licata therm EWI

Thermal insulation systems

licata® building systems

Contents

Comfortable living

Comfortable living

In the current context, in which more and more attention is paid to the quality of life and health, living comfort plays an increasingly decisive role, both because we spend most of our time in buildings, and because it has significant effects on our health.

Living comfort is determined by subjective factors, such as the aesthetics of the built-up area, and by objective factors, such as the quality of the structures and the quality of the insulation. A modern and human-sized building must ensure a pleasant and constant internal temperature and air free of pollutants, as well as being protected from fungi and moulds that cause allergic problems and unsightly blemishes on internal surfaces.

The licatatherm thermal insulation systems are able to effectively improve the quality of life because they make the building able to keep its internal temperature constant and humidity under control and increase its mechanical resistance and protection from internal noise and external.

Basically, a licatatherm system makes any type of building, new or existing, comfortable and efficient, without interfering in any way with the habits of those who live there, and its use involves a significant economic saving and translates into virtuous environmental behaviour.

Energy **efficiency** and environmental **protection**

Energy efficiency

Environmental protection and respect for our habitat presuppose necessary conditions such as energy efficiency and rational use of non-renewable resources. To solve global environmental problems such as the greenhouse effect, ozone hole and acid rain, we must first learn how to manage energy resources in an intelligent way. Each of us can contribute significantly to the cause by reducing waste and energy losses.

For years now, the EU directives and the legislation of many countries have been promoting good practices in energy efficiency in all sectors such as the residential sector which alone absorbs almost half of the national energy needs and, consequently, is responsible for much of the carbon dioxide produced. This highlights the fact that the vast majority of existing buildings are affected by important omissions in the design phase, a condition that has meant that these structures and houses were built without taking due account of energy efficiency criteria; Add to this the fact that the same criteria are still systematically ignored both for neglect and for disinformation and, last but not least, because not everyone is willing to change their habits, however counter-productive they may prove to be.

Benefits

Benefits

In practical terms, the licatatherm systems have the primary purpose of eliminating the so-called thermal bridges, i.e. parts of the structure which, due to design or construction defects, have different thermal characteristics compared to the surrounding ones. These imperfections cause the exchange of heat between the inside and outside of the building to the detriment of the insulating capacity of the walls. These circumstances force an excessive use of energy only for space heating and cooling. It should also be noted that the thermal flux, concentrating only in a few limited areas, causes the formation of mould and the creation of condensation in the areas that cool. Therefore it is essential to use a continuous envelope, as are the licatatherm systems, to give the buildings the insulation necessary to reduce heat loss and avert the risk of condensation pathologies and the consequent stains on the walls. Added to this are further advantages in terms of building protection: the licatatherm systems, in fact, being a uniform external layer from a construction point of view, are able to minimize the variations in length of the structures caused by the thermal expansions that occur in the presence of of heterogeneous materials, as well as greatly improving the mechanical resistance of the walls. In summary, the use of licatatherm increases the comfort of the building by drastically reducing thermal shocks and allowing considerable energy savings, but not only: the external thermal insulation system, improving energy performance and reducing CO2 emissions, automatically increases the economic value of the structure.

It is highlighted, among other things, that the economic aspect, mentioned several times, should not be neglected at all, given the energy costs that are far from low and moreover in progressive and constant increase. A small calculation is enough to realize that the cost of building a licatatherm system is amortized in a few years of substantial savings on bills. licatatherm is in fact an excellent investment for companies, individuals and institutions and an added value for the building.

Aesthetics

Aesthetics

The idea of applying an external insulation system, however, is not just a choice of a purely technical and economic nature: the utility of making your home more efficient can be associated with the choice of the coating, as well as the distinctly aesthetic choice of its color.

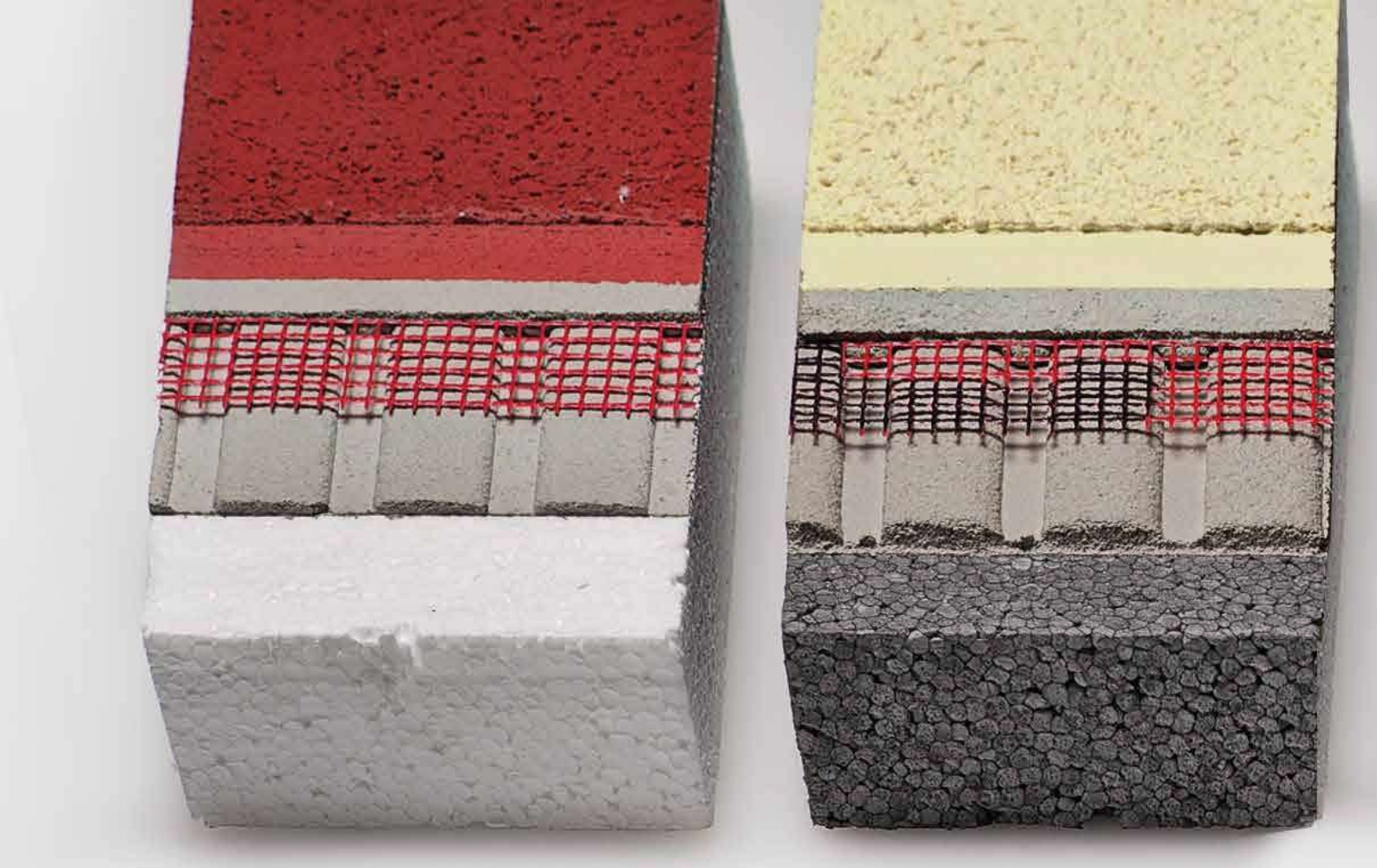
Essentially, the licata system is easy to apply: it is necessary to fix the insulating panels on the external walls of the building using adhesive mortar and dowels.
The panels are then smoothed and reinforced with fiberglass mesh. Finally, the coating is applied with a dual function: protective and aesthetic. Licata ensures a long life for the building, decorating and protecting at the same time.

It is highlighted, among other things, that the economic aspect, mentioned several times, should not be neglected at all, given the energy costs that are far from low and moreover in progressive and constant increase. A small calculation is enough to realize that the cost of building a licatatherm system is amortized in a few years of substantial savings on bills. licatatherm is in fact an excellent investment for companies, individuals and institutions and an added value for the building.

EOTA

European Technical Approval

BBA Approved Systems



licata therm

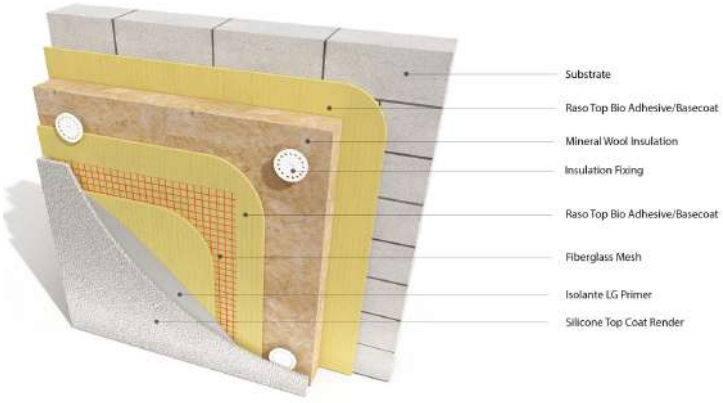
Thermal insulation systems

The Systems

licata therm Bio

Our Licatatherm Bio EWI system is over 50 years of history, turns out to be an extremely reliable, economical and simple application lime based system. Ideal for historical buildings. Featuring increased strength and crack resistance, due to the glass fibre mesh. Benefiting from weather resistance, plus protection against algae and mould at an affordable price and with great simplicity of processing. Choose from brick slips or a coloured lime base render for the decorative finish. With over 700 colours available, you can pick the perfect coloured render for your project. Our EWI systems help improve the appearance and thermal efficiency of properties, reducing overall energy consumption.

- Suitable for new builds & refurbishment
- Tougher than cement-based renders
- A1 Fire classification
- Self-cleaning properties
- Weather resistant

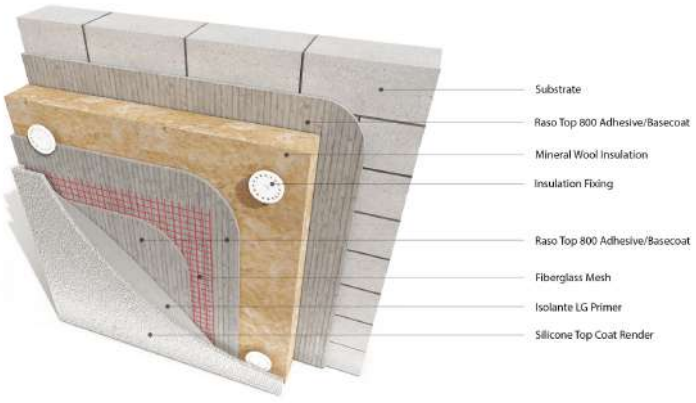


System can be finished with render or brick slips (pg.)

licata therm Mineral Wool

Our Licatatherm mineral wool EWI system has increased strength and crack resistance, due to the glass fibre mesh. Breathable and fully fire compliant, it's suitable for both new builds and refurbishment. Choose from brick slips or a coloured render for the decorative finish. With over 700 colours available, you can pick the perfect coloured render for your project. Our EWI systems help improve the appearance and thermal efficiency of properties, reducing overall energy consumption.

- Suitable for new builds & refurbishment
- Suitable for various substrates
- Fully fire compliant
- Energy carbon saving
- Weather resistant

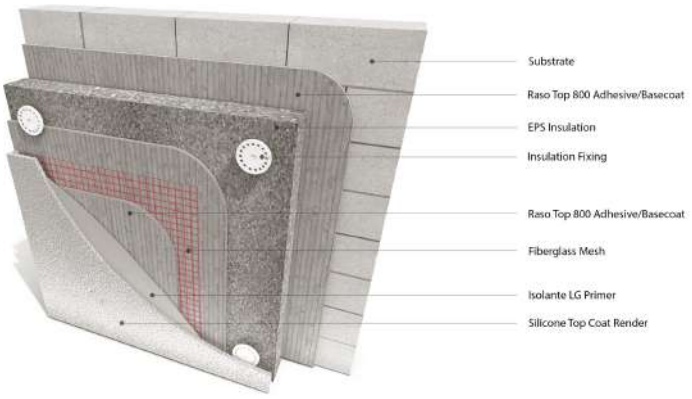


System can be finished with render or brick slips (pg.)

licata therm Graphite

Our Licatatherm Graphite EWI system benefits from being breathable, weather resistant and protection against algae and mould. With increased strength and crack resistance, due to the glass fibre mesh. Choose from brick slips, coloured render or resin multi-colour for the decorative finish. With over 700 colours available, you can pick the perfect coloured render for your project. Our EWI systems help improve the appearance and thermal efficiency of properties, reducing overall energy consumption.

- Suitable for new builds & refurbishment
- Tougher than cement-based renders
- Fully fire compliant
- Energy carbon saving
- Weather resistant

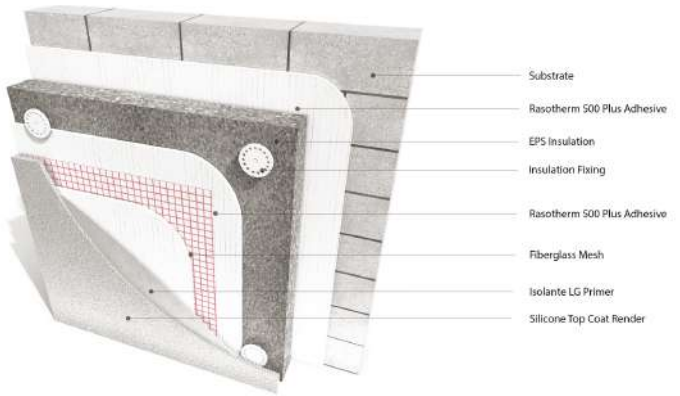


System can be finished with render or brick slips (pg.)

licata therm Anti-Crack Cement Free

Our Licatatherm Anti-Crack EWI system is ideal for unstable substrates. The combination of Rasotherm 500 plus and glass fibre mesh provides ultimate crack resistance. This system is also completely cement free. Choose from brick slips, coloured render or resin multi-colour for the decorative finish. With over 700 colours available, you can pick the perfect coloured render for your project. Our EWI systems help improve the appearance and thermal efficiency of properties, reducing overall energy consumption.

- Provides ultimate crack resistance
- Suitable for various substrates
- Fully fire compliant
- Energy carbon saving
- Weather resistant

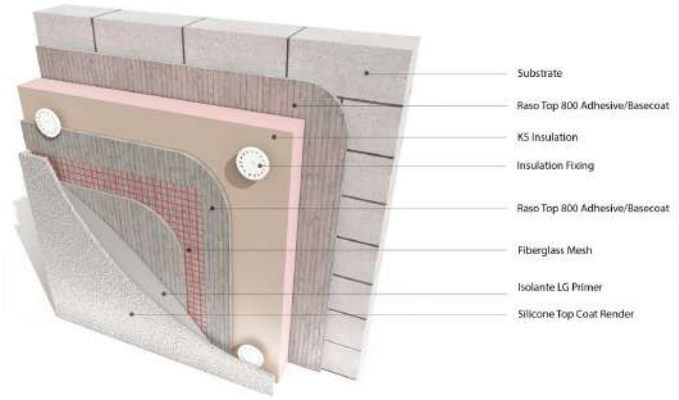


System can be finished with render or brick slips (pg.)

licata therm K5

Our Licatatherm K5 EWI system benefits from being breathable, weather-resistant and fully fire compliant. With increased strength and crack resistance, due to the glass fibre mesh. It also helps protect against algae and mould. Choose from brick slips, coloured render or resin multi-colour for the decorative finish. With over 700 colours available, you can pick the perfect coloured render for your project. Our EWI systems help improve the appearance and thermal efficiency of properties, reducing overall energy consumption.

