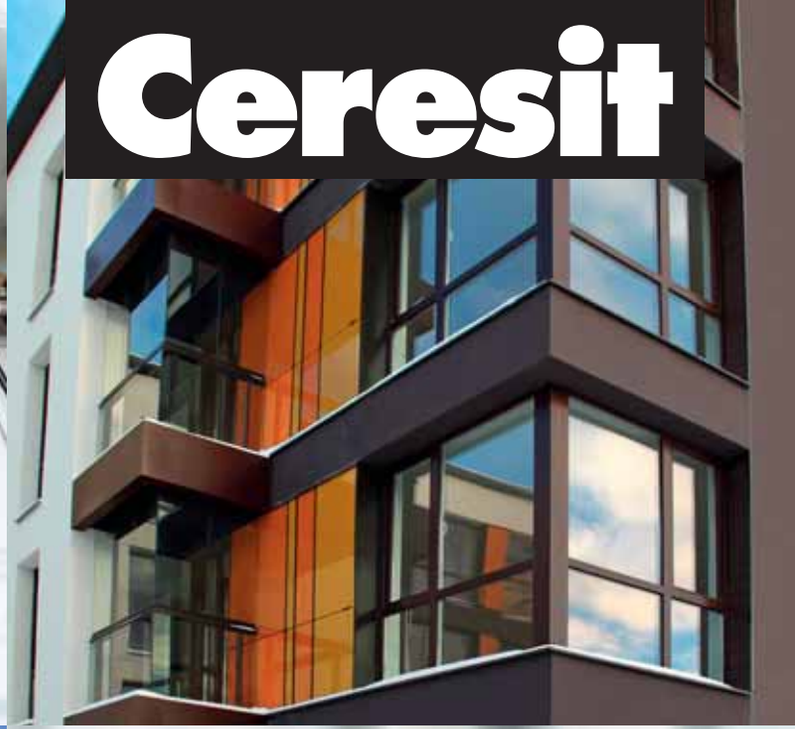
Ceretherm Systems. Advanced and durable solutions.

Ceresit



Ceretherm Systems.
Advanced and durable solutions.

Ceretherm SYSTEM

BioProtect FORMULA

Colour System WATER SAND EARTH FOREST

VISAGE

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Quality for Professionals

Content


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About Henkel Group

Henkel Group is a leader with brands and technologies that make people's lives easier, better and more beautiful. As many as 50,000 people in 125 countries work for Henkel Group in four strategic business sectors: Consumer & Craftsmen Adhesives, Laundry & Home Care, Cosmetics/Toiletries and Henkel Technologies. Integral parts of the Consumer & Craftsmen Adhesives Division are the segments Tiling, Waterproofing, Flooring and External Thermal Insulation Composite Systems. Our long-term experience, extensive know-how, highly innovative products, superior technologies and system solutions help professionals and all our customers to be more successful and efficient while saving our natural resources. Quality from Henkel – to guarantee your professional success.

Environmental awareness

As a global company, Henkel recognizes its responsibility to society. Its objective is to continuously improve environmental and consumer protection and to play an international leading role in this respect. Henkel was one of the first companies to endorse the Business Charter for Sustainable Development of the International Chamber of Commerce, to commit to its principles and to those of the international Responsible Care Program. This endorsement expresses Henkel's will to make constant improvements in all areas of environment, safety, and health protection, pursuing the same goals all over the world. In order to meet this challenge, Henkel has established an efficient and integrated management system: SHEQ (Safety, Health, Environment and Quality). This management system combines customer orientation, quality, environment, safety and health, and each business sector is responsible for its implementation. In addition, nearly all Henkel adhesive production sites have been certified to ISO 9001 and EMAS/ISO 14001. These certifications are pursued on a worldwide scale. Product users can rest assured that Henkel makes safety a priority – for them and for our environment.

Innovations

Innovative, application-related research and development are key features of Henkel's business operations. Understanding the needs and concerns of our professional users is a central factor in product and system solution development. To fulfil these needs, Henkel strives to develop and implement new technologies and to share these solutions across all business sectors.

Professional know-how

Henkel Group's strength is its vast know- how. Henkel is the partner of professionals, supplying excellence and high-performance products, system solutions and know-how based on many years of experience.

Knowledge of our products and system solutions is a major key to the professional's success on site. Henkel therefore offers training courses for knowledge transfer & product application in its worldwide training centres.

Henkel is one of the most globally oriented companies. Extensive research and development generate a constant flow of innovative products and system solutions based on new technologies.

Henkel's technical experts are always able to support and provide solutions throughout project realization. Whenever a question, problem or complaint arises, Henkel's technical advisors are there to offer expert advice.

Why should buildings be thermally protected

The thermal protection of buildings is a complex challenge which requires a profound analysis of the following aspects: building physics, economy of execution, use of the building and ecology. Typical for a moderate climatic zone, temperature range and air humidity do not provide conditions that allow comfortable living without a need to be protected against them (e.g. against low temperatures in winter, a considerable amount of rainfall or strong winds).

Buildings which we live and work in need to have a safe and pleasant climate, independent of the actual weather conditions outside. We expect the walls that surround us to ensure the lasting protection against the direct influence of the surrounding conditions such as temperature and moisture and also against the noise. With insulating buildings, one should also bear in mind the principles of sustainable development (e.g. EPD environmental declarations) concerning materials used and their utilisation conditions.

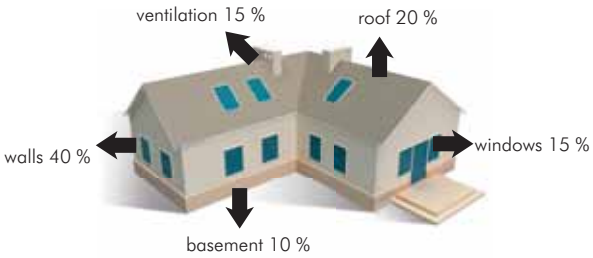
The operating costs of the building depend considerably on its energy performance – the heating effectiveness and hot water supply. The quality of this performance is indicated by the building's annual energy consumption that

is used to provide comfortable conditions indoors. Thanks to introducing the obligatory energy certification for each building, it is possible to determine its annual running costs. These in turn directly influence the market value of the building. High energy consumption in most cases is caused by extensive heat loss through the building walls.

Building walls separate the conditions between the inside and the outside. Therefore the walls become an area subject to processes of heat and moisture transition and transport. Heat always permeates from areas of higher temperature to cooler zones, so in winter, it flows from the heated inside to the cold outside. In summer, it works in reverse – the heat flows to the inside of the building.

It is not only the walls that are responsible for the heat loss. In single-family housing it is 40% of all the losses that 'escape' through the walls. The remaining 15% goes via ventilation, 20% via the roof, 15% via the windows and door frames and 10% via the basement and floors. In multi-family housing the heat loss goes as follows: 37% via the walls, 24% via the windows and door frames, 6% via the roof, 30% via ventilation and 3% via the basement and floors.

Single-family house



The diagrams clearly show that the building's external walls contribute significantly to its total heat loss, regardless of the type and size of the building. For this reason, efficient thermal insulation of the facade walls is absolutely essential, resulting in the largest reduction of heat loss and in turn reducing the energy demand needed to heat up the rooms. This gives the obvious savings in heating costs.

The bigger the difference between the wall surface temperature and the air temperature in the interior, the less intensive the air convection current. That is why, to obtain optimal warmth, it is recommended that the surface wall temperature differs by no more than 3°C in relation to the air temperature. This way the risk of vapour condensation and mould development is limited.

Multi-family house

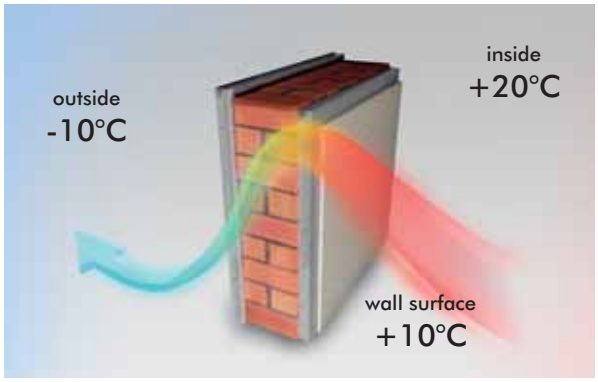
(10-floor blocks of flats built of large precast concrete slabs)

The amount of energy needed to maintain the required temperature inside the building is much higher in the case of standard, not insulated walls. In thermally insulated walls the biggest temperature differences appear inside the insulated material.

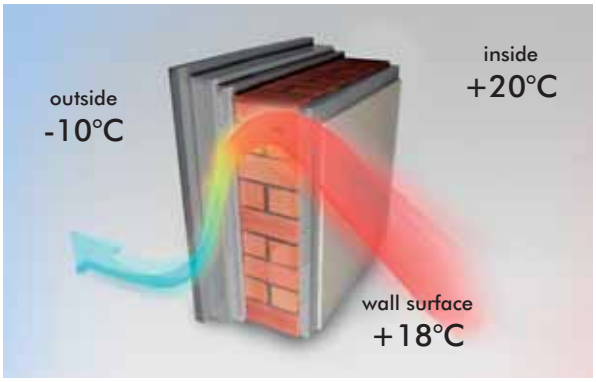
Whether you heat the building or cool it down – both processes are invariably associated with costs. The amount of these costs depends on actual fuel prices and energy sources, the costs of the heating or cooling system installation and its maintenance. By applying complex thermal insulating systems, the building's demand for energy consumption is significantly decreased which directly translates into heating or cooling costs reduction. What is more, the decrease in fuel consumption adds to the positive ecological effects. The consumption of non-renewable energy sources is reduced so the level of CO_2 emissions into the atmosphere, responsible for the progressive greenhouse effect, is also lower.

As seen, the building's external walls contribute significantly to its total heat loss, regardless of the type and size of the building. For this reason, efficient thermal insulation of the facade walls is absolutely essential, especially of projecting parts (such as balconies), by making use of external thermal insulation compound systems. ETICS are able to reduce the intensity of the heat flow through the walls. They can also limit and compensate temperature changes within a building and – of equal importance – within the structural layers of the wall itself.

If the temperature on the wall surfaces is kept as constant as possible, this will result in a higher level of comfort inside – not only by reducing the moisture (no vapour condensation and thus no chance for mould to grow), but also by decreasing the intensity of convection current inside rooms.



The quick escape of heat via a wall with no thermal insulation causes a cooling down of the internal wall surface.



The limited heat flow via a wall with an exterior side thermal insulation causes an increase in temperature of the internal wall surface.

The first of diagrams shows the temperature range for a wall without thermal insulation: inside the building the air temperature is +20°C, whereas the outdoor temperature is a frosty -10°C. As seen, the internal wall surface has a temperature of +10°C, which is much lower than the temperature inside the room. This causes a perceptible, unpleasant air movement and the amount of energy needed to maintain a sufficiently high temperature inside the room is significant.

In the case of a thermally insulated wall (2nd diagram), these problems do not occur. The difference between the air temperature and that of the internal wall surface is much lower. In a thermally insulated wall a rapid drop in temperature takes place in the area where the insulation material has been installed.

Why ETICS

The optimum solution to the aforementioned problems is a seamless thermal insulation system called ETICS, which has been applied and proven for over a dozen years. The name ETICS stands for External Thermal Insulation Composite Systems. Within ETICS a thermal insulation material such as EPS-boards or mineral wool is fixed to the outside wall with a special adhesive mortar, then the surface reinforced with a glass fibre mesh and finally coated with a decorative plaster.

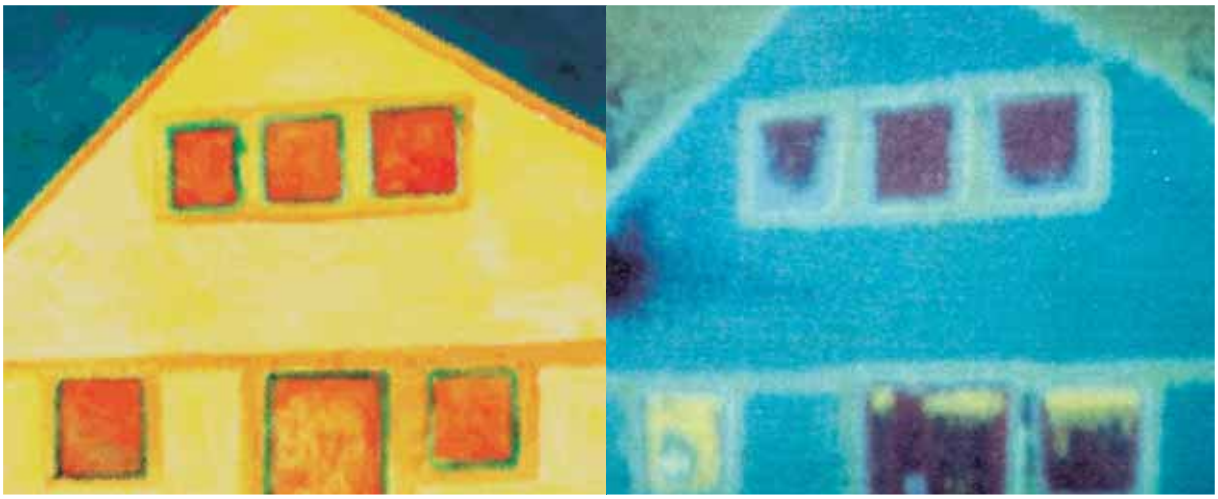
Buildings thermally insulated with ETICS offer the following qualities:
- lower energy demand required for heating the rooms,
- improved thermal comfort of the interiors,
- aesthetic and long-term appearance of the building.

Thermal insulating helps reduce CO_2 emissions, thus protecting the environment.

The insulation efficiency of the building depends on the technology with which the outside walls were built, and it is expressed by the heat flow ratio, U-value. The lower the U value, the lower the heat losses. A low U-value, however, does not always imply successful insulation. But it is not the only factor that reveals the insulation efficiency. The performance of the insulation is negatively influenced by the presence of so called thermal bridges, which come from contact points of construction elements, quoins, balcony and terraces slabs 'cutting' through the walls or the presence of lintel beams. All these 'disturbing' elements disrupt the single-direction flow of the heat and need special attention by choosing adequate insulating technology beforehand and later during the application process.

The easiest and at the same time the most efficient way of insulating the buildings in the above mentioned difficult areas, is with ETIC systems.

Costs incurred for installing an insulation system with the light-wet method (ETICS) pays off after only a few years since the heating bills for the building may go down by as much as 30 %. Together with the ever rising costs of energy fuels, it gives significant savings in every heating season.

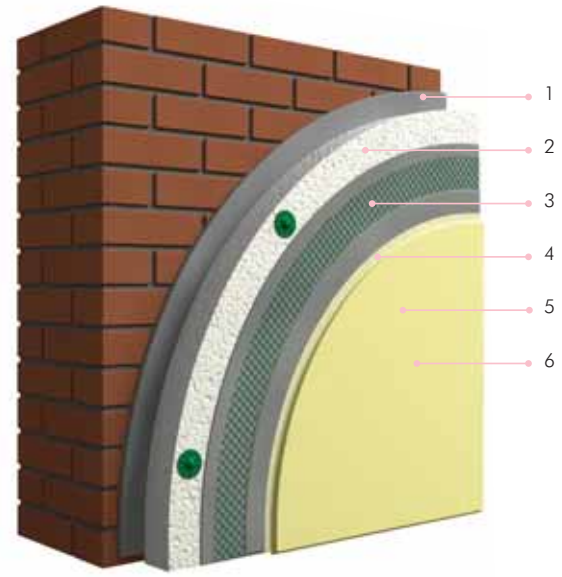


The effect of thermal insulation on a building's external walls is visible in the two thermographic pictures above. In the left picture, the colours yellow and orange mark areas of visible heat loss that can be avoided. Heat flows from the inside of the building, thus raising the temperature of the facade walls. The right picture shows a building whose facade has been thermally insulated. The areas are identical, but they now appear in a blue colour, i.e. they have a much lower temperature due to their thermal insulation. Heat is prevented from flowing from the inside to the outside.

ETIC systems advantages

The key advantages of ETIC systems are:

- effective increase of wall insulation and elimination of thermal bridges,
- complete renovation of the facade and maintaining or changing the building's appearance,
- lightweight system which, as a rule, does not affect the building's structure so that it can be applied on almost every facade (especially important while insulating buildings constructed from pre-fabricated concrete panels),
- the easy workability of the thermal insulation material facilitates the imitation of rustication, the decoration of window frames etc.,
- increase of property value coming from both the attractive appearance and the low energy consumption of the building,
- vast possibilities of surface finish forms and colours



Ceresit Ceretherm System Structure

1. Fixing
2. Insulation material
3. Reinforced layer
4. Priming paint
5. Plaster
6. Paint

Thermography – images of heat loss

Buildings erected in the past, as well as those being built currently, are based on one of a few envelope types. They may be single, double or triple-layered walls with insulation between those layers plus all kinds of modified systems. Each of the possible variants is effective when there are no thermal bridges. As regards non-insulated walls, the differences in the intensity of heat flow are visible even between particular building materials, such as cement mortar and ceramic brick. A thermal imaging camera is a tool that enables us to see the heat flux density and the related temperature distribution on the surface of the partitions.

Henkel's technical department team, equipped with this device, carry out several dozen structure inspections a year, which enables them to assess an envelope's thermal performance. The thermographic pictures below illustrate the condition of same analyzed buildings. On the temperature scale visible on each of the images, lighter areas indicate places with a higher temperature, and darker areas show areas with a lower temperature.

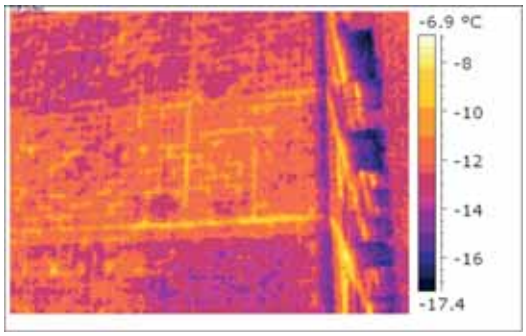
When photographed from the outside, a heated building should ideally have a stable and homogeneous facade temperature. All lighter-coloured areas in a thermogram indicate spot-like and linear thermal bridges. These are the places where excessive amounts of heat are released and thus the potential of vapour condensation occurs.

Three-layer walls perform similarly to the single-layer buildings. The only difference is that with this type of wall construction, increased heat transmission takes place not across joints or tie beams, but across structural nodes. An additional source of thermal transmission are connections between layers, the so called steel anchors.

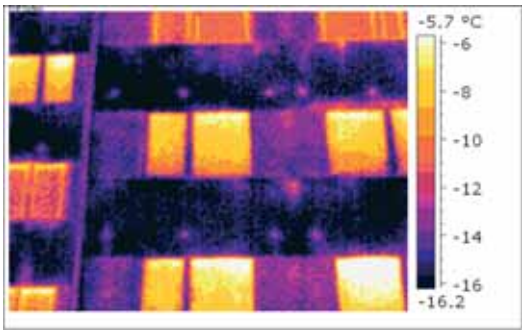
Both one-layer and three-layer walls have one thing in common: a considerable part of the wall mass is exposed to significant changes in temperature and humidity plus thaw cycles that are repeated several times.

Concerning buildings with double-layer wall construction (insulated while a structure is erected or insulated subsequently), you get the optimum possible temperature distribution on the facade. The entire section of the wall has a temperature above zero and there is no risk of water vapour condensation.

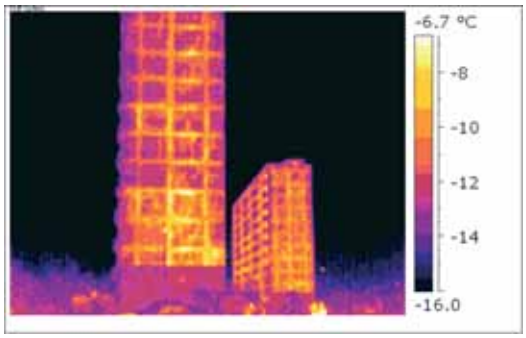
Obviously, the proper method of thermal insulation execution is the main condition in which the wall performs sufficiently in terms of building physics. In practice, there are a lot of mistakes that lead to discontinuities in thermal insulation or thermal bridge occurrence. These thermographic images illustrate some of the common mistakes.



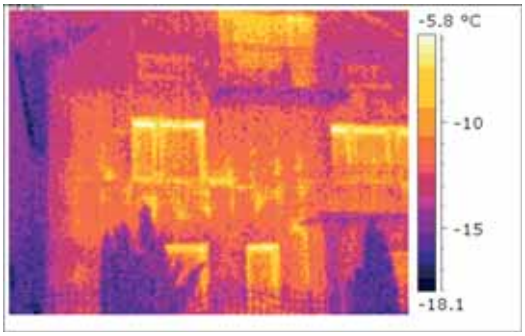
Single-layer wall of cellular concrete blocks with an intense visible heat outflow through the joints.



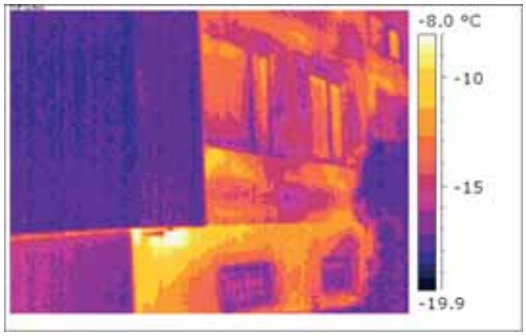
Three-layer wall of a building made of large prefabricated concrete slabs with an intense visible heat outflow through interlayer fasteners.

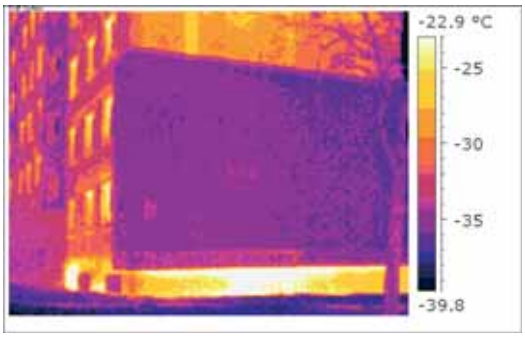


Three-layer wall of a building made of large prefabricated concrete slabs with an intense visible heat outflow through the structural joints.



Two-layer wall with thermal insulation produced by using dry technology, with an intense visible heat outflow caused by air flowing through the insulation layer – ineffective wind insulation.





Gable walls of buildings made of large prefabricated concrete slabs. The picture clearly shows that the installed external thermal insulation system has a strong impact on the heat outflow.

Why to use Ceresit thermal insulation systems

Henkel has 50 years of experience with Ceresit ETIC Systems. Already, a few thousand buildings all over the world have been insulated with the help of our systems. That is an excellent reference for our products, which proves the superb quality of the solutions offered. All this time the Henkel Research and Development team has been working on new solutions and formulas and also on constant improvements to the existing products. We introduce more and more types of adhesive mortars, plasters and paints as well as offer an extensive colour range plus different textures.

Our products and systems are constantly supervised for their compliance with international standards such as ISO 9001, ISO 14001, ISO 18001, AQUAP by the Quality Control Department at our own Central Research Laboratory. The Laboratory has been certified according to ISO/IEC 17025, which means the highest European standards both in terms of functionality and security are met.

European Technical Approvals

European Technical Approvals (ETAs) are granted after proving a thermal insulation system meets the requirements of ETAG 004: 2002 (European Technical Approval Guidelines for External Thermal Insulation Composite Systems with Rendering).
The system must conform to the following six Essential Requirements (specified in accordance with the European Parliament and Council Directive No. 89/106/ EEC, called also the Construction Products Directive):

- mechanical resistance and stability (ER1),
- safety in case of fire (ER2),
- hygiene, health and environment (ER3),
- safety in use (ER4),
- protection against noise (ER5),
- energy, economy and heat retention (ER6).

In this way the high quality, functionality and durability of the thermal insulation system can be proved on the basis of test procedures reflecting 25 years of its performance on a building's facade.

In addition to offering high quality products, Ceresit promotes awareness in the use of the products in the building industry. For this purpose a team of Technical Experts were appointed, whose task is providing advice to designers, contractors and users at every stage of the construction process (starting from design, through execution, to the use and revitalization).

Ceresit cares about the quality of the products, as well as their correct application, therefore the company invests in knowledge transfer and the training of construction companies, and thus constantly increases the level and quality of the work.

High quality products combined with the execution at a high level are the basis for granting warranties for using Ceresit thermal insulation system solutions.

ETICS influence on natural environment

For many years the external environment has been affected by the dynamic development of the world economy and many industries that have been overusing more and more unstable natural resources. Pollution and hazardous waste are generated as a result of civilization growth and get into the environment mankind is fully responsible for this situation.

Excessive exploitation of natural resources and the irresponsible consumption of electric energy has led to the so-called energetic crisis, which has resulted in a significant increase in energy carriers. In order to reduce the negative effects of the energetic crisis (and economic crisis on a global scale) on 19th of May 2011 the European Parliament issued the 2010/3/EU Directive on the energy performance of buildings. This document aims mainly to reduce the energy consumption and to use the energy from renewable sources, which is a part of the implementation of the Kyoto Protocol (EU's commitment to maintain the level of temperature rise below 2°C and to reduce total greenhouse gas emissions by at least 20% by 2020).

ETICS technology should play an extremely important role in this process - as buildings are consuming 40% of the total energy in the EU. The main reasons for this are the growth of this sector as well as the poor technical condition of most of the buildings resulting in a huge amount of energy being lost.

One of the most effective ways (though it may be a compromise between functionality and aesthetics) to save energy consumption is a building's proper insulation, with the use of ETIC system. It allows you to achieve savings of approximately 30% per year. Moreover, it translates directly into natural environment protection through reduced greenhouse gas emissions (including CO_2), which arise during the processes of energy generation and has an extremely devastating influence on ecosystems. Eco trend can be visible also at the process ETICS production viewed as a comprehensive solution. More and more companies attach great significance to ecological production (that generate smaller amounts of waste), and also to recycling, the use of natural components etc.

When properly applied, ETICS has numerous benefits – it is an excellent 'mechanical' protection for a building, as well as improving the microclimate inside a house and the health of its residents by reducing the risk of fungi and mould development, and finally, improving the living comfort of inhabitants - if we are likely to consider these facts, then we obtain the full image of ETICS' comprehensive beneficial influence on the natural environment.

Calculations

The thermal insulation system is effective and durable not only depending on the quality of the materials used but also the accurate and proper application. To a large extent it is a matter of selecting individual elements of the system properly.

The thermal insulation system's efficiency is a function of many variables. It depends, among others, on preserving the building envelope's heat and moisture balance and on the type or economically reasonable insulation thickness. Therefore, while selecting the best thermal insulation system, it is recommended that computer programs were used in order to carry out relevant calculations and simulations of envelopes properties (based on the principles of building physics).

