TECHNICAL
MANUAL

GECOL TERM ETICS

EXTERNAL THERMAL INSULATION COMPOSITE SYSTEM

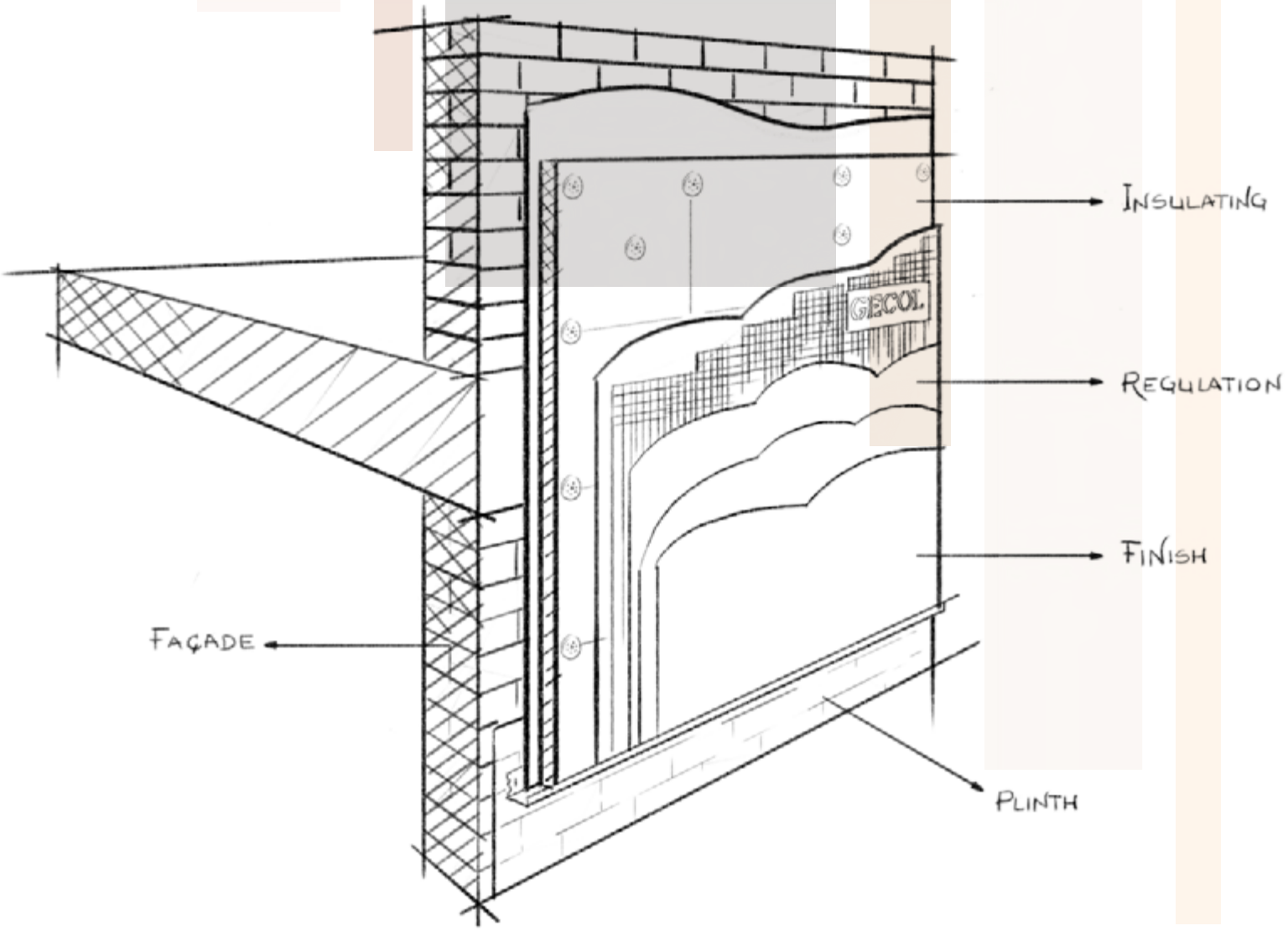
GECOL TERM ETICS

External Thermal Insulation Composite System

In a building, the facade is its ultimate embodiment and, as a result, its hallmark.

The “skin”, which constitutes the building envelope, aside from showcasing visual aspects such as design, color, texture, volumes, etc., must also fulfill key requirements such as thermal and acoustic insulation, waterproofing, durability in terms of wear and tear caused by exposure to the sun or weather elements, as well as its use over time.

And aside from all this, it should also respond to new societal demands in terms of being low maintenance, non-polluting, self-cleaning, etc.


INSULATING
GECOL
REGULATION
FINISH
FAÇADE
PLINTH

About us

GECOL is a leading industrial mortar manufacturer and specialized solution provider in the construction industry.

As part of the international group **SOPREMA**, we have nearly 50 years of experience and 13 production plants all over Spain. This gives us great network flexibility as we are very near our customers, so we can ensure that we deliver excellent service.

Our centers have the necessary resources and technology to produce more than 2,000 different products.

All our materials meet the requirements of the regulatory framework in force and enjoy a good reputation in the market.

Beyond our borders, we have operations and trade agreements spanning different countries, with more than 5,000 active customers. They are the real focus of our business, as everything revolves around them.

For **GECOL**, any aspect related to quality, training and research is of the utmost importance, which is why we have four R&D centers, as well as a team of professionals who give training sessions, product demonstrations, on-site technical support and assistance to our customers.

We are committed to the environment, which is why we deploy resources with a view to environmental protection, reduction of CO_2 emissions, recycling in our production processes and signing agreements with local suppliers.

People are our priority—their health and social welfare, gender equality, work/life balance and respect.

Digitalization is another cornerstone of our business and so we continue to make strides to adapt to the new technological reality.

WE ARE ALL **SALESPEOPLE**

By and for the people

Committed to the environment

Strong focus on digitalization

MORE THAN 40 YEARS **BY YOUR SIDE**

13 PRODUCTION **PLANTS**

MORE THAN 2000 **PRODUCTS**

5000 **ACTIVE** CUSTOMERS

4 RESEARCH AND **DEVELOPMENT CENTERS**

CS	TS	Website	Social media
Customer Service	Technical Support	**www.gecol.com**	**@GECOLoficial**
info@gecol.com	**info@gecol.com**		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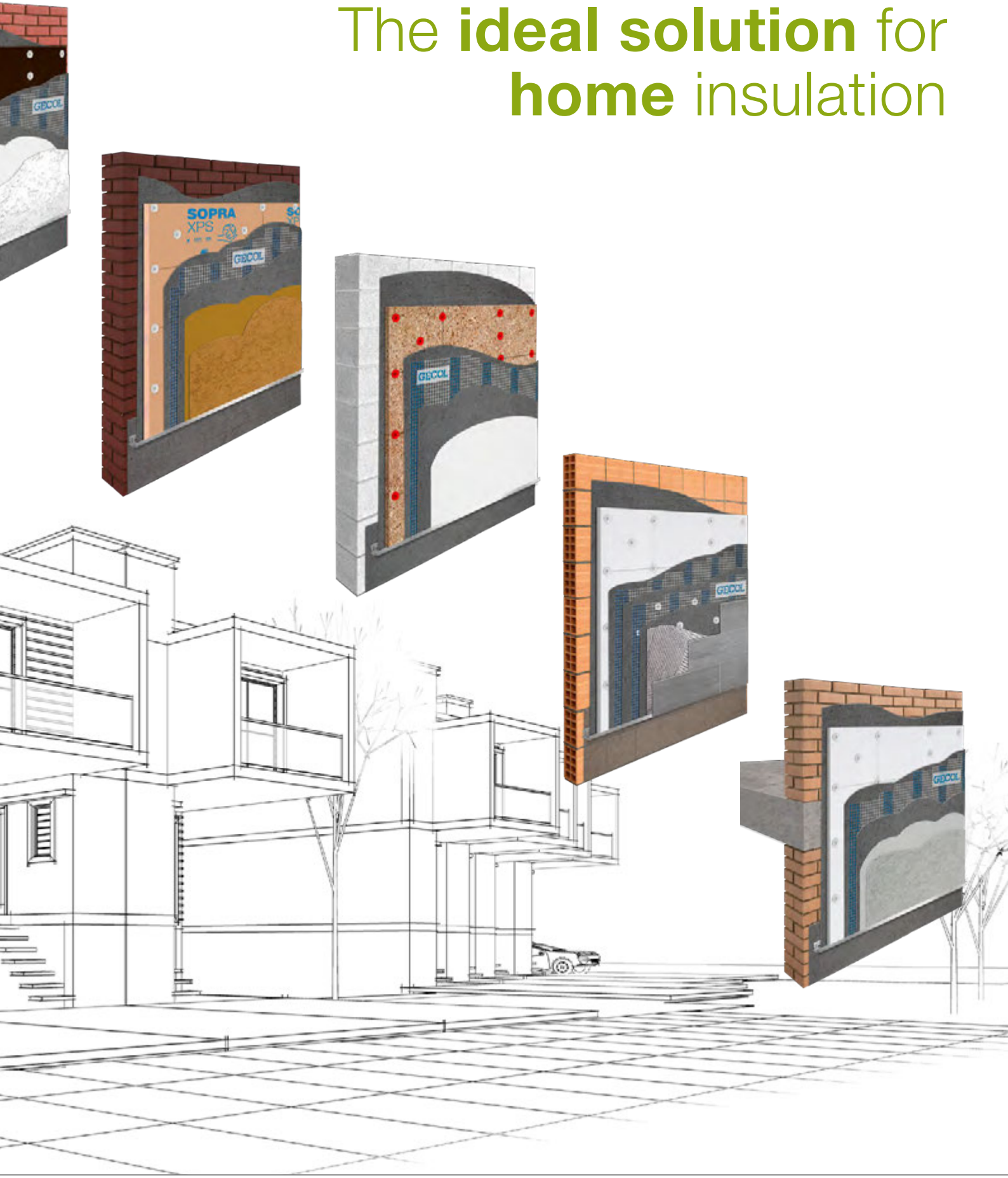
Overview

The **ideal solution** for **home** insulation



Current state of the housing stock

At present, there are thousands of buildings without the requisite building components to reduce energy losses.

They were built in another time when thermal and acoustic insulation for buildings weren't as important as they are today; neither were protection and safety measures.

It's worth pointing out that there were no specific regulations for them either.

In Europe, 67% of a building's total energy consumption can be attributed to heating and air-conditioning costs as a result of poor insulation.

By installing a suitable insulation system, the energy consumption and CO_2 emissions of buildings would dramatically decrease, as buildings alone account for 40% of total energy consumption in Europe. *(Data provided in the Spanish Institute for Energy Diversification and Saving's Practical Guide to Energy)*

ETICS systems improve the comfort level and energy efficiency of buildings

What is an ETICS system?

"ETICS" stands for external thermal insulation composite systems.

By definition, a group of building components combined together, working with each other to create a single whole is considered to be a system. And in this regard, ETICS systems comprise different components such as insulation, profiles, anchoring, meshes, decorative renders, etc.

ETICS systems are essentially a combination of a thermal insulation material—or even acoustic in some cases—with a decorative render, which can be mineral, acrylic, etc.

ETICS systems are designed for all types of works, whether new build or refurbishment, and meet energy saving needs in buildings, as well as improving the comfort level of the people living in them.

What's more, in the case of refurbishments, they give the overall look of the property a refresh, breathing new life into it. They make the facade even more durable, improving its breathability and thus keeping the building's inhabitants from coming down with sick building syndrome.

Advantages of an ETICS system

GECOL TERM ETICS systems are the simplest, most efficient and affordable solution to save energy, reduce CO_2 emissions into the atmosphere and contribute towards improving our environment and achieving a better level of build quality. This is because they improve energy efficiency in buildings in comparison with other conventional insulation systems, since:

01

They provide the ideal solution to achieve energy demand limitation, fire safety, salubrity and protection against noise in accordance with the specifications of the Spanish Technical Building Code (TBC).

02

Also using the TBC as a basis, they deliver effective protection against moisture in accordance with DB-HS1, reducing condensation inside the home, as they prevent cold walls (which attract moisture), maximizing vapor permeability.

By avoiding condensation, the growth of unhealthy molds and microorganisms is decreased.

03

They reduce thermal bridges, allowing continuous insulation, even in structural areas.

04

They contribute towards improving our environment, as they lead to a drop in energy demand, which can reach up to 70%.

The investment in an ETICS system will be amortized in 5 to 7 years, due to the reduction of energy consumption in heating and air-conditioning.

05

They improve acoustic comfort against noise caused by external agents.

06

The work is done outside, so the building inhabitants will not have to contend with the disruption normally associated with work in progress.

07 Increase in the building's value.

Refurbishment work significantly increases a building's value as it gets a refresh that definitely has a positive impact on the overall look of the facade.

The system helps protect the building envelope, minimizing the appearance of cracks and fissures, which directly affect the inside of the homes.

The property is given a new lease on life, with endless possibilities in terms of the design, colors, textures, etc.

08

The buildings have greater surface resistance to impact, abrasion and water ingress.

09 Guaranteed quality

All components of the **GECOL TERM ETICS** system are certified by **GECOL**, thus assuring the highest quality.

The system comes with a European Technical Assessment (ETA) issued by the Eduardo Torroja Institute for Construction Sciences (IETcc), complying with the requirements of the regulatory framework in accordance with EAD 040083-00-04040.

Regulatory framework

The current **Spanish Technical Building Code (TBC)** is the regulatory framework that governs the requirements related to the quality, safety and fitness for occupancy of buildings, as well as the people who live in them.

CTE DB HE 1. Energy saving

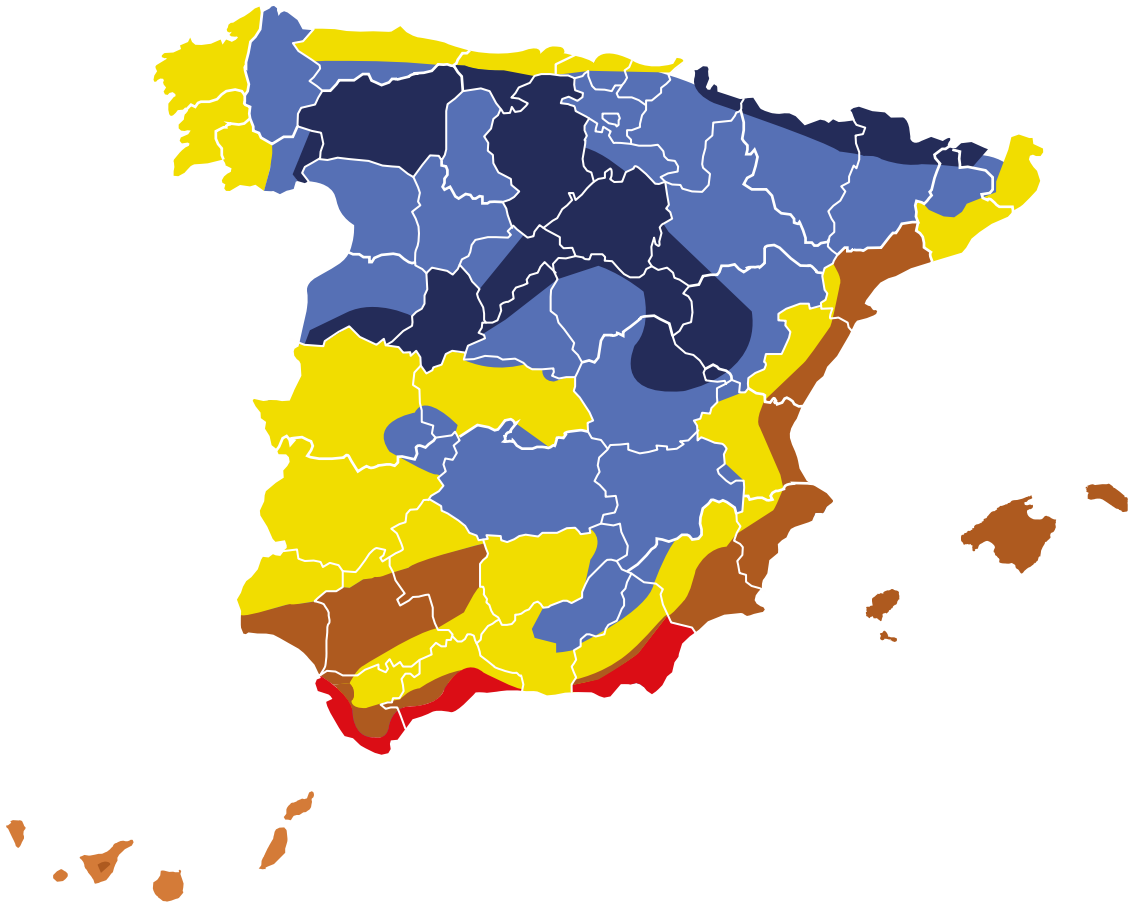
The Spanish Technical Building Code (TBC), in its **Basic Document on Energy Saving (DB HE)**, sets out rules and procedures that make it possible to comply with the basic energy saving requirements, in both new buildings and refurbishments.