- Suitable for new builds & refurbishment
- Suitable for various substrates
- Fully fire compliant
- Energy carbon saving
- Weather resistant

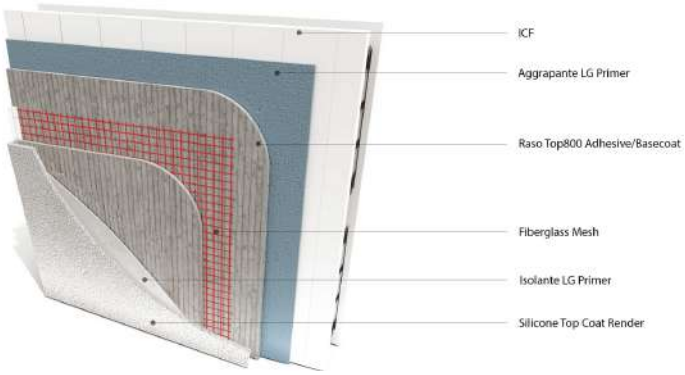


System can be finished with render or brick slips (pg.)

licata therm ICF

Our Licatatherm ICF EWI system is only suitable for insulated concrete forms. It benefits from being breathable, weather resistant and fully fire compliant. Suitable for new builds or refurbishment. Choose from brick slips, coloured render or resin multi-colour for the decorative finish. With over 700 colours available, you can pick the perfect coloured render for your project. Our EWI systems help improve the appearance and thermal efficiency of properties, reducing overall energy consumption.

- Suitable for insulated concrete forms
- Suitable for various substrates
- Fully fire compliant
- Energy carbon saving
- Weather resistant



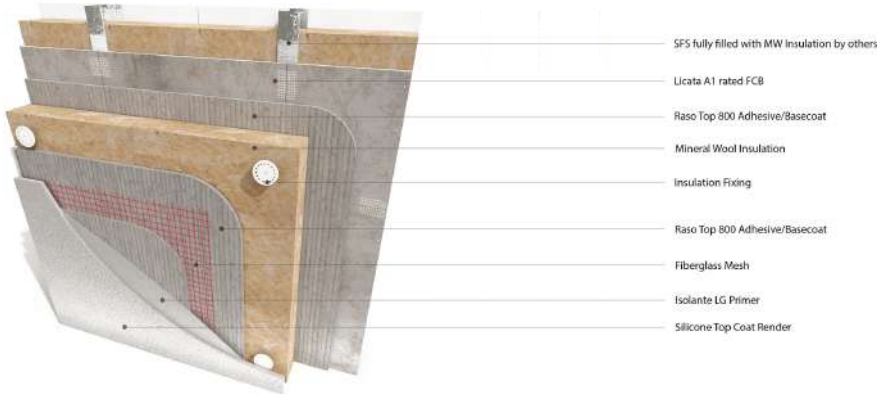
System can be finished with render or brick slips (pg.)

licata therm SFS Panel Substrate

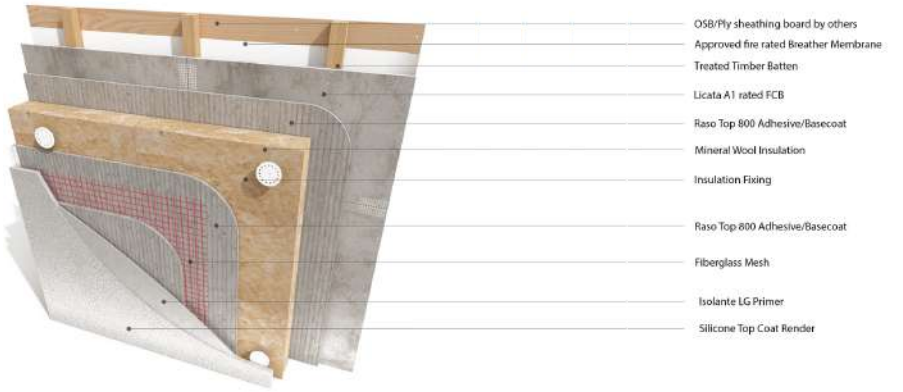
Licata's Cement Board Render System has been designed for substrates built with a steel or timber frame. Featuring great durability, water repellent surface and protection against algae and mould. With increased strength and crack resistance, due to the glass fibre mesh. Choose from brick slips, coloured render, resin multi-colour or plaster for the decorative finish. With over 700 colours available, you can pick the perfect coloured render for your project.

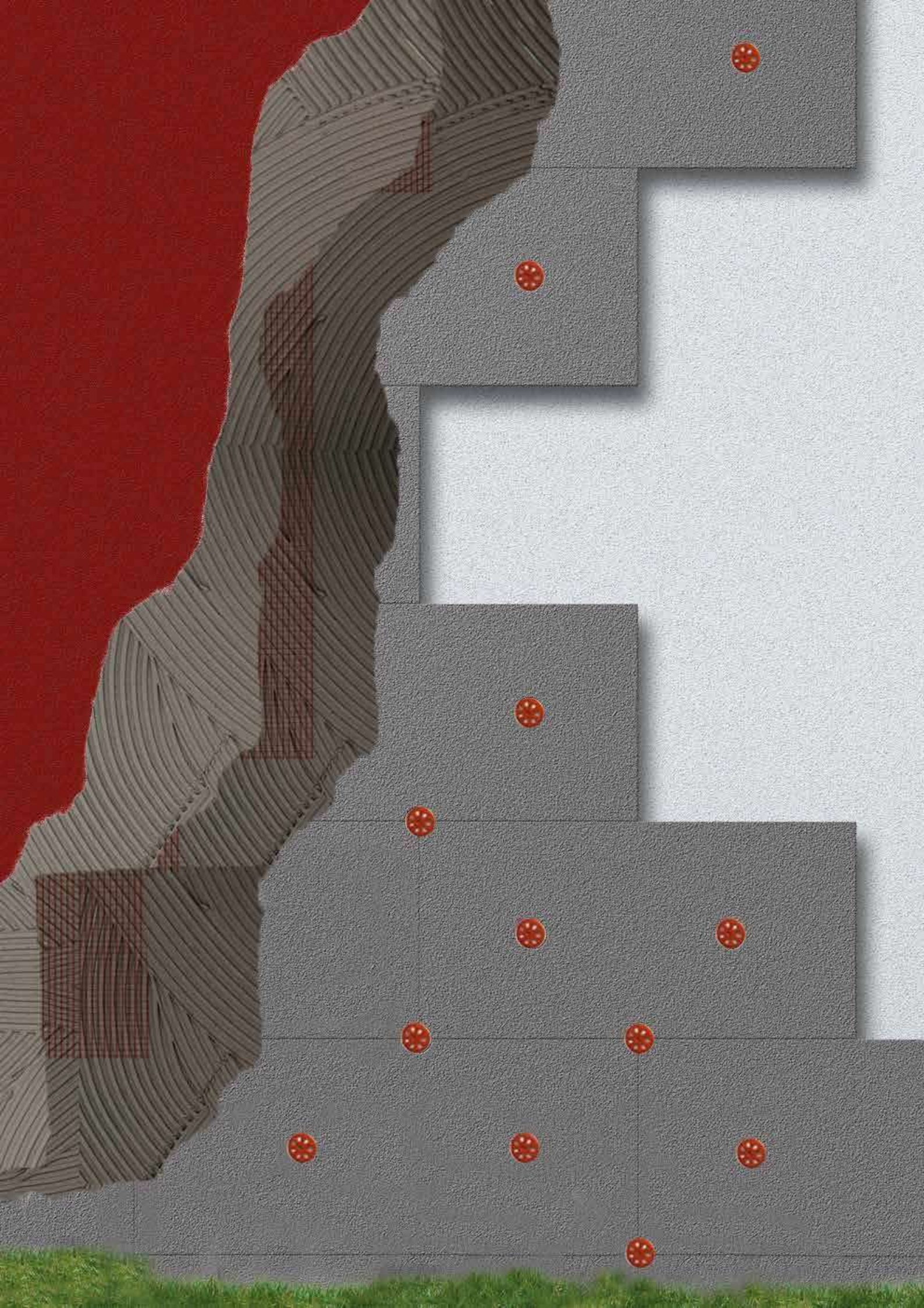
- Protects against algae and mould
- Weather resistamt
- Durable & water repellent
- Suitable for steel frame and timber frame
- Excellent drying time
- Breathable & lightweight

Steel Frame System



Timber Frame System





Application

Verification and preparation of the substrate

The use of the licatatherm thermal insulation system is allowed on old and new buildings. Suitable for various types of substrates: masonry (concrete, cement-based concrete blocks, bricks, porous concrete), exposed masonry, prefabricated structures (multi-layer slabs).
The application support must be analysed in order to verify its mechanical characteristics and its physical state.

- Check the flatness of the support and, if necessary, remove any protrusions greater than 1 cm.
- The application substrate must be dry and cured, clean, consistent, free from dust and oily substances, without humidity and salts. Primers (Acril Primer, Nano Primer, SilPrimer) must always be used on old, reconstituted and absorbent substrates, which also have the function of surface consolidation of the substrate. In case of poorly absorbent surfaces or smooth concrete in the presence of release agent, apply Aggrappante LG before gluing, specially formulated to create adhesion bridges and increase the specific surface.
- Substrates with algae, fungus or lichen settlements always require special treatment. First the wall must be cleaned and then treated with a solution of active substances (Sanus) which must not be rinsed.
- The damaged or incoherent concrete parts must be repaired with special repair mortars.
- In the case of old paints, plasters or ceramic coatings, the floor plan must be removed and reconstructed.
- The minimum temperature of the processing support must not be lower than + 5 ° C.
- Consider the right processing temperature and the degree of humidity of the building. Interventions such as the creation of an internal plaster or screed, must be completed (including drying) before starting the application of the system.

Monitor the weather conditions to ensure correct application and maintenance conditions of the products connected to the system. So do not apply on frozen supports, in the freezing phase or in anticipation of temperatures to drop below +3 ° C within 24 hours. Apply at temperatures between +5 ° C and +35 ° C with relative humidity not exceeding 70%. Protect during application from direct sunlight and rapid drying. It will be up to the designer to indicate in the project the systems to be adopted in order not to allow rainwater infiltrations inside the system (roofing, waterproofing, sealing, etc.) and the positioning of specific elements built and designed for ETICS insulation systems for loads. suspended.

Profile fixing

The insulating plates are fastened by means of universal starting profiles, basic profiles. All the connections to the sidewalks, to the skirting board and to the openings must be made with specific starting licatatherm profiles and under-sills, aligned level and fixed with anchors with a distance of less than 30 cm.

Apply the licatatherm starting profiles at a height of at least 3 cm from the walking surface to avoid contact with rainwater (see fi g.1).

fig **1**

fig **2**

Bonding and positioning of the insulating plates

For the plinth and for areas subject to driving rain (balconies, terraces, etc.) use the licatatherm plinth panels, for a minimum height of 30 cm above the walking surface, applying the Raso Top 800 adhesive over the entire surface. of the panel with a notched trowel (see fi g.2).

Mix the Raso Top 800 adhesive by adding 21-23% of the water (approximately 5.25-5.75 L) required for the mix and mix with a suitable low-speed drill until the desired consistency is obtained and let it rest. for 5 minutes and mix again. In the case of a perfectly flat support (the flatness of the surface must have a maximum tolerance of 5 mm over 3 m) the product is spread over the entire surface of the insulating plate with a notched trowel with an average consumption of 4 - 6 kg / m2 with full surface (see fi g.3).

fig **3**

When the substrate is not perfectly flat and has irregularities which in any case do not exceed one centimetre in height, the product is spread around the perimeter in points. Strips of a few centimetres in width are formed parallel to the sides of the insulating plate and thickness points with a diameter of about 5-10 cm are applied (see fi g.4). Average consumption of 3 - 5 kg / m2.

fig **4**

The insulating plates must be applied to the wall, from bottom to top, with staggered joints, ensuring that there are no gaps between the edges of the plates (see fi g.5).

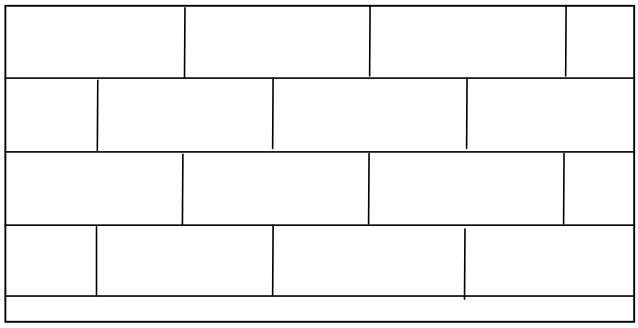


fig **5**

After the slab has been pressed against the wall, the glue must cover at least 40% of the entire surface (considering both the material on the support and that on the slab). At the corners, the sheets must be alternated in order to guarantee absorption of tensions (see fi g.6).

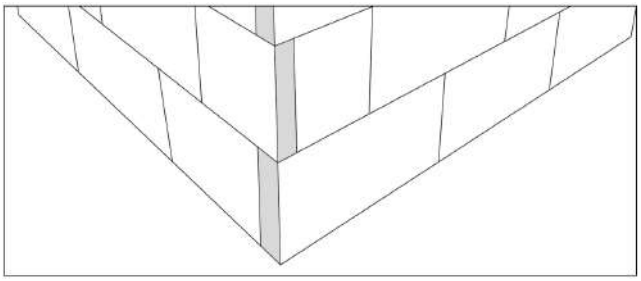


fig **6**

Gaps between panels greater than 2 mm must be sealed with insulating strips (see fi g. 7)

fig **7**

low density polyurethane foam with Licata FOAMPU (see fi g.8).

fig **8**

N.B. Immediately remove any traces of finished adhesive mortar between the joints of the slabs or in the joints, without leaving residues to avoid the formation of thermal bridges.
The insulating plates are then beaten with a wooden or plastic trowel to make them adhere as much as possible to the substrate.
Furthermore, frequently check the good flatness of the entire surface with a straightedge and if not, proceed with sanding to prepare the surface for the next cycle - smoothing.

Fixing of the insulating panels

Given that:

- Insulating panel thicknesses equal to or greater than 10 cm must in any case be doweled.
- The holes for the installation of the anchors must be made only when the adhesive has hardened (usually 3 days).
- Use rotary hammers or hammer drills only with concrete or solid brick. On bricks, hollow blocks, honeycomb concrete, use rotary drills and bits that are suitable not to damage the masonry artefacts.
- Adjust the stop depth of the drill to 10-15 mm longer than the dowel.
- The anchoring depth of the anchor on the support must be greater than 40 mm.
- The plugs must be inserted flush with the insulation by percussion with a hammer or screwing(depending on the type of anchor).
- Bent or loose (with poor sealing) plugs should be removed and replaced with a new plug with new drilling not in the same hole. Empty holes must be filled with insulating foam.

Mechanical fixing

After curing for a minimum of three days, the panels are mechanically fixed, which takes place using special anchors with an anchoring depth of at least 4 cm. The length and diameter of the dowels vary according to the type of bearing support and the insulation to be fixed. The disk of the plug has the task of pressing the insulating plate against the support, while the stem is left with the function of adherence to the support itself.

The number of dowels depends on the height and position (central area, edges) and can vary from 6 to 8 per m^2 depending on the height. They must be applied as in the diagrams shown in fi g.1, fi g.2, fi g.3 and fi g.4.