Calculations and software

To meet the needs of users (e.g. designers and investors), Henkel offers two programs for independent heat and moisture calculations of envelopes in accordance with the laws of building physics. This is intuitive, user-friendly software which calculates one-dimensionally stable heat transport, such as Konstruktor (Constructor) program version 3.7 and Envelope heat and moisture calculations program (Ceresit C-W).

Both programs are able to perform the following calculations:

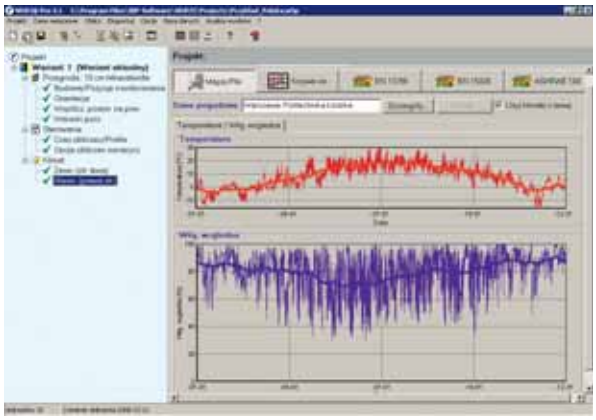
- calculations of internal and external surface temperature of the walls,
- calculations of thermal and diffusion resistance of particular envelope layers,
- calculations of thermal resistance of the adjacent soil,
- calculations of the heat transition coefficient for the envelope (taking into account the thermal bridges and joints – only Ceresit C-W program),
- determination of condensation zones on the envelope,
- simulation of moisture transport during a12 months' cycle, based on average monthly temperatures,
- determination of condensation zones in particular months and delimitation of the mass of water evaporated from the envelope.

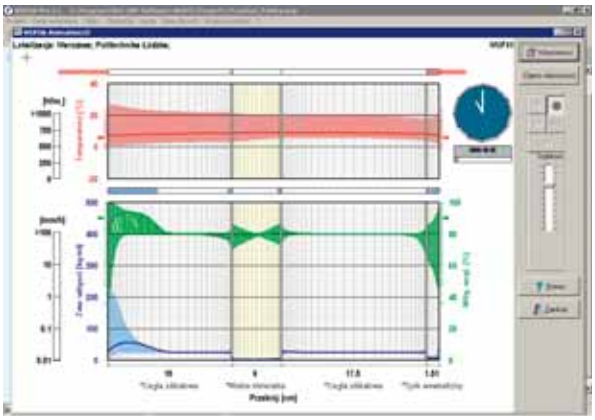
Programs can produce results in a form of tables and diagrams.

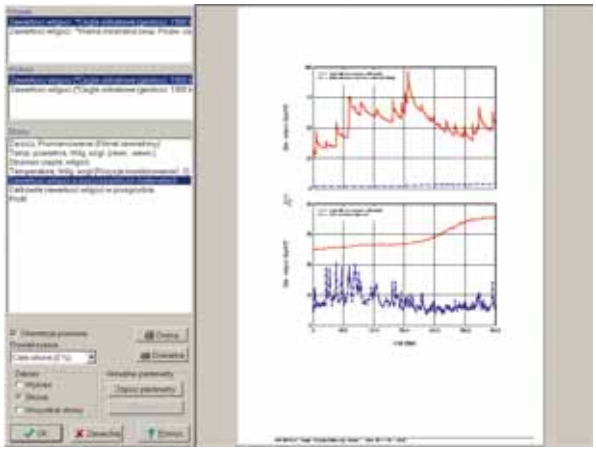
Based on these programs one can select the thickness of the insulating material in relation to standards and law requirements as well as their own expectations.
A simulation of the annual moisture balance determines the envelope's moisture balance and indicates whether the mould and fungi has developed
(in the existing wall) or check if there is such a risk (regards the newly designed wall).

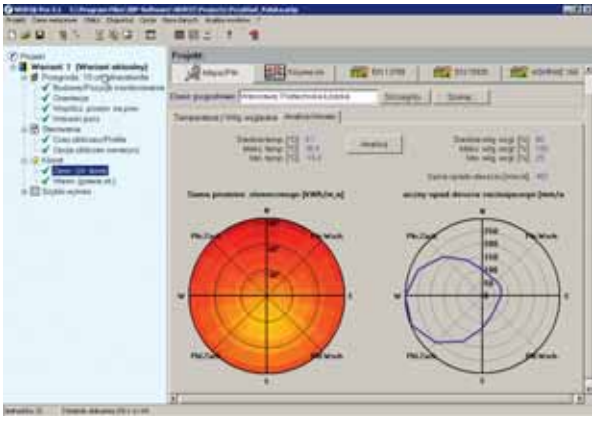
In specific cases Henkel uses the advanced WUFI 5 program to provide comprehensive technical support. The program enables us making a dynamic simulation of the envelope's hydro thermal properties, taking into account the changing parameters of the individual materials.
It is particularly useful when applying thermal insulation on historic buildings or sites of specific conditions (ie, cold stores, production halls with high interior temperatures).

This analysis helps determining whether the envelope is able to absorb and evaporate the moisture coming from the environment, water vapour condensation and technical moisture.









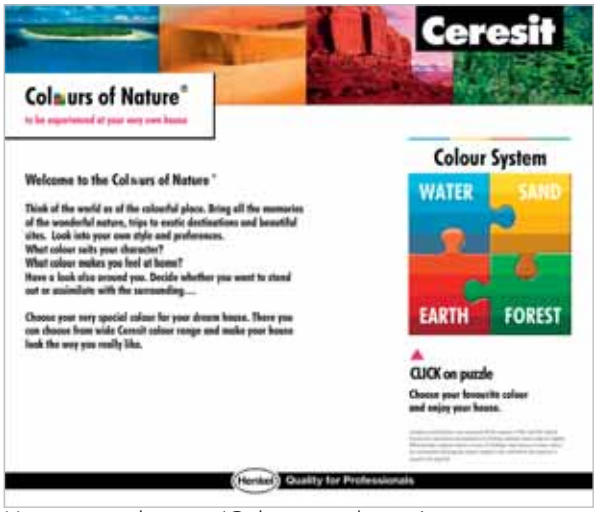
Facade design software

In addition to the software tools allowing heat and moisture calculations, Henkel offers two programs supporting the design of the facade colour. One of them is used to simulate the colour of the existing or newly designed buildings. After uploading the building's photos and indicating areas where thermal insulation is intended, it is possible to simulate different textures and colour variations of the facade.

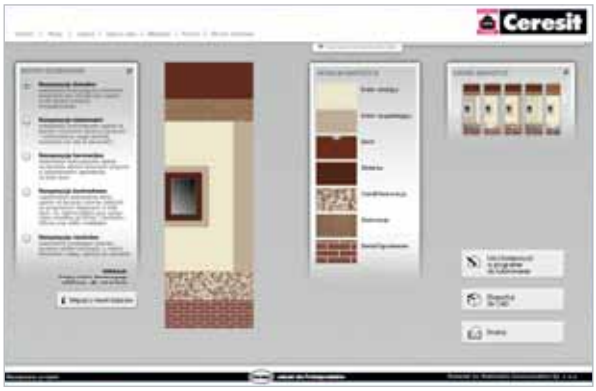
The second program is Ceresit VISAGE – for easily designing the facade's appearance using decorative tools offered by the Ceretherm VISAGE system combined with the Colours of Nature® palette. One can simulate the appearance of the facade with a wood, stone or metallic effects with ease.

Henkel also provides Colours of Nature® and VISAGE colours and textures libraries for AutoCAD®, ArchiCAD® and Autodesk® 3ds Max® programs.

Using these tools is a great help in making a choice, giving the possibility to see an initial preview of the facade design and it helps selecting individual components.



Use new application 'Colour your house' enables the visualization of your elevation.



The program allows you to create any colouring of the building on the basis of your own design.

The program also allows a selection of the prepared compositions from a base of examples available in the application.

The program includes a complete line of Colours of Nature® and VISAGE colour libraries.

Selection of insulation materials and systems

Foamed polystyrene or mineral wool?

The heat conductivity coefficients for both materials are similar. Savings in energy consumption would consequently be the same if thermal insulation boards had the same thickness.

Which system should be chosen? Should it be based on foamed polystyrene or on mineral wool?
Both solutions have their advantages.
Both can be applied on new buildings as well as on buildings in need of renovation. Yet, there are differences between foamed polystyrene and mineral wool, which can influence the final choice of system.

Most important properties of foamed polystyrene

Foamed polystyrene is not capable of absorption and does not lose its thermal insulation properties under the impact of humidity. The occasional condensation of water vapour which may occur along the thickness of the foamed polystyrene does not pose a major problem.

Although this plastic material is obtained from processing crude oil, it does not contain any substances injurious to health. Foamed polystyrene is very light and has good mechanical properties (tearing strength approx. 80 kPa, and compressive strength approx. 130 kPa). Sound insulation is not particularly high. The water is vapour transmission coefficient is also quite low: approx. 12×10-6 g/(mhPa). Temperatures above +80°C cause damage to foamed polystyrene as do most organic solvents. In the ETIC systems it is possible to use foamed polystyrene that fulfils the requirements of standard EN 13163:2004 for product CS(10)70 or CS(10)80 (a 10% deformation of foamed polystyrene is caused by stresses of at least 70 or 80 kPa). The material therefore conforms with the former classes EPS 15 or EPS 20 (thickness of foamed polystyrene in the range of 15 to 20 kg/m^3).

Furthermore, the material must not cause the propagation of fire, i.e. it must be self-extinguishing and must have the dimensional stability declared by the producer (after a suitable seasoning time). Foamed polystyrene panels cut of seasoned blocks (usually after period of 6-8 weeks) remain flat and do not change their dimensions.

It is permissible to use panels not larger than 120×60 cm.

At present there are EPS boards available in white, dotted white and in graphite colour. These boards, apart from the colour, differ from each other only with the heat transfer coefficient value. Popular opinions of lower adhesion of adhesive mortars in case of graphite boards did not prove to be true. The internal tests conducted at Henkel showed, that the colour of the board had no influence on the board's adhesion properties.

Most important properties of mineral wool

Mineral wool is resistant to high temperature. Wool fibres produced of natural rock start to melt after being exposed for two hours to a temperature above 1000°C. The thermal resistance (when used as a binder) and the hydrophobic property (when used as an additive) are slightly less favourable. Mineral wool is classified as non-flammable/non-combustible material. It also has considerable resistance to the majority of chemical substances. The water vapour transmission coefficient is very high with approx. 480×10-6 g/(mhPa). This ensures the absence of water vapour transmission. The hydrophobic property of mineral wool prevents the rise of capillary moisture and the absorption of water vapour contained in the air. Mineral wool boards have a considerable weight, low rigidity and relatively low strength. Stresses of approx. 40 kPa cause a 10 % deformation. Yet it is the fibrous structure of the board that ensures good acoustic insulation of walls.

The mineral wool used in ETIC systems must conform with the requirements of standard EN 13162:2004 for product CS(10)40 (a 10 % deformation of mineral wool is caused by a stress of least 40 kPa).

Two types of mineral wool boards may be used in ETIC systems. The first one is mineral wool with a disturbed fibre structure (density 120 to 160 kg/m^3, strength at break perpendicular to the board surface >10 kPa), on boards with dimensions of 50-60 cm × 100-120 cm. The second one is a board with a laminar parallel fibre structure, placed perpendicular to the wall surface (density 80 to 120 kg/m^3). Owing to their oblong shape (dimensions in general 20×120 cm), these boards are frequently called lamella boards.

A comparison of the properties of foamed polystyrene and mineral wool

Properties	Foamed polystyrene	Mineral wool
Suitability for mechanical processing (cutting, drilling, lapping)	very good	good
Suitability for surface levelling by grinding	very good	limited
Fire classification	not spreading fire	non-flammable/non-combustible
Resistance to natural ageing factors	limited	good
Resistance to microorganisms	good	very good
Permissible height of application on construction sites	depends on local regulations*	depends on local regulations**
Resistance to organic solvents	no resistance	full resistance
Weight of 1 m^2 thermal insulation at 10 cm thickness of thermal insulation material (adhesive mortar and mineral plaster) [kg]	approx. 15	approx. 30
Surface finishing	mineral plaster ✓ silicate plaster ✓ silicone plaster ✓ silicate-silicone plaster ✓ acrylic plaster ✓	mineral plaster ✓ silicate plaster ✓ silicone plaster ✓ silicate-silicone plaster ✓

* according to Polish regulations: limited to 11th floor or 25 m height

** according to Polish regulations: no limitations

Conclusions

When selecting the thermal insulation system for a building, fire safety is an important issue. For this reason, systems based on mineral wool should be used for the following cases: high buildings (the max. height of a building that can be thermally insulated with a system classified as not spreading fire depends on the local regulations, e.g. in Poland 25 m), buildings with a higher hazard classification (e.g. hospitals, schools, entertainment halls and other public facilities), and storage facilities for flammable materials.

Mineral wool based ETIC systems are also recommended for buildings with a high degree of humidity inside (e.g. catering kitchens, laundries and dry cleaners, water treatment plants, carwashes, public baths etc.) provided that suitable vapour barriers and hydroinsulation materials have been installed. This is due to the fact that the condensation of water vapour poses a hazard for mineral wool as it decreases its thermal insulation capacity. Although the walls of 'wet' facilities are generally covered with ceramic tiles, the materials selected for this kind of environment should be analyzed as to their hygrothermal behaviour. The selection of a mineral wool based system is also recommended for buildings located in a zone of high noise pollution. Boards made of lamella wool are both handy and flexible and thus ideally suited for buildings with a curved outline.

Foamed polystyrene based ETIC systems are most frequently used for the thermal insulation of new buildings, but also for the thermorenovation of existing residential housing as well as for individual investment projects.

Among others, this is due to economic reasons. Facade wool is more expensive than foamed polystyrene. Foamed polystyrene, which is almost ten times lighter is more convenient for transport and storage. Also the mechanical fixing is cheaper as it can be done entirely with plastic fasteners (for mineral wool anchors with metal spindles are required). EPS boards are much easier to process and can be cut and polished without major problems. As a result, labour costs for wool based systems are higher by at least 20 to 30%. One should bear in mind that during the time that EPS boards have been in general use for ETIC systems (mineral wool has been in use for a much shorter time), no cases of fire propagation caused by ETICS have been recorded. When choosing foamed polystyrene, there is no danger of excessive load to the building wall. The application of wool for thermal insulation of multi-layer walls necessitates the use of sufficiently long anchor fasteners.

As a result, depending on a region and country, 70–90% of thermal insulations are done with foamed polystyrene. In coming years, this proportion might change due to increasing competitiveness of mineral wool producers offer and also to mineral lamella boards being more popular.

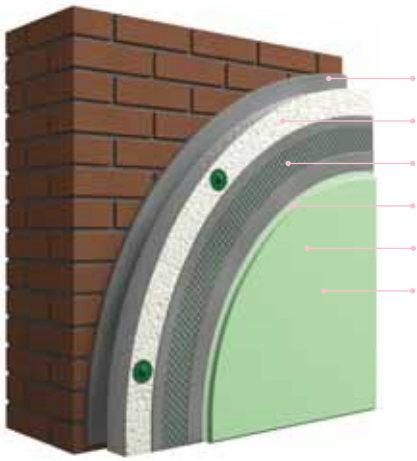
Ceresit Ceretherm Systems

Foamed polystyrene	Mineral wool
Ceresit Ceretherm Popular	Ceresit Ceretherm Wool Classic
Ceresit Ceretherm Classic	Ceresit Ceretherm Wool Premium
Ceresit Ceretherm Winter	Ceresit Ceretherm Wool Garage
Ceresit Ceretherm Premium	
Ceresit Ceretherm Ceramic	
Ceresit Ceretherm Express	
Ceresit Ceretherm VISAGE	
Ceresit Ceretherm Reno	

Ceresit Ceretherm Popular System

Characteristics

- Economical solution
- BioProtect formula – resistant to mould, fungi and algae
- Impact resistant
- Resistant to weather
- Low absorbency
- High vapour permeability
- Fire classification: PN-90/B-02867 (non-fire spreading), B according to EN 13501-1



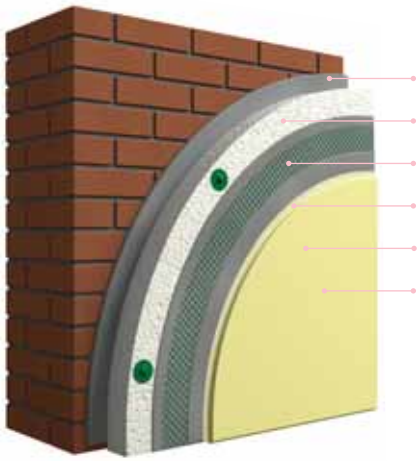
1. Fixing	• Ceresit ZS Adhesive Mortar or Ceresit ZU Universal Mortar • plastic anchors Ceresit CT 330 or CT 335 with a steel core or others classified as ETAG 014 • number of fasteners and their arrangement should be determined by an architect, based on the substrate analysis and load calculations
2. Insulation material	• EPS-boards marked Ceresit CT 315 (or others classified as PN-EN 13163:2004) with thickness up to 25 cm, with a flat or shaped end face
3. Reinforced layer	• glass fibre fabric Ceresit CT 325 with a density of 145 g/m^2 and above • Ceresit ZU Universal Mortar
4. Priming paint	• Ceresit CT 15 Silicate Paint for silicate plasters • Ceresit CT 16 Acrylic Paint for mineral, acrylic, silicate-silicone and silicone plasters
5. Plaster	• Ceresit CT 35 'rustic', Ceresit CT 137 'stone', Ceresit CT 34 Mineral Plasters (white and paintable) • Ceresit CT 60 'stone', Ceresit CT 63 'rustic', Ceresit CT 64 'rustic' Acrylic Plasters • Ceresit CT 72 'stone', Ceresit CT 73 'rustic' Silicate Plasters • Ceresit CT 74 'stone', Ceresit CT 75 'rustic' Silicone Plasters • Ceresit CT 174 'stone', Ceresit CT 175 'rustic' Silicate-silicone Plasters • Ceresit CT 710 VISAGE Natural Stone Plaster* • Ceresit CT 60 VISAGE Acrylic Plaster* • Ceresit CT 720 VISAGE Wood Plaster* • Ceresit CT 730 VISAGE Luminous Plaster*
6. Paint	• Ceresit CT 42, CT 44 Acrylic Paints • Ceresit CT 48 Silicone Paint • Ceresit CT 54 Silicate Paint • Ceresit CT 49 Silix XD® Nanosilicone Paint • Ceresit CT 740 VISAGE Metallic Paint* • Ceresit CT 750 VISAGE Opal Lack*

* special product possible to be applied with the above system

Ceresit Ceretherm Classic System

Characteristics

- Impact Resistance – resistant to stronger impacts
- BioProtect formula – resistant to mould, fungi and algae
- Resistant to weather
- Low absorbency
- High vapour permeability
- Fire classification: PN-90/B-02867 (non-fire spreading), B according to EN 13501-1



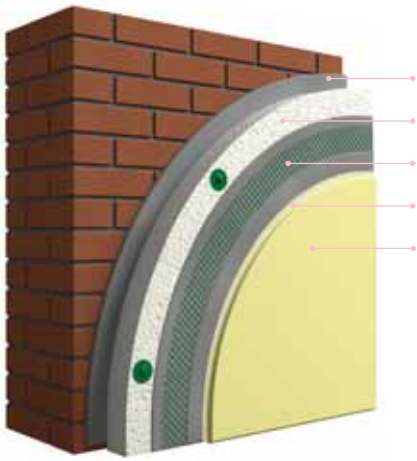
1. Fixing	• Ceresit CT 83 Adhesive Mortar or Ceresit CT 85 Adhesive and Reinforcing Mortar • plastic anchors Ceresit CT 330 or CT 335 with a steel core or others classified as ETAG 014 • number of fasteners and their arrangement should be determined by an architect, based on the substrate analysis and load calculations
2. Insulation material	• EPS-boards marked Ceresit CT 315 (or others classified as PN-EN 13163:2004) with thickness up to 25 cm, with a flat or shaped end face
3. Reinforced layer	• glass fibre fabric Ceresit CT 325 with a density of 145 g/m^2 and above • Ceresit CT 85 Adhesive and Reinforcing Mortar Impact Resistance
4. Priming paint	• Ceresit CT 15 Silicate Paint for silicate plasters • Ceresit CT 16 Acrylic Paint for mineral, acrylic, silicate-silicone and silicone plasters
5. Plaster	• Ceresit CT 35 'rustic', Ceresit CT 137 'stone', Ceresit CT 34 Mineral Plasters (white and paintable) • Ceresit CT 60 'stone', Ceresit CT 63 'rustic', Ceresit CT 64 'rustic' Acrylic Plasters • Ceresit CT 72 'stone', Ceresit CT 73 'rustic' Silicate Plasters • Ceresit CT 74 'stone', Ceresit CT 75 'rustic' Silicone Plasters • Ceresit CT 174 'stone', Ceresit CT 175 'rustic' Silicate-silicone Plasters • Ceresit CT 710 VISAGE Natural Stone Plaster* • Ceresit CT 60 VISAGE Acrylic Plaster* • Ceresit CT 720 VISAGE Wood Plaster* • Ceresit CT 730 VISAGE Luminous Plaster*
6. Paint	• Ceresit CT 42, CT 44 Acrylic Paints • Ceresit CT 48 Silicone Paint • Ceresit CT 54 Silicate Paint • Ceresit CT 49 Silix XD® Nanosilicone Paint • Ceresit CT 740 VISAGE Metallic Paint* • Ceresit CT 750 VISAGE Opal Lack*

* special product possible to be applied with the above system

Ceresit Ceretherm Winter System

Characteristics

- Designed for low-temperature application
- BioProtect formula – resistant to mould, fungi and algae
- Resistant to stronger impacts
- Resistant to weather
- Low absorbency
- High vapour permeability
- Fire classification: PN-90/B-02867 (non-fire spreading)

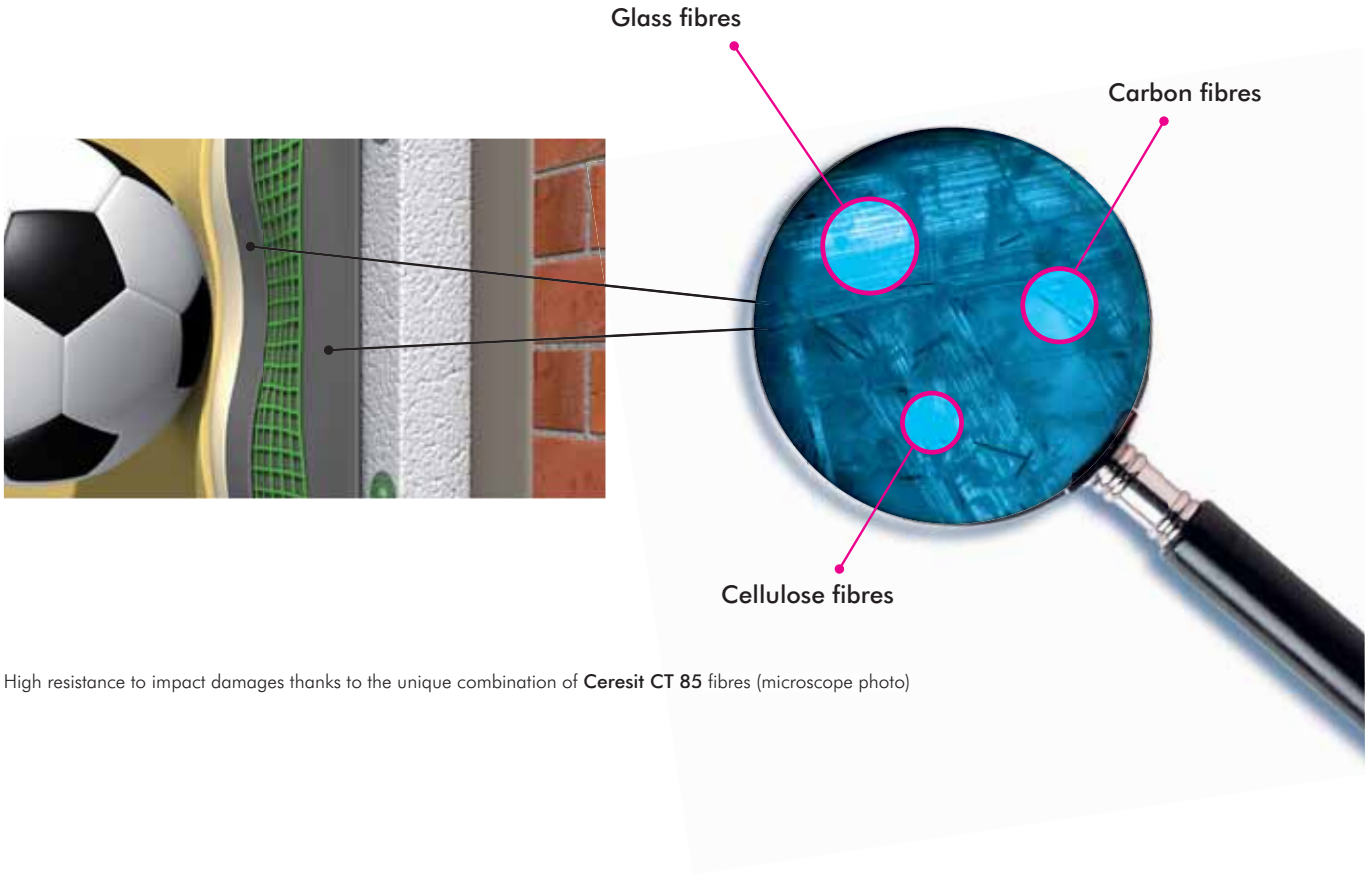


1. Fixing	• Ceresit CT 85 Adhesive and Reinforcing Mortar – Winter • plastic anchors Ceresit CT 330 or CT 335 with a steel core or others classified as ETAG 014 • number of fasteners and their arrangement should be determined by an architect, based on the substrate analysis and load calculations
2. Insulation material	• EPS-boards marked Ceresit CT 315 (or others classified as PN-EN 13163:2004) with thickness up to 25 cm, with a flat or shaped end face
3. Reinforced layer	• glass fibre fabric Ceresit CT 325 with a density of 145 g/m^2 and above • Ceresit CT 85 Adhesive and Reinforcing Mortar – Winter
4. Priming paint	• Ceresit CT 16 Winter Acrylic Paint
5. Plaster	• Ceresit CT 60 Winter Acrylic Plaster 'stone', Ceresit CT 64 Winter Acrylic Plaster 'rustic'

Ceresit CT 85 Impact Resistance

Adhesive & Reinforcement Mortar for EPS resistant to impacts and deformation

Ceresit CT 85 Adhesive and Reinforcement Mortar for EPS used in **Ceresit Ceretherm Classic** system is Henkel's response to toughened standards and rising demands of the market. An **especially developed formula** and structure of the mortar guarantee the best technical and working parameters, both during application of the product and long term maintenance of a building. **Ceresit CT 85 is unique** thanks to the use of **a highly targeted combination of three special reinforced fibres of optimal length and mutual interaction.**

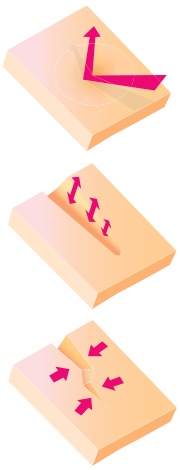


High resistance to impact damages thanks to the unique combination of **Ceresit CT 85** fibres (microscope photo)

Thanks to this combination and unique structure **Ceresit CT 85** is **highly resistant to impact damages, distortion and to the formation of cracks and hairlines.** It is especially important during maintenance of a building, when the whole system works, i.e. it is exposed to changing temperature and humidity or in case of mechanical impacts such as hitting a ball against a facade. **Ceresit CT 85** mortar guarantees cohesion of all the layers in the system and counteracts construction stresses. This way it protects external plasters and paint coats from developing cracks caused by unstable ground.

