

# EXTERNAL THERMAL INSULATION COMPOSITE SYSTEM

Installation guidelines best wood SCHNEIDER<sup>®</sup> ETICS



[www.schneider-holz.com](http://www.schneider-holz.com)

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## Legal notice

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# TABLE OF CONTENTS

## **6 SYSTEM CONSTRUCTION**

For timber frame constructions  
For continuous and load-bearing solid timber substrates  
For mineral substrates

## **7 QUALITY ASSURANCE**

best wood ETICS approvals

## **8 PRODUCT OVERVIEW**

- 8** Wood fiber insulation boards
- 10** Accessories for wood fiber insulation boards
- 12** Render system
- 14** Accessories for render system

## **16 TRANSPORTATION AND STORAGE**

## **16 INSTALLATION GUIDELINES**

- 16** General information and instructions for the installation of best wood wood fiber insulation boards
- 18** Installation of WALL 180 in timber frame constructions
- 20** Installation of WALL 140 on continuous and load-bearing solid timber substrates
- 21** Installation of WALL 140 on mineral substrates
- 25** Minimum length of fasteners
- 26** Minimum quantity of fasteners, required for an installation of WALL 180 in timber frame constructions
- 28** Minimum quantity of fasteners, required for an installation of WALL 140 on continuous and load-bearing solid timber substrates
- 32** Minimum quantity of fasteners, required for an installation of WALL 140 on mineral substrates
- 34** Window connections and window sills
- 39** Installation guidelines for the best wood render system

## **48 CONSTRUCTION DETAILS**

- 48** Base point
- 52** Window connection
- 63** Storey transitions for pre-fabricated components
- 64** Roof connection
- 69** Structural expansion joints

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deals with your  
requests.**

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## ■ ■ For timber frame construction

Classic timber frame construction with insulation. OSB panel on the inside for stiffening and with stapled-on wood fiber insulation board as a possible service cavity as a vapor barrier or air sealant. best wood WALL 180 that can be plastered on the outside.

best wood external rendering	
best wood WALL 180	60 mm
best wood FLEX 50 between studs	140 mm
OSB panel	15 mm
best wood FLEX 50 between service cavity	60 mm
Fiber-reinforced plasterboard	



## ■ ■ For continuous and load-bearing solid timber substrates

Cross laminated timber wall as a static load-bearing structure and as a vapor barrier or air sealant. Stapled-on wood fiber insulation board as a possible service cavity on the inside. best wood WALL 140 that can be plastered on the outside.

best wood external rendering	
best wood WALL 140	160 mm
Cross laminated timber wall	120 mm
best wood ROOM 140	60 mm
Internal plastering	



## ■ ■ For mineral substrates

Masonry with wood fiber insulation board glued on the inside as a possible service cavity. Bolted best wood WALL 140 that can be plastered on the outside.

best wood external rendering	
best wood WALL 140	160 mm
Brick masonry	240 mm
best wood ROOM 140	60 mm
Internal plastering	

## ■ ■ best wood ETICS approvals

### ■ ■ European technical approvals (ETA) and type approvals (aBG)

#### ■ On wood substrates



#### ■ On mineral substrates



### ■ ■ Approved render manufacturers



#### ■ ■ Information:

The specifications and recommendations described in this processing guideline for the processing and fastening of the best wood WALL 140/180 wood fiber insulation boards apply independently of the render system that has been applied.

All specifications and recommendations with regard to the render structure and the processing of the render relate exclusively to the best wood render system. If a different render system is used, the structure and the processing must be clarified with the relevant render manufacturer.

A detailed overview of the render manufacturers and their approved components can be found at [www.schneider-holz.com/holzfaserdaemmplatten/wall-putztraegerplatte](http://www.schneider-holz.com/holzfaserdaemmplatten/wall-putztraegerplatte)



## ■ ■ Wood fiber insulation boards

### ■ ■ best wood WALL 140



WALL 140 is a pressure-resistant wood fiber insulation board that can be plastered. It can be applied on entire surfaces such as masonry and solid wood in external walls.

#### Technical data

Denomination of insulation board	WF-EN13171-T4-CS(10\Y)100-TR20-WS1,0-AF75-MU3
Standard	EN13171
ETA/type approval	ETA-16/0997; ETA-15/0731; aBG Z-33.84-1674; aBG Z-33.84-1675
Density	140 [kg/m <sup>3</sup> ]
Nominal value of thermal conductivity $\lambda_D$	0.040 [W/mK]
Rated value of thermal conductivity $\lambda_B$	0.042 [W/mK]
Compressive stress at 10 % compression	$\geq 100$ [kPa]
Tensile strength perpendic. to the plane of the board	$\geq 20$ [kPa]
Water vapor diffusion resistance $\mu$	3
Linear flow resistance	$> 75$ [kPa·s/m <sup>2</sup> ]
E-module pressure E	$\geq 1.45$ [N/mm <sup>2</sup> ]
Reaction to fire according to DIN EN 13501-1	E or B-s1, d0 with best wood render system
Construction material class acc. to DIN 4102-1	B2
Materials	Wood fibers, PMDI gluing, paraffin
Specific heat capacity	2100 [J/kgK]
Fields of application according to DIN 4108-10	DEO-ds, WAB-ds, WAP-zh, WZ, WH, WI-zg, WTR

#### Delivery options

Edge profiles	Tongue+groove (wooden substrates), square edge (mineral substrates)
Thickness	40, 60, 80, 100, 120, 140, 160, 180, 200, 220, 240 mm
Length	1500, 2000 mm
Width	600 mm (square edge), 580 mm (tongue + groove)

### ■ ■ best wood PERIMETER INSULATION



The best wood perimeter insulation board is made from high quality polystyrene. The insulation boards are particularly characterized by a high grade of accuracy and a high degree of non-shrinking. This enables an efficient and no joints processing.

#### Technical data

Rated value of thermal conductivity $\lambda_B$	0.035 [W/mK]
Compressive stress at 10 % compression	150 [kPa]
Fire index	B1 according to DIN 4102-1

#### Delivery options

Edge profiles	Square edge
Thickness	40, 60, 80, 100, 120, 140, 160, 180, 200 mm
Length	1000 mm
Width	500 mm
Delivery in pairs	



## ■ best wood WALL 180

WALL 180 is a high-pressure resistant wood fiber insulation board that can be plastered. It can be applied on timber frame constructions in external walls.

### Technical data

Denomination of insulation board	WF-EN 13171-T4-CS(10\Y)150-TR30-WS1,0-AF100-MU3
Standard	EN13171
ETA/type approval	ETA-16/0997; ETA-15/0731; aBG Z-33.84-1674; aBG Z-33.84-1675
Density	180 [kg/m³]
Nominal value of thermal conductivity $\lambda_D$	0.043 [W/mK]
Rated value of thermal conductivity $\lambda_B$	0.045 [W/mK]
Compressive stress at 10 % compression	$\geq 150$ [kPa]
Tensile strength perpendic. to the plane of the board	$\geq 30$ [kPa]
Water vapor diffusion resistance $\mu$	3
Linear flow resistance	$> 100$ [kPa·s/m²]
E-module pressure E	$\geq 2.50$ [N/mm²]
Reaction to fire according to DIN EN 13501-1	E or B-s1, d0 with best wood render system
Construction material class acc. to DIN 4102-1	B2
Materials	Wood fibers, PMDI gluing, paraffin
Specific heat capacity	2100 [J/kgK]
Fields of application according to DIN 4108-10	DEO-ds, WAB-ds, WAP-zh, WZ, WH, WI-zg, WTR

### Delivery options

Edge profiles	Tongue and groove
Thickness	40, 60, 80, 100, 120, 140, 160 mm
Length	1500, 2000, 2500 mm
Width	580 mm

## ■ best wood WALL 180 REVEAL BOARD

best wood WALL 180 reveal board for paneling the window reveal.

**Technical data** see WALL 180.

### Delivery options

Edge profiles	Square edge
Thickness	20, 40 mm
Length	1500, 2000, 2500 mm
Width	600 mm
Delivery in pairs	



■ ■ Accessories for wood fiber insulation boards

■ ■ Broad back staples



Broad back staples for the fastening of best wood WALL 140/180 to continuous and load-bearing solid timber substrates and for a use on timber frame constructions.

Length	75-200 mm
Effective penetration depth in solid timber substrates	≥ 30/36 mm
Material	stainless steel

■ ■ best wood Ejotherm STR H screw-in anchor (for timber constructions)



Screw-in anchor for a flush-mounted fastening on solid wooden substrates and timber frame constructions.

Screw-in plate with polystyrene cap	Ø 60 mm
Effective screw-in depth	≥ 35 mm
Available lengths Ø 6 mm	80, 100, 120, 140, 160.180, 200, 220, 240, 260, 280, 300 mm

■ ■ best wood Ejotherm STR U 2G screw-in anchor for insulation boards for concrete and masonry



Pre-assembled universal screw-in anchor for surface fixed installation in concrete and masonry. UV exposure from sunlight on unprotected anchor ≤ 6 weeks.

Screw-in plate with polystyrene cap	Ø 60 mm
Effective penetration depth in dependency on service class, see [ pg. 25 ]	≥ 25 mm or ≥ 65 mm
Available lengths Ø 8 mm	115, 135,155, 175, 195, 215, 325, 255, 275, 295 mm

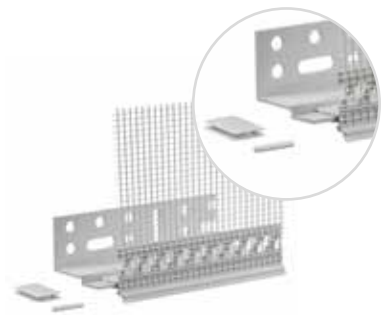
■ ■ best wood FDM WALL



Assembly adhesive to fasten reveal boards and seal joints in the wall insulation. The assembly adhesive can be plastered over.

For joint widths from	2-5 mm
Cartridge 310 ml	470 g content

■ ■ best wood plastic base profile



Plastic base rail system with base section and clip-on mesh rail.

Length	2.00 rmt/rail
Delivery form (width)	60, 80, 100, 120, 140, 160 mm
Packing unit	25 connectors, butt joint connector, 2 corner connecting profiles for outer corners, 1 corner connecting profile for inner corners

## ■ best wood base profile extension

Extension for the base profile, for an additional 40 mm of insulation material thickness. Base profile 160 mm + 40 mm base profile extension = 200 mm width.



Length	2.00 rmt/rail
--------	---------------

## ■ best wood base connecting profile for outer corners

Corner connecting profile for perfectly fitting outer corners of base profiles on plastic as well as alu profiles.



PU	10 pieces
----	-----------

## ■ best wood base connecting profile for inner corners

Corner connecting profile for perfectly fitting inner corners of base profiles on plastic as well as alu profiles.



PU	10 pieces
----	-----------

## ■ best wood aluminum base profile

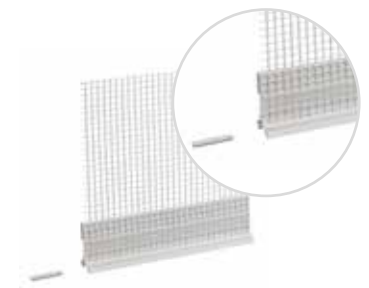
Base rail system from aluminum with integrated connector.  
(tissue strip not included).



Length	2.50 rmt/rail
Delivery form (width)	40, 60, 80, 100, 120, 140, 160, 180, 200

## ■ best wood tissue strip for aluminum base profile

Attachable plastic profile with tissue part for aluminum base profile, including 25 connectors per bundle (connecting profile for inner and outer corners not included).



Length	2.50 rmt/rail
--------	---------------

## ■ best wood illmod 600 UV-resistant joint insulation tape

Pre-compressed expanding foam insulation tape to seal open joints and connections in facades against driving rain whilst permitting vapor diffusion. UV-resistant and watertight up to 600 Pa. Building material group BG1 according to DIN 18 542. Building material class B1 acc. to DIN 4102-1.



Type 15/3-7	Joint width 3-7 mm	8.00 rmt/roll	20 rolls/box
Type 15/5-10	Joint width 5-10 mm	5.60 rmt/roll	20 rolls/box
Type 20/10-18	Joint width 10-18 mm	4.50 rmt/roll	10 rolls/box



## ■ ■ Render system

### ■ ■ best wood adhesive and reinforcing mortar (UP)

best wood adhesive and reinforcing mortar with organic lightweight aggregates on a white cement base is a water vapor-permeable, water-repellent and fiber-reinforced adhesive and filling mortar which is easy to use and highly durable. It has high adhesive strength and excellent elasticity and as a filler it enhances the pressure resistance of the system as a whole. best wood Schneider adhesive and reinforcing mortar (UP) is highly suitable for machine processing.

Consumption: depending on processing, substrate and consistence	bonding approx. 3.0–3.5 kg/m <sup>2</sup> reinforcing approx. 5.0–7.0 kg/m <sup>2</sup>
s <sub>d</sub> value	≈ 0.07 m
Mixing ratio	approx. 9.5 liters of water/bag
Suitable for machine processing	yes
Processing temperature	min. +5 °C
Storage	dry, on pallets
Storage time	do not exceed 12 months
PU	film bag, 25 kg

### ■ ■ best wood mineral plaster (MOP)

best wood mineral plaster is a breathable, water-repellent and moisture regulating final render with a brilliant surface texture. Thanks to the extremely high water retentivity it is guaranteed that it can be left open for a long time. Furthermore, it is very easy to process.



Consumption, scraped surface plaster texture	2 mm 2.5 kg/m <sup>2</sup>   3 mm 3.5 kg/m <sup>2</sup>
s <sub>d</sub> value	≈ 0.11 m
Lightness coefficient	> 20 %
Mixing ratio	approx. 10.0–11.0 liters of water/bag
Suitable for machine processing	yes
Processing temperature	min. +5° C
Storage	dry, on pallets
Storage time	do not exceed 6 months
PU	paper bag, 25 kg

## ■ best wood silicone resin plaster (SOP)

best wood silicone resin plaster is weatherproof and watertight against driving rain and may be used for decorative finishing on exteriors. It is easy to process, highly adhesive and shockproof, watertight against driving rain, water-repellent, low in tension, vapor-permeable and resistant to alkalis. The silicone-resin final render is only available with ETICS approval for installation of WALL 140 boards on mineral substrates.



Consumption, scraped surface plaster texture	2 mm 3.0 kg/m <sup>2</sup>   3 mm 4.0 kg/m <sup>2</sup>
s <sub>d</sub> value	≈ 0.16 m
Lightness coefficient	> 20 %
Processing temperature	min. +5 °C
Storage	dry, on pallets
Storage time	do not exceed 6 months
PU	plastic bucket 25 kg

## ■ best wood silicone resin paint

best wood silicone resin paint is a water-repellent, full-bodied, extremely water vapor-permeable and dirt-repellent, fungicide adjusted, facade paint. It retains its color well, has a very high covering capacity and is easy to apply without lap marks. Maximum water repellence prevents marks even in heavy rain. The best wood silicone resin paint is also fungicide/algicide adjusted in the factory.



Bonding agent base	silicone-resin emulsion
Pigment base	titanium dioxide
Application	exterior
Surface	matt, smooth and tactile (similar to mineral paint)
Consumption per coat	150–200 ml/m <sup>2</sup>
s <sub>d</sub> value	≈ 0.21 m
Lightness coefficient	> 20 %
Mixing ratio	with max. 10% water
Processing	by brush, roller, airless spraying
Processing temperature	min. +5 °C
Storage	cool, but in a frost-free place
Storage time	do not exceed 6 months
PU	plastic bucket 12.5 l



## ■ ■ Accessories for render system

### ■ ■ best wood fiber reinforcement fabric

System-glass fiber fabric, alkali resistant and with a high tensile strength.

Consumption	1.00 rmt/m <sup>2</sup>
Mesh width	4 x 4 mm
Width	1100 mm



### ■ ■ best wood reinforcing arrow

Corner bead for diagonal reinforcement on building openings.

Mesh width	4 x 4 mm
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### ■ ■ best wood reveal angle

For diagonal reinforcement at openings in buildings with additional rupture prevention in the corner of the window. Available for a reveal depth of up to 10 cm or for a reveal depth of up to 20 cm.

Mesh width	4 x 4 mm
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### ■ ■ best wood corner bead with fiber mesh

Plastic profile with integrated fiber mesh for corners and edges.

Length	2.50 rmt/rail
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### ■ ■ best wood architrave bead with telescope function

With a sealing lip for system connections on doors/windows, etc. High-quality architrave bead that is able to absorb horizontal or vertical movements of the facade. Including a plastic bar with adhesive strips for application of the cover membrane.

Length	1.40/ 2.40 rmt/rail
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### ■ ■ best wood spiral anchor

Fastening solution for light attachments to ETICS facades;

PU	10 pieces
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## ■ ■ best wood render stop bead

Profiles to form render ends with 6 mm edge.

Length	2.00 rmt/rail
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## ■ ■ best wood ATTIKA render stop bead

ATTIKA stop bead for ETICS with one-sided tissue part, drip edge and render removal edge including connector for a proper render stop and targeted water guidance beneath the parapet covering.

Length	2.00 rmt/rail
--------	---------------

## ■ ■ best wood window sill RENDER STOP BEAD

WINDOW SILL stop bead for ETICS with one-sided tissue part, drip edge and render removal edge including connector for proper render stop and retrofitting of a second sealing layer with sealing film.

Length	2.00 rmt/rail
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## ■ ■ best wood drip edge profile

Plastic profile to form horizontal render ends stops.

Length	2.00 rmt/rail
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## ■ ■ best wood sheet metal connection profile

Clip-on profile to form render connections to sheet metal parts.

Length	2.00 rmt/rail
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## ■ ■ best wood expansion joint profile for corners

Plastic profile to form movement joints on wall surfaces (inner corners).

Length	2.00 rmt/rail
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## ■ ■ best wood expansion joint profile for continuous surfaces

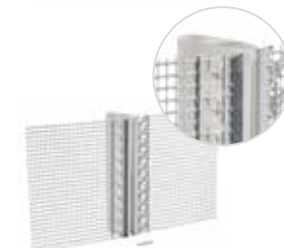
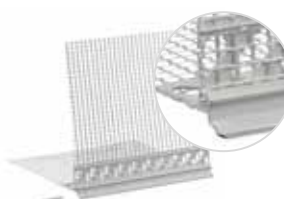
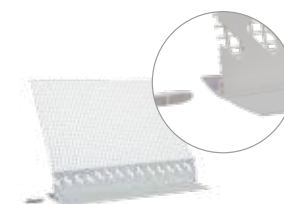
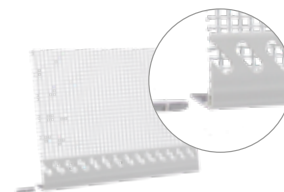
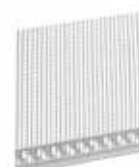
Plastic profile to form movement joints on continuous wall surfaces.

Length	2.00 rmt/rail
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## ■ ■ best wood connector for render profiles

Secure connection between the profile ends. No slipping of the profile at the joints. This allows for a correctly aligned plug up.

PU	25 pieces
----	-----------



## ■ ■ Transportation and storage of best wood WALL 140 / 180 boards and best wood render system

For technical reasons and reasons relating to building regulations, as well as warranty considerations, it is important to ensure that only best wood system components or approved materials are used.

The system components should be checked in an incoming goods inspection on delivery arrival and delivery notes and packing specifications should be kept in a safe place for future reference.

Please ensure that there is sufficient weatherproof storage space at the place of delivery. The material must be stored in a dry place and be protected against UV rays and mechanical damage.

WALL 140/180 products are delivered stacked flat on pallets. A forklift truck or crane with suitable lifting tools must be available on site at the time of delivery to unload the materials pallet by pallet. The materials should be transported further in the same way.

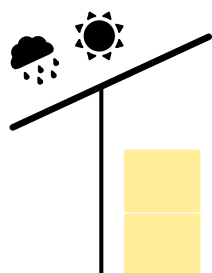
A maximum of two pallets of WALL 140/180 are allowed to be stacked on top of each other. Please make sure that there is a sufficient number of pieces of storage wood in order to prevent excessive pressure, as such pressure could cause dents in the WALL 140 / 180 boards at the top or bottom.

Pallets with FLEX 50 must not be stacked on top of each other.

Paste-like plastering components need to be protected from frost and direct sunlight both during transportation and while in storage. In addition the shelf-life given on the containers has to be observed.

Paper packs of plaster must not be stored at the building site without supports underneath and foil covering on top. The shelf-life of 6 months must not be exceeded.

Plastic packs of plaster do not need a foil support underneath. The shelf-life of 12 months must not be exceeded.



## ■ ■ General information and instructions for the installation of best wood SCHNEIDER wood fiber insulation boards

best wood WALL 140/180 wood fiber insulation boards must always be stored and installed in dry locations. Once installed the boards have to be protected from direct exposure to moisture.

For the bottom edge connection of the WALL 140/180 board, use a base rail. Ensure that a splash water zone of  $\geq 30$  cm above final ground level is provided in the area of the base unless other additional measures are taken. WALL 140/180 boards are not designed to be used in the ground. Regarding the base area, please observe the standard details [pg. 19].