Buildings located in urban contexts protected from the wind with a height not exceeding 8 m with planar, solid, absorbent, non-chalking surfaces, do not require tessellation.
In case of poorly absorbent, crumbling surfaces, and in any case of doubt, it will be necessary to tessellate according to the normal system (see fi g.1).

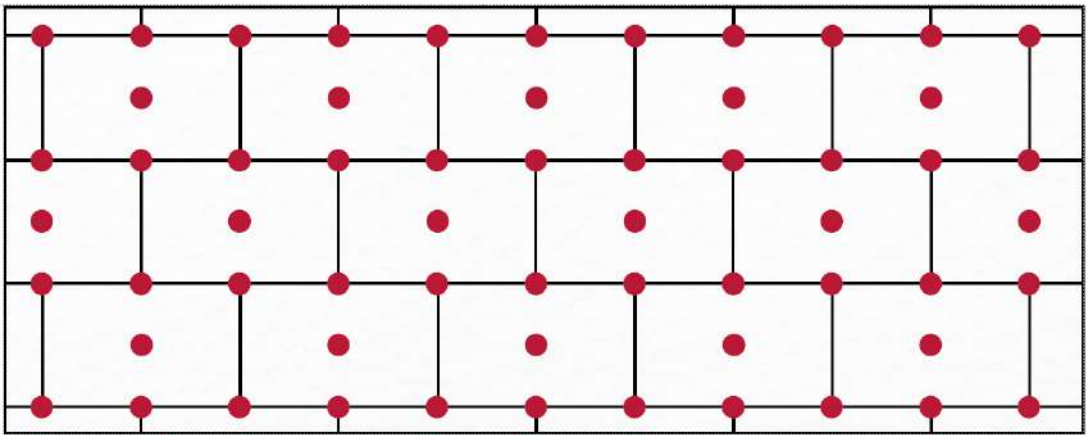


fig **1** | normal tessellation (less than 8 m)

Buildings located in urban contexts, protected from the wind and with a height greater than 8 m, require normal anchoring (see fi g.1). Isolated buildings or in open urban contexts require normal tessellation over the entire surface up to 15 m and reinforced tessellation over 15 m (see fi g.2).

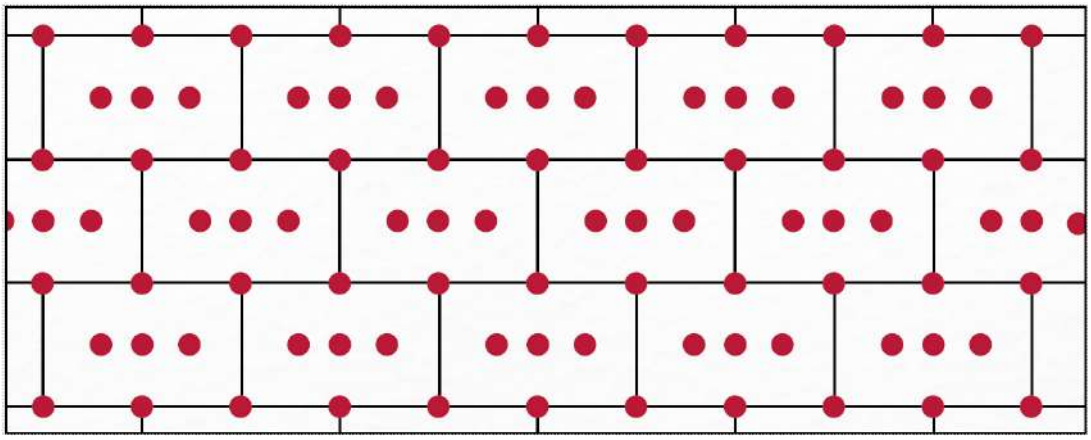


fig **2** | tassellatura rinforzata (superiore ai 15 m)

In mechanically fixed systems with additional gluing, the tessellation of the panels must be performed concurrently with the installation, therefore immediately after applying the adhesive. The anchors must be prepared as in fi g.2 with reinforced anchors.

Rockwool mechanical fixing

The mechanical fastening of the rock wool panels will take place according to a “W” pattern (see fi g. 4), where the anchors are not positioned at the intersections of the panelling, but approximately 5 cm away from the edge of the panel.
The plugs must be coupled with the Fischer DT washer to increase the pressure surface.

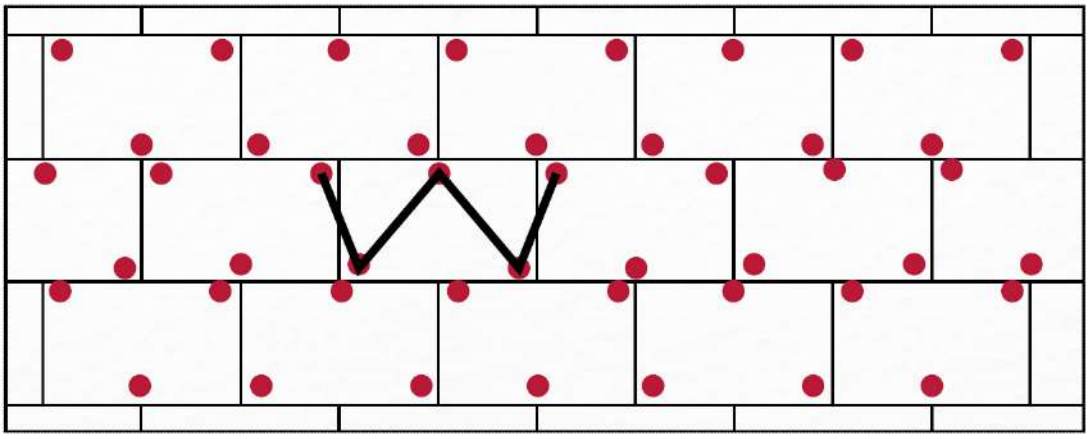


fig **4** | tessellation for rock wool panels

Rondella di fissaggio per isolanti **DT**

N.B. If the licatatherm system is not applied around the outer edge of the building, but ends without continuity, a reinforced tessellation must still be performed on the edges (see fi g.3).

Tessellation of edges

The edges at the corners in EWI systems mechanically fixed with additional gluing, must always be strengthened as well as the external vertical edges without continuity as well as the connections with openings, windows, fixes, expansion joints, etc., maintaining a maximum interdistance of 30 cm on the reinforcements and a distance from the edge of 10 cm.

See fi g.3 for positioning of vertical reinforcements on corners, edges, vertical connections to openings, windows, fixtures, expansion joints, etc.

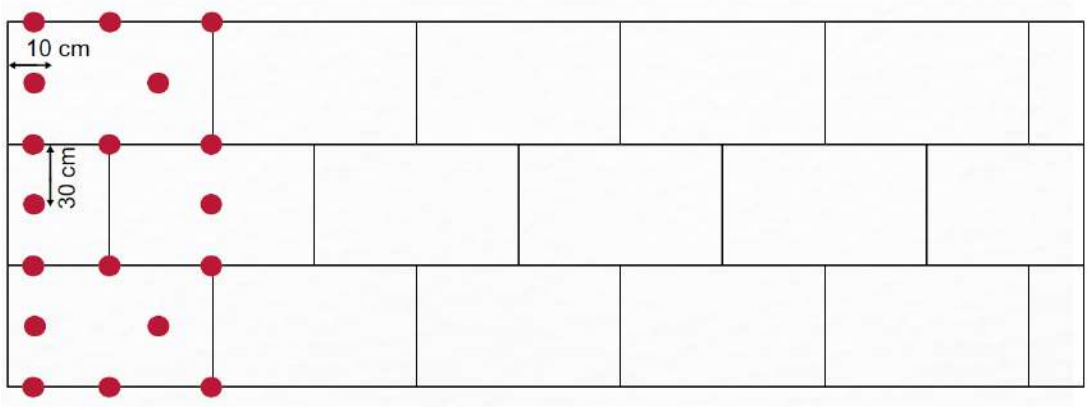


fig **3** | edge tessellation

N.B. If the licatatherm system is not applied around the outer edge of the building, but ends without continuity, even if the tessellation of the surfaces is not necessary, it must nonetheless reinforced tessellation on the edges must be performed (see fig. 3).

Arrows for armor, edge protectors and accessories

At the corners of windows and doors, the insulating panels must be shaped so that i their joints do not correspond to the edges of the openings. Panel cuts must be made in a workmanlike manner at a right angle and to do this, the appropriate tools must be used such as saws or hot wire cutters (see fig. 1).

fig. **1**

Before the reinforced smoothing it will be necessary to reinforce and counteract the shear force, with diagonal reinforcements that will be drowned in the plaster and fixed to the panels. The edge of the net strip should be positioned directly on the corner at approx. 45 °. The dimensions of the net strips should be approximately 20 x 40 cm (see fi g.2).
Alternatively, licatatherm armor arrow for shoulder can be used (see fi g.3).

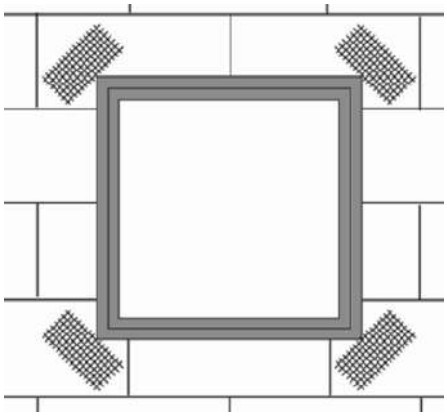


fig. **2**

fig. **3**

The appropriate angular licatatherm with net will be applied to all corners with adhesive mortar (see fi g.4 and fi g.5), taking care to use the special angular licatatherm in PVC with drip-resistant net in the rainwater drainage points. visible edge (see fi g.6).

fig **4**

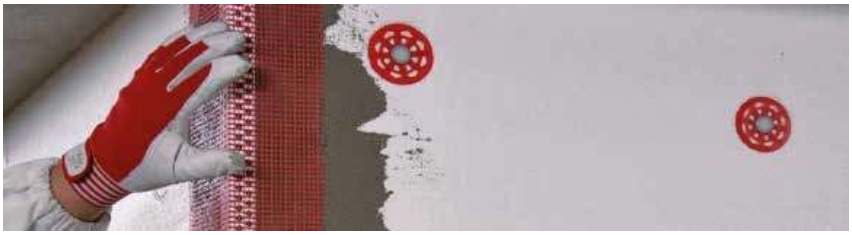


fig **5**

fig **6**

fig **7**

N.B. The structural expansion joints must be protected with licatatherm PVC expansion joint (fi g.7).

Shaving and reinforcement mesh

Once the insulating plates have been mounted, it is necessary to wait for at least 3-7 days (depending on the climatic conditions) for the smoothing and drowning of the reinforcement mesh.
Proceed to smoothing with a notched metal trowel, average consumption of 1.1 kg / m² per 1 mm of thickness.
Starting from top to bottom, insert and drown the licatatherm mesh 160 in alkali-resistant glass fibre, overlapping it between one strip and another for at least 10 cm.
Overlap the reinforcement mesh to the reinforcement mesh of the particular licatatherm accessories such as PVC angles, expansion joints, mesh for bosses, window reinforcement arrows, etc.
In areas subject to impact, it can be reinforced with a double layer of mesh. At the end of the operation, everything must dry for at least 1-2 days.

First coat of Raso Top 800 smoothing compound

Licatatherm mesh 160

Then proceed with the second coat of Raso Top 800 smoothing compound with a non-toothed steel trowel in order to completely cover the reinforcement mesh.
The final thickness of the two reinforced layers of mesh must be greater than 3 mm.
The net must be positioned beyond the half of the thickness towards the external 3/4.

Application of the finishing layers

After the complete hardening of the smoothing layer, about 3-6 days (depending on the climatic conditions), proceed with the application of the Isolante LG, PrimerOcram or Siloxan LG coloured primer with a wool roller or / and flat brush.

Subsequently, after at least 1-2 days, the decorative coating must be applied according to the coating system used:

Licatasil potassium silicate line | **Lerici acrylic line** | **Siloxan line Siloxan Color**

Spread the finish in the grain size of your choice and then structure it with the help of suitable tools (plastic trowel).
For under-balconies, eaves, etc., use paints from the Vitrea Quarzo acrylic line, the potassium silicate line Idrosil Exterior and the siloxane line Siloxan Paint.

N.B. Use light colours (reflection index higher than 30%), do not interrupt the application on continuous surfaces and for at least 3-5 days, protect the surfaces from sun, rain, etc.

licata® building systems

System finishes

licata® building systems

COLOUR

collection Exterior

colorado

red

autumn

white

grey

ochre

orange

green

ice

yellow

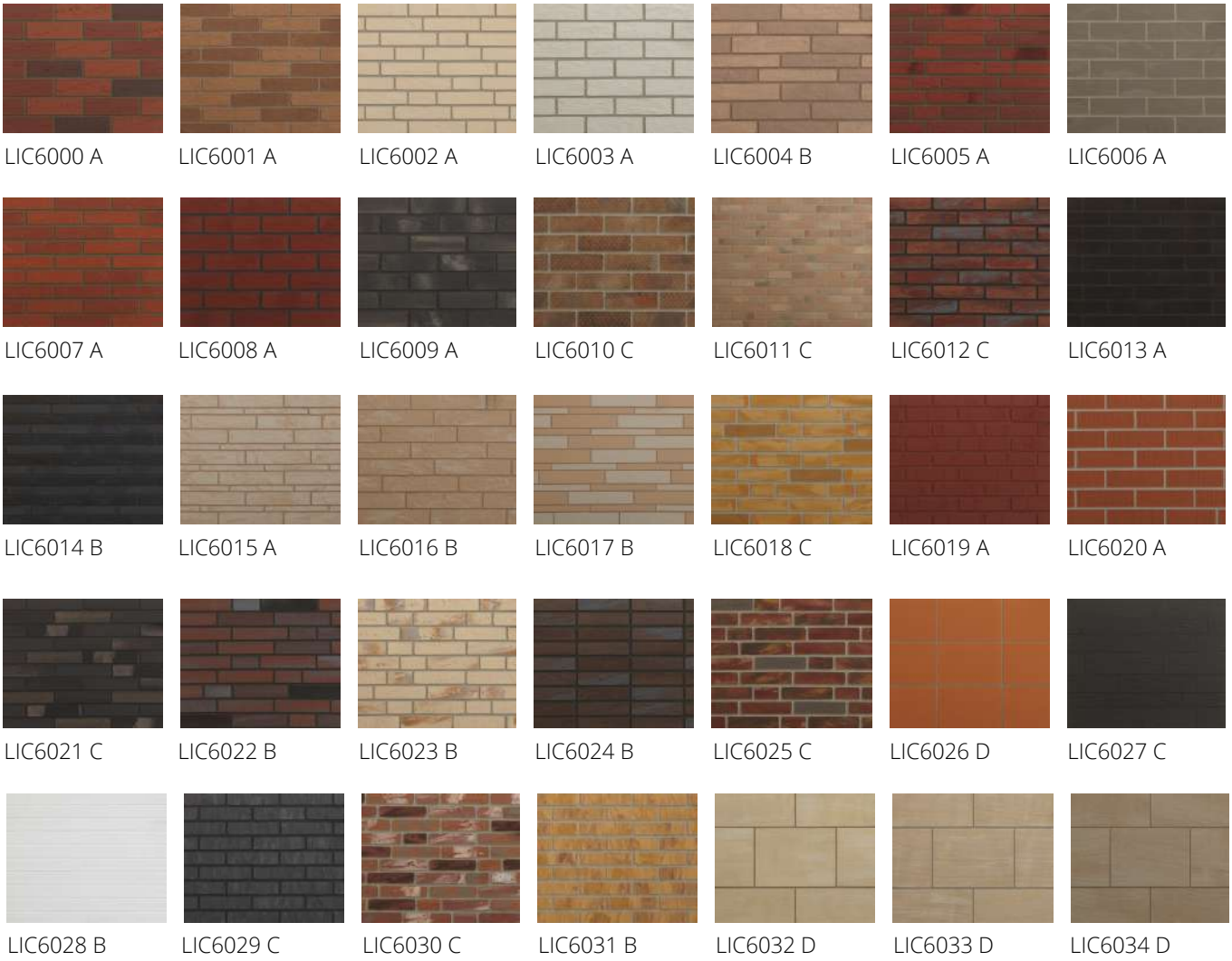
special colours

Licatasystemcolors Exterior system has been on the market for over 20 years, gaining irreplaceable experience in the development of dyes for tinting. The system offers a complete range of colours for bright and modern lightfast paste finishes. Through colour, brilliance, design, structure and different colour combinations, licata products are able to completely change our perception of a building.