The product is highly resistant to weather conditions and especially to very low and very high temperatures. Using **Ceresit CT 85** results in the reinforced layer being more frost resistant and less absorbable. The mortar's resistance to weather conditions during the process of application (very strong sun and wind without protection in summer) has also been strengthened in order to obtain optimal working and setting times. At the same time greater flexibility has been provided which eliminates the risk of cracks appearing directly after applying the reinforced layer.

This way parameters and properties of **Ceresit CT 85** considerably exceed market demands. Its application guarantees the whole system will be more resistant to ambient conditions. Thanks to greater resistance to mechanical impacts, distortion and hairlines Ceresit thermal insulation system not only acts better as insulation, but also provides long lasting aesthetic look to a building.



Impact resistance

Deflection resistance

Crack bridging resistance

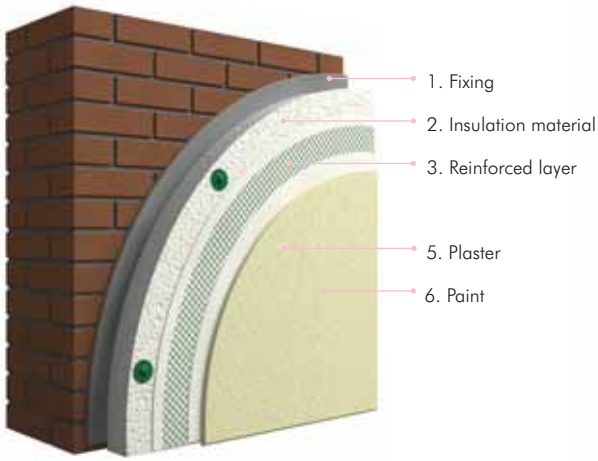
Ceresit CT 85 Impact Resistance characteristics:

- highly impact resistant
- unique fibre combination
- resistant to weather conditions
- resistant to hairlines and cracks
- flexible

Ceresit Ceretherm Premium System

Characteristics

- Resistant to strong impacts
- BioProtect formula – resistant to mould, fungi and algae
- Especially resistant to weather
- Particularly low absorbency
- High vapour permeability
- Fire classification: PN-90/B-02867 (non-fire spreading), B according to EN 13501-1



1. Fixing	• Ceresit CT 83 Adhesive Mortar or Ceresit CT 87 '2in1' White Adhesive and Reinforcing Mortar • plastic anchors Ceresit CT 330 or CT 335 with a steel core or others classified as ETAG 014 • number of fasteners and their arrangement should be determined by an architect, based on the substrate analysis and load calculations
2. Insulation material	• EPS-boards marked Ceresit CT 315 (or others classified as PN-EN 13163:2004) with thickness up to 25 cm, with a flat or shaped end face
3. Reinforced layer	• glass fibre fabric Ceresit CT 325 with a density of 145 g/m^2 and above • Ceresit CT 87 '2in1' White Adhesive and Reinforcing Mortar
4. Priming paint	• N/A
5. Plaster	• Ceresit CT 35 'rustic', Ceresit CT 137 'stone', Ceresit CT 34 Mineral Plasters (white and paintable) • Ceresit CT 60 'stone', Ceresit CT 63 'rustic', Ceresit CT 64 'rustic' Acrylic Plasters • Ceresit CT 72 'stone', Ceresit CT 73 'rustic' Silicate Plasters • Ceresit CT 74 'stone', Ceresit CT 75 'rustic' Silicone Plasters • Ceresit CT 174 'stone', Ceresit CT 175 'rustic' Silicate-silicone Plasters • Ceresit CT 710 VISAGE Natural Stone Plaster* • Ceresit CT 60 VISAGE Acrylic Plaster* • Ceresit CT 720 VISAGE Wood Plaster* • Ceresit CT 730 VISAGE Luminous Plaster*
6. Paint	• Ceresit CT 42, CT 44 Acrylic Paints • Ceresit CT 48 Silicone Paint • Ceresit CT 54 Silicate Paint • Ceresit CT 49 Silix XD® Nanosilicone Paint • Ceresit CT 740 VISAGE Metallic Paint* • Ceresit CT 750 VISAGE Opal Lack*

* special product possible to be applied with the above system

CT 87 Adhesive and reinforcing mortar ‘2in1’

Profit from time saving

CT 87 White adhesive and reinforcing mortar ‘2in1’ guarantees quick and easy work while providing the highest quality of insulation, as well as significant costs effectiveness.

- White, 2in1 – does not require priming before rendering.

- Universal both for EIFS systems on EPS and mineral wool.

- Flexible, strengthened with fibres, resistant to scratches and cracks.

- Guarantees quicker completion of the project – one application step less, shorter work interruptions (no time needed for priming paint drying) & excellent working parameters of the mortar.

- Offers savings on the costs of materials, labour and equipment due to:
  - no priming paint needed
  - priming step skipped from labour costs
  - lower consumption per m^2 guaranteed by the content of light fillers (only 3 kg/m^2 for the mesh reinforced layer on the properly prepared insulation surface)
  - lower scaffolding costs

- Has excellent working parameters and thus makes it easier to prepare the mesh reinforced layer through:
  - easier mixing (new generation modifying agents and fillers)
  - easier spreading (lower density and viscosity)
  - easier fixing of the mesh (better consistency of the mass)

- Enables easier and economic application of the final coat plaster thanks to:
  - optimal water absorbability and surface structure of CT 87
  - lower plaster consumption per m^2 due to the optimised structure of the CT 87 layer (low losses of plaster during application thanks to the better adhesion)

- Offers a wide choice of possible final coatings and can be finished with each kind of Ceresit plaster (mineral, acrylic, silicate, silicone, silicate-silicone).

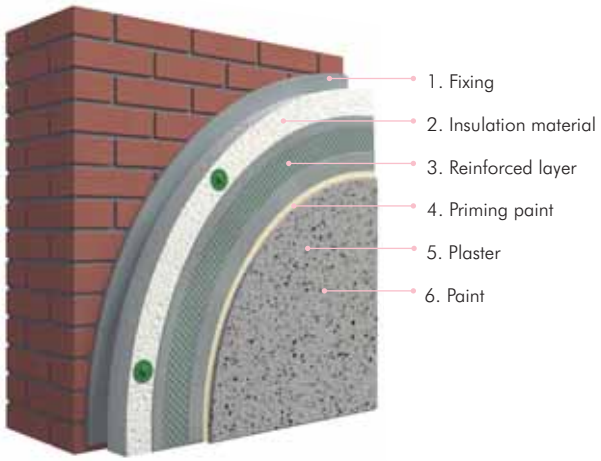
- Secures longer durability of the whole system due to the:
  - higher resistance to **mechanical damages** (impacts, perforations)
  - higher resistance to **scratches and micro-cracks** due to high content of modifying agents and fibres
  - higher resistance to **unfavourable weather conditions (sudden drops of temperatures, high amplitudes)** thanks to the 25% lower water absorbability of CT 87 mortar. The whole system can have even up to 55% lower water absorbability compared to the normal required values
  - higher resistance to **dirt** built up due to the minimized water absorbability and proper choice of the plaster (especially recommended are Ceresit silicone plasters CT 74, CT 75)

- Guarantees aesthetic building facade with homogeneous structure of the plaster.

Ceresit Ceretherm Visage System

Characteristics

- Resistant to biological contamination
- Easy to maintain
- Easy to apply
- Resistant to weather
- Colour durability (UV resistant)
- Long-term durability
- Minimising development of thermal bridges
- Easy to integrate with other facades materials (ETICS)
- Lightweight (little excessive weight in comparison to natural materials)
- Effect providing of natural materials

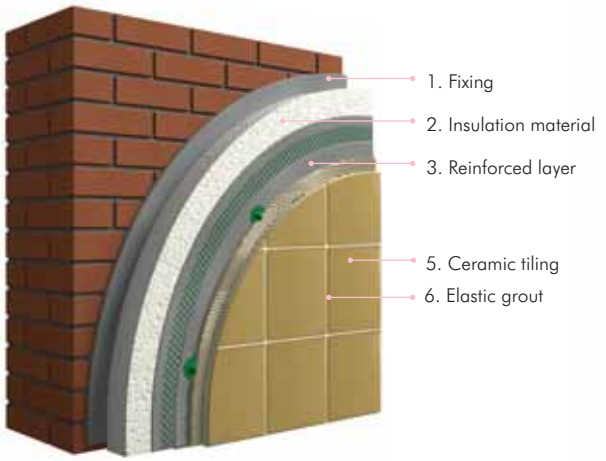


1. Fixing	• Ceresit CT 83 Adhesive Mortar or Ceresit CT 85 Adhesive and Reinforcing Mortar • plastic anchors Ceresit CT 330 or CT 335 with a steel core or others classified as ETAG 014 • number of fasteners and their arrangement should be determined by an architect, based on the substrate analysis and load calculations
2. Insulation material	• EPS-boards marked Ceresit CT 315 (or others classified as PN-EN 13163:2004) with thickness up to 25 cm, with a flat or shaped end face
3. Reinforced layer	• glass fibre fabric Ceresit CT 325 with a density of 145 g/m^2 and above • Ceresit CT 85 Adhesive and Reinforcing Mortar Impact Resistance
4. Priming paint	• Ceresit CT 16 Acrylic Paint
5. Plaster	• Ceresit CT 77 Mosaic Plaster • Ceresit CT 710 VISAGE Natural Stone Plaster • Ceresit CT 60 VISAGE Acrylic Plaster • Ceresit CT 720 VISAGE Wood Plaster + CT 721 VISAGE Wood Colour Impregnate • Ceresit CT 730 VISAGE Luminous Plaster
6. Paint	• Ceresit CT 740 VISAGE Metallic Paint* • Ceresit CT 750 VISAGE Opal Lack*

Ceresit Ceretherm Ceramic System

Characteristics

- Resistant to strong impacts
- BioProtect formula – resistant to mould, fungi and algae
- Especially resistant to weather
- Particularly low absorbency
- Especially easy to keep clean
- Fire classification: PN-90/B-02867 (non-fire spreading), B according to EN 13501-1

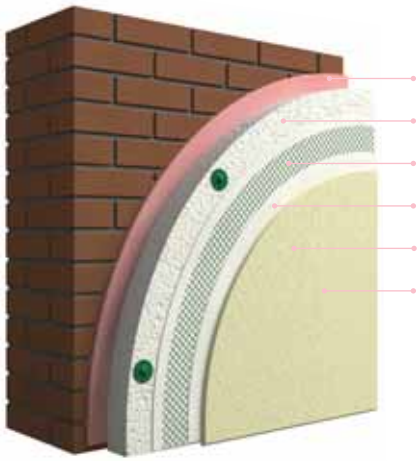


1. Fixing	• Ceresit CT 83 Adhesive Mortar or Ceresit CT 85 Adhesive and Reinforcing Mortar • plastic anchors Ceresit CT 330 or CT 335 with a steel core or others classified as ETAG 014
2. Insulation material	• EPS-boards marked Ceresit CT 315 (or others classified as PN-EN 13163:2004) with thickness up to 25 cm, with a flat or shaped end face
3. Reinforced layer	• glass fibre fabric Ceresit CT 325 with a density of 145 g/m^2 and above • number of fasteners and their arrangement should be determined by an architect, based on the substrate analysis and load calculations (recommended min. 8 fasteners/m^2) • Ceresit CT 85 Adhesive and Reinforcing Mortar
4. Priming paint	• N/A
5. Ceramic tiling	• Ceresit CM 17 Adhesive Mortar, Ceresit CM 18 Adhesive Mortar • tiles: water absorbency ≤ 6%, surface ≤ 0,09 m^2 and weight ≤ 40 kg/m^2 stone: surface ≤ 0,19 m^2 and weight ≤ 40 kg/m^2 • Ceresit CE 43 Grand'Elit Flexible Grout (min. 6 mm, max 20 mm), Ceresit CT 32 Clinker Mortar
6. Expansion gaps	• filling: Ceresit CS 29 Polyurethane Sealant, support: round foam section (bead) whos diameter (Ø) corresponds to the selected with (d) of the grout (Ø=120%d) • professional expansion sections with EPDM filled section • max. area defined by expansion gaps should not extend 9 m^2

Ceresit Ceretherm Express System

Characteristics

- Resistant to strong impacts
- BioProtect formula – resistant to mould, fungi and algae
- Especially resistant to weather
- Particularly low absorbency
- High vapour permeability
- Fire classification: PN-90/B-02867 (non-fire spreading), B according to EN 13501-1



1. Fixing	• Ceresit CT 84 Express PU-adhesive for EPS-boards • plastic anchors Ceresit CT 330 or CT 335 with a steel core or others classified as ETAG 014 • number of fasteners and their arrangement should be determined by an architect, based on the substrate analysis and load calculations
2. Insulation material	• EPS-boards marked Ceresit CT 315 (or others classified as PN-EN 13163:2004) with thickness up to 25 cm, with a flat or shaped end face
3. Reinforced layer	• glass fibre fabric Ceresit CT 325 with a density of 145 g/m^2 and above • Ceresit CT 87 '2in1' White Adhesive and Reinforcing Mortar or Ceresit CT 85 Adhesive and Reinforcing Mortar
4. Priming paint	• N/A if Ceresit CT 87 '2in1' mortar is used • Ceresit CT 15 Silicate Paint for silicate plasters (if Ceresit CT 85 mortar is used) • Ceresit CT 16 Acrylic Paint for mineral, acrylic, silicate-silicone and silicone plasters (if Ceresit CT 85 mortar is used)
5. Plaster	• Ceresit CT 35 'rustic', Ceresit CT 137 'stone', Ceresit CT 34 Mineral Plasters (white and paintable) • Ceresit CT 60 'stone', Ceresit CT 63 'rustic', Ceresit CT 64 'rustic' Acrylic Plasters • Ceresit CT 72 'stone', Ceresit CT 73 'rustic' Silicate Plasters • Ceresit CT 74 'stone', Ceresit CT 75 'rustic' Silicone Plasters • Ceresit CT 174 'stone', Ceresit CT 175 'rustic' Silicate-silicone Plasters • Ceresit CT 710 VISAGE Natural Stone Plaster* • Ceresit CT 60 VISAGE Acrylic Plaster* • Ceresit CT 720 VISAGE Wood Plaster* • Ceresit CT 730 VISAGE Luminous Plaster*
6. Paint	• Ceresit CT 42, CT 44 Acrylic Paints • Ceresit CT 48 Silicone Paint • Ceresit CT 54 Silicate Paint • Ceresit CT 49 Silix XD® Nanosilicone Paint • Ceresit CT 740 VISAGE Metallic Paint* • Ceresit CT 750 VISAGE Opal Lack*

* special product possible to be applied with the above system

The winner is CT 84 Express!

For 100% more yield and convenience.

THERMAL INSULATION
1 First certified PU adhesive
SYSTEMS

- First PU adhesive in Poland possessing technical approval in thermal systems together with complete fire resistance tests.

100% MORE YIELD

- **100% more yield** than traditional cement adhesives CT 84 is extremely efficient: with 1 can you can fix 10 m² of EPS-boards in ETICS system, while a 25 kg bag of cement adhesive does 5 m² only.


15% HIGHER STRENGTH

- **15% higher adhesive strength** than traditional cement adhesives. Adhesion to mineral substrates, wood, metals and plastics is better and binding is definitely faster.

FASTEST UP FOR ANCHORING

- **Anchoring already after ca. 2 h** speeding up thermal insulation work. It is possible to apply adhesive, fix anchors and place the reinforced layer during the same day


LOW EXPANSION – NO DEFORMATION

- **Low expansion** preventing unwanted deformations. Expansion process of CT 84 is very fast and its voluminous effect is very limited, after fixing the panels to the facade, adhesive does not expand any more.


LOW TEMPERATURE RECOMMENDED

- **Application from 0°C and at high humidity conditions.** CT 84 is especially recommended for work in low temperature when cement adhesives drying time is significantly longer.


LIGHT WEIGHT

- Perfect for 'warming to warming' system because of **light weight.** 1 m² of expanded polystyrene board fixed with CT 84 adhesive weighs 100 g, instead of 5 kg in case of cement adhesives.


MORE EFFECTIVE INSULATION

- **Enhanced thermal insulation properties.** CT 84, unlike traditional cement adhesives, has thermal insulation properties similar to EPS or wool, making the insulation more effective.


METAL BALL AGAINST AIR BUBBLES

- High homogeneity of adhesive. **Metal ball** present inside every can of CT 84 protects the adhesive against too large air bubbles, so the product stays effective and comfortable to use for long time.

Scope of use

- Fixing expanded polystyrene (EPS) boards in external thermal insulation Ceresit Ceretherm Express system
- Filling in gaps between EPS-boards
- Filling in glue in case of keying panels in the existing thermal insulation
- Fixing expanded polystyrene boards in case of 'warming to warming' system
- Fixing external window sills (after degreasing of surface)

Fixing EPS board in thermal insulation system

Filling in gaps between boards


Filling in case of keying panels

Fixing in case of 'warming to warming'

Materials

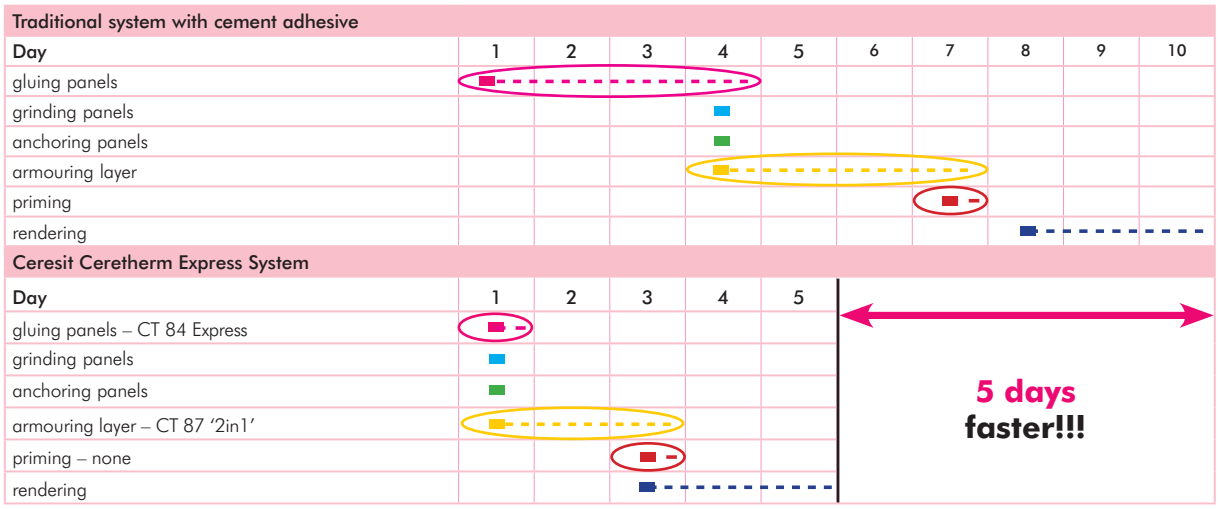
The Ceresit CT 84 polyurethane adhesive is used for fixing EPS and XPS foamed polystyrene and hard mineral wool to the structures such as:

- ceramic bricks
- concrete
- wood
- glass
- bitumen
- drywall
- OSB boards
- coated and galvanised sheet plate
- dry cellular concrete

and for layered fixing expanded polystyrene and mineral wool boards under conditions of normal and lower temperatures.

All data refer to temperature +20°C and relative air humidity 60%. Under other conditions, the parameters of the material may differ. In case of any further information, please refer to Technical Data Sheet or contact sales representative.

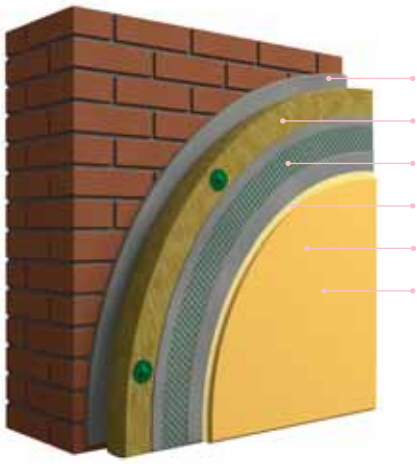
Comparison between installation time of traditional system and Ceresit Ceretherm Express System



Ceresit Ceretherm Wool Classic System

Characteristics

- Resistant to stronger impacts
- BioProtect formula – resistant to mould, fungi and algae
- Resistant to weather
- Low absorbency
- Very high vapour permeability
- Fire classification: PN-90/B-02867 (non-fire spreading) – A2 (if covered with mineral and silicone plasters), B (if covered with other plasters) according to EN 13501-1

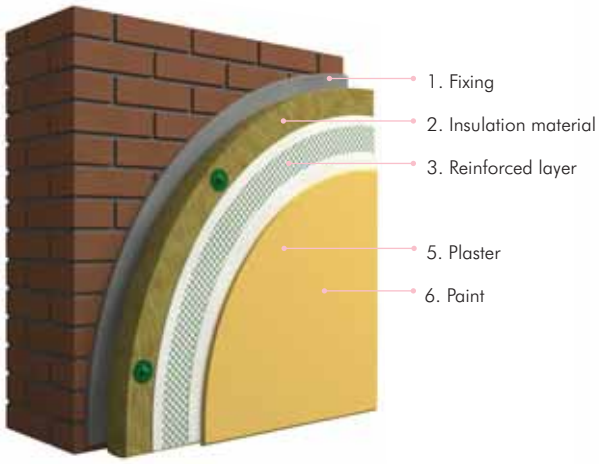


1. Fixing	• Ceresit CT 180 Adhesive Mortar for Mineral Wool or Ceresit CT 190 Adhesive and Reinforcing Mortar for Mineral Wool • anchors Ceresit CT 335 with a steel core or others classified as ETAG 014 • number of fasteners and their arrangement should be determined by an architect, based on the substrate analysis and load calculations
2. Insulation material	• mineral wool with a disturbed fibre layout or mineral wool with lamella fibre layout (so-called lamella wool) • classified as EN 13162:2001
3. Reinforced layer	• glass fibre fabric Ceresit CT 325 with a density of 145 g/m^2 and above • Ceresit CT 190 Adhesive and Reinforcing Mortar for Mineral Wool
4. Priming paint	• Ceresit CT 15 Silicate Paint for silicate plasters • Ceresit CT 16 Acrylic Paint for mineral, silicate-silicone and silicone plasters
5. Plaster	• Ceresit CT 35 'rustic', Ceresit CT 137 'stone', Ceresit CT 34 Mineral Plasters (white and paintable) • Ceresit CT 72 'stone', Ceresit CT 73 'rustic' Silicate Plasters • Ceresit CT 74 'stone', Ceresit CT 75 'rustic' Silicone Plasters • Ceresit CT 174 'stone', Ceresit CT 175 'rustic' Silicate-silicone Plasters
6. Paint	• Ceresit CT 48 Silicone Paint • Ceresit CT 54 Silicate Paint • Ceresit CT 49 Silix XD® Nanosilicone Paint

Ceresit Ceretherm Wool Premium System

Characteristics

- Resistant to strong impacts
- BioProtect formula – resistant to mould, fungi and algae
- Especially resistant to weather
- Particularly low absorbency
- Very high vapour permeability
- Fire classification: PN-90/B-02867 (non-fire spreading) – A2 (if covered with mineral and silicone plasters), B (if covered with other plasters) according to EN 13501-1



1. Fixing	• Ceresit CT 190 Adhesive and Reinforcing Mortar for Mineral Wool or Ceresit CT 87 '2in1' White Adhesive and Reinforcing Mortar • anchors Ceresit CT 335 with a steel core or others classified as ETAG 014 • number of fasteners and their arrangement should be determined by an architect, based on the substrate analysis and load calculations
2. Insulation material	• mineral wool with a disturbed fibre layout or mineral wool with lamella fibre layout (so-called lamella wool) • classified as EN 13162:2001
3. Reinforced layer	• glass fibre fabric Ceresit CT 325 with a density of 145 g/m^2 and above • Ceresit CT 87 '2in1' White Adhesive and Reinforcing Mortar
4. Priming paint	• N/A
5. Plaster	• Ceresit CT 35 'rustic', Ceresit CT 137 'stone', Ceresit CT 34 Mineral Plasters (white and paintable) • Ceresit CT 72 'stone', Ceresit CT 73 'rustic' Silicate Plasters • Ceresit CT 74 'stone', Ceresit CT 75 'rustic' Silicone Plasters • Ceresit CT 174 'stone', Ceresit CT 175 'rustic' Silicate-silicone Plasters
6. Paint	• Ceresit CT 48 Silicone Paint • Ceresit CT 54 Silicate Paint • Ceresit CT 49 Silix XD® Nanosilicone Paint

Ceresit Ceretherm Wool Garage System

Characteristics

- Highly thermal insulation properties
- Acoustic insulation increase
- Easy and quick workability
- Providing easy application of EPS-boards
- No need of grinding and anchoring
- Adaptive for machine application
- Non-flammable according to fire classification PN-90/B-02867 (non-fire spreading) – A2 according to EN 13501-1

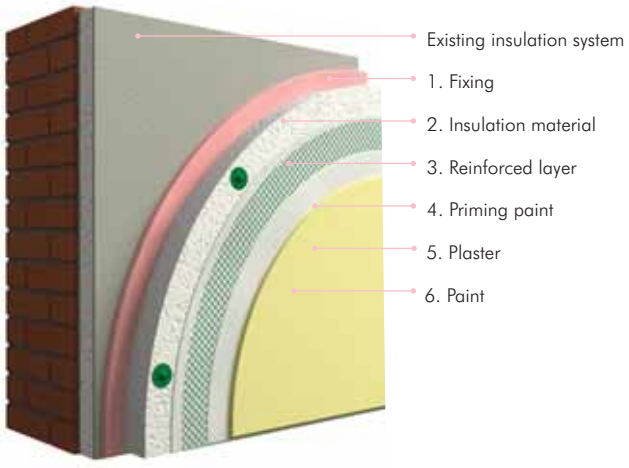
Strop
1. Fixing
2. Insulation material
3. Priming paint
4. Plaster

1. Fixing	• Ceresit CT 180 Adhesive Mortar for Mineral Wool or Ceresit CT 190 Adhesive and Reinforcing Mortar for Mineral Wool
2. Insulation material	• mineral wool
3. Priming paint	• Ceresit CT 16 Acrylic Paint
4. Plaster	• Ceresit CT 137 Mineral Plaster

Ceresit Ceretherm Reno System

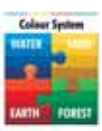
Characteristics

- has obtained ITB (Instytut Techniki Budowlanej - Institute of Construction Technology) approval no. AT-15-8077/2009 - issued: 20 August 2009 + appendix no 1 of 1 June 2010
- should be applied in cases when:
  – the existing layer of thermal insulation is too thin
  – damages of the external layer are too severe to fix them.