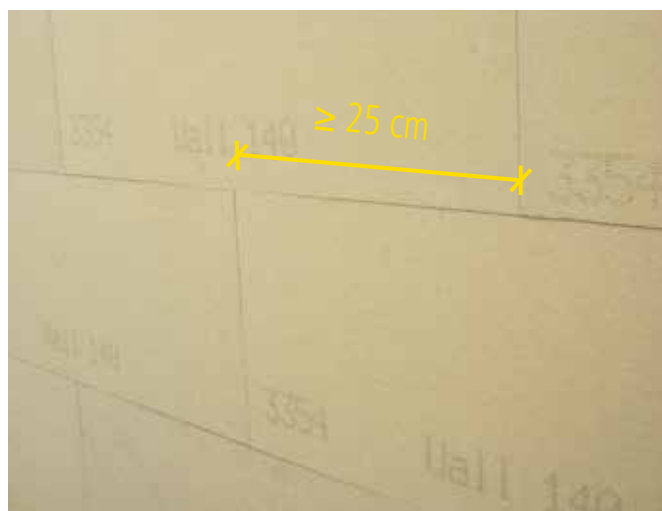
Splash water zone of  $\geq 30$  cm without any additional measures.



All standard cutting equipment for cutting wood, such as bench-type circular saws and hand-held circular saws, can be used to cut WALL 140/180 boards to size. The dust which is generated when cutting WALL 140/180 boards, should be extracted by means of a vacuum extractor.

Make sure that the groove of the board always faces downwards when installing Wall 140/180. This ensures that rainwater is able to run off effectively during construction and will not remain in the recess. WALL 140/180 boards can be used on both sides.

Avoid board edges at the corners of window openings, otherwise there is a risk of notch cracks in this area. Install the boards on a staggered basis with an vertical offset of at least 25 cm to each other (avoid cross joints). The edges of the board must be precisely fitted together at all joint areas and should be preferably pressed tightly together.



Offset of at least 25 cm.

Joints of up to 2 mm at the board edges can be plastered over. Joints of 2–5 mm are to be sealed with best wood FDM WALL. Joints bigger than 5 mm must be closed off with strips of best wood WALL 140/180 wood fiber insulation boards. For outer corners and window edges the WALL 140/180 boards must have a square edge. Any tongue and groove sections must be cut back before the installation of the boards.

All connections with adjoining elements of the building must be tightly sealed against driving rain and wind by means of render stop connection profiles and joint insulation tape.

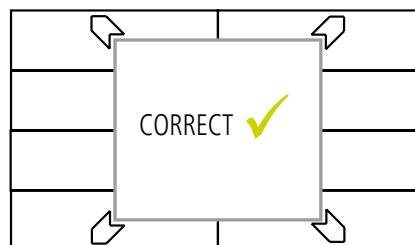
A second sealing layer in the form of a watertight and heat-resistant foil should always be installed beneath window sills. The end pieces of the window sills must be capable to absorb movements in the rendered facade and the window sill. The installation of window sill end pieces with slide bearings is recommended. When installing the window sill, joint insulation tape must be applied to all the connection joints between the sill and the WALL 140/180 boards.

For an installation over vertically or horizontally changing substrates, movement/expansion joints must be used.

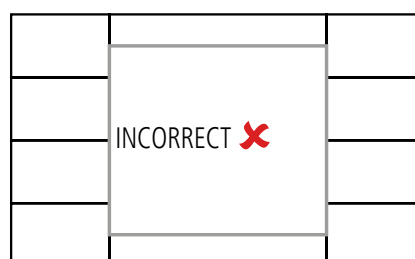
The render system must be installed not later than 8 weeks after the WALL 140/180 boards are installed. If this is not possible, the wall has to be covered with a tarpaulin. Make sure air can circulate behind the tarpaulin. Horizontal board edges such as at breast walls or parapets must also be protected from direct weathering with a suitable covering. At the breast wall this can be done by creating the second sealing layer, for example. The WALL 140/180 must be tested for moisture and surface stability before plastering. The board moisture content must not exceed 13% of the weight (if the setting on the electronic moisture meter is for spruce/pine, the maximum permitted value is 19.5%). Uneven surfaces at board level must be levelled out by grinding, e.g. with a K40 sanding board.

Countersink broad back staples 1 mm into the boards. If screw-in insulation board anchors or fasteners are used, the anchor plate must be flush-mounted to the surface of the board. An air injected insulation must be applied before plastering.

Installation elements and feedthroughs (e.g. for solar cables ...), for which temperatures > 80° have to be expected, must not be installed without further fire protection measures into the insulation material.



Avoid joints between boards at the corners of openings!



## ■ ■ Installation of WALL 180 in timber frame constructions

### ■ ■ Checking the substrate

Examine the substrate before the installation of WALL 180 boards. The timber frame construction must be dry (wood moisture content below 18%), clean and level (no differences in height).

### ■ ■ Fastening the base rail

The base section of the base rail must be aligned horizontally and fastened to the wooden sill, leaving a space of approx. 30 cm and must be connected with butt joint connectors at all longitudinal ends.

Connect the base sections at the outer and inner corners with miter-cut joints. For the clip-on mesh rails, pre-assembled corner connecting profiles are available. Alternatively, they can also be miter-cut.

All butt joints on the base profiles must be sealed with durable, weatherproof and temperature-resistant adhesive tape, e.g. TESCON VANA. The best wood WALL 180 boards must be installed at a minimum of 30 cm above final ground level unless other additional measures are taken.



Wood moisture content  $\leq 18\%$ .



Base rail must be aligned and fastened horizontally.



Installation of butt joint connectors at all longitudinal ends.



Bonding of the joint by means of a fabric tape.



Splash water zone of  $\geq 30$  cm without any additional measures.

## ■ Installing the first row of WALL 180 boards in the base area

The groove at the bottom of the boards in the first row of WALL 180 boards has to be cut off and the boards then have to be fitted fully into the base rail. It is recommended to use a marking chord to check that the top of the first row is horizontally aligned in the right way.



Cut off the groove side.



Horizontal alignment of the first row of panels by means of a marking chord.



## ■ Installation of the WALL 180

Fasten the WALL 180 boards directly to timber studs, which must have a width of at least 60 mm, using broad back staples or screw-in anchors for insulation boards. The number of fasteners required must be distributed accordingly over the timber stud – see installation example for WALL 180 boards for timber-framed constructions. WALL 180 board must be fastened to at least two timber studs.

The edges of the boards must be precisely fitted to all joint areas and should possibly be pressed tightly together. In the area of storey joints it is essential that open joints are avoided, because they might cause the formation of creases. Alternatively, fitting pieces which are fastened to the sill and head rail may be used – see detail of the ceiling joint [pg. 58].

The fasteners need to be anchored in a sufficient depth to the timber studs. The effective minimum penetration depth of the broad back staples is  $\geq 30$  mm and for the screw-in anchors for insulation boards it is  $\geq 35$  mm.

The boards have to be installed on a staggered basis with a minimum offset of 25 cm vertically to each other. The boards do not need to have indented joints at the outer corners, but they must be precisely fitted together. Joints must be avoided.



Fastening by means of broad back staples.

### ■ Maximum distance between studs for an application of WALL 180 in timber frame constructions

Board thickness [mm]	Max. distance between studs [mm]
40	625
60–160	833

### ■ Maximum distance between beams for an application of WALL 180 under ceilings

Board thickness [mm]	Max. distance between beams [mm]
40-160	416

## ■ ■ Installation of WALL 140 on continuous and load-bearing solid timber substrates

### ■ ■ Checking the substrate

Examine the substrate before the installation of WALL 140 boards. The solid timber substrate must be dry (wood moisture content below 18%), clean and level (no differences in height).



Wood moisture content  $\leq 18\%$ .

### ■ ■ Fastening the base rail

The base section of the base rail must be aligned horizontally and fastened to the solid timber substrate, leaving a space of approx. 30 cm and must be connected with butt joint connectors at all longitudinal ends.

Connect the base sections at the outer and inner corners with miter-cut joints. For the clip-on mesh rails, pre-assembled corner connecting profiles are available. Alternatively, they can also be miter-cut.

All butt joints on the base profiles must be sealed with durable, weatherproof and temperature-resistant adhesive tape, e.g. TESCON VANA. The best wood WALL 140 boards must be installed at a minimum of 30 cm above final ground level unless other additional measures are taken.

### ■ ■ Installing the first row of WALL 140 boards in the base area

The groove at the bottom of the boards in the first row of WALL 140 boards has to be cut off and the boards then have to be fitted fully into the base rail. It is recommended to use a marking chord to check that the top of the first row is horizontally aligned in the right way.

### ■ ■ Installation of the WALL 140

Fasten the WALL 140 boards directly to the load-bearing solid timber substrate using broad back staples or screw-in anchors for insulation boards. The number of fasteners required must be determined in accordance with DIN 1055-4 and they have to be distributed accordingly over the WALL 140 – see installation example for WALL 140 boards on load-bearing solid timber substrates [pg. 27/28].

Take care to ensure that the WALL 140 boards do not move apart when using screw-in anchors for insulation boards for fastening them at the butt joints.

The edges of the boards must be precisely fitted to all joint areas and should possibly be pressed tightly together.

The fasteners need to be anchored in a sufficient depth in the solid timber substrate. The minimum penetration depth of the broad back staples is  $\geq 30$  mm and for the screw-in anchors for insulation boards it is  $\geq 35$  mm. The boards have to be installed on a staggered basis with a minimum offset of 25 cm vertically to each other. The boards do not need to have indented joints at the outer corners, but they must be precisely fitted together. Joints must be avoided.

Alternatively to the WALL 140 board with a tongue and- groove edge, a WALL 140 board with a square edge can also be fastened to the solid timber substrate.



## ■ ■ Installation of WALL 140 on solid mineral substrates

### ■ ■ Checking the substrate

Examine the substrate before the installation of WALL 140 boards. The substrate must be dry, clean and level. Remove all loose plaster and cover over the flaws with suitable material. Areas of unevenness in the substrate of up to 10 mm can be effectively smoothed out with best wood adhesive and reinforcing mortar. Larger areas of unevenness need to be smoothed out with leveling plaster or similar.



1 Remove all loose plaster.



2 Clean the substrate.



3 Closure of flaws.



4 Closure of flaws.

The wall temperature and ambient temperature must be a minimum of +5°. For renovation works on older buildings, the structural conditions of the building need to be investigated with particular regard to structural and physical considerations in relation to the planned ETICS. The masonry must be free of rising damp.

## ■ Fastening the base rail

The base section of the base rail must be aligned horizontally and fastened to the solid mineral substrate, leaving a space of approx. 30 cm and must be connected with butt joint connectors at all longitudinal ends. Every unevenness in the substrate has to be levelled out by means of a distance adjustment (e.g. plastic plate).

Connect the base sections at the outer and inner corners with miter-cut joints. For the clip-on mesh rails, pre-assembled corner connecting profiles are available. Alternatively, they can also be miter-cut.

All butt joints on the base profiles must be sealed with durable, weatherproof and temperature-resistant adhesive tape, e.g. TESCON VANA. The best wood WALL 140 boards must be installed at a minimum of 30 cm above final ground level unless other additional measures are taken.



Splash water zone of  $\geq 30$  cm without any additional measures.



Base rail must be aligned and fastened horizontally.



Distance adjustment at the base rail.



Installation of butt joint connectors at all longitudinal ends.



Bonding of the joint by means of a fabric tape.

## ■ Bonding the first row of WALL 140 boards in the base area

The WALL 140 boards (only boards with square edge) are glued by means of the spot-and-bead method. Using this method, a bead of adhesive mortar of about 5 cm in width is applied all around the edge of the WALL 140 board. 2-3 additional spots of adhesive mortar are applied in the middle of the board. At least 40% of the board's surface have to be glued. This method of bonding prevents ventilation at the back of the insulation material and the convective entry of moisture to the ETICS.



Application by means of the spot-and-bead method.

## ■ Installation of the WALL 140

For the installation of the first row of boards, the WALL 140 board has to be fitted fully into the base rail. Particular care needs to be taken to ensure that no adhesive gets between the vertical edge of the base rail and the Wall 140 board.

It is recommended to use a marking chord to check that the top of the first row is horizontally aligned in the right way.



Horizontal alignment of WALL 140 boards by means of a marking chord.

The WALL 140 board is applied and fitted to the substrate by means of a light sliding movement. To ensure a firm contact with the wall, a rubber hammer can be used to tap the board against the wall. The boards have to be installed on a staggered basis with a minimum offset of 25 cm vertically to each other.



WALL 140 board has to be fitted fully into the base rail.



Application of WALL 140 by means of a light sliding movement.

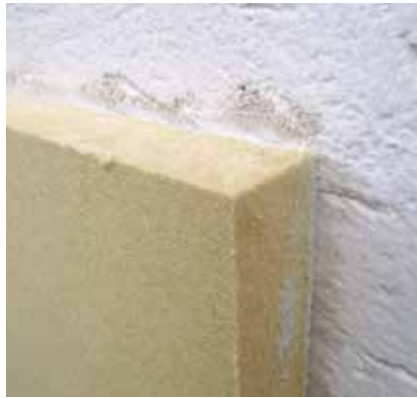


Offset of at least 25 cm.

Any adhesive emerging from the sides must be removed immediately after the installation of the boards. Make sure that no adhesive gets between the butt joints of the boards. Also make sure that the boards are installed with a precise fit. The boards must have indented joints at the outer corners.



Remove any emerging adhesive.



### ■ Fixing of the WALL 140 by means of fastening anchors

Additionally to the fixing by means of an adhesive, the WALL 140 boards also have to be fastened by means of screw-in anchors Ejotharm STR U 2G for insulation boards. The adhesive has to be completely dry. The number of fasteners required must be determined in accordance with DIN 1055-4 and they have to be distributed accordingly over the WALL 140 – see installation example for WALL 140 boards on solid mineral substrates. The screw-in anchors for insulation boards have to be fastened in the surface area of the boards only, not in the joints between the boards.

The Ejotharm STR U 2G anchors need to be anchored in a sufficient depth in the substrate. The minimum penetration depth of the insulation board anchors in service category A–D is  $\geq 25$  mm and for insulation board anchors in service category E it is  $\geq 65$  mm.

After the application of the insulation board anchors, the closing plug has to be flush-mounted with the anchor plate into the screw opening.



Pre-drilling by means of an impact drill.



Application of the screw-in anchor.



The anchor has to be flush-mounted to board.



Application of the closing plug.



## ■ ■ Minimum fastener length

Installation substrate	Timber frame constructions or solid timber substrates	Timber frame constructions or solid timber substrates	Mineral substrates in new buildings <sup>1)</sup>		Mineral substrates in existing buildings <sup>2)</sup>	
Insulation material thickness WALL 140/180 in [mm]	Haubold or equivalent broad back staples, min. length [mm]	Screw-in anchor for insulation boards Ejotherm STR H, min. length in [mm]	Screw-in anchor for insulation boards STR U 2 G, min. length in [mm]		Screw-in anchor for insulation boards STR U 2 G, min. length in [mm]	
40	75	80	–	–	–	–
60	90	100	115	135	115	155
80	110	120	115	155	135	175
100	130	140	135	175	155	195
120	150	160	155	195	175	215
140	180	180	175	215	195	235
160	200 <sup>3)</sup>	200	195	235	215	255
180	–	220	215	255	235	275
200	–	240	235	275	255	295
220	–	260	255	295	275	315
240	–	280	275	315	295	335
Service category			A–D	E	A–D	E

<sup>1)</sup> for a 10 mm layer of adhesive | <sup>2)</sup> for a 10 mm layer of adhesive and for 20 mm of existing plaster or leveling plaster | <sup>3)</sup> for the moment not in ETICS approval

### Service category

A: Standard concrete and concrete facing layers

B: Bricks, solid bricks, concrete solid bricks and lightweight concrete solid bricks

C: Vertically perforated bricks, perforated calcium-silicate bricks and lightweight concrete hollow blocks

D: Lightweight aggregate concrete with open structure

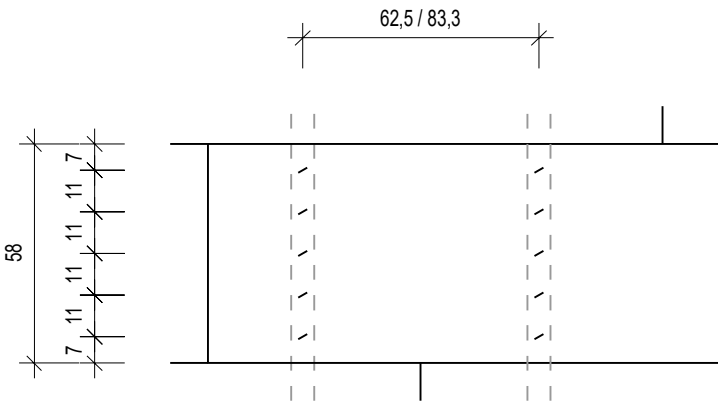
E: Porous concrete (e.g. Ytong)

The correct determination of the anchor length is essential to guarantee the highest possible fastening safety. The object specific conditions always have to be taken into consideration. The required anchor length depends on the effective anchoring depth + tolerance compensation + insulation material thickness. The tolerance compensation is based on the non-load-bearing layers (e.g. existing plaster, tile facings, etc.), the thickness of the adhesive mortar layer and the additional layer for smoothing out uneven areas on the wall.

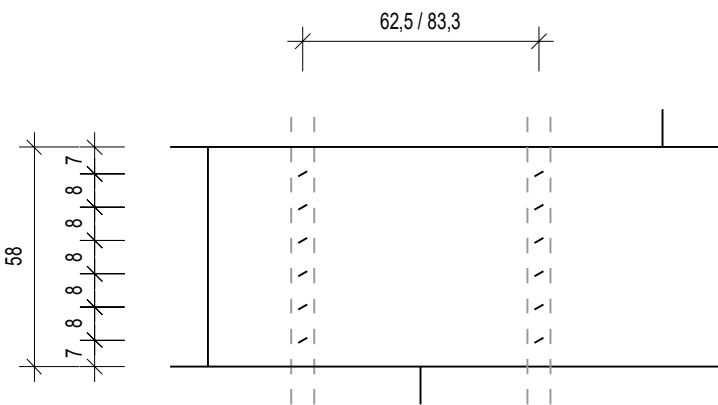


■ ■ Minimum quantity of fasteners, required for an installation of WALL 180 in timber frame constructions

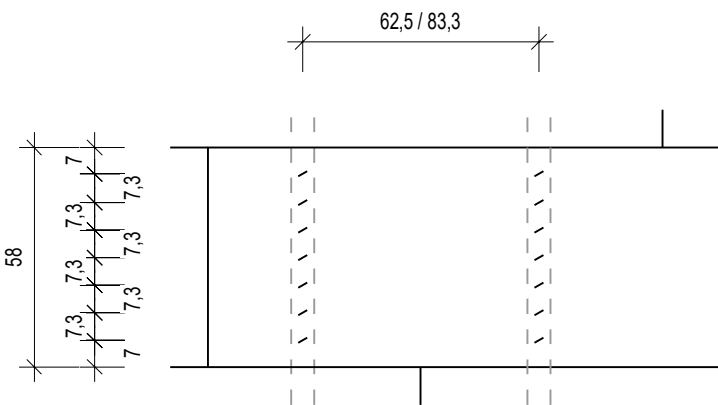
■ ■ Fastening by means of broad back staples for axis spacing of 62.5 / 83.3 cm



Axis spacing	62.5 cm	83.3 cm
Max. permissible wind load	1.22 kN/m <sup>2</sup>	0.91 kN/m <sup>2</sup>
Quantity/stud and board height	5	
Quantity/m <sup>2</sup>	13.8	10.3

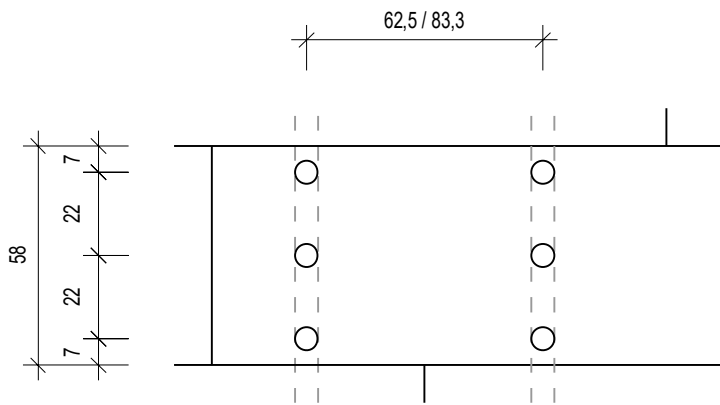


Axis spacing	62.5 cm	83.3 cm
Max. permissible wind load	1.47 kN/m <sup>2</sup>	1.09 kN/m <sup>2</sup>
Quantity/stud and board height	6	
Quantity/m <sup>2</sup>	16.6	12.4

