

SOLUTION: FACADE



FACADE INSULATION OF A BRICK WALL
PLASTERED OR SUSPENDED FACADES

INSULATION WORK IN PRACTICE



Depending on the thickness of the insulation, timber laths, TJI beams or timber constructions are fastened to the brick wall. The centre-centre distance depends on the requirements of the respectively employed plaster base material.





Window and door soffits must be closed all round. Hollow spaces of less than 10 cm are stuffed by hand.



The respective plaster base material is mounted on the perpendicularly aligned spacers. In the case of rear-ventilated facades, a diffusion-open wood-based panel is attached.



Holes are drilled into the hollow spaces for the injection hose shortly before installing the ISOCELL cellulose insulation.

Injection process:

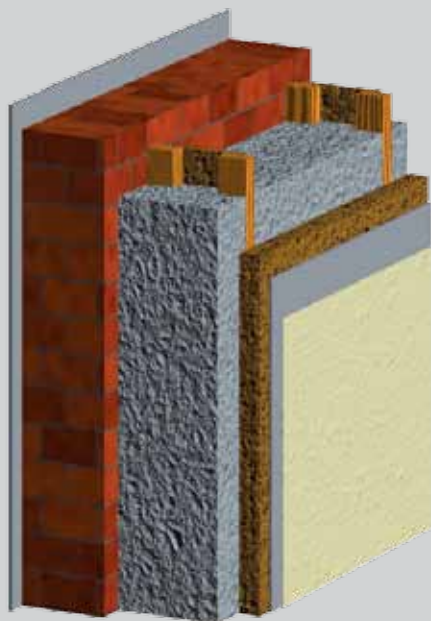
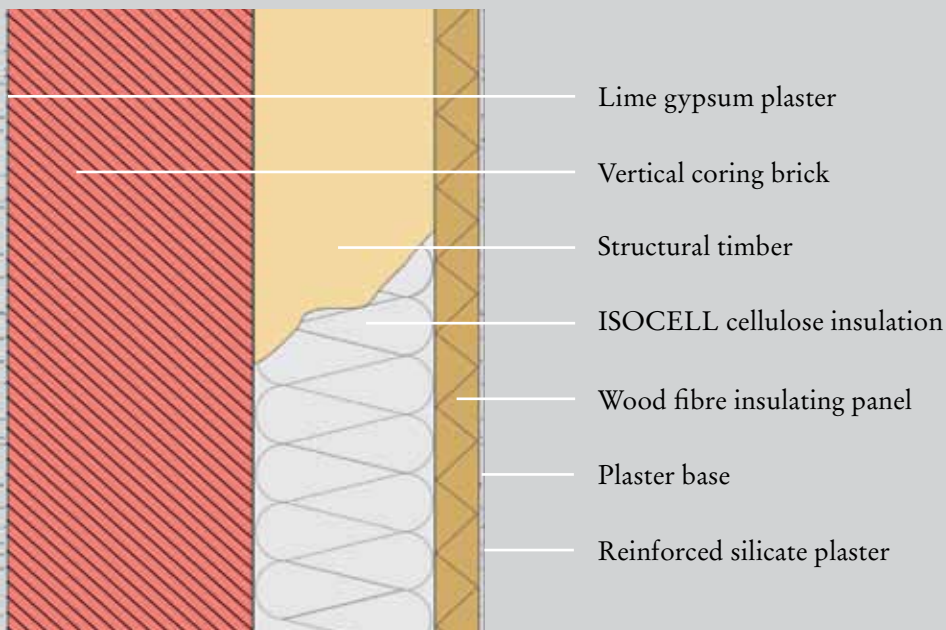
The injection specialist comes with his truck to the building site and bring along everything he needs: the injection machine and the material. Only the injection hose needs to be brought to the place of installation, not enormous amounts of material.

By means of radio control the injection specialist controls the injection machine on the truck, which an assistant fills with cellulose. The hollow spaces are insulated without joints and settlement-free in just a few hours.



SOLUTIONS IN DETAIL, SIDE VIEW AND SECTION

Brick wall with plastered facade

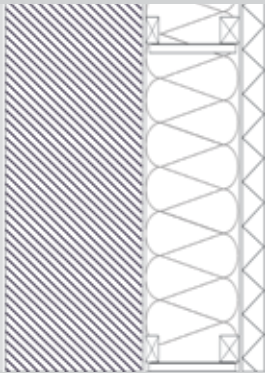


Advantage

- Energy savings of up to 40%
- Diffusion-open and surface-active
- Many different facade design options
- High fire protection
- Higher weather resistance
- Dry masonry
- Outstanding protection against heat
- High sound insulation