1. Fixing	• Ceresit CT 84 Express PU-adhesive for EPS-boards, Ceresit ZS Adhesive Mortar, Ceresit ZU Universal Mortar, Ceresit CT 83 Adhesive Mortar, Ceresit CT 85 Adhesive and Reinforcing Mortar, Ceresit CT 85 Adhesive and Reinforcing Mortar – Winter or Ceresit CT 87 '2in1' White Adhesive and Reinforcing Mortar • plastic anchors Ceresit CT 330 or CT 335 with a steel core or others classified as ETAG 014 • number of fasteners and their arrangement should be determined by an architect, based on the substrate analysis and load calculations
2. Insulation material	• EPS-boards marked Ceresit CT 315 (or others classified as PN-EN 13163:2004) with thickness up to 25 cm, with a flat or shaped end face
3. Reinforced layer	• glass fibre fabric Ceresit CT 325 with a density of 145 g/m^2 and above • Ceresit CT 87 '2in1' White Adhesive and Reinforcing Mortar or Ceresit CT 85 Adhesive and Reinforcing Mortar
4. Priming paint	• N/A if Ceresit CT 87 '2in1' mortar is used • Ceresit CT 15 Silicate Paint for silicate plasters (if Ceresit CT 85 mortar is used) • Ceresit CT 16 Acrylic Paint for mineral, acrylic, silicate-silicone and silicone plasters (if Ceresit CT 85 mortar is used)
5. Plaster	• Ceresit CT 35 'rustic', Ceresit CT 137 'stone', Ceresit CT 34 Mineral Plasters (white and paintable) • Ceresit CT 60 'stone', Ceresit CT 63 'rustic', Ceresit CT 64 'rustic' Acrylic Plasters • Ceresit CT 72 'stone', Ceresit CT 73 'rustic' Silicate Plasters • Ceresit CT 74 'stone', Ceresit CT 75 'rustic' Silicone Plasters • Ceresit CT 174 'stone', Ceresit CT 175 'rustic' Silicate-silicone Plasters • Ceresit CT 710 VISAGE Natural Stone Plaster* • Ceresit CT 60 VISAGE Acrylic Plaster* • Ceresit CT 720 VISAGE Wood Plaster* • Ceresit CT 730 VISAGE Luminous Plaster*
6. Paint	• Ceresit CT 42, CT 44 Acrylic Paints • Ceresit CT 48 Silicone Paint • Ceresit CT 54 Silicate Paint • Ceresit CT 49 Silix XD® Nanosilicone Paint • Ceresit CT 740 VISAGE Metallic Paint* • Ceresit CT 750 VISAGE Opal Lack*

* special product possible to be applied with the above system



Ceresit Ceretherm Repair System

Characteristics

- Has obtained ITB (Instytut Techniki Budowlanej - Institute of Construction Technology) recommendation
- Should be applied in the case of following damage appearing on the facade:
  – cracks,
  – microbiological contamination,
  – dirty wall surface,
  – polystyrene slab faulting,
  – tear of the reinforced mesh.

Cracks

Gaps and cracks can appear in the plaster either because the thermal insulation system has been executed using materials of poor quality, owing to faulty performance, or problems connected with building statics, such as settlement. In such events, it is necessary to find the cause of the problem before starting repair work, and also to check whether there is a gap or stabilized crack.

Microbiological contamination

Biological contamination, a growth of fungi, moss and algae, can appear if the plaster is inappropriately chosen in relation to the facade's exposure to biological contamination. It can also be caused by insufficient protection of biocide additives, or active substances being washed away from the plaster during its life.

Dirty wall surface

A few years after applying a new plaster, the facade can become dirty, which is caused by contaminants (such as filth, dust) accumulating on the surface. The level of contamination depends on the type of plaster and outside weather conditions. Dirt is visible mainly at the end of windowsills, flashings, balconies etc.

Slab faulting

Slab faulting may occur and cracks may appear on the facade when the number of mechanical fasteners is not enough (or there aren't any) in relation to the wind suction force (they appear mainly in the corners of the building).

Tear of the reinforced mesh

The reinforced layer is extremely important for the durability of the whole system, because it is the factor determining the system's resistance. The proper thickness of the mortar combined with the proper application of a glass fibre mesh, guarantees the facade will be durable and resistant, especially in those places which are subject to mechanical impacts. Reinforced mesh can lose its protective characteristics in the following situations: when the reinforced layer hasn't been applied thoroughly (it is too thin), when the overlaps of mesh are insufficient, when its weight is too low, or when it is not resistant to alkaline environments.

Ceresit Plasters

This is the decorative plaster that makes the top layer of every thermal insulation system, whatever insulating material is used 'inside'. There are a few main plaster types, differing from each other with the chemical constitution:

- acrylic plasters,
- silicone plasters,
- silicate plasters,
- mineral plasters,
- silicate-silicone plasters.

All these are available in two grain structures:

- 'stone',
- 'rustic'.

Additionally, depending on the grain size, the plaster has a different thickness and appearance.

Apart from its decorative purpose, the role of plaster is to protect the insulation material from weather conditions and any damage as well as to cooperate with other components of the system within the performance of physical parameters.

Plasters and paints with BioProtect formula
Durability and aesthetics for years

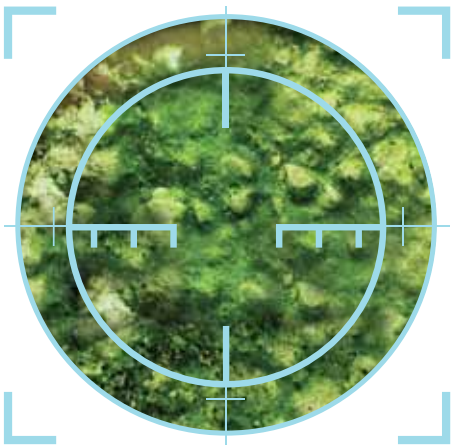
Protection and aesthetics

The dusty and neglected facades of buildings are usually the result of excessive atmospheric pollution, human activities and their interference with the environment. Dirty-gray precipitation often appears on the surface of building walls. This is already the result of the development of microorganisms – fungi and algae – which are invisible to the naked eye.

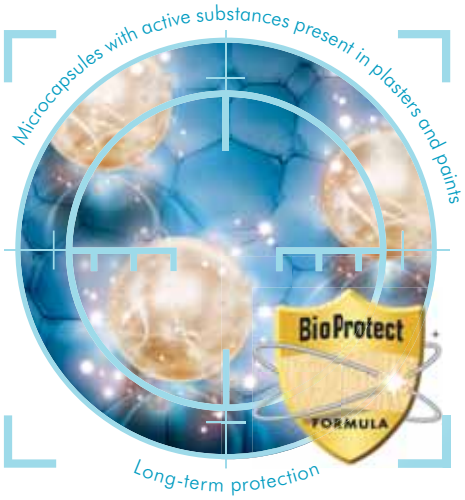
Microorganisms can only grow in specific conditions favourable to them. Unprotected plaster is exposed to their action and beyond the negative impact on the aesthetics of the facade, also entails the danger of its inevitable degradation.

The use of Ceresit plasters and paints with the BioProtect formula on the building facades protects elevations for many years and helps to maintain their aesthetics. Active substances existing in the products actively protect the facades against the development of microorganisms and their destructive influence. The durable and beautiful appearance remains pleasing to the eye for years. The effectiveness of the BioProtect formula products was confirmed by the appropriate permission of the Minister of Health.

Unsecured plaster with biological contamination.
Dirty and unaesthetic facade.



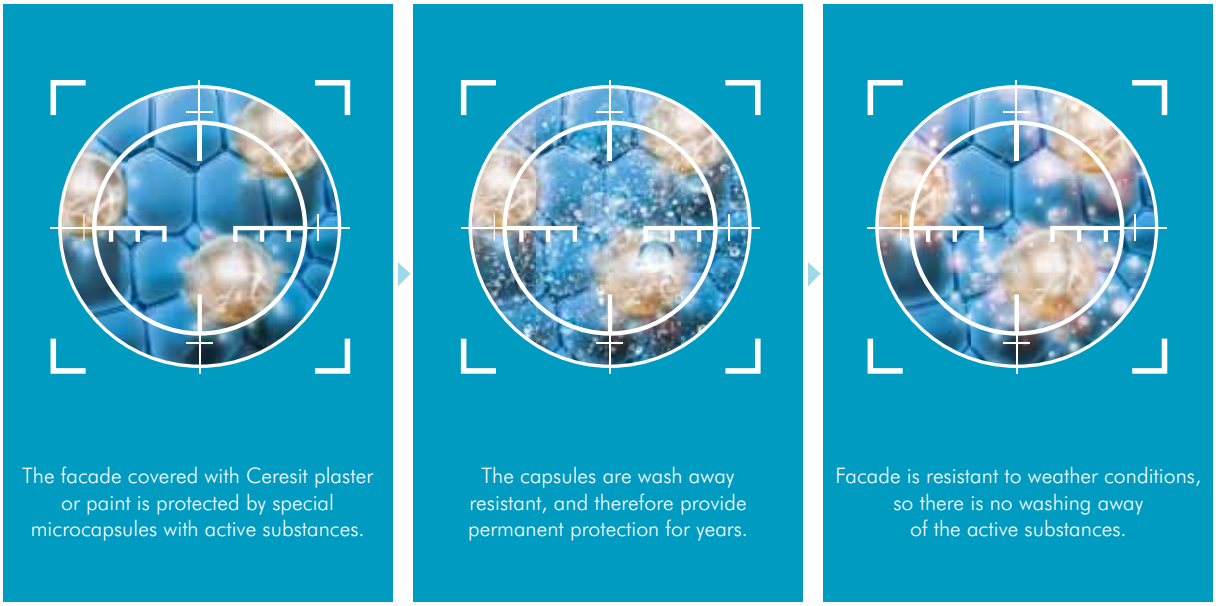
Ceresit plaster with BioProtect formula.
Durable and aesthetic facade.



How does it work

BioProtect formula works by employing microcapsules with active substances present in Ceresit plasters and paints.

Active substances, enclosed in the microcapsules, have a high resistance to being washed off, which in turn leads to a gradual substance release and works effectively in changing weather conditions. The active substances are released in a controlled manner for many years. This means that Ceresit products significantly extend the facade durability.



Additional protection

Ceresit plasters and paints also have antistatic properties, obtained through the Anti Dirt Pick-up effect, which protects the surface against the excessive deposition of pollutants. On the surface of the plasters and paints settles less pollution, so the facade is not proper environment for the development of fungi and algae.

Ecology and safety

The process of the gradual release of active substances is fully ecological. The form and character of microcapsules, with the active substances, is developed in such a way as not to affect the soil or sources of the drinking water. The safety of their use was confirmed by the appropriate permission of the Minister of Health. This also means that the active substances release process is completely safe for humans, animals, and the environment.

Plasters technical parameters

European standards of the EN 1062 series define the following values for thermal insulation systems:

- absorbency,
- water vapour permeability,
- self-cleaning ability.

The systems are also classified according to their water permeability coefficient:

Class	Water permeability coefficient W [kg/m² x h 0.5]	Classification
I	below 0.1	resistant to water
II	0.1-0.5	water repellent
III	0.5-2.0	water limiting
IV	above 2.0	water permeable

The diffusivity of a facade system is determined by:

μ Coefficient of relative diffusion resistance stating how many times water vapour diffusion resistance in the coat exceeds water vapour diffusion resistance in still air gap/layer of the same obstacle to thickness than temperature

Sd Relative diffusive resistance, i.e. thickness of still air gap, which constitutes the same obstacle to water vapour permeation than the given material [m]

d Layer thickness [m]

Sd $= \mu$ x d [m]

Classification of facade materials according to their Sd coefficient:

Type of coating system	Loss of whiteness degree [%]	Sprinkling angle [°]
Silicate-organic system	0.11	79
Silicone system	0.19	120
Acrylic system	2.12	104

Under standard operating conditions of the elevation, the resistance of decorative layer (plaster, paint) to the dirt is very important. This is specified by the degree of whiteness loss of top layer materials. Determining parameter of susceptibility to dirt is the contact angle of water meeting the coating surface. The higher the angle, the coating is more hydrophobic and the water carrying dirt penetrates into the structure of the substrate harder.

The criterion for differentiating the various plasters is their base binder. The binder in mineral plasters is cement, the binder in acrylic plasters are polymers (acrylic resins), the binder in silicate plasters are water solutions of potassium silicate and polymer dispersions, the binder in silicone plasters are silicon resins combined with acrylic or acrylic-styrene resins.

The essential differences between particular types of plasters can be described as follows:

- mineral and silicate plasters are characterised by a relatively low diffusion resistance,
- acrylic and silicone plasters have a low absorbency.

Below the characteristics of different plasters according to their binders are summarized.

Flexibility

- In the acrylic and silicone plasters flexibility compensates for shrinkage is greater than in the mineral and silicate plasters.

Absorbability

- Acrylic and silicone plasters contain significantly higher amount of polymers that seal the system and reduce water absorption, what increase mechanical strength.
- In the mineral and silicate plasters absorption is limited by the addition of hydrofobisators.

Resistance to dirt

- Acrylic and silicone plasters get naturally dirty due to environmental pollution, resulting in setting of dust on the surface of the plasters. With low water absorption of these plasters, the dirt settles only on the surface and in a great degree is self-cleaned with rain.
- Mineral and silicate plasters get naturally dirty with the same intensity, but because of the open structure, impurities are able to penetrate the plaster microstructure, and thus are harder to wash off by rainfall.

Maintain easiness

- As a result of low water absorption of acrylic and silicate plasters contamination is located on their surface and can be removed by washing elevation with water under pressure.
- With the possibility of deposition of pollutants in the microstructure of mineral and silicate plasters, in order to refresh the appearance of the facade, it is necessary to repaint the surface.

Large variety of colours

- Acrylic, silicate, silicone and silicate-silicone plasters can be tinted in a virtually unlimited number of colours.

The occurrence of discolouration

- Acrylic, silicone, silicate and silicate-silicone plasters do not contain cement or lime, so in the case of unfavourable conditions appearing during application or soon after its completion, there is no risk of discolouration.

Colour durability

- Acrylic, silicone and silicate-silicon plasters due to lower alkalinity are characterized by increased colour stability (slower fading with time).
- Silicate and mineral plasters due to the high alkalinity are characterized by moderate resistance to colour fading.

The resistance to microbiological contamination

- Thanks to the unique BioProtect formula, acrylic and silicone plasters are well protected against microbiological contamination. In addition, the closed structure impedes the growth of fungi and algae.
- Silicate and mineral plasters are characterized by very high alkalinity (pH>12), which forms a natural barrier against the development of microorganisms on the elevation surface. The addition of a BioProtect biocid agent provides additional protection against the development of microorganisms on the elevation surface.

Silicate-silicon plasters

- These plasters are a hybrid combination of two binders – silicone resin and silicate. By combining these two materials the plaster with high vapour permeability and at the same time with low water absorption was obtained. Increased alkalinity enhances the natural protection against growth of microorganism, and the compact structure of the polymer prevents the penetration of dirt particles in the structure of the plaster.

Comparison of physical properties of Ceresit plasters

Ceresit plasters	Vapour permeability	Water nonab-sorbability	Dirt resistance	Resistance to microbiological contamination	Durability
Mineral plasters CT 34, CT 35, CT 137	+++++	+	+	+++++	+++
Acrylic plasters CT 60, CT 63, CT 64	++	+++	++	++++	+++
Silicone-silicate plasters CT 174, CT 175	+++	+++	+++	++++	++++
Silicate plasters CT 72, CT 73	+++++	++	++++	+++++	+++++
Silicone plasters CT 74, CT 75	++++	+++++	+++++	++++	+++++

Ceresit Plasters textures

The choice of plaster texture and the technique of application influence the final appearance of the facade. One can decide between more definite rustic texture and a subtle stone texture. The expected effect is obtained by choosing the adequate grain size and the floating technique, which can be vertical, horizontal or circular.

I. 'Stone' textures

Materials with a high grain content of the same fraction ensure a more homogeneous appearance. When using a plastic float, they obtain the texture of dense aggregate, the so-called 'stone' texture. This plaster provides an elegant surface. When choosing an appropriate grading, the plaster can reinforce the building's architectural style.

Stone texture produced with **Ceresit CT 137** mineral plaster, grain size 1.5 mm, obtained by floating with a plastic float

Stone texture produced with **Ceresit CT 60** acrylic plaster, grain size 1.5 mm, obtained by floating with a plastic float

Stone texture produced with **Ceresit CT 137** mineral plaster, grain size 2.5 mm, obtained by floating with a plastic float

II. ‘Rustic’ textures

A ‘rustic’ texture is obtained by floating the surface with a plastic float. During this process, aggregate grains contained in the material roll and scratch the plaster depending on the float’s direction of motion. Thanks to various floating techniques (vertical, horizontal, circular) the plaster can be textured according to individual wishes. Depending on the grain size, the texture can be fine or coarse.

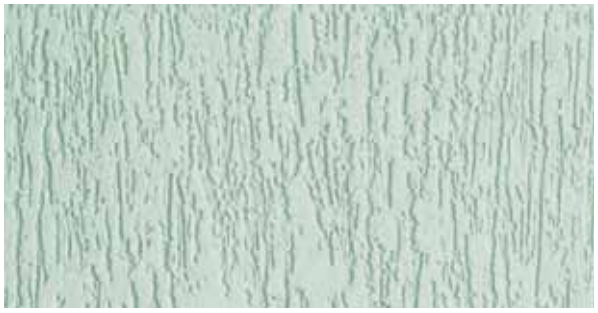
Rustic texture produced with **Ceresit CT 35** mineral plaster, grain size 3.5 mm, obtained by floating with a plastic float in one direction

Rustic texture produced with **Ceresit CT 35** mineral plaster, grain size 2.5 mm, obtained by circular floating with a plastic float

Rustic texture produced with **Ceresit CT 64** acrylic plaster, grain size 2.0 mm, obtained by floating with a plastic float in one direction

Rustic texture produced with **Ceresit CT 35** mineral plaster, grain size 2.5 mm, obtained by floating with a plastic float in one direction

Rustic texture produced with **Ceresit CT 64** acrylic plaster, grain size 2.0 mm, obtained by circular floating with a plastic float



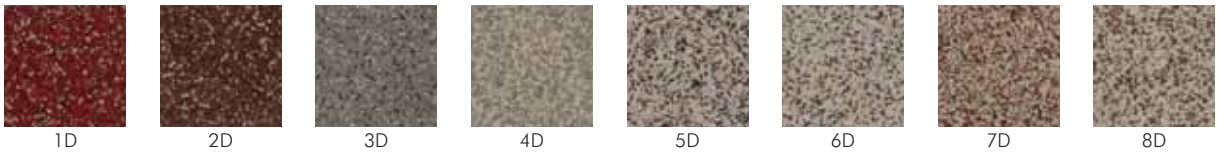
Rustic texture produced with **Ceresit CT 63** acrylic plaster, grain size 3.0 mm, obtained by floating with a plastic float in one direction

Rustic texture produced with **Ceresit CT 35** mineral plaster, grain size 3.5 mm, obtained by circular floating with a plastic float

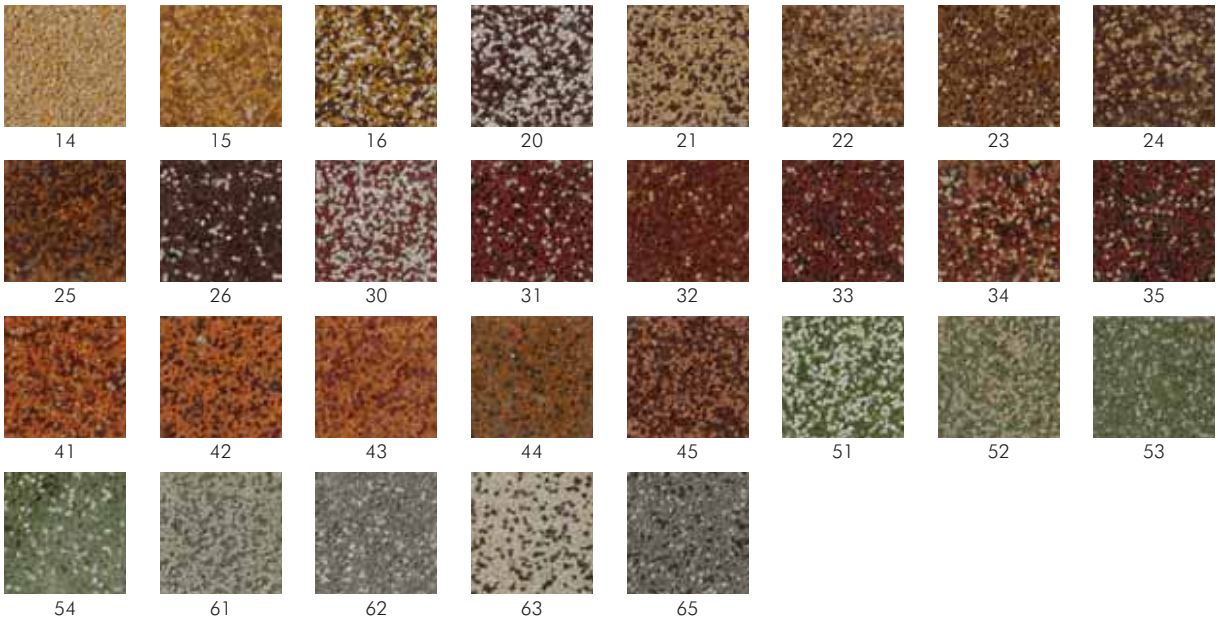
III. Colours of mosaic plasters

Ceresit CT 77 plasters are applied and smoothed with a metal float. Depending on the grading fraction, it is possible to produce a smoother or more intricate surface. Transparent resins are used a s a binder whereas coloured grit is used as a filler. After setting, the surface has a glassy colourful appearance which is easy to keep clean. Mosaic plasters are recommended for use on building pedestals, on the surface of balustrades as well as on window and door reveals and frames.

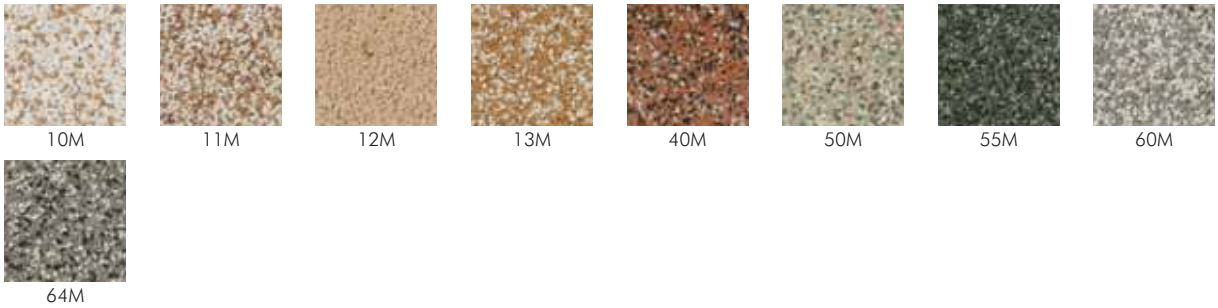
1. Mosaic plasters with fine grain 0.8-1.2 mm



2. Mosaic plasters with coarse grain 1.4-2.0 mm



3. Mosaic plasters with marble aggregates



Ceresit plasters types and characteristics

Type	Name	Structure and grain	Characteristics
Mineral	CT 34 (more information on p. 97) 	‘smooth’ structure	• vapour permeable (breathing) • hydrophobic • flexible • weather resistant • good adhesion • reinforced with microfibres • easy to use • requires mixing with water
	CT 35 (more information on p. 97) 	‘rustic’ structure grain 2.5 mm grain 3.5 mm	• highly vapour permeable (breathing) • highly durable and weather resistant • naturally resistant to bio-contamination (e.g. mould or moss) • hydrophobic • available in white and in version for painting • requires mixing with water
	CT 137 (more information on p. 98) 	‘stone’ structure grain 1.5 mm grain 2.0 mm grain 2.5 mm	• highly vapour permeable (breathing) • highly durable and weather resistant • naturally resistant to bio-contamination (e.g. mould or moss) • hydrophobic • possibility of mechanical application • available in white and in version for painting • equires mixing with water
Acrylic	CT 60 (more information on p. 98) 	‘stone’ structure grain 1.5 mm grain 2.0 mm grain 2.5 mm	• weather resistant • ready to use • low absorption and high flexibility • resistant to exploitation damages • vapour permeable (breathing) • BioProtect formula – resistant to mould, fungi and algae • colour stability • possibility of mechanical application • available in full colour range of Ceresit Colours of Nature®
	CT 60 Zima (more information on p. 99) 	‘stone’ structure grain 1.5 mm grain 2.5 mm	• possibility of application also in lower temperatures • ready to use • vapour permeable (breathing) • hydrophobic • weather resistant • BioProtect formula - resistant to mould, fungi and algae
	CT 63 (more information on p. 99) 	‘rustic’ structure grain 3.0 mm	• weather resistant • ready to use • low absorption and high flexibility • resistant to exploitation damages • vapour permeable (breathing) • BioProtect formula - resistant to mould, fungi and algae • colour stability • available in full colour range of Ceresit Colours of Nature®
	CT 64 (more information on p. 100) 	‘rustic’ structure grain 2.0 mm	
Silicate-silicone	CT 174 (more information on p.104) 	‘stone’ structure grain 1.5 mm grain 2.0 mm	• vapour permeable (breathing) • ready to use • low absorption • resistant to exploitation damages • highly weather resistant • BioProtect formula – resistant to mould, fungi and algae • colour stability • possibility of mechanical application • available in full colour range of Ceresit Colours of Nature®
	CT 175 (more information on p. 104) 	‘rustic’ structure grain 2.0 mm	
Silicate	CT 72 (more information on p.102) 	‘stone’ structure grain 1.5 mm grain 2.5 mm	• highly vapour permeable (breathing) • ready to use • highly durable – resistant to exploitation damages and cleaning • weather resistant • BioProtect formula – resistant to mould, fungi and algae • colour stability • possibility of mechanical application• available in full colour range of Ceresit Colours of Nature®
	CT 73 (more information on p. 102) 	‘rustic’ structure grain 2.0 mm	• highly vapour permeable (breathing) • ready to use • highly durable – resistant to exploitation damages and cleaning • weather resistant • BioProtect formula – resistant to mould, fungi and algae • colour stability • available in full colour range of Ceresit Colours of Nature®
Silicone	CT 74 (more information on p. 103) 	‘stone’ structure grain 1.5 mm grain 2.5 mm	• high dirt resistance • ready to use • highly flexible and impact resistant • high colour stability • highly durable • very limited absorption and high vapour permeability (breathing) • highly weather resistant • BioProtect formula – resistant to mould, fungi and algae • available in full colour range of Ceresit Colours of Nature®
	CT 75 (more information on p. 103) 	‘rustic’ structure grain 2.0 mm	
Mosaic	CT 77 (more information on p. 101) 	grain 0.8 - 1.2 mm grain 1.4 - 2.0 mm	• available in many colour compositions • ready to use • weather resistant • scrub resistance • easy to keep clean • BioProtect formula – resistant to mould, fungi and algae

Ceresit Paints

The role of facade paint, in addition to providing an aesthetic appearance of buildings, is the protection against external environmental influences. First of all, the paint protects the building from moisture deriving from rainfall or water vapour condensation. It is important that the paint, despite the low absorption, allows free transport of water vapour through the structure of insulation. Additionally, the paint should be characterized by high adhesion to the substrate and resistance to scratches and scrubbing. As the paint is the material used on the facade as the top layer, the quality of it determines the appearance and durability of the walls of the buildings.