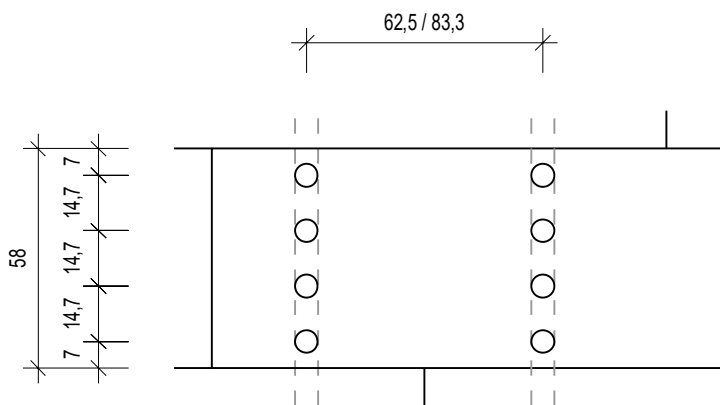


Axis spacing	62.5 cm	83.3 cm
Max. permissible wind load	1.60 kN/m <sup>2</sup>	1.36 kN/m <sup>2</sup>
Quantity/stud and board height	7	
Quantity/m <sup>2</sup>	19.3	14.5

■ Fastening by means of STR H screw-in anchor



Axis spacing	62.5 cm	83.3 cm
Max. permissible wind load	1.29 kN/m <sup>2</sup>	0.97 kN/m <sup>2</sup>
Quantity/stud and board height	3	
Quantity/m <sup>2</sup>	8.3	6.2



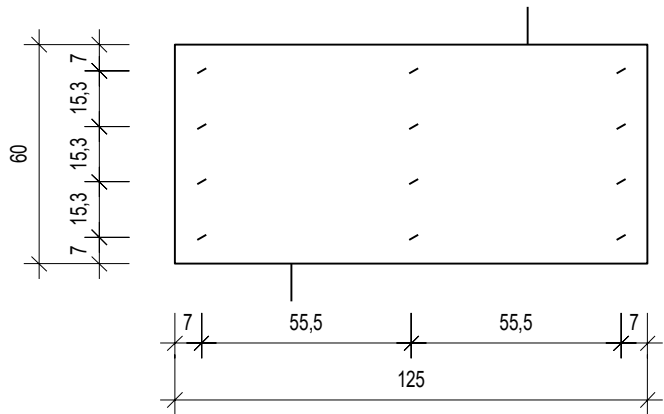
Axis spacing	62.5 cm	83.3 cm
Max. permissible wind load	1.60 kN/m <sup>2</sup>	1.36 kN/m <sup>2</sup>
Quantity/stud and board height	4	
Quantity/m <sup>2</sup>	11.0	8.3



■ ■ Minimum quantity of fasteners, required for an installation of WALL 140 on solid timber

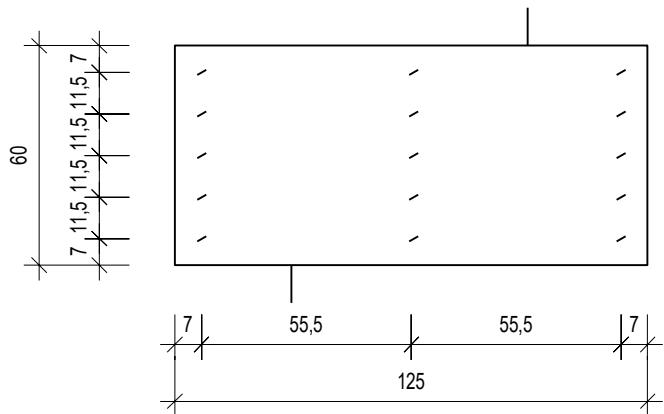
■ Fastening by means of broad back staples

Board length 1250 mm



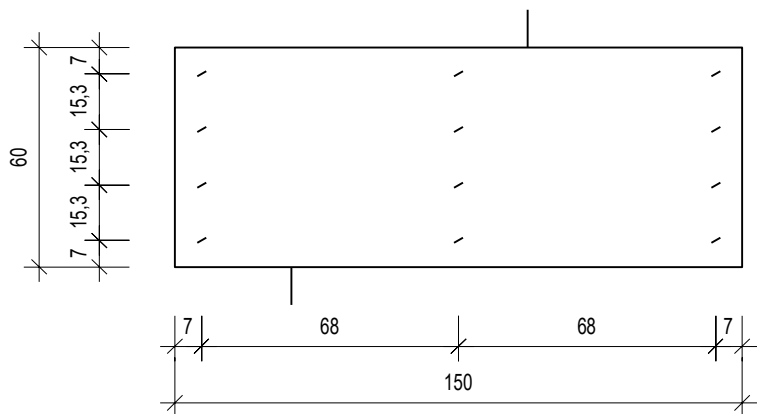
Max. permissible wind load	1.42 kN/m <sup>2</sup>
Quantity/board	12
Quantity/m <sup>2</sup>	16.0

Board length 1250 mm



Max. permissible wind load	1.60 kN/m <sup>2</sup>
Quantity/board	15
Quantity/m <sup>2</sup>	20.0

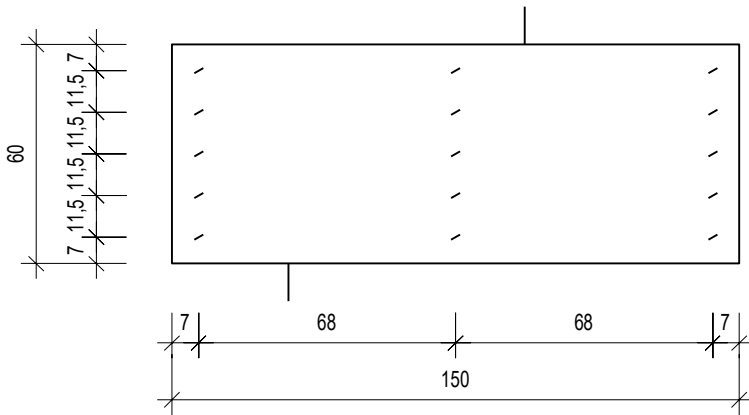
Board length 1500 mm



Max. permissible wind load	1.18 kN/m <sup>2</sup>
Quantity/board	12
Quantity/m <sup>2</sup>	13.3

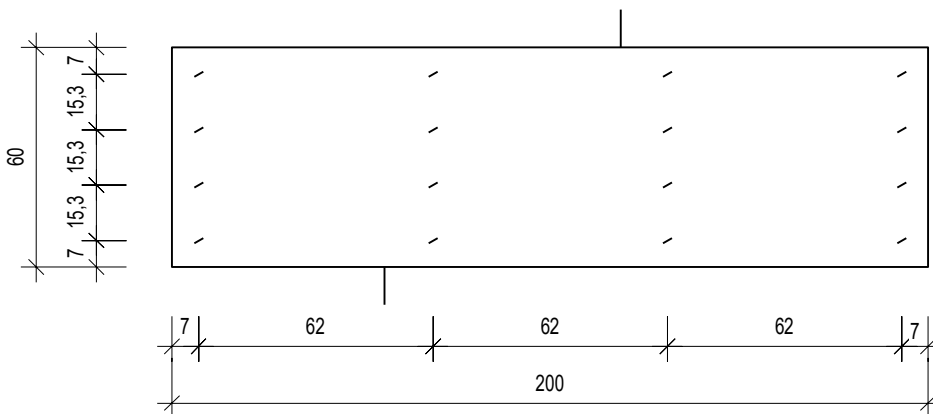
## ■ Fastening by means of broad back staples

Board length 1500 mm



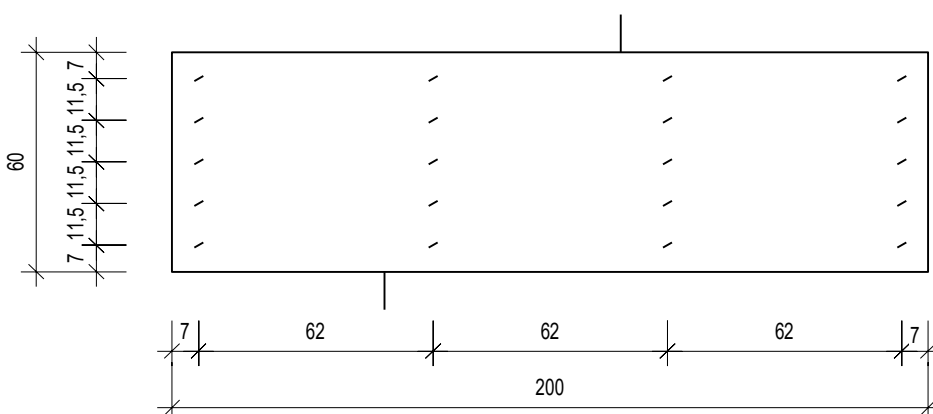
Max. permissible wind load	1.48 kN/m <sup>2</sup>
Quantity/board	15
Quantity/m <sup>2</sup>	16.7

Board length 2000 mm



Max. permissible wind load	1.18 kN/m <sup>2</sup>
Quantity/board	16
Quantity/m <sup>2</sup>	13.3

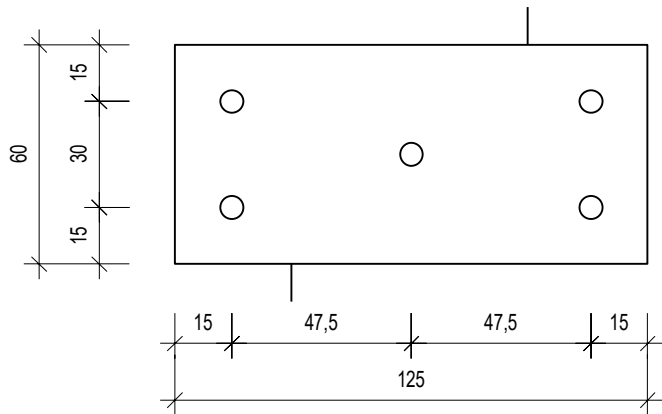
Board length 2000 mm



Max. permissible wind load	1.48 kN/m <sup>2</sup>
Quantity/board	20
Quantity/m <sup>2</sup>	16.7

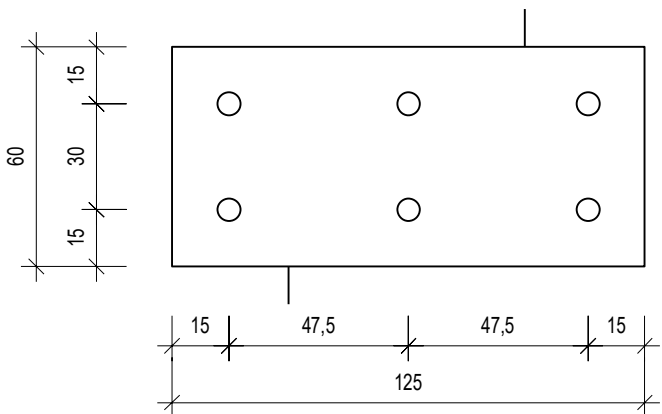
■ Fastening by means of STR H screw-in anchor

Board length 1250 mm



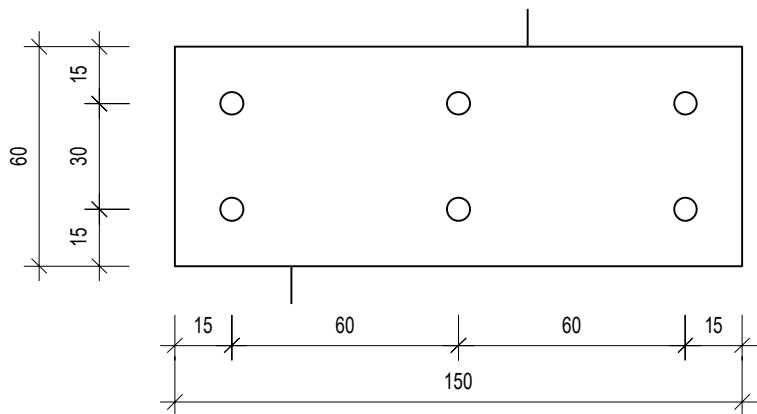
Max. permissible wind load	1.26 kN/m <sup>2</sup>
Quantity/board	5
Quantity/m <sup>2</sup>	6.7

Board length 1250 mm



Max. permissible wind load	1.51 kN/m <sup>2</sup>
Quantity/board	6
Quantity/m <sup>2</sup>	8.0

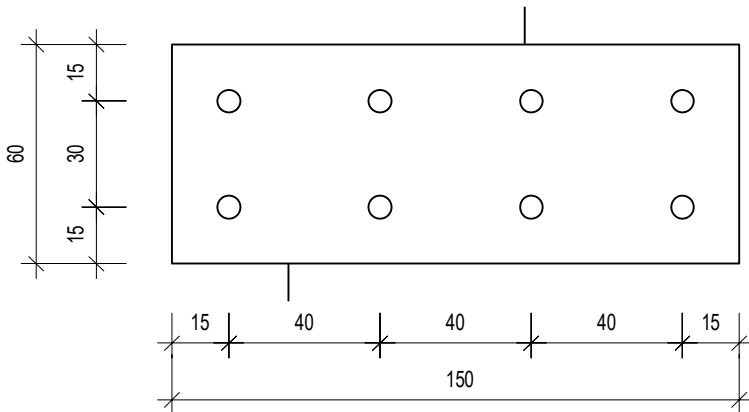
Board length 1500 mm



Max. permissible wind load	1.26 kN/m <sup>2</sup>
Quantity/board	6
Quantity/m <sup>2</sup>	6.7

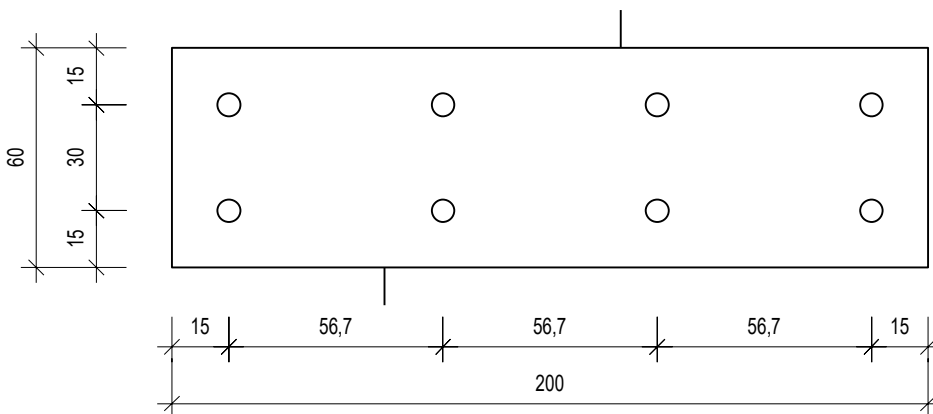
■ Fastening by means of STR H screw-in anchor

Board length 1500 mm



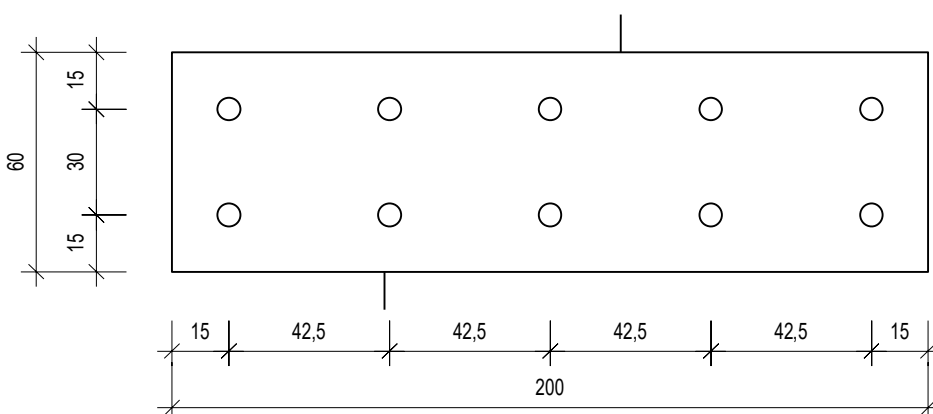
Max. permissible wind load	1.60 kN/m <sup>2</sup>
Quantity/board	8
Quantity/m <sup>2</sup>	8.9

Board length 2000 mm



Max. permissible wind load	1.26 kN/m <sup>2</sup>
Quantity/board	8
Quantity/m <sup>2</sup>	6.7

Board length 2000 mm



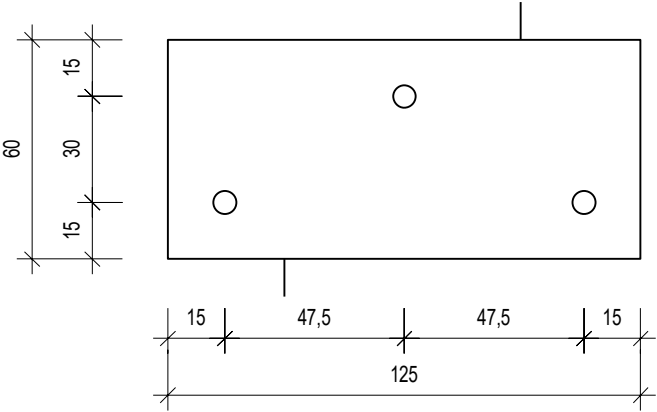
Max. permissible wind load	1.57 kN/m <sup>2</sup>
Quantity/board	10
Quantity/m <sup>2</sup>	8.3



■ ■ Minimum quantity of fasteners, required for an installation of WALL 140 on mineral substrates

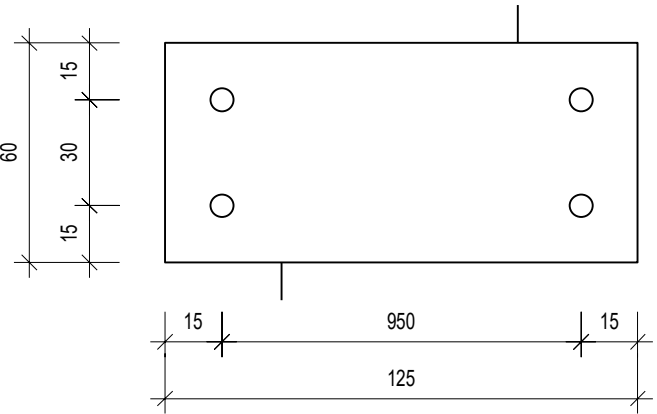
■ Fastening by means of STR U 2G screw-in anchor

Board length 1250 mm



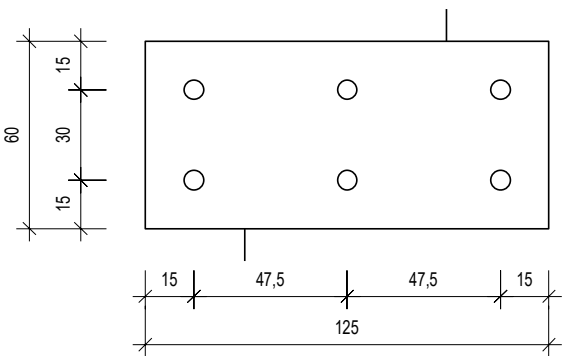
Max. permissible wind load	0.75 kN/m <sup>2</sup>
Quantity/board	3
Quantity/m <sup>2</sup>	4.0

Board length 1250 mm



Max. permissible wind load	1.01 kN/m <sup>2</sup>
Quantity/board	4
Quantity/m <sup>2</sup>	5.3

Board length 1250 mm



Max. permissible wind load	1.51 kN/m <sup>2</sup>
Quantity/board	6
Quantity/m <sup>2</sup>	8.0





## ■ ■ Window connection and window sill

### ■ ■ General information

In the window area, special attention must be paid to the correct connection of the reveal area and the window sill. This is very important with regard to the weather protection. The components of the complete system, consisting of facade, window, sun protection and window sill have to be optimally coordinated amongst each other. Therefore, a professional and detailed planning before the installation is essential. This is the only way to make sure, that inadequate or improvised "on site solutions" are avoided.

In the following, it is important to make sure that the window sill has a minimum overhang of 40 mm over the finished coating of plaster. Furthermore, it is necessary that the window sill slopes forward with a minimum gradient of 5°. Movements of the window sill (caused by thermal activity and effects of wind/suction) must not be transferred into the facade system, but they have to be absorbed by slide bearings in the end pieces of the window sill. The window sill systems must be suitable for ETICS accordingly.

The lateral sides of the window sill end pieces must be wide enough for the fitting of a joint insulation tape (minimum 25 mm). Hold-down devices for the window sill have to be installed depending on the range and length of the window sill. The recommendations of the manufacturer of the window sills have to be observed.

A second water-repellent sealing layer which removes water towards the outside must be installed for window sills which are exposed to driving rain, and is advisable for window sills which are not exposed to driving rain.

The window sill must not be walked on unless suitable additional support is provided. The connection of the WALL 140/180 boards to the window as well as all connection joints to the window sill or window sill end pieces, do always have to be made watertight against driving rain by means of suitable architrave beads and joint insulation tape.

