KNAUF INSULATION

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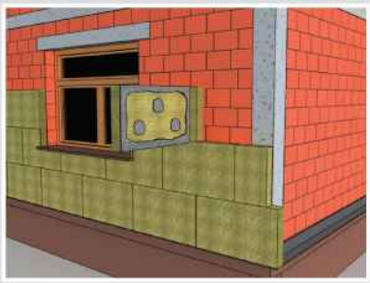
Contact façade with stone wool

Rock Fasada

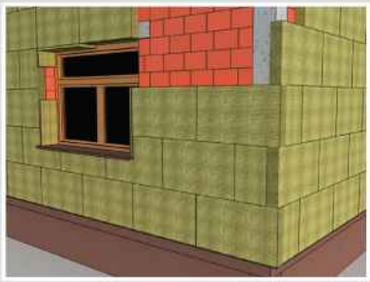
EXECUTION OF ROCK FAÇADE

Rock façade is intended for new builds as well as additional insulation of existing thermally non-insulated or insufficiently insulated buildings. Stone wool slabs may be adhered to any flat, hard, dry and clean substrate.
For existing buildings, it is necessary to check old plaster and remove loose parts and fill-in missing parts. Old concrete surfaces should be cleaned with water jet sprays.

Phases of the installation of façade thermal insulation system with stone wool **KR FAS** type, **Rock façade**, in compliance with the recommendations of EOTA (European Organisation for Technical Approvals) – ETAG Guideline for European technical approval of external thermal insulation composite systems with rendering:

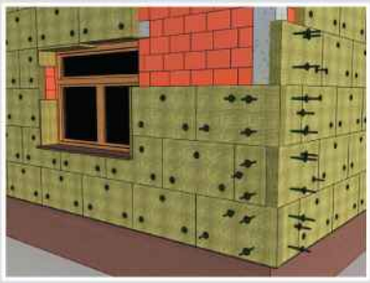


1. Placing of bottom end profile
Bottom end aluminium profile is fastened with screw anchors max. 3 pc/m'. It serves to provide firm façade end (profiles are placed if there is no skirting).

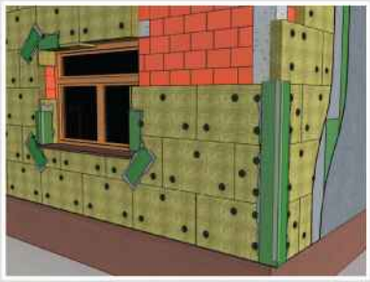


2. Application of adhesive mortar
Polymer-cement adhesive is applied to slabs linearly along the edges and spot-like on inner surface of slab. About 40% slab surface minimum should be covered with the adhesive. The adhesive must not penetrate joints between slabs.

3. Adhesion of stone wool slabs to basic structure
KR FAS stone wool slabs are placed next to each other, pressing one slab next to one already glued. Next row is placed staggered in respect of previous one for about one half slab length. Uniformity of external surfaces is constantly checked with a screed rail of adequate length. Corners of windows and doors must obligatorily be executed with a whole slab to prevent eventual corner cracking.

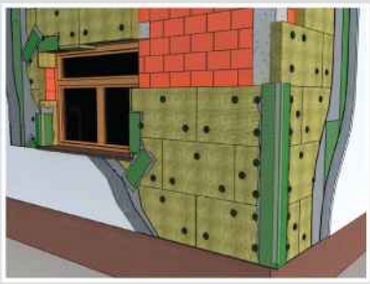


4. Fixing stone wool slabs with screw anchors
Use of polyethylene anchors with steel screws and anchor head dia. 60 mm. Correct slab fixing method is with 6 façade screw anchors per m² (3 pieces for one slab); however, it should be noted that 8-14 pc/m² is required on building corners.



5. Placing corner profiles with mesh and reinforcement of opening corners
Before first layer of polymer-cement mortar is placed, it is necessary to reinforce building corners as well as corners around windows and doors by way of affixing angle profiles with glued glass mesh. In order to prevent façade to crack at the corners of openings, additional glass mesh strip size 20x40 cm is affixed at 45° angle with respect to the respective corner.

6. Application of mortar into which glass mesh is pressed into
Alkali resistant reinforcement mesh made from glass fibres is with obligatory overlapping (min 10 cm) pressed into the first layer of freshly evenly applied polymer-cement mortar. Then the second layer of polymer-cement mortar is applied taking care for the reinforcement mesh to be in the middle or outer third of the cement mortar layer.



7. Application of a primer and façade finish layer
Suitable primer for the façade finish layer defined by design documentation is applied to dried mortar in accordance with producer's instructions. For façade finish layer the following are recommended: silica, silicon and mineral decorative plasters.

Note:
- It is not permitted to glue Knauf Rock thermal insulation slabs onto wall if ambient air temperature is below +5°C or above + 25°C, or under conditions of rain and strong wind.
- For any required more detailed technical information about the method of preparation of certain material pertaining to the system, contact the producer directly.

