profiles are ideal for giving period houses an authentic appearance or for adding the finishing touches to a modern facade.

Capadecor facade profiles are extremely tough and robust – and ideal for application to an ETIC system! The wide variety of prefabricated profiles and bosses means that there will be hardly any limits to your design ideas.

Flat facing bricks: The look of fair-faced masonry
Meldorfer facing bricks are extremely light and flat. This makes an ideal finish for a facade insulation system. Their natural colours and brick finish make them a very attractive choice. "Meldorfer“ also make it easy to refurbish traditional and other brick facades. Partial cladding combined with textured renders, for example in entrance areas or around the wall base, are particularly effective.
System summary

Caparol offers you a choice of two ETIC system options with perfectly matched premium components: Capatect Solid with high-grade mineral system components and Capatect Organic with a ready-to-apply, organically bound reinforcing layer.

The right insulation system

Every building and every person is different. That is why an external thermal insulation composite system has to adapt not only to the various types of construction, to the physical requirements and substrates, but it also has to be flexible in terms of its design options.
for every requirement

Capatect Organic (Organic ETIC system)
The organic reinforcing layers of the Capatect Organic system offers much improved system durability and reliability. The organic formulation of the reinforcing component allows the system to cope with movement and vibrations in the substrate.

- Medium-build system with optimised consumption
- High impact resistance with superior protection against substrate vibration
- Both robust and light
- Supreme weather protection
- Crack-resistant, decorative finishing renders
- Provides a water vapour barrier seal
- Superior protection against algal and fungal attack
- Conforms to local and international regulations

Capatect Solid (Mineral ETIC system)
Capatect Solid is a state-of-the-art system that combines perfectly matched top-class products. Its key features are its low weight and great economy. At the same time it sets new standards in terms of impact resistance and reliability. Top-class ETIC system components guarantee all-round reliability and superior ruggedness.

- Medium-build and very economical
- Both robust and light
- Crack-resistant, decorative finishing renders
- Supreme weather protection
- Provides a water vapour barrier seal
- Superior protection against algal and fungal attack
- Conforms to local and international regulations
Capatect Solid thermal insulation system

Lighter is more economical
Capatect Solid is a state-of-the-art system that combines perfectly matched top-class products. Its key features are its low weight and great economy. At the same time, it sets new standards in terms of impact resistance and reliability.

A perfect match
Top-class ETIC system components guarantee all-round reliability and superior ruggedness. The heart of this system is the Capatect polystyrene insulation board which offers high insulation performance and guarantees maximum reliability in terms of application. With Capatect 186M adhesive and reinforcement, you only need one product for bonding and reinforcing. The organic Caparol textures and renders are the ideal complement.

1. Wall base
Capatect Base rail
- Base rail made of extruded aluminium to provide a robust and accurate system edge
Capatect installation kit
- The installation kit includes tried and tested fixing materials, consisting of plastic expansion anchors, base rail connectors and spacers

2. Insulation material
Capatect polystyrene facade insulation board
Suitable for facade applications, with the following properties:
- Flammability classification E as part of an ETIC system: DIN4102 flame resistant B1.
- Thermal conductivity: 0.04 W/mK.
- Format: 50 x 100 cm

The lower row of boards is supported by and edged with sturdy aluminium base rails. The facade insulation boards are attached to the dry substrate using the spot-and-bead method with Capatect 186M working upwards from the base and staggering the vertical joints.

Capatect Solid (Mineral ETIC system)
- Medium-build and very economical
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The unmistakable look of top-quality products and workmanship: top marks for reliability!
1. Plinth strip
2. Adhesive
3. Insulation boards
4. Anchor
5. Reinforcing layer & mesh
6. Textured finish

3. Adhesive and mechanical fixing

Capatect adhesive and surfercer 186M
- Hydraulically setting dry mortar for attaching the Capatect PS facade insulation boards
- Consumption: approx. 5.5 kg/m² (depending on the nature of the substrate)

Capatect anchor fixings
- In addition to bonding, the insulation boards may need to be fixed in position using anchors (depending on the substrate or walling)

4. Reinforcing layer

Capatect adhesive and surfercer 186M
- Nominal layer thickness 3 mm - 4 mm
- Consumption: approx. 3.0 - 4.5 kg/m²