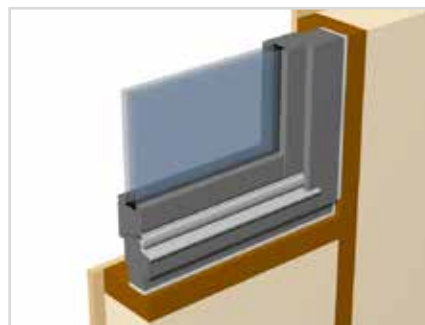
## ■ ■ Window connection and installation of the window sill

After the standardized installation of the window into the wall, the wood fiber insulation board for the window sill area has to be cut at an angle to match the gradient of the window sill (minimum 5°) before installation. When installed, the distance between the WALL 140/180 board and the window sill should be approximately 8 mm.

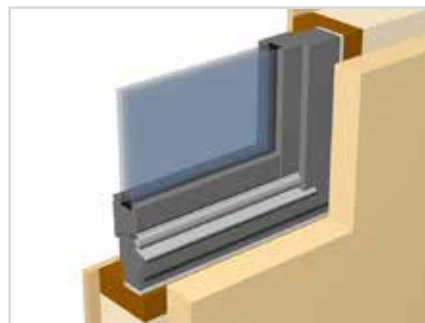
At the lateral window connection the WALL 140/180 board needs to be set back by the thickness of the reveal board which is to be installed later.

The advantage of using reveal boards is, that joint insulation tape can be fitted easily and precisely (flush with the front edge).

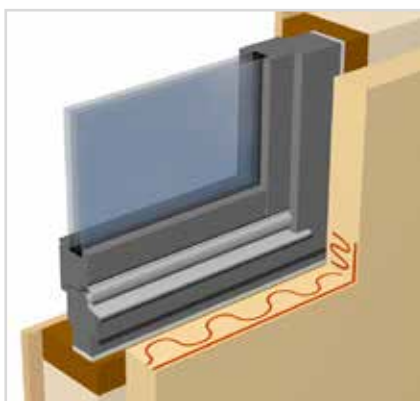
For an installation of roller shutter boxes or Venetian blinds, the special details for application have to be observed – see detailed drawings.



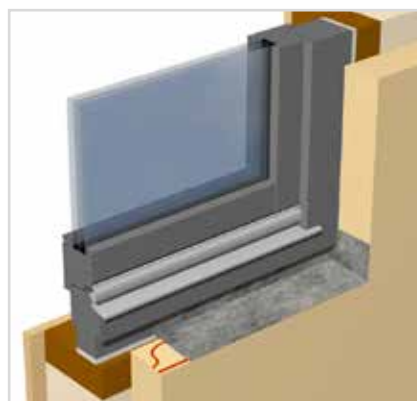
The outer edge of the window is installed flush with the timber frame construction.



In the parapet area, the insulation board is cut to the inclination of the window sill.



Application of FDM WALL for film adhesion on the window parapet.



Adhesion of the foil to the window and to the window parapet.

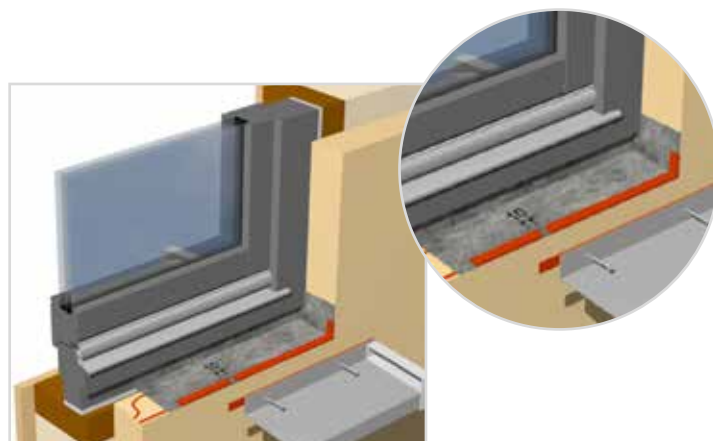
After the installation of WALL 140/180 the second sealing layer by means of watertight and heat-resistant foil has to be connected to the window frame in a trough shape with adhesive tape. A minimum overlapping of 6 cm (upwards) on the lateral reveals is required. If no self-adhesive foil is used, best wood FDM WALL is used for the gluing on the WALL140/180 boards.

Before the installation of the window sill, the joint insulation tape illmod 15/5-10 has to be applied on the front edge of the WALL 140/180 under the window sill and laterally up to the level of the window sill end piece. The joint insulation tape under the window sill should be suspended for approx. 10 mm in the middle of the window.

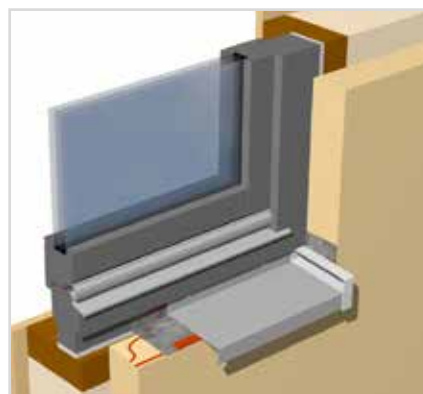
On the back of the window sill connection profile a joint insulation tape illmod 15/3-7 is applied. The tape seals the window frames and window sills against driving rain. It is important to make sure that the joint insulation tape is applied right at the very top of the vertical edge, otherwise a channel will be formed which will direct the water laterally to the window reveal.

Alternatively, a window sill system that is delivered already with sealing lip on the upstand of the window sills backside can be used. For this version no joint insulation tape between window frame and the upstand of the window sill is necessary.

For the fastening of the window sill, only suitable fasteners (e.g. non-corrosive screws) which are compatible with the system have to be used.



Application of the joint insulation tape beneath, laterally and to the rearward upstand of the window sill.



Fastening of the window sill by means of suitable fasteners that are compatible with the system.

Movements of the window sill caused by thermal activity need to be taken into consideration when fastening, e.g. elongated holes could be used. The window sill should be screwed to the window in such a way that the rear vertical edge of the window sill slots into the drip edge of the window frame.

On windows with aluminum facings in particular it is essential that the aluminum facing is backed, because water has to drain from it and the mitered joints onto a drip edge. Drainage openings on the window must not be blocked off by the installation of the window sill. It is not recommendable to install the window sill on the window frame with square edges. The side window frame grooves and the facing grooves should be sealed with suitable sealing compound on the bottom ends if they have not already been sealed by the window manufacturer by structural or prefabrication means. This work is the responsibility of the window fitter.

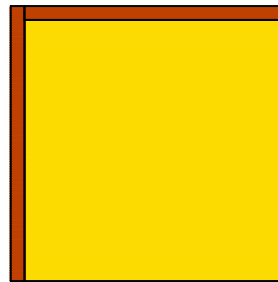
After the window sill has been installed, the side reveal boards can be installed. These should be cut to length with an angle-cut at the bottom to match the angle of the window sill. After the reveal board has been cut to length, apply joint insulation tape along the parts facing the window and window sill end profile.

Take particular care here to ensure that the joint insulation tape is expertly applied. The joint insulation tape must be fitted with square edges in the corners, with pressure, and must not be simply bent around the corners. As a general principle the joint installation must always be fitted with the application of pressure, not by pulling it, otherwise there is a risk of it re-setting to its original length later.

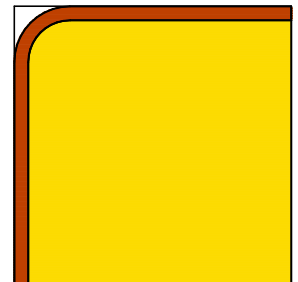


Laying direction of the joint insulation tape around the window sill and to the window.

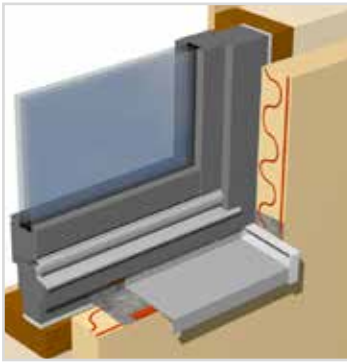
CORRECT ✓



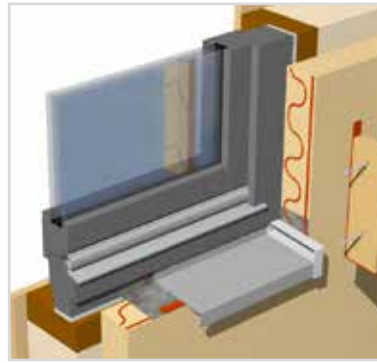
INCORRECT ✗



Application of the joint insulation tape around the edge.

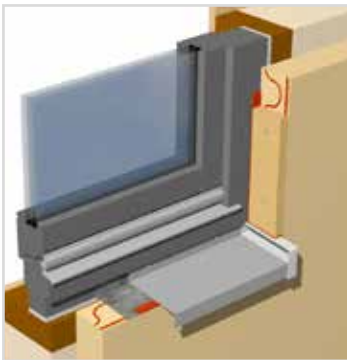


Application of FDM WALL to the window reveal.



Application of the reveal board with pre-mounted joint insulation tapes to the window reveal.

Once all the joint insulation tapes have been expertly applied to the reveal board, the reveal board should be bonded to the WALL 140/ 80 boards using best wood FDM WALL. Non-corrosive screws should then be used to provide the reveal board with additional fastening. These will prevent the reveal boards from moving in response to the swelling of the joint insulation tape.

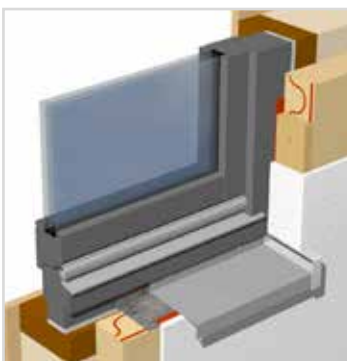


Installed reveal board.

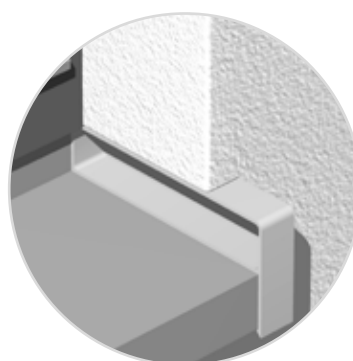


Offset of approx. 10 mm for render applications.

After the reveal board has been installed, the lateral side of the window sill end piece should still overhang approx. 10 mm to provide sufficient space for the render layer in the window reveal.



Plastered reveal board.



The inner edge of the window sill end piece is flushy aligned with the plastering layer.

After the plaster has been applied, the lateral side of the window sill end piece should be plastered over flush to the surface.

## ■ Important information

When installing the window sill, it is important to make sure that all joints and openings which are produced as a result of the construction are protected against water ingress. See, for example, the constructional joint between the bottom edge of the window frame and the top edge of the weather panel end piece.

INCORRECT ✗



Take particular care with mitered, welded synthetic windows. Here there is a risk of water ingress into the building structure through the miter-joint of the window frame.

This miter-joint should be sealed with suitable material or should be avoided at the outset by appropriate constructional measures.

INCORRECT ✗



Guide rails for solar protection elements and roller shutters must drain directly onto the window sill and must be positioned on the inside of the side vertical edges of the window sill end piece. The guide rails must finish approx. 8 mm before the top edge of the window sill.

CORRECT ✓



## ■ ■ Installation guidelines for the best wood render system

### ■ ■ General information

When the best wood WALL 140/180 wood fiber insulation boards have been installed, they can be left exposed to the weather for a period of up to 8 weeks thanks to their water repellent finishing. However, they do require permanent protection against UV exposure and moisture. If this cannot be guaranteed (small roof overhang, exposed location), we recommend that the facade should be protected with a diffusion-permeable underlay immediately after installation, or that the base coat of plaster be applied as fast as possible. Horizontal board edges such as at breast walls or parapets must also be protected from direct weathering with a suitable covering. At the breast wall this can be done by creating the second sealing layer, for example.

The ambient temperature and the temperature of the substrate must not be below +5°C at any time during the application and drying of the plastering and paint products. The air temperature must not exceed 30°. Frost should be avoided for at least four days. No other materials are allowed to be mixed in and appropriate measures should be taken to protect the fresh plaster from the influence of the weather (e.g. strong sunshine and heavy wind and rain). It is recommended to hang tarpaulins from the scaffolding. The substrates must be dry, absorbent and free of release agents, dust and loose particles.

Mineral types of plaster produce an alkaline reaction on contact with water and can therefore irritate the eyes and skin. The material must be kept away from children and contact with the eyes and skin must be avoided. Avoid generating dust. Suitable protective gloves, glasses and/or a face mask should always be used when working with the materials. If the materials do come into contact with eyes, the eyes of the affected person must be rinsed out thoroughly with water and a doctor should be consulted. It is prohibited to allow water-borne plasters to enter surface waters or the sewage system. Plaster which has fully hardened can be disposed of as building rubble.

### ■ ■ Checking the substrate

Immediately before the reinforcement layer is applied, the complete facade of best wood WALL 140/180 wood fiber insulation boards should be examined to check its suitability. The substrate must be flat, dry, stable and clean. The board moisture content must not exceed 13% of the weight (if the setting on the electronic moisture meter is for spruce/pine, the maximum permitted value is 19.5%).



Board moisture content  $\leq 19,5\%$  with a setting for spruce/pine.

It is essential that any differences in level at the butt joints between the boards are smoothed out by sanding, e.g. with a K40 sanding board. The sanding dust which is generated must be completely removed from the surfaces of the boards.



Gaps in the board joints of up to 2 mm can be plastered over, and gaps of 2-5 mm must be filled with best wood FDM WALL. Gaps bigger than 5 mm must be closed off with strips of best wood WALL 140/180.



Closing the installation joints by means of FDM WALL.



Closing the installation joints by means of strips from WALL 140/180.



Flush-mounting of screw-in anchors to the best wood WALL 140/180.



Broad back staples have to be countersunk approx. 1 mm into the best wood WALL 180.

Screw-in anchors for insulation boards must be fitted flush with the surface of the best wood WALL 140/180 wood fiber insulation boards. Broad back staples should be countersunk approx. 1 mm into the best wood WALL 140/180 wood fiber insulation boards.

## ■ Installation of additional reinforcement

Before the reinforcement for the entire surface is installed, corner beads with fiber mesh have to be embedded in the compound on all the outer corners.



Application of adhesive and reinforcing mortar (UP).



Application of corner bead with fiber mesh.



Embedding of the corner bead with fiber mesh.



Architrave beads with telescope function are embedded in filler in the vicinity of connections to windows and door frames.



**1**

Adhesion of the architrave bead with telescope function.



**2**

Architrave bead with telescope function sits flush to the inner edge of the window sill end piece.



**3**

Architrave bead mitered in the edge.



**4**

Application of adhesive and reinforcing mortar (UP) to the window reveal and the outer edge.



**5**

Embedding of the architrave bead with telescope function.



**6**

Application of corner bead with fiber mesh.

#### ■ ■ ATTENTION

The adhesion has to be checked before an application of the architrave bead with telescope function! Do install the beads only when an adequate adhesion is guaranteed. Do only use cleaning agents in coordination with the window manufacturer.



**7**

Horizontal and vertical alignment of the corner bead with fiber mesh.



**8**

At the same time, diagonal reinforcement arrows and reveal angles are embedded in filler at all facade openings in the surface.



Embedding of reinforcing arrow.



Embedding of reveal angle.

All special plaster profiles such as drip edge profiles, render stop beads, sheet metal connection profiles and expansion joint profiles for corners/surface are embedded beforehand.

### ■ Application of the base coat and fiber reinforcement mesh in two steps

#### ■ Application of the base coat

After completion of the preparation work of embedding the render stop connection profiles and the diagonal reinforcement, best wood adhesive and reinforcing mortar should be applied to the best wood WALL 140/180 wood fiber insulation boards either by machine or by hand with a 4-6 mm serrated trowel at an angle of approx. 45° to the surface of the boards, combing through the mortar to form a serrated layer. The resultant layer must be 3-4 mm thick. The serrated form of the mortar layer ensures that the fiber reinforcement fabric is embedded in a layer which is of a sufficient thickness of at least 5 mm in the outer third of the reinforcement layer. Furthermore, the application and hardening of the serrated layer of mortar prevents lignin from bleeding through and ensures that the render baseboard is protected against the weather for up to 5 months. This requires as a precondition that the connections and joints are correctly sealed to ensure that the timber structure and best wood WALL 140/180 wood fiber insulation boards are effectively protected.



Application of adhesive and reinforcing mortar (UP).



Application of the coating by means of a toothed spatula.

## ■ Embedding the fiber reinforcement mesh

After the serrated mortar layer has dried, the fiber reinforcement fabric can be embedded. In this case the mortar has to be applied crosswise using a trowel which is moved flat across the surface. The fiber reinforcement fabric should be embedded in the crosswise mortar while it is still wet and the edges of the fiber fabric must overlap by a minimum of 10 cm.

The fiber reinforcement fabric then has to be covered over with mortar on a wet basis until the fiber fabric is completely covered at every point. Air inclusions must be avoided and filler ridges must be chipped off after drying. The total thickness of the serrated layer of mortar, including the embedded fiber reinforcement mesh, should be approx. 6–7 mm.



1 Application of vertical coating.



2 Application of best wood fiber reinforcement fabric.



3 Wet embedding of the best wood fiber reinforcement fabric.



4 Embedding of the best wood fiber reinforcement fabric.

## ■ Application of the base coat and fiber reinforcement mesh in one step

It is possible to apply the base coat/serrated mortar layer and the fiber reinforcement mesh in one single step.

After completion of the preparation work of embedding the render stop connection profiles and the diagonal reinforcement, best wood adhesive and reinforcing mortar should be applied to the best wood WALL 140/180 wood fiber insulation boards either manually or with mixing pumps/plastering machines and combed through with a 10 mm serrated trowel. Attention must be paid to having homogeneous material distribution.

The best wood fiber reinforcement fabric is embedded wet and filled over until the fabric is completely covered at every point. The fabric joints must overlap by at least 10 cm. Air inclusions must be avoided and filler ridges must be chipped off after drying. The total thickness of the layer, including the embedded fiber reinforcement mesh, should be approx. 6–7 mm.

### ■ INFORMATION

If the base coat/serrated mortar layer is applied in a single step, the person doing the work must ensure that the thicknesses of the layers are adhered to and that the fiber reinforcement fabric is positioned in the outer third of the coat.

## ■ Application of the final render

Before the final render is applied, the base coat must have hardened and dried. For darker facades it is recommendable to apply the final render ready-colored. All of the material required for each area to be plastered has to be prepared in a single step.

To avoid overlapped edges in the surface of the plaster, a sufficient number of workers need to be deployed on each section of the scaffolding and the section of plaster should be completed from corner to corner in a single operation. Excess material should be removed by scraping it off with a trowel at a steep angle. All uneven areas which are created should be corrected straight away.

Silicone-resin final render, which comes in buckets, needs to be thoroughly stirred and have water added if necessary to achieve the right consistency. Use a stainless steel trowel to apply the plaster with a coat not exceeding the grain thickness, and then texture the surface afterwards.

Mineral final render comes in sacks and can be processed with all standard types of mixing pumps and plastering machines or by hand. This should be applied with a sponge float or plastic float. The mineral final render of a scraped surface plaster texture should be rubbed using a circular motion.



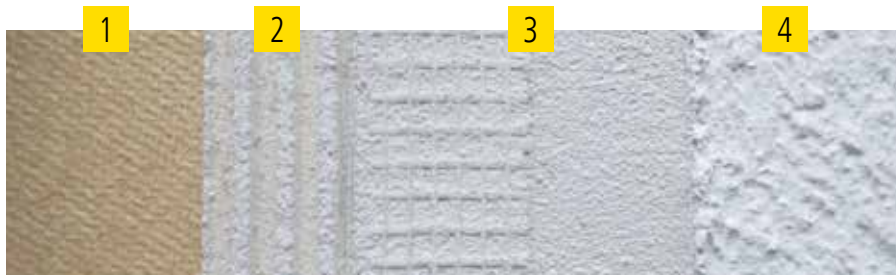
The final render is applied by means of a trowel and then skimmed to grain size.



Structuring of the final render by means of a trowel.

Ready structured plaster surface.

■ Structures and layer thicknesses in the best wood render system



1. best wood WALL 140/180
2. Serrated mortar layer
3. Fiber reinforcement mesh
4. Plaster and paint





## ■ Application of the leveling coat with best wood silicone resin paint

The application of a leveling coat is always recommended on all final render coats, because it lends surfaces a uniform appearance and also provides protection against the weather. Moreover, it helps slow down the rate at which material is lost from the render surface and also reduces the extent to which the surface is susceptible to the accumulation of dirt. Leveling coat is an essential requirement, particularly for mineral final render coats, because of their susceptibility to efflorescence or cloudiness when they dry. Coating with paint levels out this appearance while significantly improving water repellence at the same time. It is generally advisable to apply two coats.

For **approval-compliant processing** of the best wood ETICS, depending on the final render coat that is used and the load-bearing substrate to which the best wood wood fiber board has been fitted, attention must be paid to the following:

### **Mineral final render (MOP) with plaster baseboard on mineral substrate**

- From a technical approval point of view, no painting is required.
- **One coat of paint** is an **essential requirement** from a visual and technical point of view, since patches of lime efflorescence may otherwise become apparent.

### **Mineral final render (MOP) with plaster baseboard on wooden substrates**

- **One coat of paint is essential** from a technical approval point of view.