The finishes are available in different grain sizes and structures and in Licatasystemcolors Exterior shades.

Licata Acrylic Brick Slips

Licata's acrylic brick slips are mineral-based, made from a mixture of assorted quartz sands and a binding agent. Ideal for new build and renovation projects, they are perfect for façade cladding whilst creating a beautiful aesthetic. Suitable for internal and external use, brick slips are cost-effective and quick to apply. They are durable, weather resistant and come with a 10 year guarantee. Our acrylic brick slip range is available in a wide range of sizes, textures and colours.

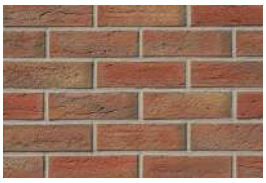



THE EAST LONDON HOTEL

Licata Clay Brick Slips

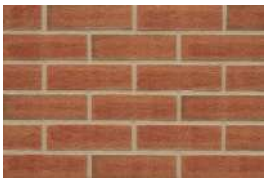
Licata clay slips are a versatile thin brick cladding that simulates the look of traditional clay brickwork whilst providing greater insulation and more flexibility of style and application. Our clay slips come in a range of sizes, colours and textures, and are suitable for both internal and external use. Providing modern insulation and greater adaptability whilst giving you that traditional brickwork look that is so popular in the UK. Suitable for both low and high rise buildings, this is an A2 fire classification brick slip system in accordance with BS EN 13501-1 : 2007.

HANDFORMED
Arezzo nero



HANDFORMED
Autumn leaves

HANDFORMED
Colorado flamed

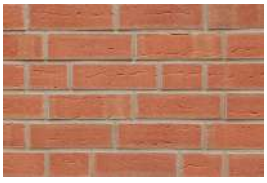


HANDFORMED
Florence antique

HANDFORMED
Old millhouse

HANDFORMED
Red blue flamed

HANDFORMED
Red nuance

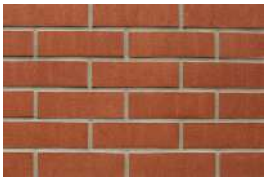


HANDFORMED
Red sand flamed

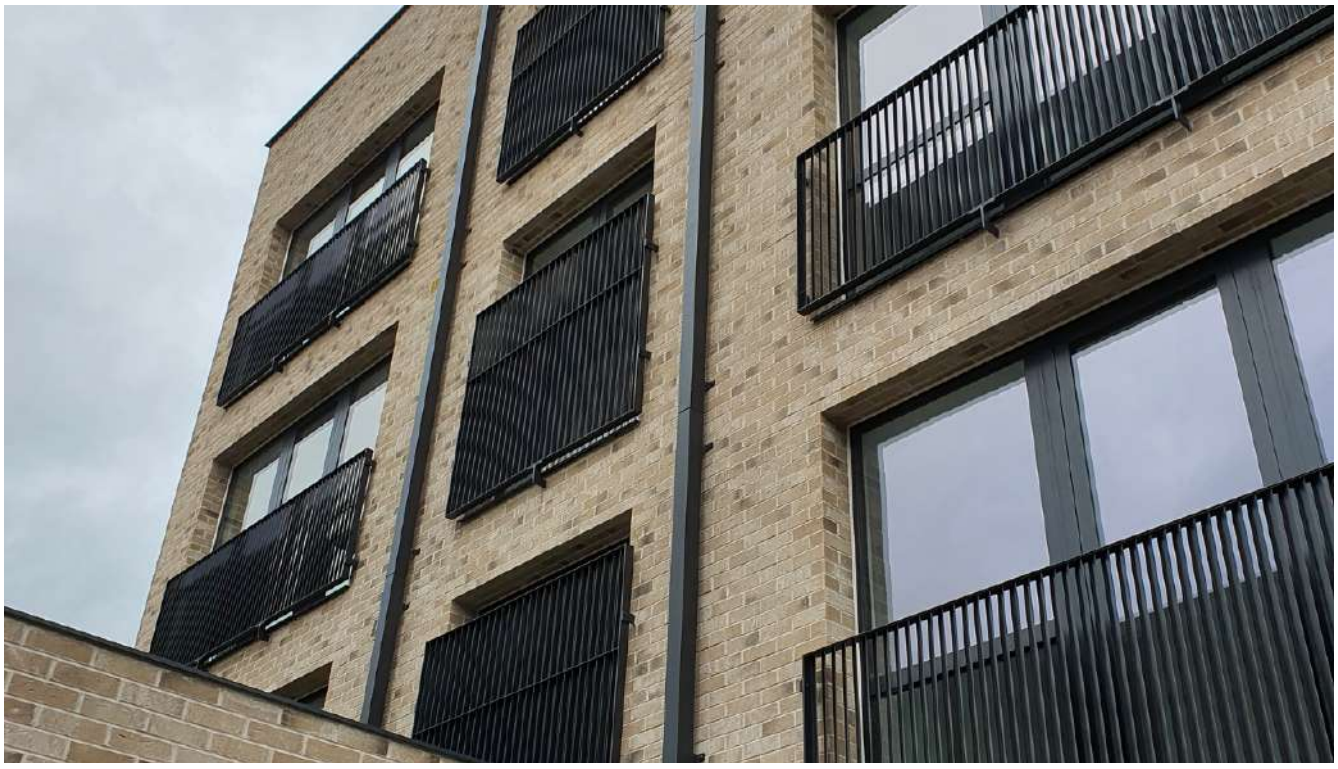
HANDFORMED
Royal antique

HANDFORMED
Flame colour

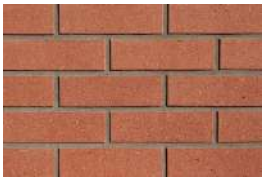
MONTANA
Ravenna



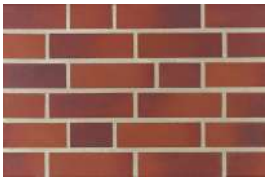
SANDED
Dark red nuance



SANDED
Leonardo



SANDED
Red nuance



SMOOTH
Bordeaux

SMOOTH
Grenoble

SMOOTH
Staffordshire blue

VINTAGE
Charleroi

VINTAGE
New york

VINTAGE
Oslo

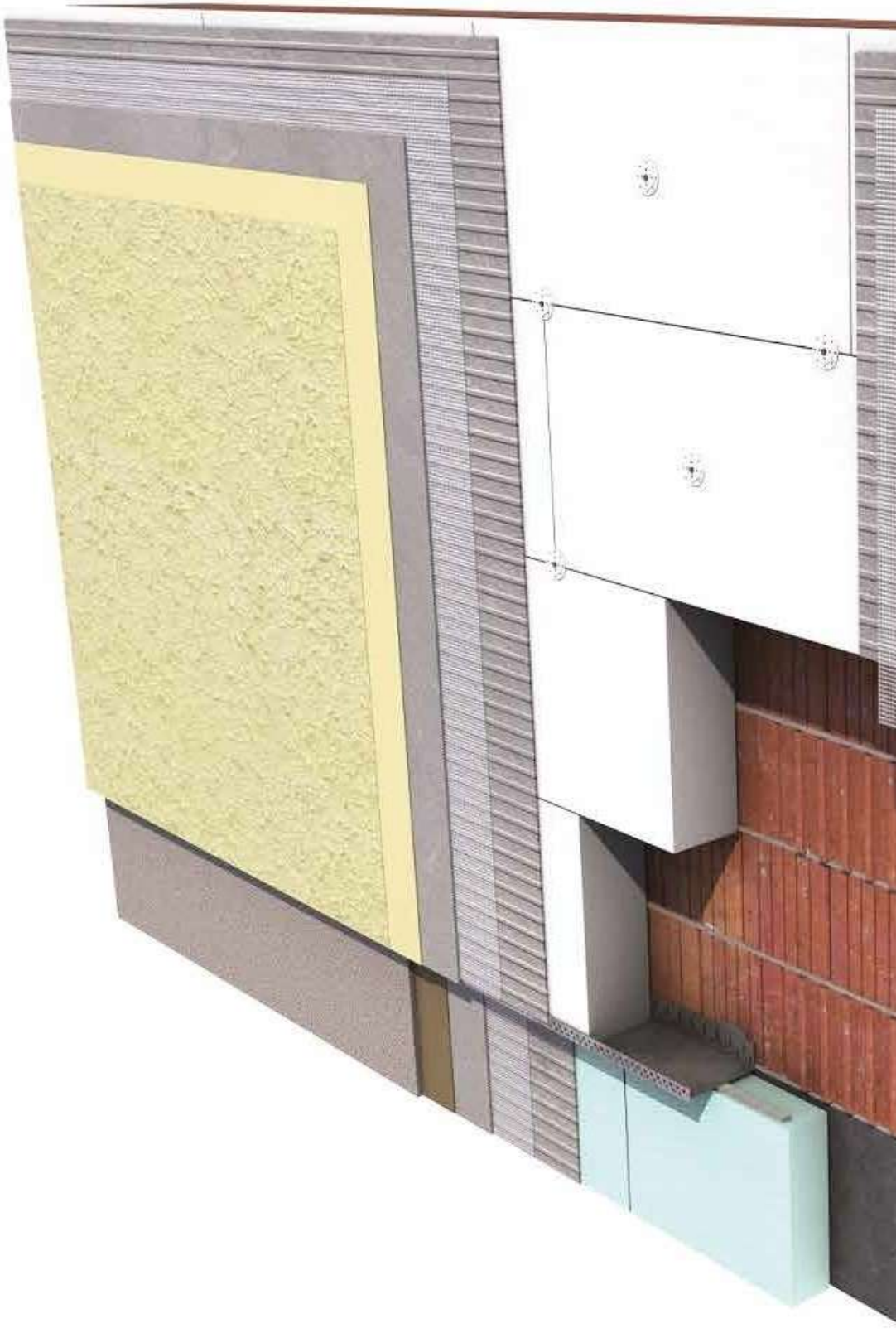
WATERSTRUCK
Auckland

WATERSTRUCK
Boston

WEATHERED
London buff

WEATHERED
Old millhouse

licata® building systems



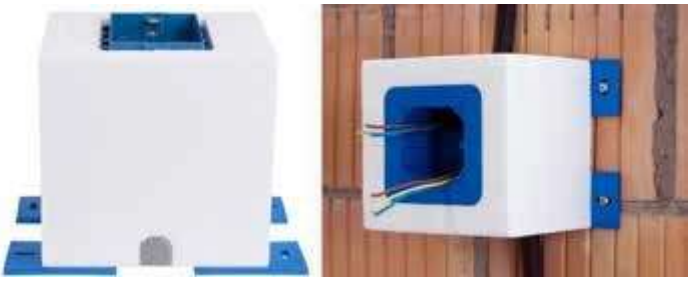
licata therm

Accessories

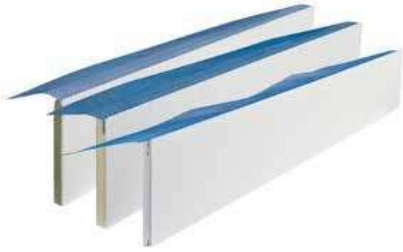
licata® building systems

licatatherm starting profile with aluminium drip

licatatherm under sill



licatatherm electrical boxes



licatatherm parapets for window

licatatherm expansion joint

angular licatatherm in PVC with mesh

angular licatatherm in PVC with drip net

licatatherm Rock wool insulating cap

licatatherm EPS insulating cap with graphite

licatatherm EPS insulating cap

licatatherm plug PN 8

licatatherm Termofix 6H-NT anchor

licatatherm Ecotwist dowel

licatatherm anchor M6

licatatherm anchor M12

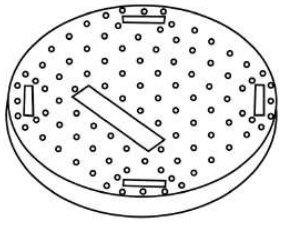
licatatherm washers Fischer DT

licatatherm fiberglass mesh 160

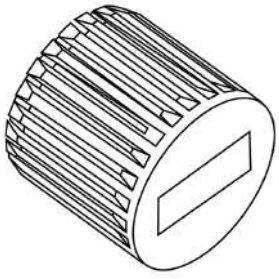
Accessories

Even the slightest thermal bridges can lead to the formation of condensation water or mould in the external insulation systems. The Licata proposal is its "Accessories" line: elements for anchoring to walls covered with licatatherm.

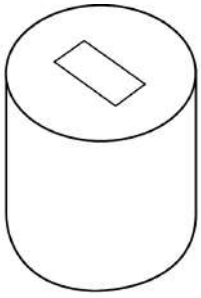
They allow you to fix both light and heavy elements on any thickness of the coat, such as: lamps, railings, awnings, canopies, air conditioners, etc. The easy and safe assembly of the various accessories saves time and prevents breakage, costly repairs, while preserving the integrity of the licatatherm.



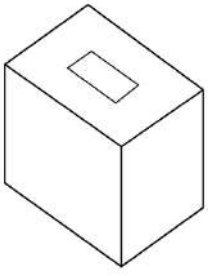
1 licatatherm disco



2 licatatherm cilindro VARIZ



3 licatatherm cilindro Pu



4 licatatherm cubo Pu

licata therm disk

The licatatherm disc fixing washers are composed of a phenolic resin plate glued to an EPS or polypropylene washer.

Application
- Curtain guides
- Lightweight panels
- Temperature sensor
- Hose clamps
- Stops for taxes

licata therm VARIZ cylinder

VARIZ® cylinders are moulded by expansion, in EPS, with high specific weight. The 20 mm circular grid marks the precise cut of the saw. They are available with two different diameters.

Application
- Stops for taxes
- Hose clamps
- Coat hanger
- Bins
- Set screw for shutters

licata therm Pu cylinder

The licatatherm Pu cylinder mounting cylinders are made of rigid EPS or polyurethane foam, with a high specific cost. They are available with two different diameters.

Application
- Shutters
- Advertising panels
- Small luminaries
- Hose clamps
- Coat hanger

licata therm Pu cube

The licatatherm cube Pu assembly blocks are made of rot-proof rigid foam in EPS or polyurethane, with a high specific cost. They are available with two different diameters.

