

design details ATLAS

EXTERNAL WALL INSULATION SYSTEMS
GUIDEBOOK

Design details intended for the United Kingdom





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GUIDEBOOK

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introduction

This brochure is a supplement to the previously published EXTERNAL WALL INSULATION SYSTEMS GUIDEBOOK – design details ATLAS.

In this publication, we meet the needs of contractors carrying out thermal modernization works in the United Kingdom, taking into account the specificity of this region in terms of solutions typical for single-family residential buildings. According to the Department of Energy & Climate Change, approximately 70% of the houses in the country are built with cavity walls. For that reason we selected brickwork as substrate for presented solutions for EWI systems.

As in the previous guide, we have included drawings of details and 3D visualizations showing these solutions in an accessible way. However, unlike the collection of details published earlier, this supplement does not specify all possible materials that constitute the components of ATLAS insulation systems in each of the solutions. We assumed that the user would select the ETICS* components independently, appropriately to the existing conditions, substrate and needs, taking into account that their arrangement in the insulation system is essentially repeatable. For this purpose, one can use the solutions already prepared by ATLAS.

The sample solutions included in this catalogue concern specific, sensitive places in buildings. The tips that the user will find in the set of drawings correspond to the best practices that are actually applicable in construction, taking into account legal requirements. By providing the user – designer or contractor – with instructions, we do not limit the possibility of using available alternative solutions – in particular in the use of ready-made materials intended for such applications.

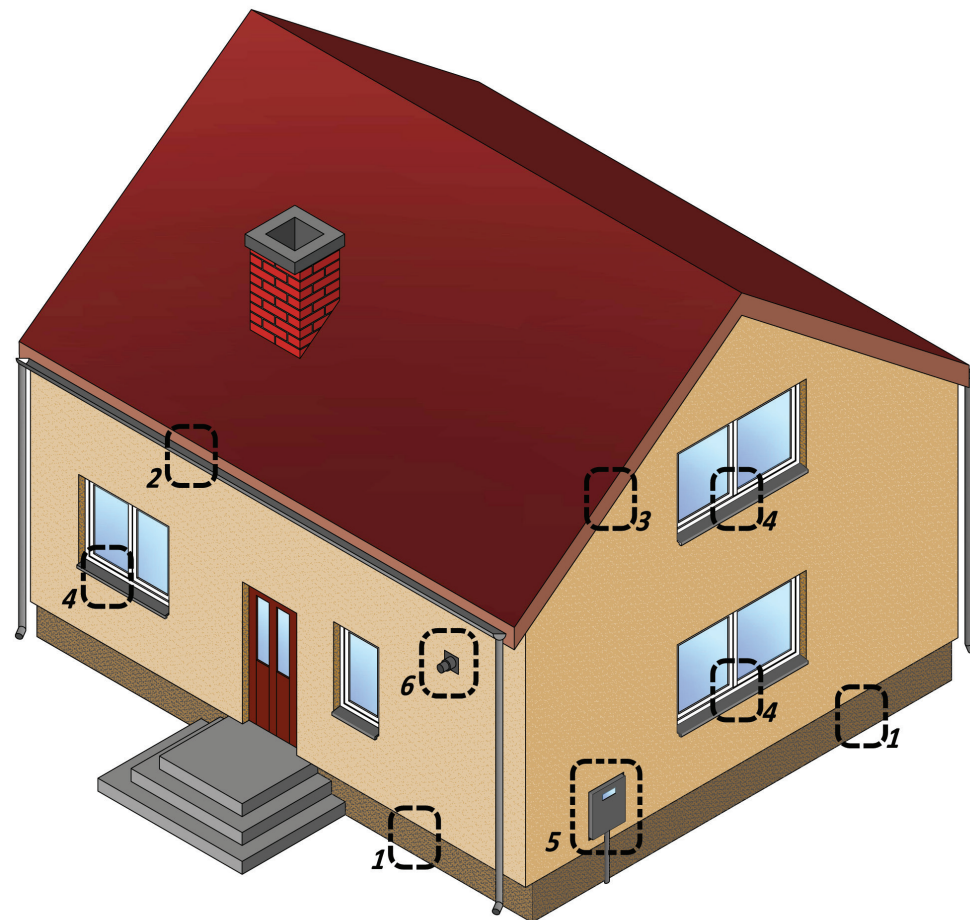
However, it should be borne in mind that the presented solutions do not exhaust all options and should be adapted to individual circumstances. The scope of the drawings has been limited to guidelines specifying the correct use of the EWI system. All co-existing technologies must be used in accordance with separate requirements.