### **Silicone resin plaster (SOP) with plaster baseboard on wooden or mineral substrates**

- From a technical approval point of view, no painting is required.
- **One coat of paint** is recommended to provide protection from algae (since it is biocide and fungicide adjusted) and from a visual and processing point of view.
- If no paint is applied, the silicone resin plaster **must** be “biocide and fungicide” adjusted.

In terms of the color scheme for the ETICS facade, the selected color must have a lightness value (LV) of  $\geq 20$  %. Dark colors can lead to high levels of thermal stress and are therefore not permitted for the best wood external thermal insulation composite system. The final render must have thoroughly dried before the paint is applied. Silicone resin paint can be applied by hand (by brush or roller) or with an airless spray gun. Silicone resin paint should be diluted with a maximum of 10 % water and should not be applied in direct sunlight.

The silicone resin paint is fungicide/algicide adjusted. The use of this

additive inhibits or retards algae and fungal attack. On the basis of the current state-of-the-art in technology it is not possible to guarantee permanent protection because, among other things, the resistance of biocidal treatment systems has to be time-limited in order to meet environmental biodegradability requirements.

## ■ Maintenance of the facade

Facade surfaces are permanently exposed to the weather and therefore need to be inspected and maintained at regular intervals. Particular attention needs to be given to all the connections between different components of the facade (e.g. window reveal connection, window sill connection, etc.).

This weather-related ageing varies considerably depending on the alignment and location of the building and on design measures taken to reduce the stress on the facade (roof overhang, protection by trees and bushes).

With regard to maintenance intervals, there is no difference between wood fiber ETICS and other types of ETICS facades or other rendered facades. All best wood final renders provide effective resistance to the influence of the weather. This is further enhanced with the application of the leveling coat. The amount of time before the first maintenance coat is required can therefore be considerably extended as a result. The products used for maintenance coats must be compatible with the system.

## ■ best wood spiral anchor

Fastening solution for light attachments to ETICS facades; the minimum board thickness is 60 mm; recommended load: max. 5 kg per fixing point; free of thermal bridges; a subsequent installation through the plaster layer is possible: pre-drill with an 8mm drill trough the covering plaster, apply best wood FDM WALL under anchor plate and screw-in (TORX T40). Spiral anchor should be sealed to the plaster facade with FDM WALL, Afterwards the screw (4-5 mm) has to be screwed in and the attachment has to be fixed.



### ■ Installation instructions for unrendered wood fiber insulation boards best wood WALL 140, WALL 180 and ROOM 140



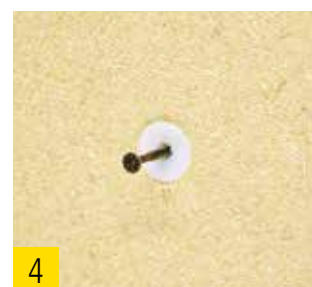
1 Pre-drilling of the unrendered wood fiber insulation board by means of an 8 mm wood drill.



2 Insertion of the spiral anchor by means of a TORX T40 into the unrendered wood fiber insulation board.



3 Flush-mounting of the spiral anchor.



4 Fastening of the attachment piece by means of a 4–5 mm screw.

### ■ Installation instructions for rendered wood fiber insulation boards best wood WALL 140, WALL 180 and ROOM 140



1 Pre-drilling of the rendered wood fiber insulation board by means of an 8 mm wood drill.



2 Application of best wood FDM WALL under the anchor plate.



3 Application of best wood FDM WALL for sealing purpose.



4 Flush insertion of the spiral anchor by means of a TORX T40 into the rendered wood fiber insulation board.



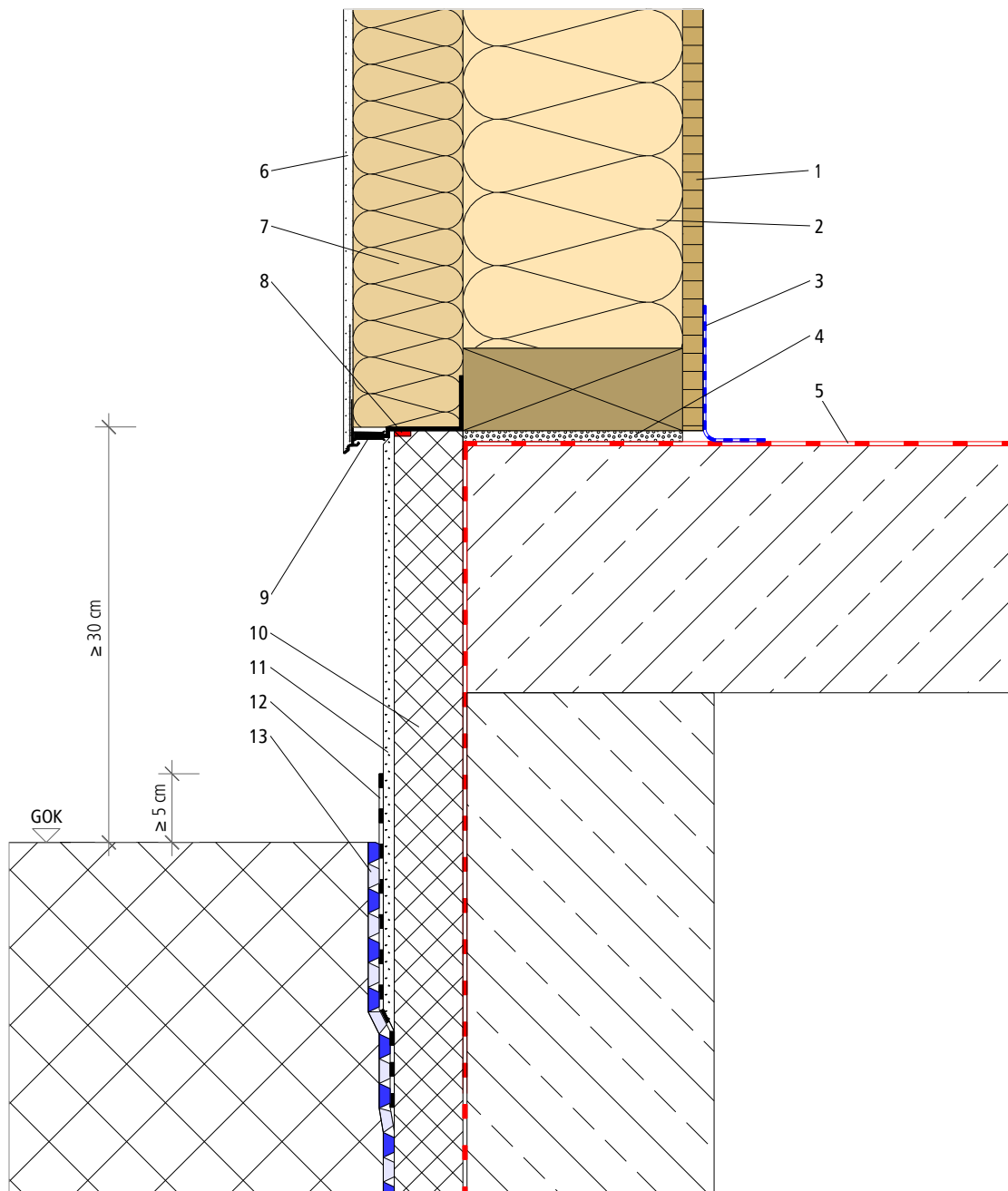
5 Remove any excess FDM WALL between plaster and spiral anchor.



6 Fastening of the attachment piece by means of a 4-5 mm screw.

## ■ ■ Base point

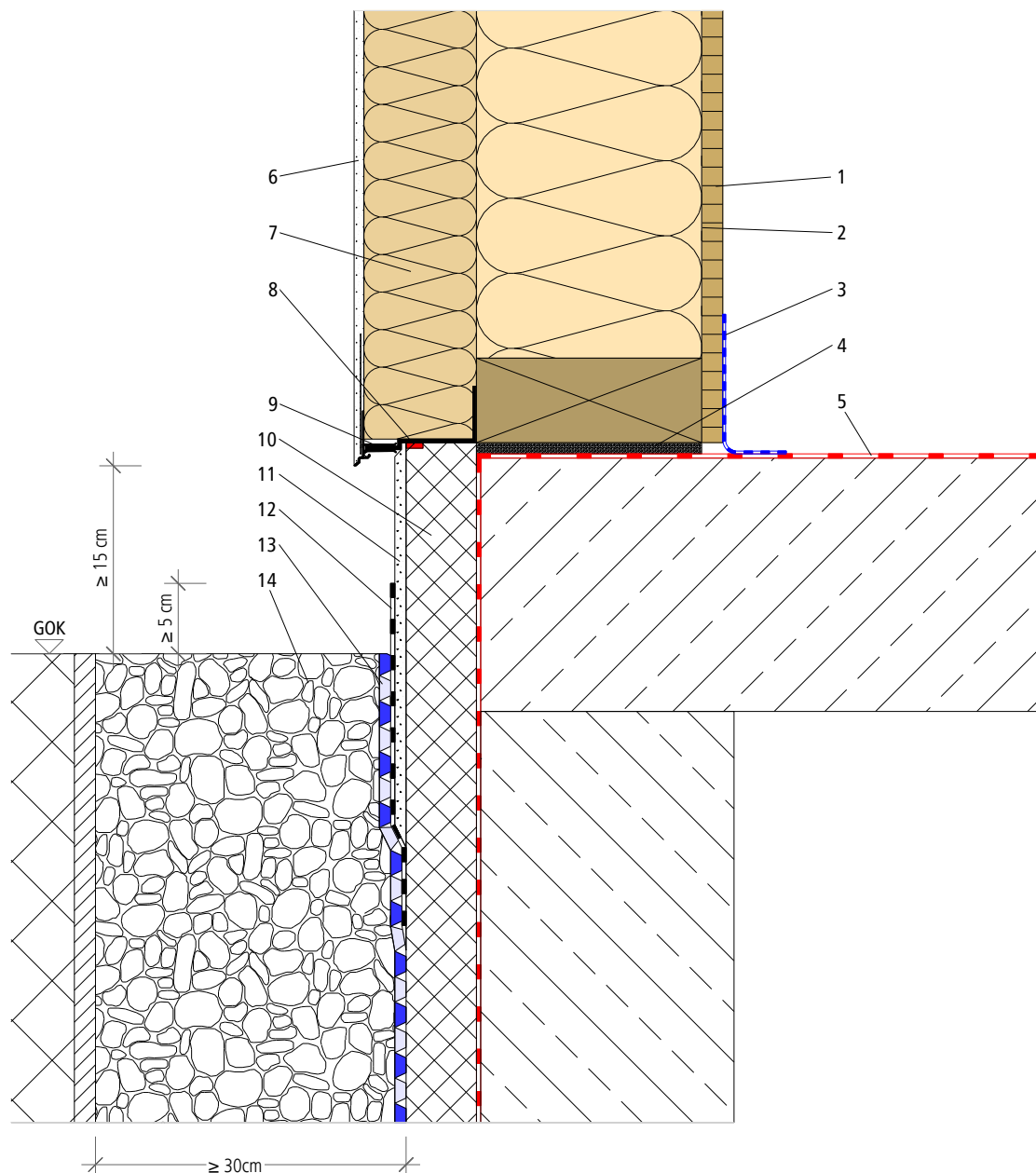
- ■ Outside splash water range with  $\geq 30$  cm between ground surface and base point



- |  |  |   |
|--|--|---|
| 1 Wood-based panel, e.g. OSB                       | 4 Balancing mortar without shrinkage   | 9 best wood base rail                         |
| 2 Timber frame construction with best wood FLEX 50 | 5 Sealing according to DIN 18533-1     | 10 Base insulation panel/perimeter insulation |
| 3 Vapor barrier/airtight sealing on the base point | 6 best wood render system              | 11 Base reinforcing mortar                    |
|  | 7 best wood WALL 180                   | 12 Mineral seal                               |
|  | 8 Joint insulation tape Illmod 15/5-10 | 13 Knob-protection film                       |

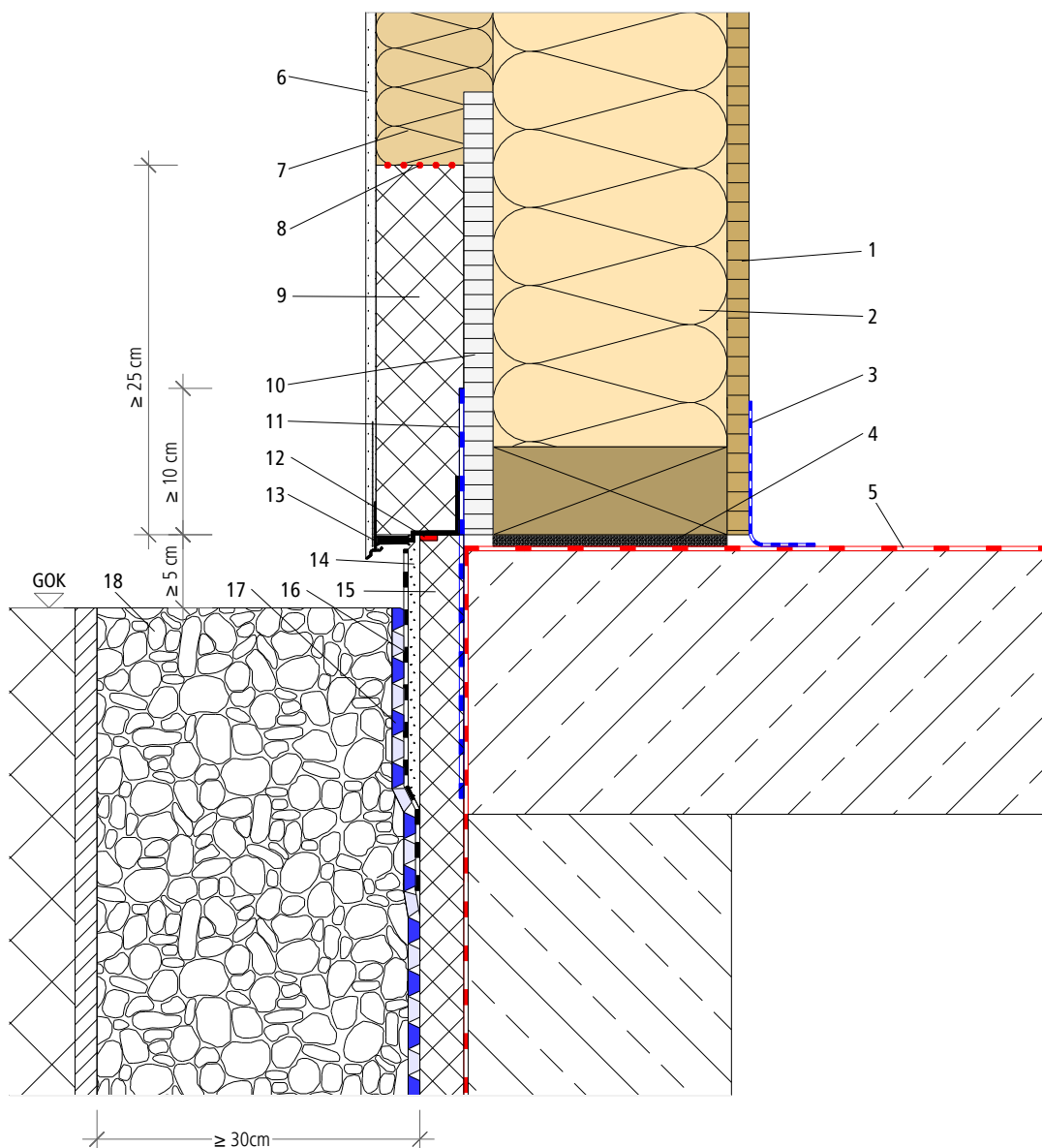


- Splash area on the gravel and  $\geq 15$  cm distance between ground edge and lower edge



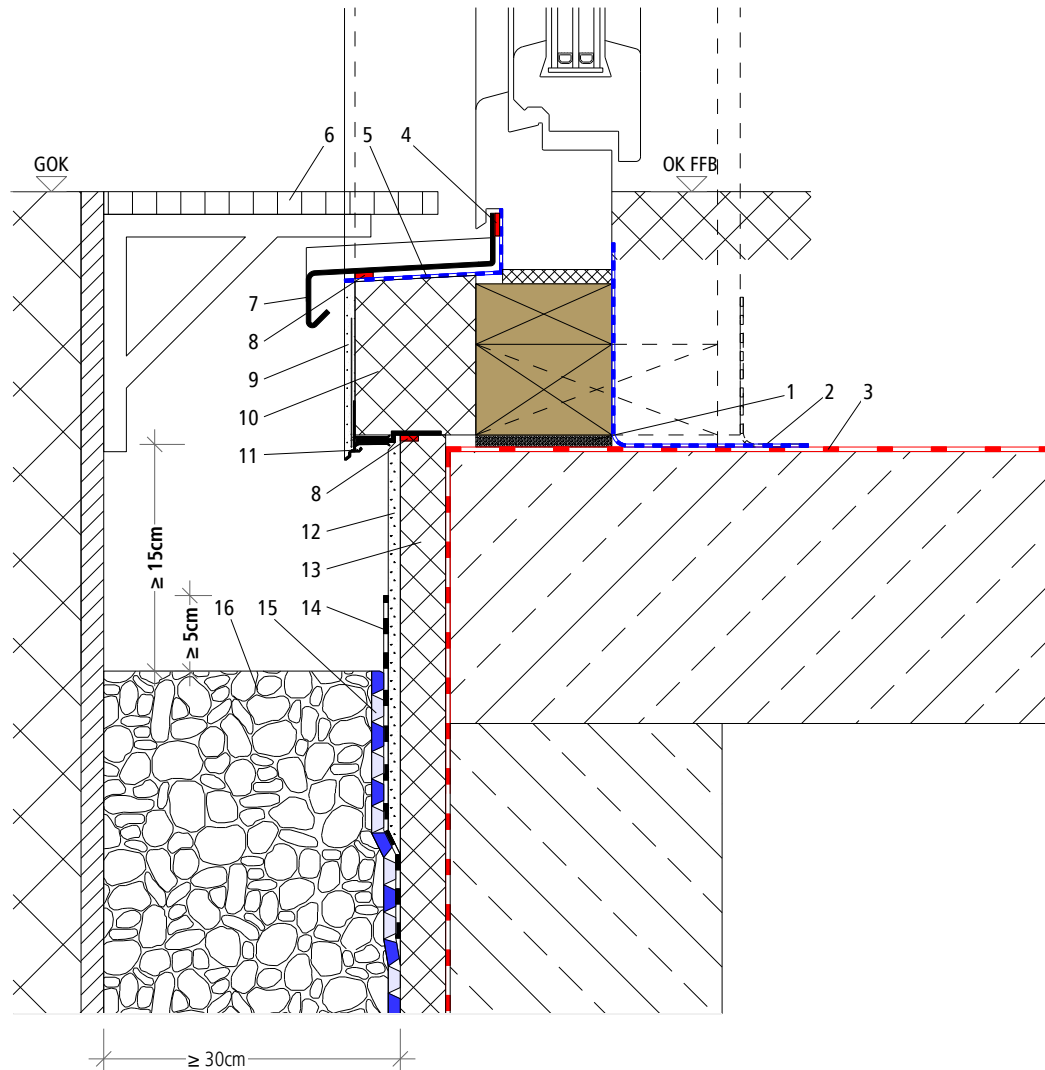
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|--|--|---|
| 1 Wood-based panel, e.g. OSB                       | 5 Sealing according to DIN 18533-1     | 10 Base insulation panel/perimeter insulation |
| 2 Timber frame construction with best wood FLEX 50 | 6 best wood render system              | 11 Base reinforcing mortar                    |
| 3 Vapor barrier/airtight sealing on the base point | 7 best wood WALL 180                   | 12 Mineral seal                               |
| 4 Balancing mortar without shrinkage               | 8 Joint insulation tape Illmod 15/5-10 | 13 Knob-protection film                       |
|  | 9 best wood base rail                  | 14 Gravel with drainage                       |

- Splash area on the gravel and  $\geq 5$  cm distance between ground edge and lower edge



- |  |   |   |
|--|---|---|
| 1 Wood-based panel, e.g. OSB                       | 7 best wood WALL 180  | 12 Joint insulation tape Illmod 15/5-10       |
| 2 Timber frame construction with best wood FLEX 50 | 8 Front sides glued with best wood FDM WALL   | 13 best wood base rail                        |
| 3 Vapor barrier/airtight sealing on the base point | 9 best wood perimeter insulation  | 14 Base reinforcing mortar                    |
| 4 Balancing mortar without shrinkage               | 10 Cement-bound chipboard   | 15 Base insulation panel/perimeter insulation |
| 5 Sealing according to DIN 18533-1                 | 11 Vertical sealing according to DIN 18195-4, e.g. sealing system of Ceresit with pre-painting BT26 and dense ground BT21 | 16 Mineral seal                               |
| 6 best wood render system                          |   | 17 Knob-protection film                       |
|  |   | 18 Gravel with drainage                       |

