

# SOLUTION TOP FLOOR - NOT ACCESSIBLE

PLANK-LATTICE TRUSS ROOF STRUCTURES AND UNUSED ATTIC SPACE



**ISOCELL**

# INSULATION WORK IN PRACTICE



## BUILDING SITE PROCEDURE

The injection specialist comes with his truck to the building site and bring along everything he needs: the injection machine and the cellulose.

## THE ROOF: LITTLE EFFORT - BIG EFFECT



If the attic is not used as living space, then it collects quite a few treasures. However, there is no other part of the building where so much energy can be saved with so little effort as in the attic.

The actual treasure of the house is proper thermal insulation!



An assistant fills the injection machine on the truck with the ISOCELL cellulose insulation.



Only the injection hose needs to be brought to the place of installation, not enormous amounts of material.

The injection specialist controls the injection machine on the truck by remote control. The top floor or attic is insulated in just a few hours.

## BLOW UP - INACCESSIBLE AREAS

For the insulation of uneven surfaces with floor bracings (plank-lattice truss constructions), ISOCELL cellulose represents the only sensible solution from the point of view of building technology and economy.

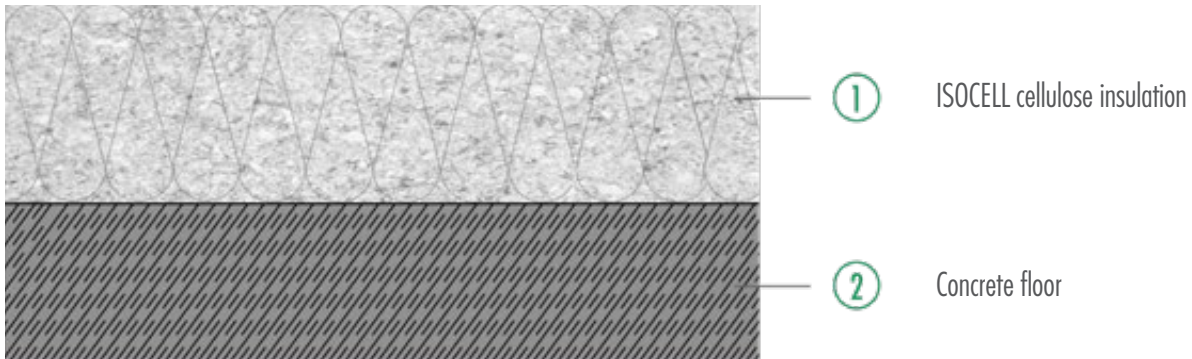
The loose material is conveyed from the truck up to the attic with the aid of the injection machine. After that an even, precisely fitting and jointless cellulose layer insulates the top floor and keeps the building warm in winter and cool in summer.



# SOLUTIONS IN DETAIL

## SIDE VIEW AND SECTION

### CELLULOSE BLOWN UP OPENLY ONTO CONCRETE FLOOR



## ISOCELL CELLULOSE

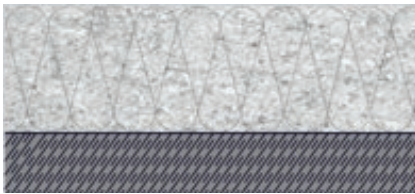
Designation	ISOCELL cellulose insulation
Approval:	ETA - 06/0076 (A)
Installation density as per approval	free lying 28 - 40 kg/m <sup>3</sup> Space filling 38 - 65 kg/m <sup>3</sup>
Rated value of thermal conductivity	0,038 W/mK (AT) 0,039 W/mK (DE)
Greenhouse potential (GWP 100)	-1,21 kg CO <sub>2</sub> äqu. pro kg



# TECHNICAL DATA

## FOR THE STRUCTURAL ELEMENT ILLUSTRATED

### ISOCELL CELLULOSE INSULATION ON CONCRETE FLOOR



Building material	Layer thickness (mm)	$\lambda$ (W/mK)	Fire class (EN)
ISOCELL cellulose insulation	160	0,038 0,039 (D)	B-s2,d0
Concrete floor	200	2,33	A1

