

System loyalty pays off!

*Why respecting the system is essential
for quality, safety and long-term performance of
External Thermal Insulation Composite Systems (ETICS).*

ETICS and system loyalty are essential to achieve Europe's energy efficiency objectives.



ETICS is the abbreviation for External Thermal Insulation Composite System. ETICS can be used to improve the energy efficiency of both new and existing buildings. A comprehensive range is available to meet the various demands of building structure and architecture.

ETICS are a kit in the sense of the Construction Products Regulation (CPR) consisting of certain (specified) prefabricated components being applied directly to the façade onsite.

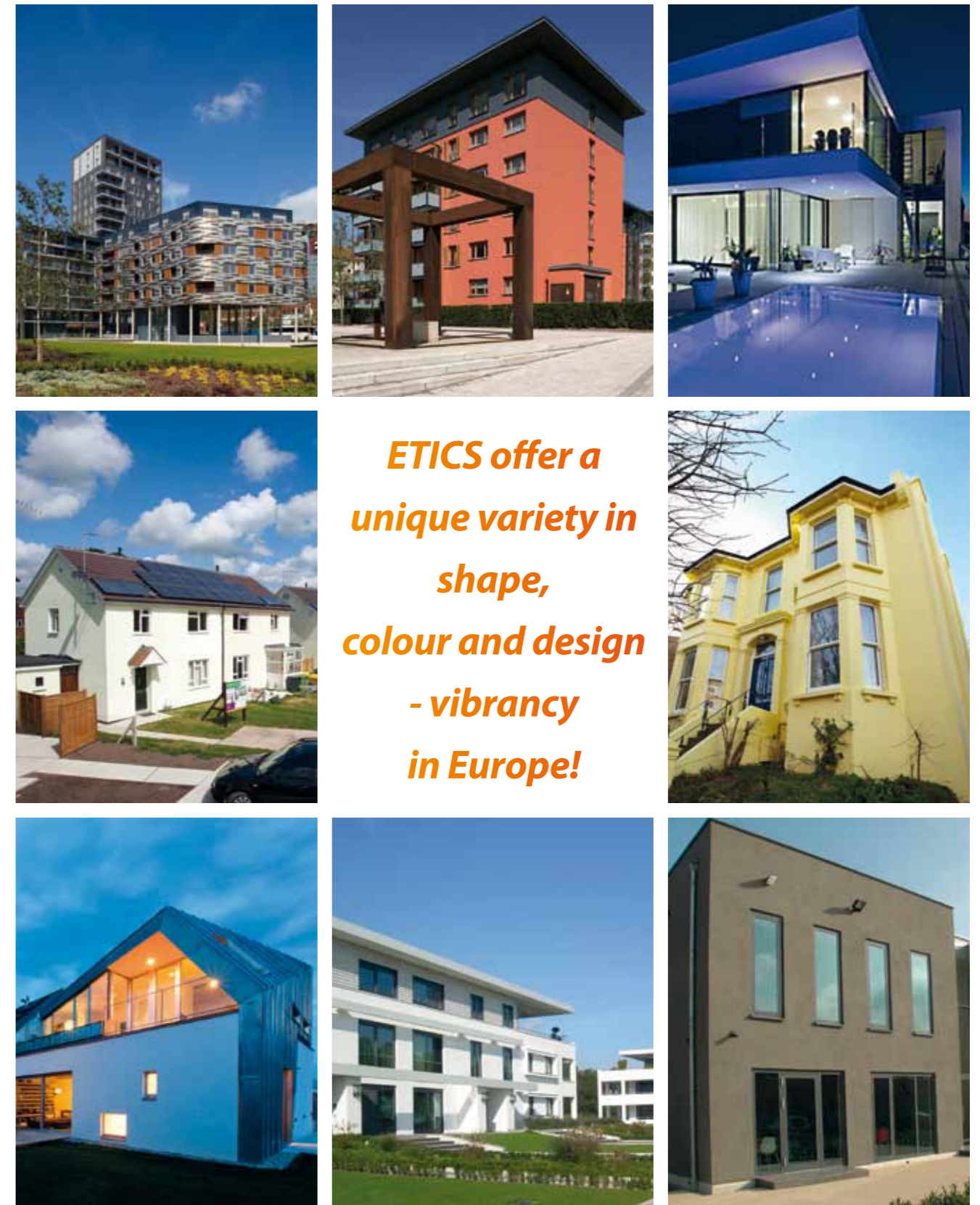
Which configuration of system components is required for specific projects depends on system holder's installation manuals and national regulation.