The purpose of the Basic Document is to obtain a rational use of the energy required for buildings, reducing their consumption to sustainable limits, and thereby ensuring that part of this consumption comes from renewable sources of energy.

As per **CTE DB HE 1. Energy saving:** *"Buildings will have an envelope whose characteristics adequately limit the energy demand required to achieve thermal comfort depending on the local climate, the use of the building, and summer and winter conditions, as well as their characteristics of insulation and inertia, air permeability and exposure to solar radiation, reducing the risk of surface and interstitial condensation that may affect their characteristics and dealing with thermal bridges in a suitable manner to limit heat losses or gains and to avoid any hygrothermal problems therein".*

The TBC determines the maximum thermal transmittance value that a building envelope must have depending on its geographical location.

Climate zones and maximum recommended thermal transmittance (W/m²K)



CTE DB HS. Salubrity

The Spanish Technical Building Code (TBC), in its **Basic Document on Salubrity (DB HS)**, focuses on the basic hygiene, health and environmental protection requirements, aside from reducing the risk limits of the buildings' inhabitants, and also protecting against the possible deterioration of these buildings as a result of the characteristics of the construction project, use or maintenance.

As per **CTE DB HS. Salubrity:** *"The foreseeable risk involved in the unwanted presence of water or condensation inside buildings and their enclosures as a result of water from atmospheric precipitation, runoff, soil or condensation will be limited, providing the means to prevent water ingress or, where applicable, enable its elimination without causing damage (…)"*

CTE DB HR. Protection against noise

HR
Protection against noise

According to the **Spanish Technical Building Code (TBC),** the **Basic Document on Protection Against Noise (DB HR)** aims to insulate building users from noise. This insulation will affect both noise generated outside the building and noise from the adjacent properties.

As per CTE DB HR. Protection against noise:

"Buildings will be designed, built and maintained in such a way that the building components comprising their enclosures will have adequate soundproofing properties to reduce the transmission of airborne noise, noise from impacts and noise and vibrations from the building's own installations, and to limit the reverberation noise from the enclosures (…)"

CTE DB SI. Fire safety

According to the Spanish Technical Building Code (TBC), the Basic Document on Fire Safety (DB SI) aims to reduce the risk that the inhabitants of a building could suffer as a result of a fire.

As per CTE DB SI. Fire safety:

"The risk of fire spreading to the outside, both in the building in question and other buildings will be limited.

The reaction to fire class of the materials accounting for more than 10% of the surface of the external finish of facades or the internal surfaces of the air chambers that such facades may have will be B-s3,d2 ( ) up to a height of at least 3.5 m in facades whose base is accessible to the public from the exterior ground level or from a roof, and across the entire height of the facade when it is taller than 18 m, regardless of where its base is (…)"*

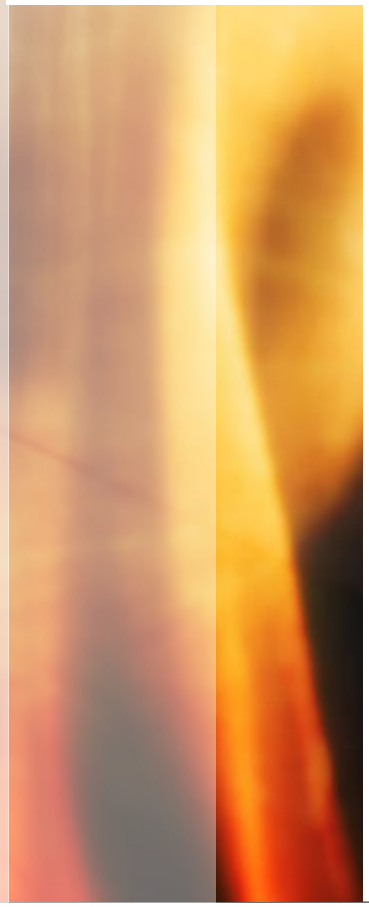
(*) **GECOL** has thermal insulation that ranges from **A2-s1,d0** to **B-s1,d0,** systems that keep fire from spreading on the facade**.**

Euroclasses

This is a classification and testing system according to the **UNE 13501-1** standard which provides additional information on the materials.

It is based on three parameters (combustibility, smoke and droplets), which in turn give rise to different classes:

Parameters	Euroclass	Contribution to fire
Combustibility	A1	Non-combustible: no contribution to fire
	A2	Non-combustible: no contribution to fire
	B	Combustible: very limited contribution to fire
	C	Combustible: limited contribution to fire
	D	Combustible: medium contribution to fire
	E	Combustible: high contribution to fire
	F	Unclassified
Smoke (emissions)	s1	Emissions absent or very little
	s2	Emissions with average volume intensity
	s3	Emissions with high volume intensity
Formation of droplets	d0	No burning droplets
	d1	Slow dripping droplets <10 seconds
	d2	High/intense dripping droplets



Based on this classification, by combining the different Euroclasses, it will be possible to learn the performance offered by the materials.

Keys for a good project

The right technical specifications

All facade works are subject to regulations that must be complied with, based on the facade's performance against fire, wind, rain, solar radiation, waterproofing, etc.

The specifier plays a crucial role in the design plan phase. Properly defining the systems, with the construction details and the products comprising them, is key to delivering an excellent final outcome.

The technical teams of **GECOL** will be more than happy to share their expertise and help you with your projects.

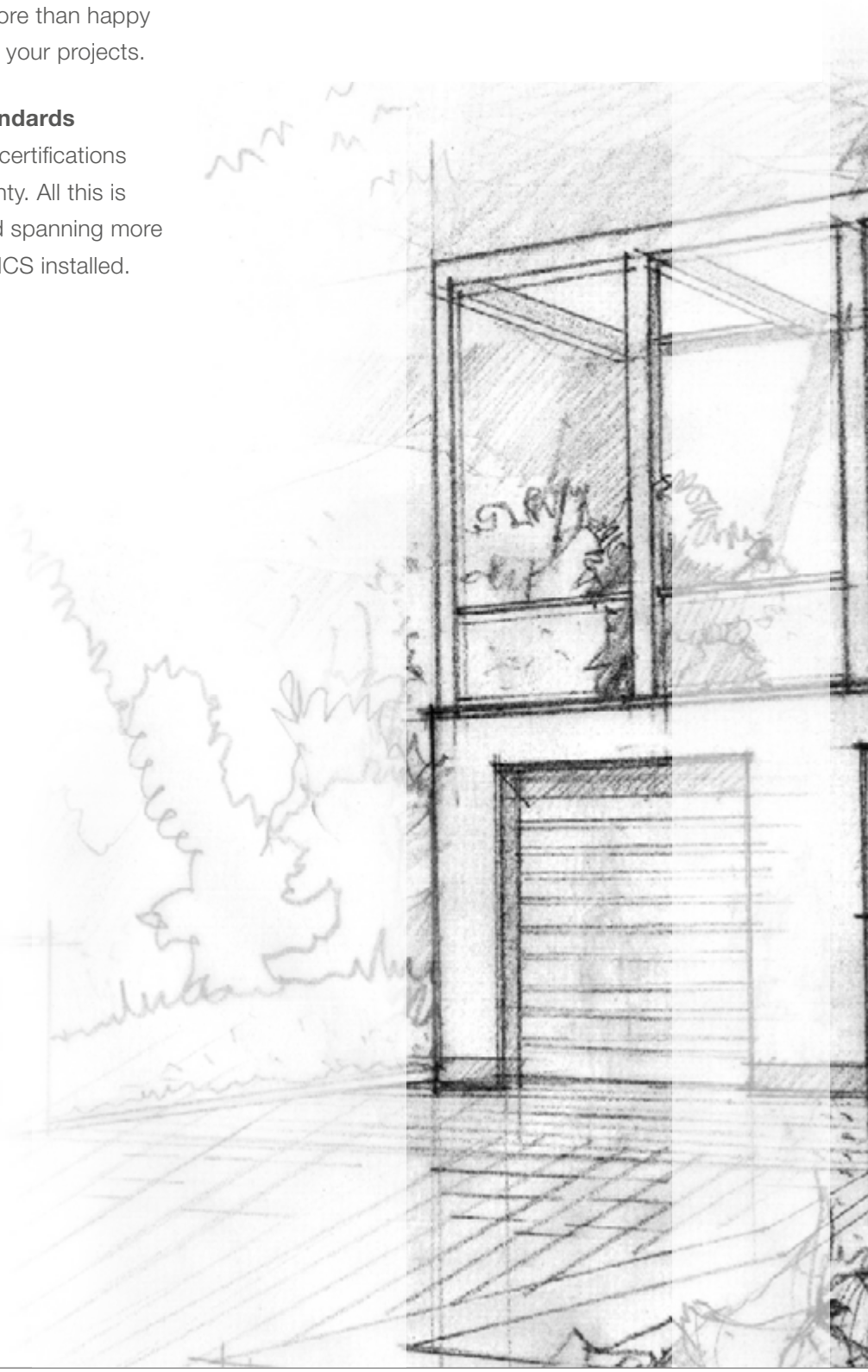
A system that meets professional standards

GECOL TERM ETICS complies with all certifications of the system and offers a product warranty. All this is backed by a company with a track record spanning more than 40 years and thousands of m^2 of ETICS installed.

Specialized commissioning

Proper commissioning by professionals is crucial for a good outcome for the facade.

GECOL offers technical training courses on construction systems and their commissioning, on its premises, distribution centers, and on-site at the start of the facade works. Likewise, **GECOL** has an extensive network of approved specialist fitters for the commissioning of its **technical systems for facades.**



The most comprehensive range of systems

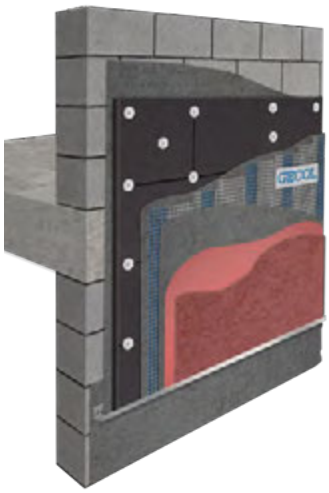
GECOL has a wide range of energetically sustainable **ETICS systems for facades** that contribute towards effectively improving the environment, in order to enjoy **TODAY** while creating a better **FUTURE** for our children

Insulation system:
Expanded polystyrene (EPS)

Advantages:

- Inexpensive.
- High efficiency at an affordable cost.
- Provides a good level of insulation.
- Good performance against impacts.
- Decorative mineral or organic finishes.

Insulation system:
Expanded polystyrene (graphite EPS)



Advantages:

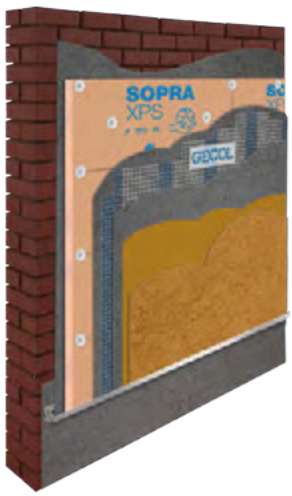
- Inexpensive
- Maximum efficiency at an affordable cost.
- Provides the highest level of insulation.
- Good performance against impacts
- Decorative mineral or organic finishes.

Insulation system:
Mineral wool

Advantages:

- High level of thermal and acoustic insulation.
- Non-combustible. Protection against fire.
- High permeability.
- Maximum adaptability to the substrate.
- Decorative mineral or organic finishes.

Insulation system:
Extruded polystyrene (SOPRA XPS CB)



Advantages:

- Provides a high level of insulation.
- Resistant.
- Good performance against impacts.
- Waterproof.
- Decorative mineral or organic finishes.

Insulation system: **Cork**

Advantages:

- Sustainable.
- Environmentally friendly.
- Excellent level of insulation.
- Permeable to vapor.
- Robust.
- Good performance against impacts.
- Decorative mineral or organic finishes.

Insulation system: **Wood fiber**

Advantages:

- Sustainable.
- Environmentally friendly.
- Excellent level of insulation.
- Permeable to vapor.
- Robust.
- Good performance against impacts
- Decorative mineral or organic finishes.

Insulation system: **Expanded polystyrene (EPS or graphite EPS) with ceramic finish.**

Advantages:

- Minimal maintenance.
- The most resistant solution to impacts.
- Decorative finishes with ceramic cladding.

Impact insulation system **Expanded polystyrene (EPS or graphite EPS), Mineral wool and SOPRA XPS CB**

Advantages:

- Maximum resistance to impact.
- Minimal maintenance.
- High energy efficiency.
- Protection against external aggressions.
- Different design options available.
- Multiple decorative finishes available.

GECOL TERM ETICS system

Insulation: Expanded polystyrene (EPS)

This **thermal insulation system** is currently **the most commonly used one on the market** and is based on stabilized expanded polystyrene (EPS) insulation boards.

Advantages:

- Offers the best value for money.
- Provides a good level of insulation.
- High energy efficiency.
- Good performance against impacts.
- Different design options available.
- Multiple decorative finishes available, whether mineral or organic.

The most popular on the market

1. **Support**
2. **GECOL Term**
3. **GECOL EPS**
4. **GECOL Mesh**
5. **GECOL Screw anchor**
6. **GECOL Term**
7. **GECOL Finishes**
8. **GECOL Profiling**
9. **GECOL Imper / Sopra range**

- **Use:**
Recommended for all types of works, whether new builds or refurbishments.

- **System components:**
All components comprising the system are certified by **GECOL**, to offer the highest level of assurance when it comes to quality.

These components comply with the regulations in force and must comply with the conditions set out by **GECOL**, as stated in their technical manuals.

- **System implementation:**
The system consists of expanded polystyrene (EPS) insulation boards—previously stabilized—, which will be double-fixed to the substrate; first, with a chemical anchor provided by the hardening adhesive mortar **GECOL Term**, and then, with a mechanical anchor using any of the options available in the **GECOL Screw anchors** range.

Once the insulation layer has been installed, it will be coated with the hardening adhesive mortar **GECOL Term** to give the system a better consistency.

Then, embed the alkali-resistant fiberglass mesh (**GECOL Malla range**), smooth out the substrate and then get it ready for the application of the final decorative layer.

- **Finishes:**
The system offers multiple options*:

  - **Cement-free organic render:**

    GECOL Revestcril range: acrylic, photocatalytic, siloxane or elastic.

    GECOL Cril elastic range

  - **Mineral renders** (**GECOL Premium One Coat Render** range)

  - **Ceramic cladding.**

- **Regulations. Quality:**
The system holds European Technical Assessment No. 12/0408 and complies with the requirements set out in la EAD 040083-00-04040.

- Complies with CTE DB HE1. Savings in energy demand.

- Complies with CTE DB HS. Salubrity.

- Complies with CTE DB S1. Fire safety.