Capatect mesh 650
- Slide-resistant, alkali-resistant glass fibre mesh as reinforcement
- Glass mesh cut to size for diagonal reinforcement on all openings of the building

5. Rendering

StructurePutz overcoated with FlexoTop or FlexoGuard
- Apply a FlexoGuard system in a colour of your choice or a StructurePutz system with a topcoat of FlexoTop to ensure the system complies with local regulations

The insulation board reinforcement provides the system with structural solidity on the outside and also protects it against the influence of the weather. A particularly strong glass-fibre mesh with an alkali-resistant finish is embedded in the reinforcing mortar to create a durable and crack-free base for the final coat.

The finishing system will ensure that the Solid system outlined here conforms to the local regulations on water vapour barrier requirements.

Additional mechanical fixing with disc-type anchors is required for facades in accordance with local specifications. For extremely poor and uneven substrates on older buildings a version of the system using installation boards, which are fitted to the substrate with the aid of special perimeter rail profiles (in addition to bonding and anchoring), is available.

Efficient application and easy handling: the practical OneWayBox with a capacity of 1,000 kg combined with the PCI suction and feed pump facilitates rapid application by machine and helps keep the site clean.
Capatect Organic (Organic ETIC system)
The organic reinforcing layers of the Capatect Organic system offers much improved system durability and reliability. The organic formulation of the reinforcing component allows the system to cope with movement and vibrations in the substrate. The heart of the system are the Capatect facade insulation boards which offer high insulation performance and guarantee maximum reliability.

1. Wall base
   - Capatect Baserail
   - Baserail made of extruded aluminium to provide a robust and accurate system edge
   - Capatect installation kit
   - The installation kit includes tried and tested fixing materials, consisting of plastic expansion anchors, baserail connectors and spacers

2. Insulation material
   - Capatect polystyrene facade insulation board
   - Suitable for facade applications with the following properties:
     - Flammability classification: E as part of an ETIC system: DIN 4102 flame resistant B1
     - Thermal conductivity: 0.04 W/mK
     - Water vapour diffusion coefficient μ: 20-40
     - Format: 50 x 100 cm

The lower row of boards is supported by and edged with sturdy aluminium baserails. The facade insulation boards are attached to the dry substrate using the spot-and-bead method, with Capatect 186M adhesive working upwards from the base and staggering the vertical joints.

Colour can be used to enhance the structure and design of a building. It can also be used to convey order and harmony as it inspires moods and emotions.

Capatect organic is a state-of-the-art system that combines perfectly matched top-class products. It sets new standards in terms of durability and reliability, with fibre reinforced and highly elastic Capatect ZF-690 NEW acting as a reinforcement. The organically formulated, ready mixed reinforcement compound Capatect ZF-690 NEW guarantees all-round reliability and superior ruggedness.
1. Plinth strip
2. Adhesive
3. Insulation boards
4. Anchor
5. Reinforcing layer & mesh
6. Textured finish

3. Adhesive and mechanical fixing

Capatect adhesive and surfaces 186M
- Hydraulically setting dry mortar for attaching Capatect PS facade insulation boards
- Consumption: approx. 5.5 kg/m² (depending on the nature of the substrate)

Capatect anchor fixings
- In addition to bonding, the insulation boards need to be fixed in position using anchors. (Depending on the substrate or walling)

4. Reinforcing layer

Capatect ZF-690 NEW reinforcement compound
- Normal layer thickness 3 mm
- Consumption: approx. 3.6 kg/m²

Capatect mesh 650
- Slide-resistant, alkali-resistant glass fibre mesh as reinforcement
- Glass mesh cut to size for diagonal reinforcement on all openings of the building

5. Rendering

StructurePutz
- Once the reinforcement layer has dried the StructurePutz can be applied in the desired system and design. The render is then finished and the system installation complete.

The finishing system outlined here ensures that the Organic system conforms to the local regulations on water vapour barrier requirements.

The insulation board reinforcement provides the system with structural solidity on the outside and also protects it against the influence of the weather. A particularly strong glass-fibre mesh with an alkali-resistant finish is embedded in the reinforcing mortar to create a durable and crack-free base for the final coat.