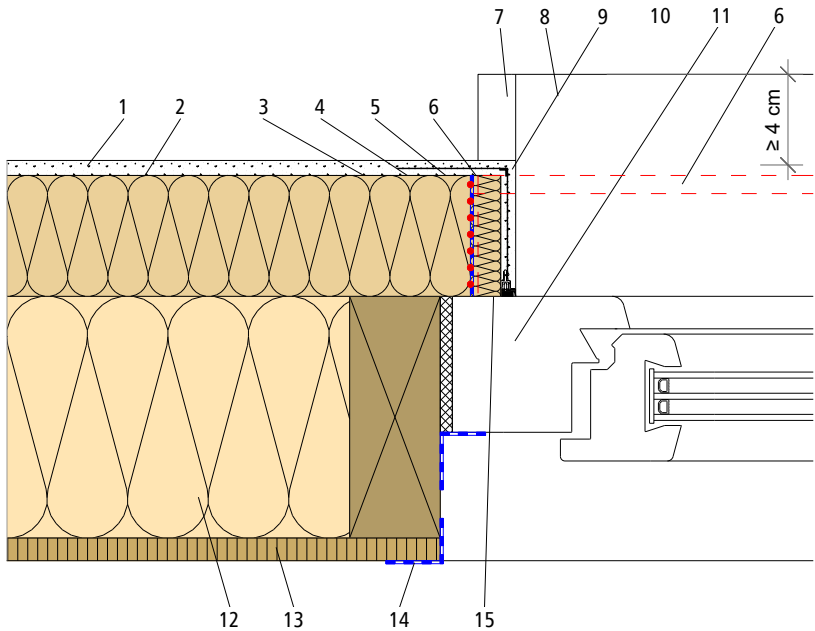
■ Base point; patio door level with grating



- |  |  |   |
|--|--|---|
| 1 Balancing mortar without shrinkage               | 6 Grating                              | 12 Base reinforcing mortar                    |
| 2 Vapor barrier/airtight sealing on the base point | 7 Window sill                          | 13 Base insulation panel/perimeter insulation |
| 3 Sealing according to DIN 18533-1                 | 8 Joint insulation tape Illmod 15/5-10 | 14 Mineral seal                               |
| 4 Joint insulation tape Illmod 15/3-7              | 9 best wood render system              | 15 Knob-protection film                       |
| 5 Second sealing layer beneath window sill         | 10 best wood perimeter insulation      | 16 Gravel with drainage                       |
|  | 11 best wood base rail                 |   |

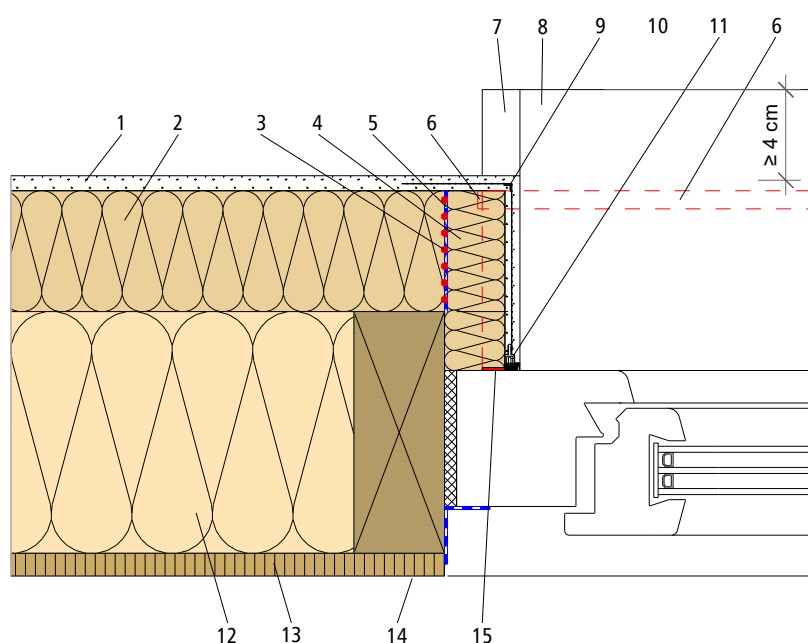
■ ■ Window connection

■ ■ Window connection with 20 mm reveal board



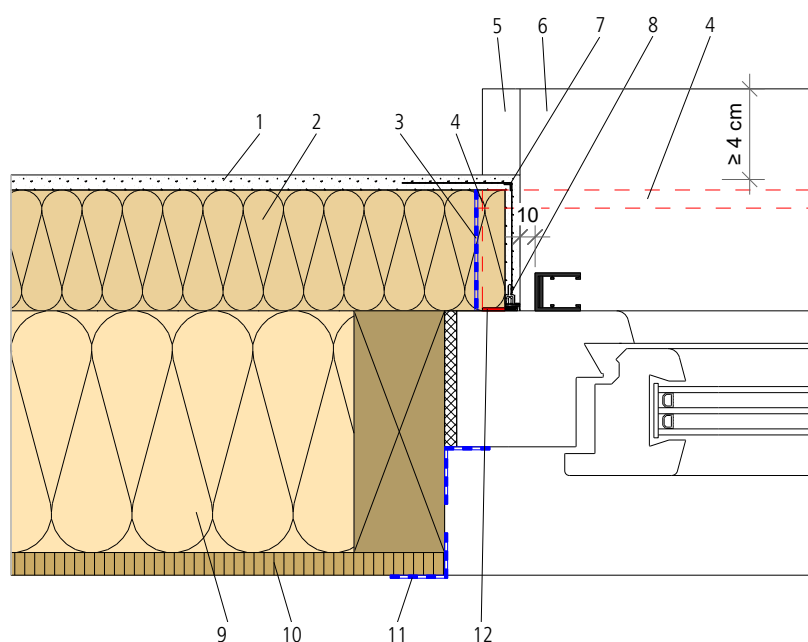
- |   |  |   |
|---|--|---|
| 1 best wood render system   | 6 Joint insulation tape Illmod 15/5-10       | function                                    |
| 2 best wood WALL 180  | 7 Window sill end profile with slide bearing | 12 Timber frame construction with best wood |
| 3 best wood reveal board bonded with best wood FDM WALL glued to WALL 180 | 8 Window sill                                | FLEX 50                                     |
| 4 best wood reveal board  | 9 best wood corner bead with fiber mesh      | 13 Wood-based panel, e.g. OSB               |
| 5 Second sealing layer beneath window sill                                | 10 Stainless steel screw                     | 14 Vapor barrier/airtight sealing           |
|   | 11 best wood architrave bead with telescope  | 15 Joint insulation tape Illmod 15/3-7      |

## ■ Window connection with 40 mm reveal board



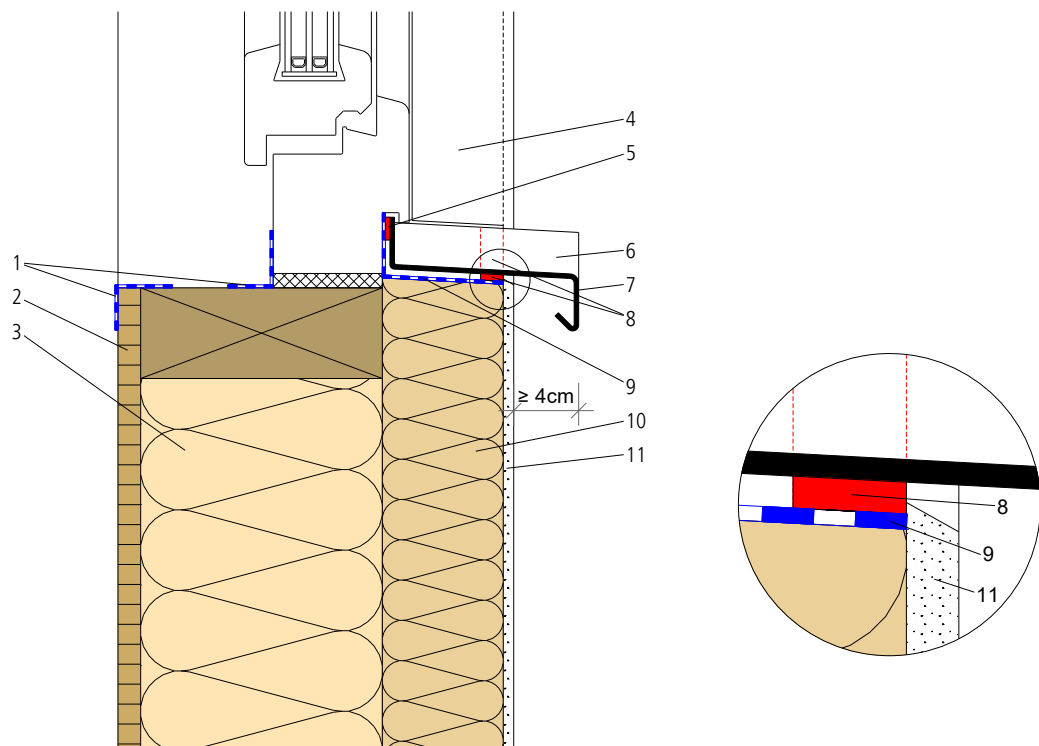
- |   |  |   |
|---|--|---|
| 1 best wood render system   | 6 Joint insulation tape Illmod 15/5-10               | 12 Timber frame construction with best wood FLEX 50 |
| 2 best wood WALL 180  | 7 Window sill end profile with slide bearing         | 13 Wood-based panel, e.g. OSB                       |
| 3 best wood reveal board bonded with best wood FDM WALL glued to WALL 180 | 8 Window sill  | 14 Vapor barrier/airtight sealing                   |
| 4 best wood reveal board in the area of the window sill end profile       | 9 best wood corner bead with fiber mesh              | 15 Joint insulation tape Illmod 15/3-7              |
| 5 Second sealing layer beneath window sill                                | 10 Stainless steel screw                             |   |
|   | 11 best wood architrave bead with telescope function |   |

## ■ Window connection without reveal board and with roller shutter guide rail



- |   |   |  |
|---|---|--|
| 1 best wood render system   | 5 Window sill end profile with slide bearing        | 9 Timber frame construction with best wood FLEX 50 |
| 2 best wood reveal board in the area of the window sill end profile | 6 Window sill                                       | 10 Wood-based panel, e.g. OSB                      |
| 3 Second sealing layer beneath window sill                          | 7 best wood corner bead with fiber mesh             | 11 Vapor barrier/airtight sealing                  |
| 4 Joint insulation tape IIImod 15/5-10                              | 8 best wood architrave bead with telescope function | 12 Joint insulation tape IIImod 15/3-7             |

## ■ Window connection on window sill with second sealing layer



- 1 Vapor barrier/airtight sealing
- 2 Wood-based panel, e.g. OSB
- 3 Timber frame construction with best wood FLEX 50

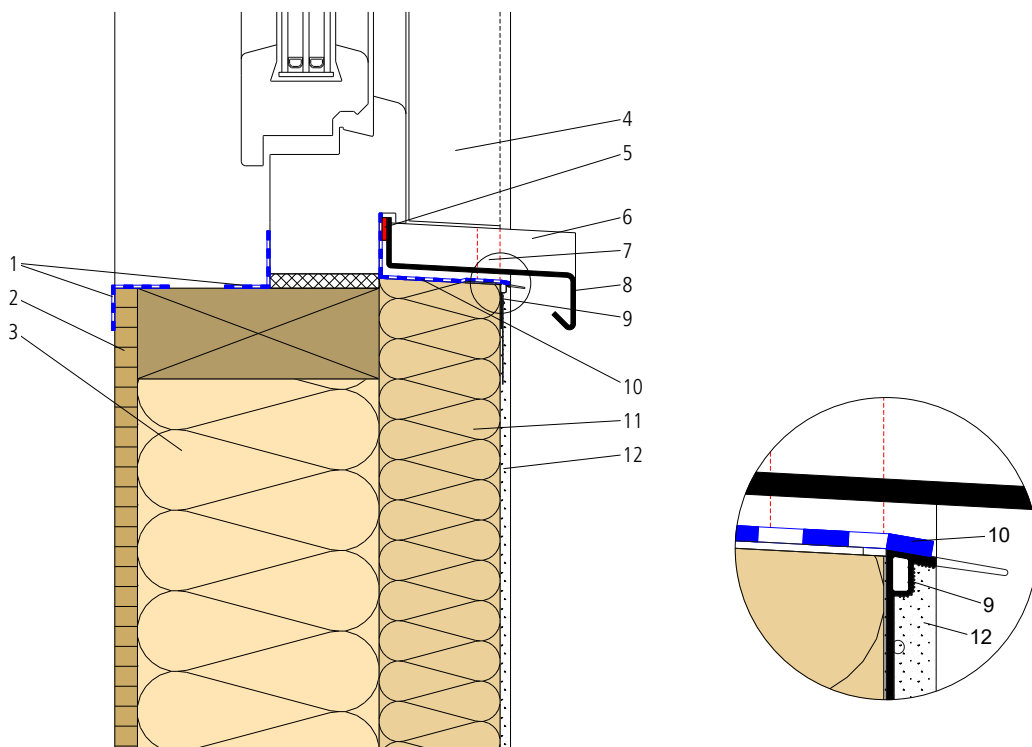
- 4 best wood reveal board
- 5 Joint insulation tape Illmod 15/3-7
- 6 Window sill end profile with slide bearing
- 7 Window sill

- 8 Joint insulation tape Illmod 15/5-10
- 9 Second sealing layer beneath window sill
- 10 best wood WALL 180
- 11 best wood render system

08/2020

This detailed drawing is intended as a general design suggestion. The actual construction needs to be checked by the designer/person responsible with regard to structural and physical considerations for the specific building concerned and is the responsibility of that person. The installation guidelines and technical data sheets for best wood ETICS must be observed. This version of the detailed drawing replaces all previous versions.

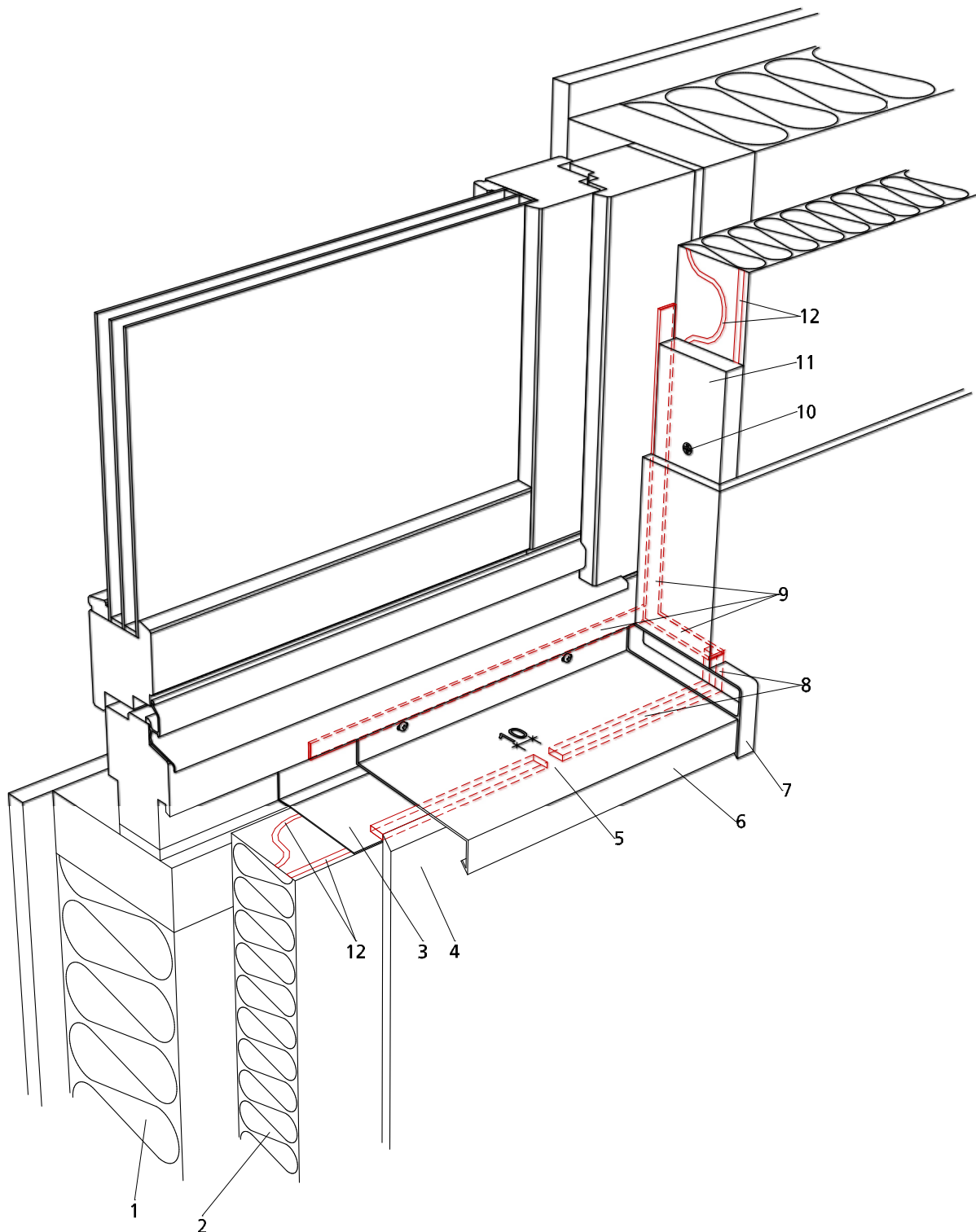
## ■ Window connection to window sill with second sealing layer and window sill stop bead



- |  |  |   |
|--|--|---|
| 1 Vapor barrier / airtight sealing                 | 15/3-7                                       | 10 Second sealing layer beneath window sill |
| 2 Wood-based panel, e.g. OSB                       | 6 Window sill end profile with slide bearing | 11 best wood WALL 180                       |
| 3 Timber frame construction with best wood FLEX 50 | 7 Joint insulation tape Illmod 15/5-10       | 12 best wood render system                  |
| 4 best wood reveal board                           | 8 Window sill                                |   |
| 5 Joint insulation tape Illmod                     | 9 best wood window sill stop bead            |   |



■ Window connection on window sill with second sealing layer – 3D view

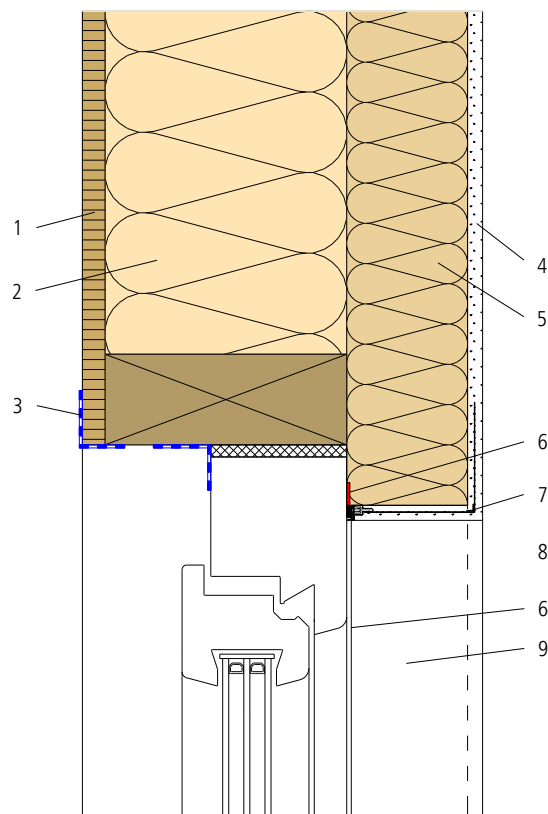


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|--|---|---------------------------------------|
| 1 Timber frame construction with best wood FLEX 50 | 5 Joint insulation tape under window sill, suspended on 10 mm | 9 Joint insulation tape Illmod 15/3-7 |
| 2 best wood WALL 180                               | 6 Window sill   | 10 Stainless steel screw              |
| 3 Second sealing layer beneath window sill         | 7 Window sill end profile with slide bearing                  | 11 best wood reveal board             |
| 4 best wood render system                          | 8 Joint insulation tape Illmod 15/5-10                        | 12 best wood FDM WALL                 |

08/2020

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## ■ Window connection – window lintel



- 1 Wood-based panel, e.g. OSB
- 2 Timber frame construction with best wood FLEX 50
- 3 Vapor barrier/airtight sealing