* See below for color and texture charts

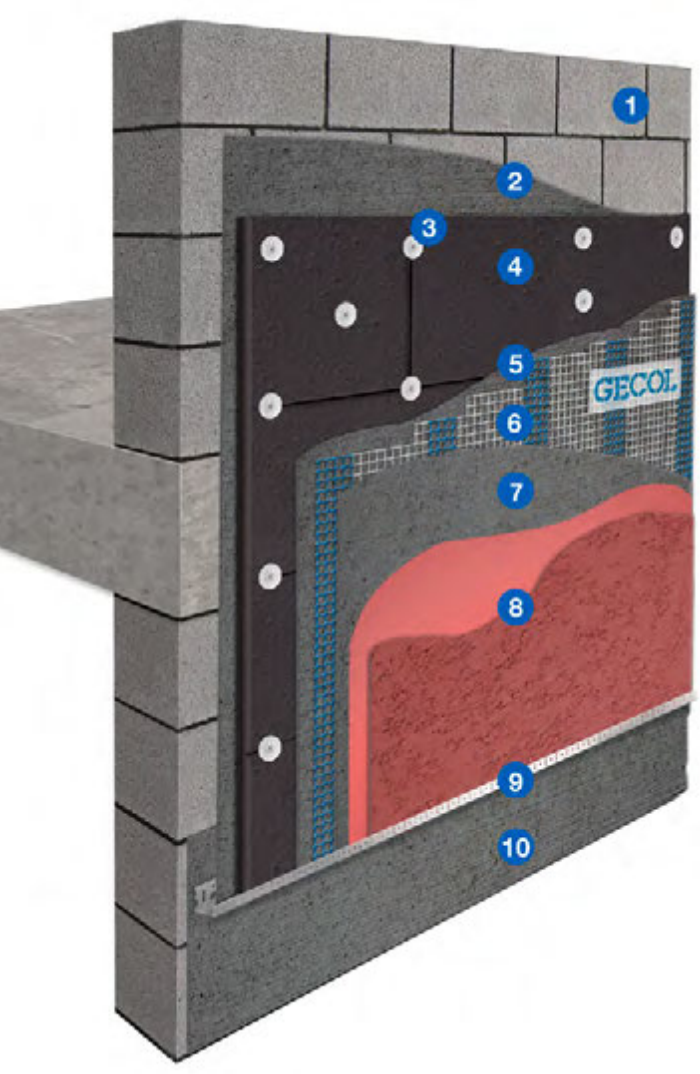
GECOL TERM ETICS system

Insulation: Expanded polystyrene (graphite EPS)

This **thermal insulation system** is based on stabilized expanded polystyrene (graphite EPS) insulation boards, which offer the **best level of insulation on the market**.

Advantages:

- Inexpensive
- Maximum efficiency at an affordable cost.
- Provides the highest level of insulation.
- Compared with a white EPS with the same thickness, it saves 15% energy.
- Good performance against impacts.
- Different design options available.
- Multiple decorative finishes available, whether mineral or organic.



The best insulation

$\lambda = 0.032$

1. **Support**
2. **GECOL Term**
3. **GECOL Screw anchor**
4. **GECOL graphite EPS**
5. **GECOL Term**
6. **GECOL Mesh**
7. **GECOL Term**
8. **GECOL Finishes**
9. **GECOL Profiling**
10. **GECOL Imper / Sopra range**

- **Use:**
  Recommended for all types of works, whether new builds or refurbishments, which have high savings requirements.

- **System components:**
  All components comprising the system are certified by **GECOL**, to offer the highest level of assurance when it comes to quality.

  These components comply with the regulations in force and must comply with the conditions set out by **GECOL**, as stated in their technical manuals.

- **System implementation:**
  The system consists of expanded polystyrene (graphite EPS) insulation boards—previously stabilized—, which will be double-fixed to the substrate; first, with a chemical anchor provided by the hardening adhesive mortar **GECOL Term**, and then, with a mechanical anchor using any of the options available in the **GECOL Screw anchors** range.

  Once the insulation layer has been installed, it will be coated with the hardening adhesive mortar **GECOL Term** to give the system a better consistency.

  Then, embed the alkali-resistant fiberglass mesh (**GECOL Malla range**), smooth out the substrate and then get it ready for the application of the final decorative layer.

- **Finishes:**
  The system offers multiple options*:

  - **Cement-free organic render:**

    GECOL Revestcril range: acrylic, photocatalytic, siloxane or elastic.

    GECOL Cril elastic range

  - **Mineral renders** (**GECOL Premium One Coat Render** range)

  - **Ceramic cladding.**

- **Regulations. Quality:**
  The system holds European Technical Assessment No. 12/0408 and complies with the requirements set out in la EAD 040083-00-04040.

  - Complies with CTE DB HE1. Savings in energy demand.

  - Complies with CTE DB HS. Salubrity.

  - Complies with CTE DB S1. Fire safety.

* See below for color and texture charts

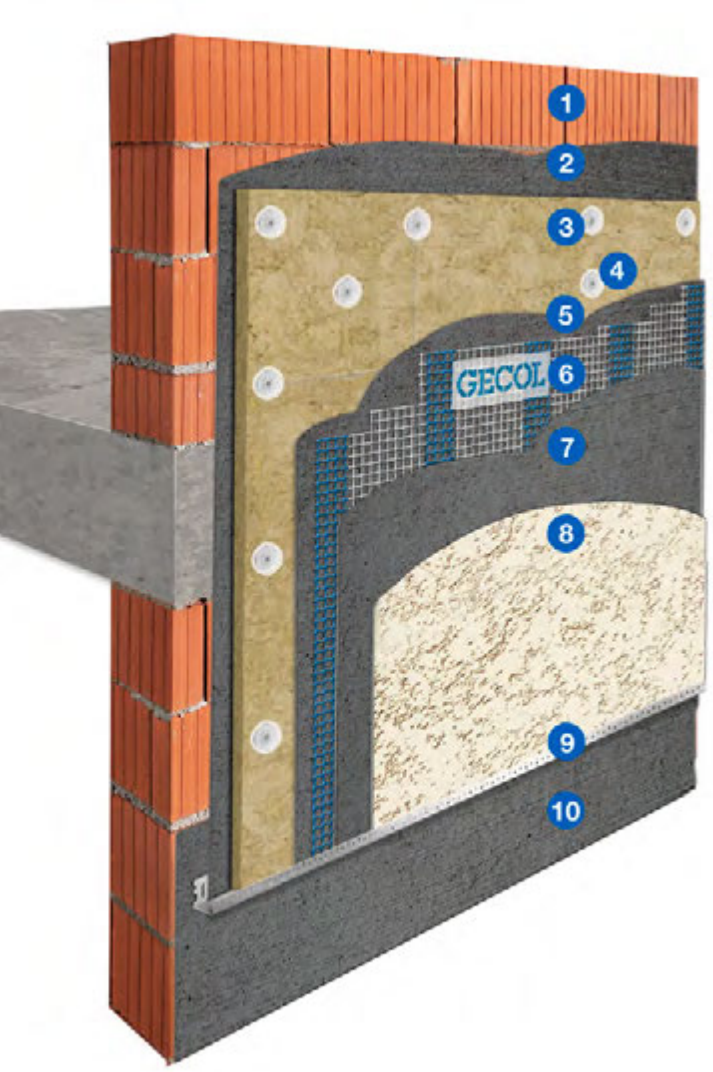
GECOL TERM ETICS system

Insulation: Mineral wool

This **thermal insulation system** is based on mineral wool insulation boards, which offer the **best performance against fire**, as it is a fireproof material.

Advantages:

- Has the most features required in an ETICS system.
- Excellent performance against fire.
- Non-combustible.
- High level of and acoustic insulation.
- High permeability.
- Maximum adaptability to the substrate.
- High dimensional stability.
- Multiple decorative finishes available, whether mineral or organic.



The best protection against fire

1. **Support**
2. **GECOL Term**
3. **GECOL Mineral wood**
4. **GECOL Screw anchor**
5. **GECOL Term**
6. **GECOL Mesh**
7. **GECOL Term**
8. **GECOL Finishes**
9. **GECOL Profiling**
10. **GECOL Imper / Sopra range**

- **Use:**
Recommended for all types of works, whether new builds or refurbishments, which have high savings requirements.

- **System components:**
All components comprising the system are certified by **GECOL**, to offer the highest level of assurance when it comes to quality.

These components comply with the regulations in force and must comply with the conditions set out by **GECOL**, as stated in their technical manuals.

- **System implementation:**
The system consists of mineral wool insulation boards which will be double-fixed to the substrate; first, with a chemical anchor provided by the hardening adhesive mortar **GECOL Term**, and then, with a mechanical anchor using any of the options available in the **GECOL Screw anchors** range.

Once the insulation layer has been installed, it will be coated with the hardening adhesive mortar **GECOL Term** to give the system a better consistency.

Then, embed the alkali-resistant fiberglass mesh (**GECOL Malla** range), smooth out the substrate and then get it ready for the application of the final decorative layer.

- **Finishes:**
The system offers multiple options*:

- **Cement-free organic render:**

GECOL Revestcril range: acrylic, photocatalytic, siloxane or elastic.

GECOL Cril elastic range

- **Mineral renders** (**GECOL Premium One Coat Render** range)

- **Regulations. Quality:**
The system holds European Technical Assessment No. 12/0408 and complies with the requirements set out in la EAD 040083-00-04040.

- Complies with CTE DB HE1. Savings in energy demand.

- Complies with CTE DB HR. Protection against noise.

- Complies with CTE DB HS. Salubrity.

- Complies with CTE DB S1. Fire safety.

* See below for color and texture charts

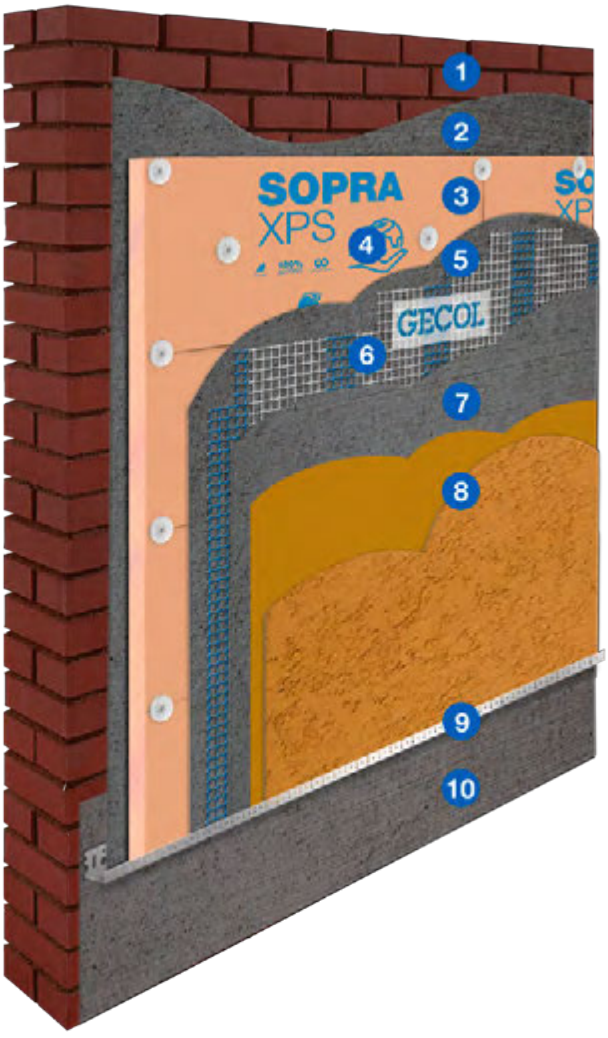
GECOL TERM ETICS system

Insulation: Extruded polystyrene (SOPRA XPS CB)

This **thermal insulation system** is based on extruded polystyrene insulation boards **(SOPRA XPS CB)** and offers **excellent performance against water.**

Advantages:

- Waterproof.
- Provides a high level of insulation.
- High energy efficiency.
- Resistant.
- Good performance against impacts.
- Different design options available.
- Multiple decorative finishes available, whether mineral or organic.



Waterproof.

Excellent performance against water

1. Support
2. GECOL Term
3. GECOL Screw anchor
4. SOPRA XPS CB
5. GECOL Term
6. GECOL Mesh
7. GECOL Term
8. GECOL Finishes
9. GECOL Profiling
10. GECOL Imper / Sopra range

- **Use:**
  Recommended for all types of works, whether new builds or refurbishments, which require special waterproofing properties.

- **System components:**
  All components comprising the system are certified by **GECOL**, to offer the highest level of assurance when it comes to quality.

  These components comply with the regulations in force and must comply with the conditions set out by **GECOL**, as stated in their technical manuals.

- **System implementation:**
  The system consists of extruded polystyrene **(SOPRA XPS CB)** insulation boards, which will be double-fixed to the substrate; first, with a chemical anchor provided by the hardening adhesive mortar **GECOL Term**, and then, with a mechanical anchor using any of the options available in the **GECOL Screw anchors** range.

- Once the insulation layer has been installed, it will be coated with the hardening adhesive mortar **GECOL Term** to give the system a better consistency.

- Then, embed the alkali-resistant fiberglass mesh (**GECOL Malla** range), smooth out the substrate and then get it ready for the application of the final decorative layer.

- **Finishes:**
  The system offers multiple options*:

  - **Cement-free organic render:**

    GECOL Revestcril range: acrylic, photocatalytic, siloxane or elastic.

    GECOL Cril elastic range

  - **Mineral renders** (**GECOL Premium One Coat Render** range)

  - **Ceramic cladding.**

- **Regulations. Quality:**
  The system complies with the requirements set out in EAD 040083-00-04040.

  - Complies with CTE DB HE1. Savings in energy demand.

  - Complies with CTE DB HS. Salubrity.

  - Complies with CTE DB S1. Fire safety.

* See below for color and texture charts

CTE CÓDIGO TÉCNICO DE LA EDIFICACIÓN

EOTA

GECOL TERM ETICS system

Insulation: Cork

This **thermal insulation system** is based on natural cork insulation boards, for works with **environmentally friendly or natural requirements**.

Advantages:

- Sustainable product.
- Environmentally friendly.
- Excellent level of insulation.
- Very permeable to vapor.
- Robust.
- Good performance against impacts.
- Different design options available.
- Multiple decorative finishes available, whether mineral or organic.

Natural cork.

The most environmentally friendly system

1. Support
2. GECOL Term
3. GECOL Screw anchor
4. GECOL Cork
5. GECOL Term
6. GECOL Mesh
7. GECOL Term
8. GECOL Finishes
9. GECOL Profiling
10. GECOL Imper / Sopra range

Ecologic **Product**

GECOL

- **Use:**
  Recommended for all types of works such as refurbishments or buildings with wooden structures, which have environmental protection requirements.

- **System components:**
  All components comprising the system are certified by **GECOL**, to offer the highest level of assurance when it comes to quality.

  These components comply with the regulations in force and must comply with the conditions set out by **GECOL**, as stated in their technical manuals.

- **System implementation:**
  The system consists of natural cork insulation boards, which will be double-fixed to the substrate; first, with a chemical anchor provided by the hardening adhesive mortar **GECOL Term**, and then, with a mechanical anchor using any of the options available in the **GECOL Screw anchors** range.

- Once the insulation layer has been installed, it will be coated with the hardening adhesive mortar **GECOL Term** to give the system a better consistency.

- Then, embed the alkali-resistant fiberglass mesh (**GECOL Malla** range), smooth out the substrate and then get it ready for the application of the final decorative layer.

- **Finishes:**
  The system offers multiple options*:

  - **Cement-free organic render:**

    GECOL Revestcril range: acrylic, photocatalytic, siloxane or elastic.

    GECOL Cril elastic range

  - **Mineral renders** (**GECOL Premium One Coat Render** range)

- **Regulations. Quality:**
  The system complies with the requirements set out in EAD 040083-00-04040.

  - Complies with CTE DB HE1. Savings in energy demand.