Additional mechanical fixing with disc-type anchors is required for facades in accordance with local specifications. For extremely poor and uneven substrates on older buildings a version of the system using installation boards, which are fitted to the substrate with the aid of special perimeter rail profiles (in addition to bonding and anchoring), is available.

The Caparol OneWayBox for mineral products permits rapid machine application and ensures a clean construction site.
Production Sites
Deutsche Amphibolin-Werke
von Robert Murjahn
Stiftung & Co KG
D-64372 Ober-Ramstadt

LACUFA GmbH
Lacke und Farben
Werk Fürstenwalde
D-15517 Fürstenwalde

LACUFA GmbH
Lacke und Farben
Werk Köthen
D-06866 Köthen

LACUFA GmbH
Lacke und Farben
Werk Nierchau
D-04685 Nierchau

OOO SP „LACUFA-TWER”
RU-170039 Twer
Neue Meldörfer
Flachverblender
GmbH & Co KG
D-25704 Nindorf/Meldorf

VWS-Ergotherm
GmbH & Co DÄMMSstoffe, Dämmsysteme KG
D-69491 Hirschberg-Großsachsen

DAW France S.A.R.L.
F-80440 Boves
Caparol Italiana
GmbH & Co. KG
I-20080 Vermezzo (Mi)

Synthesia Chemie
Gesellschaft m.b.H.
A-4320 Perg

Capatect
Baustoffindustrie GmbH
A-4320 Perg

Caparol Sverige AB
S-40013 Göteborg

CAPAROL (Shanghai) Co., LTD
201814 Shanghai, P. R. China

DAW BENITA ROMANIA
S.R.L.
RO-547525 Sâncraiu de Mureș, Jud. Mureș

LIFS Lithodecor
Innovative Fassadensysteme
GmbH & Co KG
D-08491 Netzschkau

Caparol Italia SpA
Via Guido Gualtieri, 23
20122 Milan

Sales Offices
Caparol Belgium bvba/april
B-3550 Heusden-Zolder

Caparol España, S.L.
E-17300 Blanes (Girona)

Caparol Farben AG
CH-4133 Pratteln

Caparol Hungária Kft.
H-1108 Budapest

CAPAROL L.L.C.
Dubai - UAE

Caparol Nederland
NL-3860 BC Nijkerk

Caparol Polska Sp. z o.o.
PL-02-867 Warszawa

Caparol Sarajevo d.o.o.
BiH-71000 Sarajevo

Caparol Slovakia spol. s r.o.
SK-82105 Bratislava

Glemadur Farben und Lacke
Vertriebsges.m.b.H.
A-1110 Wien

Český Caparol s.r.o.
CZ-37001 České Budějovice
CZ-15800 Praha 5

Caparol d.o.o.
HR-10431 Sisak

Caparol UK
Staffordshire, ST15 8GH

DAW BENITA BULGARIA
BG-1220 Sofia

ICS „DAW BENTA MOL” SRL
MD-2060 Mun. Chisinau

LACUFA GmbH
Lacke und Farben
D-12439 Berlin

Caparol OOO
RU-125212 Moskau

DP Caparol Ukraine
UA-02092 Kiew

LACUFA GmbH
Lacke und Farben
Repräsentanz Kiew
UA-02092 Kiew

SIA Caparol Baltica
LV-1067 Riga

UE „Caparol Lietuva”
LT-2212 VšĮ

OOO „LACUFA GmbH
Lacke und Farben
Repräsentanz Minsk
BY-220035 Minsk

Licensees
BETEK Boya ve Kimya
Sanayi A.Ş.
TR-34742 Bostancı-Istanbul

Pars Alvan Paint & Resin
Industries Mfg. Co. (HAWILUX)
Theheran, Islamic Republic of Iran

Representatives
SEFRA Farben- und Tapetenvertrieb
Gesellschaft m.b.H.
A-1050 Wien

Fachmaatskraft
Robert Steinhäusler SARL
L-3364 Leudelange

Rockián as
DK-6200 Aabenraa

NOVENTA A.E.
GR-106 82 Athens

Daeyoung Dojang Co., Ltd.
Seocho-Gu, Seoul, Korea

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