Application
- Shutters
- Advertising panels
- Hose clamps
- Coat hanger

licata®
building systems

licata therm

Energy certificate

licata building systems

Energy performance of residential buildings

What is the energy performance index? The energy performance index corresponds to the total energy consumed by the air-conditioned building, per square meter of surface each year. This index indicates how much energy is consumed so that the building (or the real estate unit) reaches the conditions of comfort according to the energy needs taken into consideration by the type of property. From 1 October 2015 according to the guidelines for energy certification DM 06/26/2015, the energy performance of the property is expressed through the global energy performance index EPgl, nren which includes:

- winter air conditioning (EPh, nren)
- summer air conditioning (EPc, nren)
- the production of domestic hot water (EPw, nren)
- ventilation (EPv, nren)
- artificial lighting (EPl, nren), for non-residential properties
- the transport of people or things (EPt, nren), for non-residential properties

The unit of measurement for performance relating to residential buildings is the kWh / m2 year, and the symbol used and de fi ned by law is EPgl (Global Energy Performance Index).

What is the energy class

The energy class is an index ranging from A4 to G and is bound by some parameters that depend on the specification of a property, the location in which it is located and its shape (S / V ratio), the energy quality and the relative energy consumption . From 1 October 2014 this classification is the result obtained by comparing the property and its performance, compared to a reference building with average characteristics.

Energy certification is a tool for transforming the real estate market, which improves its transparency and efficiency by providing potential buyers and tenants with objective information on the energy performance (and related costs) of the property to be purchased or rented.
Energy certification has positive effects on the market value of properties and encourages the requalification of existing buildings with low energy performance having objectives such as:

- make the real estate market more transparent, because it allows a comparison of the energy consumption connected to the property;
- informing about energy saving systems and potentials;
- document the energy and technology standard of the property;
- stimulate the owners to proceed with the energy improvement of their properties;
- contribute to environmental protection.

The certification is valid for 10 years and is updated on the occasion of any intervention that changes the performance of the building or system in terms of energy absorption. It should be remembered that to access tax concessions with a tax deduction of 55% for energy requalification of existing buildings or part of them, the Energy Certification is mandatory (except for boilers and windows).
Decree 201/2012 (the famous «Salva Italia»), extended the tax concessions of 55% of the costs incurred for energy requalification until 30 June 2013.

NZEB (Nearly Zero Energy Building) buildings with almost zero consumption

Nearly Zero Energy Buildings (nZEB) are buildings that simply consume very little energy for heating, cooling, for the production of domestic hot water, ventilation, and lighting. The definition of nZEB has not yet been well de fi ned by national regulations but is associated with definitions such as “class A houses”, “passive buildings”, “buildings with high energy performance”, etc. The nZEB buildings were introduced by the European Directive 31/2010 / EC, followed in Italy by Legislative Decree 192/2005 and subsequent updates. However, the legislation provides that from 2021 all new buildings will have to be built nZEB, the obligation has been brought forward to 2019 for public buildings.

What is Thermal transmittance

(U) (unit of measurement: W / m2K) indicates the amount of heat that is dispersed by a square meter of building envelope and is defined by the inverse of the sum of the thermal resistances (R) of the layers that constitute it. A low thermal transmittance value corresponds to a lower heat dispersion, therefore a better insulation.

U = 1: R (Thermal Resistance)
The thermal resistance (R) (unit of measurement: m2K / W) is obtained from the ratio between the thickness of the single layer and its thermal conductivity.
R = S: λ
S is the thickness of the layer (unit of measurement: m)
λ = is the thermal conductivity of the material (unit of measurement: W / mK)

hi and he = Pre-set coefficients of exchange with the internal or external air (liminal coefficient), to be used in the calculations.
The standard defines the values of the standard liminal coefficient to be used for opaque components, setting it equal to 25 W / m2K for the surfaces facing the outside and 7.7 W / m2K for the surfaces facing the internal environment.

Main laws and regulations governing energy saving in construction

EUROPEAN REGULATION

- Direttiva 91-2002 CE
- Direttiva 28-2009 CE
- Direttiva 31-2010 CE EPBD Energy Performance Building Directive

The EU directive on the energy performance of buildings was first adopted in 2002. It was intended to improve the energy efficiency of buildings, reduce carbon emissions, reduce the impact of climate change.
On May 19, 2010, the Council of the European Union and the European Parliament revised the directive on energy performance to strengthen its constraints, it also clarified and streamlined some of the provisions of the 2002 directive which it then replaced. The 2012 Energy Performance and Efficiency Directive are the two main pieces of legislation aimed at reducing the energy consumption of buildings.
The principle behind the directive is to make the energy efficiency of buildings transparent, by requiring an energy performance certificate that demonstrates the energy value of the buildings, accompanied by recommendations on how to improve their efficiency.
In addition, the European Union has set itself the goal, by 2020, of improving energy efficiency by 20% and reducing greenhouse gas emissions by 20% compared to 1990 levels.

ITALIAN LEGISLATION

- Legislative Decree 192 of 19/08/2005 Basic Law on Energy Certification
- Ministerial Decree of 26/06/2009 National guidelines for the energy certification of buildings -
- incorporates Legislative Decree 192/2005, concludes the transitional period and outlines the guidelines for the energy certification of buildings
- Law 10/91 Rules on the rational use of energy, energy saving and development of renewable energy sources - First Italian law dealing with energy saving and attempting to rationalize the problem of consumption and renewable energy sources .
- The Legislative Decree 04/06/2013 n. 63, transformed into law with L90 / 2013, transposes the European Directive 2010/31 / EC. The Italian process ends with the issuance of the implementing decrees with the Ministerial Decree of 26/06/2015. In particular, the energy performance of the envelope and systems for new buildings and in cases of renovation are regulated.

Decalogue National Building Regulations "ETICS"

To date, the process of harmonizing European standards has not yet been completed. For this reason, in addition to the European Directive on construction products (CPD: Construction Products Directive), the law of the individual country on construction is applied for the application of the six Essential Requirements (ER: Essential Requirements).
The six Essential Requirements consider the building as a single object: the individual components, in our case the ETICS, are therefore considered according to this principle. The Essential Requirements regulate the following areas:

1. MECHANICAL RESISTANCE AND STABILITY

The work must be designed and built so that the loads to which it can be subjected during construction and use do not cause:

- the collapse of the entire work or part of it;
- severe deformations of inadmissible importance;
- damage to other parts of the work or to equipment and main systems or accessories following a deformation of primary importance of the load-bearing elements;
- damage of disproportionate severity compared to the cause that caused them.

2. SAFETY IN THE EVENT OF FIRE

The work must be designed and built so that, in the event of a fire:

- the load-bearing capacity of the building can be guaranteed for a specific period of time;
- the production and spread of fire and smoke within the works are limited;
- the spread of fire to nearby works is limited;
- the occupants can leave the work or otherwise be rescued;
- the safety of the rescue teams is taken into consideration.

3. HYGIENE, HEALTH AND ENVIRONMENT

The work must be designed and built in such a way as not to compromise the hygiene or health of the occupants or neighbours and, in particular, so as not to cause:

- development of toxic gases;
- presence of dangerous particles or gases in the air;
- emission of dangerous radiations;
- pollution or toxicity of water or soil;
- defects in the elimination of waste water, fumes and solid or liquid waste;
- formation of humidity on parts or walls of the work.

4. SAFETY DURING USE

The work must be designed and built in such a way that its use does not involve the risk of inadmissible accidents, such as slips, falls, collisions, burns, electrocutions, injuries following explosions.

5. PROTECTION AGAINST NOISE

The casing as a whole must ensure the noise protection function.

coming from outside the building. The work must be designed and built in such a way that the noise to which the occupants and the people in the vicinity are subjected is maintained at levels that do not harm their health and such as to allow satisfactory conditions of sleep, rest and of work.

6. ENERGY SAVING AND THERMAL DISPERSION

The work and the related heating, cooling and ventilation systems must be designed and built in such a way that the energy needs of the building are moderate, taking into account the climatic conditions of the place, without affecting the thermal well-being of the occupants.

Note: the Construction Products Directive 89/106 / EC has been replaced by the new European Regulation 305/2011 in force since 01/07/2013. The following new requirement is introduced in this regulation.

7. SUSTAINABLE USE OF NATURAL RESOURCES

Construction works must be designed, built and demolished so that the use of natural resources is sustainable and guarantees in particular the following: the reuse or recyclability of construction works, their materials and their parts after demolition; the durability of construction works; the use, in construction works, of environmentally compatible raw and secondary materials.

licatatherm ETICS Operation and benefits

The external thermal insulation system, by insulating the perimeter walls, reduces the influence of the external temperature on the internal one, in this way: in winter, walls and internal environment are less cold in summer less hot.
Non-insulated perimeter walls are the main culprits for the heat loss of a building. For this reason, adopting a licatatherm ETICS system means significantly improving the energy performance of the building, which is certified for a period of 10 years.
In the drawing the main areas of heat loss in a house.

HEAT LOSSES IN A "NORMAL" HOUSE


licata
building+colours
Raso Top 800
licata.finish
Raso Top 800
25kg
licata coat
licata
building+colours
LINEA
SILICATO DI POTASSIO

licata therm

Technical data sheets of the components

licata building systems

Raso Top 800

Fibre-reinforced mineral adhesive/skim coating made with hydraulic binders and polymer-modified resins for interiors and exteriors. Specifically designed for ETAG 004 external solid insulation such as *licatatherm* and for façade restoration work.

Raso Top 800 is a fibre-reinforced mineral adhesive/skim coating made with hydraulic binders, polymer-modified resins, selected inert materials and latest-generation additives, specifically devised for bonding and skim coating thermal insulation panels in **ETAG 004** systems such as ***licatatherm***. **Raso Top 800** boasts an excellent degree of adhesion on any traditional substrate, whether new or existing, even with extremely low absorption, making it also ideal for façade restoration work, both indoors and out. Its special formula allows professionals to apply it with extreme smoothness, achieving finishes with a superior degree of styling. Its dimensional stability, guaranteed by controlled hygrometric shrinkage, means it can be applied in variable thicknesses of between 1 and 10 mm per coat, consequently **Raso Top 800** also proves ideal as a regulating skim coating to restore flatness on horizontal or vertical substrates.

MAIN AREAS OF APPLICATION

Raso Top 800 can be used on the majority of substrates commonly used in construction, for work on both new and existing buildings. It is mainly intended for use in:

- ***licatatherm*** external solid insulation systems with classic panels such as EPS, graphite EPS, rock wool or XPS (only for low bottom board strips)
- Lime based renders
- Lime/cement based renders
- Brick
- Prefabricated concrete or cast in-situ
- Autoclaved aerated concrete
- Old paintwork and coatings provided they are clean, consistent and well anchored to the substrate

Raso Top 800 is also used in ***licatatherm*** external solid insulation systems for bonding and skim coating of natural breathable panels such as wood fibre or cork.
For application on other types of substrates, please contact our engineering department.

CHARACTERISTICS

- High adhesion: owing to the addition of specific additives, **Raso Top 800** boasts excellent adhesion to the majority of commonly used substrates.

- Regulating: **Raso Top 800** can also be used as a "regulating" product on extra thick surfaces that are not flat (up to 10 mm).

- Easy workability. The combined spreadability, easy detachment of tools and simple working are obtained thanks to the use of latest-generation additives, reducing the level of difficulty and any delays in the laying process.

- **ETA** certified: product inserted in external solid insulation systems awarded an **ETA** certificate.

PRODUCT INFORMATION

Appearance	Grey or white powder
Particle size	<0.8 mm and 1.2 mm
Powder consumption (bonding)	Between 4 and 6 kg/m² on full surface Between 3 and 5 kg/m² for perimeter with points
Powder consumption (skim coating)	Between 4 and 6 kg/m² 1.1 kg/m² per mm in thickness
Mixing water	21-23% of powder weight
Workability time at 20 °C	≥30 minutes
Application thickness per coat	± 1.5 mm
Application temperature	Between +5 °C and +35 °C
Storage	12 months in a dry, protected place in sealed packs, at temperatures of between +5 °C and +35 °C
Packaging	25 kg
Density	1400-1500 kg/dm³
Mixture pH	approx. 11

PERFORMANCE LEVELS according

Characteristic	Test Method	Normative requirement	Performance
Dry bulk density	EN 1015-10		1400-1500 kg/m³
Compression resistance	EN 1015-11	CS I - CS IV	CS III
Adhesion	EN 1015-12		≥ 0.16 FP:B
Capillary water absorption	EN 1015-18	W0-W2	W0
Water vapour permeability coefficient (μ)	EN 1015-19		≤ 8
Thermal conductivity (λ)	EN 1745		< 0.45 W/mK
Reaction-to-fire Euroclass	EN 13501-1		A1

WARNINGS

- Professional-grade product.
- Alkaline material: protect your eyes and skin during application.
- After use, wash tools with water while the mixture is still fresh.
- The room temperature and degree of humidity affect the workability, grip and drying times.
- Monitor the product curing suitably for at least the first 24 hours after laying, protect fresh mortar against rapid drying, against direct sunlight, strong wind and heavy rain.

SAFETY

As regards the information concerning proper product disposal, storage and handling, please consult the relevant Safety Data Sheet.

NOTES
This technical data sheet replaces and cancels all previous versions.
The indications and performance levels provided in this document are based on our current technical-scientific knowledge and in any case should be considered as purely indicative since the conditions of use are in no way under our control. The purchaser must therefore check the suitability of the product for his or her specific needs, assuming all responsibility deriving from its use. Our technical-sales network guarantees a speedy response and is at your disposal for any clarifications or queries regarding the use and processing of ***licata SpA*** products.
Data Sheet ref.: 110/17.1

Raso W 160

Fibre-reinforced skim coat/adhesive for interiors and exteriors, made with hydraulic binders, polymer-modified resins, certified in accordance with the UNI 998-1 standard as GP mortar, specifically designed for external solid insulation systems with white or graphite EPS panels and as a skim coat, in the reinforced repair of façades during restoration work.

Raso W 160 is a professional-grade skim coat/adhesive for interiors and exteriors, made with Portland cement, carefully selected sands, polymer-modified resins and additives that give it a considerable adhesive capacity and good workability. The addition of special mineral fibres means it is possible to combine improved shock resistance with good flexibility. **Raso W 160** proves to be an ideal substrate for subsequent application of decorative coatings made with silicates, acrylics, siloxanes, or paintwork. The superior adhesive capacity, the enhanced pot life and the exceptional spreadability make it particularly recommended for ***licatatherm*** external solid insulation systems and as a skim coating, in the reinforced repair of façades during restoration work.

MAIN AREAS OF APPLICATION

Raso W 160 can be used on the majority of substrates commonly used in construction, for work on both new and existing buildings. It is mainly intended for use in:

- ***licatatherm*** external solid insulation systems with classic panels such as EPS, graphite EPS or XPS (only for low bottom board strips)
- Lime/cement based renders
- Brick
- Prefabricated concrete or cast in-situ
- Autoclaved aerated concrete
- Old paintwork and coatings provided they are clean, consistent and well anchored to the substrate

Owing to its outstanding permeability to water vapour, **Raso W 160** is also recommended for ***licatatherm*** external solid insulation with rock wool or glass wool panels. IT is also suitable for single or double layer skim coatings with reinforcement on renders or lime-based finishes where no damp-proofing treatment or the use of biocompatible materials is required.
For application on other types of substrates, please contact our engineering department.

CHARACTERISTICS

- Universal product: owing to its special composition, **Raso W 160** adheres to the majority of substrates commonly used in construction.

- Easy workability. The combined spreadability, easy detachment of tools and simple working are obtained thanks to the use of latest-generation additives, reducing the level of difficulty and any delays in the laying process.

- Regulating: **Raso W 160** can also be used as a "regulating" product on extra thick surfaces that are not flat (up to 10 mm).

- Outstanding thixotropy: the special additives contained in **Raso W 160** make for easy application both vertically as well as over-head.