The durability of the colour is achieved by low absorbability in combination with UV resistance and stability of pigments, binders and fillers. It is the paint absorbability that also determines the surface elevation susceptibility to dirt and to microbiological contamination. Using suitably formulated biocide composition increase the paint resistance to the development of microorganisms.

The characteristic features of paint coats are:
- **vapour permeability** – usually determined by the resistance to water vapour permeation, equivalent to the thickness of the still air gap Sd [m].
- **absorbency** – this is measured by the coefficient of capillary water absorption w24 [kg/m2h½].
- **mechanical resistance** – this is expressed by the number of cycles of wet scrubbing.

Depending on the binder type, the paints are of the following sorts: acrylic, silicone, silicate and nanosilicate. Each of these paints has different features, allowing for the choice that meet one's precise requirements.

The low diffusion resistance of facade paints allows the surface to dry and the water vapour to migrate unhindered from the interior of the building. This migration is caused by differences in the vapour pressure between the building's interior and its surrounding area. The biggest differences occur in the winter period where the indoor temperature differs considerably from the outdoor temperature. Facade walls with a high diffusion hinder the above described migration, thus causing the humidity trapped inside the walls to rise. As a result, the facade paint starts to flake off and peel – frequently already after the first year of application, in most cases accompanied by damage to the surface layer. This is the result of a high vapour pressure in the porous surface structure, caused by a rapid temperature increase on the outer wall surface in the spring and summer period.

At the same time, the facade coat should have the lowest possible absorbency to prevent wetting of the walls during heavy rainfall. Absorbent facade surfaces quickly become dirty and a breeding ground for microorganisms (such as algae or mosses). In addition, they are liable to be destroyed by aggressive substances (e.g. the so-called acid rain) and by frozen water due to the increase in volume. Other favourable features of a facade paint are easy cleaning and resistance to wear and tear.

The Ceresit paint offer meets all the aesthetical and technical requirements that are set by the thermal insulation market.

Ceresit paints types and characteristics

Type	Name	Characteristics
Acrylic	CT 42 (more information on p. 105) 	• low absorption • BioProtect formula - resistant to mould, fungi and algae • resistant to exploitation damages • weather resistant • available in full colour range of Ceresit Colours of Nature®
	CT 44 (more information on p. 105) 	• reduce carbonatization process of concrete • BioProtect formula - resistant to mould, fungi and algae • crack bridging • low absorption and high flexibility • resistant to exploitation damages • weather resistant • available in full colour range of Ceresit Colours of Nature®
Silicate	CT 54 (more information on p. 107) 	• highly vapour permeable (breathing) • BioProtect formula - resistant to mould, fungi and algae • highly durable - resistant to exploitation damages and cleaning • weather resistant • colour stability • available in full colour range of Ceresit Colours of Nature®
Silicone	CT 48 (more information on p. 106) 	• low absorption • BioProtect formula - resistant to mould, fungi and algae • vapour permeable (breathing) • dirt resistance • durable • highly resistant to UV and weather conditions • available in full colour range of Ceresit Colours of Nature®
Nanosilicone	CT 49 Silix XD® (more information on p. 108) 	• slight absorbance • BioProtect formula – resistant to mould, fungi and algae • excellent vapour permeability • self-cleaning (especially resistant to dirt) • high durability thanks to Silix XD® formula • crack bridging • highly resistant to UV and weather conditions • ticsotropic • for use in areas open for biological contamination (fungi, algae, etc.) • available in full colour range of Ceresit Colours of Nature®

Comparison of physical properties of Ceresit paints

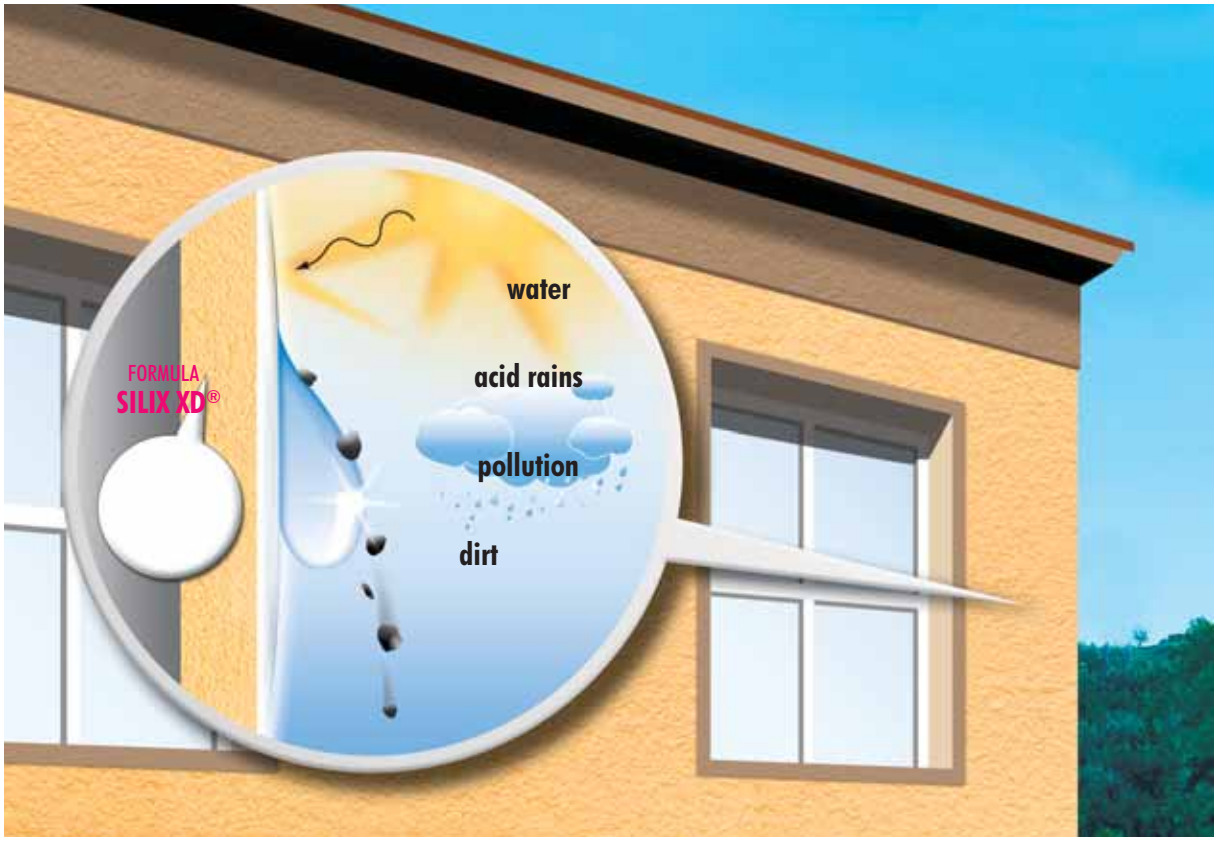
Ceresit paints	Vapour permeability	Water nonab-sorbability	Dirt resistance	Resistance to microbiological contamination	Durability
Acrylic paints CT 42, CT 44	++	+++	++	++++	+++
Silicate paint CT 54	++++	++	+++	+++++	++++
Silicone paint CT 48	+++	++++	++++	++++	++++
Nanosilicone paint CT 49 Silix XD®	+++++	+++++	+++++	++++	+++++

Nanosilicone paint CT 49 Silix XD®

Long-lasting facade guarantee

Nanosilicone paint CT 49 Silix XD® is designated to paint buildings' facades and interiors. Thanks to Silix XD® formula, the paint has the highest durability and resistance to harming influence of external factors such as water, dirt and biological corrosion. Thanks to its properties the paint can be widery used and is recommended to be applied also for historical buildings renovations.

Silix XD® formula makes the rain work as the 'natural wash' – with rain all the dirt is washed away, cleaning the surface of the wall. Effect – durable and clean facade for years.



Characteristics

- high durability and aesthetics of facades thanks to Silix XD® formula
- self-cleaning – ensures high resistance to dirt
- low absorbance
- high colour stability
- vapour permeability
- high resistance to UV and weather conditions
- resistant to biological corrosion (mould and algae) – BioProtect formula
- crack bridging – to be applied for renovation of thermal insulation
- available within Colours of Nature® colour palette

Silix XD® formula – eXtra Dur

Applied in the paint Silix XD® (short for 'eXtra Dur') formula makes the painted surface last longer. The formula is based on selected and modified silicone, acrylic and polysiloxane resins with special pigments and fillers additives. Thanks to these all, the following is provided:

- prolonged aesthetic effect
- long-term durability of painted surface
- crack-bridging (can be applied also for repainting of long-existing or under repair facades).

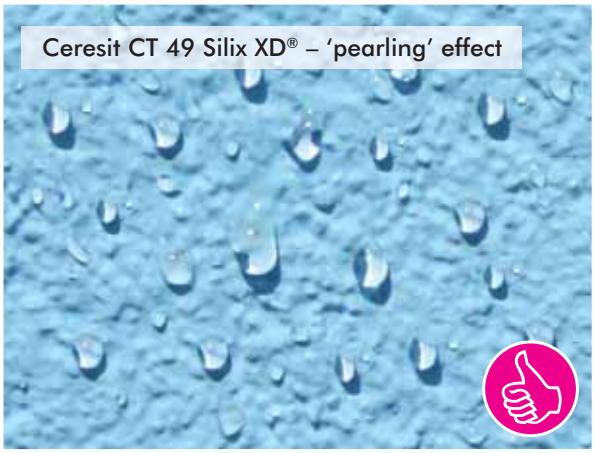
'pearling' effect imitates the nature: water does not soak in the structure of leaf

Hydrophobic and vapour permeability properties

Ceresit CT 49 Silix XD® efficiently protects the surface from water absorbance while at the same time it ensures fast moisture evaporation from the substrate. This is why the walls of the building do not get moistured – they stay dry and healthy.

dirt gets into paint structure

When facades are painted with ordinary paint, all pollution gets into the paint structure causing visible dirty patches and biological corrosion (fungi, algae, etc).



water does not soaks in the structure of paint

- 'pearling' effect – Silix XD® formula minimizes the risk of water and dirt absorbance into the paint structure
- high vapour permeability
- fast moisture evaporation from the substrate
- surface self-cleaning properties

Colours of Nature® Plasters and Paints

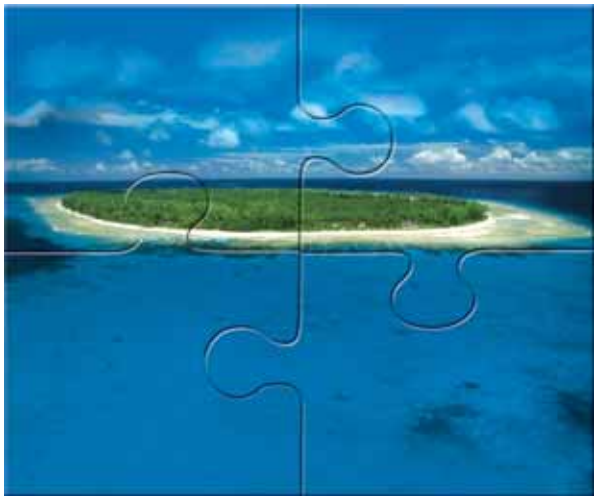
To be experienced at your very own house

The finish colour of the facade has its definite importance in the final effect of thermal insulation work. Ceresit Colours of Nature® concept made the vast offer of Ceresit plasters and paints better structured and therefore easier for investors to go through and choose the right colours.

Ceresit Colours of Nature® derives from the beauty of nature, rich in its opulence of colours from delicate blues of the sea to intensive shades of green. That is why the colours are presented in four clear theme groups – WATER, SAND, EARTH and FOREST. Investors can choose from 211 colours, divided by colour gradations from the lightest to darkest.

Ceresit Colours of Nature® is the best way of creating a facade which will work in perfect harmony with the surrounding or will clearly be different and distinguishing. These colours are created to emphasize the character of newly built or renovated buildings and to influence the well-being of its owners.

Colours of Nature®



Oceans and seas, freshness and clearness.
The memories of carefree holidays… This is the blue colour that brings vitality and energy into your life. Ceresit gives you a wide choice of shades from very fair blues to most intensive ones. Enjoy the blue of Pacific, Baltic or any other region, depending on your very own choice.

California beaches and vast deserts of the world were the inspiration for this group of colours. Perfect choice for those who like warm, friendly yellows and fair browns. These are the colours that inspire optimism and joy of life and bring the sunny memories. Enjoy your house in one of the sandy shades!

Andalusia browns and lavender fields of Provence are the examples of this largest Ceresit colour group. It represents love for nature and tradition and the basic need of being close to the earth around you. This is the art of feeling secure and in peace with the world. Ceresit EARTH colours are the good choice for those who want to become a part of the surrounding rather than contrast to it. These are authentic colours which are always beautiful, regardless of quick fashions and moods.

Peace, harmony and love for the nature. These are the greens of Amazonia forests, Toscana hills and many other beautiful regions of the world. Fair or dark, pure green or bluish – all these colours find their lovers. Designed by Ceresit will make your house a part of the nature and a positive element of your local landscape.

Colours of Nature®

To be experienced at your very own house


EARTH
FOREST


Colour System
WATER
SAND
EARTH
FOREST

VISAGE Plasters and Paints

Contemporary design loves natural materials

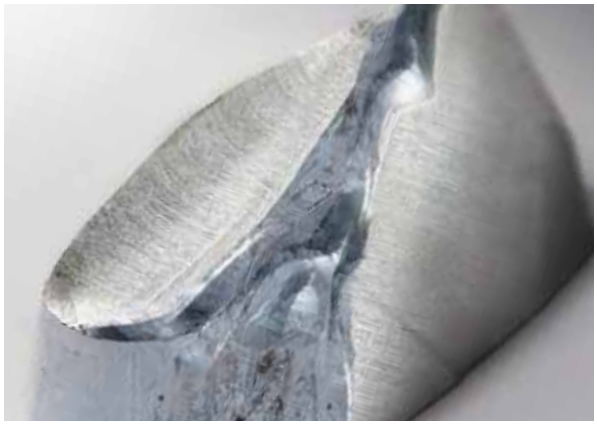
The technological innovativeness of Henkel solutions together with their knowledge of contemporary architecture trends encouraged us to launch new line of plasters and paints: **VISAGE**, inspired by the beauty of natural materials, such as stone, wood and metal.

VISAGE means image and appearance, referring to our main goal which is giving the investors ideal materials enabling them to implement the most dignified and elegant projects. This is a perfect answer to the challenges of contemporary design that value minimalism and simplicity without being scared of innovative and experimental ideas.

While the real materials prove to be expensive, difficult to transport and work with, VISAGE plasters and paints allow for the problem-free obtaining of an aesthetic and durable facade with a natural effect.

VISAGE materials work on any substrate – thanks to being lightweight they do not affect the building's structure, and they are resistant to weather conditions, UV, dirt and biological contamination.

To simplify the selection process of products in the wide VISAGE range, we have divided them into three main categories representing three key groups of natural resources: stone, wood and metallic materials. Within each group we offer a rich choice of colours and textures that allow the bringing to life of most individual concepts.



Natural effect plasters and paints

Stone effect facades

Wood effect facades

Metal effect facades

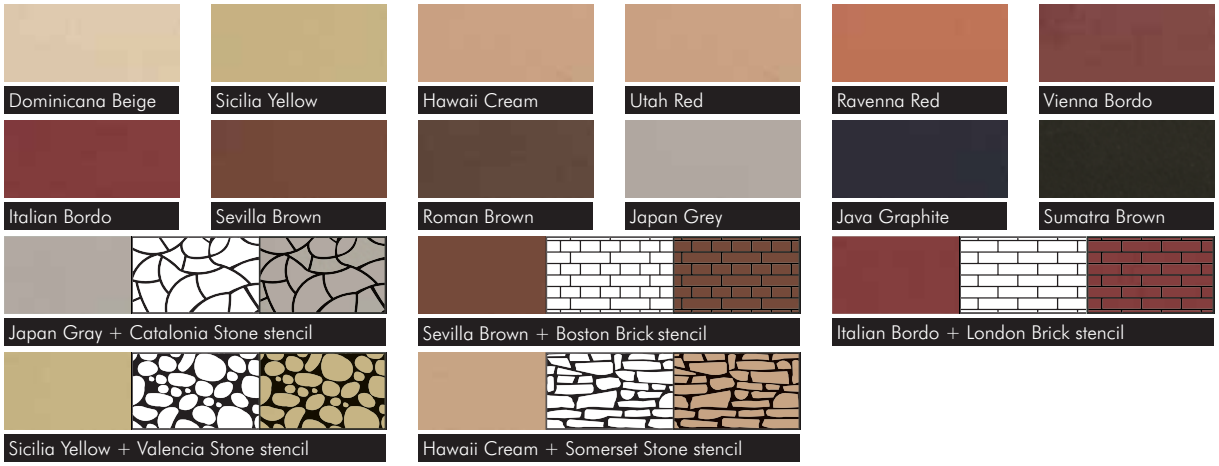
Stone effect facades

Within stone effect plasters we offer wide range of sandstone and granite counterparts in many colours. In the granite effect palette one will find anything from sparkled black and dotted greys to fair brown and beige shades, while sandstone effect plasters are available in colour range from creamy beige through reddish to grey. The VISAGE range also includes special products that can create the effect of various stone and brick patterns to be applied on a building's facade or anywhere in its surroundings, for example, on a fence.

CT 710 VISAGE Natural Stone Plasters (Granite)

CT 710 VISAGE Natural Stone Plasters (Sandstone)

CT 60 VISAGE Acrylic Plasters – colours and stencils



The VISAGE products allow to create the effect of various stone and brick patterns. The desired brick effect can be obtained by applying two products: any colour of CT 60 0,5 mm acrylic plaster (of the VISAGE and Colours of Nature® palette) and one of 2 unique stencils designed for brick patterns. The desired stone effect can be obtained by applying two products: any colour of CT 60 0,5 mm acrylic plaster (of the VISAGE and Colours of Nature® palette) or Ceresit CT 710 VISAGE Natural Stone Plaster (sandstone) and one of 3 unique stencils designed for stone patterns.

Wood effect facades

Wood plays a key role in contemporary design. This natural material carries both insulating and aesthetic properties, while at the same time complying with modern pro-ecological trends in architecture. Depending on the project, wooden facades ideally create big surfaces of modern apartment estates and commercial buildings as well as the smaller facades of family houses.
The VISAGE line is a perfect answer for everybody who is looking for advanced materials which can re-create the beauty and elegance of natural wood. They can form eye-catching details, emphasising the unique finish of the house.

visage

CT 720 VISAGE Wood Plaster

Wood Plaster

To obtain the desired wood effect, two products must be applied. One is the CT 720 Wood Plaster creating an authentic looking wood texture by pressing silicone templates, another is the CT 721 Wood Colour Impregnate giving the final wood colour shade. Within CT 721 you have a choice of 6 different colours to create your dream wood effect facade: 2 pine shades as well as oak, teak, walnut and wenge colours.

CT 720 VISAGE Wood Plaster + CT 721 VISAGE Wood Colour Impregnate

Iberia Pine

Norway Pine

Irish Oak

Bengal Teak

Canada Walnut

Kongo Wenge

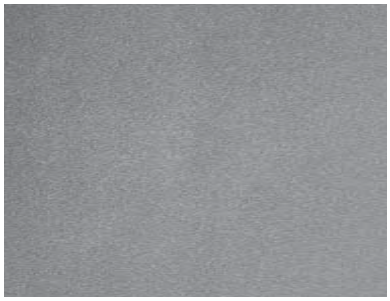
Metal effect facades

With modern architecture, traditional materials are not the only source of inspiration. More and more often contemporary projects use vibrant shiny components, representing the newest, dynamically changing trends in architecture.

Within the VISAGE palette, there is a choice of metal, luminescent and opal effect products that turn any ideas into a uniquely original facade. What is more, advanced technology provides a long-lasting, resistant effect.

visage

CT 740 VISAGE Metallic Paints



Australia Silver

Iceland Silver

American Gold

CT 730 VISAGE Luminous Plasters

Day look

Night effect

The intensity of the luminescence depends on abutting energy sources and their intensity. Therefore this effect is time-bound, as is the case with any other luminous products.

CT 750 VISAGE Opal Lack

African Glow (applied by brush on Ceresit Colours of Nature® Kalahari 1 colour)

Arctic Glow (applied by roller on Ceresit Colours of Nature® Etna 1 colour)

The final result is affected by the colour of the substrate and application method (by brush or roller). It gives an almost unlimited choice of final colour variations.

Ceresit Ceretherm VISAGE System

VISAGE products are a part of the professional Ceresit Ceretherm insulation system and they are certified with suitable technical approval. Additionally, VISAGE is compatible with other Ceresit systems thanks to allowing for the use of all EPS-boards adhesives deriving from the vast Ceresit offer. All in all, VISAGE guarantees perfect insulation properties, the facade durability and the aesthetic effects tailored to the individual taste of every customer. The system gives comfortable indoor climate conditions – pleasant coolness in summer and cosy warmth in winter. The advanced and efficient technology protects the building from heat loss, leading to higher energy saving and lower bills as well as reducing the consumption of natural resources.

Design and construction recommendations

- Thermal insulation should be installed in dry conditions (no rainfall, relative air humidity below 80%).
- It is recommended not to work on surfaces directly exposed to sunshine, and the layers should be protected against rainfall and strong wind. It is also recommendable to install a dense protection mesh along the scaffolding.
- The ambient temperature should be between +5 and +25°C. An exception are coloured mineral plasters which can be applied from a minimum temperature of +9°C upwards.
- The distance between the insulation board surface and the scaffolding cannot make the floating of the plaster difficult.
- Hanging scaffolding are not recommended because of the risk of mechanical damage.
- If thermal insulation work is done in mild winters, it is indispensable to protect the scaffolding. If, however, a drop in temperature below +9°C has been forecasted for 3 consecutive days, coloured mineral plasters should not be applied.
- In the case of **Ceresit Ceretherm Winter System** at each layer application, there must not be any frost, ice or snow.
- Working with **Ceresit Ceretherm Winter System** allows for outside temperatures from 0 to +20°C and a relative air humidity level below 80%. During insulation applications it is absolutely necessary to use protective scaffolding shields. 8 hours after application the materials of **Ceresit Ceretherm Winter System** are resistant to temperature drop to the level of –5°C. If for next three days the temperature is forecasted to drop even more, the application should not be continued.
- Flashings should protrude by a minimum of 40 mm from the plaster end face and be protected efficiently from rainfall.
- While applying the plaster on one surface, work should not be interrupted and proceed on neighbouring scaffolding levels – provided that the same amount of water is dosed.
- The natural fillers contained in the plaster may cause differences in the plaster appearance. Therefore, it is necessary to use only material with the same production batch number on one surface (the batch number is indicated on every package).
- After application, the plaster should be protected against rain (scaffolding protection) for at least 1 day – colourful mineral plasters for at least 3 days. This applies to a temperature of +20°C and relative air humidity of 60%. In less favourable conditions, slower setting of the plaster must be taken into account.

What are the most common mistakes in the application of ETICS

These are the most common mistakes made when installing thermal insulation:

- Lack of information concerning the insulation of specific facade elements such as architectural details and flashings. Missing specification of the type and number of mechanical fasteners required per 1 m^2. On the one hand, this provides the building contractor with more freedom of action, but on the other hand increases the scope of his responsibility. Inaccurate documentation may cause a higher expenditure than originally planned. Unfortunately, individual buildings are most frequently insulated without any documentation whatsoever!

- The contractors do not pay enough attention to assessing the geometry of walls: their smoothness and vertical deviation. Thermal insulation provides an opportunity for 'straightening out' a previously erected building by making use of system-based technology. This, however, requires the use of levelling mortars, plasters, a larger consumption of adhesive mortar and even deviations from the normally used materials, e.g. by increasing the thickness of the thermal insulation boards.

- Sometimes, the ETICS thermal insulation technology makes use of materials from different manufacturers. This type of non-system solution may result in serious consequences. Building Research Institutes grant a Technical Approval to material systems after having carried out appropriate verification tests. However, the interaction of materials originating from various systems has not been tested! When it becomes known that special materials have been used for a solution that are not included in the system, this may lead to the rejection of potential complaints and loss of warranty.

- Before fixing thermal insulation boards, the substrates should be cleaned in order to remove dust, algae etc. whereas highly absorbent substrates should be cleaned. This procedure, however, is not always observed. The use of high-pressure cleaners is not common yet.

- Mortars are sometimes applied by using only the 'spot' method. In addition to reducing the bonding strength, the unsupported board edges tend to bend, thus making it harder to properly perform the following work steps.

- Thermal insulation boards are sometimes pasted without strapping (especially on the building edges). In addition, the amount of reinforcing mesh applied to the facades is not sufficient.

- Failing to polish foamed polystyrene board offsets with high-grade sandpaper and to fill the board contacts/ edges with mortar result in shadows visible when side-lighting the wall and stains on the finishing coating.

- Mechanical fasteners are improperly fixed. A fastener head that is sunk too deeply causes damage to the thermal insulation boards whereas a fastener that is set too shallow is not strong enough to hold the board in place. The resulting protrusion becomes visible and degrades the reinforced layer.

- Failure to fill the casing gaps and sheet metal fittings with an acrylic sealant to prevent rainwater penetration underneath the thermal insulation boards.

- Failure to paste extra diagonal mesh patches on the corners of openings (e.g. windows) may result in diagonal cracks in these spots. The lack of additional mesh within a distance of up to 2 m from ground level is conducive to damage caused by accidental mechanical impacts.

- Inadequate thickness of the reinforced layer, or even worse, 'dry-fixed' glass fibre mesh – that means without a previously applied mortar bed – weakens the protection properties of the insulation material and adversely affects the durability of the rendering layer.

- Inadequate number of plaster applicators when producing facade layers. The work should be organized in such a way that it can be simultaneously done on a minimum of 2 or 3 scaffold levels. This is the only way to effectively hide plaster joints. Prior to starting any plastering work, spots or areas should be indicated where plaster joints will not be too disturbing (by disrupting the uniform appearance of the facade), e.g. within the outlet of pipelines.