  - Complies with CTE DB HS. Salubrity.

  - Complies with CTE DB HR. Protection against noise.

  - Complies with CTE DB S1. Fire safety.

* See below for color and texture charts

CTE CÓDIGO TÉCNICO DE LA EDIFICACIÓN

EOTA

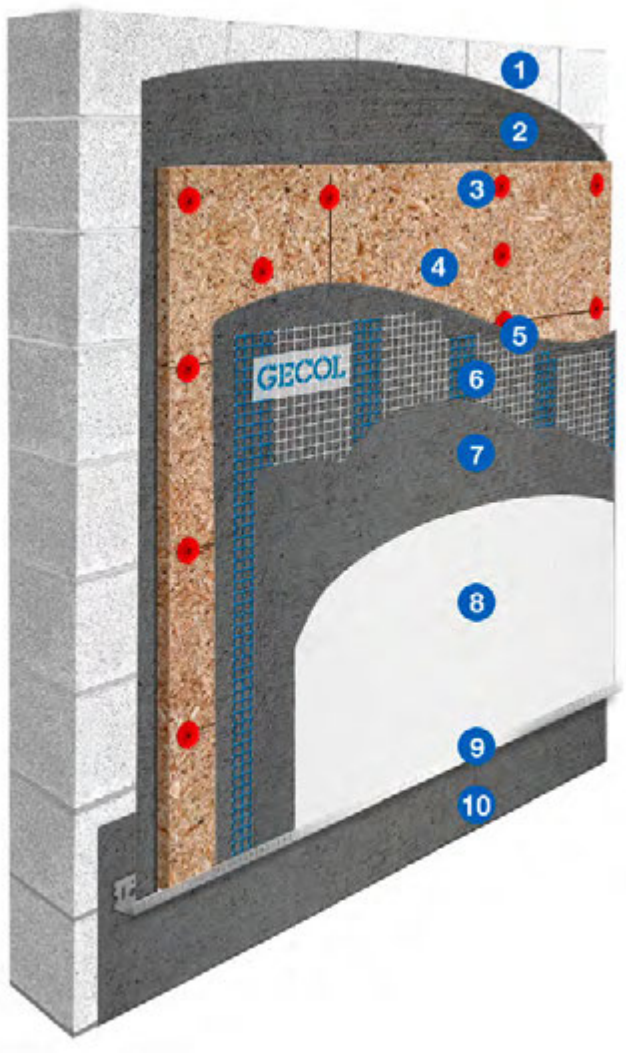
GECOL TERM ETICS system

Insulation: Wood fiber

This **thermal insulation system** is based on wood fiber insulation boards for works with **environmentally friendly or natural requirements.**

Advantages:

- Sustainable product.
- Environmentally friendly.
- Excellent level of insulation.
- Very permeable to vapor.
- Robust.
- Good performance against impacts.
- Different design options available.
- Multiple decorative finishes available, whether mineral or organic.



Environmentally friendly and natural system

1. Support
2. GECOL Term
3. GECOL Screw anchor
4. GECOL Wood fiber
5. GECOL Term
6. GECOL Mesh
7. GECOL Term
8. GECOL Finishes
9. GECOL Profiling
10. GECOL Imper / Sopra range

- **Use:**
  Recommended for all types of works, generally new builds or buildings with wooden structures, which have environmental protection requirements.

- **System components:**
  All components comprising the system are certified by **GECOL**, to offer the highest level of assurance when it comes to quality.

  These components comply with the regulations in force and must comply with the conditions set out by **GECOL**, as stated in their technical manuals.

- **System implementation:**
  The system consists of wood fiber insulation boards, which will be double-fixed to the substrate; first, with a chemical anchor provided by the hardening adhesive mortar **GECOL Term**, and then, with a mechanical anchor using any of the options available in the **GECOL Screw anchors** range.

- Once the insulation layer has been installed, it will be coated with the hardening adhesive mortar **GECOL Term** to give the system a better consistency.

- Then, embed the alkali-resistant fiberglass mesh (**GECOL Malla** range), smooth out the substrate and then get it ready for the application of the final decorative layer.

- **Finishes:**
  The system offers multiple options*:

  - **Cement-free organic render:**

    GECOL Revestcril range: acrylic, photocatalytic, siloxane or elastic.

    GECOL Cril elastic range

  - **Mineral renders** (**GECOL Premium One Coat Render** range)

- **Regulations. Quality:**
  The system complies with the requirements set out in EAD 040083-00-04040.

  - Complies with CTE DB HE1. Savings in energy demand.

  - Complies with CTE DB HS. Salubrity.

  - Complies with CTE DB S1. Fire safety.

* See below for color and texture charts

GECOL TERM ETICS System

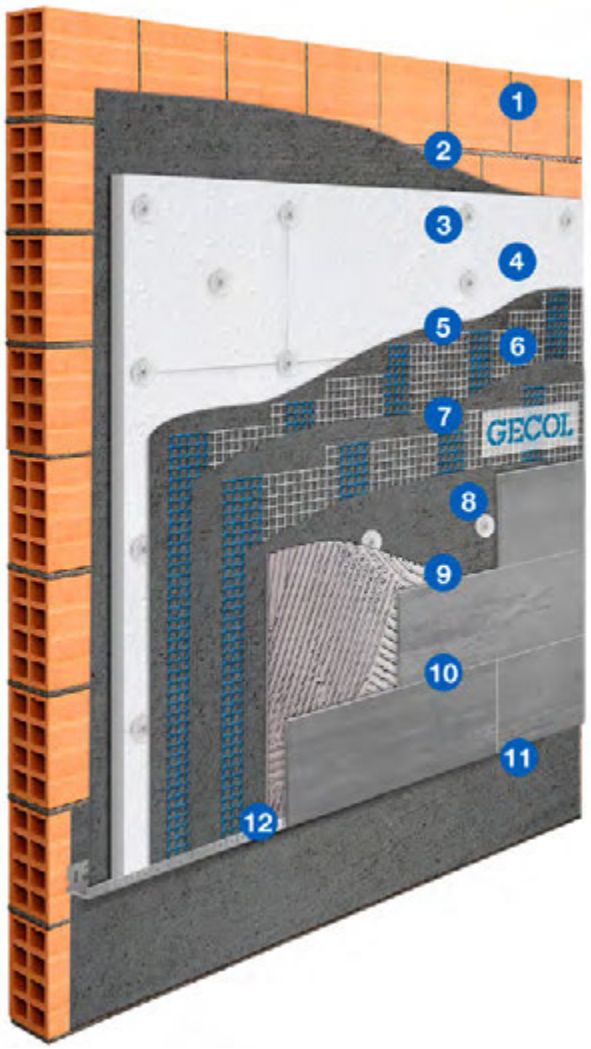
Ceramic finish

Insulation: Expanded polystyrene (EPS or graphite EPS)

This **thermal insulation system** is based on expanded polystyrene (EPS or graphite EPS) insulation boards for **ceramic cladding finishes.**

Advantages:

- Provides a good level of thermal insulation.
- The most resistant solution against impacts.
- Minimal maintenance.
- Different design options available.
- Decorative finishes with ceramic cladding.



The most resistant solution against impact

1. Support
2. GECOL Term
3. GECOL Screw anchor
4. GECOL EPS/graphite EPS
5. GECOL Term
6. GECOL Mesh
7. GECOL Term
8. GECOL Screw anchor
9. G100 Superflex
10. G#color Junta epoplus
11. GECOL Imper / Sopra range
12. GECOL Profiling

- **Use:**

Recommended for all types of works, whether new builds or refurbishments, where the design calls for a ceramic cladding finish.

- **System components:**

All components comprising the system are certified by **GECOL**, to offer the highest level of assurance when it comes to quality.

These components comply with the regulations in force and must comply with the conditions set out by **GECOL**, as stated in their technical manuals.

- **System implementation:**

The system consists of expanded polystyrene (EPS or graphite EPS) insulation boards—previously stabilized—, which will be double-fixed to the substrate; first, with a chemical anchor provided by the hardening adhesive mortar **GECOL Term**, and then, with a mechanical anchor from the **GECOL Screw anchor - A** range.

Once the insulation layer has been installed, it will be coated with the hardening adhesive mortar **GECOL Term** to give the system a better consistency.

Then, embed the alkali-resistant fiberglass mesh (**GECOL Malla** range), smooth out the substrate and then get it ready for the application of the final decorative layer.

This last layer, formed by a double mesh, must also be mechanically fixed to the substrate.

The final process culminates with the adhesion of ceramic cladding, using a highly deformable cementitious adhesive S2).

Grouting will be done using **G#color Junta epoplus.**

- **Finishes:**

The system allows finishing using ceramic cladding.

- **Regulations. Quality:**

- Complies with CTE DB HE1. Savings in energy demand.

- Complies with CTE DB HS. Salubrity.

- Complies with CTE DB S1. Fire safety.

* See below for color and texture charts

CTE
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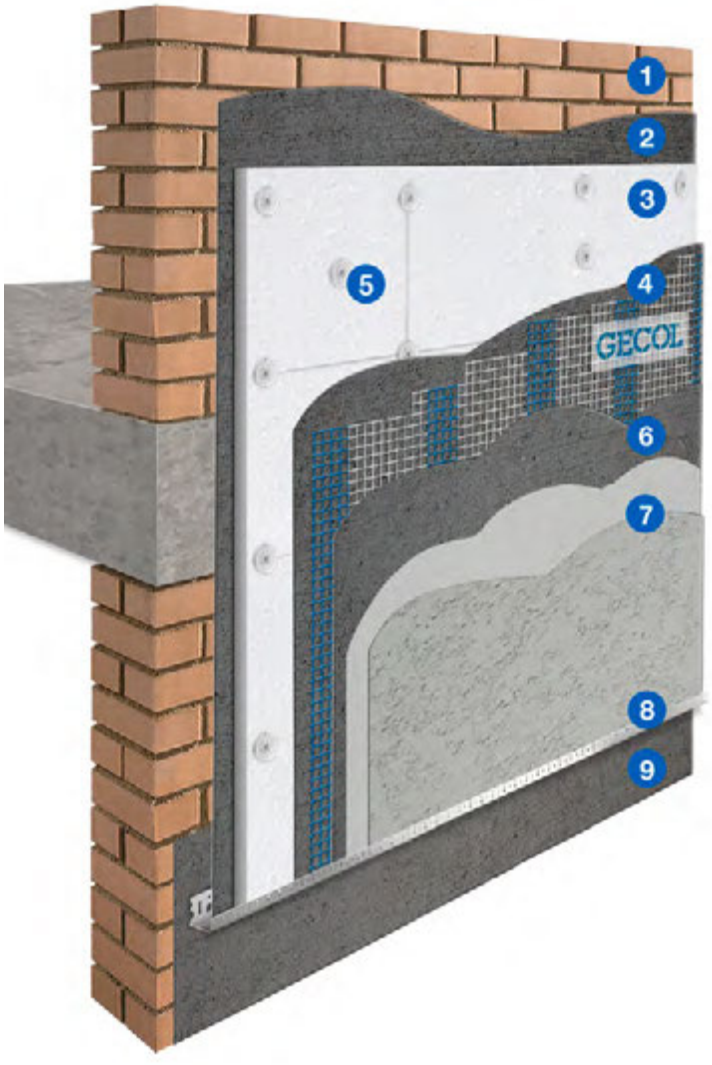
GECOL TERM ETICS IMPACT System

Insulation: Expanded polystyrene (EPS or graphite EPS) Mineral wool and SOPRA XPS CB

This **thermal insulation system** protects the facade from all types of blows, impacts and external aggressions to it.

Advantages:

- Maximum resistance to impact.
- Minimal maintenance.
- High energy efficiency.
- Protection against external aggressions.
- Different design options available.
- Multiple decorative finishes available, whether mineral or organic.
- Type I, as per ETA No. 12/0408



The solution for facades exposed to blows and impacts

1. Support
2. GECOL Term
3. GECOL EPS
4. GECOL Mesh
5. GECOL Screw anchor
6. GECOL Term
7. GECOL Finishes
8. GECOL Profiling
9. GECOL Imper / Sopra range

- **Use:**
Recommended for all types of works, whether new builds or refurbishments.

- **System components:**
All components comprising the system are certified by **GECOL**, to offer the highest level of assurance when it comes to quality.

These components comply with the regulations in force and must comply with the conditions set out by **GECOL**, as stated in their technical manuals.

- **System implementation:**
The system consists of expanded polystyrene (EPS) insulation boards—previously stabilized—, which will be double-fixed to the substrate; first, with a chemical anchor provided by the hardening adhesive mortar **GECOL Term**, and then, with a mechanical anchor using any of the options available in the **GECOL Screw anchors** range.

Once the insulation layer has been installed, it will be coated with the hardening adhesive mortar **GECOL Term** to give the system a better consistency.

Then, embed the alkali-resistant fiberglass mesh (**GECOL Malla range**), smooth out the substrate and then get it ready for the application of the final decorative layer.

To finish using **GECOL Cril elastic**, apply a second layer of alkaline-resistant mesh (**GECOL Malla 160**) in the opposite direction of the previous layer.

- **Finishes:**
The system offers multiple options*:

- **Cement-free organic render:**

  GECOL Revestcril elastic range

  GECOL Cril elastic range

- **Mineral renders** (**GECOL Premium One Coat Render** range)

- **Regulations. Quality:** The system holds European Technical Assessment No. 12/0408 and complies with the requirements set out in la EAD 040083-00-04040.

- Complies with CTE DB HE1. Savings in energy demand.

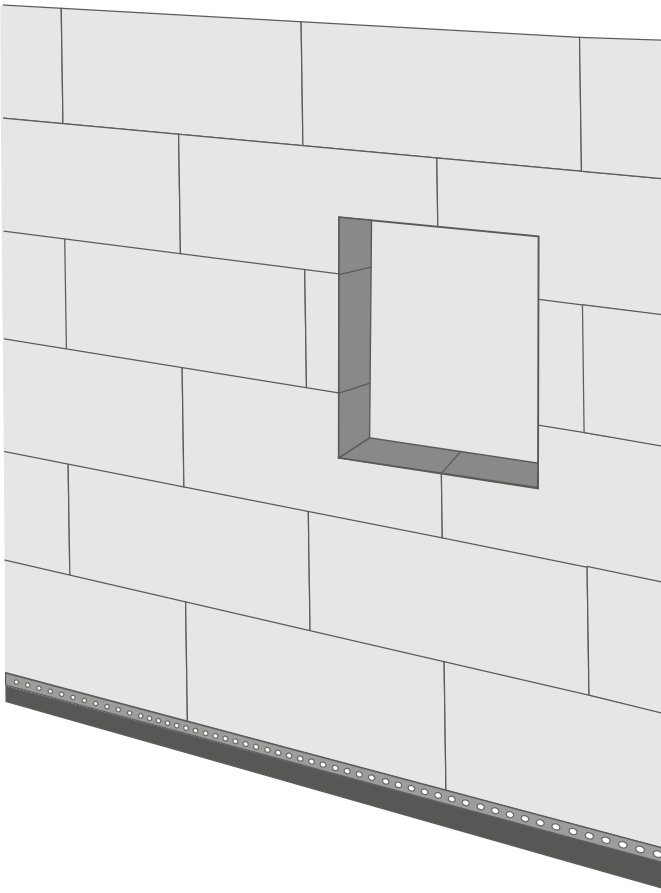
- Complies with CTE DB HS. Salubrity.

- Complies with CTE DB S1. Fire safety.

* See below for color and texture charts

Commissioning and technical criteria

When designing a technical system for a facade, it is necessary to deal with different aspects that will serve as a key element for the company in charge of carrying it out:



1. Technical criteria:

No two works are ever the same. All works, whether new builds or refurbishments, call for an in-depth analysis beforehand to adapt to the different situations facing them and to come up with the best building project possible.

It is necessary to know the work really well, to find the critical points and understand all the details on its implementation, in order to deliver the best final performance.