- Controlled hygrometric shrinkage. The presence of special mineral fibres minimises the formation of cracks.

PRODUCT INFORMATION

Appearance	Grey or white powder
Particle size	<0.5 mm and 0.8 mm
Powder consumption (bonding)	Between 4 and 6 kg/m² on full surface Between 3 and 5 kg/m² for perimeter with points
Powder consumption (skim coating)	Between 4 and 6 kg/m² 1.15 kg/m² per mm in thickness
Mixing water	21-23% of powder weight
Workability time at 20 °C	>30 minutes
Application thickness per coat	± 1 mm (0.5 mm version) ± 1.5 mm (0.8 mm version)
Application temperature	Between +5 °C and +35 °C
Storage	12 months in a dry, protected place in sealed packs, at temperatures of between +5 °C and +35 °C
Packaging	25 kg
Density	1300-1400 kg/dm³
Mixture pH	approx. 11

PERFORMANCE LEVELS according

Characteristic	Test Method	Normative requirement	Performance
Dry bulk density	EN 1015-10		1400-1500 kg/m³
Compression resistance	EN 1015-11	CS I - CS IV	CS III
Adhesion	EN 1015-12		≥ 0.14 MPa
Fracture pattern	EN 1015-12	A, B, C	B
Capillary water absorption	EN 1015-18	W0-W2	W0
Water vapour permeability coefficient (μ)	EN 1015-19		≤ 8
Thermal conductivity (λ)	EN 1745		< 0.45 W/mK

WARNINGS

- Professional-grade product.
- Alkaline material: protect your eyes and skin during application.
- After use, wash tools with water while the mixture is still fresh.
- The room temperature and degree of humidity affect the workability, grip and drying times.
- Monitor the product curing suitably for at least the first 24 hours after laying, protect fresh mortar against rapid drying, against direct sunlight, strong wind and heavy rain.

SAFETY

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Data Sheet ref.: 110/17.1

Raso Top Bio

Fibre-reinforced mineral skim coating/adhesive made solely with natural hydraulic lime NHL 5 certified in accordance with UNI EN 459-1. The extremely high breathability and outstanding adhesion properties make it ideal for the construction of biocompatible thermal insulation systems

Raso Top Bio is a biocompatible skim coating/adhesive, certified as GP mortar in accordance with the **UNI EN 998-1** standard, specifically designed for applications requiring extremely high breathability. The special formula of **Raso Top Bio** lends the product excellent adhesion to the majority of substrates used in construction, combined with high spreadability during application. Owing to the addition of pozzolanic reagents, selected sands and specific additives, **Raso Top Bio** meets the strictest requirements in terms of environmental friendliness.
Raso Top Bio is recommended for work in ***licata*** external solid insulation systems and in the majority of work aimed at repairing/restoring construction heritage as a skim coating with superior permeability to water vapour properties.

MAIN AREAS OF APPLICATION

Raso Top Bio can be used on the majority of substrates commonly used in construction, for work on both new and existing buildings. It is mainly intended for use in:

- ***licata*** external solid insulation systems with natural breathable panels such as wood fibre, rock wool or cork
- Lime based renders
- Lime/cement based renders
- Brick
- Prefabricated concrete or cast in-situ
- Autoclaved aerated concrete
- Old paintwork and coatings provided they are clean, consistent and well anchored to the substrate

Raso Top Bio is also recommended in ***licata*** external solid insulation systems with classic panels such as EPS, graphite EPS or XPS (only for low bottom board strips).
For application on other types of substrates, please contact our engineering department.

CHARACTERISTICS

• Biocompatible product: owing to the addition of pozzolanic agents, selected sands and specific additives, **Raso Top Bio** meets the strictest requirements in terms of environmental friendliness.

• Easy workability. The combined spreadability, easy detachment of tools and simple working are obtained thanks to the use of latest-generation additives, reducing the level of difficulty and any delays in the laying process.

• Regulating: **Raso Top Bio** can also be used as a "regulating" product on extra thick surfaces that are not flat (up to 10 mm).

• Extra high breathability: the natural properties of hydraulic lime combined with inert materials with a controlled particle size curve make for exceptional permeability to water vapour, making **Raso Top Bio** ideal for use in breathable thermal insulation work (rock wool, cork or wood fibre).

• Outstanding wetting and thixotropic properties. • The special additives contained in **Raso Top Bio** make for easy application both vertically as well as over-head.

PRODUCT INFORMATION

Appearance	beige powder
Particle size	< 1 mm
Powder consumption (bonding)	between 4 and 5 kg/m² on full surface between 3.5 and 4.5 kg/m² for points/perimeter
Powder consumption (skim coating)	between 3.5 and 4 kg/m² (1.1-1.2 kg/m² per mm in thickness)
Mixing water	22-24% of powder weight
Workability time at 20 °C	≈ 30 minutes
Application thickness per coat	3-10 mm
Application temperature	between +5 °C and +35 °C
Storage	12 months in a dry, protected place in sealed packs, at temperatures of between +5 °C and +35 °C
Packaging	25 kg bag
Density	1470-1530 kg/dm³

PERFORMANCE LEVELS required according to

Characteristic	Test Method	Normative requirement	Performance
Dry bulk density	EN 1015-10		1470-1530 kg/m³
Compression resistance	EN 1015-11	CS I - CS IV	CS II
Adhesion	EN 1015-12		≥0.13 MPa
Fracture pattern	EN 1015-12	A, B, C	B
Capillary water absorption	EN 1015-18	W0-W2	W0
Water vapour permeability coefficient (μ)	EN 1015-19	≤15	≤12
Thermal conductivity (λ)	EN 1745		0.4 W/mK
Reaction-to-fire Euroclass	EN 13501-1		A1

WARNINGS

- Professional-grade product.
- Alkaline material: protect your eyes and skin during application.
- After use, wash tools with water while the mixture is still fresh.
- The room temperature and degree of humidity affect the workability, grip and drying times.
- Monitor the product curing suitably for at least the first 24 hours after laying, protect fresh mortar against rapid drying, against direct sunlight, strong wind and heavy rain.

SAFETY

As regards the information concerning proper product disposal, storage and handling, please consult the relevant Safety Data Sheet.

NOTES
This technical data sheet replaces and cancels all previous versions.
The indications and performance levels provided in this document are based on our current technical-scientific knowledge and in any case should be considered as purely indicative since the conditions of use are in no way under our control. The purchaser must therefore check the suitability of the product for his or her specific needs, assuming all responsibility deriving from its use. Our technical-sales network guarantees a speedy response and is at your disposal for any clarifications or queries regarding the use and processing of ***licata SpA*** products.
Data Sheet ref.: 110/17.1

Rasotherm 500Plus

Ready-to-use, synthetic polymer-based fibre-reinforced adhesive/render paste, with high adhesive power and excellent elasticity, ideal as an adhesive/render paste for use in *licatatherm-type* external insulation finishing systems and as a render paste in the reinforced restoration of façades with microcavillations.

Rasotherm 500 Plus is a ready-to-use, synthetic polymer-based in water dispersion fibre-reinforced adhesive/render paste, ideal as an adhesive/render paste for insulating panels made of foamed polystyrene, glass wool, rock wool, cork and wood fibre panels, especially on deformable bases such as wood panels, fibre-cement panels etc. The careful selection of raw materials and the addition of selected synthetic polymers, give **Rasotherm 500 Plus** excellent elasticity, flexibility, mechanical resistance (classified **cat. 2** according to **EN 13498**) and impermeability to water. Totally free of cement, **Rasotherm 500 Plus**, is also ideal as skim plaster for buildings subject to high accidental impact risk, for low-baseboard and in the restoration of façades with microcavillations or cracks.

MAIN FIELDS OF USE

Rasotherm 500 Plus is ideal as an adhesive/render plaster on natural and not natural insulating panels such as:

- Rock wool
- Glass wool
- Wood fibre
- EPS

Rasotherm 500 Plus is designed and formulated for applications on:

- Wooden bases (even CLT type composite laminates)
- Pre-fabricated concrete panels
- Lime-cement base plasters and finishes
- Reinforced skim coatings in façade restoration cycles
- Concrete
- Old paint and coatings provided they are clean, thick and well anchored to the substrate

For applications on different substrates, please contact our technical department.

CHARACTERISTICS

• Specific for wooden bases: **Rasotherm 500 Plus** is an adhesive/render plaster specific for gluing the majority of insulating panels on a multitude of bases, even deformable, like wooden walls (raw wood, glued laminated timber, CLT etc.)

• Excellent elasticity: the combination of specific performance additives and high quality binders gives **Rasotherm 500 Plus** excellent elasticity and flexibility.

• High mechanical resistance: classified in **Cat. 2** according to **EN 13498**, **Rasotherm 500 Plus** has excellent qualities of resistance to accidental impacts that make it ideal for interventions on low-baseboards.

• Excellent Thixotropy: the special consistency of **Rasotherm 500 Plus** allows an easy application also in vertical.

PRODUCT INFORMATION

Appearance	White paste
Particle size	<0.5 mm
Consumption	Bonding: from 3 to 5 kg/m² Smoothing: from 3 to 4 kg/m²
Preparation of the product	Ready to use
Overlay time at 20 °C	24-48 hours
Application thickness per coat	From 1 to 3 mm per coat
Application temperature	From +5 °C to +35 °C
Storage	12 months in dry, protected place in unopened container at temperatures between +5 °C and +35 °C
Packaging	25 kg
pH of mixture	approx. 9

PERFORMANCE

Characteristic	Test method	Legal requirement	Performance
Specific gravity	Internal		1.45 kg/dm³
Adhesion on cls and brick	Internal		> 0,45 N/mm²
Solid mass content	Internal		>90%
Viscosity at 20 °C	Brookfield-impeller No. 6		Approximately 60 000 cPs
Limit value EU VOC Dir. 2004/42/EC			<30 g/L

WARNINGS

- IT IS not suitable for application on frozen or thawing substrates. Store the buckets in places away from direct sunlight and with temperatures not below +5 °C to avoid compromising the quality of the material.
- If the surfaces are crumbling, flaking or the paintwork is old, clean the substrate thoroughly.
- In the event of difficult substrates, perform a suitability test beforehand.
- The effective temperature and degree of humidity may speed up or slow down the drying process.
- After using the product, wash the tools with water.

SAFETY

Please consult the safety data sheet for information about product disposal, storage and usage.

NOTES
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The indications and specifications given in this document are based on our current technical and scientific knowledge. They should, however, be considered as purely indicative because we have no control over the conditions in which the product will be used. The purchaser must, therefore, check that the product is suitable for his specific requirements. Our sales and technical network guarantees rapid consultancy services and is at your disposal for any clarifications and questions you may have about the use and application of ***Licata SpA*** products.
Data sheet ref.: 280/18.2

Aggrappante LG

Pigmented primer based on acrylic resins and natural silica inert fillers, ideal for Exteriors, with high bonding power on smooth or absorbent substrates

Universal pigmented primer based on acrylic resins and natural silica inert fillers. Specifically for bridging primer on smooth surfaces for rendering or skim coating cycles. The presence of inert fillers allows **Aggrappante LG** to create rough surfaces for excellent grip, allowing rendering and/or skim coatings to bond perfectly to cement or lime/cement. Ideal on absorbent substrates as well because it uniforms the drying of successive layers.

MAIN FIELDS OF USE

Aggrappante LG is suitable for preparing substrates in internal/external areas, both new or existing, on residential, industrial or commercial buildings. It is recommended for use on cured substrates, i.e. after a curing time of at least four weeks. It can be applied to substrates, such as:

- Smooth concrete
- Absorbent walls/substrates
- Particleboard (on pre-fabricated buildings)
- Plaster board

For applications on different substrates, please contact our technical department.

CHARACTERISTICS

Evens out absorption: ideal even on porous surfaces as it regulates the drying of subsequent materials (plaster, skim coating) avoiding "burn" cause by the substrate absorbing excessive amounts of water in the mixture.

• Excellent bonding power: ideal as bridging primer on horizontal or vertical vibrated/smooth concrete panels. Creates a rough surface which is ideal for bonding renders/skim coatings.

• Universal: **Aggrappante LG** can be applied to the most commonly used substrates in building.

•Low VOC content: extremely low release, compliant with European laws on volatile organic components

PRODUCT INFORMATION

Appearance	Liquid - Pale blue
Yield	0.250 kg/m²
Dilution	Ready to use/maximum 10% water
Drying time	1-2 hours at +20 °C to touch approx. 24 hours at +20 °C fully dry
Application temperature	between +5 °C and +35 °C and 70% R.H.
Storage	12 months if stored in the original, unopened container
Packaging	Polypropylene bucket from 5 kg -20 kg
Binding agent	Acrylic
Specific gravity	1.30 kg/L
VOC (Directive 2004/42/EC) for primers (Cat A/c):	< 30g/L of VOC

WARNINGS

- IT IS not suitable for application on frozen or thawing substrates. Store the primer containers in places away from direct sunlight and with temperatures not below +5 °C for avoid compromising the quality of the material.
- If the surfaces are crumbling, flaking or the paintwork is old, clean the substrate thoroughly.
- In the event of difficult substrates, perform a suitability test beforehand.
- The effective temperature and degree of humidity may speed up or slow down the drying process.
- It is not possible to guarantee drying with colour differences (stains) due to:
    - the conditions of the substrate (such as structure, absorption aspect, etc.)
    - the use of natural raw materials.
- After using the product, wash the tools with water.

SAFETY

Please consult the safety data sheet for information about product disposal, storage and usage.

NOTES
This data sheet replaces and voids all previous versions.
The indications and specifications given in this document are based on our current technical and scientific knowledge. They should, however, be considered as purely indicative because we have no control over the conditions in which the product will be used. The purchaser must, therefore, check that the product is suitable for his specific requirements. Our sales and technical network guarantees rapid consultancy services and is at your disposal for any clarifications and questions you may have about the use and application of ***Licata SpA*** products.
Data sheet ref. 110/17.1

Isolante LG

Pigmentable primer made with acrylic copolymers and inert silica materials, specifically for exteriors, with high coverage and excellent levelling properties.

Universal pigmentable primer made with acrylic copolymers and inert silica materials. IT is ideal as a fixer before all decoration work with micro-coatings or synthetic binder based paste coatings. Specifically designed for exteriors and suitable for interiors, its formula is purpose-devised to achieve high levels of concealment for both flaws in the substrate, as well as when painting over medium/strong colours.
Its high levelling power ensures even absorption of the subsequent decorative layer, enhancing the yield and the surface effect of the micro-coating.

MAIN AREAS OF APPLICATION

Isolante LG is recommended for preparing internal/external substrates, whether new or existing, on residential, industrial or commercial buildings. IT is advisable to use the product on seasoned substrates, in other words after a curing time of at least four weeks. IT is applicable to substrates such as:

- Smooth concrete
- Absorbent walls/substrates
- Existing rendered façades
- Prefabricated concrete panels
- Old paint and coatings of an organic or mineral nature
- Plasterboard sheets

For application on other types of substrates, please contact our engineering department.

CHARACTERISTICS

• Pigmentable: it can be applied white or coloured, pigmented with the same shade as the subsequent topcoat, so as to combine the effect of the bonding bridge and attenuate any strong shades when painting over existing surfaces.

• Universal: **Isolante LG** can be applied to the majority of substrates commonly used in construction.

• Low VOC content: extremely low emissions, in compliance with European standards concerning volatile organic compounds.

• Excellent levelling power: also ideal on new surfaces since it limits the absorption of subsequent coats of paint, maximising yield and improving the styling finish.