Before a system holder places a new system on the market, a number of tests of both single system components and certain system configurations have to be performed. Based on the test results the entire system is assessed and essential characteristics are determined. Furthermore, the system holder is fully responsible for factory production control to ensure that systems placed on the market meet the declared performances.

Thus the performance of an ETICS can only be guaranteed if all system components are delivered by one system holder and applied in the tested configurations. Only then can the performance of the system be ensured.

Respecting the system is fundamental for the quality, safety, and durability of an ETICS. By doing this, customers will trust the long-term performances of their investments and be willing to invest in further energy-efficiency measures. This is urgently required in all Member States to meet Europe's ambitious energy efficiency and environmental objectives.

Dr. Clemens Hecht, EAE board member technical affairs



**ETICS offer a
unique variety in
shape,
colour and design
- vibrancy
in Europe!**

System loyalty pays off!

System loyalty is fundamental to ensure quality and reliability of ETICS

Significant improvements of the energy efficiency of Europe's building stock is key to achieve Europe's political objectives regarding

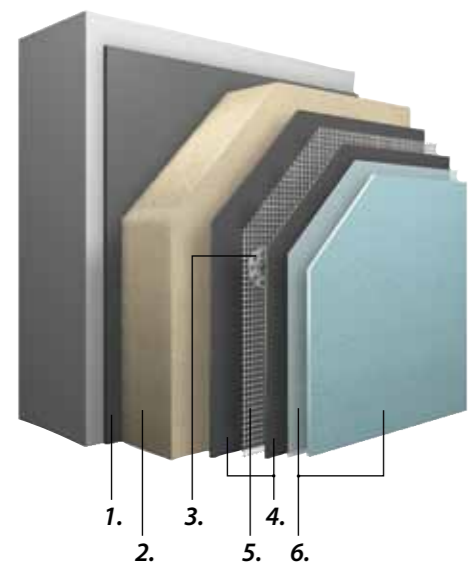
- **Reduction of GHG emissions**
- **Resource efficiency and sustainability**
- **Welfare and employment**
- **Reduction of dependency from energy imports**

As private housing is clearly identified to be the main source of energy consumption, mainly caused by heating and cooling, thermal improvements of buildings' envelopes are regarded to offer the greatest leverage.*

To achieve these ambitious but necessary goals the renovation rate has to be increased significantly all over Europe. However, this will only be possible if consumers can trust in the durability and long-term performance of External Thermal Insulation Composite Systems (ETICS). ETICS are very cost-effective and have approved in practice for more than 50 years.

The quality and durability of an ETICS depends on the careful choice of system components. This composition is done by system holders. They take care that components perfectly fit together. Each system placed on and sold to the market by the system holder is intensely tested regarding its essential characteristics.

Therefore the EAE requests respect for system loyalty.



These system components typically are:

1. **Adhesive**
2. **Thermal insulation material**
3. **Anchors**
4. **Base coat**
5. **Reinforcement, usually glass fibre mesh**
6. **Finishing layer: finishing coat with a key coat (optional) and/or a decorative coat (optional)**
7. **Accessories, e.g. fabricated corner beads, connection and edge profiles, expansion joint profiles, base profiles, etc.**

*For more information about the opportunities ETICS offer to achieve Europe's economic, ecological and societal objectives see EAE European Energy Saving Guide.