Thickness of insulation material (mm)	Insulating material density (kg/m <sup>3</sup> )	*GWP (kg CO <sub>2</sub> äqv./m <sup>2</sup> ) for overall structure	PHI (Phase shift in hours)	**U-Wert (W/m <sup>2</sup> K)
160	30	56,63	9,7	0,228
180	32	55,75	10,2	0,204
220	32	54,59	11,3	0,169
260	34	52,95	12,7	0,144
320	36	50,51	14,8	0,118
360	38	48,55	16,4	0,105
400	38	47,16	17,7	0,095

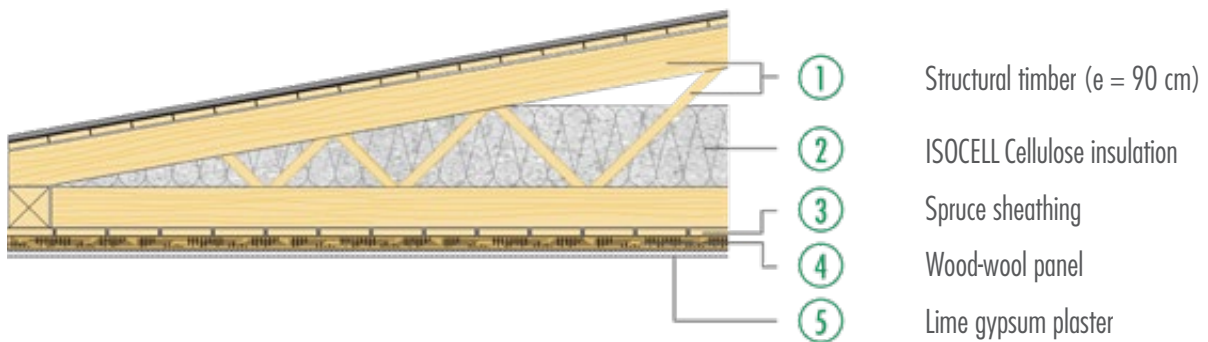
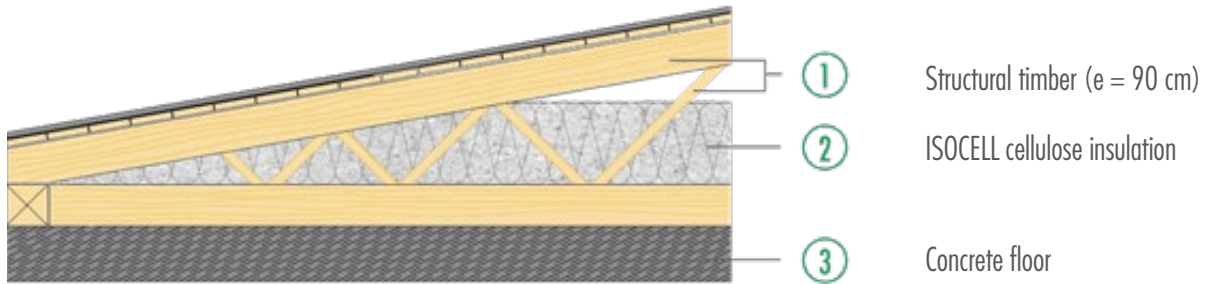
\* Total GWP (Global Warming Potential)

\*\* U-Value (W/m<sup>2</sup>K) for ISOCELL Cellulose was calculated with  $\lambda = 0,039$  W/m<sup>2</sup>K and with an assumed wood content (structural timber) of 9,6%

