

# SOLID TIMBER CONSTRUCTION

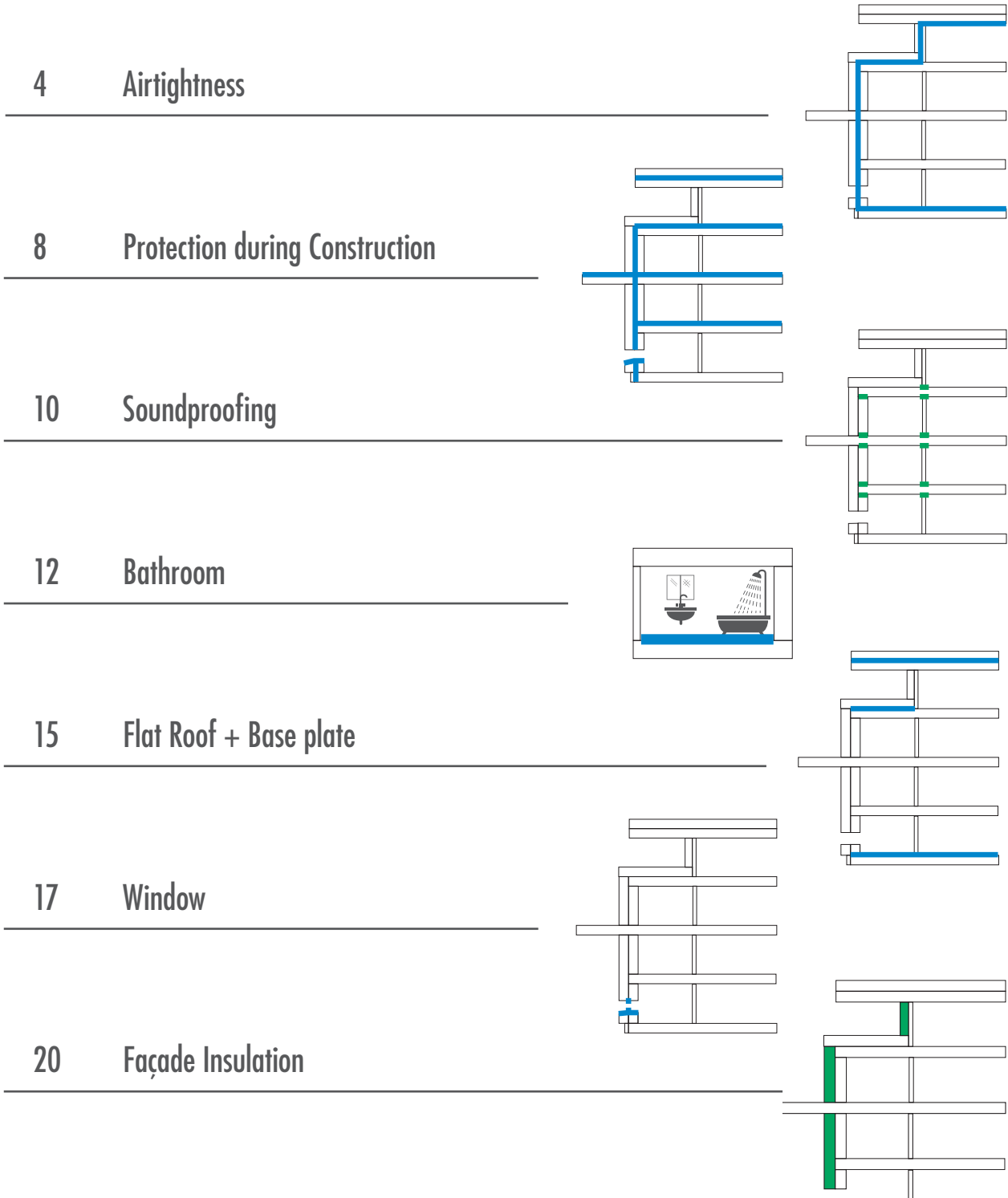
SOLUTIONS FOR PLANNING AND IMPLEMENTATION

AIRTIGHTNESS | SOUNDPROOFING | THERMAL INSULATION

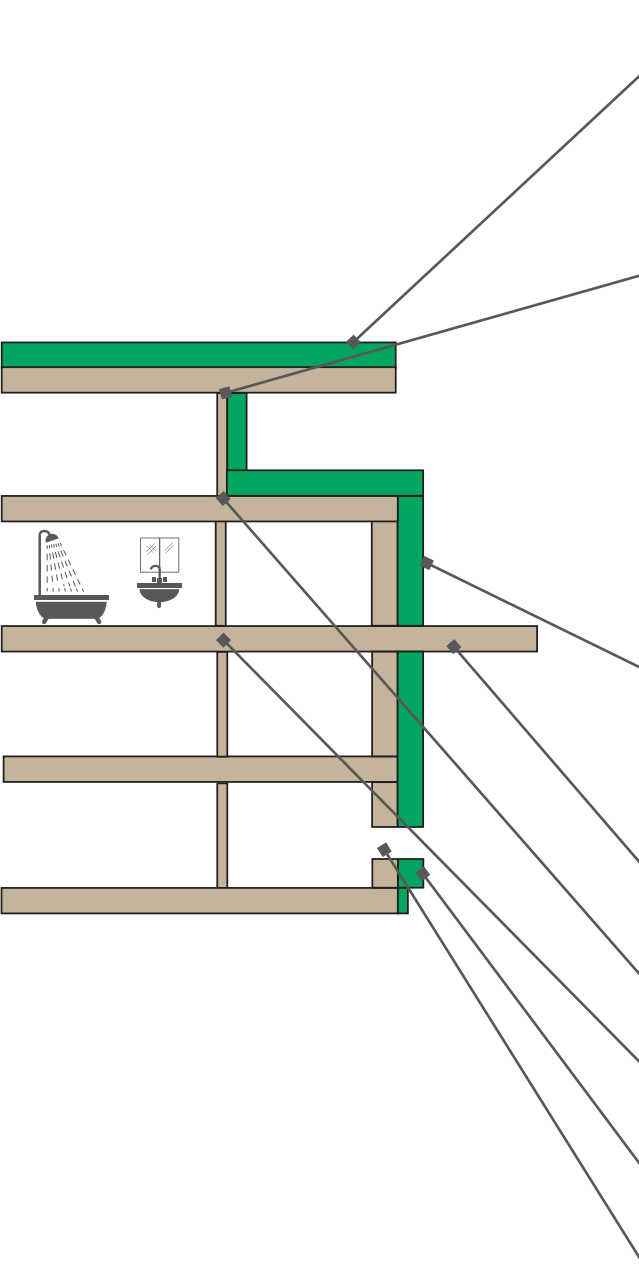


**ISOCELL**

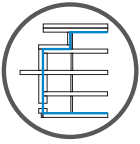
# OVERVIEW



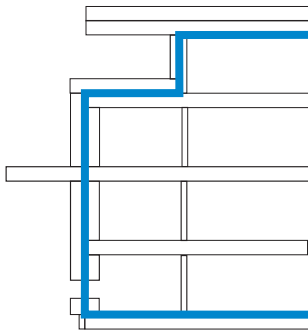
# CONSTRUCTION DETAILS



Roof	21
Intersection between flat roof and outer wall	22
Façade insulation	26
Projecting balcony base	28
Intersection storey ceiling to outer wall	29
Intersection storey ceiling inner wall	30
Outer wall base	31
Window installation	32



# AIRTIGHTNESS

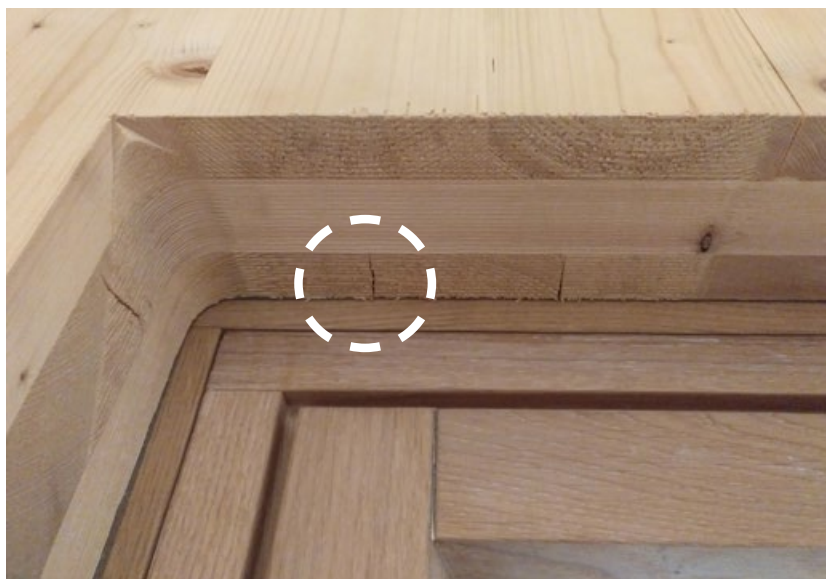


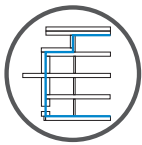
A continuous airtight layer should be made around the heated volume of the building. This layer can consist of various materials, e.g. membranes, adhesive tapes, or components that are themselves airtight. In solid timber construction a check must be made in advance to determine whether the individual solid wood components are sufficiently airtight in the long-term. If that is the case, bonding of building components at the butt joints is sufficient.

When bonding, pay attention that connections are made only on airtight sections of the component (sometimes only single layers of multi-layer solid wood are airtight).








When determining airtightness take into consideration any possible shrinkage due to drying – see illustration.

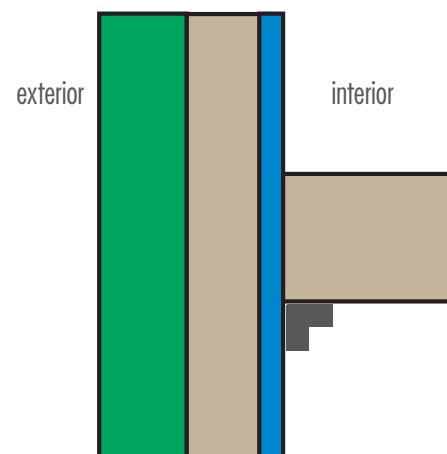
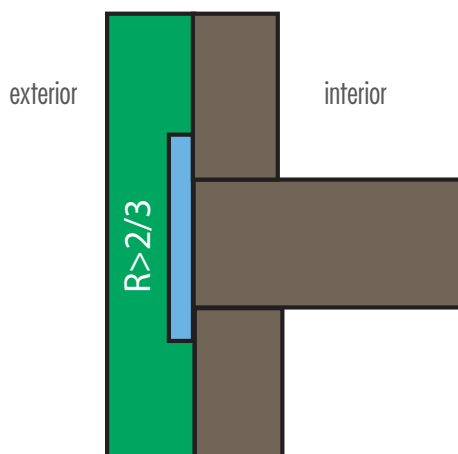
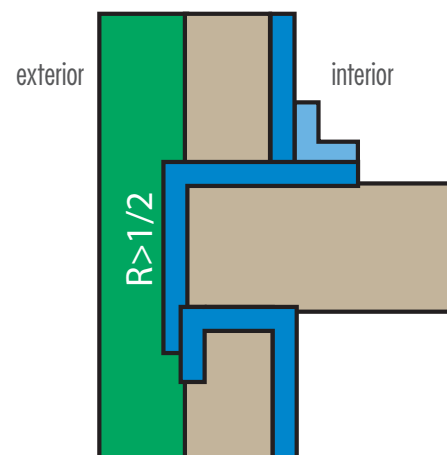
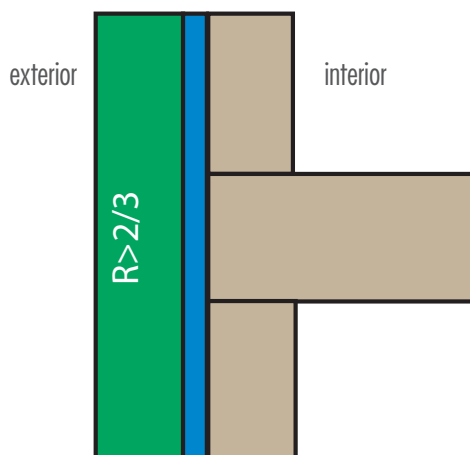


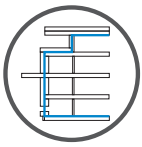


# AIRTIGHTNESS

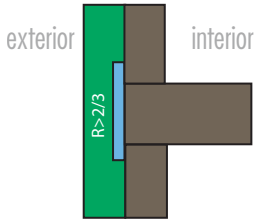
If airtightness of individual construction components is not guaranteed, an airtight layer (e.g. ISOCELL vapour barrier) must be placed around the entire outer shell of the construction. This can be installed on the warm side of the supporting element, otherwise between the load-bearing element and the thermal insulation (provided more than 2/3 of the total thermal resistance (R) are on the cold side of the vapour barrier). Installation of the vapour barrier between supporting construction and insulation allows also for exposed timber surfaces inside and acts as a protection for the supporting element during construction.