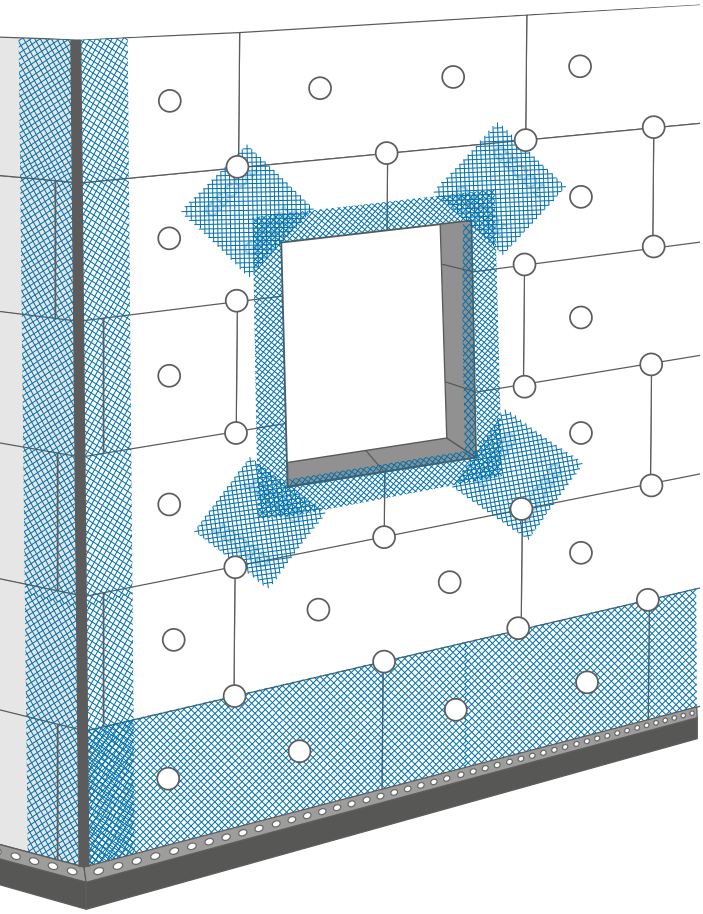
GECOL has a team of professionals who will help you answer any question regarding your implementation project. It also has a wide range of products and construction solutions specifically designed for the preparation and renovation of substrates (send an email to **info@gecol.com** or visit **www.gecol.com**)

2. Preliminary preparatory work:

Aspects such as possible defects and hidden construction problems must be taken into account, aside from carrying out a thorough planning after considering the state of the substrate in order to make the system last as long as possible.

It is common to find defects related to the poor condition of the substrate, such as fissures caused by the concrete breaking or the deterioration of the reinforcements, detachments, blistering, damp due to filtration or capillary action, mortar or coating substrates that are not stable, have lost adhesion or are in poor condition, etc.

The defects described should not be concealed and overlooked as they will have quite an impact on the final outcome of the construction system.



3. Choice of insulation material:

The core element of an **ETICS** system is the insulation material. Its choice is often based on thermal conductivity criteria, without bearing in mind other properties that the different insulation materials can offer, based on their nature and composition, fire resistance, impermeability, etc.

It will be the responsibility of the technical management team to decide on the material to be used, as well as its thickness, and this will be done while considering the energy certification and performance programs.

This table shows the main characteristics of each system depending on the insulation material:

GECOL TERM ETICS systems						
Features	**EPS**	**Graphite EPS**	**Mineral wool**	**SOPRA XPS CB**	**Cork**	**Wood**
Thermal insulation (W/mK)	0.038	0.032	0.036	0.033	0.037–0.040	0.040
Fire resistance	E	E	A1	E	E	E
Acoustic insulation			Yes		Yes (not shown)	
Waterproof (%)	<3%	<3%	<3%	<0.7%		
Breathable (μ)	20–40	20–40	1		3	
Compression strength (kPa)	60	60	15	300	100	70
Sustainable					Yes	Yes

4. Special accessories for ETICS:

On a facade, you can find different defects and weak points that must be dealt with beforehand, aside from finishes that are extremely important at the technical level.

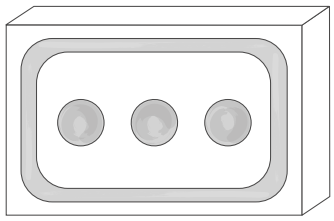
Proper implementation ensures that the final outcome of the project will be excellent.

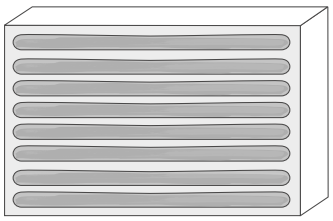
4.1. Chemical anchors:

Adhesion of the insulation boards to the substrate will be done using the adhesive mortar **GECOL Term** and two fitting techniques are usually used for this:

- Perimeter edges and some points on the inside. This method achieves surface-to-surface contact of 50–60%

- Adhering the entire surface, wherein surface-to-surface contact reaches 100%

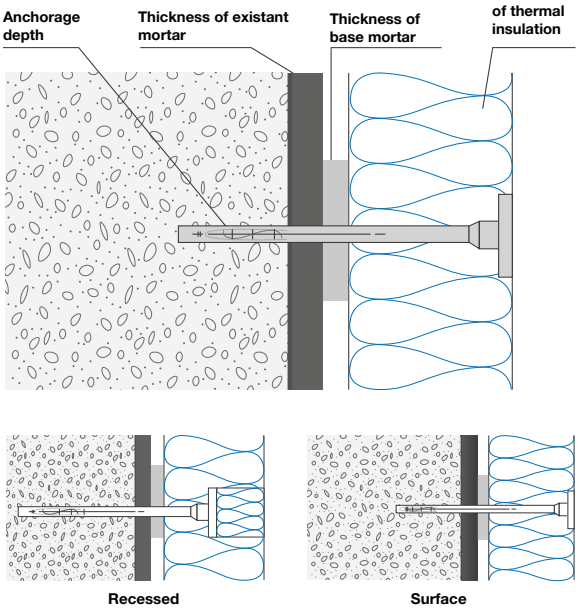




4.2. Mechanical anchors:

Once the boards are chemically bonded to the substrate, place the mechanical anchors.

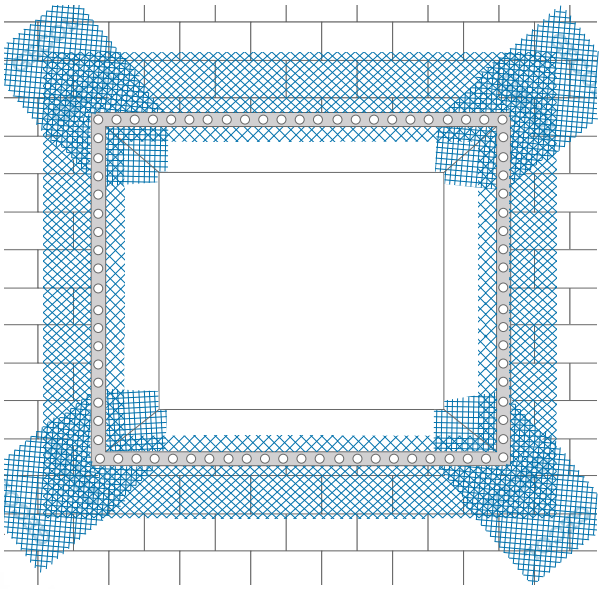
GECOL has a wide range of mechanical fixings. Its choice depends on the type of substrate, the required load capacity and the fitting method, whether surface or recessed.



4.3. Meshes and reinforcements:

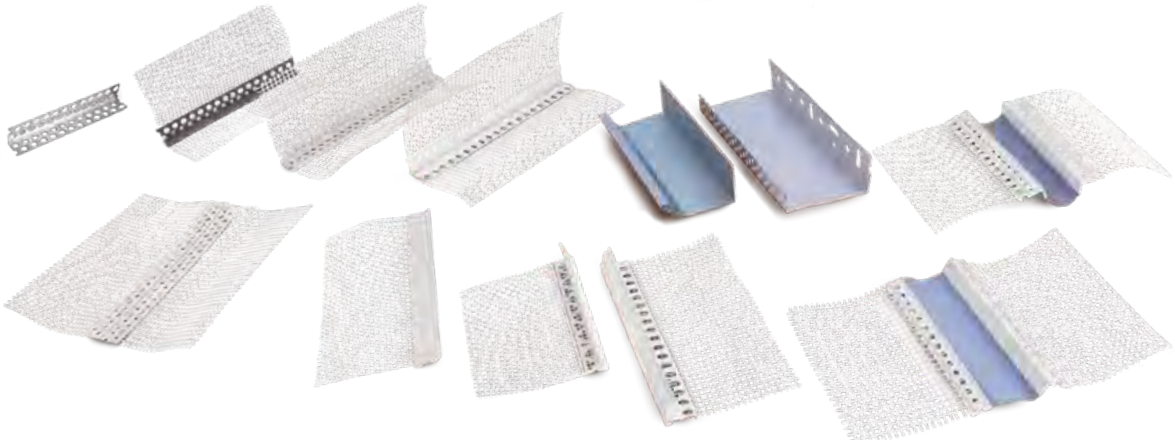
The following step consists in smoothing out the substrate using the adhesive mortar **GECOL Term** to fully reinforce the system. Areas that require reinforcement, such as the most vulnerable points, openings in general (doors, windows, etc.) or other areas that are prone to building up stress or rigidity will require double treatment.

To this end, it will be necessary to use any of the products from the **GECOL Malla** range.



4.4. Profiles and accessories:

The range of profiles and accessories for **ETICS** systems is quite extensive. They have been designed to treat weak points, finishes, protections, joints, etc. Using them will ensure the quality of the insulation system.



4.5. Sealing and protection:

The presence of water inside the system must be avoided at all times. To this end, there are elastomeric mastics (**G#color Elastic-MS** range), sealing strips, sealing and capping profiles are available.

4.6. Decorative finishes:

In a building, the facade is the hallmark of its identity, and this is where the colors, textures or volumes play a crucial role.

The table below shows the many options available when choosing the final decorative coating layer:

Decorative finishes	Product	Textures	Colors
Mineral	GECOL Premium One Coat Render	Stucco, troweled, smooth and texture	Color chart
Organic	GECOL Revestcril	Troweled, scored and fine	
	GECOL Revestcril elastic	Troweled	
	GECOL Revestcril siloxane	Troweled	
	GECOL Revestcril photocatalytic	Troweled	White
	GECOL Cril elastic	Smooth	Color chart
Ceramic	Ceramic / natural or reconstituted stone		*

* We recommend using formats not greater than 3,600 cm² and colors with absorption coefficients <0.25

4.7. Decorative elements. 3D moldings

Volumes also offer an important value proposition for facades as they are a relatively inexpensive solution with great possibilities in terms of design, high surface resistance, being lightweight and not requiring skilled labor for its installation.

They can also provide a good solution to hide defects or installations found on the facade itself.

Finishing layers and aesthetic finishes

GECOL Revestcril:

Acrylic render for the protection, decoration and renovation of facades.

Fungicidal (anti-mold) and bactericidal effect.

Textures: Troweled, scored, fine, popcorn and flattened popcorn

EN **ETA 12/0408 standard**

GECOL Revestcril photocatalytic:

Next-generation, non-polluting acrylic render with high durability.

Fungicidal (anti-mold) and bactericidal effect.

Textures: troweled, popcorn and flattened popcorn.

EN **ETA 12/0408 standard**

GECOL Revestcril siloxane:

Acrylic render with siloxane additives that are highly water repellent, for the protection, decoration and renovation of facades.

Fungicidal (anti-mold) and bactericidal effect.

EN **ETA 12/0408 standard**

GECOL Revestcril elastic:

Acrylic render with high flexibility for the protection, decoration and renovation of facades.

Fungicidal (anti-mold) and bactericidal effect.

Textures: troweled, popcorn and flattened popcorn.

IMPACT system, finished with high resistance to impact.

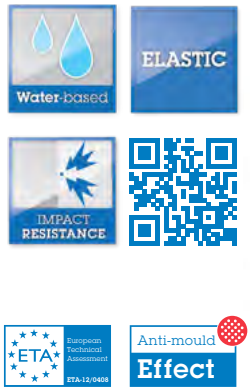
EN **ETA 12/0408 standard**

GECOL Cril elastic:

Waterproof render with high elasticity that offers excellent coverage for the protection, decoration and renovation of facades with cracks, fissures and filtration.

With fungicidal (anti-mold) and bactericidal effect.

IMPACT system, finished with high resistance to impact.



EN **ETA 12/0408 standard**

GECOL Premium One Coat Render:

Lightweight one coat render for the coating, decoration and renovation of facades.

Can be machine applied.

Waterproof and breathable.

Textures: Stucco, troweled, flattened, popcorn, textured and smooth.

IMPACT system, finished with high resistance to impact.

EN **LW CSII W2 / ETA 12/0408 standard**

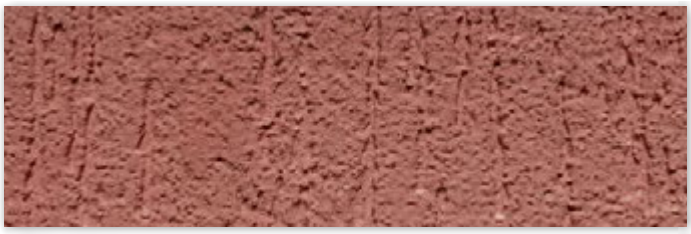
Color palettes and textures

Colors and textures for organic renders (**GECOL Revestcril** range)

Textures and finishes

Smooth

Scored



Troweled

Warning: Due to the printing process of this document, the colors that appear on the chart are indicative with respect to the final color once the product has been applied.

The colors displayed in this sample book may suffer small variations in color or texture depending on the conditions in which which the product is applied.

The range of colors with coefficients of solar absorption > 0.7 have ability to capture higher surface temperature and consequently cause increased material fatigue

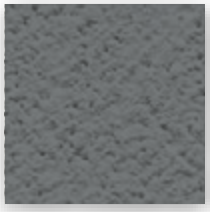
Colors

01_**White**

02_**Ash**

03_**Lead**

04_**Dark grey**



05_**Bone**

06_**Stone**

07_**Ivory**

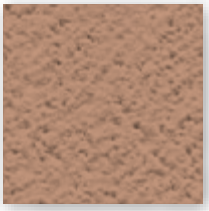
08_**Beige**

09_**Wood**

10_**Dark brown**

11_**Khaki**

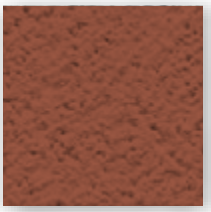
12_**Earth**



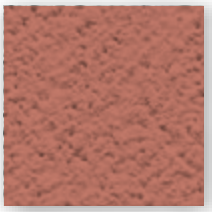
13_**Teide**

14_**Candy**

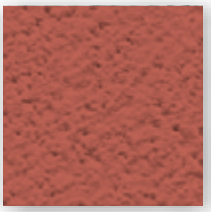
15_**Kenya**



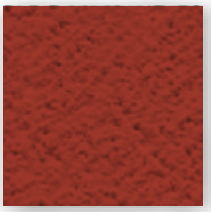
16_**Terracotta**



17_**Fire_**



18_**Bordeaux**



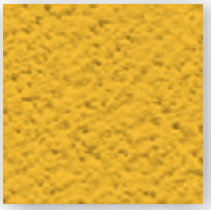
19_**Green**

20_**Lichen**

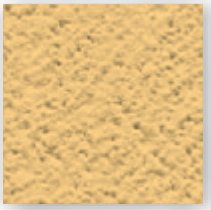
21_**Pearl**

22_**Yellow**

23_**Sahara**



24_**Ocher**

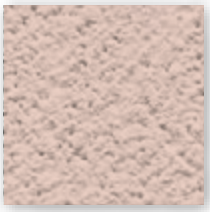


25_**Pipeclay**

26_**Mustard**

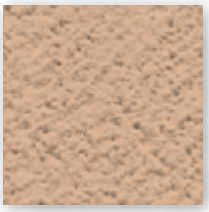
27_**Cream**

28_**Pink**

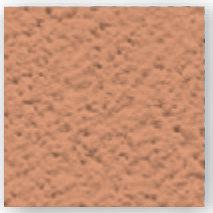


29_**Suede**

30_**Copper**

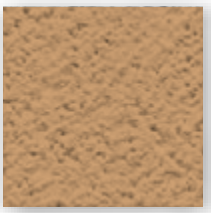


31_**Tile**



32_**Tobacco**

33_**Sand**

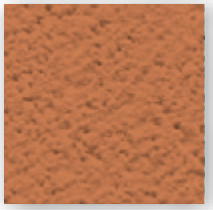


34_**Adobe**

35_**Orange**

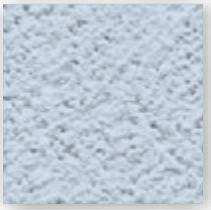
36_**Amber**

37_**Clay**

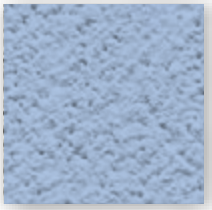


38_**Magma**

39_**Turquoise**



40_**Blue**



Color palettes and textures

Colors and textures for organic renders (**GECOL Cril**)

Textures and finishes

Smooth

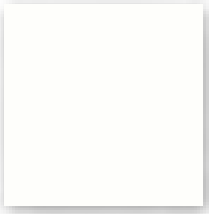
Warning: Due to the printing process of this document, the colors that appear on the chart are indicative with respect to the final color once the product has been applied.