- When failing to provide protective scaffold shields, the plaster may be either washed off or discoloured by rain. The shields are also required in sunny conditions as they reduce the drying speed of thin-layer materials and provide good protection for fresh plaster against dusty winds.

Ceresit renovation Systems for ETICS

The technology of External Thermal Insulating Composite Systems (ETICS) has been used for more than 50 years. The first Ceresit insulations of this type were only applied in the early sixties. The vast majority of these early developed systems are still functional today, although a number of the residential and industrial buildings were subjected to the thermal renovation process. Any problems concerning the technical shape and aesthetic appearance of facades equipped with ETIC – type systems are caused by numerous factors. They result from mistakes that may have been made at any stage of the system execution such as material manufacture, system completion process and also its later maintaining practice.

The faults that are visible either on facade surfaces or inside the building on its walls may originate from one of many reasons and come from any element of the system. Therefore, from an insulation system durability point of view, annual technical inspections are of utmost importance and required by local laws and all ETICS-concerned technical bodies. In the majority of cases, early detection and removal of the causes of these defects is the least expensive and the most effective method for ensuring the optimum performance of an insulation system.

As there are many combinations of facade fault reasons, it is not possible to describe each of them separately. It also has to be taken into account that buildings differ from each other with the building method, construction, surroundings, insulation system types and the art of its application, therefore it is vital to analyse all the system faults individually. That is why the individual approach is needed, each time requiring the detailed inspection and field tests. To meet these requirements, Henkel has arranged the team of highly specialised technical advisors. They are available to customers and happy to offer their advise at every stage of the investment execution and help in choosing the right repair system.

The following faulty elements can be responsible for damage in insulation systems:

- groundwork and construction of the building,
- method of insulation montage (adhesive mortar, anchors),
- quality of reinforced layer (adhesive mortar and mesh),
- quality of finishing surface,
- method and execution of architectural details (dilatations, eaves, cornices).

To satisfy market expectations within the complementarity of solutions, Henkel offers two systems: Repair and Reno, with specially selected products sets, which are tailored to effective repair and revitalisation of damaged insulation systems.

Examples of problems and proposed solutions

Substrate

Fault	Reason	Repair	Solution
moisture below the system	leaks in the ETICS or in flashing profiles	to seal the edges between e.g. window frames and ETICS, correction of the position and shape of the protection profiles	Ceresit acrylic silicone or silicone or CS 29 polyurethane sealant
	too low vapour permeability of ETICS	recalculation of the hygrothermal condition of the existing wall, replacement (depending on calculation results) of the plaster or whole system with a lower Sd	'Ceresit Konstruktor 3.7' calculation software; Ceresit Ceretherm Popular, Ceresit Ceretherm Classic, Ceresit Ceretherm Premium, Ceresit Ceretherm Ceramic, Ceresit Ceretherm Express, Ceresit Ceretherm VISAGE, Ceresit Ceretherm Reno, Ceresit Ceretherm Wool Classic, Ceresit Ceretherm Wool Premium, Ceresit Ceretherm Wool Garage Systems with silicate, silicone or mineral plasters
delaminations, stratifications	too low (or even not tested) load-bearing capacity of the substrate	to analyse the location of substrate imperfections; additional, mechanical fixing with new mesh and plaster, or removal of the whole ETICS including non-load-bearing parts of the substrate, restoration of the substrate, application of a new ETICS	Ceresit Ceretherm Popular, Ceresit Ceretherm Classic, Ceresit Ceretherm Premium, Ceresit Ceretherm Ceramic, Ceresit Ceretherm Express, Ceresit Ceretherm VISAGE, Ceresit Ceretherm Reno, Ceresit Ceretherm Wool Classic, Ceresit Ceretherm Wool Premium, Ceresit Ceretherm Wool Garage Systems: plugs Ceresit CT 330 lub CT 335; substrate preparation: Ceresit CT 17, CT 29, CC 81 (as additive for repair mortars)

Fixing of the insulation boards

Fault	Reasons	Repair	Solution
destruction of the adhesive mortar	too large unevenness of the substrate cannot be levelled off by the adhesive layer, insufficient adhesive amount	if no deformations are visible and the compressive strength of the adhesive is sufficient, install additional anchors and/or low-pressure PU foam, otherwise replace the whole system	Ceresit CT 330 or CT 335 anchors, Ceresit CT 84 Express PU-adhesive, complete Ceresit Ceretherm Popular, Ceresit Ceretherm Classic, Ceresit Ceretherm Premium, Ceresit Ceretherm Ceramic, Ceresit Ceretherm Express, Ceresit Ceretherm VISAGE, Ceresit Ceretherm Reno, Ceresit Ceretherm Wool Classic, Ceresit Ceretherm Wool Premium, Ceresit Ceretherm Wool Garage Systems
insufficient adhesion surface	incorrect water addition, working time of the adhesive was exceeded; insufficient quality of the board surface (corrosion, dirt), wrong adhesive applied, adhesive applied only in spots/too few spots on the substrate, gaps filled with normal PU foam (pressure, post expansion)		
functionless, ineffective mechanical fixing	lack or insufficient number of wall anchors or insufficient quality of anchor seating; plugs become functionless when the adhesive has already stopped working!	additional anchors, reinforcing layer and render	Ceresit CT 330 or CT 335 anchors, mortars Ceresit CT 85/ CT 87/CT 190/CT 325 mesh, all Ceresit plasters

Insulation layer

Fault	Reasons	Repair	Solution
gaps between boards	shrinkage of non-seasoned EPS	inject low-pressure PU foam into the gaps, additional mesh and plaster	Ceresit CT 84 Express PU-adhesive
	wrongly glued boards (boards 'hang on' anchors only)	inject Ceresit CT 84 Express PU-adhesive underneath the boards	

Reinforced layer

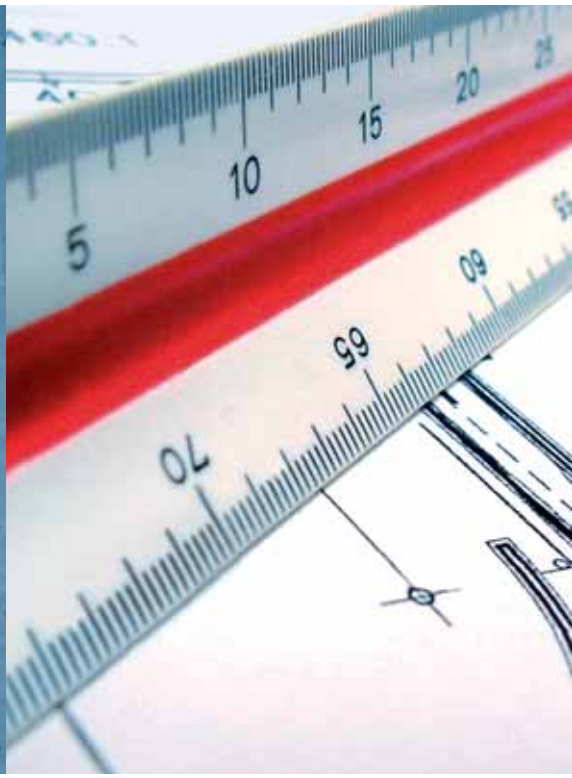
Fault	Reasons	Repair	Solution
lack of adhesion between boards and reinforced layer	insufficient quality of the board surface (corrosion, dirt), wrong mortar application (through the mesh), too high Sd value of the render	in case of small local areas: inject a dispersion adhesive; in case of bigger local damage: replace the mesh and plaster	Ceresit CT 84 Express PU-adhesive
gaps and cracks	– missing or insufficient overlaps of mesh – missing armouring of critical details – too thin layer of mortar – wrong mesh	additional reinforcement and render; crack filling with special acrylic	Ceresit CT 97 Acrylic for Plasters, CT 330 or CT 335 anchors, mortars Ceresit CT 85/CT 87/CT 190/CT 325 mesh, all Ceresit plasters and paints
stratifications	overdosage of water, frost damage	remove all destroyed materials, apply new reinforcement and render	mortars Ceresit CT 85/ CT 87/ CT 190/ CT 325 mesh, all Ceresit plasters and paints

Plaster

Fault	Reasons	Repair	Solution
surface contamination	pollution by air and rain	cleaning, depending on results impregnation or painting	Ceresit CT 13 impregnation (for minerals), paints compatible with the existing rendering facade plaster, cleaning with Ceresit CT 98 Concentrate for cleaning dirty surfaces
structural contamination	pollution by air and rain combined with higher water absorption of the plaster	mechanical removal of contaminations, protecting, painting (silicate)	Ceresit CT 99, CT 54
efflorescence, discolouration	work interruptions, contaminated or too humid substrate, application in wrong conditions	mechanical removal of efflorescence (hard brush), painting	paint compatible with the existing facade plaster
blisters	application on fresh primer/adhesive; application in not adequate temperature	removal of destroyed plaster, renewed application of primer and plaster	Ceresit CT 15/CT 16, all Ceresit plasters, paints
'spider's web', cracks	wrong setting conditions, overdosage of watery	cover with a highly flexible paint coat; in the case of mineral plasters: transparent impregnation	Ceresit CT 13, CT 44 acrylic paint
inacceptable surface appearance	visible joints, too thin layer, number of applicators not sufficient for the area to be plastered	on 'stone' structured plasters: primer and plaster (Ceresit CT 60/CT 72/CT 74 only), on 'rustic' plasters: reinforcement, primer and any Ceresit plaster	

Paint

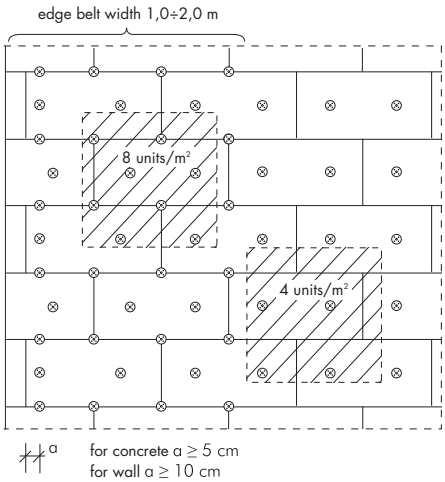
Fault	Reasons	Repair	Solution
surface contamination	pollution by air and rain	cleaning with water-jet devices	
structural contamination	pollution by air and rain combined with higher water absorption of the coating	cleaning and painting	compatible with the rendering Ceresit facade paints
biological contaminations	humid environment, by low UV radiation, wrong setting conditions	disinfection, mechanical removal of contaminations (ev. with paint), repeated disinfection, painting (Si)	Ceresit CT 99 disinfection, Ceresit CT 54 paint
blisters	too high Sd value of the paint coat compared to the substrate	removal of destroyed coat, application of paint (Si, Sc)	Ceresit CT 54, CT 48 paints
	dust on substrate	removal of the destroyed coat, application of paint (Si, Sc, Ac)	Ceresit CT 42, CT 44, CT 48, CT 54
'spider's web', cracks	wrong setting conditions, overdosage of water	cover with a highly flexible paint coat	Ceresit CT 13 impregnation



Ceretherm ETICS – Specific technical solutions for architects and designer

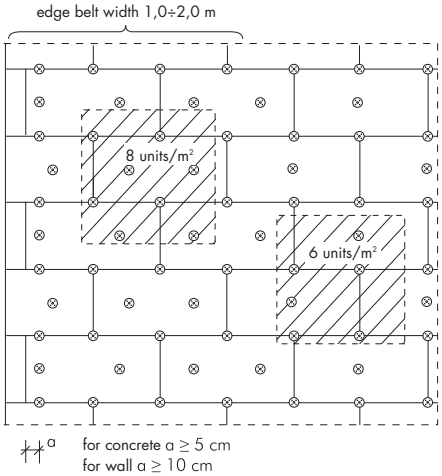
Additional anchoring of EPS-boards with mechanical fixing elements

width of building	edge belt
up to 8 m	1.0 m
from 8 to 16 m	1.5 m
over 16 m	2.0 m



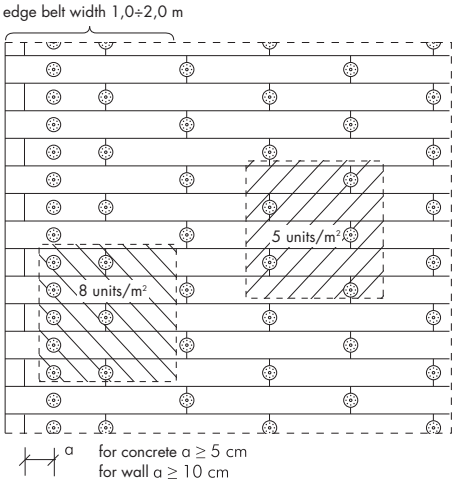
Additional anchoring of mineral wool boards with mechanical fixing elements

width of building	edge belt
up to 8 m	1.0 m
from 8 to 16 m	1.5 m
over 16 m	2.0 m

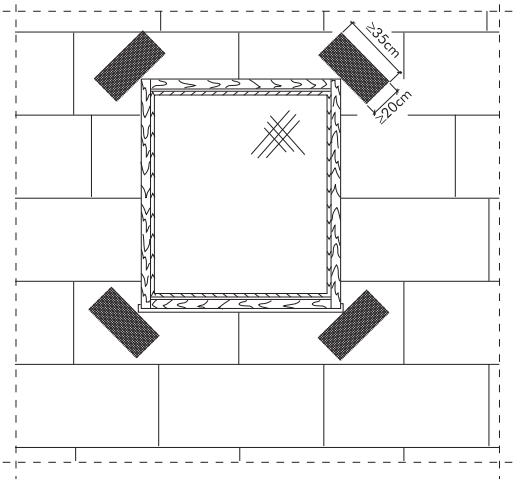


Additional anchoring of lamella boards with mechanical fixing elements

width of building	edge belt
up to 8 m	1.0 m
from 8 to 16 m	1.5 m
over 16 m	2.0 m

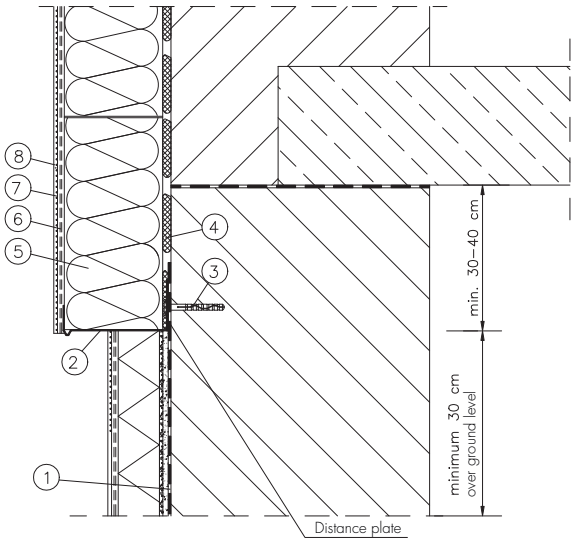


Additional anchoring of reinforcement layer at the edges of window frames (door frames)



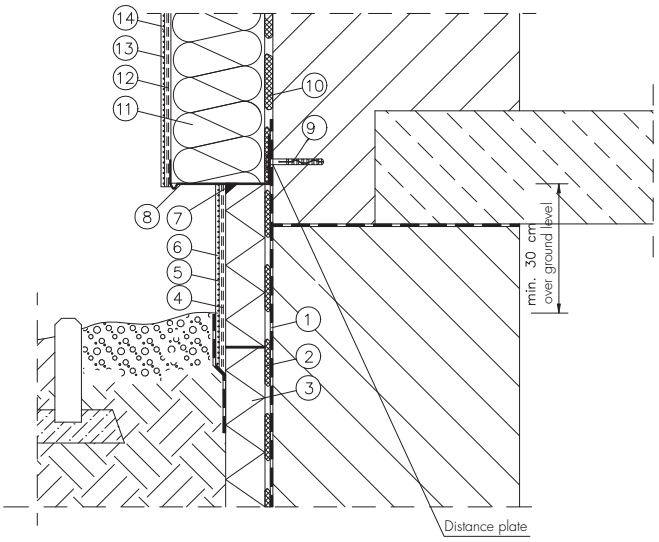
Bottom edge of thermal insulation systems

1. Ceresit vertical insulation
2. socle profile
3. anchor + distance plate
4. Ceresit adhesive mortar
5. thermal insulation
6. glass fibre reinforcing mesh layer
7. Ceresit priming paint
8. Ceresit facade plaster



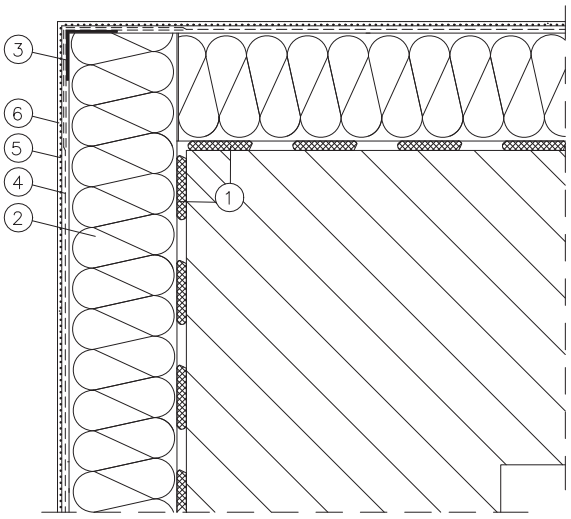
Thermal insulation of the building's socle

1. Ceresit vertical insulation
2. Ceresit adhesive mortar
3. extruded EPS-board
4. binary reinforcing mesh layer
5. Ceresit CT 16 priming paint
6. Ceresit CT 77 mosaic plaster
7. Ceresit CS 11 / CS 29
8. socle profile
9. anchor + distance plate
10. Ceresit adhesive mortar
11. thermal insulation
12. glass fibre reinforcing mesh layer
13. Ceresit priming paint
14. Ceresit facade plaster



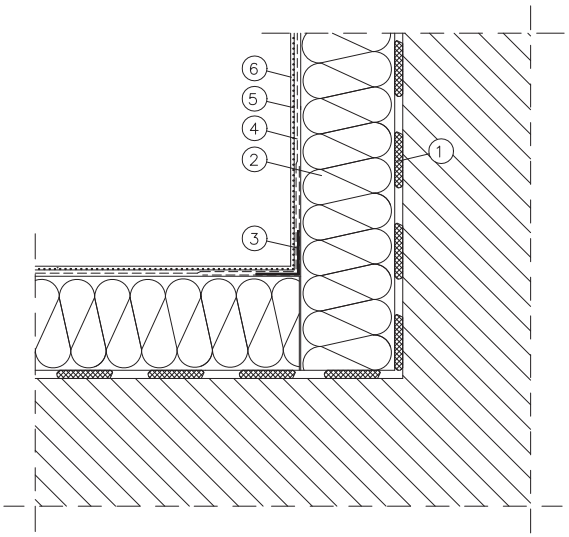
Thermal insulation of the building's convex edge

1. Ceresit adhesive mortar
2. thermal insulation
3. corner profile with industrially glued mesh
4. glass fibre reinforcing mesh layer
5. Ceresit priming paint
6. Ceresit facade plaster



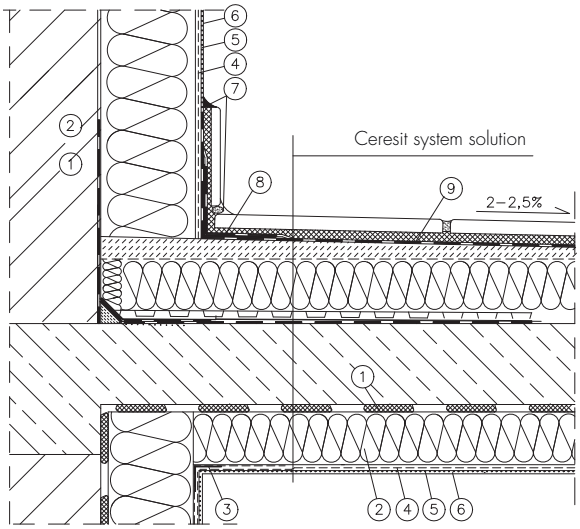
Thermal insulation of the building's concave edge

1. Ceresit adhesive mortar
2. thermal insulation
3. corner profile with industrially glued mesh
4. glass fibre reinforcing mesh layer
5. Ceresit priming paint
6. Ceresit facade plaster



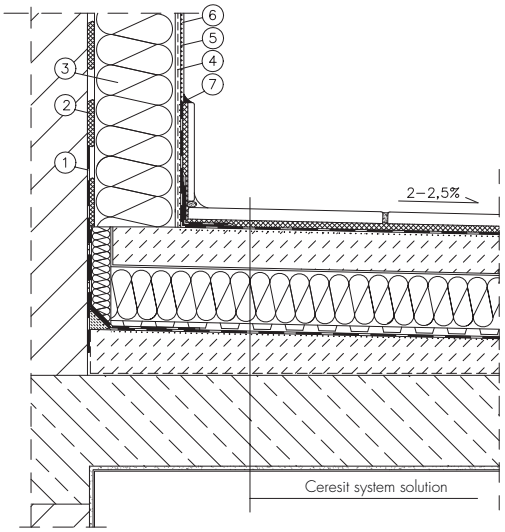
Connection with the balcony slab

1. Ceresit adhesive mortar
2. thermal insulation
3. corner profile with industrially glued mesh
4. Ceresit adhesive and reinforcing mortar
5. Ceresit priming paint
6. Ceresit facade plaster
7. Ceresit sealant
8. Ceresit CL 152 tape
9. Ceresit waterproofing material



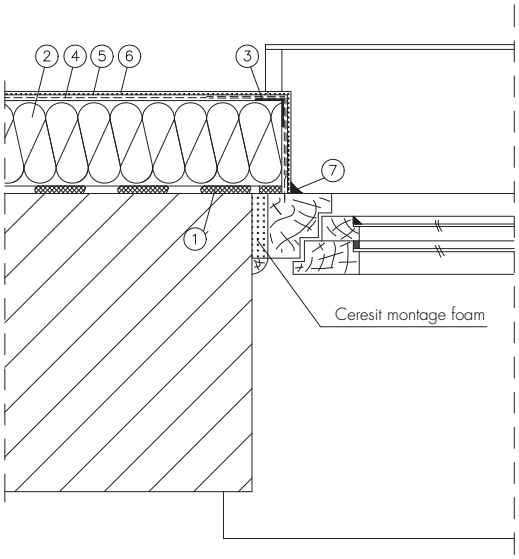
Connection with terrace flooring

1. Ceresit insulation
2. Ceresit adhesive mortar
3. thermal insulation
4. Ceresit adhesive and reinforcing mortar
5. Ceresit priming paint
6. Ceresit facade plaster
7. Ceresit sealant



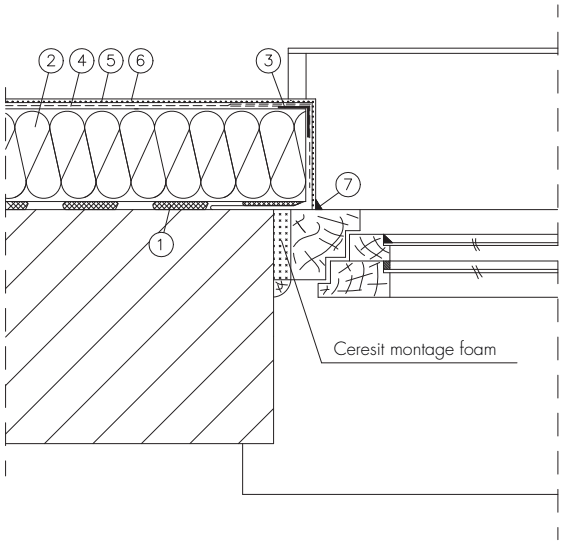
Thermal insulation of window frames

1. Ceresit adhesive mortar
2. thermal insulation
3. corner profile with industrially glued mesh
4. glass fibre reinforcing mesh layer
5. Ceresit priming paint
6. Ceresit facade plaster
7. Ceresit sealant or window frame profile



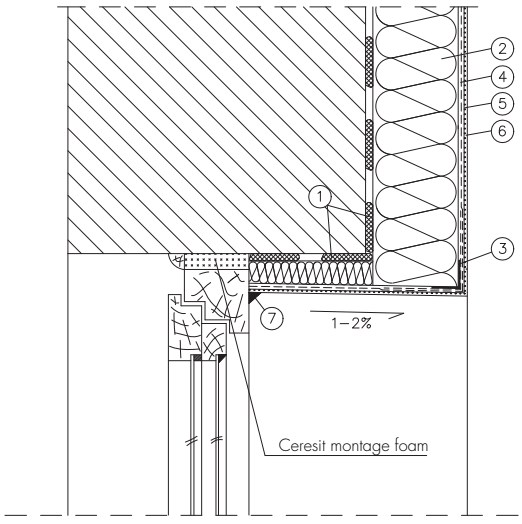
Thermal insulation of window frames in the wall face

① Ceresit adhesive mortar
② thermal insulation
③ corner profile with industrially glued mesh
④ glass fibre reinforcing mesh layer
⑤ Ceresit priming paint
⑥ Ceresit facade plaster
⑦ Ceresit sealant or window frame profile



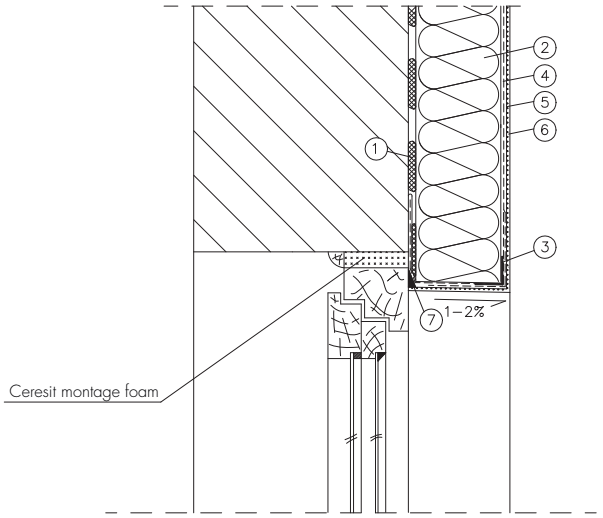
Thermal insulation of the wall crown

① Ceresit adhesive mortar
② thermal insulation
③ corner profile with industrially glued mesh
④ glass fibre reinforcing mesh layer
⑤ Ceresit priming paint
⑥ Ceresit facade plaster
⑦ Ceresit sealant or window frame profile



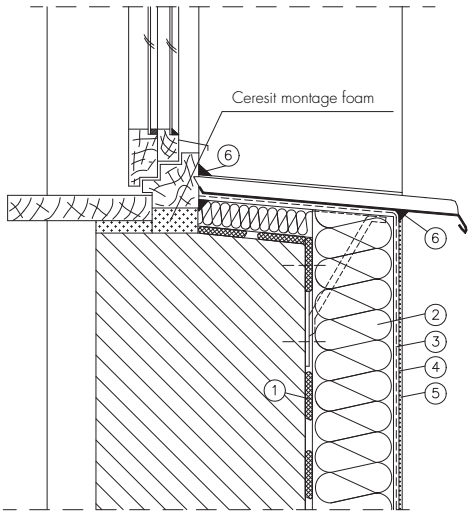
Thermal insulation of window head in wall face