PRODUCT INFORMATION

Appearance	Liquid - White
Yield	0.200 – 0.250 kg/m²
Dilution	Ready to use/maximum 10% water
Drying time	approx. 1-2 hours at +20 °C to touch approx. 24 hours at +20 °C completely
Application temperature	between +5 °C and +35 °C and 70% R.H.
Storage	18 months, if kept in the original sealed bucket
Packaging	5 kg - 20 kg polypropylene bucket
Binder	Acrylic
Specific weight	1,30 kg/L
VOC (Directive 2004/42/EC) for primer (Cat A/g):	< 30g/L VOC

WARNINGS

- WE advise against application on frozen or thawing substrates. Store the primer buckets in a place sheltered from direct exposure to sunlight and at temperatures not below +5 °C to avoid compromising the quality of the material.
- In the case of surfaces with evident chalking, peeling or old paint, it is advisable to proceed with thorough cleaning of the substrate.
- In the case of critical substrates, it is a good idea to check them for suitability beforehand.
- The actual temperature and the degree of air humidity may speed up or slow down the drying process.
- It is impossible to guarantee drying without differences in colour (spots) considering:
    - the conditions of the substrates (such as structure, absorbency, etc.)
    - the use of natural raw materials.
- Wash the tools with water after user.

SAFETY

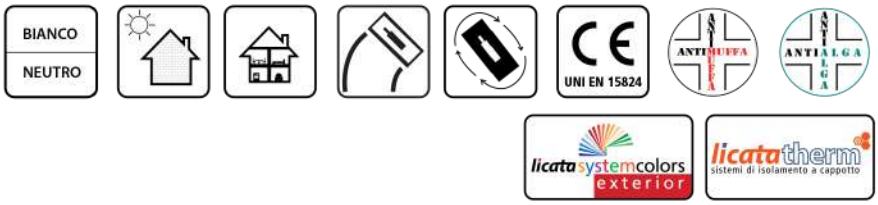
As regards the information concerning proper product disposal, storage and handling, please consult the relevant Safety Data Sheet.

NOTES
This technical data sheet replaces and cancels all previous versions.
The indications and performance levels provided in this document are based on our current technical-scientific knowledge and in any case should be considered as purely indicative since the conditions of use are in no way under our control. The purchaser must therefore check the suitability of the product for his or her specific needs, assuming all responsibility deriving from its use. Our technical-sales network guarantees a speedy response and is at your disposal for any clarifications or queries regarding the use and processing of ***licata SpA*** products.
Data Sheet ref.: 110/17.1

Siloxan Color

Ready to use coating made with a siloxane binder paste affording high water-repellency and excellent permeability to water vapour, certified in accordance with ETICS standards.
Offering excellent mould-proof and anti-algae properties, it is an ideal decoration during styling/functional restoration work on façades and specifically in *licatatherm* external solid insulation systems. Ideal as a decorative finish in all work requiring high permeability to water vapour.

Siloxan Color is a coating made with water-dispersed siloxane binder paste, ready for use and which can be pigmented. **Siloxan Color** is specifically designed for work on new or existing façades, as well as for the decorative phase of reinforced skim coating, and in ***licatatherm*** external solid insulation. Owing to its formula, **Siloxan Color** provides complete protection for the façade against rain and atmospheric agents. The special additives contained in the formula guarantees outstanding protection against algal and mould growth. Ideal as a finish where a high degree of permeability to water vapour is required, such as in damp-proofing work or breathable insulation systems. Combined with colouring pastes, **Siloxan Color** guarantees good durability, gloss and full colours. Available in 5 particle sizes.



MAIN AREAS OF APPLICATION

Siloxan Color is recommended for decorating external surfaces, whether new or existing, on residential industrial or commercial buildings. IT is advisable to use the product on seasoned substrates, in other words generally after a curing time of four weeks. IT is applicable to substrates such as:

- ***licatatherm*** thermal insulation systems
- Damp-proofing renders
- Thermal renders
- Lime or lime/cement based renders
- Reinforced skim coating in façade restoration work
- Concrete
- Prefabricated concrete panels

For application on other types of substrates, please contact our engineering department.

CHARACTERISTICS

• High water-repellency: the carefully selected latest-generation additives give the coating self-cleaning properties.

• Workability: the thixotropy of the coating combines excellent spreadability of the coating with good adhesion to the substrate to minimise any material peeling during processing

• Excellent permeability to water vapour: the carefully selected siloxane binders maximises the coating's properties ensuring the walls breathe without creating a "barrier effect"

• Improved pot life: **Siloxan Color**, in standard conditions, makes for easier work on large-size façades thanks to an improvement made to the extended working time.

• Algal and mould protection: the special mould-proof additives found in the formula guarantee an excellent degree of protection against algal and mould growth.

PRODUCT INFORMATION

Appearance	Paste - White
Particle size and yield	well rounded 1.0 mm - approx. 1.7 kg/m² well rounded 1.2 mm - approx. 2.0 kg/m² well rounded 1.5 mm - approx. 2.6 kg/m² well rounded 2.0 mm - approx. 3.2 kg/m² angular 2.0 mm - approx. 3.0 kg/m²
Dilution	Ready to use
Drying time	approx. 3-4 hours at +20 °C to touch approx. 24 hours at +20 °C completely
Application temperature	between +5 °C and +35 °C and 70% R.H.
Storage	18 months, if kept in the original sealed bucket
Packaging	25 kg polypropylene bucket
Binder	Acrylic siloxane copolymer
Specific weight	1.85 kg/L
Dirt pickup	Low
Gloss	Matt
VOC (Directive 2004/42/EC) for external wall coating (Cat A/c):	< 30g/L VOC

PERFORMANCE LEVELS according

Characteristic	Test Method	Normative requirement	Performance
Permeability to water vapour	UNI EN ISO 7783/2 - 2001	V1 (high) V5 (low)	V1
Water absorption	UNI EN 1062/3-2001	W1 (high) W3 (low)	W3
Adhesion	ISO 4624:2002	> 0.3 MPa	> 0.3 MPa
Durability	UNI EN 13687-3	> 0.3 MPa	> 0.3 MPa
Thermal conductivity	UNI EN 1745		λ=0,70 W/(m K)
Reaction to fire	UNI EN 13501-1		Euroclass A2 S1 d0

WARNINGS

- We advise against application on frozen or thawing substrates.
- In the case of critical substrates or those other than those specified, it is a good idea to check them for suitability beforehand and contact our engineering department.
- Store the coating cans in a place sheltered from direct exposure to sunlight and at temperatures not below +5 °C to avoid compromising the quality of the material.
- Always check the material prior to application, to make sure the colour tone matches the one required.
- Any complaints concerning the colour tone will not be accepter after application.
- It is impossible to guarantee drying without differences in colour (spots) considering:
    - the differences in atmospheric and physical conditions in which a building may be;
    - the presence of scaffolding;
    - the conditions of the substrates (such as structure, absorbency, etc.);
    - the use of natural raw materials.
- Protect against direct sun rays and heavy rain for the first 48-72 hours. The actual temperature and the degree of air humidity may speed up or slow down the drying process.
- Protect your eyes and hands during application.
- Wash the tools with water after user.

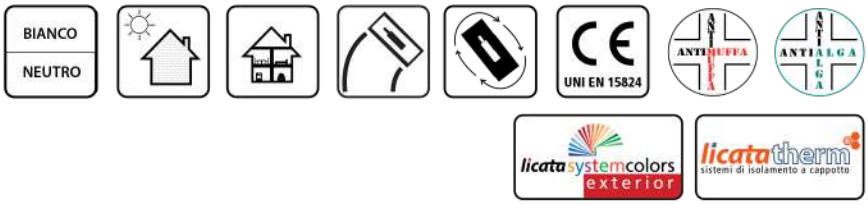
SAFETY

As regards the information concerning proper product disposal, storage and handling, please consult the relevant Safety Data Sheet.

Lerici

Ready to use coating made with an acrylic binder paste affording high water-repellency and exceptional workability, certified in accordance with ETICS standards. Offering excellent mould-proof and anti-algae properties, it is an ideal decoration during styling/functional restoration work on façades and specifically in *licatatherm* external solid insulation systems.

Lerici is a coating made with water-dispersed acrylic binder paste, ready for use and which can be pigmented. **Lerici** is specifically designed for work on new or existing façades, as well as for the decorative phase of reinforced skim coating, and in ***licatatherm*** external solid insulation. Owing to its formula, **Lerici** provides complete protection for the façade against rain and atmospheric agents; it is particularly effective in critical weather and environmental conditions (humid climate or in the presence of smog). The special additives contained in the formula guarantees outstanding protection against algal and mould growth. Combined with colouring pastes, **Lerici** guarantees good durability, gloss and full colours. Available in 4 particle sizes.



MAIN AREAS OF APPLICATION

Lerici is recommended for decorating internal substrates, whether new or existing, on residential, industrial or commercial buildings. IT is advisable to use the product on seasoned substrates, in other words after a curing time of at least four weeks. IT is applicable to substrates such as:

- ***licatatherm*** thermal insulation systems
- Thermal renders
- Lime/cement based renders or skim coatings
- Reinforced skim coating in façade restoration work
- Concrete
- Prefabricated concrete panels

For application on other types of substrates, please contact our engineering department.

CHARACTERISTICS

• High hydrophobicity: the particular formula of **Lerici** allows complete protection against atmospheric agents, creating a continuous film that prevents the passage of rainwater and therefore keeping the walls dry.

• Workability: the thixotropy of the coating combines excellent spreadability of the coating with good adhesion to the substrate to minimise any material peeling during processing.

• Improved pot life: **Lerici**, in standard conditions, makes for easier work on large-size façades thanks to an improvement made to the extended working time.

• Algal and mould protection: the special mould-proof additives found in the formula guarantee an excellent degree of protection against algal and mould growth.

• Extensive range of colours: from pastel hues to particularly bright shades, **Lerici** can be pigmented in over 600 different types of colour.

PRODUCT INFORMATION

Appearance	Paste - White
Particle size and yield	well rounded 1.0 mm - approx. 1.7 kg/m² well rounded 1.2 mm - approx. 2.0 kg/m² well rounded 1.5 mm - approx. 2.6 kg/m² well rounded 2.0 mm - approx. 3.2 kg/m² angular 2.0 mm - approx. 3.0 kg/m²
Dilution	Ready to use
Drying time	approx. 3-4 hours at +20 °C to touch approx. 24 hours at +20 °C completely
Application temperature	between +5 °C and +35 °C and 70% R.H.
Storage	18 months, if kept in the original sealed bucket
Packaging	25 kg polypropylene bucket
Binder	Acrylic
Specific weight	1.85 kg/L
Dirt pickup	Low
Gloss	Matt
VOC (Directive 2004/42/EC) for external wall coating (Cat A/c):	< 30g/L VOC

PERFORMANCE LEVELS according

Characteristic	Test Method	Normative requirement	Performance
Permeability to water vapour	UNI EN ISO 7783/2 - 2001	V1 (high) V5 (low)	V2
Water absorption	UNI EN 1062/3-2001	W1 (high) W3 (low)	W3
Adhesion	ISO 4624:2002	> 0.3 MPa	> 0.3 MPa
Durability	UNI EN 13687-3	> 0.3 MPa	> 0.3 MPa
Thermal conductivity	UNI EN 1745		λ=0,70 W/(m K)
Reaction to fire	UNI EN 13501-1		Euroclass A2 S1 d0

WARNINGS

- We advise against application on frozen or thawing substrates.
- In the case of critical substrates or those other than those specified, it is a good idea to check them for suitability beforehand and contact our engineering department.
- Store the coating cans in a place sheltered from direct exposure to sunlight and at temperatures not below +5 °C to avoid compromising the quality of the material.
- Always check the material prior to application, to make sure the colour tone matches the one required.
- Any complaints concerning the colour tone will not be accepter after application.
- It is impossible to guarantee drying without differences in colour (spots) considering:
    - the differences in atmospheric and physical conditions in which a building may be;
    - the presence of scaffolding;
    - the conditions of the substrates (such as structure, absorbency, etc.);
    - the use of natural raw materials.
- Protect against direct sun rays and heavy rain for the first 48-72 hours. The actual temperature and the degree of air humidity may speed up or slow down the drying process.
- Protect your eyes and hands during application.
- Wash the tools with water after user.

SAFETY

As regards the information concerning proper product disposal, storage and handling, please consult the relevant Safety Data Sheet.

LicataSil

Mineral coating made with potassium silicate paste, ready for use, conforming to standard DIN 18363; high breathability and good water-repellency, it is an ideal decoration during styling/functional restoration work on façades. Low dirt pickup and offering natural mould-proof (PH 11) and anti-algae properties, it is certified in accordance with ETICS standards, and it is suitable for use in *licatatherm* external solid insulation systems.

LicataSil is a mineral coating made with water-dispersed potassium silicate paste, ready for use and which can be pigmented. It conforms to standard **DIN 18363** in regard to the pureness of silicates, and it is specifically designed for work on new or existing façades as well as the decorative phase of reinforced skim coating or in ***licatatherm*** external solid insulation systems. Owing to its formula, **LicataSil** combines superior permeability to water vapour with good water-repellency and low dirt pickup. Available in multiple colours, it proves particularly suitable for restoration work in historic city centres, since it can be used to achieve special styling effects also with slight shadings on the façade. The normal properties of silicate lend **LicataSil** an outstanding natural protection against algal and mould growth (PH 11). Combined with colouring pastes, it guarantees good durability, gloss and full colours. Available in 4 particle sizes.

MAIN AREAS OF APPLICATION

LicataSil is recommended for decorating external surfaces, whether new or existing, on residential industrial or commercial buildings. IT is advisable to use the product on seasoned substrates, in other words generally after a curing time of four weeks. IT is applicable to substrates such as:

- ***licatatherm*** thermal insulation systems
- Thermal renders
- Lime/cement based renders or skim coatings
- Reinforced skim coating in façade restoration work
- Concrete
- Prefabricated concrete panels

For application on other types of substrates, please contact our engineering department.

CHARACTERISTICS

• Extra high breathability: the careful choice of raw materials, teamed with the typical property of silicate, lend this coating excellent permeability to water vapour values.

• Workability: the thixotropy of the coating combines excellent spreadability of the coating with good adhesion to the substrate to minimise any material peeling during processing.

• Outstanding adhesion strength: the pure silicate based composition lends **LicataSil** outstanding adhesion properties since it reacts chemically with the mineral substrate via a natural process called silicatisation

• Protection against algal and mould growth: the natural highly alkaline properties of silicate (PH 11) prevent the conditions for the formation of bacterial growth such as moulds, algae, etc.