TECHNICAL DATA FOR THE STRUCTURAL ELEMENT ILLUSTRATED

Brick wall with plastered facade



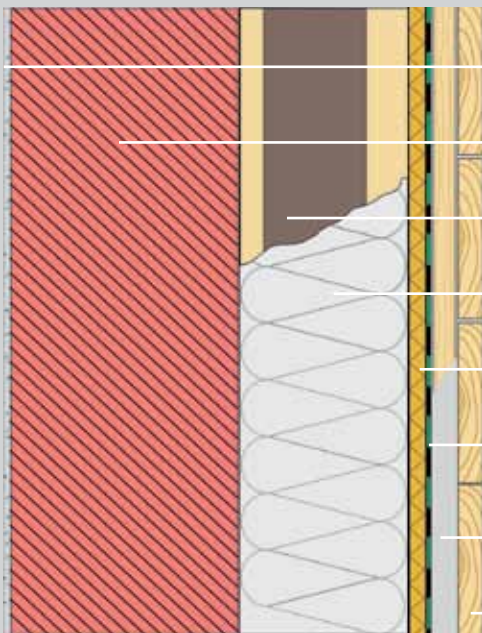
Building material	Layer thickness (mm)	λ (W/m K)	Fire class (EN)
Lime gypsum plaster	10	0,8	A1
Vertical coring brick	250	0,25	A1
ISOCELL cellulose insulation		0,039 0,040 (D)	B-s2, d0
Structural timber	120	0,13	D
Wood fibre insulating panel	60	0,055	E
Plaster base	10	0,8	A1
Reinforced silicate plaster	3	0,8	A1

Thickness of insulating material (mm)	Insulating material density (kg/m ³)	GWP* (kg CO ₂ äqv./m ²) for overall structure	PHI (Phase shift in hours)	U-value (W / m ² K)
120	50	27,08	18,5	0,206
140	50	24,98	19,2	0,190
160	50	22,87	19,9	0,176
180	52	20,51	20,8	0,164
200	52	18,37	21,6	0,154
220	52	16,24	22,4	0,144
260	54	11,59	24,1	0,129
320	58	4,18	26,5	0,111

* Total GWP (Global Warming Potential)

SOLUTIONS IN DETAIL, SIDE VIEW AND SECTION

Brick wall with suspended facade



- Lime gypsum plaster
- Vertical coring brick
- Timber construction
- ISOCELL cellulose insulation
- MDF board
- Windproof layer (z.B. OMEGA wind seal)
- Rear ventilation, transverse lathing
- Larch cladding



Injection openings

Injecting openings at top right in case of narrow, horizontal hollow spaces.

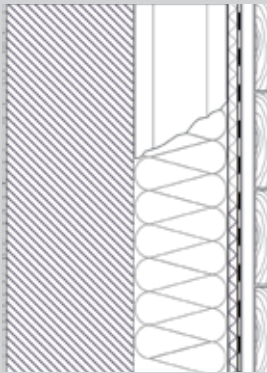
Injecting openings at the highest point.

Do not inject into fields of less than 10 cm; stuff by hand.



TECHNICAL DATA FOR THE STRUCTURAL ELEMENT ILLUSTRATED

Brick wall with suspended facade



Building material	Layer thickness (mm)	λ (W/m K)	Fire class (EN)
Lime gypsum plaster	10	0,8	A1
Vertical coring brick	250	0,25	A1
ISOCELL cellulose insulation		0,039 0,040 (D)	B-s2, d0
Timber construction	120	0,13	D
MDF board	15	0,09	D
Windproof layer	0,5	0,8	E
transverse lathing	30	0,13	D
Larch cladding	20	0,15	D

Thickness of insulating material (mm)	Insulating material density (kg/m ³)	GWP * (kg CO ₂ äqv./m ²) for overall structure	PHI (Phase shift in hours)	U-value (W / m ² K)
120	50	-0,98	15,8	0,252
140	50	-3,09	16,5	0,228
160	50	-5,19	17,2	0,208
180	52	-7,56	18,1	0,192
200	52	-9,69	18,8	0,178
220	52	-11,83	19,6	0,160
260	54	-14,47	21,4	0,146
320	58	-23,89	24,2	0,123

* Total GWP (Global Warming Potential)

REFERENCES



Construction of new detached house in Eugendorf

In the construction of the new detached house it was not only the outstanding insulating characteristics that were particularly important to the young family man, but also safety in the event of fire. ISOCELL cellulose insulation is classified under fire class B-s2, d0 – which means that it is flame resistant, unlike EPS insulating materials. In addition, the sound insulation is significantly better.

Thermal renovation of house in Mattsee

In the thermal renovation of the detached house, the roof and the facade were insulated in addition to installing new windows. *“I wanted to offer the hard-working ISOCELL installers a cake in the afternoon, but the facade was finished so quickly that they were already done and on the way to the next building site”*, said the house owner. The U value of the house was about 0.8 W/m²K before the renovation, now it is 0.15 W/m²K.