-  CLT (Element itself not airtight)
-  CLT (Element itself airtight)
-  Thermal insulation
-  **TIMBER** Protect SK
-  **TIMBERFLEX** Adhesive Tape





# AIRTIGHTNESS



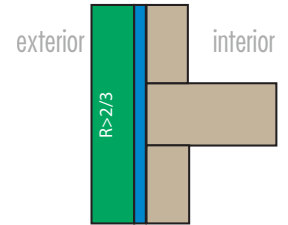
## TIMBERFLEX Adhesive Tape AIRSTOP FLEX Adhesive Tape

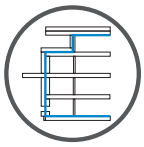
- Widths of 50 to 300 mm possible
- Wide range of adhesion
  - With thick acrylate adhesive layer
  - Protection during construction and airtight joints



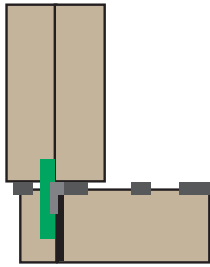
## TIMBER Protect SK

- Widths of up to 1.5 m possible
- Protection during building phase and airtight layer
  - With and without full-surface adhesive coating
  - Moisture-regulating and variable sd-value
  - Water-tight also for butt joint bonding



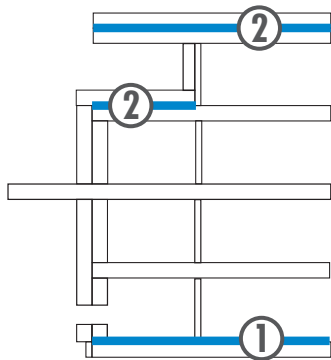


# AIRTIGHTNESS



**AIRSTOP** PLASTO Tape  
**OMEGA** PoBit PLUS Spray Paste  
**OMEGA** PoBit Sealing Compound

Airtight connection & protection against splashing



**OMEGA** SUB Screed Sheeting

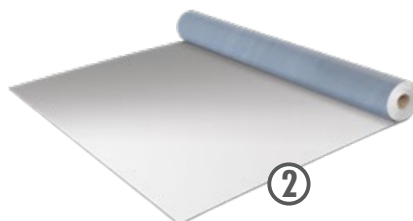
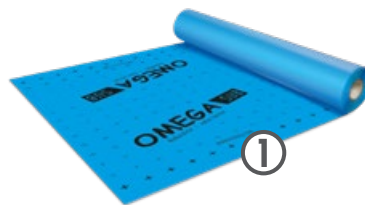
- Radon-tight seal against ascending (capillary) moisture from the ground
- Acts as airtight layer in completed buildings

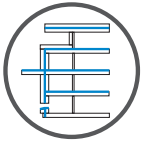


**OMEGA** ALUBIT Vapour Barrier SK

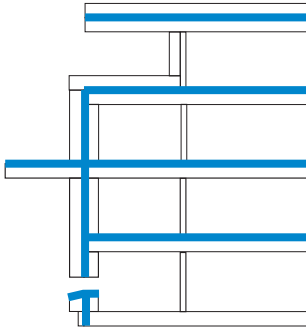
Vapour barrier with 1,500 m sd-value – full surface adhesion below flat roof thermal insulation

- Serves as airtight layer
- Full-surface adhesive aluminium vapour barrier for on-roof insulation
- Vapour impermeable (sd-value 1,500 m)
- Walkable





# PROTECTION DURING CONSTRUCTION



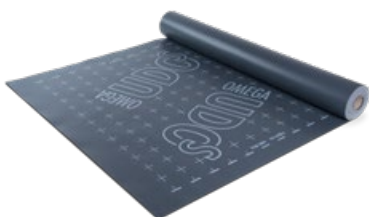
Protection during construction is becoming increasingly important, especially for larger buildings. It provides a certain independence from weather conditions, adding in this way to planning certainty. Protection during the construction period enables interior fitting even before completion of the building and contributes to a greater degree of pre-fabrication. During construction planning attention must be paid especially to the periods of outdoor exposure and the particularly sensitive areas (valleys, reveals, areas exposed to splashing).



## TIMBER Protect SK

Width 1.5 m, split liners at 25 cm  
Can also adopt the function of airtight layer  
High safety due to dual function membrane

- Full-surface seal for construction period
- With dual-function membrane
- Diffusible with great drying potential
- Waterproof (W1) for quality protection against the elements
- Anti-slip coating
- Moisture regulating with variable sd-value



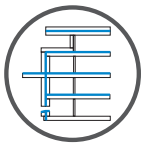
## OMEGA UDOs 330 Roof underlay

A weldable sealing membrane suitable for a variety of uses, with a double TPU functional membrane. Can remain on the ceiling or can be moved up to the next upper storey before the walls are fixed.

- Can also be supplied cut-to-size







# PROTECTION DURING CONSTRUCTION

Airtightness

Protection during Construction

Soundproofing

Bathroom

Flat Roof + Base Plate

Window

Façade Insulation

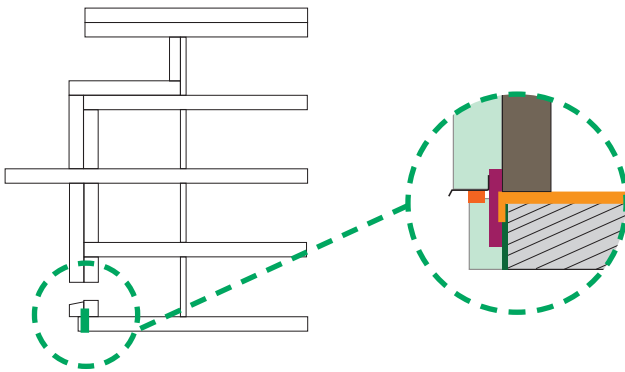
Construction Details

General

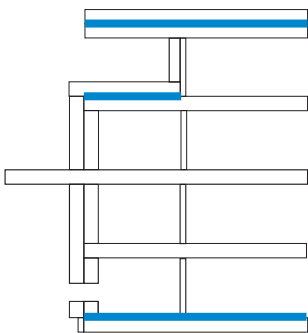
Products for Protection during Construction



## AIRSTOP PLASTO Tape



Airtight connection and protection against splashing  
**AIRSTOP** PLASTO Tape in sensitive spots with the addition  
of **OMEGA** PoBit Sealing Compound



## OMEGA AB Aluminium Tape

Elastomer-bitumen tape with aluminium coating. Sealing of joints and connections.

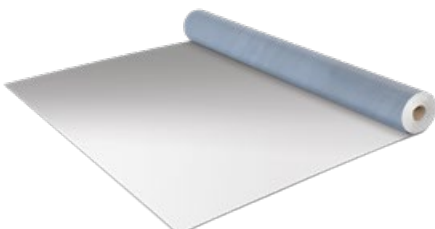
- Vapour resistant
- Strong adhesion
- Permanently UV-resistant
- Available in dimensions of 50 mm up to 300 mm width

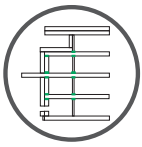


## OMEGA ALUBIT Vapour Barrier SK

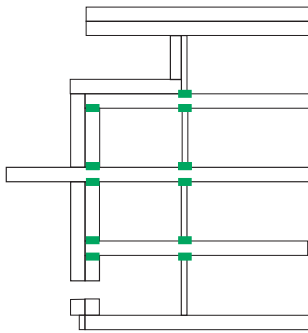
Vapour barrier with 1,500 m sd-value

- Full-surface adhesion under flat roof thermal insulation
- Also serves as airtight layer



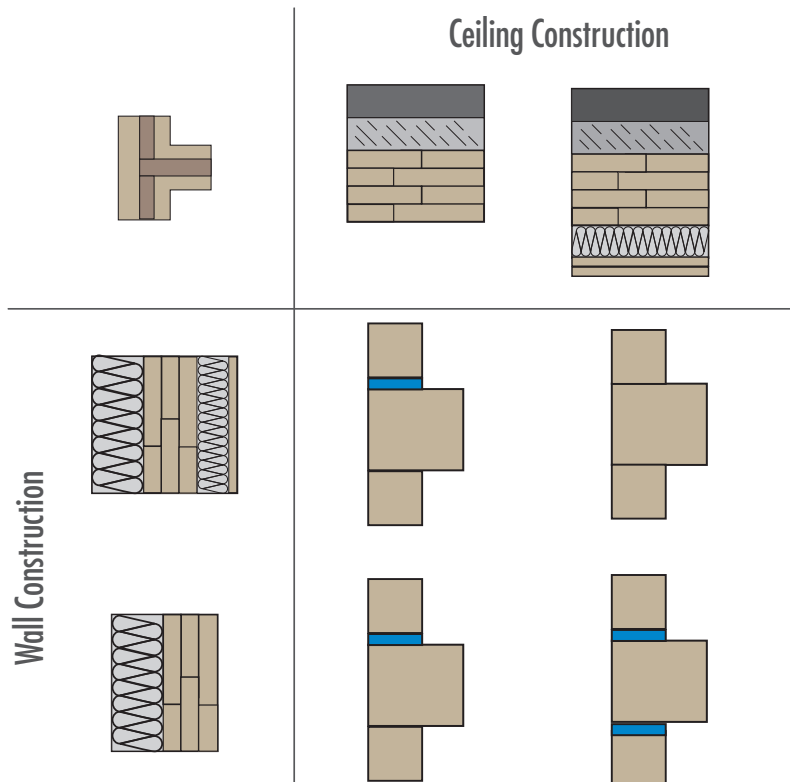
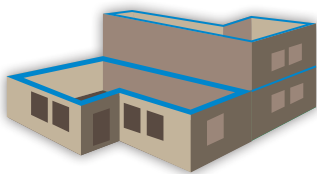


# CONSTRUCTION SOUNDPROOFING

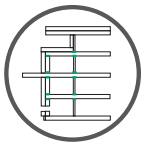


A great challenge in solid wood construction is soundproofing of the structure, due to the low mass. Sound waves can spread via supporting elements. Low noise level is one of the components of quality of lifestyle that is a demand increasingly made by future occupants.

Insulation strips between walls and ceiling can prevent the transmission and/or reduce sound transfer. This reduction, measured in tests, is particularly significant if the interior surfaces are not covered with an additional decoupled insulation level.



The diagram shows where, at the connection outer wall to ceiling, the supports provide a greater improvement in construction soundproofing.



# CONSTRUCTION SOUNDPROOFING

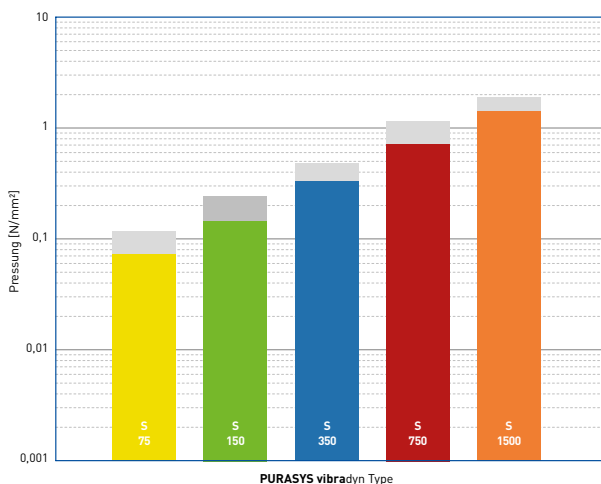
For the products **vibradyn** and **vibrafoam** a calculation tailored to the individual load can be carried out to acquire information on the dampening levels in various frequency ranges, when demands on vibration insulation are very high. The materials, based on polyether-urethane, provide the best possible basis for a material to insulate into the deepest frequencies possible.

For constructions with low mass and low demands, a certain dampening effect can be achieved by inserting a support of rubber STG impact sound insulation.