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External Walls Insulation

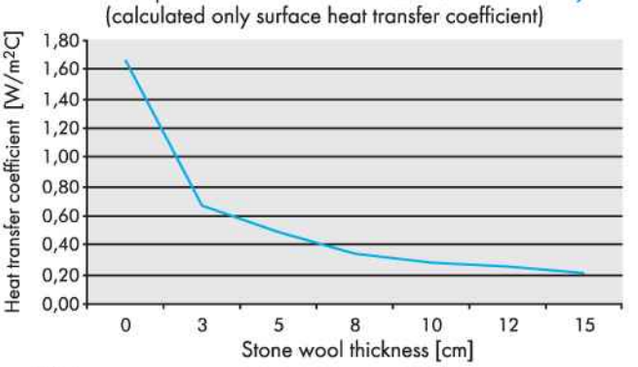
Considering that the share of external walls in the total heat losses in a building is 20-30%, investments in thermal insulation may be returned through reduced energy consumption during building service life.

Thermal insulation thickness recommended from the point of energy-efficient building for our climatic zone is 8-12 cm.

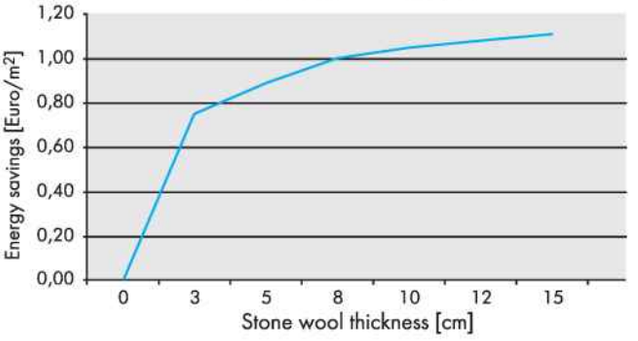
External wall as one of construction elements comprising a building performs heat protection of a building with the purpose to:

- protect building users against excessive or insufficient heat, weather conditions, penetration of wind, dust and polluted air;
- make comfortable living conditions, i.e. provide good heat accumulation to ensure the feeling of comfort is not disrupted due to a sudden change in heating regime or sudden change of outside temperature;
- make possible passing through of moisture without occurrence of condensate on either external surfaces or in the inside;
- ensure saving of heating energy intended to heat rooms, i.e. reduce heat gains in rooms which are cooled;
- provide resistance of a building to fire.

Example of 19 cm hollow brick wall with ROCK FAÇADE
(calculated only surface heat transfer coefficient)



HEAT TRANSFER COEFFICIENT VALUE CHANGE DEPENDENT ON THE THICKNESS OF STONE WOOL IN FACADE



SAVING OF ELECTRIC ENERGY DEPENDENT ON THE INCREASE OF STONE WOOL THICKNESS IN FACADE

Thermal insulation of a building structure is characterised by heat transfer coefficient k (W/m^2K) which is directly dependent on thermal conductivity of material λ (W/mK) of the respective building structure.

BENEFITS OF ROCK FAÇADE

- More energy efficient construction – short investment return period;
- Efficient sound insulation against noise which surrounds us;
- The best fire protection – incombustible material, prevents fire propagation, with extremely high melting point of app. 1000°C which ensures longer protection;
- No resistance to water vapour flow – façade "breathes" owing to open porosity of the material – prevented condensation on walls and growth of fungi and mould;
- Long life and durability of insulation over time.

TECHNICAL DATA of Knauf Rock KR FAS

CHARACTERISTICS	STANDARD	UNIT OF MEASURE	Knauf Rock KR FAS
Thermal conductivity coef. λ	EN 12667	W/mK	0.039
Specific heat C_p	-	J/kgK	840
Incombustibility	EN ISO 1182	-	incombustible material
Melting temperature	DIN 4102-17	°C	>1000
Water vapour diffusion resistance factor μ	EN 12086	-	1.4
Delaminating σ_{mt}	EN1607	kPa	>7.5 (d < 50 mm) >10 (d ≥ 50 mm)
Stress at 10% compacting, σ_{10}	EN 826	kPa	>20 (d < 50 mm) >30 (d ≥ 50 mm)

Handling and storage

Knauf Rock **KR FAS** slabs are easy to handle and install being lightweight and easily cut to size.
Knauf Rock **KR FAS** slabs are supplied in PVC shrink foil packaging. For longer term outside storage, the packs should be protected with waterproof cover.

MAIN PROPERTIES OF TOP QUALITY INSULATION

excellent thermal insulator ...
energy efficient building ...

acoustic insulator ...
excellent ability to absorb and subdue sound ...

incombustible material,
melting point over 1000°C ...
increased safety of buildings ...

the best ally in combating global warming and climatic changes ...

reduces the need for heating or cooling and thus saves your money...

Number of slabs and m² per **pack** – slab dimension 1000 x 500 mm

Thickness (mm)	30	40	50	60	70	80	90	100	120
Square area	5	4	3	2.5	2.5	2	2	1.5	1.5
No. of slabs	10	8	6	5	5	4	4	3	3

Partners of the system of contact façade with stone wool, in Serbia:

Knauf Insulation d.o.o.
Milutina Milankovica 25 b, 11070 Belgrade
Phone: +381 11 311 3369; 311 4052; 213 1004; 213 3192
Fax: +381 11 313 9912
office.belgrade@knaufinsulation.com

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