The colors displayed in this sample book may suffer small variations in color or texture depending on the conditions in which which the product is applied.

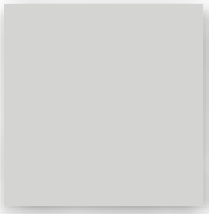
The range of colors with coefficients of solar absorption > 0.7 have ability to capture higher surface temperature and consequently cause increased material fatigue

Colors

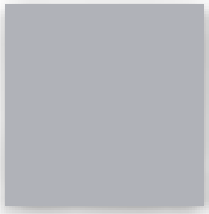
01_**White**



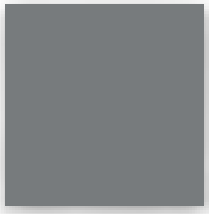
02_**Ash**



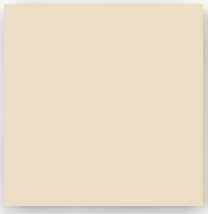
03_**Lead**



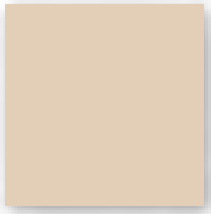
04_**Dark grey**



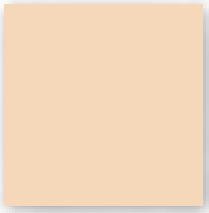
05_**Bone**



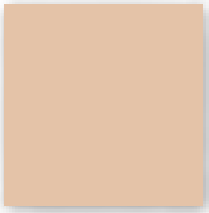
06_**Stone**



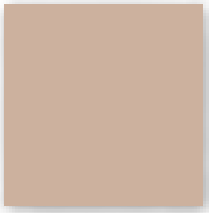
07_**Ivory**



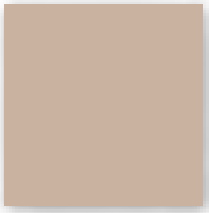
08_**Beige**



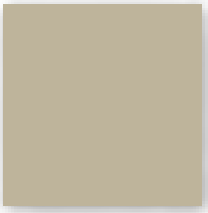
09_**Wood**



10_**Dark brown**



11_**Khaki**



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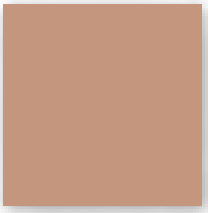

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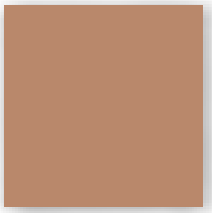
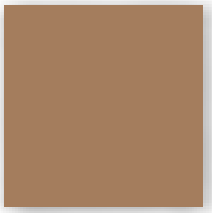
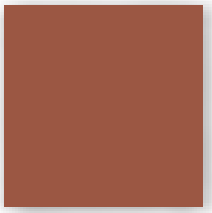


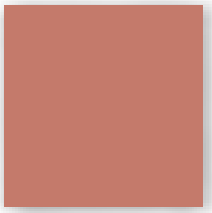
14_**Candy**



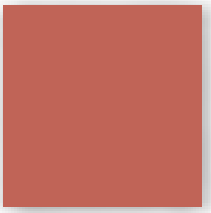
15_**Kenya**



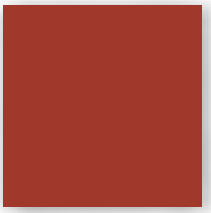
16_**Terracotta**



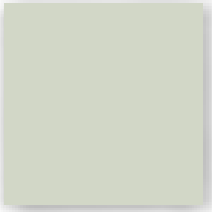
17_**Fire**



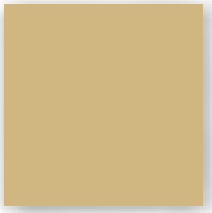
18_**Bordeaux**



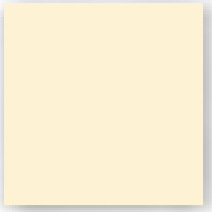
19_**Green**



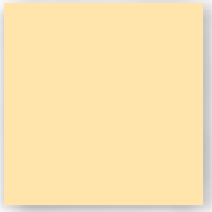
20_**Lichen**



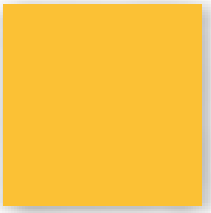
21_**Pearl**



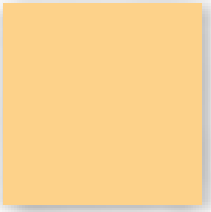
22_**Yellow**



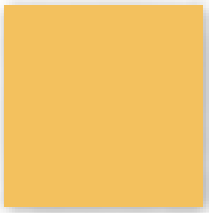
23_**Sahara**



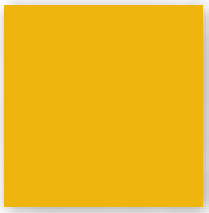
24_**Ocher**



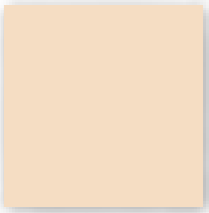
25_**Pipeclay**



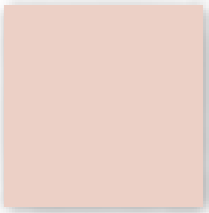
26_**Mustard**



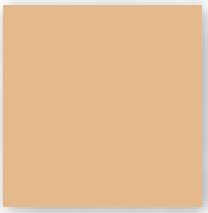
27_**Cream**



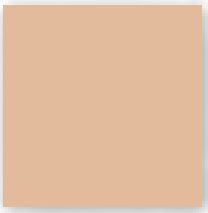
28_**Pink**



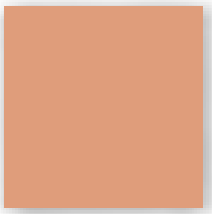
29_**Suede**



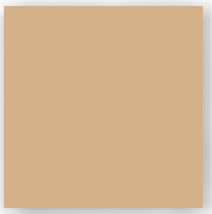
30_**Copper**



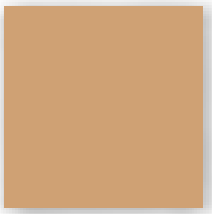
31_**Tile**



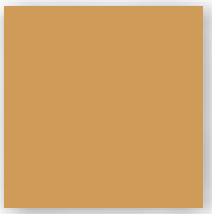
32_**Tobacco**



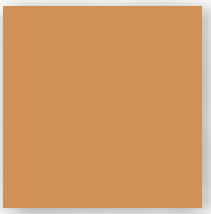
33_**Sand**



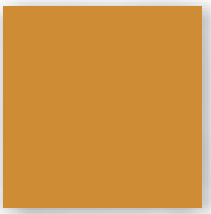
34_**Adobe**



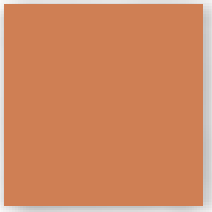
35_**Orange**



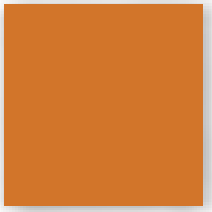
36_**Amber**



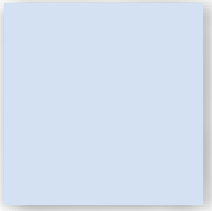
37_**Clay**



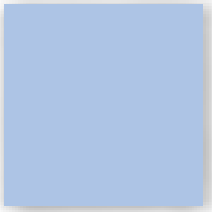
38_**Magma**



39_**Turquoise**



40_**Blue**



Color palettes and textures

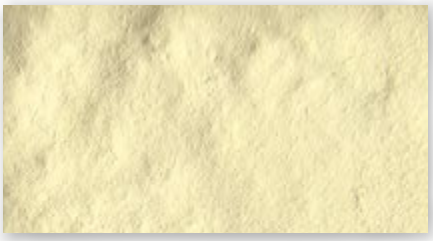
Colors and textures for mineral renders (**GECOL Premium One Coat Render** range)

Textures and finishes

Smooth / Floated

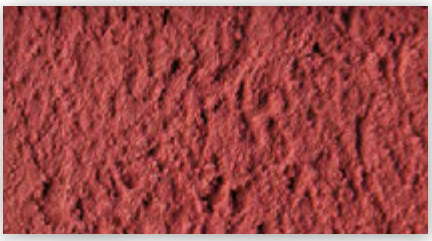
Premium scraped

Textured



Dash

Flattened Dash



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The colors displayed in this sample book may suffer small variations in color or texture depending on the conditions in which which the product is applied.

The range of colors with coefficients of solar absorption > 0.7 have ability to capture higher surface temperature and consequently cause increased material fatigue

Colors

01_**White**

02_**Ash**

03_**Lead**

04_**Dark grey**

05_**Bone**

06_**Stone**

07_**Ivory**

08_**Beige**

09_**Wood**

10_**Dark brown**

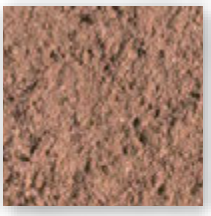
11_**Khaki**

12_**Earth**

13_**Teide**

14_**Candy**

15_**Kenya**



16_**Terracotta**

17_**Fire**

18_**Bordeaux**

19_**Green**

20_**Lichen**

21_**Pearl**

22_**Yellow**

23_**Sahara**

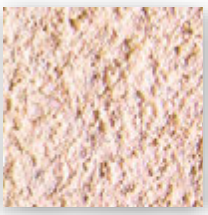
24_**Ocher**

25_**Pipeclay**

26_**Mustard**

27_**Cream**

28_**Pink**



29_**Suede**

30_**Copper**

31_**Tile**

32_**Tobacco**

33_**Sand**

34_**Adobe**

35_**Orange**

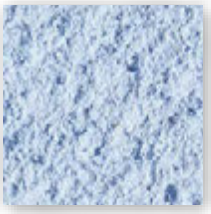
36_**Amber**

37_**Clay**

38_**Magma**

39_**Turquoise**

40_**Blue**



Facade maintenance and conservation

The logical and unavoidable aging of facades is mainly down to the weather, the visible deterioration of the materials, and perhaps even improper use due to a lack of adequate maintenance.

A facade featuring the **GECOL TERM ETICS** system is extraordinarily long-lasting, as the materials comprising the system have been tested and certified, complying with the requirements of the EOTA.

EOTA
European Organisation for Technical Assessment

ETA
European Technical Assessment
ETA-12/0408

Maintenance actions

According to **Article 16 of Law 38/1999 on Building Regulations**, **: Owners and users:**

1. "*Owners have the obligation to keep the building in a good state of conservation through adequate use and maintenance, as well as receiving, keeping and sharing the documentation on the work carried out and the insurance cover and warranties it has*"

2. "*Users, whether or not they happen to be the owners, have the obligation to use the buildings or part of them properly, in accordance with the instructions for use and maintenance contained in the documentation of the work carried out*"

In view of the foregoing, it is necessary to carry out different maintenance tasks:

Direct maintenance:

- Removal of stains caused by runoffs.
- Repair of damage caused to the surface due to subsequent works carried out on the facade.
- Energy optimization by means of additional insulation panels.

Maintenance every three years:

- Giving its look a refresh because of aging or soiling.
- Cleaning and treatment for algae, fungi or microorganisms that are mainly found in shady areas.
- Improvement of the texture of the coating.
- Checking that seals and expansion joints remain watertight.

IMPORTANT

Any maintenance action to be carried out on the facade must be done under the supervision of **GECOL's Technical Department**, in order to ensure its suitability and to avoid any possible issues in the future.

- Economic and energy **saving.**
- **Comfort** and **habitability.**
- **Optimization** of the useful surface.
- **Thermal** and **acoustic** insulation**.**
- **Rejuvenate** the façade and **enhance** the building.
- **Breathable** and **waterproof.**
- **Quality** of life and environmental **protection.**

CTE CÓDIGO TÉCNICO DE LA EDIFICACIÓN

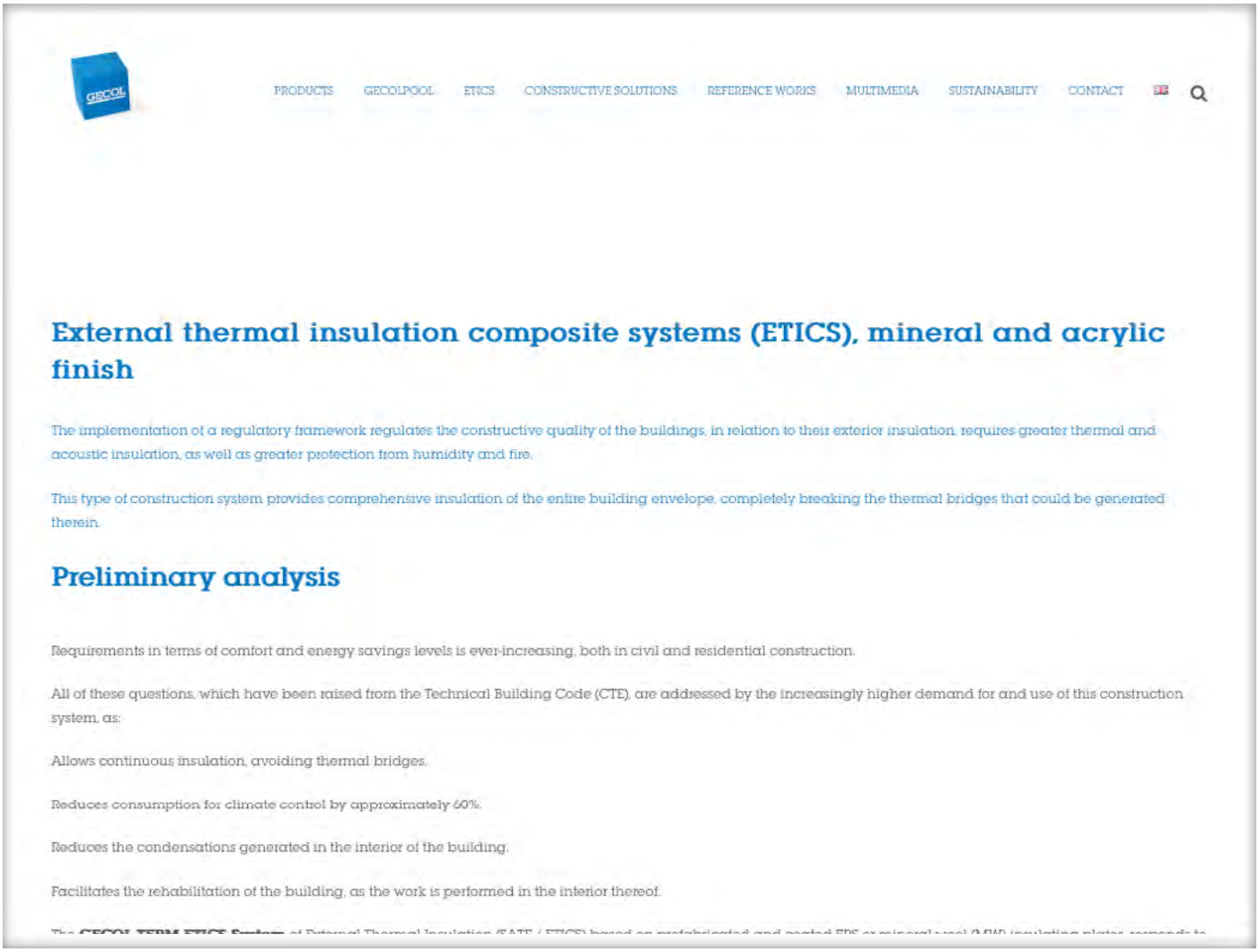
ETA European Technical Assessment ETA-12/0408

EOTA European Organisation for Technical Assessment

Ask your technician

GECOL's technical support team will make every effort to reply and provide a solution to the most frequently asked questions that it encounters on a daily basis.