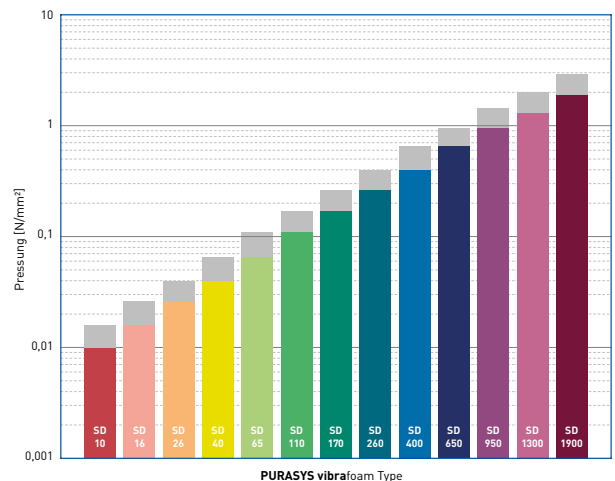
## vibradyn Sound Decoupling Mat

Closed cell elastomer consisting of a special polyether-urethane. The wide load range enables optimum vibration dampening over wide areas.



## vibrafoam Sound Decoupling Mat

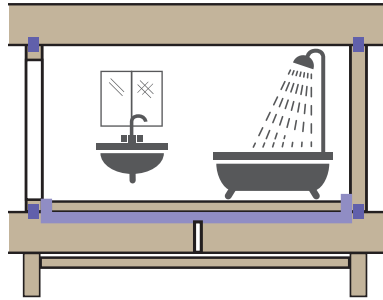
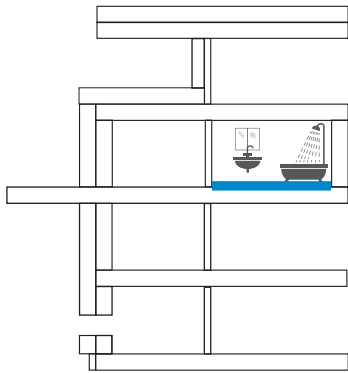
Mixed cellular structure elastomer consisting of a special polyurethane. The fine classification into individual products for various ranges of load permit optimum dimensioning.





# BATHROOM WATERPROOFING

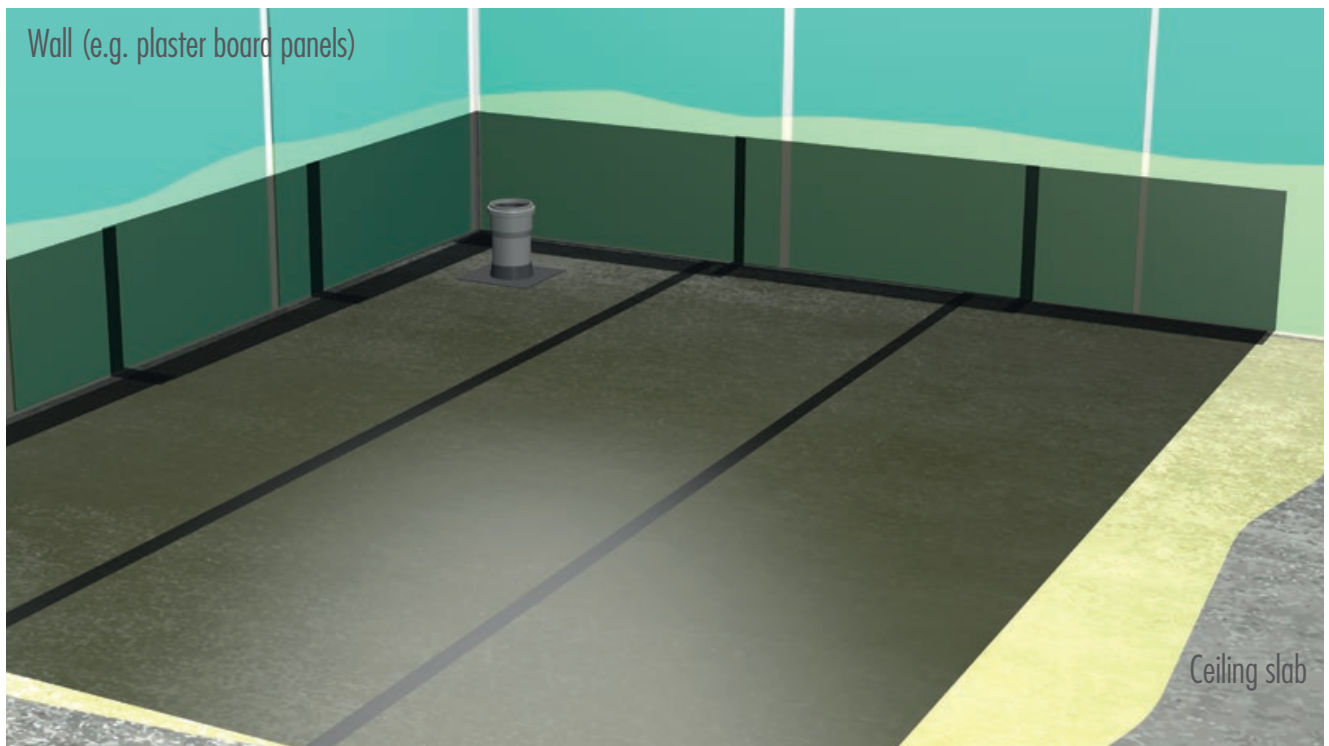
Airtightness | Protection during Construction | Soundproofing | **Bathroom** | Flat Roof + Base Plate | Window | Façade Insulation | Construction Details  
General | Products | Construction detail



Additional waterproofing on the ceiling of the building's shell protects the supporting construction in wet rooms and prevents damage to the solid wood components.

This seal serves as a second safety level in addition to the compound seal of the ceramic covering.

Attention must be paid to the water flow in case of a burst pipe. A high threshold in the door area can prevent seepage into other parts of the building. A special drain opening into the apartment below and/or as far as the interior sheathing of the ceiling ensures that any water damage can be quickly detected.



Schematic diagram of a bathroom sealed with **AIRSTOP** BB Bitumen Rubber Tape

**AIRSTOP** BB Bitumen Rubber Tape can be used in widths of up to 95 cm. The full-surface adhesive tape meets the demands of ÖNORM B3692 standard and provides a very resilient covering layer with its tear-resistant backing. At wall connections work can be done using narrower tapes. For pipe penetrations **OMEGA** Alu-Butyl pipe sleeves are used. The system also includes primer for improved substrate adhesion and watertight

Adhesive Paste 3300 for corners and awkward spots. The bathroom seal can partly be processed in pre-fabrication. Pulling up must be adjusted on site. It is important for all installations, in the event of a failure, that water drains onto the seal and does not penetrate into the construction behind.



# BATHROOM WATERPROOFING

Airtightness | Protection during Construction | Soundproofing | **Bathroom** | Flat Roof + Base Plate | Window | Façade Insulation | Construction Details

General | Products | Construction detail



## OMEGA Aluminium-Butyl pipe sleeves

Suitable for indoors and outdoors on substrates such as soft fibreboard, concrete, roof membranes etc. A primer should be used where necessary!



## AIRSTOP VBB Fleece Bitumen Rubber Tape

Bitumen rubber tape with fleece backing. Self-adhesive, permanently elastic bitumen-rubber mass. Especially suitable for sealing the problematic threshold to concrete floor and sealing of MDF and soft fibre panels. Can be plastered over and covered with adhesive.

Split liner

Thickness: 1.5 mm

Working temperature: from -5° C



## AIRSTOP BB Bitumen Rubber Tape

Bitumen-rubber tape with self-adhesive, permanently elastic bitumen-rubber mass. Especially suitable for sealing the problematic crossover threshold to concrete floor and sealing MDF and soft fibre panels in roof areas at butt joints, valleys, flashing troughs. Split liner.

Working temperature: from -5° C



## UNI XL Primer Spray / UNI Primer Spray

For optimization of the adhesion of adhesive tapes. A particular feature is its fast processing.

Working temperature: from -5° C

Accessories on request

**AIRSTOP**  
PLASTO Tape



Adhesive Paste 3300



**AIRSTOP**  
ROLL Pressing roller conical

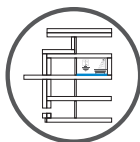


**OMEGA**  
PoBit PLUS Spray Paste

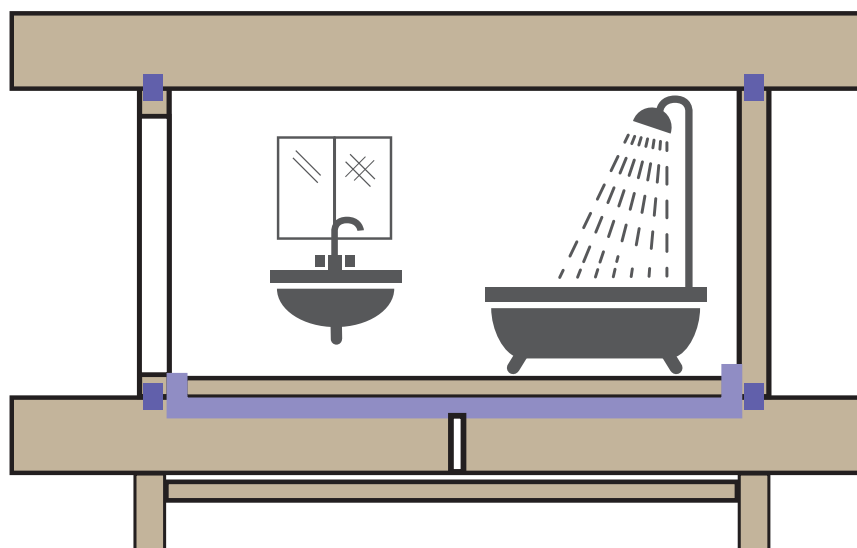


**OMEGA**  
PoBit Sealing Compound

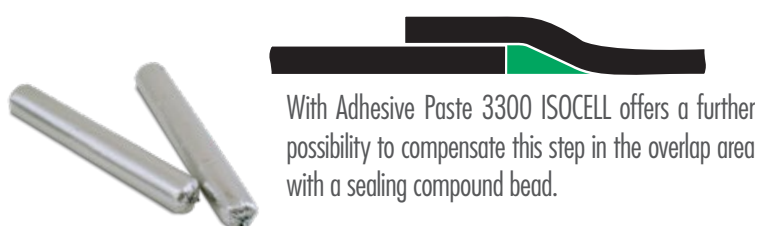




# BATHROOM WATERPROOFING



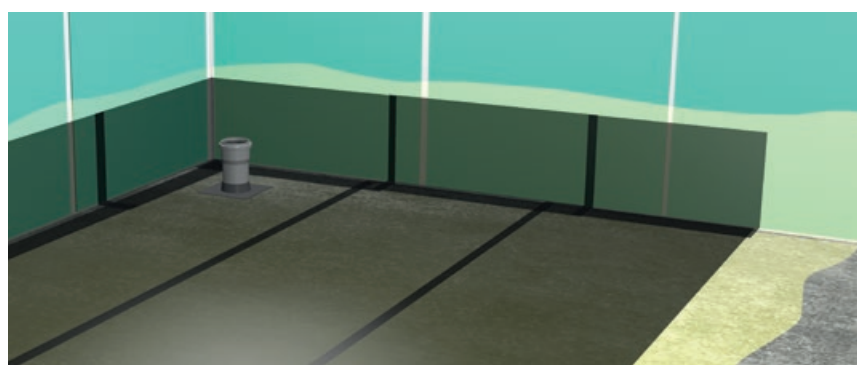
-  ISOCELL Sound isolating support
-  **AIRSTOP BB**  
Bitumen Rubber Tape



## AIRSTOP BB Bitumen Rubber Tape

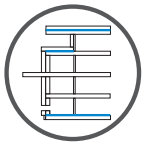
- Adhesive on one side with paper liner
- Self-adhesive
- Immediate adhesion and raintight

For application all year at temperatures of  $-5^{\circ}\text{C}$  to  $+30^{\circ}\text{C}$  - in conjunction with primer, sealing tape conform to DIN EN 13969 (KSK), water vapour permeability  $s_d \geq 160\text{ m}$



Where possible, we recommend carrying out so-called 'control drilling'. This would adopt the function of a passive early warning. Empty pipes can be positioned at selected spots (ideally near pipes transporting water or drains) which are additionally sealed to **AIRSTOP BB** Bitumen Rubber Tape with **OMEGA** Alu-Butyl Pipe Sleeve. On the lower side of the floor construction the pipe should be laid at maximum to the lower edge of the ceiling structure.