PRODUCT INFORMATION

Appearance	Paste - White
Particle size and yield	well rounded 1.0 mm - approx. 1.7 kg/m² well rounded 1.2 mm - approx. 2.0 kg/m² well rounded 1.5 mm - approx. 2.6 kg/m² well rounded 2.0 mm - approx. 3.2 kg/m² angular 2.0 mm - approx. 3.0 kg/m²
Dilution	Ready to use
Drying time	approx. 3-4 hours at +20 °C to touch approx. 24 hours at +20 °C completely
Application temperature	between +5 °C and +35 °C and 70% R.H.
Storage	12 months, if kept in the original sealed bucket
Packaging	25 kg polypropylene bucket
Binder	Potassium silicate
Specific weight	1,90 kg/L
Dirt pickup	Low
Gloss	Matt
VOC (Directive 2004/42/EC) for external wall coating (Cat A/c):	< 30g/L VOC

PERFORMANCE LEVELS according

Characteristic	Test Method	Normative requirement	Performance
Permeability to water vapour	UNI EN ISO 7783/2 - 2001	V1 (high) V5 (low)	V1
Water absorption	UNI EN 1062/3-2001	W1 (high) W3 (low)	W3
Adhesion	ISO 4624:2002	> 0.3 MPa	> 0.3 MPa
Durability	UNI EN 13687-3	> 0.3 MPa	> 0.3 MPa
Thermal conductivity	UNI EN 1745		λ=0,70 W/(m K)
Reaction to fire	UNI EN 13501-1		Euroclass A2 S1 d0

WARNINGS

- We advise against application on frozen or thawing substrates.
- In the case of critical substrates or those other than those specified, it is a good idea to check them for suitability beforehand and contact our engineering department.
- Store the coating cans in a place sheltered from direct exposure to sunlight and at temperatures not below +5 °C to avoid compromising the quality of the material.
- Always check the material prior to application, to make sure the colour tone matches the one required.
- Any complaints concerning the colour tone will not be accepter after application.
- It is impossible to guarantee drying without differences in colour (spots) considering:
    - the differences in atmospheric and physical conditions in which a building may be;
    - the presence of scaffolding;
    - the conditions of the substrates (such as structure, absorbency, etc.);
    - the use of natural raw materials.
- Protect against direct sun rays and heavy rain for the first 48-72 hours. The actual temperature and the degree of air humidity may speed up or slow down the drying process.
- Protect your eyes and hands during application.
- Wash the tools with water after user.

SAFETY

As regards the information concerning proper product disposal, storage and handling, please consult the relevant Safety Data Sheet.

licatatherm mesh 160

licatatherm mesh 160 (certified according to **ETAG 004**), alkali resistant fibre glass mesh, meets the maximum safety requirements about crack-resistance and resistance to shock.

APPLICATION

After installing the insulation boards and having left the adhesive dry, you can smooth and drown the reinforcing mesh with **licata. finish** or **licata.coat** smoothing products. Operate by metal spatula trowel.
Starting from the top to bottom, insert and drown the reinforcing alkali-resistant fibreglass mesh **licatatherm mesh 160** overlapping at least 10 cm of mesh between one strip and the other. Areas subjected to mechanical stress can be better armed by using two layers of mesh.
When the operation is finished let it all dry for at least 2 days. Then proceed with the second coat of **licata.finish** or **licata.coat** smoothing products with steel trowel (not notched) so as to completely cover the reinforcing mesh.

N.B. *At the edges, stretch the glass fiber mesh over the entire wall and at the openings (doors / windows), drowning it in the mortar. Run along the edge of the intrados with a sharp knife, cutting the reinforcement mesh with an angle of 45 °.*
At the outer corners of the intrados cut the reinforcement mesh thoroughly and precisely.

TECHNICAL DATA

Description	Value	Regulations
Mass per unit area	160,4 g/m²	ETAG 004
Starch	Alkali resistance	-
Thread count - Warp - Weft	 48.0 Fd(yarn)/10 cm 20.0 Fd(yarn)/10 cm	DIN 53853
Colour	Red	-
Tensile strength - Warp - Weft	 2042,2 N/5 cm 2289,4 N/5 cm	ETAG 004
Ash content	84%	ETAG 004
Standard roll width	100,5 cm	DIN EN 1773
Standard roll leght	50 m	-
Packacking	50 m² roll 1 pallet contains 33 rolls (1.650 m²)	

ADVICE

- Prevent the formation of folds and/or bubbles during application of the mesh.
- Protect from UV rays, humidity and rain.

SAFETY

As regards the information concerning proper product disposal, storage and handling, please consult the relevant Safety Data Sheet.

NOTE
The information in this technical data sheet is gathered from information provided by the manufacturer.
The manufacturer reserves the right to make changes and variations due to technical needs without prior notice.
Ref. Sheet: 220/18.2

EJOT® H1 eco

The universal hammer-in anchor for all substrates with European Technical Approval

Technical data

Anchor nominal diameter	8 mm
Washer diameter	60 mm
Drill hole depth h_1 ≥	35 mm (55 mm)
Embedment depth h_{ef} ≥	25 mm (45 mm)
Point thermal transmission χ	0.001 W/K
Use categories acc. to ETA*	A, B, C, D, E
European Technical Assessment	ETA-11/0192

Values in parentheses: anchoring in lightweight aggregate concrete and autoclaved aerated concrete (use categories D and E)

Characteristic loads

A	Normal weight concrete C 12/15 acc. to EN 206-1	0.9 kN
A	Normal weight concrete C 20/25 - C 50/60 acc. to EN 206-1	**0.9 kN**
B	Clay bricks (Mz) acc. to EN-771-1 / DIN 105	0.9 kN
B	Solid lime sandstone (KS) acc. to EN 771-2 / DIN EN 106	**0.9 kN**
C	Vertically perforated clay bricks (Hlz) acc. to EN 771-1 / DIN 105, bulk density, ≥ 1.2 kg/dm³	0.75 kN
C	Vertically perforated clay bricks (Hlz) acc. to EN 771-1 / DIN 105, bulk density, ≥ 0.9 kg/dm³	**0.6 kN**
C	Sand-lime perforated bricks (KSL) acc. to EN 771-2 / DIN 106	0.9 kN
D	Lightweight aggregate concrete (LAC 4 - LAC 25) acc. to EN 1520	**0.9 kN**
E	Autoclaved aerated concrete AAC 4 - AAC 7) acc. to EN 771-4	0.5 kN

*Please note: For calculation of design loads the national safety **factors have to be** included (e.g. Germany: 3). Please observe the approval.*

Fastening of insulation boards

Accessories

A broad range of accessories is available for the **EJOT H1 eco** product group:

EJOT combi washer **VT 90** and **SBL 140** ***plus***

Product range

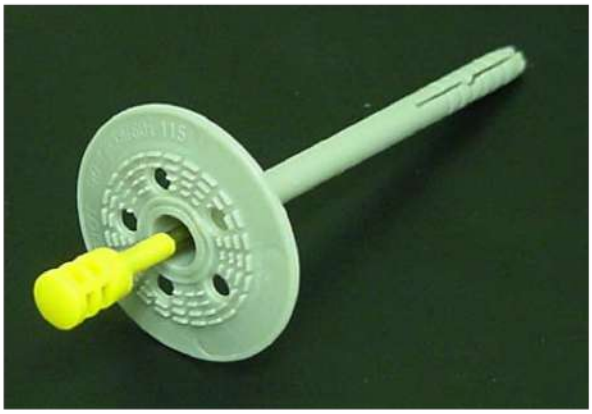
Use categories **A-C** Insulation (mm)		Use categories **D-E** Insulation (mm)		Product name and length (mm)	Product code	Packaging (pieces)	Pallet quantity (pieces)
New build.[1]	Renovation[2]	New build.[1]	Renovation[2]				
60	40	40	-	EJOT H1 eco 095	8746 095 400	100	5,000
80	60	60	40	EJOT H1 eco 115	8746 115 400	100	4,000
100	80	80	60	EJOT H1 eco 135	8746 135 400	100	4,000
120	100	100	80	EJOT H1 eco 155	8746 155 400	100	3,000
140	120	120	100	EJOT H1 eco 175	8746 175 400	100	3,000
160	140	140	120	EJOT H1 eco 195	8746 195 400	100	3,000
180	160	160	140	EJOT H1 eco 215	8746 215 400	100	3,000
200	180	180	160	EJOT H1 eco 235	8746 235 400	100	2,000
220	200	200	180	EJOT H1 eco 255	8746 255 400	100	2,000
240	220	220	200	EJOT H1 eco 275	8746 275 400	100	2,000
260	240	240	220	EJOT H1 eco 295	8746 295 400	100	2,000

[1] *10 mm adhesive*
[2] *10 mm adhesive and 20 mm old render*

EJOT Insulation Anchor TID-T 8/60 x L
The Energy Saver

For - Secure mechanical fixing of insulation

Onto - Concrete, concrete blockwork and brick



Features

- Patented plastic moulded head: -
  Minimises thermal bridge.
  Seals against ingress of moisture.
  Prevents excess render in centre recess.
- Steel pin - high shear and bending loads.
- Improved performance.
- Large expansion zone range available.
- One-piece fastener.
- Simple installation – hammer - in expansion pin.
- Pin head colour indicates anchor length.
- Engineered washer design.
- Wide range of lengths from 75,95, – 295mm.

Application Detail

- Hole diameter: 8mm.
- Embedment: 35mm.
- Hole depth: 45mm.
- Minimum application temperature: -5° C.
- Insulation thickness = anchor length – embedment.

Pullout Load

Expected Ultimate load in dense concrete: 1.40 kN
We recommend confirmation by on-site testing.

licata therm EPS Grey

Advantages:

- Faster, more efficient single leaf construction can be used, creating additional internal space with improved thermal performance.
- Lightweight materials make this system suitable for tall constructions.
- Its closed-cell structure inhibits water absorption and it is unaffected by the normal range of climatic conditions.
- Unique thermal properties EPS is 98% air, therefore it is an excellent thermal insulator.
- A+ green guide rating

Expandable polystyrene boards are used as part of a render system to provide an efficient and cost effective solution. S and B EPS external wall insulation is an accepted way of adding thermal value to the outer face of most external walls. Its versatility enables it to be used with a variety of finishes including plastic weather boarding, cladding, tile hanging and reinforced render systems.

External Wall Insulation - Specification Data

Features	Grades EPS				Lambdatherm®	
	EPS70	EPS100	EPS150	EPS200	70	*ELITE*
Thermal Conductivity [k] value W/mk (10°C mean)	0.038	0.036	0.035	0.034	0.032	0.030
Compressive Strength kPa Min (at 10% compressive strength)	70	100	150	200	70	100
Cross Breaking Strength kPa Min	115	150	200	250	115	150
Safe working load kPa at 1% nominal compression	21	45	70	90	21	45
Vapour diffusion resistance factor μ1	20-40	30-70	30-70	40-100	20-40	30-70
Vapour permeability δmg [pa.h.m]	0.015 to 0.030	0.009 to 0.020	0.009 to 0.020	0.006 to 0.015	0.015 to 0.030	0.009 to 0.020

S and B external wall insulation when used on the external face of a masonry wall maximises the natural thermal capacity of the wall and assists in the reduction of thermal fluctuations. Given that heating and air conditioning interior rooms consumes vast amounts of energy and also accounts for approximately 80% of total energy consumption, with 30% being lost through uninsulated walls, external wall insulation offers a highly cost effective solution to reducing your carbon footprint and money expended on climate control.

S and B offer various bespoke grades for thermal wall insulation; grades such as S and B External wall, S and B Lambdatherm which is a grey, low thermal valued board, plus EPS 70E and EPS 200E all containing a fire retardant additive. Thermal values ranging from .038 down to .030 W/mk. Selected grades of EPS raw material are used for external wall applications to reduce any bowing and shrinkage of the EPS.

Identification / colour coding of products manufactured to BSEN 13163	
EPS 70E	2 x brown stripes & 1 red stripe
EPS 100E	1 x black stripe & 1 red stripe
EPS 120E	2 x green stripes & 1 red stripe
EPS 150E	1 yellow stripe & 1 red stripe
EPS 200E	2 x black stripes & 1 red stripe

Radius Boards:

S and B radius boards are bespoke cut boards suited to turn square edge buildings into radius arches and radius arches into square edge buildings.

Recycling

EPS is 100% recyclable and any left over waste we can offer a 'Waste Recycling Scheme' ask one of our team.

licata therm Mineral Wool

Product description

External Wall Dual Density Slab is a stone wool insulation specifically developed for use in external wall insulation systems.

Made using a ROCKWOOL-patented 'dual density' manufacturing process, the top layer of each slab has a distinctly higher density than the remainder of the product. This provides a robust outer surface for applying render and accepting fixings, while the resilient underside can accommodate unevenness in the substrate.

To aid installation the top layer is branded with 'THIS SIDE UP', allowing for quick and easy identification of the outer surface.

Dimensions

Length	Width	Thickness
1200mm	600mm	50-250mm (10mm increments)

Performance

Fire
Euroclass A1 – non-combustible

Thermal
Thermal conductivity 0.036 W/mK

Strength
Tensile strength perpendicular to faces ≥ 10 kPa
Compressive ≥ 10 kPa

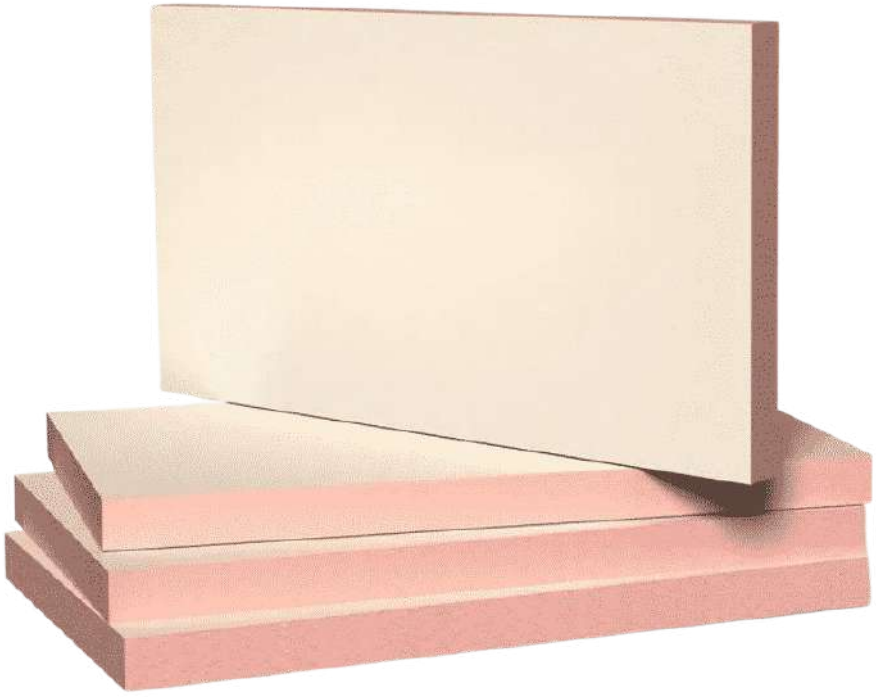
U-values

U-value (W/m²K)	External wall slab DD (mm)	
	New build Steel frame[1]	Refurbishment 215mm block[2]
0.30	50	110
0.29	60	110
0.28	60	120
0.27	60	120
0.26	70	130
0.25	70	130
0.24	80	140
0.23	80	140
0.22	90	150
0.21	100	160
0.20	100	170
0.19	110	170
0.18	120	190
0.17	130	200
0.16	140	210
0.15	160	220
0.14	170	240

K5 Insulation Panel

Kooltherm® K5 External Wall Board

External Insulation for Masonry Walls



- Premium performance rigid thermoset insulation - thermal conductivities as low as 0.021 W/mK
- Suitable for use behind traditional and lightweight polymer modified renders
- Unaffected by air infiltration
- Resistant to the passage of water vapour
- Easy to handle and install
- Ideal for new build and refurbishment
- Non-deleterious material
- Manufactured with a blowing agent that has zero ODP and low GWP

Fibre-free Core

Kingspan®

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licata.waterproofing
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Tel: 020 8894 3372

Kent, Dartford
Unit 4, Schooner Park
Schooner Court,
Dartford DA2 6NW
Tel: 01322 927 600

Birmingham
Unit 17, Frankley Industrial Park,
Tay Rd, Rednal, Rubery,
Birmingham B45 0LD

info@licataltd.co.uk
www.licataltd.co.uk