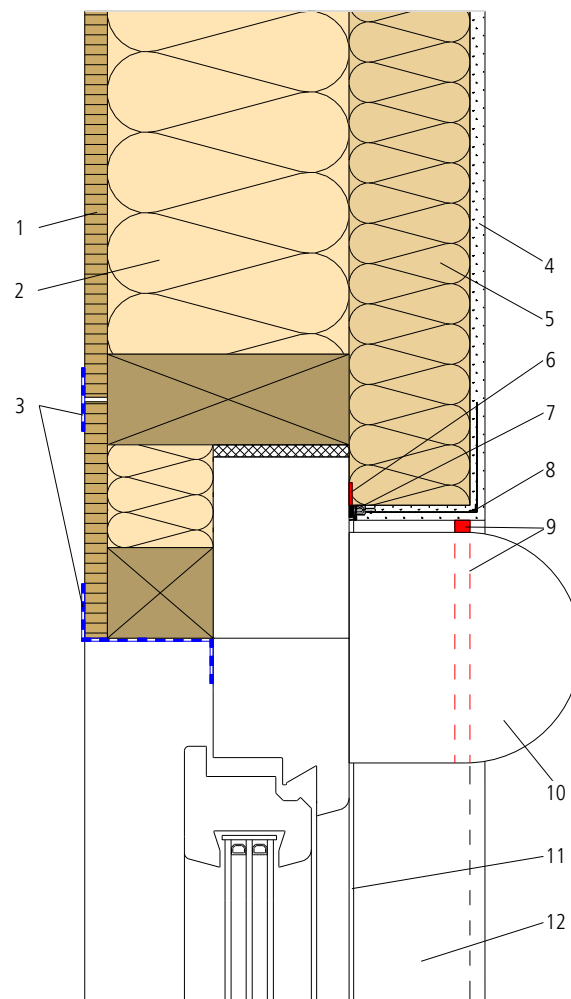
- 4 best wood render system
- 5 best wood WALL 180
- 6 Joint insulation tape Illmod 15/3-7
- 7 best wood corner bead with fiber mesh

- 8 best wood architrave bead with telescope function
- 9 best wood reveal board

08/2020

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## ■ Window connection to exposed projecting roller shutter housing – version 1

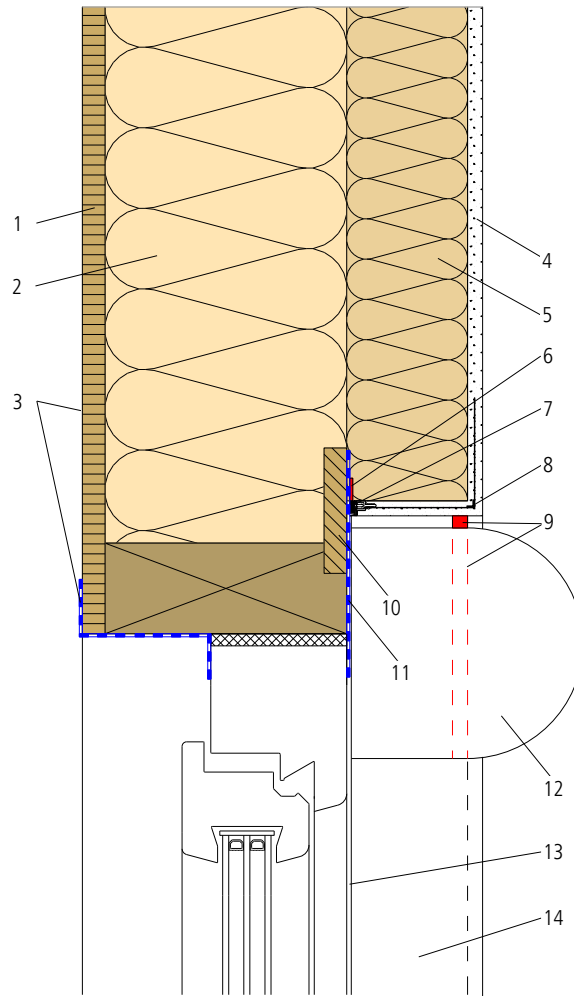


- |  |   |  |
|--|---|--|
| 1 Wood-based panel, e.g. OSB                       | 5 best wood WALL 180                                | 9 Joint insulation tape Illmod 20/10-18      |
| 2 Timber frame construction with best wood FLEX 50 | 6 Joint insulation tape Illmod 15/3-7               | 10 Exposed projecting roller shutter housing |
| 3 Vapor barrier/airtight sealing                   | 7 best wood architrave bead with telescope function | 11 Joint insulation tape Illmod 15/3-7       |
| 4 best wood render system                          | 8 best wood corner bead with fiber mesh             | 12 best wood reveal board                    |

08/2020

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## Window connection to exposed projecting roller shutter housing – version 2

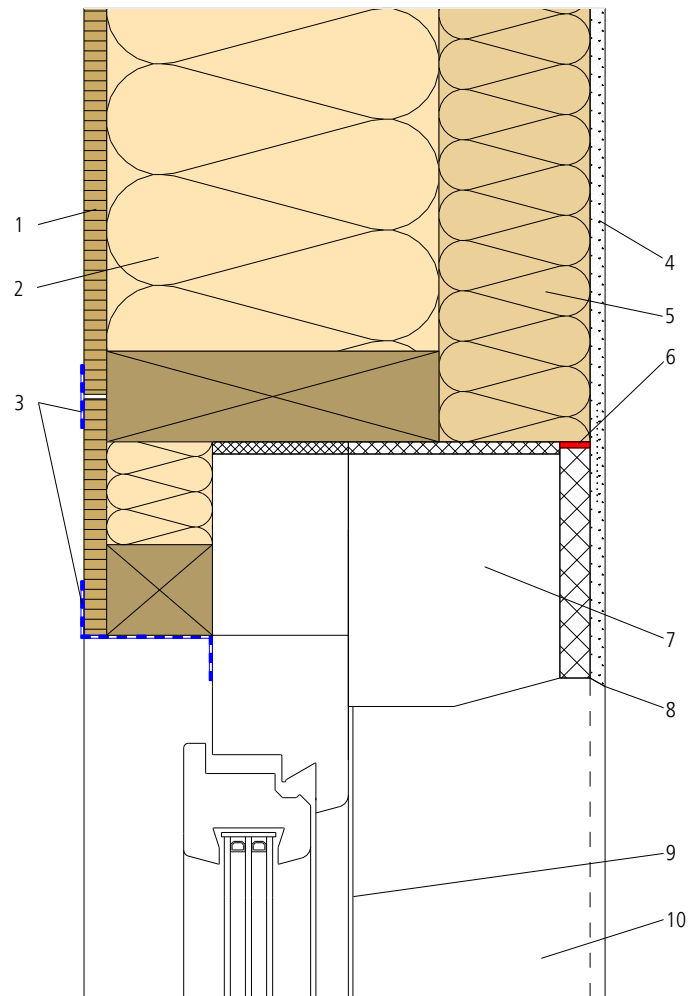


- |  |   |  |
|--|---|--|
| 1 Wood-based panel, e.g. OSB                       | 6 Joint insulation tape Illmod 15/3-7               | 11 Diffusion-permeable membrane              |
| 2 Timber frame construction with best wood FLEX 50 | 7 best wood architrave bead with telescope function | 12 Exposed projecting roller shutter housing |
| 3 Vapor barrier/airtight sealing                   | 8 best wood corner bead with fiber mesh             | 13 Joint insulation tape Illmod 15/3-7       |
| 4 best wood render system                          | 9 Joint insulation tape Illmod 20/10-18             | 14 best wood reveal board                    |
| 5 best wood WALL 180                               | 10 Glued timber board                               |  |

08/2020

This detailed drawing is intended as a general design suggestion. The actual construction needs to be checked by the designer/person responsible with regard to structural and physical considerations for the specific building concerned and is the responsibility of that person. The installation guidelines and technical data sheets for best wood ETICS must be observed. This version of the detailed drawing replaces all previous versions.

## ■ Window connection to projecting roller shutter housing for plastering over



- 1 Wood-based panel, e.g. OSB
- 2 Timber frame construction with best wood FLEX 50
- 3 Vapor barrier/airtight sealing
- 4 best wood render system

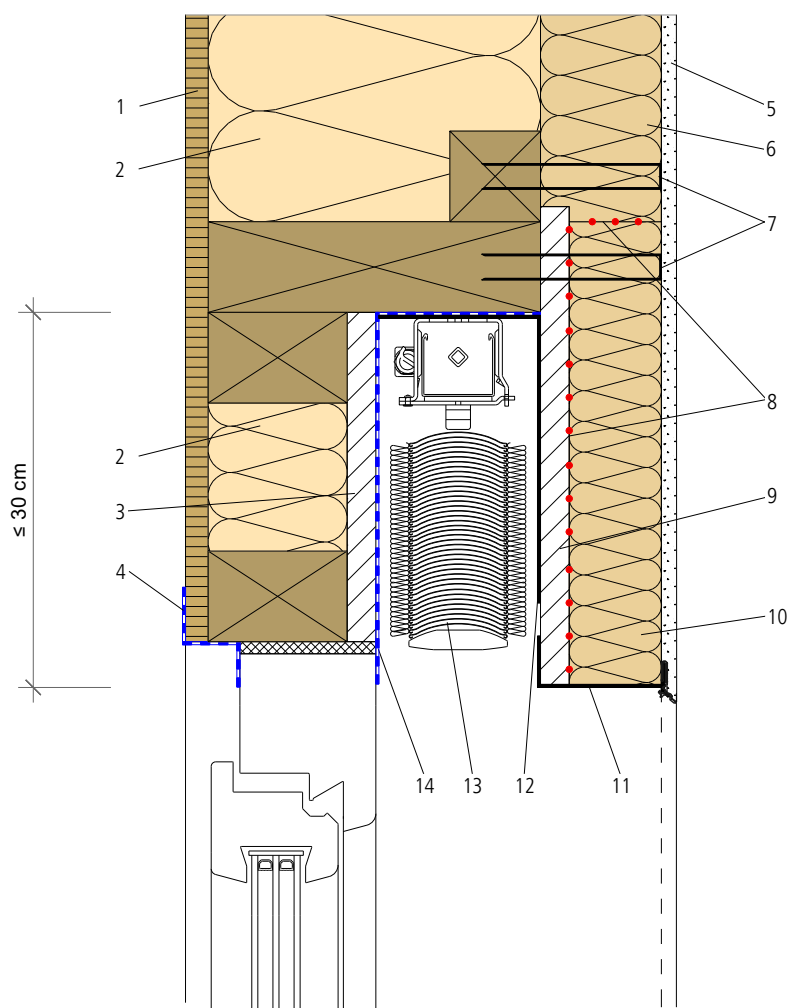
- 5 best wood WALL 180
- 6 best wood FDM WALL
- 7 Exposed projecting roller shutter housing with suitable render baseboard
- 8 Drip edge profile integrated in exposed

- projecting roller shutter housing
- 9 Joint insulation tape Illmod 15/3-7
- 10 best wood reveal board

08/2020

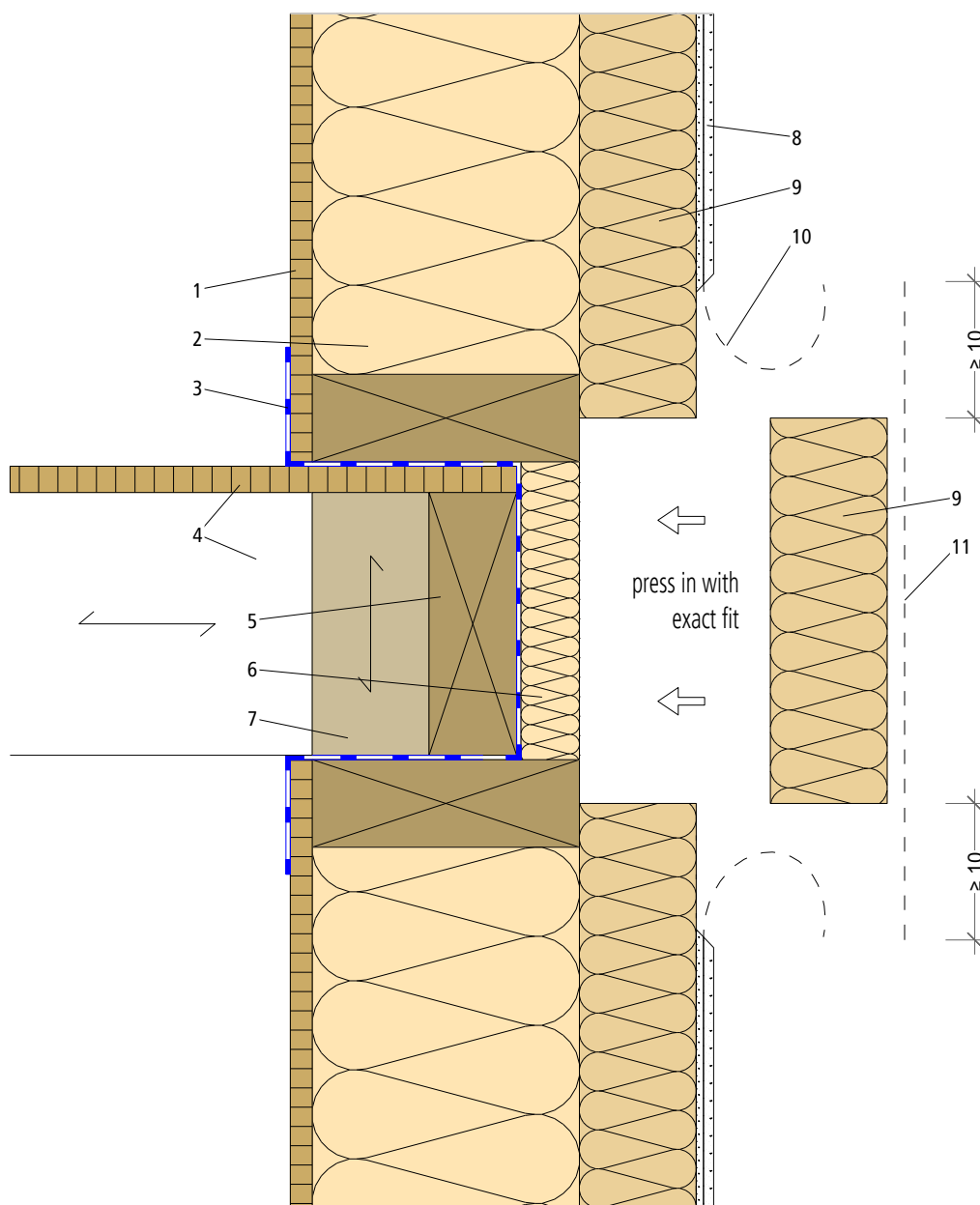
This detailed drawing is intended as a general design suggestion. The actual construction needs to be checked by the designer/person responsible with regard to structural and physical considerations for the specific building concerned and is the responsibility of that person. The installation guidelines and technical data sheets for best wood ETICS must be observed. This version of the detailed drawing replaces all previous versions.

## Window connection to Venetian blind facing



- |  |  |  |
|--|--|--|
| 1 Wood-based panel, e.g. OSB                       | best wood FDM WALL   | profile  |
| 2 Timber frame construction with best wood FLEX 50 | 9 Wood-based panel, e.g. three-layer board with support on three sides                                       | 12 Metal angle for reinforcement with spacing of $\leq 1.0$ m                            |
| 3 Glued timber board                               | 10 best wood WALL 180 set in the base rail and also bonded on the facing sides to 9 using best wood FDM WALL | 13 Venetian blind  |
| 4 Vapor barrier/airtight sealing                   |  | 14 Diffusion-permeable wall lining membrane, e.g. Solitex WA, bonded to the window frame |
| 5 best wood render system                          |  |  |
| 6 best wood WALL 180                               |  |  |
| 7 Broad back staple                                |  |  |
| 8 Bonding with                                     | 11 Metal base profile with clip-on render  |  |

## ■ ■ Storey transitions for pre-fabricated components



- 1 Wood-based panel, e.g. OSB
- 2 Timber frame construction with best wood FLEX 50
- 3 Vapor barrier/airtight sealing
- 4 System of timber binders and joists with OSB panel

- 5 Edge planking
- 6 Edge insulation best wood FLEX 50
- 7 Upright timbers for protection against settling
- 8 best wood render system
- 9 best wood WALL 180

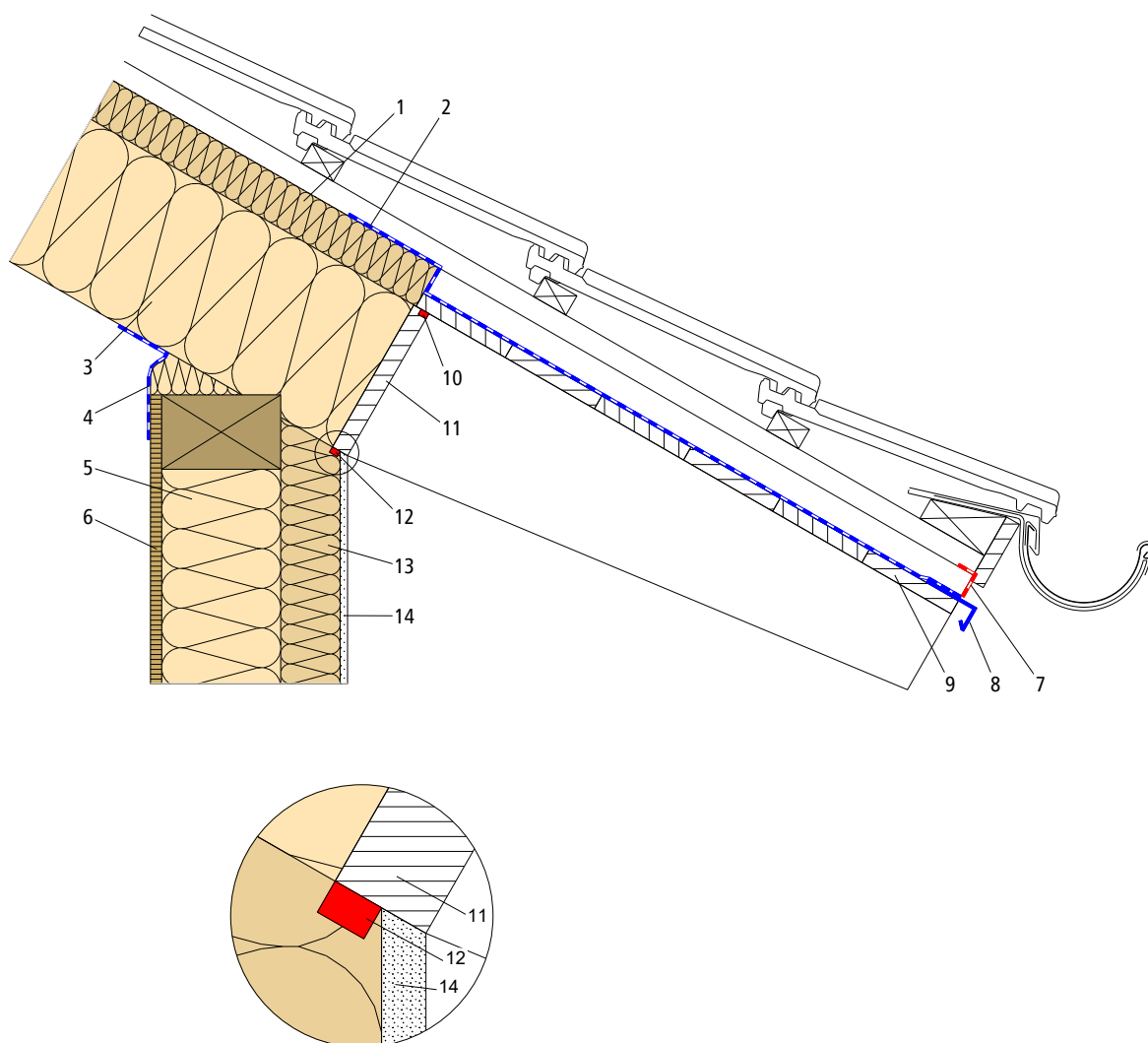
- 10 Fiber reinforcement fabric with min. 10 cm projection
- 11 On-site application of serrated mortar and embedding of fiber mesh elements

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## Roof connection

### Eaves with adjustable hanger



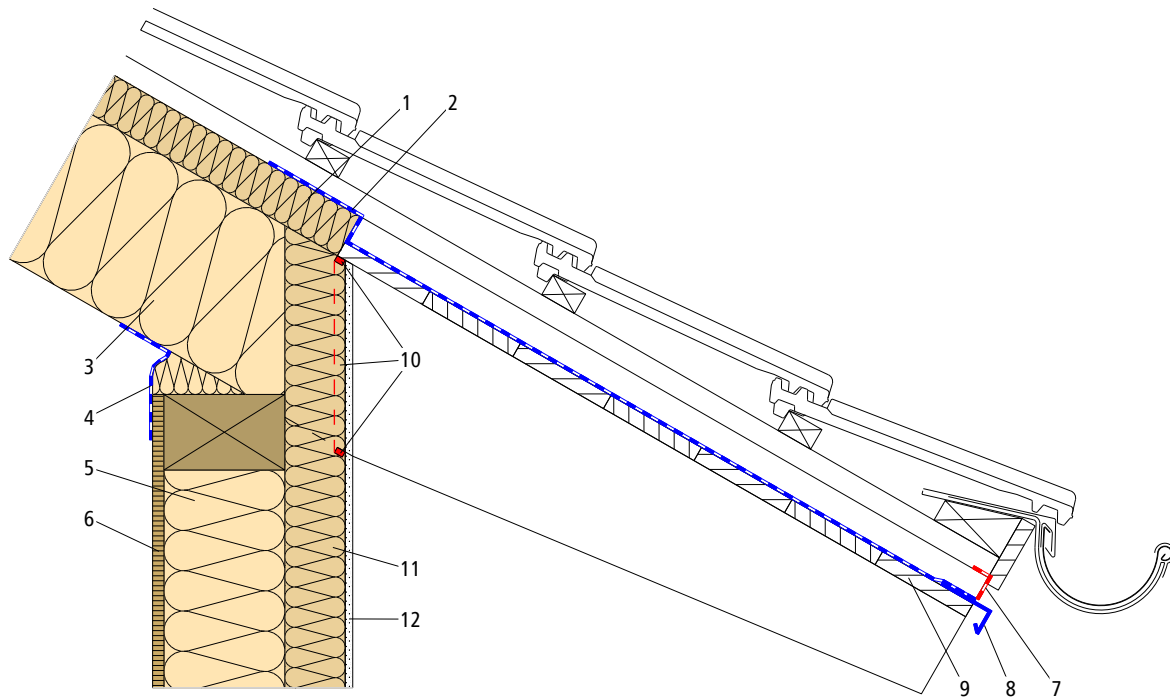
- |  |  |   |
|--|--|---|
| 1 best wood TOP 180 on-roof insulation             | wood FLEX 50                           | 11 Adjustable hanger slotted into grooves in the rafter |
| 2 Underlay bonded to on-roof insulation board      | 6 Wood-based panel, e.g. OSB           | 12 Joint insulation tape Illmod 15/5-10                 |
| 3 Rafters with best wood FLEX 50                   | 7 Insect screen                        | 13 best wood WALL 180                                   |
| 4 Vapor barrier/airtight sealing                   | 8 Drip plate                           | 14 best wood render system                              |
| 5 Timber frame construction with best wood FLEX 50 | 9 Visible planking                     |   |
|  | 10 Joint insulation tape Illmod 15/3-7 |   |