By filling with mineral wool the fire and noise protection is adequate. In this way this pipe is not visible from below and in the event of leakage in the upper storey this becomes quickly visible through patches of water. Repair measures can then be quickly launched.



## RAW CONCRETE CEILING + FLAT ROOF

Airtightness

Protection during Construction

Soundproofing

Bathroom

**Flat Roof + Base Plate**

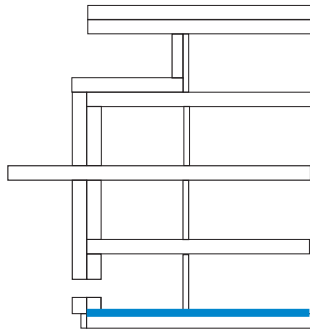
Window

Façade Insulation

Construction Details

Base Plate & Rising Moisture

Flat roof – Non-ventilated Roof



On the side of the raw concrete base which is close to the ground a seal must be laid against capillary rising moisture. This applies to all buildings irrespective of the type of construction. Moisture from the ground and building moisture from the component layers below is blocked off through the seal. With **OMEGA** SUB Screed Sheeting ISOCELL offers an optimum solution for this challenge. The membrane is, in addition, radon-resistant and therefore blocks off this toxic gas.

### OMEGA SUB Screed Sheeting

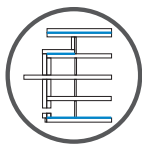


Radon-tight seal against (capillary) rising damp from the ground. Also serves as airtight layer in the completed construction.

- Radon-resistant
- Integrated adhesive strips for butt joint adhesion
- Robust and walkable



See construction detail in area: exterior wall base



# RAW CONCRETE CEILING + FLAT ROOF

Airtightness | Protection during Construction | Soundproofing | Bathroom | **Flat Roof + Base Plate** | Window | Façade Insulation | Construction Details

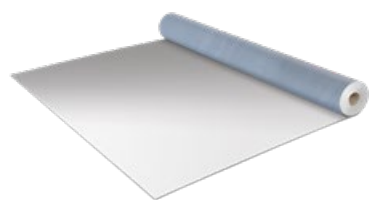
Base Plate & Rising Moisture | Flat roof – Non-ventilated Roof

## FLAT ROOF VAPOUR BARRIER



Usually a vapour barrier is installed below the typically pressure-resistant flat roof insulation boards. With the full-surface adhesive **OMEGA** ALUBIT Vapour Barrier SK ISOCELL offers an optimum solution for this field of application.

### **OMEGA** ALUBIT Vapour Barrier SK



- Impermeable (sd-value 1,500 m)
- High resistance to damage from floating screed installation
- Full-surface adhesive coating to ensure adhesion to substrate during the construction phase

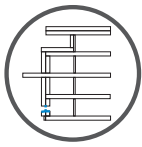
## REMARKS

**OMEGA** ALUBIT Vapour Barrier SK can also be used for a limited period as protection during construction. As soon as greater differences in temperature or high exposure to moisture is expected, the edges must be protected additionally with **AIRSTOP** ULTRA Adhesive Tape. Lengthwise too, after max. 12 m a butt joint with overlap + **OMEGA** AB Aluminium Tape must be carried out.



Should there be problems with adhesion, due either to the surface or temperature conditions, the product can be combined with **UNI** Primer Spray or **UNI XL** Primer Spray.





# WINDOW CONNECTION + WINDOW SILL

Airtightness

Protection during Construction

Soundproofing

Bathroom

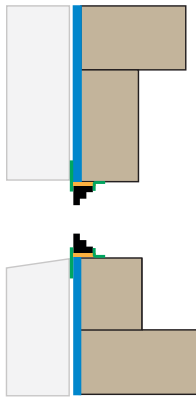
**Flat Roof + Base Plate**

Window

Façade Insulation

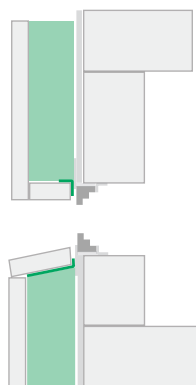
Construction Details

General



Sealing takes place before the insulation measures if immediately after erection a protected window joint, resulting in a completely closed façade, is to be achieved (see diagram). In this case the airtight system **TIMBER** Protect SK + **AIRSTOP** FLEX Adhesive Tape is used to connect the continuous airtight layer on the outer side of the solid timber directly with the window frame. This can be the case with windows flush on the outside as well as with protruding windows. We recommend adhesion with **OMEGA** FB Window Tape and **UNI** Primer Spray for protruding windows. During insulation measures further connection against wind and driven rain must be added on the window frame.

If the façade insulation is mounted during pre-fabrication the final connection between façade covering and window can be made directly from the final windtight layer on the window frame (see diagram below) with one product. With this alternative the product selected depends on the type of the EWIS (External wall insulation system). A wide range of products is described in the ISOCELL Window Connection folder. In most cases the combination of products **AIRSTOP** FLEX Adhesive Tape in reveals and **OMEGA** FB Window Tape (**AIRSTOP** PLASTO Tape) is an ideal solution in the sill area. If there are particularly exposed, difficult spots or areas exposed long-term to the elements, these can be additionally protected with **OMEGA** PoBit Sealing Compound or **OMEGA** PoBit PLUS.

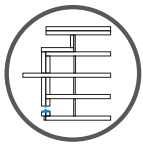


The second water-bearing level of the window sill should have an incline of 5°. The seal level should be made min. 10 cm high at the sides of the reveal. When bonding joints on **AIRSTOP** PLASTO Tape the back of the tape should be treated in advance with **UNI** Primer Spray. During adhesion of the window edge attention should be paid to the direction of water flow and work should be from below to above. The window sill itself should be bonded with vertical strips of sealing compound (**UNI** MS Sealant-Adhesive on **AIRSTOP** PLASTO Tape). Condensed water must be able to drain downwards.

For windows with aluminium facing panels or tracks for blinds etc. care must be taken that bonding is made on the sealed frames. Should this not be possible with a normal adhesive tape, then the two-way adhesive coated window tapes **ISOWINDOW** FEBA Soft and UVAU should be used instead.

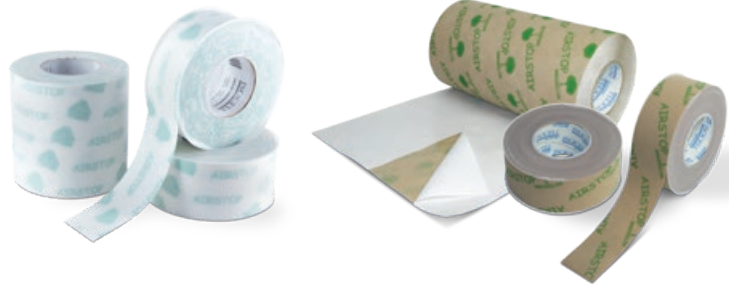
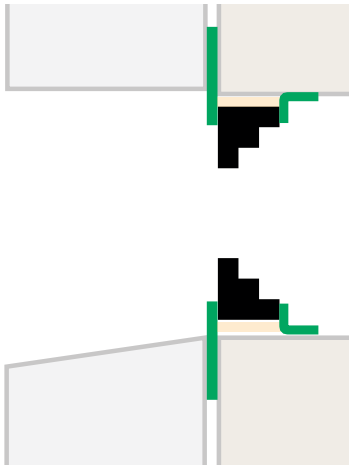
## ADVANTAGES:

- Immediate raintight connection
- Can also be combined with plaster façades
- Second water-bearing level provides protection during construction and long-term safety



# WINDOW CONNECTION + WINDOW SILL

## PRODUCTS

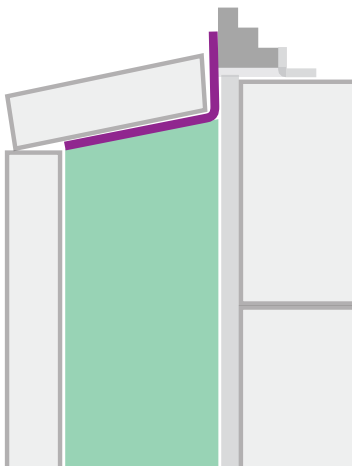
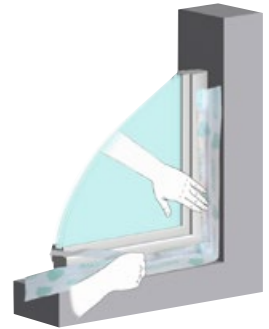


### AIRSTOP FLEX Adhesive Tape TIMBERFLEX Adhesive Tape

Wide range of adhesion with thick layer of acrylate adhesive

- Resistant to driven rain
- Airtight
- Protection during construction phase

Suitable for adhesion indoors and out in timber construction  
Recommendation for window installation 75 mm (split liner 25/50)

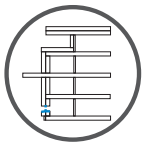


### OMEGA FB Window Tape

- Can be plastered over
- Soft, supple
- Butyl adhesive tape

OMEGA FB Window Tape offers the function of a second water-bearing level

The window sills can be bonded with sealing compound (e.g. UNI MS Sealant-Adhesive) on the fleece surface for strong adhesion



# WINDOW CONNECTION + WINDOW SILL

Airtightness

Protection during Construction

Soundproofing

Bathroom

Flat Roof + Base Plate

**Window**

Façade Insulation

Construction Details

General

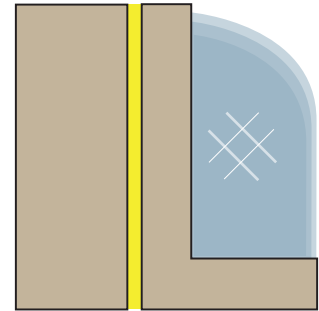
Products

## PRODUCTS for Window Installation



### ISOWINDOW WZS Soft Cell Foam

- High movement absorption
- Easily cut
- Fast hardening
- Fine-pore structure
- Free from FCs, HFCs and HCFCs
- Sound insulation

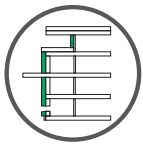


### OMEGA PoBit Sealing Compound

At neurlgic spots the **AIRSTOP FLEX** Adhesive Tape and **AIRSTOP PLASTO** Tape can be complemented with a surface coating of **OMEGA PoBit** Sealing Compound or **OMEGA PoBit PLUS** Spray Paste.

- Permanently UV-resistant
- Can be plastered over
- Water-resistant





# FAÇADE INSULATION

Airtightness

Protection during Construction

Soundproofing

Bathroom

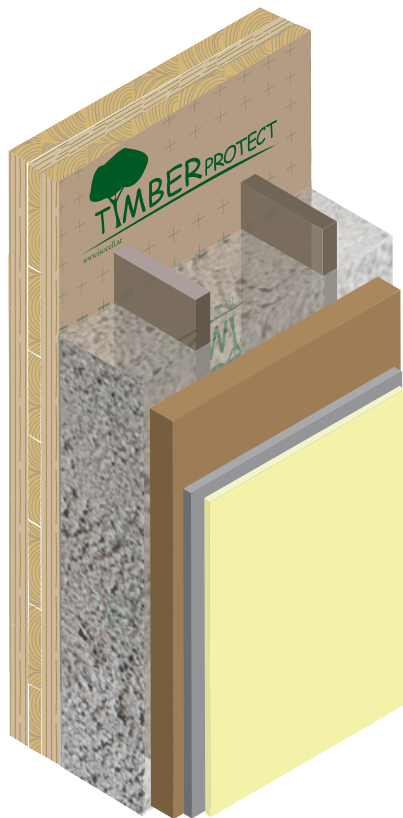
Flat Roof + Base Plate

Window

**Façade Insulation**

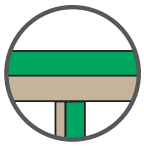
Construction Details

General



A timber construction mounted on the solid wall creates cavities which are filled with cellulose. The outer planking can be plastered baseboard (soft wood fibre, wood wool board...) or wood sheathing + wind seal / façade lining. This provides freedom in the choice of façade design. All systems have great advantages with regards to soundproofing and ecology.

