

FRIDS : Moisture – regulating indoor insulation system to improve energy efficiency while renovating old buildings

EASY – ECONOMICAL - SUSTAINABLE

Background

The recent UN Climate Agreement strengthens and highlights the existing importance of upgrading the energy efficiency in old, historical buildings to facilitate optimum quality use of the premises.

Old buildings present a special challenge since it is often only possible to insulate them from the inside (e.g. classified as historical monuments). Furthermore, old buildings frequently suffer from damp and condensation problems which can be eliminated by FRIDS.

Technology

FRIDS (FeuchteRegulierendesInnenDämmSystem, “moisture regulating indoor insulation system”) offers a permanent solution to this problem, see figure 1).

The proven - capillary driven - “condensate converter” promotes rapid evaporation of wall moisture or condensate to the environment. Dual purpose, rear-ventilated foam/cellular glass boards provide heat insulation and transport channels for evaporated water. The design of the wall surface is individually selectable. An optional wall heating system can be integrated into the insulation system if required.

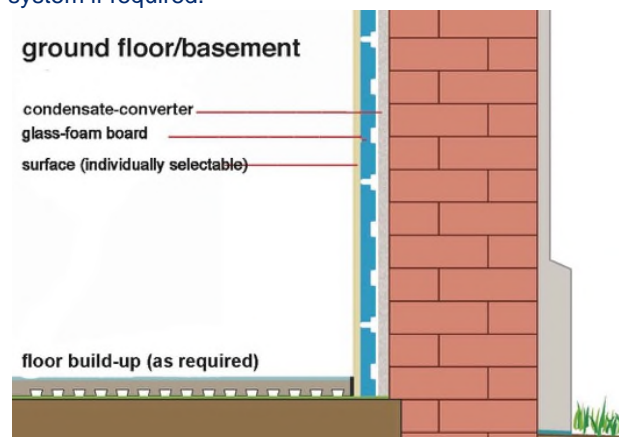


Fig. 1: Structure of FRIDS on the ground floor, basement and cellar

The condensate converter is a “diffusion-open” plaster which is applied wet; it has a high proportion of closed and capillary pores. This plaster has been widely and successfully applied to remove moisture from damp and wet masonry, for more than a decade. Besides its good insulation properties ($\lambda=0,038$ W/mK), the usage of glass foam boards (building material class A1) offers further advantages such as fire resistance, ageing stability, compressive strength, moisture resistance and easy workability.

FRIDS eliminates acknowledged inside insulation system problems such as heat bridges, airtight construction, condensation in existing cavities in uneven walls and fire protection-related problems.

Application

FRIDS can be used basically in every location where moist masonry makes the use of rooms difficult or impossible (due to formation of unhealthy mold).

Especially for the renovation of moist, salt containing walls with an indoor insulation (mostly in protected historical buildings), FRIDS simultaneously offers a unique energy/cost saving and sustainable solution for treatment of damp/wet walls.



Figure 2: Example of a renovation using FRIDS

Benefits

- Indoor insulation system that guarantees heat insulation and moist removal → sustainable solution for ground-contact wall fragments, fire walls, reveals, etc.
- Cost-effective solution compared to other complex renovation systems
- Wall heating system can be integrated
- Other insulation than glass foam boards possible

Patent status

- EU Patent granted (EP2186958B1): Validation in AT, BE, CH, DE, FR, GB, IT

Development

- Long-term experience with condensate-converter
- Cooperation with Vienna University of Technology
- Existing reference objects for FRIDS

Collaboration

- License agreement

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