If this chapter does not answer all your questions, feel free to reach out to **GECOL** by sending an email to **info@gecol.com** or visiting **www.gecol.com**

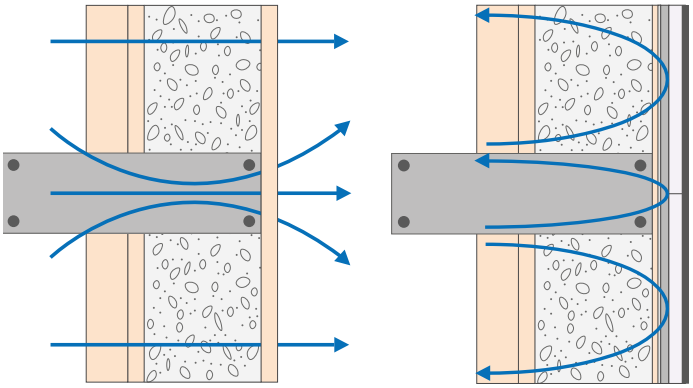


What is a thermal bridge?

The Spanish Technical Building Code, in **Basic Document HE, section HE1**, defines a thermal bridge as:

"*An area of the building envelope where there is evidence of variation in the uniformity of the construction, either because of:*

- *A change in thickness of the enclosure or the materials used.*
- *Complete or partial penetration of building components with different conductivities.*
- *A difference between the external and internal areas of the component, etc., which leads to a decrease in thermal resistance compared with the rest of the enclosure.*"



What are the substrate specifications in an ETICS system?

In order to properly install an **ETICS** system, it is necessary to have a suitable substrate to begin with, so the first task is to treat it beforehand.

The substrate must meet the minimum requirements for stability, cohesion, resistance, flatness, moisture content and cleanliness. It must also have enough load-bearing capacity to bear the combined weight of its own weight, the weight of the **ETICS** system, as well as wind loads.

The work involved in preparing the substrate must be carried out meticulously as the success of the entire process rests on it.

Substrate specification and requirements:

1. For new builds:

- The substrates should have a flat surface (ceramic brick wall with joints without protrusions, concrete or mortar rendering).

- With no significant irregularities or unevenness no greater than 10 mm measured with a 2 m ruler.

- With adequate strength to support the covering and for the necessary curing time to have passed since they were built so they are stable enough.

- They must be clean and consistent, absorbent and free from dirt or release agents.

2. For refurbishment works:

- They must be consistent, with no fissures, and not unduly aged, eliminating and repairing all friable parts.

- Remove all traces of dirt and pollution found on the surface (proliferation of microorganisms, build-up of dirt, etc.), by applying a biocide agent and subsequently using a pressure washer to wash them clean.

- Deteriorated concrete substrates must be repaired using a mortar from the **GECOL Reparatec** range, including treatment of the reinforcements for possible deterioration or oxidation.

- Repair areas with fissures, provided that the fissures are stable and have openings larger than 2 mm.

- Removal of the existing layer of paint.

- Leave the external water, gas and electricity conduits as they are, providing access to them whenever necessary.

Can you start an ETICS system without a base profile?

Before anything, follow the provisions set out in **CTE DB HS1** at all times:

"*A waterproof barrier covering the entire thickness of the facade at more than 15 cm above the exterior ground level must be provided to prevent rising damp through capillary action or another solution that produces the same effect must be adopted*."

To prevent damp through capillary action and blows, it is mandatory to install base profiles, which are placed horizontally with respect to a base of about 15 cm. This will make it possible to fit the boards properly.

Furthermore, in terms of waterproofing the base that will be found beneath the base profile, it is advisable to use mortars from the **GECOL Imper** range.

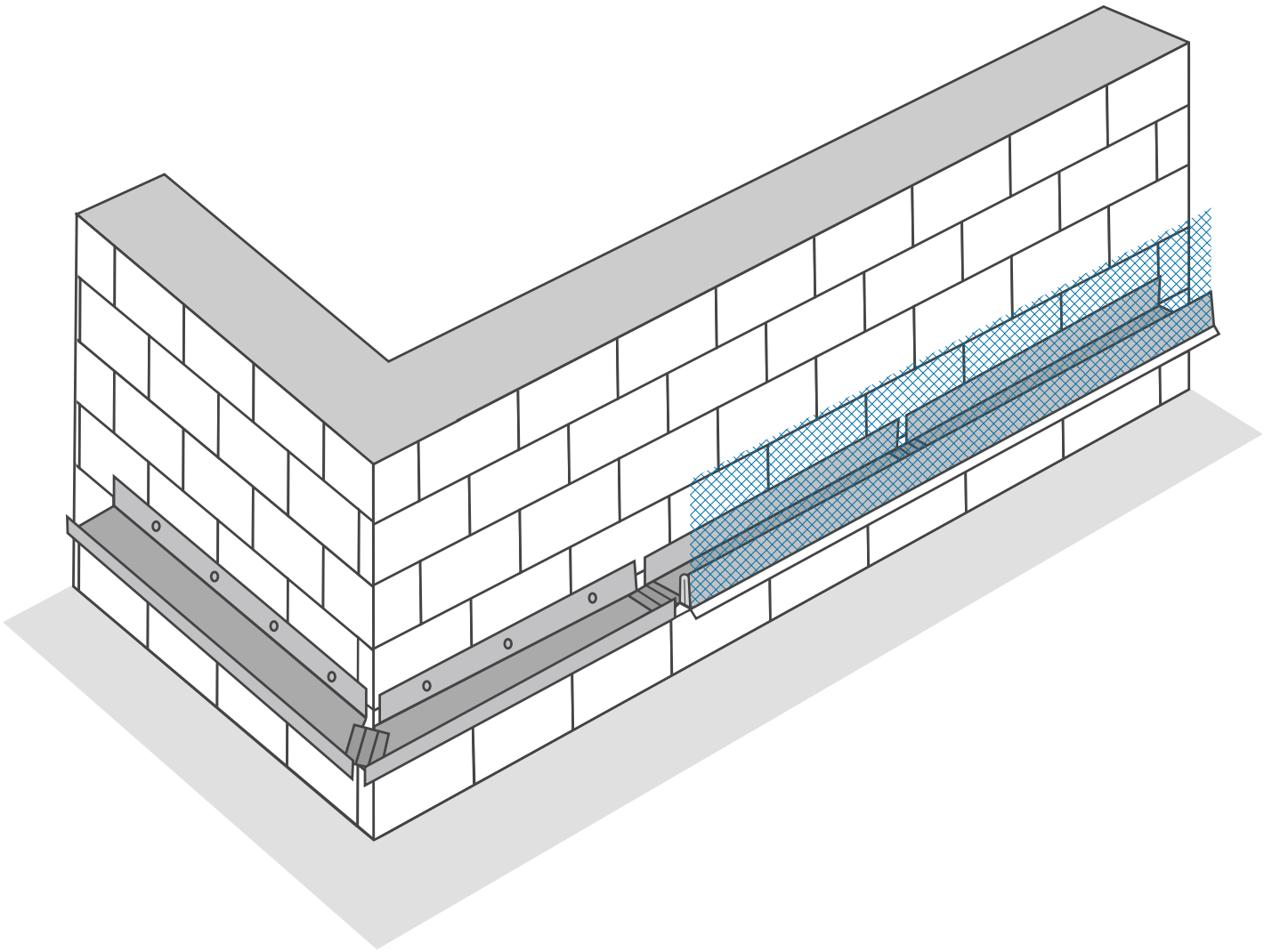
How do you install base profiles?

Horizontally, at the lower limit of the area to be covered, set a base of about 15 cm to prevent rising damp through capillary action.

The profiles are fitted before the insulation boards, which provides an even base to fit the insulation boards, thus creating a protected area against damp, blows, etc.

To fix them, use zinc-plated screws and dowels suitable for the substrate. The fixings must be placed at a distance of 30 cm and at the joints or vertices at a distance not less than 15 cm. To properly level them, it is advisable to use **GECOL Spacers**.

The profiles should be spaced 2 or 3 mm apart to avoid any possible contact as a result of expansion.



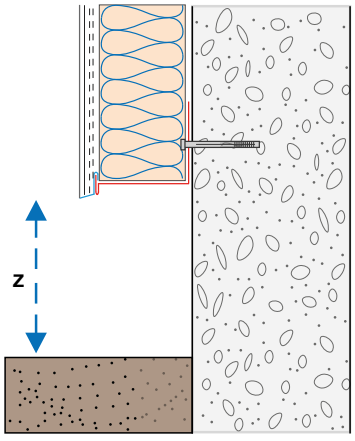
Can you start the ETICS system at floor level?

To this end, use an insulating and moisture-resistant material such as **SOPRA XPS CB**, and follow the steps below:

1. Waterproof the substrate and the base of the building (1 meter) using a mortar from the **GECOL Imper** range and form a half-round shape.
2. Fit the insulation material **SOPRA XPS CB** 10 mm from the foundation using the adhesive mortar **GECOL Term** and then subsequent sealing with the mastic **G#color Elastic–MS**.
3. Use **GECOL Screw anchors** to mechanically fix the **SOPRA XPS CB**.
4. Fit the base profile 10 mm to the insulation **SOPRA XPS CB** and then fill using **G#color Elastic–MS** afterwards.
5. Fit the chosen insulation board using **GECOL Term** and then **GECOL Screw anchors**.
6. Smooth out and leave the insulation boards to harden with the highly resistant anti-vandal **GECOL Malla 330**.
7. Fit **GECOL Malla 160** to them and cover the joints with **GECOL Term**.
8. Apply the finish coating up to 15 mm from the foundation.
9. Fit the ceramic baseboard using deformable adhesives (S1 or S2) from the **G100** range.

SYSTEM STARTUP

- **At general level:**
  Z ≥ 150 mm
- **Terraces/balconies:**
  Z ≥ 10 mm (sloping to the outside)
  Z ≥ 50 mm (sloping to the inside)
- **Over a wood structure:**
  Z ≥ 200 mm



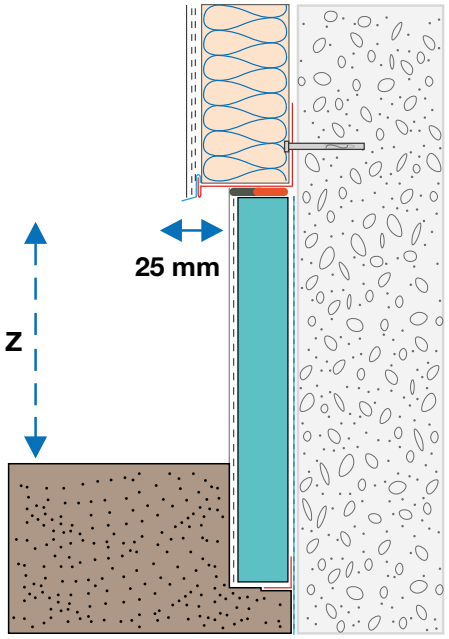
Can an ETICS system be installed underground?

Follow the steps below:

1. Waterproof the underground substrate using one of the mortars from the **GECOL Imper** range.
2. Fit the insulation material **SOPRA XPS CB** using the adhesive mortar **GECOL Term**.
3. Fix the insulation **SOPRA XPS CB** using **GECOL Screw anchors**.
4. Smooth out and leave to harden with **GECOL Term** + **GECOL Malla**.
5. Waterproof using the elastic mortar **GECOL Imper–E**.
6. Fit the draining and filtering layer.
7. Create a compression layer
8. Seal with the elastic mastic **G#color Elastic–MS**.
9. Then, follow the steps in the installation of an **ETICS** system at floor level.

SYSTEM STARTUP WITH UNDERGROUND PARTS

- In new construction, the insulation of the basements buried parts reduces signi cantly thermal bridges.
- The Z-height criteria are the same as for system startup.



How do you install insulation panels?

The insulation panels will be fitted using the adhesive mortar **GECOL Term** and placed with staggered joints, from bottom to top, evenly pressing to connect them, starting from the edges of the building.

It's important to fit whole panels or half panels at the corners of the buildings and that they hold perfectly firm and are fully adhered to the substrate.

Check that the insulation boards have properly adhered to the substrate at all times, as per the recommendations of the **EN 13499 and EN 13500** standards.

Then, place the mechanical fixings (**GECOL Screw anchors**) once the insulation panels have been installed.

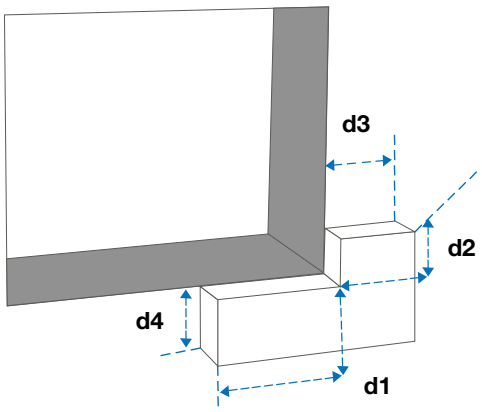
While fitting, make sure that there are no protrusions or ridges between the insulation boards.
If there are any, remove them by sanding and cleaning afterwards.

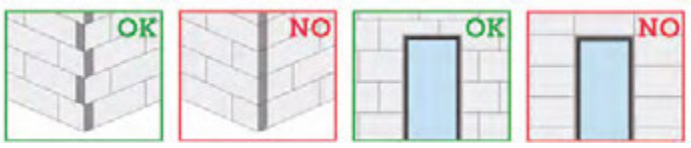
Check that the joints between the insulation boards fit snugly against each other and avoid overfilling them with adhesive.

Fill any gaps between panels using strips of the same insulation material.

Remove any excess adhesive to avoid the formation of thermal bridges.

Mark the location of hidden pipes to avoid drilling through them when placing the screw anchors or other fixings in subsequent anchoring operations.





What is the insulation board adhesive for?

The adhesive mortar **GECOL Term** has three functions:

1. To support and adhere the insulation material to the building surface.

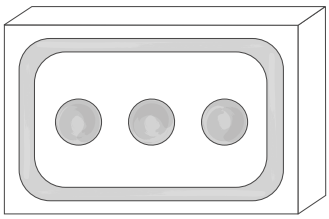
2. To restrict expansion, contraction and warping of the insulation.

3. To smooth out or adjust the flatness of the installation due to any defects on the surface, provided that they are no greater than 10 mm measured with a 2 m ruler.