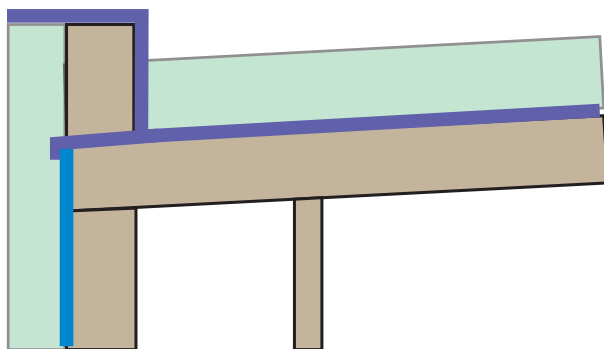




# CONSTRUCTION DETAILS ROOF

There are many possibilities for roof design. Some approaches to a solution are considered here with the focus on airtightness. It would go beyond the scope of this presentation to go into further detail on the outer waterproofing level (brick, flat roof membrane etc.) and particularly their construction details. The focus is on airtightness and protection during the construction period.

## FLAT ROOF WITH PARAPET CONNECTION EXTERIOR WALL



-  CLT Element
-  **TIMBER** Protect SK
-  **OMEGA** ALUBIT Vapour Barrier SK

### DESCRIPTION

Full-surface self-adhesive **TIMBER** PROTECT SK serves as airtight layer on the outer wall. This regulates moisture and is suitable for all conventional façade insulations. This product can also be delivered without full-surface adhesive coating as **TIMBER** PROTECT SK, and must immediately be mechanically secured. The airtight layer is joined above the upper ceiling as far as the flat roof’s vapour barrier, where an airtight connection is made. The vapour barrier below the flat roof insulation package is completed with **OMEGA** ALUBIT Vapour Barrier SK. This is also full-surface self-adhesive. The barrier is positioned above the parapet as far as min. the upper edge of the parapet.

### ADVANTAGES

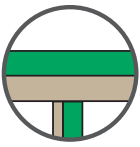
- Light-weight materials
- Temporary weather protection no problem
- Easy to use
- Full-surface adhesion permits construction phase without mechanical securing

### DISADVANTAGES

- In Austria a bitumen seal must be applied below the insulation, if the ceiling was horizontal. (For the OMEGA ALUBIT Vapour Barrier SK solution minimum 2% incline is necessary in Austria)
- If changes in length occur with OMEGA ALUBIT Vapour Barrier SK due to great differences in temperature these can be compensated if required with butt bonding

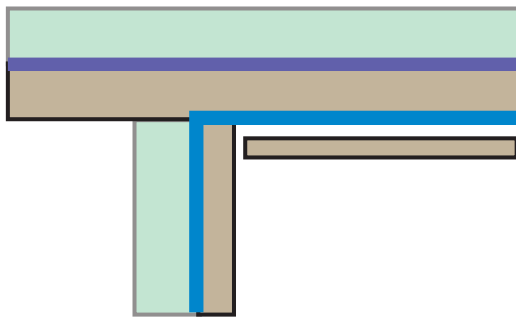
### ASSESSMENT





# CONSTRUCTION DETAILS ROOF

## CANTILEVER FLAT ROOF – VARIANT 1: Ceiling NOT ON SIGHT

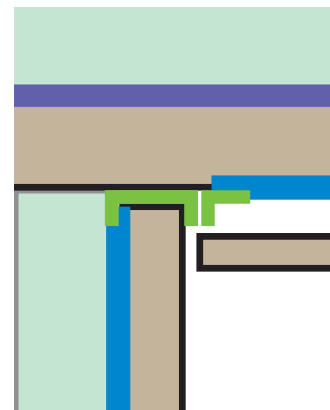


-  CLT Element
-  **TIMBER** Protect SK
-  **OMEGA** ALUBIT Vapour Barrier SK
-  **AIRSTOP** FLEX Adhesive Tape

### DESCRIPTION

If the ceiling is not designed with exposed wood, the airtight layer can run below the supporting ceiling. This possibility is technically the simplest and the one less prone to faults. It is of no importance whether the airtight layer runs along the wall on the warm side of the wall or the colder side of the supporting construction. It must have an airtight connection with the ceiling's vapour barrier (Attention construction procedure: insert the vapour barrier strips before the ceiling is positioned on the wall).

As airtight layer we recommend the product **TIMBER** PROTECT SK - other bonding with **AIRSTOP** FLEX Adhesive Tape. The greater part of the airtight layer can be (but must not be) attached during pre-fabrication. The element joints are then sealed on site. At the contact points between wall and ceiling the connection must be prepared before the ceiling is set on the wall.



### ATTENTION

Draw the airtight layer continuously from the exterior to the interior of the building before the ceiling is positioned. In case of later repositioning of the ceiling on the wall, pay attention that the airtight layer is not damaged. The ceiling's airtight layer lies on its lower side and can therefore not be used as temporary construction protection for this element. For this purpose it is necessary to use a separate membrane on the top side.

### ADVANTAGES

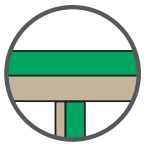
- Hardly prone to errors
- Vapour barrier always in warm zone
- Saves material and easy to handle

### DISADVANTAGES

- Ceiling cannot be exposed wood
- Before ceiling is positioned airtight layer must run from outside to inside

### ASSESSMENT





# CONSTRUCTION DETAILS ROOF

Airtightness

Protection during Construction

Soundproofing

Bathroom

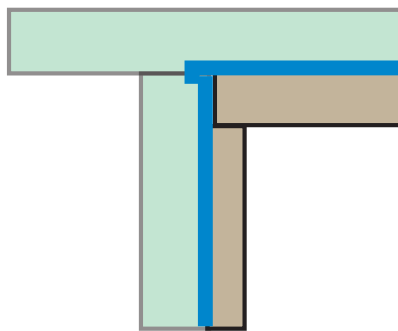
Flat Roof + Base Plate

Window

Façade Insulation

Construction Details

## CANTILEVER FLAT ROOF – VARIANT 2: Roof insulation level cellulose protruding rafters



- CLT Element
- TIMBER** Protect SK

### DESCRIPTION

The airtight layer lies above the supporting ceiling and below the thermal insulation level, which projects. Connection of the airtight layer of the wall with the roof is important. This system is hardly prone to faults.

### ATTENTION

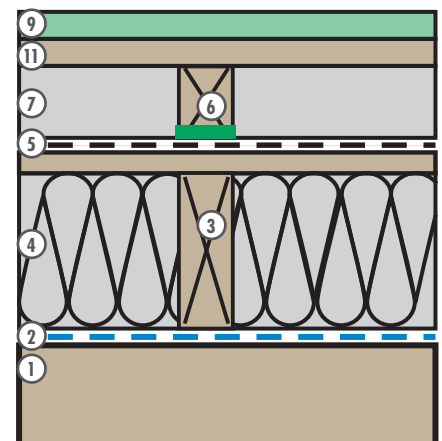
There must be sufficient ventilation in the ventilation level. We advise against a mixed construction of this and a non-ventilated roof. (Projecting wood supports directly below the flat roof proofing).

### STRUCTURE INSULATION LEVEL.

- 1 Cladding or supporting construction
- 2 Vapour barrier layer **TIMBER** Protect SK
- 3 Dry wood product
- 4 ISOCELL cellulose insulation
- 5 Dry wooden boarding max. width 160 mm covered with OMEGA UDOs 330 Roof underlay7 ventilated cavity: max. 15 m long
- 6 Counter battens Use Class (Use Class 0) + OMEGA Nail-seal Tape
- 7 ventilated cavity: max. 15 m long
  - for roof pitch  $\alpha \geq 3$  and  $\leq 5^\circ$ : min. 150 mm high
  - for roof pitch  $\alpha > 5^\circ$ : min. 80 mm high
  - ventilation openings  $\geq 40\%$  of ventilation cross-section
- 9 Green roof with proofing

- 11 Sheathing dry wood or of wood materials suitable for use in moist areas (Use Class 0)

Based upon 68800 diagram A.17 – gently sloped and sloped roof, sheathing with green roof



### RECOMMENDATION

- Layer ⑤: **OMEGA** UDOs 330  
Roof underlay – on sheathing
- Layer ④: ISOCELL Cellulose
- Layer ②: **TIMBER** Protect SK

### ADVANTAGES (+)

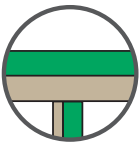
- Airtight layer easily accessible during construction
- System not prone to faults
- Insulation materials in flat roof with very low primary energy requirement
- Ventilated roof insulation with high drying

### DISADVANTAGES (–)

- Rather complex and costly insulation level above supporting ceiling

### ASSESSMENT





# CONSTRUCTION DETAILS ROOF

Airtightness

Protection during Construction

Soundproofing

Bathroom

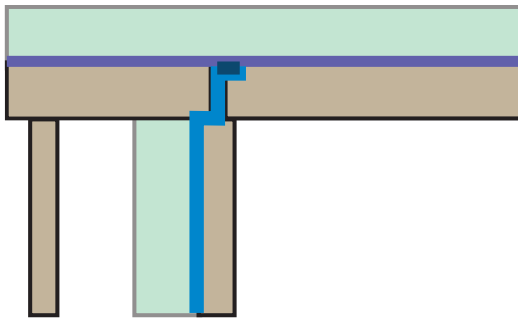
Flat Roof + Base Plate





Window

Façade Insulation

**Construction Details**

## CONSTRUCTION DETAILS ROOF – VARIANT 3: Supporting element over exterior wall interrupted



-  CLT Element
-  **TIMBER** Protect SK
-  **OMEGA** ALUBIT Vapour Barrier SK
-  **UNI** MS Sealant-Adhesive

### DESCRIPTION

The upper ceiling is interrupted above the outer wall and a vapour barrier strip, already prepared, is inserted. The projecting roof is supported statically in addition.

### RECOMMENDATION

**TIMBER** Protect SK +  
**TIMBERFLEX** Adhesive Tape.

At the connection between the airtight layer of the wall and the airtight layer to the ceiling, the join is secured additionally with Adhesive Compound 3300.



### ADVANTAGES

- Airtight layer remains in warm area
- Interrupted airtight layer can be secured
- Exposed ceiling possible indoors

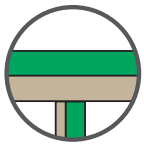
### DISADVANTAGES

- Implementation complex
- Airtight layer must be considered and prepared during shell structure

### ASSESSMENT







# CONSTRUCTION DETAILS ROOF

Airtightness

Protection during Construction

Soundproofing

Bathroom

Flat Roof + Base Plate

Window

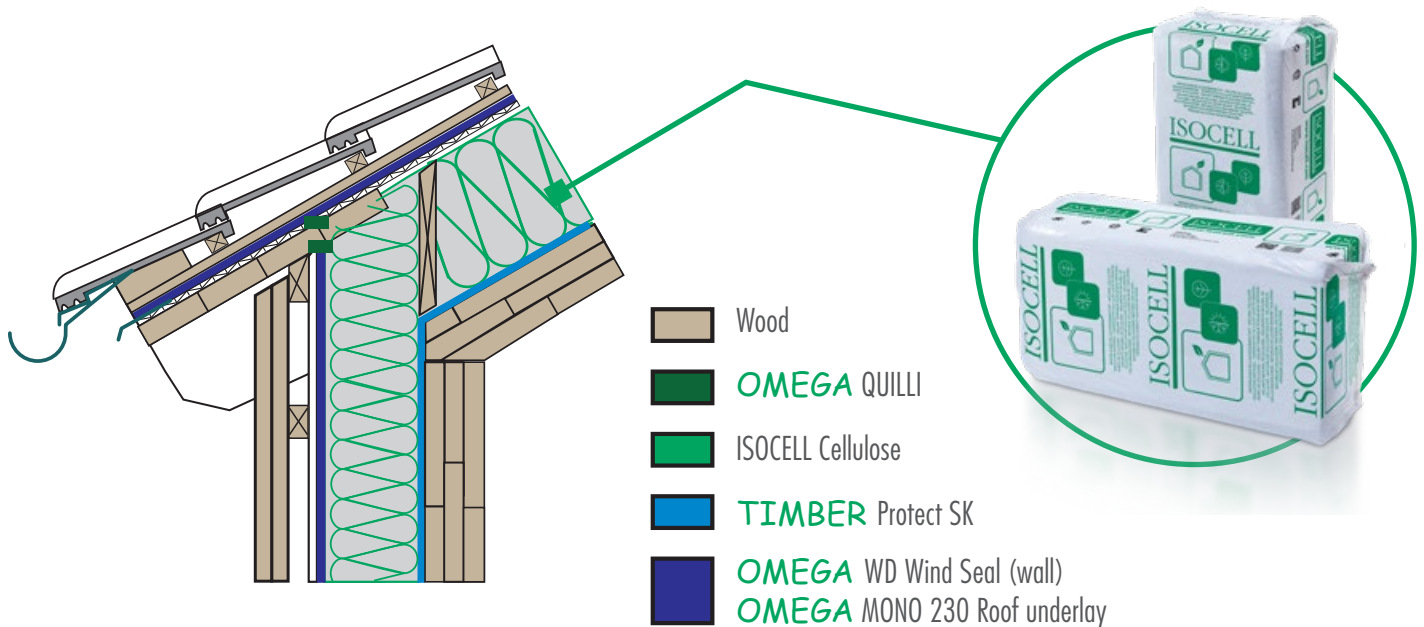
Façade Insulation

**Construction Details**

## PITCHED ROOF IN SOLID TIMBER CONSTRUCTION

### BESCHREIBUNG

For a pitched roof a wooden frame construction is positioned on the solid timber construction. The product **TIMBER** Protect SK serves as vapour barrier below the insulation level. The remaining setup is equivalent to ventilated pitched roofs.