1. Ceresit adhesive mortar
2. thermal insulation
3. corner profile with industrially glued mesh
4. glass fibre reinforcing mesh layer
5. Ceresit priming paint
6. Ceresit facade plaster
7. Ceresit sealant or window frame profile



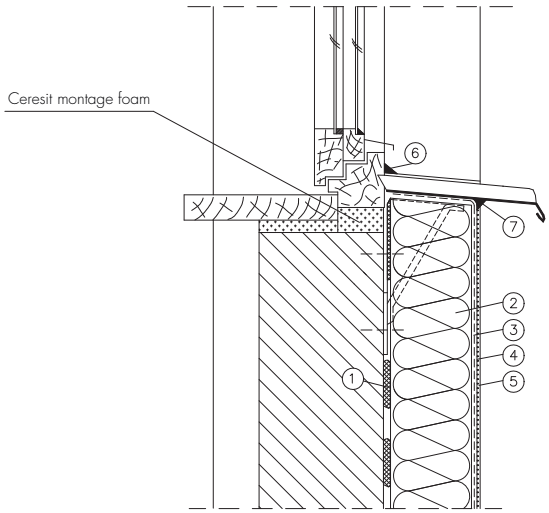
Thermal insulation of wall under window

1. Ceresit adhesive mortar
2. thermal insulation
3. glass fibre reinforcing mesh layer
4. Ceresit priming paint
5. Ceresit facade plaster
6. Ceresit sealant or window sill profile



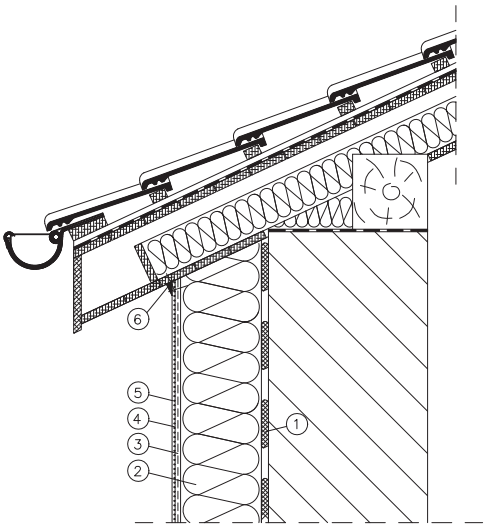
Thermal insulation of wall under window in wall face

1. Ceresit adhesive mortar
2. thermal insulation
3. glass fibre reinforcing mesh layer
4. Ceresit priming paint
5. Ceresit facade plaster
6. Ceresit sealant
7. Ceresit sealant or window sill profile



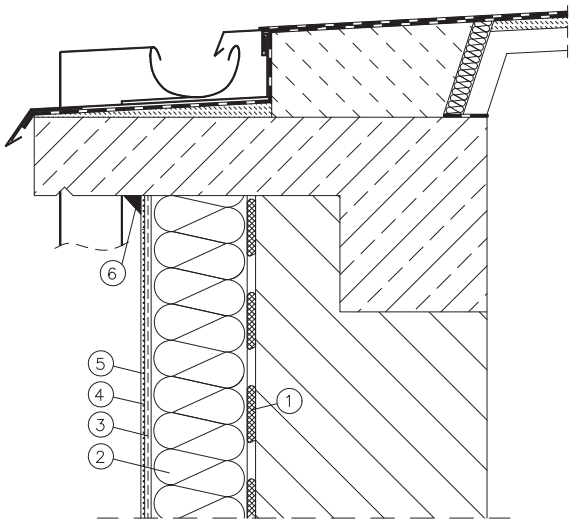
Connection with wooden roof eaves

1. Ceresit adhesive mortar
2. thermal insulation
3. glass fibre reinforcing mesh layer
4. Ceresit priming paint
5. Ceresit facade plaster
6. Ceresit sealant



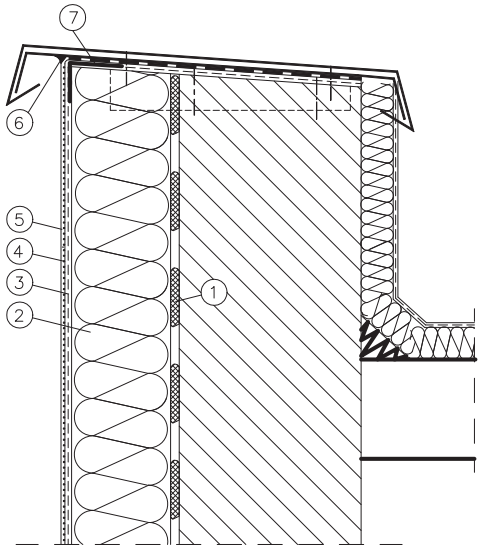
Connection with cornice of a bipartite roof floor

① Ceresit adhesive mortar
② thermal insulation
③ glass fibre reinforcing mesh layer
④ Ceresit priming paint
⑤ Ceresit facade plaster
⑥ Ceresit sealant



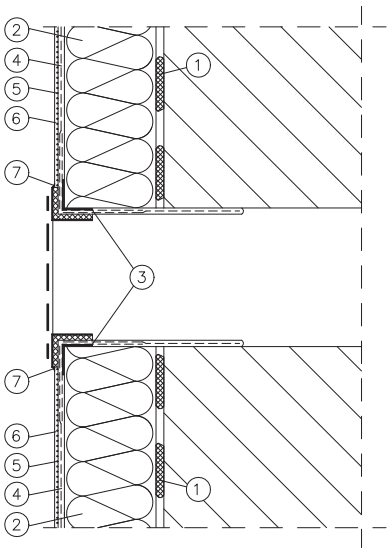
Thermal insulation of a wall above a hipped roof end

① Ceresit adhesive mortar
② thermal insulation
③ glass fibre reinforcing mesh layer
④ Ceresit priming paint
⑤ Ceresit facade plaster
⑥ Ceresit sealant
⑦ corners with mesh



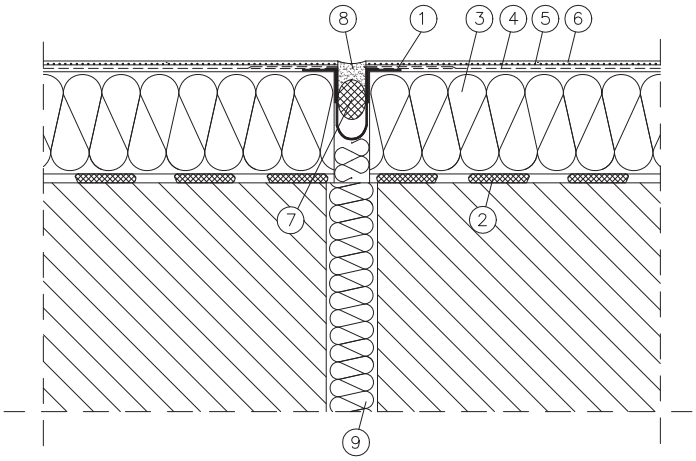
Connection with air grate

1. Ceresit adhesive mortar
2. thermal insulation
3. corner profile with industrially glued mesh
4. glass fibre reinforcing mesh layer
5. Ceresit priming paint
6. Ceresit facade plaster
7. Ceresit sealant



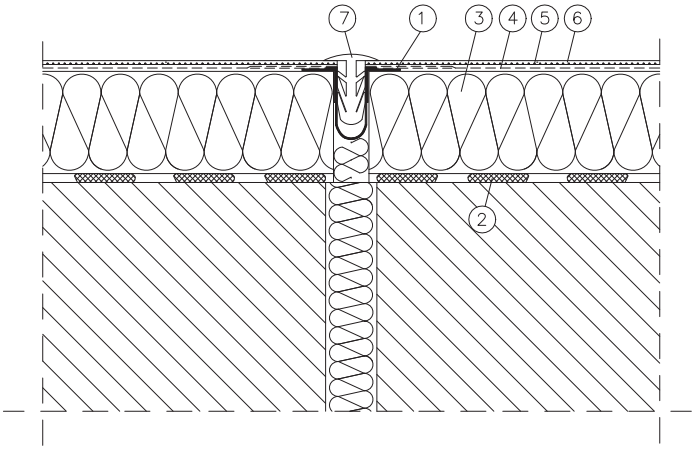
Sealing of expansion joint by expansion tape – bridging with polyurethane sealant

1. expansion profile
2. Ceresit adhesive mortar
3. thermal insulation
4. glass fibre reinforcing mesh layer
5. Ceresit priming paint
6. Ceresit facade plaster
7. Polyurethane packing cord
8. Polyurethane sealant Ceresit CS 29
9. Ceresit PU foam



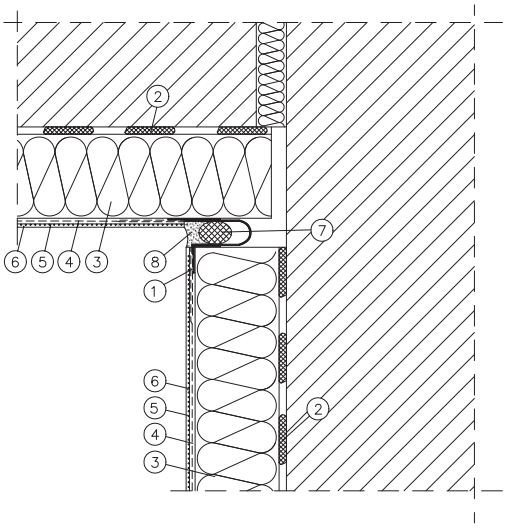
Sealing of expansion joint by expansion tape – bridging with expansion profile

① expansion tape
② Ceresit adhesive mortar
③ thermal insulation
④ glass fibre reinforcing mesh layer
⑤ Ceresit priming paint
⑥ Ceresit facade plaster
⑦ expansion profile



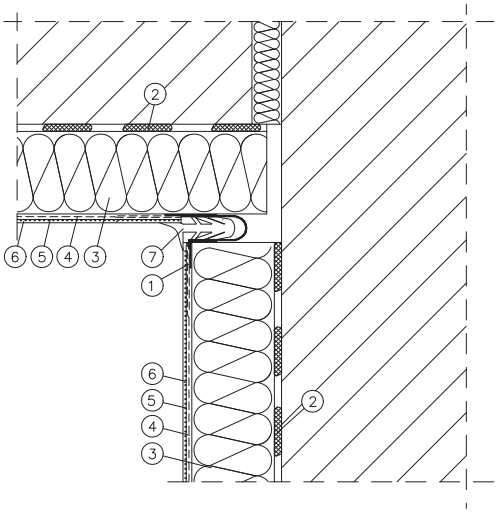
Sealing of expansion joint corner by expansion tape – bridging with polyurethane sealant

① expansion profile
② Ceresit adhesive mortar
③ thermal insulation
④ glass fibre reinforcing mesh layer
⑤ Ceresit priming paint
⑥ Ceresit facade plaster
⑦ Polyurethane packing cord
⑧ Polyurethane sealant Ceresit CS 29



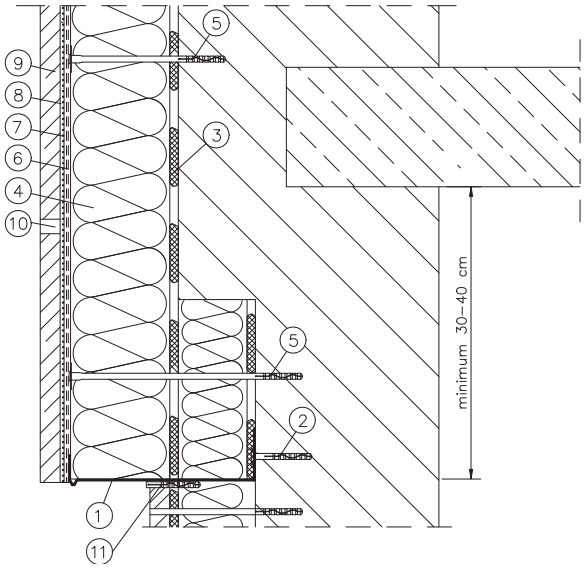
Sealing of expansion joint corner by expansion tape – bridging with expansion profile

1. expansion tape
2. Ceresit adhesive mortar
3. thermal insulation
4. glass fibre reinforcing mesh layer
5. Ceresit priming paint
6. Ceresit facade plaster
7. expansion profile



Ceresit Ceretherm Ceramic System on wall with receding socle

1. socle profile or corner profile with drip cap
2. socle profile fixing anchor + distance plate
3. Ceresit adhesive mortar
4. thermal insulation
5. fixing anchor
6. glass fibre reinforcing mesh layer
7. Ceresit CT 85 adhesive and reinforcing mortar
8. Ceresit CM 17 Adhesive Mortar
9. ceramic tiles, natural stones
10. Ceresit CE 43 Grand'Elit Flexible Grout, Ceresit CT 32 Clinker Mortar
11. Polyurethane sealant Ceresit CS 29



Ceresit Ceretherm Systems – Product by product

Henkel offers a wide range of modern products, which guarantee excellent insulation performance of insulated buildings. These products create specialist, earlier presented systems, that are tailored to the varied insulation needs.

Presented products are grouped according to their use:

- Priming products
- Adhesive mortars
- Facade plasters
- Facade paints
- VISAGE 'Natural effect' plasters and paints
- Repair and renovation products

Priming products: primers and priming paints

CT 17 Penetrating primer

Priming coat for walls and floors. For strengthening lightweight concrete, wood chipboards (V 100), block-boards, gypsum plasters, gypsum boards, gypsum and fibrous plasterboards, anhydrite screeds, highly absorbent plasters or cement screeds, ceramic coverings, natural and artificial stone floors as well as high-compression, smoothed concrete floors.
Use CN 94 Special primer to pretreat wooden substrates and mastic asphalt before applying Ceresit floor screeding compounds.

Characteristic:
- solvent-free
- surface-strengthening
- reduces absorbency
- for indoor and outdoor use

Packaging:
Plastic canisters of 2 l, 5 l and 10 l

CT 15 Priming paint

Ceresit CT 15 facilitates the application of thin-layer silicate plasters and renderings inside and outside the buildings. It is recommended for priming the armoured layers within Ceresit ETICS (External Thermal Insulation Composite Systems) and traditional plasters. The paint CT 15 can be applied to the surfaces of chipboards, gypsum cardboards, gypsum plasters, all types of concrete and strong paint coats. Priming the substrate with the paint CT 15 considerably decreases its absorption, which prevents from too fast drying of the applied products. The fine aggregates included in CT 15 make the primed surfaces rough and scratch resistant. As the surface is expanded, it increases the adhesion of the plasters, putties and paints. This product has strong coating properties and makes the substrate efficiently homogenous, thus preventing from any formation of stains on the coloured silicate plasters. Ceresit CT 14 or CT 17 should be used for reinforcing the surface of the absorptive substrates.

Characteristic:
- manufactured in several colours
- easier application of plasters
- higher adhesion to the substrate
- waterproof
- ready to use

Packaging:
Plastic buckets of 10 l

CT 16 Priming paint ‘white’

Suitable for indoor and outdoor use. For producing load-bearing substrates before applying synthetic resin plasters and at the same time a surface with a good keying structure. For all mineral, load-bearing substrates, e.g. concrete, fibrous cement, plasters (PII, PIII), gypsum plasterboards and fibrous plasterboards, aerated and lightweight concrete. For wood chipboards, gypsum plasters and firmly adhering paint coats. For producing an intermediate coat of good filling power when applying Ceretec facade paints. For fixing the CT 92 crack bridge. For first and intermediate coats applied on aerated and lightweight concrete elements.

Characteristic:
- active adhesion
- waterproof
- ready for use
- moisture-repellent
- water-based

Packaging:
Plastic buckets of 5 l and 10 l

CT 16 Priming paint – Winter version

Ceresit CT 16 Winter is recommended for priming armoured layers within Ceresit Ceretherm Winter and for priming of traditional plasters, concrete and strong painted coats. Primer properties enable application on the substrates in mild winter weather conditions, which means that while working the temperature is not lower than 0 oC, and it is possible after 8 hours since plaster application fall in temperature to -5oC . Priming the substrate with the paint CT 16 Winter considerably decreases its absorption, which prevents from too fast drying of the applied products. The fine aggregates included in CT 16 Winter make the primed surfaces rough and scratch resistant. As the surface is expanded, it increases the adhesion of the plasters, putties and paints. This product has strong coating properties and makes the substrate efficiently homogenous, thus preventing from any formation of stains on the coloured acrylic plasters.
Ceresit CT 17 should be used for reinforcing the surface of the absorptive substrates.

Characteristic:
- enables works in low temperature
- easier application of plasters
- higher adhesion to the substrate
- waterproof
- very good covering
- to apply with a roller or brush
- ready to use

Packaging:
Plastic buckets of 5 l and 10 l

Adhesives and renders for insulation systems

CT 83 EPS-board adhesive mortar

Ceresit CT 83 mortar is designed to apply EPS-boards within Ceresit ETICS (External Thermal Insulation Composite Systems) Ceretherm Classic and Premium. CT 83 mortar is used for applying to the newly erected objects as well as the buildings to be thermo renovated. The applied boards require additional fixing by means of mechanical anchors. Ceresit CT 85 or CT 87 '2in1' mortars should be used to apply fibre glass armoured layer on the EPS-boards. In case of the walls insulation with facade mineral wool boards, Ceresit CT 190 mortar should be used.

Characteristic:
- high adhesion to mineral substrates
- and EPS-boards
- economical in consumption
- quick increase in strength
- vapour permeable

Packaging:
Bags of 25 kg

CT 84 Express – Polyurethane adhesive

Ceresit CT 84 is a polyurethane adhesive used to fix EPS-boards (Expanded Polystyrene boards) to facade walls during the thermal insulation of buildings by means of ETICS. It is an element of the Ceresit Ceretherm Express system. Ceresit CT 84 can be used for applying EPS-boards to the newly erected objects or the buildings to be thermorenovated. Approximately 2 hours after the application, the EPS-boards may be smoothed (by grinding or rasping), anchored and, then the armoured layer may be applied using the Ceresit CT 85 or CT 87. CT 84 cannot be used in the vicinity of open fire or embers because it contains combustible gas.

Characteristic:
- easy to apply and use
- enables fast progress of work, i.e.
- fixing, anchoring and the application of armoured layer within one day
- high adhesion to mineral substrates and EPS
- very good insulation properties
- enables application in lowered temperatures and increased humidity
- low expansion and dimensionally stable
- water-resistant
- freon (CFC) free

Packaging:
Metal containers of 850 ml

CT 85 Adhesive and Reinforcing mortar for EPS

Ceresit CT 85 mortar is designed to insulate external walls of the buildings by using EPS-boards. It is an element within Ceresit Ceretherm Classic, Express and Ceramic system. CT 85 mortar is used for fixing EPS-boards as well as applying the armoured protection layer to insulate the newly erected objects and also the buildings to be thermo-renovated. CT 85 is additionally reinforced with fibres, therefore it is more resistant to the formation of hairlines. In case of applying facade mineral wool boards, Ceresit CT 190 mortar should be used.

Characteristic:
- high adhesion to mineral substrates and EPS-boards
- vapour permeable
- resistant to weather conditions
- flexible
- reinforced with fibres
- resistant to hairlines and cracks

Packaging:
Bags of 25 kg

CT 85 WINTER Adhesive and Reinforcing mortar for EPS – winter version

Ceresit CT 85 Winter mortar is designed to insulate external walls of the buildings by using EPS-boards. It is an element within Ceresit Ceretherm Winter system. Mortar properties enable application in mild winter weather conditions, which means that while applying the mortar the temperature is not lower than 0 °C, and temperature drops to –5 °C are possible after 8 hours since the mortar application. The mortar can be used to insulate the newly erected objects and also the buildings to be thermo-renovated. CT 85 Winter is reinforced with fibres, therefore it is more resistant to the formation of hairlines.

Characteristic:
- enables application in lower temperatures
- high adhesion to mineral substrates and EPS-boards
- vapour permeable
- resistant to weather conditions
- reinforced with fibres
- resistant to hairlines and cracks

Packaging:
Bags of 25 kg

CT 87 Adhesive and Reinforcing Mortar for EPS and MW '2in1'

Ceresit CT 87 mortar is designed to insulate external walls of the buildings by application of external thermal insulation composite system using EPS- or mineral wool facade boards. It is an element of following ETICS from Ceresit Ceretherm Premium, Express and Wool Premium. CT 87 mortar is used for fixing of EPS- or mineral wool facade boards and for applying the reinforcing protection layer to insulate the newly constructed objects as well as older buildings to be thermo-renovated. Ceresit CT 87 is additionally reinforced with fibres, therefore it is more resistant to the formation of cracks and hairlines. The application of CT 87 (colour, surface and organic modifiers) allows for omitting the substrate preparation process by priming with the priming paints before the application of any Ceresit plasters. The content of special light fillers gives the more flexible, light and homogenous consistency, it is easier to be stirred, applied and spread, thus increasing the efficiency of the mortar.

Characteristic:
- 2 in 1 – does not need priming
- before the application of plaster
- considerably lower consumption
- high adhesion to mineral substrates,
- EPS-boards and mineral wool
- vapour permeable
- flexible
- reinforced with fibres
- resistant to scratches and cracks
- resistant to weather conditions

Packaging:
Bags of 25 kg

CT 180 Adhesive mortar for mineral wool

Ceresit CT 180 mortar is designed to warm up external walls of the buildings by application of external thermal insulation composite system using mineral wool facade boards. It is an element of Ceresit Wool Classic and Ceresit Wool Premium insulation systems. CT 180 mortar is used for fixing of mineral wool facade boards to insulate the newly erected objects as well as the buildings to be thermo-renovated. In case of EPS-boards application used for insulating buildings, Ceresit CT 83 should be used.

Characteristic:
- high adhesion to mineral substrates and wool
- vapour permeable
- resistant to weather conditions
- flexible

Packaging:
Bags of 25 kg

CT 190 Adhesive and reinforcing mortar for mineral wool

Ceresit CT 190 mortar is designed to warm up external walls of the buildings by application of external thermal insulation composite system using mineral wool facade boards. It is an element within Ceresit Wool Classic insulation system. CT 190 mortar is used for fixing of mineral wool facade boards and for applying the reinforcing protection layer to insulate the newly constructed objects as well as older buildings to be thermo-renovated. In case of EPS-boards application used for insulating buildings, Ceresit CT 85 should be used.

Characteristic:
- high adhesion to mineral substrates
- and wool
- vapour permeable
- resistant to weather conditions
- flexible

Packaging:
Bags of 25 kg

ZS Adhesive mortar for Polystyrene

Ceresit ZS mortar is designed to apply EPS-boards within Ceresit ETICS (External Thermal Insulation Composite Systems) with a light-wet method Ceresit Ceretherm Popular. ZS mortar is used for applying to the newly erected objects as well as the buildings to be thermo renovated. The applied boards require additional fixing by means of mechanical anchors, i.e. proper expansion pins made of plastic. Ceresit ZU mortar should be used to apply fibre glass armoured layer on the EPS-boards.

Characteristic:
- economical in use
- good adhesion
- weather conditions resistant

Packaging:
Bags of 25 kg

ZU Adhesive and Reinforcing Mortar for Polystyrene

Ceresit ZU mortar is designed to apply EPS-boards within Ceresit ETICS (External Thermal Insulation Composite Systems) Ceresit Ceretherm Popular with a light-wet method. ZU mortar is used for applying to the EPS boards as well as to prepare rainforced layer of newly erected objects and the buildings to be thermo renovated.

Characteristic:
- flexible
- durable
- good adhesion
- resistant to weather conditions

Packaging:
Bags of 25 kg

Facade Plasters

CT 34 Smooth mineral plaster for Thermal Insulation Systems

CT 34 is mainly used for smooth mineral substrates on reinforced Ceresit Ceretherm External Thermal Insulations. It is also used to repairing traditional and cement-lime plasters inside and outside the buildings. It may be applied both to fill deep losses (e.g. chases after installation work) and to smooth the plaster surface as well.
The properties of CT 34 make it possible to apply thin layers on the walls and ceilings, to cover rough and uneven cement and cement-lime plaster surfaces. Thickness of complete plaster layer must be up to 5 mm

Characteristic:
- Vapour permeable (breathable)
- Hydrophobic
- Flexible
- Resistant to weather conditions
- With good adhesion
- Reinforced with micro-fibres
- Easy to apply

Packaging:
Bags of 25 kg

CT 35 Mineral plaster, woodworm like structure grain 2.5 mm or 3.5 mm

Ceresit CT 35 is used for making thin layer plasters on concrete substrates, traditional plasters, gypsum substrates and gypsum cardboards, gypsum-fibre boards, etc. We recommend the application of the plaster CT 35 as facade plaster within Ceresit ETICS with the application of EPS-boards or facade mineral wool boards. The plaster CT 35 is manufactured in several colours to be applied as the final layer of the facade as well as in the option to be painted, e.g. with Ceresit CT 54 silicate paint or Ceresit CT 48 silicone paint and Ceresit CT 42/ CT 44 acrylic paints.

Characteristic:
- manufactured in several colours as well as in the option to be painted
- vapour permeable
- hydrophobic
- resistant to weather conditions

Packaging:
Bags of 25 kg

CT 137 Mineral plaster, stone like structure grain 1.5 mm, 2.0 mm or 2.5 mm

Ceresit CT 137 is used for making thin layer plasters on concrete substrates, traditional plasters, gypsum substrates and gypsum cardboards, gypsum-fibre boards, etc. We recommend the application of the plaster CT 137 as facade plaster within Ceresit ETICS and EPS-boards or facade mineral wool boards. The plaster CT 137 is manufactured in several colours to be applied as the final layer of the facade as well as in the option to be painted, e.g. with Ceresit CT 54 silicate paint or Ceresit CT 48 silicone paint and Ceresit CT 42/ CT 44 acrylic paints (in case of applying Ceresit Ceretherm Wool systems).

Characteristic:
- manufactured in several colours as well as in the option to be painted
- vapour permeable
- hydrophobic
- resistant to weather conditions

Packaging:
Bags of 25 kg

CT 60 Acrylic plaster, stone like structure grain 1.5 mm or 2.5 mm

Ceresit CT 60 is used for making thin-layer plasters on concrete substrates, traditional plasters, gypsum substrates and chipboards, gypsum cardboards, etc. We recommend the application of the plaster CT 60 as facade plaster within Ceresit ETICS with the application of EPS-boards. In case of intensive dark colours, the material application should be limited to small areas, e.g. architectural details. This products protected against biological corrosion (fungi, mould and algae).