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## ■ Roof connections to eaves without adjustable hanger

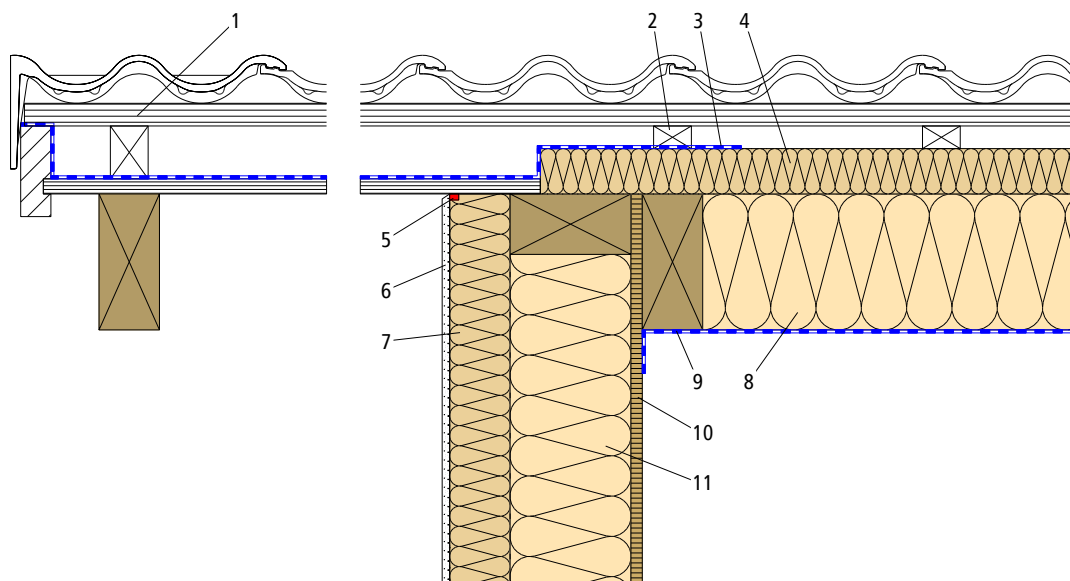


- |   |  |   |
|---|--|---|
| 1 best wood TOP 180 on-roof insulation        | 5 Timber frame construction with best wood FLEX 50 | 9 Visible planking                      |
| 2 Underlay bonded to on-roof insulation board | 6 Wood-based panel, e.g. OSB                       | 10 Joint insulation tape Illmod 15/5-10 |
| 3 Rafters with best wood FLEX 50              | 7 Insect screen                                    | 11 best wood WALL 180                   |
| 4 Vapor barrier/airtight sealing              | 8 Drip plate                                       | 12 best wood render system              |

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## Roof connections to verges



- |   |  |   |
|---|--|---|
| 1 Load-bearing batten                         | 5 Joint insulation tape Illmod 15/5-10 | 10 Wood-based panel, e.g. OSB                       |
| 2 Counter-batten                              | 6 best wood render system              | 11 Timber frame construction with best wood FLEX 50 |
| 3 Underlay bonded to on-roof insulation board | 7 best wood WALL 180                   |   |
| 4 best wood TOP 180 on-roof insulation        | 8 Rafters with best wood FLEX 50       |   |
|   | 9 Vapor barrier/airtight sealing       |   |

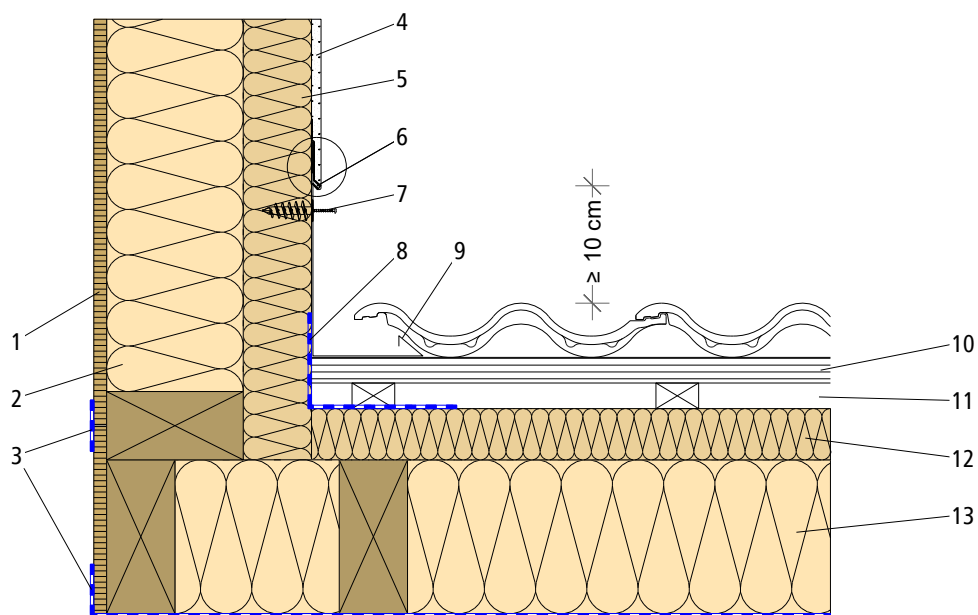
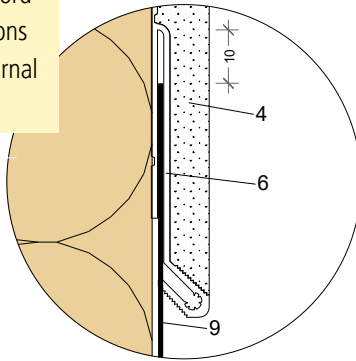
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## ■ Roof connections to dormer cheeks

### ■ INFORMATION:

Implementation of sheet metal work in accordance with the guideline for metal connections to render, external heat insulation and external thermal insulation composite systems.



- |  |   |   |
|--|---|---|
| 1 Wood-based panel, e.g. OSB                       | 6 best wood sheet metal connection profile  | board                                   |
| 2 Timber frame construction with best wood FLEX 50 | 7 Insulation board anchor (e.g. best wood spiral anchor) and stainless steel screw with suitable seal | 9 Sheet metal flashing*                 |
| 3 Vapor barrier/airtight sealing                   | 8 Underlay bonded to on-roof insulation   | 10 Load-bearing batten                  |
| 4 best wood render system                          |   | 11 Counter-batten                       |
| 5 best wood WALL 180                               |   | 12 best wood TOP 180 on-roof insulation |
|  |   | 13 Rafters with best wood FLEX 50       |

\* with connection lengths of more than 3.00m a two-piece metal connection with a flashing strip must be implemented.

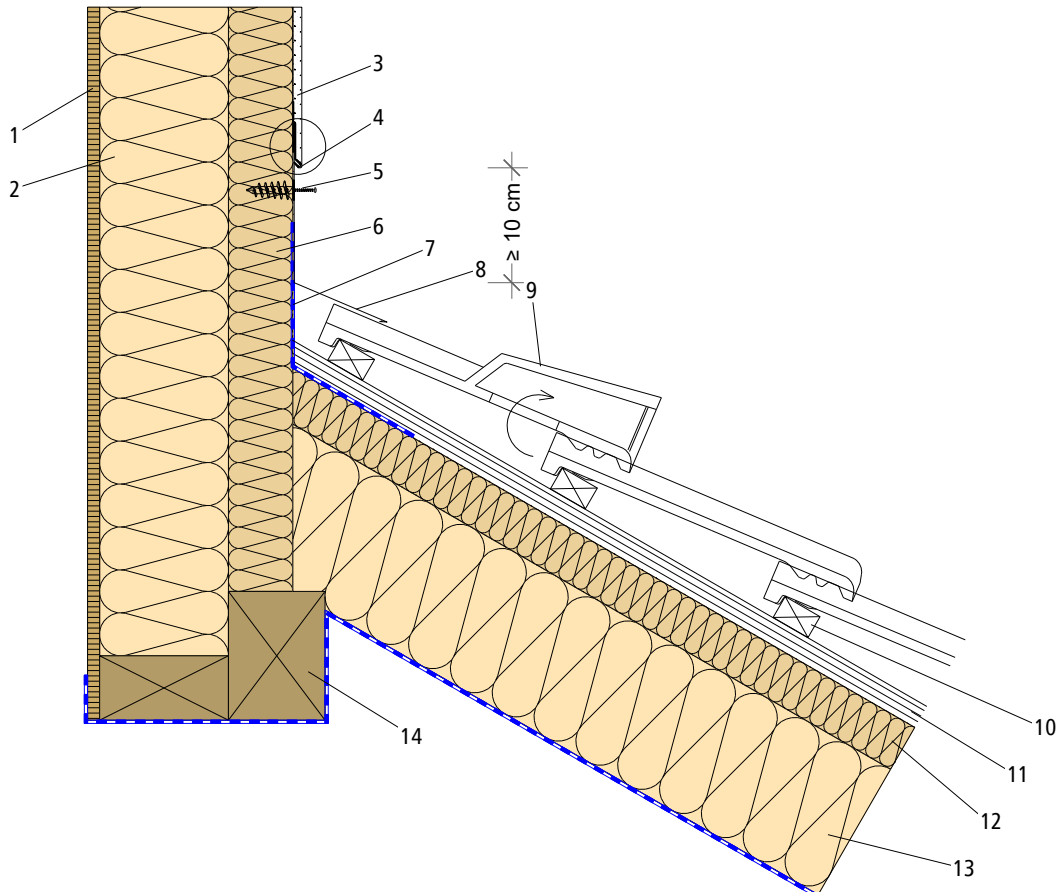
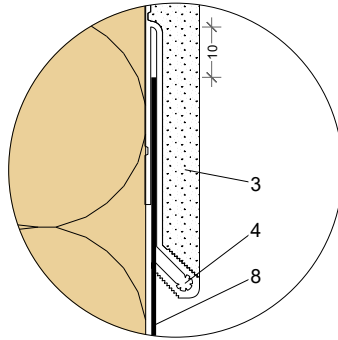
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## ■ Roof connection for a monopitch roof on an exterior wall

### ■ INFORMATION:

Implementation of sheet metal work in accordance with the guideline for metal connections to render, external heat insulation and external thermal insulation composite systems.



- |  |   |   |
|--|---|---|
| 1 Wood-based panel, e.g. OSB                       | wood spiral anchor) and stainless             | 10 Load-bearing batten                  |
| 2 Timber frame construction with best wood FLEX 50 | steel screw with suitable seal                | 11 Counter-batten                       |
| 3 best wood render system                          | 6 best wood WALL 180                          | 12 best wood TOP 180 on-roof insulation |
| 4 best wood sheet metal connection profile         | 7 Underlay bonded to on-roof insulation board | 13 Rafters with best wood FLEX 50       |
| 5 Insulation board anchor (e.g. best               | 8 Sheet metal flashing*                       | 14 Vapor barrier/airtight sealing       |
|  | 9 Roof tile with ventilation tile             |   |

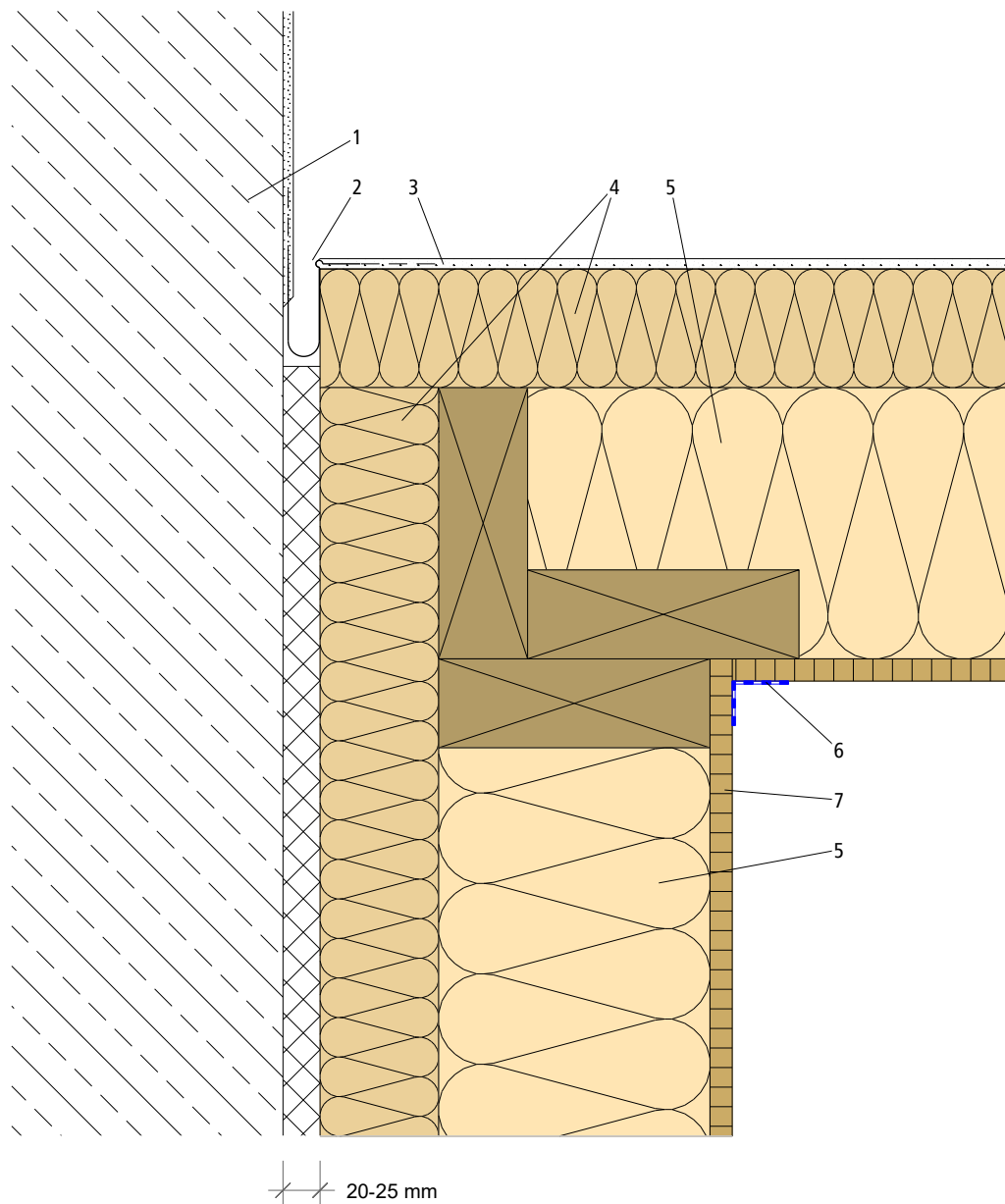
\* with connection lengths of more than 3.00 m a two-piece metal connection with a flashing strip must be implemented.

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## ■ ■ Structural expansion joints

### ■ ■ Corner joints on existing buildings



1 Existing building

2 best wood expansion joint profile for corners

3 best wood render system

4 best wood WALL 180

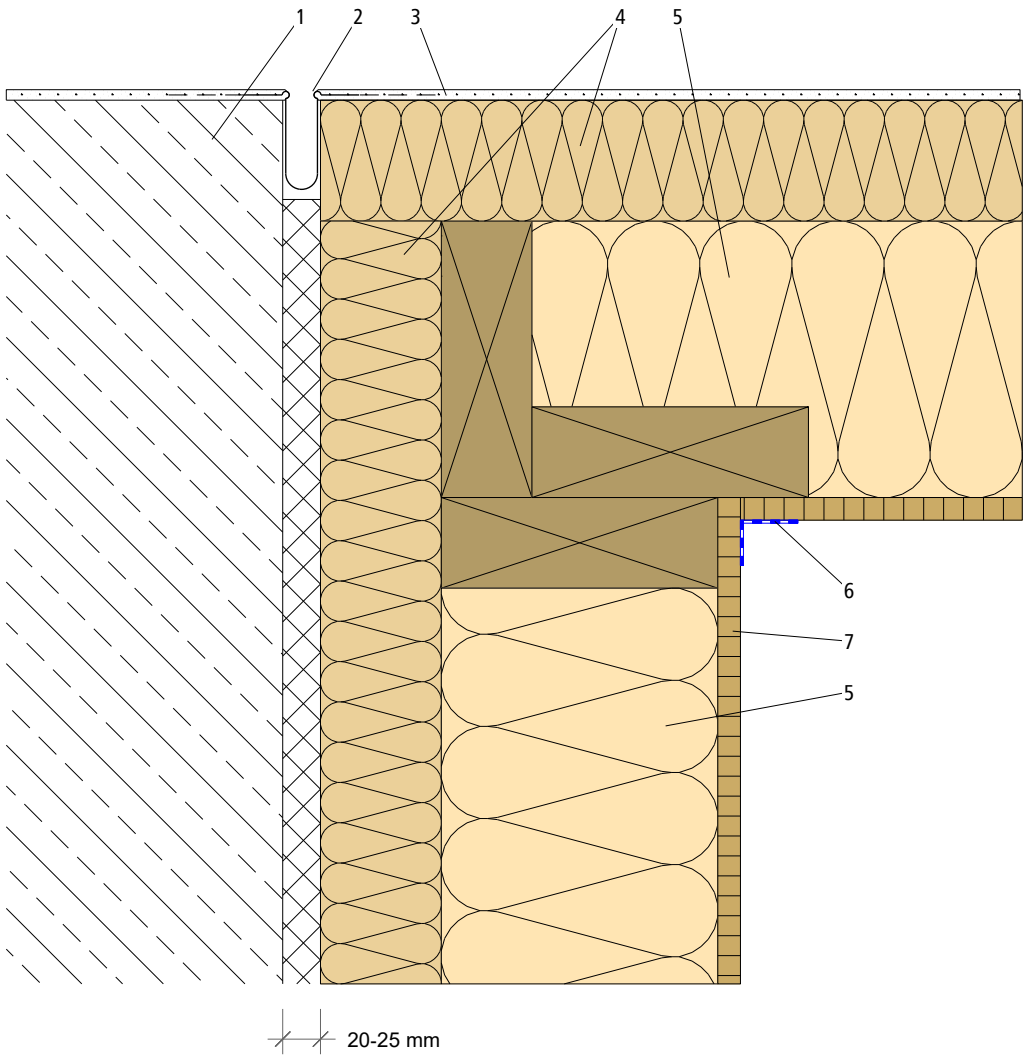
5 Timber frame construction with best

wood FLEX 50

6 Vapor barrier/airtight sealing

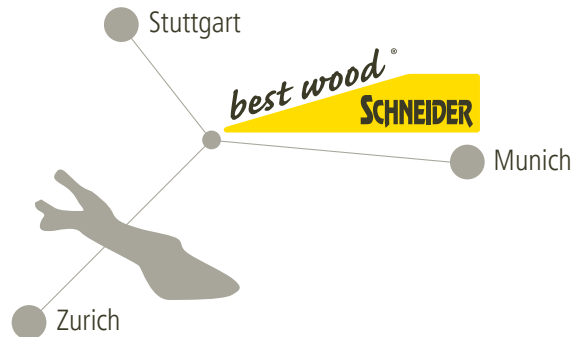
7 Wood-based panel, e.g. OSB

■ Continuous joints on existing buildings



- |   |                                       |                                  |
|---|---------------------------------------|----------------------------------|
| 1 Existing building   | 3 best wood render system             | wood FLEX 50                     |
| 2 best wood expansion joint profile for continuous surfaces | 4 best wood WALL 180                  | 6 Vapor barrier/airtight sealing |
|   | 5 Timber frame construction with best | 7 Wood-based panel, e.g. OSB     |

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