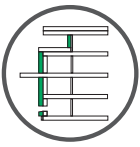
### ADVANTAGES ⊕

- Very good sound and heat protection
- Projecting roof protects façade
- Easily accessible airtight layer during construction
- System not prone to faults
- Insulation materials with very low primary energy requirement (cellulose) possible
- Ventilated roof insulation with high drying properties

### DISADVANTAGES ⊖

### ASSESSMENT





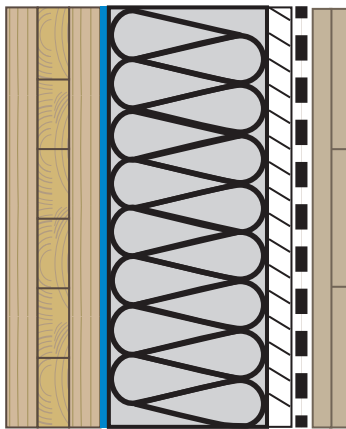
# FAÇADE INSULATION

## Construction detail

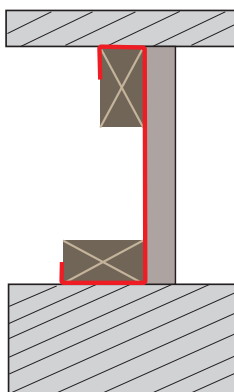


Processing is possible in pre-fabrication but also on site. In order to create the insulation cavities wooden frames are attached to the supporting wall. These supports can be in solid wood but also TJI joists or I-joists pre-fabricated by your-

self e.g. battens 2 x 4 x 6 + 22 mm OSB strips and an embedded **OMEGA** WD Wind Seal (fleece) to separate the cavities from each other.

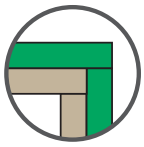


Layer	Thickness (mm)	$\lambda$ (W/m K)	Fire Class (EN)
Solid timber wall CLT	140	0,13	D
Timber Protect SK	1	0,220	E
ISOCELL Cellulose Insulation + 2% wood	120–300	0,039 (D)	B-s2, d0
Wood layer from above	120–300	0,13	D
Medium density fibreboard	15		D-s1,d0
Wind seal	15	0,13	E
Counter batten	28		D
Façade cladding	22		D



Insulation thickness (mm)	Density IC [kg/m <sup>3</sup> ]	GWP* (kg CO <sub>2</sub> equiv./m <sup>2</sup> ) Overall structure	U-value [W/m <sup>2</sup> K] Overall structure
120	50	-105,9	0,23
140	50	-107,2	0,2
160	50	-108,4	0,19
180	52	-109,9	0,17
200	52	-111,2	0,16
240	52	-113,7	0,14
280	54	-116,7	0,12
340	58	-121,8	0,1

Source Sealing: Ecotech  
 Source GWP: OIB PDF list  
 for slides Baubook online-data GWP 100 total

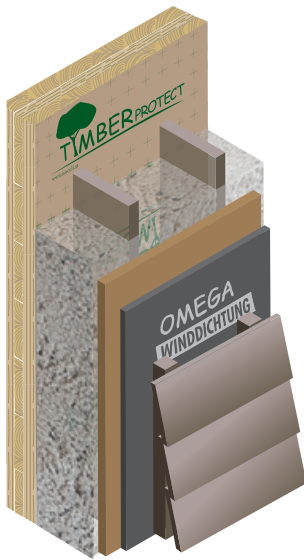


# FAÇADE INSULATION

Airtightness | Protection during Construction | Soundproofing | Bathroom | Flat Roof + Base Plate | Window | Façade Insulation | **Construction Details**

Construction detail

## CONSTRUCTION DETAILS FAÇADE INSULATION WITH VENTILATED FAÇADE



Layer	Thickness (mm)	$\lambda$ (W/m K)	Fire Class (EN)	Insulation thickness (mm)	Density IC [kg/m <sup>3</sup> ]	GWP* (kg CO <sub>2</sub> equiv./m <sup>2</sup> ) Overall structure	U-value [W/m <sup>2</sup> K] Overall structure
Solid timber wall CLT	140	0,13	D	120	50	-113,7	0,25
Timber Protect SK	1	0,220	E	140	50	-116,3	0,22
ISOCELL Cellulose Insulatio+ Wood cc:62,5cm; b:6cm	120–300	0,039 (D)	B-s2, d0	160	50	-118,8	0,2
Wood layer from above	120–300	0,13	D	180	52	-121,6	0,19
Medium density fibreboard	15		D-s1,d0	200	52	-124,2	0,17
Wind seal	15	0,13	E	240	52	-129,3	0,15
Counter battens	28	0,15	D	280	54	-134,8	0,13
Façade cladding	22		D	340	58	-143,7	0,11

Source Sealing: Ecotech  
Source GWP: OIB PDF list  
for slides Baubook online-data GWP 100 total

- Solid timber wall
- **TIMBER** Protect SK (airtight layer)
- Wood frame construction with insulated with ISOCELL cellulose
- Medium density fibreboard or fibre board or wooden sheathing
- **OMEGA** WD Wind Seal + closed sheathing, or **OMEGA** G20 Façade Lining + rhomboid cladding

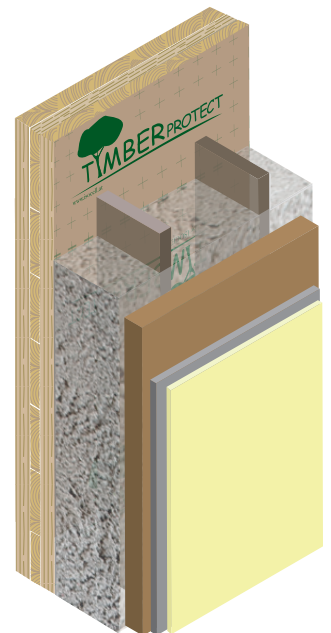
## CONSTRUCTION DETAIL FAÇADE INSULATION WITH PLASTERED FAÇADE

Layer	Thickness (mm)	$\lambda$ (W/m K)	Fire Class (EN)
Solid timber wall CLT	140	0,13	D
Timber Protect SK	1	0,220	E
ISOCELL Cellulose Insulatio+ Wood cc:62,5 b:6cm	100–280	0,039 (D)	B-s2, d0
Wood layer from above	100–280	0,13	D
Wood fibre board	60	0,042	E
Façade rendering	8	0,7	A

Quelle: Source: www.baubook.info (GWP 100 total) and www.ibo.at

Insulation thickness (mm)	Density IC [kg/m <sup>3</sup> ]	GWP* (kg CO <sub>2</sub> equiv./m <sup>2</sup> ) Overall structure	Overall structure
100	50	-82,8	0,2
120	50	-85,4	0,19
140	50	-87,9	0,17
160	50	-90,4	1,16
180	52	-93,2	0,15
200	52	-95,8	0,14
240	52	-100,9	0,13
280	54	-106,5	0,11

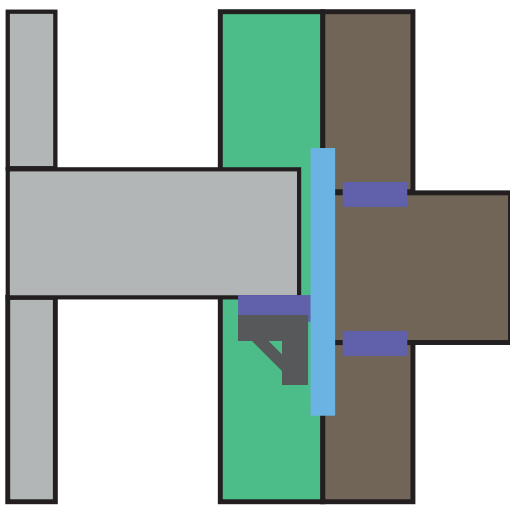
- Solid timber wall
- **TIMBER** Protect SK (airtight layer)
- Wood frame construction with insulated with ISOCELL cellulose
- Wood fibre board  $\geq 60$  mm + rendering system










# CANTILEVER BALCONY BASE

The balcony is positioned projecting from the building. At the connections to the building attention must be paid to sound conduction.

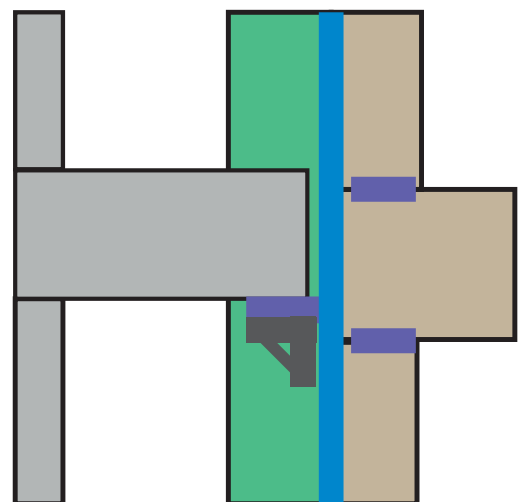


-  CLT (Element itself not airtight)
-  CLT (Element itself airtight)
-  Thermal insulation
-  **TIMBER** Protect SK
-  **TIMBERFLEX** Adhesive Tape
-  ISOCELL Sound isolation support

## DESCRIPTION

The self-supporting balcony has the advantage that possible leakage in the elements or at element joins can be completely avoided. A structurally optimum precondition for the creation of the airtight level. Sound conduction should not be forgotten – on the balcony the walkable covering is often poorly decoupled – in this case it would be best to decouple the whole balcony plate.

The support and the fastening screw are to be decoupled (vibradyn washer). The screw should sit in its drilled hole, diameter of which is larger than the screw shaft and the screw's thread should not protrude into the ceiling element. For protection against splashing **AIRSTOP** PLASTO Tape + **OMEGA** PoBit Sealing Compound or **OMEGA** PoBit PLUS Spray Paste, for example, can be used.