Why?

1. European regulation

ETICS are a kit in the sense of the EU Construction Products Regulation. That means that system holders take full responsibility for the performance of their ETICS. Furthermore European Technical Assessments or Approvals include a detailed description of the system components foreseen by the system holder. Only these tested combinations guarantee the quality and function of the system.

2. Tested as an entire system (kit)

To achieve a European Technical Assessment (Approval) ETICS have to be tested according to a European Assessment Document. For most systems this document is ETAG 004. Test procedures require a variety of tests that approve the function of system components in combination, e. g. shear loads, hygrothermal behavior, reaction to fire, etc. Only when all tests have been performed and passed successfully will the system holder place a system on the market.

3. Kit means that system holders take full responsibility

Only if system holders can be sure that all system components have been supplied by their company, they can take full responsibility for the performance, durability and safety of the entire system. They ensure third party controls of their quality systems and therefore will guarantee for the performance of their ETICS. This will therefore guarantee the performance of the ETICS, installed by trained contractors, following the requirements of the system holders

If only one component is changed, the system holder cannot provide any guarantee. According to the Construction Products Regulation in this case the installer finally takes the full responsibility not only for the execution of the work, but also for the performance of the system.

4. Quality is fundamental for employment

ETICS have performed perfectly in practice for more than five decades. To achieve this reliable quality it was necessary to establish system tests, system assessments and system loyalty. Doing so designers, architects, and end-users can rely on the long-term performance of their energy-saving facades and on the pay-back of their investments. Any doubts in the reliability of ETICS caused by quality failure will prevent building owners to invest in thermal improvements.

This would be a high risk not only for the development of the energy-efficient building stock but also for achieving Europe's main 2020 objectives. Each successful ETICS project helps to save or to create employment for architects and designers, for craftsmen and industry - thousands of jobs that cannot easily be transferred abroad.

Therefore energy efficient buildings may become a sustainable driver of Europe's economy.

5. Cheap may finally become expensive

Sometimes it seems to be very attractive to save some money by purchasing cheaper components from different manufacturers to form the ETICS on the construction site. But what happens if problems occur? Who will take responsibility? In the end it's the installer who guarantees the performance of his work. Costly repairs or even total reconstruction of systems are often consequences of mixing individual system components from different suppliers.

In such cases all warranties of the system holder immediately become invalid. Therefore system loyalty finally pays off, especially if you take into consideration the life-cycle of an ETICS.

Certificate of the applied ETICS

At the end of each Declaration of Performance of an ETICS you will find an Annex. This Annex should be used to confirm which system components have been finally installed at each construction site. It has to be signed by the installer after the assembly has been completed. With this documentation ("certificate of the applied ETICS") it will be possible to trace the performance criteria of the system. This certificate could be used as a warranty document for the investor.



The image shows a certificate form titled "Certificate of the applied ETICS (kit)". The form is white with orange and blue text. At the top right is the EAE logo (European Association for External Thermal Insulation Composite Systems). The form contains several sections for data entry:

- Postal address of the building:** Project owner, Street, ZIP/City, Country.
- Description of the ETICS installed:** System holder, ETICS trade name, and checkboxes for bonding methods: Bonded, Mechanically fixed with profiles, Bonded with supplementary adhesive.
- ETICS components installed (see Table 1 of the DoP):** Adhesive, Insulation product, thickness, Anchors, length, plate-Ø, Base coat, thickness, Reinforcement, number of layers, Finishing coat, thickness, Decorative coat, Reaction to fire classification (ETICS), and Fire barriers (with checkboxes for none, above openings, or at floor level).
- Postal address of the installer:** Company, Street, ZIP/City, Country.
- Declaration:** "Herewith we declare that after carefully checking the situation on the construction site we have installed the ETICS as described above and delivered as a kit according to the application guidelines of the manufacturer."
- Date/sign of the installer:** A line for the date and signature.