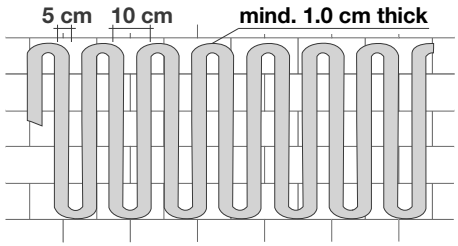
The **GECOL Term** adhesive can be applied to the insulation boards by:

- **Substrates that have not been smoothed out:**

  A. Around the perimeter plus some points in the middle.

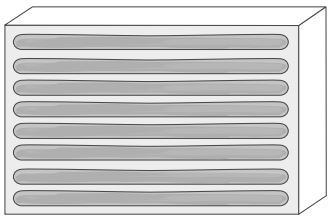


  B. Machine applied around the perimeter.



- **Substrates that have been smoothed out:**

  Notched trowel at the rear of the insulation board.



Greater adhesion resistance by perfectly counteracting all types of expansion.

How do you determine the number of screw anchors to use?

The number of screw anchors is calculated according to the height of the building or location (surface, edge), and their length and diameter will depend on the characteristics of the supporting wall and the type of insulation to be installed.

Mechanical fixings are placed once the insulation has been adhered and before the mesh is embedded, and they must be evenly distributed.

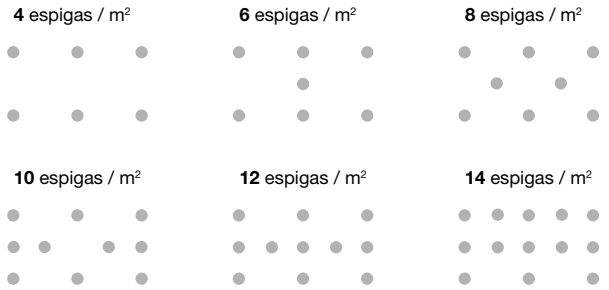
In some specific systems, it will be necessary to use a larger number of screw anchors after the reinforced rendering (e.g. **GECOL TERM system with a ceramic finish**).

Bear in mind that higher wind loads are formed at the corners of buildings, so it's important to ensure that the screw anchors are evenly distributed all throughout.

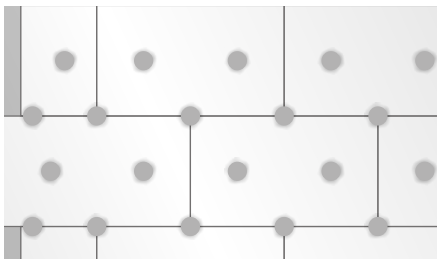
The fixings should be placed perpendicular (90-degree angle) to the substrate, ensuring that the top of the washer is perfectly aligned with the surface of the insulation material, or by using special fixings and drill bits to use them inside the insulation board, subsequently covering them with screw cover caps of the same material.

Depending on the insulation material and its dimensions, there are different ways to distribute them:

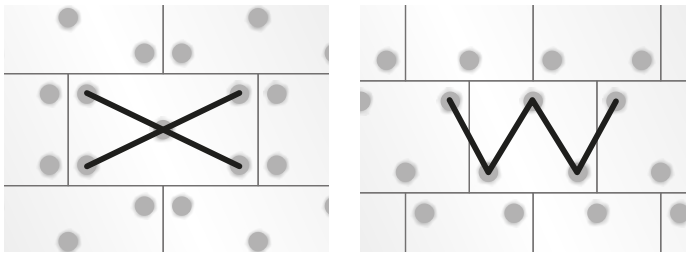
Placement of screw anchors



All types of boards



Mineral wool boards



Basic wind speed value (km/h)	Building environment								
	I No buildings around			II (protected; with buildings around)			III (with a large number of buildings around)		
	Building height								
	<10 m	10 to 25 m	25 to 50 m	<10 m	10 to 25 m	25 to 50 m	<10 m	10 to 25 m	25 to 50 m
<85	6	6	6	6	6	6	6	6	6
85 to 115	8	10	12	8	8	10	6	8	10
115 to 135	10	12	12	10	12	12	8	10	12

What kind of screw anchors should you use and when?

GECOL has a wide range of screw anchors, which can be percussion drilled (impact) or screwed in.

The most common mechanical anchors are:

- **GECOL Screw anchor**:

  Polypropylene anchor with a polyamide core for percussion drilling and suitable for substrates A, B and C.

  Three-dimensional opening screw anchors are recommended for hollow ceramic bricks (**GECOL 3D screw anchor**)

- **GECOL Screw anchor - A Impact**:

  Polypropylene anchor with a metal core for hammering in and suitable for substrates A, B and C.

- **GECOL Screw anchor - A**:

  Polypropylene anchor with a metal core for screwing in and suitable for substrates A, B and C.

- **GECOL Screw anchor:**

  Plastic screw anchor composed of a washer, also made of plastic, and a screw, for screwing insulation panels to wooden or steel sheet substrates.

The fixings must be chosen depending on the substrate type as follows:

A- concrete, B- solid brick, C- hollow brick,
D- lightweight concrete, E- cellular concrete.

This table shows the different substrate types:

Category	A	B	C
Material	 Concrete	 Solid clay block	 Perforated clay block
	 Precast concrete panel	 Solid block	 Perforated block
		 Lightweight aggregate concrete	 Lightweight hollow concrete block
Category	**D**	**E**	
Material	 Lightweight concrete solid block	 Cellular concrete	

Is there anything worth bearing in mind when installing mineral wool insulation?

Due to the low compression strength of this type of system, it is necessary to use the **GECOL PVC Washer** as a compressing agent, to give greater strength and consistency to the whole.

It's also worth bearing in mind that anchoring with the screw anchors is always done inside the mineral wool following the specific drawings.

What is the base coat for and how is it used to smooth out the insulation board and make it harden?

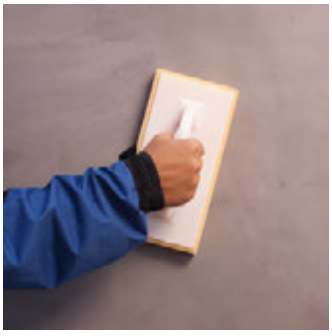
The entire process is done using the hardening adhesive mortar **GECOL Term**.

The function of the base coat is to improve the mechanical performance of the **ETICS** system and to also absorb the stresses that may be generated between the insulation boards.

Once the insulation boards have been fitted and all the weak points have been reinforced, the adhesive mortar is applied directly to them, with an approximate thickness of 2 mm, which is then smoothed out.

This reinforcing and smoothing layer is called a base coat. It's advisable to spread it using a notched trowel to smooth it out onto the substrate and apply an even layer all throughout, since it provides most of the mechanical performance.

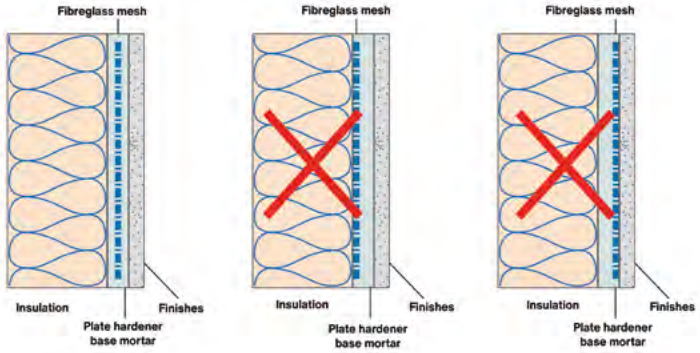
While the base coat is still fresh, place the **GECOL Malla** (weight of 160 g/m^2) and apply pressure. The mesh fabric must penetrate into the first layer of the fresh mortar so it's perfectly embedded and has no folds.



To fit it properly, the mesh must overlap at least 10 cm between adjacent sections.

If using anti-vandal mesh, fit it by embedding it into the base coat without overlapping, as its high surface density does not allow for two layers of the same mesh to overlap each other.

However, this would lead to a high risk of fissures in the mesh butt joints. To avoid this, apply a second coat of mortar and embed standard mesh (160 g/m^2) into it.



Why should you apply a primer for acrylic finishes?

GECOL Cril fondo serves as a bonding primer between the base coat with the **GECOL Term** mortar and the **GECOL Revestcril** acrylic finish coating, improving the adhesion of the latter.

It also smooths out the absorption of the base coat that covers the insulation, as well as finishing coats with a ribbed or rough texture, in which the base coat is transparent.

To even out the color, it must be in the same color as the final finish.

To apply a coat of **GECOL Cril fondo** primer, observe the drying times for mortar (moisture less than 3%) and cover the entire surface using a roller (pay close attention to the thickness of the coat).

What are considered weak points in an ETICS system?

The weak points of a facade are those where the greatest stress builds up or are those which are most vulnerable due to the intrinsic characteristics of the building work or project. Among others, these include:

• Doors and windows:

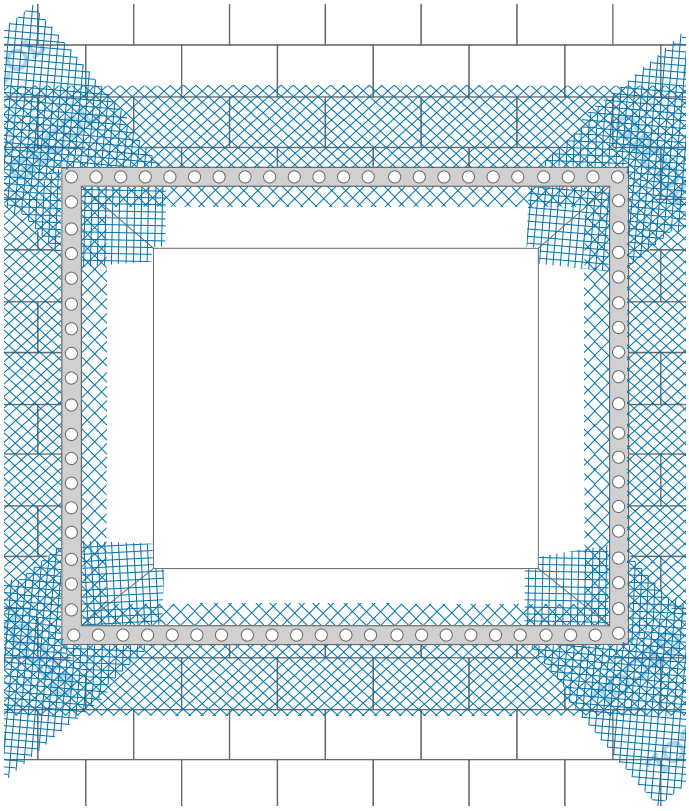
To implement an **ETICS** system properly, pay special attention to the edges of window or door openings and the discontinuity between materials.

Before applying the reinforced base coat, reinforce the weak areas such as corners using fiberglass mesh and overlapping it with the mesh in the base coat.

Likewise, it is necessary to place additional pieces of mesh on all edges to reinforce them.

• Sills:

An insulation must be fitted beneath the sill to prevent the formation of thermal bridges.



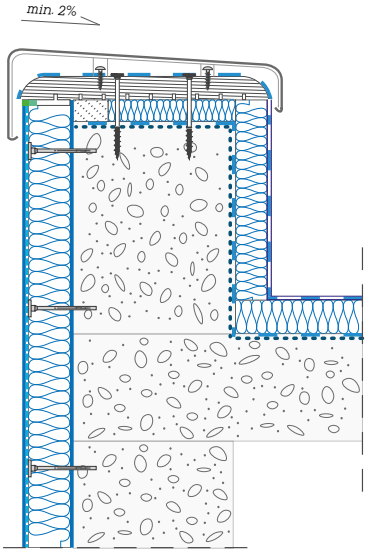
• Eaves and copings:

A 5 mm elastic joint should be made at the point where the system meets between eaves, cornices and copings. Use G#color Elastic-MS for this. This will prevent the transmission of movement from these to the boards.

According to Art. 2.3.3.7 of **CTE DB HS1: Parapets and upper trims on the facades:**

"Parapets must be topped with copings to drain off rainwater that reaches the top and to prevent it from reaching the part of the facade immediately below it or another solution that produces the same effect must be adopted. Large overhanging elements must be provided the same treatment as the roof in order to ensure the waterproofing and insulation of the element in question".

At present, there are different construction solutions within the **ETICS** systems that ensure the right solution for the element, when the placement of copings or other overhanging elements is not being considered.



• Corners:

Corners should be protected with metal or PVC profiles, which serve to reinforce these critical points, in addition to creating greater verticality and uniformity for an ideal finish.

In all cases, it is advisable to use corner protectors reinforced with mesh.

Finish off corners by pressing the mesh fabric into the base coat of the fresh mortar until it is properly embedded into it.

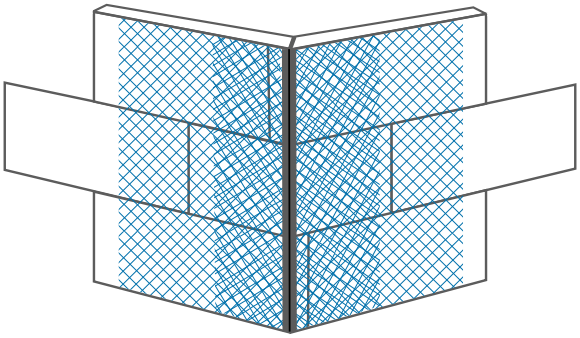
It is essential to avoid joining different corner strips in order to avoid horizontal fissures due to expansion.

• Location of scaffolding:

It is advisable to use tubular scaffolding, which should be placed so that the clearance between the facade and the closest part of the scaffolding is greater than the thickness of the insulation plus 8 cm.

Threaded eyebolts must be used as the anchors for the scaffolding fixed to the facade. Once adjusted their heads must lie at a distance greater than the thickness of the insulation plus 5 cm.

Armor overlap detail with corner profile



Are there any colors that cannot be used with the system?

It is advisable for the refractive index not to be less than 25 (where 0 = black and 100 = white).

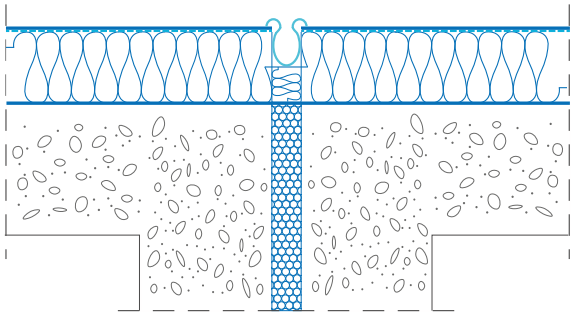
In any case, this value should be studied for each specific system as it partly depends on the location of the building, direction, geometry and type of insulation used.

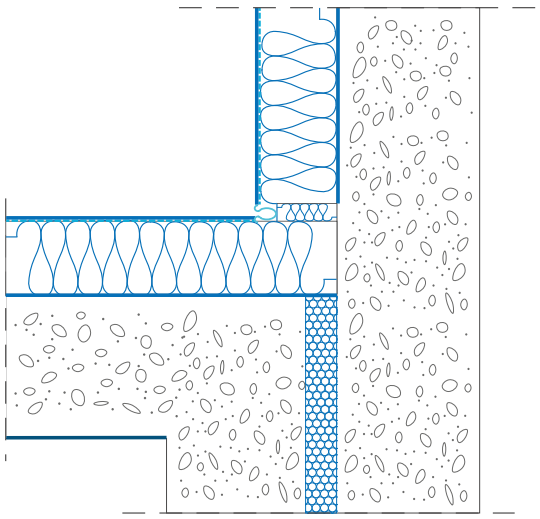
Can panels be fitted without partition and/or expansion joints?

The existing expansion joints in the building must be observed at all times, using the appropriate implementation procedures.

When rendering large areas, use area delimiters such as masking tape in the case of acrylic renders and PVC beading in the case of mineral mortars that give rise to discontinuity. This avoids the splicing of materials together and differences in color.

In the case of acrylic renders, greater attention and care should be taken when removing masking tape, so as not to leave hollow areas and lack of adhesion through which water can penetrate.





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