## ADVANTAGES

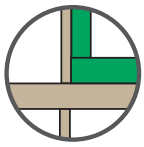
- Airtight can simply be laid continuously
- Not prone to faults

## DISADVANTAGES

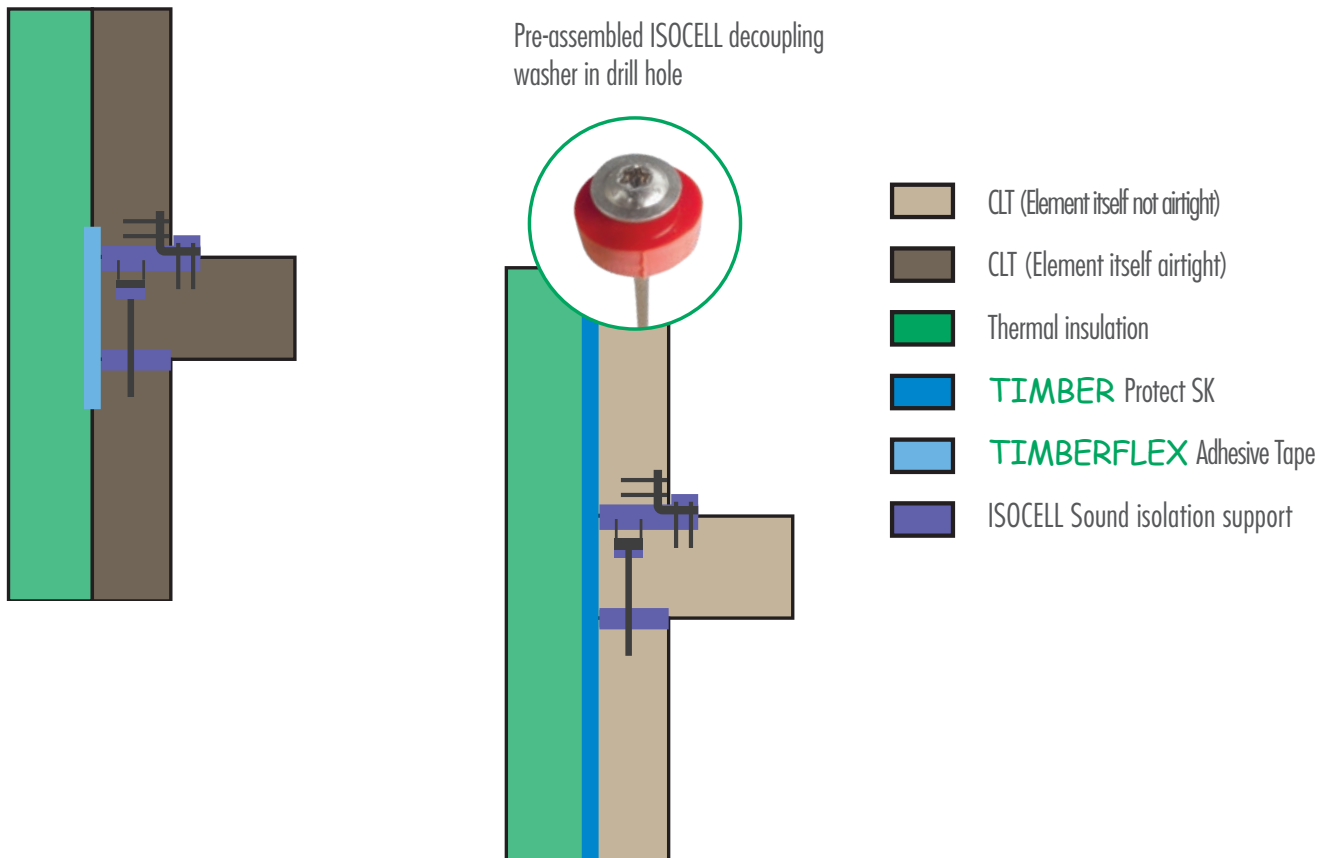
- complex

## ASSESSMENT





# CEILING CONNECTION to exterior wall



## DESCRIPTION

The structure-borne sound isolation support between the ceiling and the wall reduce the structure-borne vibrations. If the ceiling remains visible, the support below the ceiling can be omitted.

Means of connection should ideally also be decoupled. If this is not done for financial reasons an ISOCELL structure-borne sound isolation support + rigid connection means is always still considerably better from an acoustic perspective, than no measure at all. With a decoupled washer-head screw care must be taken that the precounterbore of the hole is deep enough that the screw head has no contact with the upper wall even with compression of the lower support. The hole through the ceiling should be precounterbored with 2 mm tolerance. Attention must be paid that the screw thread only fits into only the outer wall and does not fix the ceiling.



# CEILING CONNECTION INTERIOR WALL

Airtightness

Protection during Construction

Soundproofing

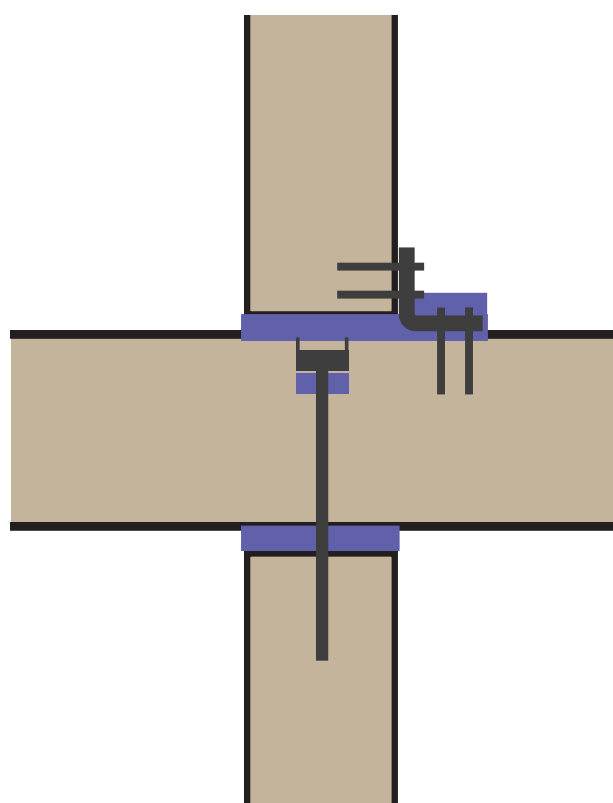
Bathroom

Flat Roof + Base Plate

Window

Façade Insulation

**Construction Details**



Pre-assembled ISOCELL decoupling washer in drill hole

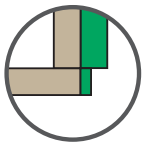


ISOCELL Sound isolation support

## DESCRIPTION

The structure-borne sound isolation between ceiling and wall damp structure-borne sound vibrations. If the ceiling is to remain (visible) from below, the support below the ceiling is acoustically not so important and can eventually be omitted. The means of connection should also ideally be decoupled. If this is omitted for financial reasons, an ISOCELL structure-borne sound isolation support + rigid connection means is always still considerably better from an acoustic perspective, than no measure at all.

With a decoupled washer-head screw care must be taken that the precounterbore of the hole is deep enough that the screw head has no contact with the upper wall even with compression of the lower support. The hole through the ceiling should be precounterbored with 2 mm tolerance. Attention must be paid that the screw thread only fits into only the outer wall and does not secure the ceiling.



# OUTER WALL BASE

Airtightness

Protection during Construction

Soundproofing

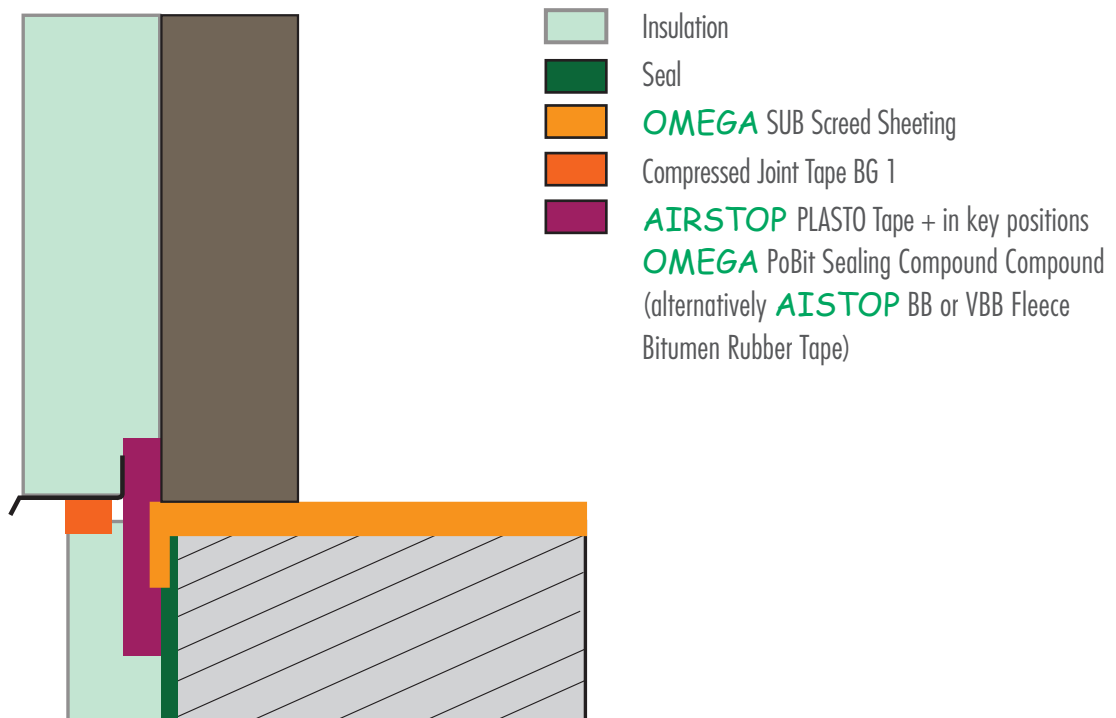
Bathroom

Flat Roof + Base Plate

Window

Façade Insulation

Construction Details



## DESCRIPTION

If the bonding area is insulated ( $R$ -value  $> 2/3$  total  $R$ ), a single seal on the outside can represent construction time protection / protection against the elements and airtightness. Attention must be paid to the individual levels of splashing and threshold height. (conform to DHV & HFA leaflet). In addition, and if the insulation mentioned is not present, bonding on the interior (solid timber to concrete) can be made with: **AIRSTOP** BB Bitumen Rubber Tape (alternatively **OMEGA** PoBit PLUS Spray Paste or **OMEGA** PoBit Sealing Compound / **AIRSTOP** FLEX Adhesive Tape). With all bonding the nature of the substrate / preparation according to Product Data Sheet (e.g. ev. primer) must be taken into consideration.

Bonding outdoors with **AIRSTOP** PLASTO Tape it is not possible in Germany if a connection conform to DIN 18195 or DIN 18533 is required, as this material basis is missing in the standard. In this case it is necessary to use **AIRSTOP** BB Bitumen Rubber Tape (optionally with fleece surface: **AIRSTOP** VBB Fleece Bitumen Rubber Tape).

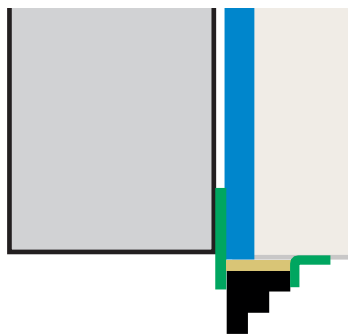


# WINDOW INSTALLATION Construction Details

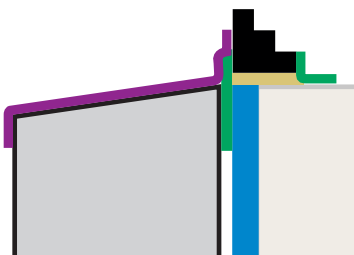
## CONSTRUCTION DETAIL WINDOW SEAL

‘Window installation immediately, EWIS (External Thermal Insulation Composite Systems) delayed’

By bonding the connection joints with **AIRSTOP FLEX** Adhesive Tape a construction’s joins can, immediately after window installation, be resistant to driven rain and to weather conditions. The building’s shell is protected even before installation of the EWIS (exterior wall insulation system). After installation of the ETICS, we recommend in any case, creating a second load-bearing level with **OMEGA FB** Window Tape. The seal must be drawn min. 10 cm high on the reveal. At the other reveal connections of the EWIS take care to pack the insulation level well e.g. with a T-FAL® sealing system (see next page).



-  **ISOWINDOW** WZS Soft Cell Foam
-  **TIMBER** Protect SK
-  **AIRSTOP FLEX** Adhesive Tape
-  **AIRSTOP PLASTO** Tape



The most important thing at the connection is the raintight connection of the window to the construction. To achieve this during construction, we recommend connection to the supporting wall in advance. When the thermal insulation is installed, the diversion of rainwater is also the most important measure (second water-bearing level with **AIRSTOP PLASTO** Tape). The tape should be bonded at the most leak-proof part of the window frame. For full-length windows there is also a special two-way connection flange.

After completion of the insulation level this should naturally be given a windtight connection to the construction. If the windows have decoupled tracks for blinds or alu cladding profile, care must be taken that bonding reaches as far as the sealed frame. Please follow guidelines— Watertight Creation of Window Breasts.