With its help project owners can rely that the system components installed perfectly fit together and lead to the expected performance. Installers confirm that they installed the ETICS according to the system configuration foreseen by the manufacturer and taking into account the relevant application instructions. In case of complaints the installer can contact the system holder who will guarantee for the performance of his system.



Statements



“Selection of components and consideration of their interaction is essential for long-term function and durability”

The first Vienna approval for ETICS was issued in 1972. Already at that time it became obvious that the selection of components and consideration of their interaction was essential for long-term function and durability of such systems. The oldest documented ETIC system in Vienna from that era was installed during the early 1980s and is still working today without any problems.

Fixing the insulation panels using beading-point-adhesion and the evaluation of mechanical properties according to those approvals was transferred into the first Austrian Standards (ÖNORM) for ETICS in 1983.

The understanding that systems have to be assessed and installed as entire systems was fundamental. Only then could all the positive characteristics and the safety of such systems be ensured in the long run. In addition, the responsibility for the system could be clearly separated between system holders and installers.

Withdrawing the relevant Austrian Standards (ÖNORMs) and shifting to European Technical Approvals (ETAs) further strengthened the common understanding for ETICS being complex construction kits. The system approach was communicated and further developed e.g. regarding stability and system classification. Today system loyalty is mandatory and according to existing experience the number of system failures and problems was reduced significantly. This is an important precondition to fulfil our energy-efficiency goals and to prevent climate change.

Dipl.-Ing. Georg Pommer,

Head of Municipal Authority, Department 39 - Testing, inspection and certification body, City of Vienna/Austria



“System loyalty contributes to economic and ecologic efficiency and customer satisfaction”

ETICS have approved in practice for decades. The first system was installed in Berlin in 1957. In a long-term-study of the German ETICS association Fraunhofer Institute inspected numerous projects completed between 1970 and 1985 – with convincing results. If ETICS are applied properly, their life time expectation is equal to the one of walls with only render systems. We have similar experience in other countries.

This durability and long-term performance can only be achieved if the interaction between system components is assessed carefully by the system holder, supported by factory production control and if finally the system is installed as a kit delivered by one system holder. Thus system loyalty contributes to economic and ecologic efficiency and customer satisfaction.

Ralf Pasker,

EAE Managing Director



“This approach helps to avoid problems caused by building physics and to reduce the risk of failures early in the design stage”

For designers and planners in general and for architects in particular, construction systems are the cornerstones for the future of construction. Systems enable architects to offer concepts at an affordable price by using components that have been carefully selected and matched. ETICS are the result of both research and development and practical experience.

This approach helps to avoid problems caused by building physics and to reduce the risk of failures early in the design stage.

Thus systems are an essential precondition for the realisation of responsible architecture in combination with affordable price and knowledge of hygrothermal characteristics of tested and recommended system configurations. As construction cannot and must not be an experiment, systems offer the answer.

Energy efficiency requirements will become more restrictive in the future and lead to increasing costs for construction works. Construction systems are the perfect solution to keep building projects cost efficient.

Luc Dedeyne,

Architect, bvba BENERGIE Architectuur en Energie, Torhout/Belgium



“Any substitution for alternative materials will mean that the performance of the installed system cannot be predicted”

The British Board of Agrément is the leading UK Certification Body issuing Agrément Certificates (product approvals) ETAs for external wall insulation systems. These are only awarded following successful completion of a rigorous technical assessment process of a complete system.

Any Certificate / ETA issued is specific to the individual components listed within the document and any substitution for alternative materials will mean that the performance of the installed system cannot be predicted and so is not covered by the Certificate / ETA; this means that the reassurance otherwise offered to stakeholders is lost.

The BBA supports any initiative aimed at preventing unauthorised product substitution as a key element in helping to ensure that the design levels of performance are achieved in practice.

John Albon,

Head of Approvals Energy Ventilation and Technical, British Board of Agrément, Herts/United Kingdom

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