Characteristic:
- manufactured in more than two hundred colours
- ready to use
- vapour permeable
- hydrophobic
- resistant to weather conditions
- resistant to biological corrosion

Packaging:
Plastic containers of 25 kg

CT 60 Winter Acrylic plaster, stone like structure – winter version grain 1.5 mm or 2.5 mm

Ceresit CT 60 Winter is used for making thin-layer plasters on concrete substrates, traditional plasters, etc. We recommend the application of the plaster CT 60 Winter as facade plaster within Ceresit ETICS with the application of EPS-boards. Plaster properties enable application on the substrates in mild winter weather conditions, which means that while plastering the temperature is not lower than 0°C, and temperature drops to –5°C are possible after 8 hours since the plaster application. In case of intensive dark colours, the material application should be limited to small areas, e.g. architectural details. This product protected against biological corrosion (fungi, mould and algae).

Characteristic:
- enables plastering in lower temperatures
- manufactured in more than two hundred colours
- ready to use
- vapour permeable
- hydrophobic
- resistant to weather conditions
- resistant to biological corrosion

Packaging:
Plastic containers of 25 kg

CT 63 Rustic float plaster 3 mm

High-quality wall coating with an attractive, ribbed texture. For designing facades. For decorative design of interior walls and ceilings. For durable bridging of fine hairline cracks or surface cracks.

Characteristic:
- ready for use
- capable of diffusion
- hard-wearing
- weather-resistant
- algicide action

Packaging:
Plastic containers of 25 kg

CT 64 Acrylic plaster, woodworm like structure grain 2 mm

Ceresit CT 64 is used for making thin-layer plasters on concrete substrates, traditional plasters, gypsum substrates and chipboards, gypsum cardboards, etc. We recommend the application of the plaster CT 64 as facade plaster within Ceresit ETICS with the application of EPS-boards. In case of intensive dark colours, the material application should be limited to small areas, e.g. architectural details. This products protected against biological corrosion (fungi, mould and algae).

Characteristic:
- manufactured in more than two hundred colours
- ready to use
- vapour permeable
- hydrophobic
- resistant to weather conditions
- resistant to biological corrosion

Packaging:
Plastic containers of 25 kg

CT 64 Winter Acrylic plaster, woodworm like structure – winter version grain 3 mm

Ceresit CT 64 Winter is used for making thin-layer plasters on concrete substrates, traditional plasters, etc. We recommend the application of the plaster CT 64 Winter as facade plaster within Ceresit Winter ETICS with the application of EPS-boards. Plaster properties enable application on the substrates in mild winter weather conditions, which means that while plastering the temperature is not lower than 0°C, and temperature drops to –5°C are possible after 8 hours since the plaster application. In case of intensive dark colours, the material application should be limited to small areas, e.g. architectural details.

Characteristic:
- enables plastering in lower temperatures
- manufactured in more than one hundred sixty colours
- ready to use
- vapour permeable
- hydrophobic
- resistant to weather conditions

Packaging:
Plastic containers of 25 kg

CT 77 Mosaic plaster

Ceresit CT 77 is used for applying decorative colourful plasters to traditional plasters, concrete substrates, gypsum substrates and chipboards, gypsum cardboards, etc. Transparent resins are the binder and coloured quartz gravels size of 0.8–1.2 mm (colours marked with D), size of 1.4–2.0 mm and natural marble aggregates (colours marked with M) are the fillers. This material is designed for applying with a metal long float. When it is set, the colourful plaster is obtained. The properties of the material allow for bridging the existing scratches in the substrate. CT 77 is especially recommended to be applied to the exposed to abrasion walls inside the buildings, e.g. at the entrance, corridors, staircases. Outside the buildings, CT 77 is recommended on the areas easy to get dirty: on the pedestals, railings, door and window frames. In case of intense dark colours, the application of CT 77 should be limited to small areas, e.g. pedestals or architectural details.

Characteristic:

- manufactured in several dozen colour arrangements
- ready to use
- resistant to weather conditions
- resistant to abrasion
- easy to keep clean

Packaging:

Plastic containers of 25 kg

CT 72 Silicate plaster, stone like, structure grain 1.5 mm or 2.5 mm

Ceresit CT 72 is used for making thin-layer plasters on concrete substrates, traditional plasters, gypsum substrates and chipboards, gypsum cardboards, etc. We recommend the application of the plaster CT 72 as facade plaster within Ceresit ETICS with the application of EPS-boards and mineral wool boards. CT 72 plaster is recommended to be applied on the partitions where high permeability is required. CT 72 is available in a wide range of colours, but in case of intensive dark colours, the material application on the facades should be limited to small areas, e.g. architectural details. This products protected against biological corrosion (fungi, mould and algae).

Characteristic:
- manufactured in more than two hundred colours
- ready to use
- vapour permeable
- hydrophobic
- resistant to weather conditions
- dirt resistant

Packaging:
Plastic containers of 25 kg

CT 73 Silicate plaster, woodworm like structure, grain 2.0 mm or 3.0 mm

Ceresit CT 73 is used for making thin-layer plasters on concrete substrates, traditional plasters, gypsum substrates and chipboards, gypsum cardboards, etc. We recommend the application of the plaster CT 73 as facade plaster within Ceresit ETICS with the application of EPS-boards and mineral wool boards. Ceresit CT 73 plaster is recommended to be applied on the partitions where high permeability is required. CT 73 is available in a wide range of colours, but in case of intensive dark colours, the material application on the facades should be limited to small areas, e.g. architectural details. This products protected against biological corrosion (fungi, mould and algae).

Characteristic:
- manufactured in more than two hundred colours
- ready to use
- vapour permeable
- hydrophobic
- resistant to weather conditions
- dirt resistant

Packaging:
Plastic containers of 25 kg

CT 74 Silicate plaster, stone like structure grain 1.5 mm or 2.5 mm

Ceresit CT 74 is used for making thin-layer plasters on concrete substrates, traditional plasters, gypsum substrates and chipboards, gypsum cardboards, etc. We recommend the application of the plaster CT 74 as facade plaster within Ceresit ETICS with the use of EPS-boards and mineral wool boards. Ceresit CT 74 plaster is recommended to be applied to the partitions where high permeability is required. CT 74 is available in a wide range of colours, but in case of intense dark colours, the material application on the facades should be limited to small areas, e.g. architectural details. This products protected against biological corrosion (fungi, mould and algae).

Characteristic:
- manufactured in more than two hundred colours
- ready to use
- vapour permeable
- highly hydrophobic
- high resistance to weather conditions
- high resistance to dirt

Packaging:
Plastic containers of 25 kg

CT 75 Silicate plaster, woodworm like structure grain 2.0 mm or 3.0 mm

Ceresit CT 75 is used for making thin-layer plasters on concrete substrates, traditional plasters, gypsum substrates and chipboards, gypsum cardboards, etc. We recommend the application of the plaster CT 75 as facade plaster within Ceresit ETICS with the application of EPS-boards and mineral wool boards. Ceresit CT 75 plaster is recommended to be applied to the partitions where high permeability is required. CT 75 is available in a wide range of colours, but in case of intense dark colours, the material application on the facades should be limited to small areas, e.g. architectural details. This products protected against biological corrosion (fungi, mould and algae).

Characteristic:
- manufactured in more than two hundred colours
- ready to use
- vapour permeable
- highly hydrophobic
- high resistance to weather conditions
- high resistance to dirt

Packaging:
Plastic containers of 25 kg

CT 174 Silicate-silicone plaster, stone like structure grain 1.5 mm or 2.0 mm

Ceresit CT 174 combines good points of silicate plaster and silicone plaster. It is vapour permeable, of low absorbability and dirt resistant. CT 174 is used for making thin-layer plasters on concrete substrates, traditional plasters, gypsum substrates and chipboards, gypsum cardboards, etc. We recommend the application of the plaster CT 174 as facade plaster within Ceresit ETICS with the application of EPS-boards and mineral wool boards. In case of intensive dark colours, the material application should be limited to small areas, e.g. architectural details. This products protected against biological corrosion (fungi, mould and algae)

Characteristic:
- manufactured in more than two hundred colours
- ready to use
- vapour permeable
- hydrophobic
- resistant to weather conditions
- dirt resistant
- UV resistant

Packaging:
Plastic containers of 25 kg

CT 175 Silicate-silicone plaster, woodworm like structure grain 2.0 mm

Ceresit CT 175 combines good points of silicate plaster and silicone plaster. It is vapour permeable, of low absorbability and dirt resistant. CT 175 is used for making thin-layer plasters on concrete substrates, traditional plasters, gypsum substrates and chipboards, gypsum cardboards, etc. We recommend the application of the plaster CT 175 as facade plaster within Ceresit ETICS with the application of EPS-boards and mineral wool boards. In case of intensive dark colours, the material application should be limited to small areas, e.g. architectural details. This products protected against biological corrosion (fungi, mould and algae).

Characteristic:
- manufactured in more than two hundred colours
- ready to use
- vapour permeable
- hydrophobic
- resistant to weather conditions
- dirt resistant
- UV resistant

Packaging:
Plastic containers of 25 kg

Facade Paints

CT 42 Acrylic paint

Ceresit CT 42 is used for protecting facades, concrete constructions, interiors. It can be applied on the mineral substrates (concrete, cement plasters, lime-cement plasters and lime plasters). This paint can be used for painting Ceresit: CT 35, CT 36 and CT 137 mineral plasters, Ceresit: CT 60, CT 63, CT 64 acrylic plasters applied on traditional substrates and within Ceresit ETICS with the application of EPS-boards. The facades covered with the paint CT 42 can be washed with washing devices operating under low pressure. The exposure of the facade to the sun causes dangerous tensions, therefore dark colours should be used only on small areas, e.g. architectural details.

Characteristic:
- manufactured in more than one hundred sixty colours
- resistant to alkalis
- resistant to weather conditions
- resistant to biological corrosion
- easy to use

Packaging:
Plastic containers of 15 l

CT 44 Acrylic paint

Ceresit CT 44 is used for protecting facades, concrete constructions, interiors. It can be applied on the mineral substrates (concrete, cement plasters, lime–cement plasters and lime plasters). This paint can be used for painting Ceresit: CT 35, CT 36 and CT 137 mineral plasters, Ceresit: CT 60, CT 63, CT 64 acrylic plasters applied on traditional substrates and within Ceresit ETICS with the application of EPS-boards. This paint is a part of the concrete repair and concrete protection system Ceresit PCC. The structure of the coating ensures a high degree of protecting against CO_2 diffusion, which considerably reduces the process of concrete carbonisation.
The facades covered with the paint CT 44 can be washed with washing devices operating under low pressure.
The exposure of the facade to the sun causes dangerous tensions, therefore dark colours should be used only on small areas, e.g. architectural details. This product protected against CO_2.

Characteristic:
- manufactured in more than two hundred colours
- resistant to alkalis
- low absorbability
- resistant to abrasion
- limits the process of concrete carbonisation
- resistant to weather conditions
- resistant to biological corrosion
- easy to use

Packaging:
Plastic containers of 15 l

CT 48 Silicone paint

Ceresit CT 48 is used for protecting facades, concrete constructions, interiors. It can be applied on the mineral substrates (concrete, cement plasters, lime–cement plasters and lime plasters) that have never been painted before. This paint can be used for painting Ceresit: CT 35, CT 36 and CT 137 mineral plasters, Ceresit: CT 60, CT 63, CT 64 acrylic plasters, Ceresit: CT 72, CT 73 silicate plasters as well as silicone plasters Ceresit: CT 74, CT 75 applied on traditional substrates and within Ceresit ETICS with the application of EPS-boards and mineral wool boards. The structure of the coating ensures fast moisture evaporation from the substrate and at the same time creates an efficient protection against the substrate moisture and humidity. The binder used in the paint CT 48 causes pearl like effect of water after wetting the coat. It is highly recommended to use CT 48 in historical objects, on the renovation and aerated plasters as well as on all the surfaces where aesthetic qualities and duration of the coating is required. The facades covered with the paint CT 48 can be washed with washing devices operating under low pressure.
The exposure of the facade to the sun causes dangerous tensions, therefore dark colours should be used only on small areas, e.g. architectural details.

Characteristic:
- manufactured in more than two hundred colours
- excellent vapour permeability
- especially resistant to dirt
- UV resistant
- resistant to weather conditions
- resistant to biological corrosion
- easy to use

Packaging:
Plastic containers of 3,5 l and 15 l

CT 54 Silicate paint

Ceresit CT 54 is used for painting facades and interiors (walls and ceilings). It can be applied on the mineral substrates: concrete, cement plasters, lime-cement plasters and lime plasters. The paint is permanently bound with the substrate as a result of chemical reactions. It is highly recommended to paint new plasters because it allows for starting the painting work immediately, without any threats that the alkaline reaction of the fresh substrate may damage the paint coat. This paint can be used for painting Ceresit: CT 35, CT 36 and CT 137 mineral plasters, as well as Ceresit: CT 72, CT 73 silicate plasters and Ceresit: CT 174 and CT 175 silicate-silicone ones applied on traditional substrates and within Ceresit ETICS. Owing to no flammability and excellent vapour permeability, CT 54 is recommended in case of Ceresit Wool system, in which the insulation materials are mineral wool boards. The exposure of the facade to the sun causes dangerous tensions, therefore dark colours should be used only on small areas, e.g. architectural details. It cannot be used on acrylic and non-mineral paint coatings. This product protected against biological corrosion (fungi, mould and algae).

Characteristic:

- manufactured in more than two hundred colours
- resistant to weather conditions
- mat
- alkaline
- resistant to biological corrosion

Packaging:

Plastic containers of 3,5 l and 15 l

CT 49 Silix XD® Nanosilicone paint

Ceresit CT 49 Silix XD® nano-silicone paint is equipped in selected modified silicone and polysiloxane resins together with special fillers and pigments. Thanks to extremely high hydrophobia of coat surface, reached by use of PTFE additives the "pearl" effect appears – inmigration of water and dirt is strongly limited. Nevertheless the coat is highly permeable to water vapour. CT 49 Silix XD® extends the aesthetic effect and and durability of coated surface. CT 49 Silix XD® is used outdoor and indoor, especially suggested for protecting of coated areas against weathering (e.g. sour rain), biological corrosion and in cases where high durability and dirt-resistance is required. It can be applied on the mineral substrates (concrete, cement plasters, lime–cement plasters and lime plasters) that have never been painted before. This paint can be used for painting Ceresit: CT 35 and CT 137 mineral plasters, Ceresit: CT 60, CT 63, CT 64 acrylic plasters, Ceresit: CT 72, CT 73 silicate plasters, CT 74, CT 75 silicone plasters, as well as silicate-silicone plasters Ceresit CT 174 and CT 175: applied on traditional substrates and within Ceresit ETICS with the application of EPS-boards. It is highly recommended to use CT 49 in historical objects, on the renovation and aerated plasters as well as on all the surfaces where aesthetic qualities and duration of the coating is required. Thanks to crack-bridging abilities of CT 49, the coat is highly recommended for application on mineral plasters as well during application of ETICS as during the renovation of aged insulation systems. The facades covered with the paint CT 49 can be washed with washing devices operating under low pressure. The exposure of the facade to the sun causes dangerous tensions; therefore dark colours should be used only on small areas, e.g. architectural details.

Characteristic:

- slight absorbance
- high vapour permeability
- self-cleaning (especially resistant to dirt)
- high durability thanks to the Silix XD® formula
- crack-bridging
- highly resistant to UV and weather conditions
- ticsotropic
- for use in areas open for biological contamination (fungi, algae, etc.)
- available in full palette of Ceresit Colours of Nature®

Packaging:

Plastic containers of 15 l

VISAGE ‘Natural effect’ plasters and paints

CT 710 VISAGE Natural Stone Plaster

The Ceresit CT 710 plaster is used for execution of decorative plasters on traditional plasters, concrete and gypsum surfaces and chipboards, drywall boards, etc. CT 710 as facade plaster is one of the components used in the Ceresit Ceretherm Visage system for thermal insulation for external building walls (ETICS) with application of expanded polystyrene boards. Transparent resins are used as binding material, with fillers in the form of specially selected combinations of natural or modified granite or quartz aggregate. Ceresit CT 710 is dedicated for spray application. Application on small areas is possible with a metal long float. After setting, natural stone pattern is obtained. Characteristics of the material allow for bridging capillary scratches in the surface. The resulting plaster features exceptional durability and resistance to soiling. CT 710 is specifically recommended for places exposed to intense wearing and subject to rapid soiling, e.g. building plinths, entrances to buildings, corridors, staircases. In case of strong, dark colours, using CT 710 as a facade layer in the Ceresit Ceretherm system of insulation for buildings (with expanded polystyrene boards) should be limited e.g. for execution of plinths or architectural details.

Characteristic:

- granite or sandstone effect in several dozen colours
- plaster including mix of natural and modified
- aggregate for natural stone effect
- resistant to weather conditions
- resistant to scrubbing
- easy to maintain clean
- adaptive for machine application
- may be applied with stencils
- ready for use

Packaging:
Plastic containers of 20 kg

CT 720 VISAGE Wood Plaster

The Ceresit CT 720 plaster is used for executing thin-layer plasters on concrete surfaces, traditional plasters, gypsum surfaces and on drywall, gypsum--fibre boards, etc. CT 720 as facade plaster is one of the components used in the Ceresit Ceretherm Visage system for thermal insulation for external building walls (ETICS) with application of expanded polystyrene boards. The CT 720 plaster is produced white, ready for painting with the CT 721 ‘Wood’ Colour Impregnate available in 6 colours.

Characteristic:

- ready for modelling wooden structure with templates
- highly vapour permeable
- highly durable and resistant to weather conditions
- naturally resistant to growth of fungi,
- algae and mould
- hydrophobic

Packaging:
Bags of 25 kg.

CT 60 VISAGE Acrylic Plaster 0.5 mm

Ceresit CT 60 0.5 mm plaster is used for making building facades with the use of stencils which imitate clinker bricks or natural stones. CT 60 0.5 mm plaster as facade plaster is one of the components used in the Ceresit Ceretherm systems for thermal insulation for external building walls (ETICS) with application of expanded polystyrene boards. Material may be used on concrete surfaces, traditional cement plasters, gypsum surfaces and chipboards, drywall boards, etc. In case of strong, dark colours, application of the material over thermal systems should be limited to small areas, e.g. architectural details. Ceresit CT 60 0.5 mm is protected against biological contamination, e.g. with fungi, mould or algae.

Characteristic:
- recommended for stencils
- resistant to weather conditions
- low absorption and high flexibility
- resistant to damage through wear and tear
- vapour permeable
- BioProtect formula - resistant to biological
- contamination (mould, fungi and algae)
- colour stability
- available in 12 Visage colours and full
- palette of the Ceresit Colours of Nature®

Packaging:
Plastic containers of 25 kg

CT 730 VISAGE Luminous Plaster

The Ceresit CT 730 plaster is used for executing thin-layer plasters on concrete surfaces, traditional plasters, gypsum surfaces and chipboards, drywall boards, etc. CT 730 as facade plaster is one of the components used in the Ceresit Ceretherm Visage system for thermal insulation for external building walls (ETICS) with application of expanded polystyrene boards. Recommended specifically for elements and details in traffic and evacuation passages, passages and underground garages, warehouse halls, etc.
For execution of information and advertising signs or architectural details on walls. Intensity of luminescence effect of plaster is conditioned on existing source of energy and their intensity, so it is limited in time like similar luminescent product.

Characteristic:
- luminescence effect (light shining in the darkness)
- resistant to weather conditions
- low absorption and high flexibility
- resistant to damage through wear and tear

Packaging:
Plastic containers of 25 kg

CT 721 VISAGE Wood Colour Impregnate

The Ceresit CT 721 Impregnate is used for executing a decorative layer with natural wood colours on the surface of the Ceresit CT 720 VISAGE Wood Plaster, thin-layer mineral plasters, traditional plasters, concrete and gypsum surfaces. The CT 721 Impregnate is one of the components used in the Ceresit Ceretherm Visage system for thermal insulation for external building walls (ETICS) with application of expanded polystyrene boards. The material may be sprayed or applied with brush, roller or sponge. The impregnate features exceptional durability and resistance to soiling.

Characteristic:
- available in 6 natural wood colours
- resistant to weather conditions
- exceptionally durable and resistant to dirt
- hydrophobic
- high stability of colour
- ready for use

Packaging:
Plastic containers of 25 kg

CT 722 VISAGE Anti-adhesive Agent

Anti-adhesive agent CT 722 should be applied to the silicone matrix to avoid sticking of the matrix to the Ceresit CT 720 VISAGE plaster during wood structure modeling.

Characteristic:
- anti-adhesive agent applied to the silicone matrix during wood structure modeling
- easy in usage
- ready to use

Packaging:
Plastic canisters of 5 l

CT 740 VISAGE Metallic Paint

The Ceresit CT 740 paint is dedicated for protecting facades, concrete structures, and interiors. It may be applied on mineral surfaces (concrete, cement plasters, cement-lime and lime plasters). It may be used to paint over mineral, acrylic and silicone Ceresit plasters applied on traditional surfaces and included in the Ceresit Ceretherm systems for insulation of external walls in buildings (ETICS), with application of expanded polystyrene boards. The facades covered with the CT 740 paint are given metallic effect. It is specifically recommended for small areas and architectural details.

Characteristic:
- low absorption
- resistant to weather conditions
- available in 3 colours

Packaging:
Plastic containers of 4 l

CT 750 VISAGE Opal Lack

The Ceresit CT 750 lack is used for making decorative layers on the surface of thin-layer plasters, traditional plasters, concrete and gypsum surfaces. The CT 750 lack is one of the components used in the Ceresit Ceretherm Visage system for thermal insulation for external building walls (ETICS), with application of expanded polystyrene boards. The material is dedicated for application with roller, brush, sponge or by spraying. It is specifically recommended for small areas and architectural details.

Characteristic:
- available in 2 colours
- glow of opalescence colour changes
- depending on light angle
- ready for use
- resistant to weather conditions

Packaging:
Plastic containers of 2 l

Impregnation agents, anti-fungus and other materials

CT 13 Facade and Balcony Impregnation Agent

For impregnating clinker and faced clay bricks, mineral exterior plasters and paintwork and roof tiles. For producing a water-repellent effect on absorbent, alkaline surfaces, e.g. concrete, fibrous cement, sand-lime brickwork, fresh plasters and newly grouted joints. For protecting facades against the penetration of driving rain and aggressive substances in the air. For preventing efflorescence, frost damage and the formation of mildew and moss. For reliable, water-repellent impregnation, even with existing hairline cracks (surface cracks) of up to 0.2 mm width. CT 13 is ideally suited for sealing balconies and patios. It can be used for impregnating tiles, concrete, screed and natural stones that are insensitive to discolouring. It is also suitable for producing water-repellent surfaces on porous tiles, joints and cracks. It serves as a transparent, additional resp. subsequent impregnation of tile joints in baths and showers. CT 13 can provide temporary protection of areas in need of repair (e.g. flaked-off glazes). Do not use on synthetic resin plasters and dispersion based facade paints.

Characteristic:
- rsolvent-free
- impervious to driving rain
- alkali-resistant
- permits diffusion
- deep penetration
- seals joints

Packaging:
Plastic canisters of 10 l

CT 99 Anti-fungus

For removing fungi, lichens and moss.
For destroying micro-organisms, bacteria etc.
For indoor and outdoor use.

Characteristic:
- heavy-metal-free
- water-dilutable
- leaves no stains
- can be painted over
- permits capillary action

Packaging:
Plastic containers of 1 l,
plastic containters with atomiser of 0,5 l

CT 29 Plaster filler

Plaster filler Ceresit CT 29 is mainly used for repairing cement-lime plasters inside and outside the buildings. It may be applied both to fill deep losses (e. g. chases after installation work) and to smooth the plaster surface as well. The properties of CT 29 make it possible to apply thin 'putties' on the walls and ceilings, to cover rough and uneven cement and cement-lime plaster surfaces. Due to its good adhesion property this material may be used for applying single layer plasters on the concrete substrates (monolithic and prefabricated ones) as well as on the even walls. CT 29 is also designed to smooth mineral substrates before the application of ceramic tiles and thermal insulation boards, for traditional plasters and small masonry work.

Characteristic:

- vapour permeable
- resistant to weather conditions
- with good adhesion
- reinforced with micro-fibres
- easy to apply

Packaging:

Bags of 25 kg and 5 kg

Polyurethane sealant CS 29

Ceresit CS 29 is a one component polyurethane sealant. It creates a filling resistance to various weather conditions. This product is part of the System Ceresit solutions.

CS 29 is ideal for:

- Sealing and filling joints in buildings
- on the terraces and balconies, and thermal insulation of walls (such as expansion joints on buildings),
- Sealing of industrial tanks, trays, tanks, industrial floors, and floors in multistation garages,
- Sealing of joints surface parking surfaces, roof elements
- Sealing connections at crossing technological piping,
- External and internal seals in concrete, wood, steel, aluminum, zinc, tiles and PVC,
- Sealing the joints of construction buildings,
- Sealing of window frames and door frames made of wood, metal, aluminum or PVC with a wall and plaster,
- Sealing of the curtain wall joints
- Filling gaps, cracks, cracks in buildings, in particular before painting and plastering

Ceresit CS 29 should not be used for work related to the glazing or set a window, and to connections from PE, PP and bituminous surfaces. Should not be used for set and mount the mirrors.

Characteristic:

- excellent adhesion to many materials (also humid)
- highly flexible
- waterproof
- UV resistance
- permanently flexible even at low temperatures
- resistant to salt water, weak acids and lime
- resistant to various petroleum products
- can be painted
- easy to use

Packaging:

Metal cartridges (all colours) of 300 ml
Aluminium tubes (only grey available) of 600 ml

CT 97 Acrylic for plasters

Ceresit CT 97 is a special acrylic sealant, which resembles the structure of the plaster after drying due to the content of fine fractions of aggregates. The product is a component of Ceresit Ceretherm Repair system used to repair damaged and cracked facade made in ETICS technology. It may be used to fill the external and internal cracks and scratches in the insulation systems, but also in all the mineral structural materials, as well as in rough structure.

Characteristic:
- to repair cracks in the facade
- suitable to paint
- excellent adhesion to mineral materials
- waterproof
- UV resistant
- permanently elastic even at low temperatures
- easy to use

Packaging:
Plastic cartridge of 300 ml

CT 98 Concentration to remove impurities

Ceresit CT 98 provides washing and degreasing heavily dirty facades of the buildings constructed in the ETICS technology finished with thin coats of mineral, acrylic, silicate, silicone and silicate-silicon plasters, in the traditional technologies, such as cement and lime plasters, facades made of natural stone, artificial stones or finished with ceramic coating and facades made of glass and aluminum. The product is a component of the Ceresit Ceretherm Repair system. After washing the facade with the concentration surfaces may be renewed by painting with Ceresit paints. It may also be used to clean and degrease the mineral floors which are contaminated before successive layers of floor are applied. It removes motor oil, dry dirt, salt sprinkled on the roads, soot and light hydrocarbons. It can also be used to clean glass and plastic. It is intended for indoor and outdoor applications.

Characteristic:
- it effectively removes dirt from the facade
- high performance
- for inside and outside
- it does not contain caustic substances
- it removes dirt, oils, greases

Packaging:
Plastic canisters of 5 l

Ceresit

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Quality for Professionals