Technical Information
for the Construction Industry

RÖBEN BRICK SLIPS ON ETIC SYSTEMS

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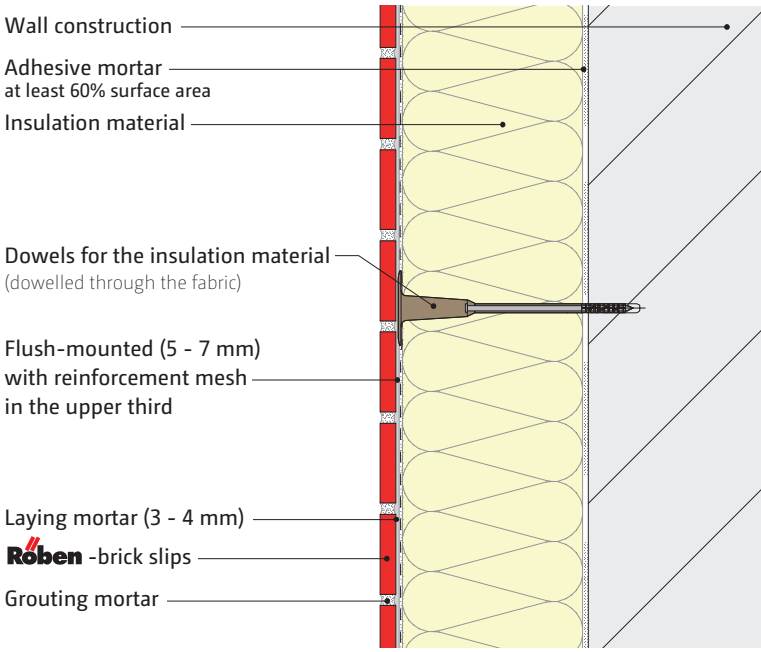
In recent decades, external thermal insulation composite systems (ETICS) have proven their worth in numerous new build and renovation projects. They have now gained a significant market share in construction measures to reduce transmission heat losses on external walls. Initially, they were often critically scrutinized. This critical scrutiny has led to permanent improvements and ultimately to mature, reliable systems.

In a thermal insulation composite system with brick slip cladding, the insulation boards are bonded directly to the external masonry using the point-bead method with an adhesive content of at least 60 % or using the full-surface comb-bed method. A reinforced base coat of approx. 5 to 7 mm is applied to the insulation layer, which absorbs minor movements of the substrate and expansion stresses and thus forms the basis for the top layer of brick slips. In contrast to a rendered façade, the ETICS system is dowelled directly through the fresh reinforcement layer in the case of a ceramic covering.



The brick slip cladding is installed in accordance with DIN 18 515-1. Care must be taken to ensure that all products relevant to approval are used in accordance with the system. The brick slips are always laid using the combined method in accordance with DIN EN 12 004.

The constructive fire protection measures are regulated in the respective approvals. The design of dilatation joints and the use of dark brick slips are discussed elsewhere

History

In **1957**, the first ETICS was installed in Berlin on polystyrene with a plaster surface; in **1977**, the first with a mineral fiber insulation material was installed in Nuremberg.

Until 1995, these systems were officially regulated by DIBt test certificates; **since 1996** by corresponding approvals.

Since 1999 there have been general building authority approvals / general type approvals from the DIBt for systems with bonded ceramic cladding (brick slips). The DIBt has currently issued 28 approvals in which the generally applicable properties of the ceramic cladding are specified. All Röben brick slips meet the required technical characteristics of the relevant standards and can therefore be used for the existing approvals with bonded ceramic cladding.

As Röben has been involved in this process from the very beginning, we have been supporting licensees and industry partners for some time now and operate together on the market. On our website, we explain a large number of detailed technical solutions in this segment.

The respective approval holders have applied for the use of the following different insulation materials for the various general type approvals of the DIBt:

Röben brick slips on mineral wool

This insulating material consists of glass wool or rock wool made from molten mineral raw materials. It is often used in ETICS with brick slips when, for fire protection reasons in multi-storey residential buildings, the first floor must be designed as non-combustible as prescribed. Insulation thicknesses of up to 300 mm are possible here.

a) Mineral wool panels are uncoated or resin-bonded panels coated on one or both sides, in which the mineral fibers are mainly aligned in the plane of the panel. They have a thermal conductivity of 0.035 to 0.040 W/(mK).

b) Mineral wool lamellas are synthetic resin-bonded boards coated on one or both sides with mineral fibers, which are mainly aligned perpendicular to the board plane. They have a thermal conductivity of 0.041 W/(mK).

c) Rock wool panels are coated synthetic resin-bonded panels with mineral fibers, mainly aligned in the plane of the panel. They have a thermal conductivity of 0.035 to 0.040 W/(mK).

Due to the large number of different approvals, different requirements can be placed on the water absorption of the respective brick slips. These vary from 3 % to > 20 % according to DIN EN ISO 10545-3.

☑ This means that all Röben brick slips can be used on these insulating materials.

Röben brick slips on expanded polystyrene (EPS)

This insulation material is the most widely used as the basis for an ETIC system. It is a transparent, foamed white thermoplastic. Insulation thicknesses of up to 300 mm are possible for cladding with brick slips. EPS has a thermal conductivity of 0.032 to 0.040 W/(mK). Due to its fire behavior, approval-related, constructive fire protection measures against external fire exposure are required, which are regulated in the respective approvals. The permissible water absorption of the brick slips in accordance with DIN EN ISO 10545-3 can be up to 20%, depending on the DIBt approval.

☑ This means that all Röben brick slips can be used on this insulation material.

Röben brick slips on Resol rigid foam

Another design option is the use of Resol rigid foam insulation boards. This plastic foam has a thermal conductivity of just 0.021 W/(mK) and therefore enables slim exterior walls. The system therefore contributes to a corresponding added value compared to other layer structures - e.g. by gaining space. A precise assessment of the costs/benefits should be made on an individual basis depending on the application.

☑ Röben straps can also be used on this system.

Röben brick slips on PU insulation material

Increasing demands on energy efficiency do not necessarily have to lead to thicker insulation layers. Suitable rigid polyurethane foam boards are manufactured in accordance with DIN 13 165 and consist of thermosetting rigid foam with a predominantly closed-cell structure. Their thermal conductivity is between 0.024 and 0.028 W/(mK), depending on the production process and thickness.

☑ Numerous Röben brick slips can be used as a surface covering on this insulating material.

Röben brick slips on wood fiber insulation material

The use of Röben clinker brick slips on an ecological wood fiber insulation material with a thermal conductivity of 0.040 W/(mK) is also possible as an ETIC system. However, it is not regulated by a building authority approval and is based exclusively on the recommendations of the respective insulation manufacturer.

As a special feature, it should be emphasized that in addition to the layer structures mentioned above, a second fabric reinforcement may be required over the entire surface. A primer must be applied as additional moisture protection.

☑ Due to the properties of the wood fiber insulation material, only clinker brick slips with a water absorption of ≤ 6 % according to DIN EN ISO 10545-3 can be used.