### ADVANTAGES

- Temporary weather protection is no problem
- Easy handling
- Full-surface bonding layer enables construction phase without mechanical securing
- **AIRSTOP PLASTO** Tape – permanent resistance to moisture – second water-bearing level below sill

### DISADVANTAGES

- Fleece backing of **AIRSTOP PLASTO** Tape requires primer for butt joints

### ASSESSMENT







# WINDOW INSTALLATION Construction Details

Airtightness

Protection during Construction

Soundproofing

Bathroom

Flat Roof + Base Plate

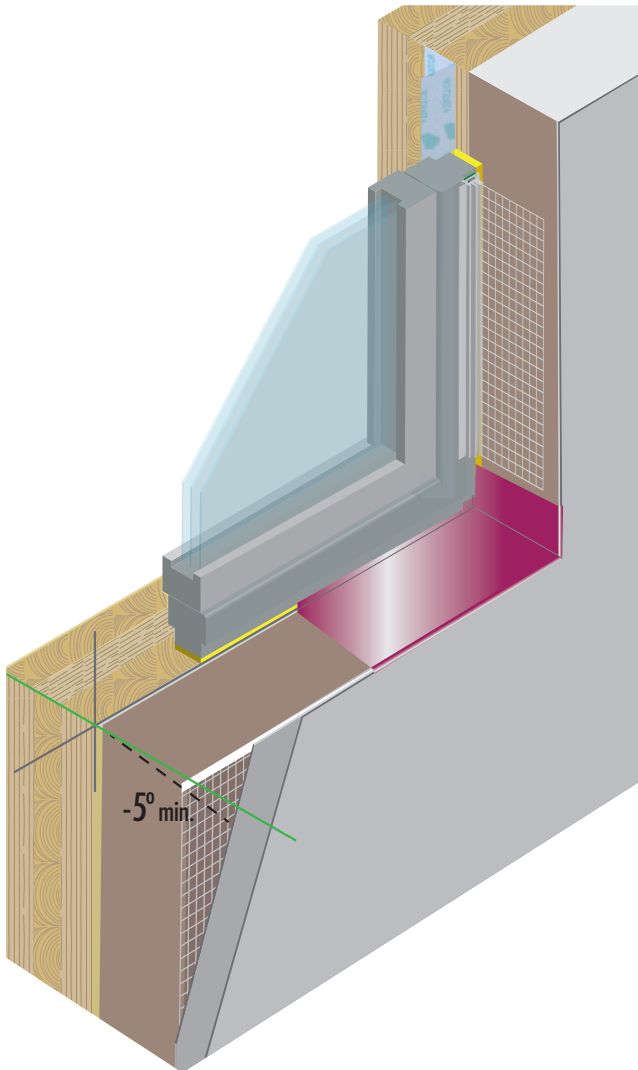
Window

Façade Insulation

**Construction Details**

## CONSTRUCTION DETAIL FOR WINDOW EMBEDDING IN PLASTERED EWIS\*

\*External Wall Insulation System



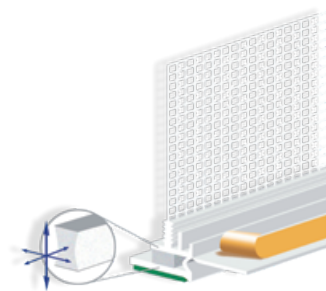
Rendered façades can be combined with a T-FAL® sealing profile 3779G to be wind and raintight. The corners should be filled with **UNI** MS Sealing Compound and the window sill treated with **OMEGA** FB Window Tape (= **AIRSTOP** PLASTO Tape). The plastering strip cannot serve as weather protection until completion of the plaster layer.

### UNI MS Sealant-Adhesive

- UV-resistant
- Permanently elastic
- Water resistant



Sealing compound on MS-Polymer basis that can be painted over. For sealing and bonding various materials in the entire house, indoor and outdoors, as e.g. window joints and **OMEGA** Façade Linings. Meets standards ÖN 5320 and EN 15651-1 (interior and exterior).



### T-FAL® Sealing Profile 2-part OUTDOOR 'green' Wall Insulation System'

We recommend the use of T-FAL® sealing profile gel for window frame lengths greater than 2.5 m. Due to the high adhesion of the gel adhesive tape, there is no problem for large elements up to 10 m<sup>2</sup> window area. USE OUTDOORS ONLY!

 **AIRSTOP** PLASTO Tape

### ADVANTAGES ⊕

- Clean connection of plaster to window frame

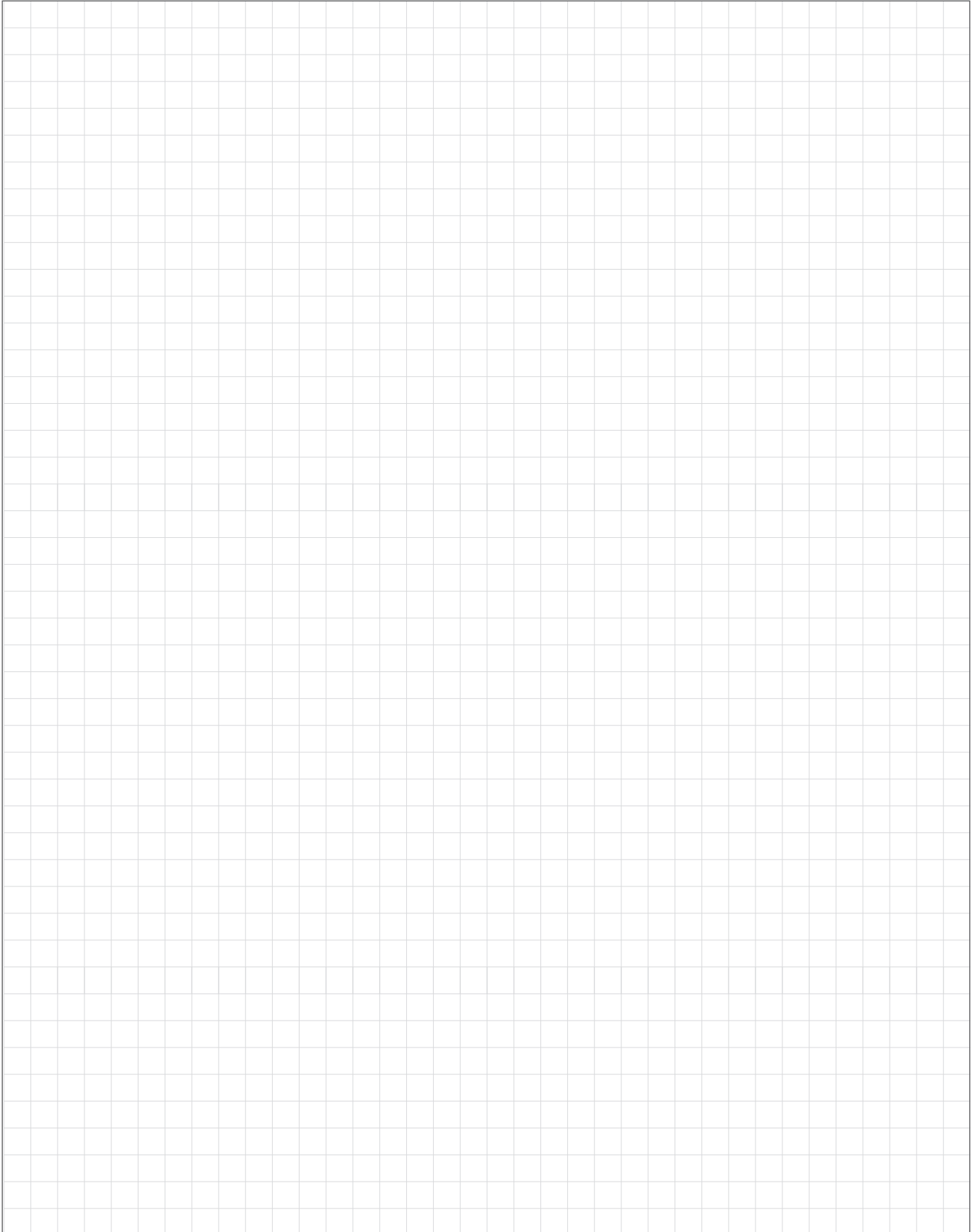
### DISADVANTAGES ⊖

- No weather protection until completion of surface plastering

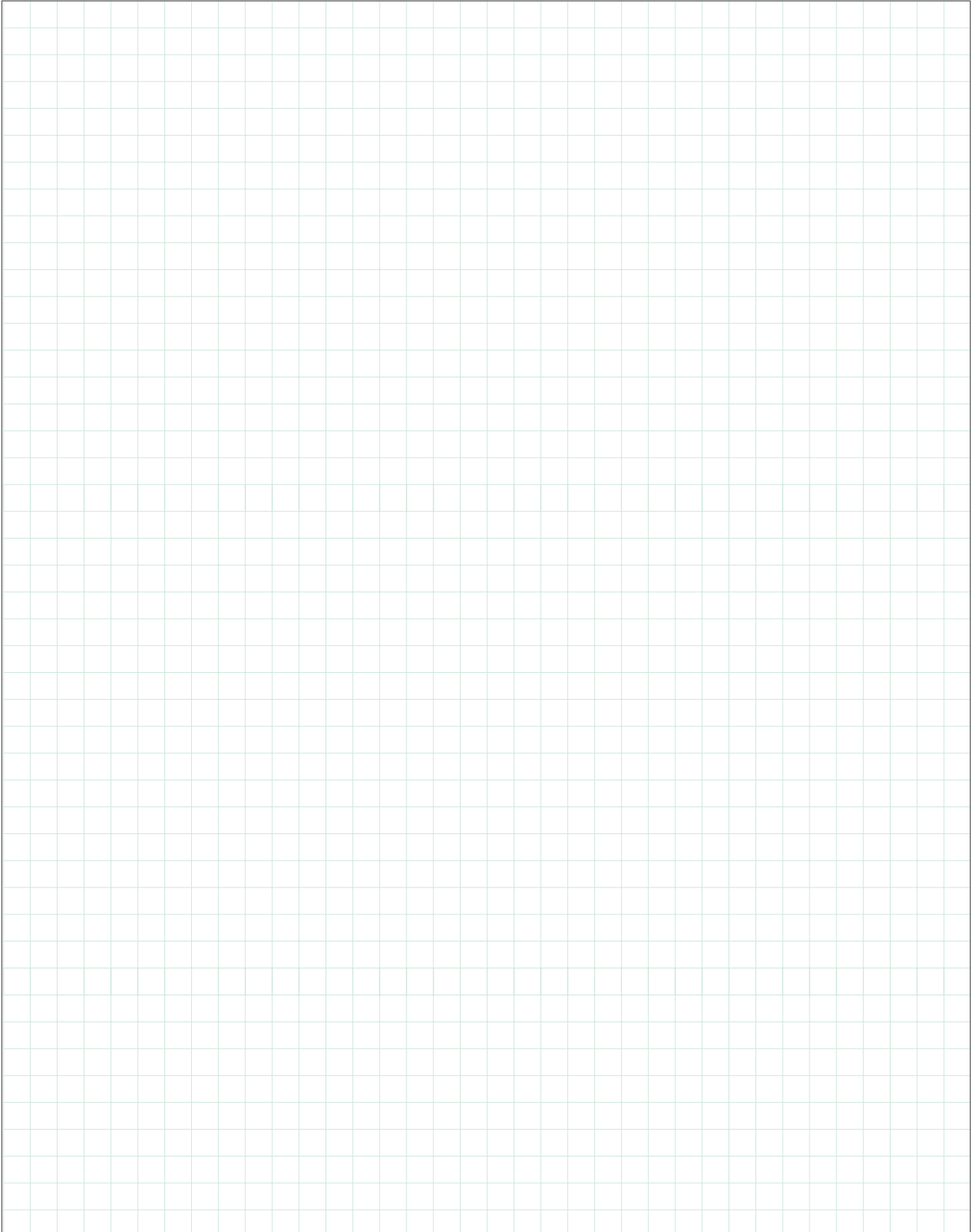
### ASSESSMENT



# NOTIZEN



# NOTIZEN



## YOUR SPECIALIST DEALER:

### **ISOCELL GmbH & Co KG**

Gewerbestraße 9  
5202 NEUMARKT AM WALLERSEE | Österreich  
Tel.: +43 6216 4108 | Fax: +43 6216 7979  
office@isocell.at

### **ISOCELL SCHWEIZ AG**

Herbergstrasse 29  
9524 Zuzwil | Suisse /Schweiz  
Tel.: +41 71 940 06 72  
office@isocell.ch

### **ISOCELL FRANCE**

170 Rue Jean Monnet | ZAC de Prof Pip Sud  
29490 GUIPAVAS | France  
Tél.: +33 2 98 42 11 00 | Fax: +33 2 98 42 11 99  
contact@isocell-france.fr

### **ISOCELL BUREEL BELGIË**

Außenborner Weg 1 | Schoppen  
4770 Amel | Belgique  
Tel.: +32 80 39 90 58 | Fax: +32 80 39 97 68  
office@isocell.be

### **ISOCELL Sverige AB**

Box 20059  
161 02 BROMMA | Sverige  
Tel.: +46 10 130 25 00  
info@isocell.se

[WWW.ISOCELL.COM](http://WWW.ISOCELL.COM)