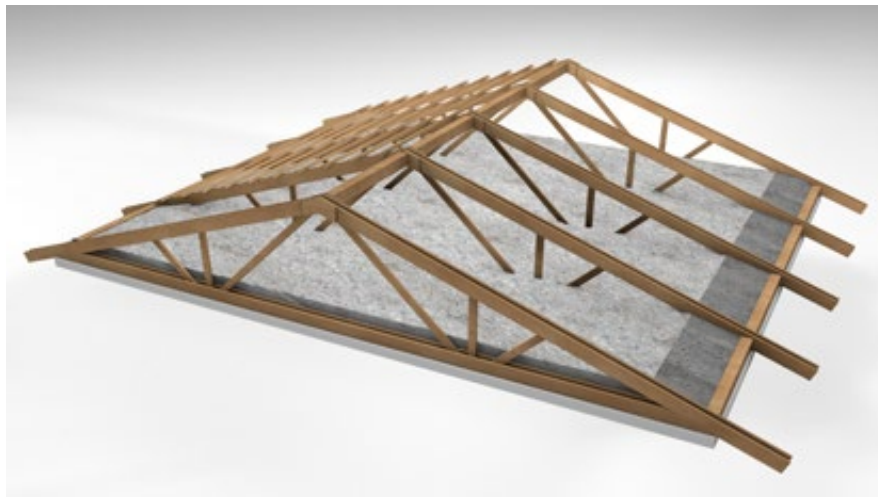
# SOLUTIONS IN DETAIL

## SIDE VIEW AND SECTION

### CELLULOSE BLOWN UP OPENLY INTO PLANK-LATTICE TRUSS CONSTRUCTIONS



## ADVANTAGES

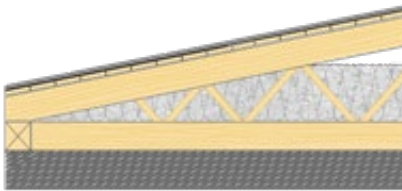


- Top thermal insulation values
- Outstanding protection against heat
- High sound insulation
- High fire protection
- Ecological insulating material
- Adapts itself without wastage or joints to all undulations and gaps.

# TECHNICAL DATA

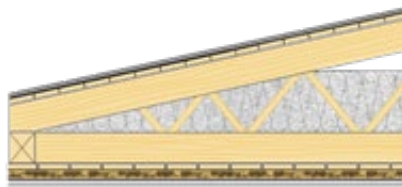
## FOR THE STRUCTURAL ELEMENT ILLUSTRATED

### CELLULOSE BLOWN UP OPENLY INTO PLANK-LATTICE TRUSS CONSTRUCTIONS



Building material	Layer thickness (mm)	$\lambda$ (W/mK)	Fire class (EN)
Structural timber	140	0,13	D
ISOCELL cellulose insulation	140	0,038 0,039 (D)	B-s2,d0
Concrete floor	200	2,33	A1

Thickness of insulating material (mm)	Insulating material density (kg/m <sup>3</sup> )	*GWP (kg CO <sub>2</sub> äqv./m <sup>2</sup> ) for overall structure	PHI (phase shift in hours)	**U-Value (W/m <sup>2</sup> K)
140	30	48,48	9,2	0,307
200	32	42,82	10,7	0,221
280	34	35,18	13,3	0,161



Building material	Layer thickness (mm)	$\lambda$ (W/mK)	Fire class (EN)
Structural timber	140	0,13	D
ISOCELL cellulose insulation	140	0,038 0,039 (D)	B-s2, d0
Spruce sheathing	24	0,13	D
Wood-wool panel	35	0,09	B1
Lime gypsum plaster	10	0,7	A1

Thickness of insulating material (mm)	Insulating material density (kg/m <sup>3</sup> )	*GWP (kg CO <sub>2</sub> äqv./m <sup>2</sup> ) for overall structure	PHI (phase shift in hours)	**U-Wert (W/m <sup>2</sup> K)
140	30	-29,36	8,4	0,263
200	32	-35,10	8,6	0,197
280	34	-42,88	9	0,148

\* Total GWP (Global Warming Potential)

\*\* U-Value (W/m<sup>2</sup>K) for ISOCELL Cellulose was calculated with  $\lambda = 0,039$  W/m<sup>2</sup>K and with an assumed wood content (structural timber) of 9,6%

# REFERENCES

## PORR RESIDENTIAL COMPLEX IN RUM



The entire 315 m<sup>2</sup> flat roof construction of the former Porr residential complex was insulated with 3.5 tonnes of ISOCELL cellulose insulating material in just eight working hours.

The insulation of the roof construction dating from the 1970s would not have been possible with conventional board insulating materials due to the cramped spatial conditions.

## HISTORIC HOUSE IN BAD ISCHL



The positive product properties of ISOCELL cellulose insulation as well as the gentle work process really come in to their own when renovating historical buildings.

The injection process is accomplished rationally and with low dust levels. The result is a jointless insulating mat with no thermal bridges that meets the highest energy saving and room climate demands.

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