In the second part of the catalogue you can also find tips on the proposed installation of EWI systems on buildings with traditional frame structures – steel frame and timber frame, in options depending on the type of insulating material.

We hope that the information provided in this publication will be useful to both designers and contractors. We are convinced that this will help you to make correct decisions when choosing solutions in which ATLAS insulation systems will be used.

Rafał Woziwoda
Technical Support Manager
ATLAS

*ETICS = External Thermal Insulation Composite System – the full name of the system commonly known as EWI



sensitive points of the building

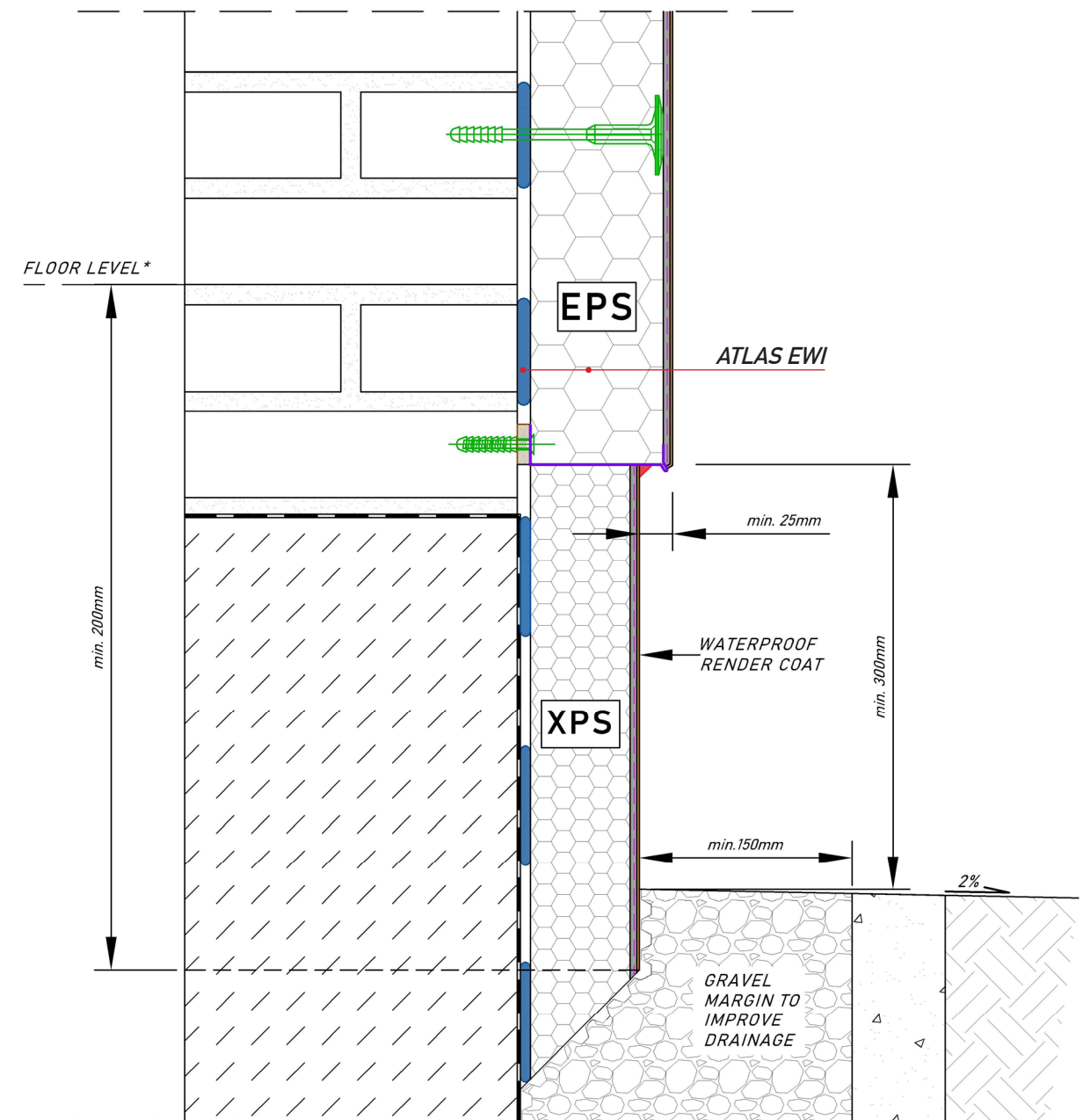
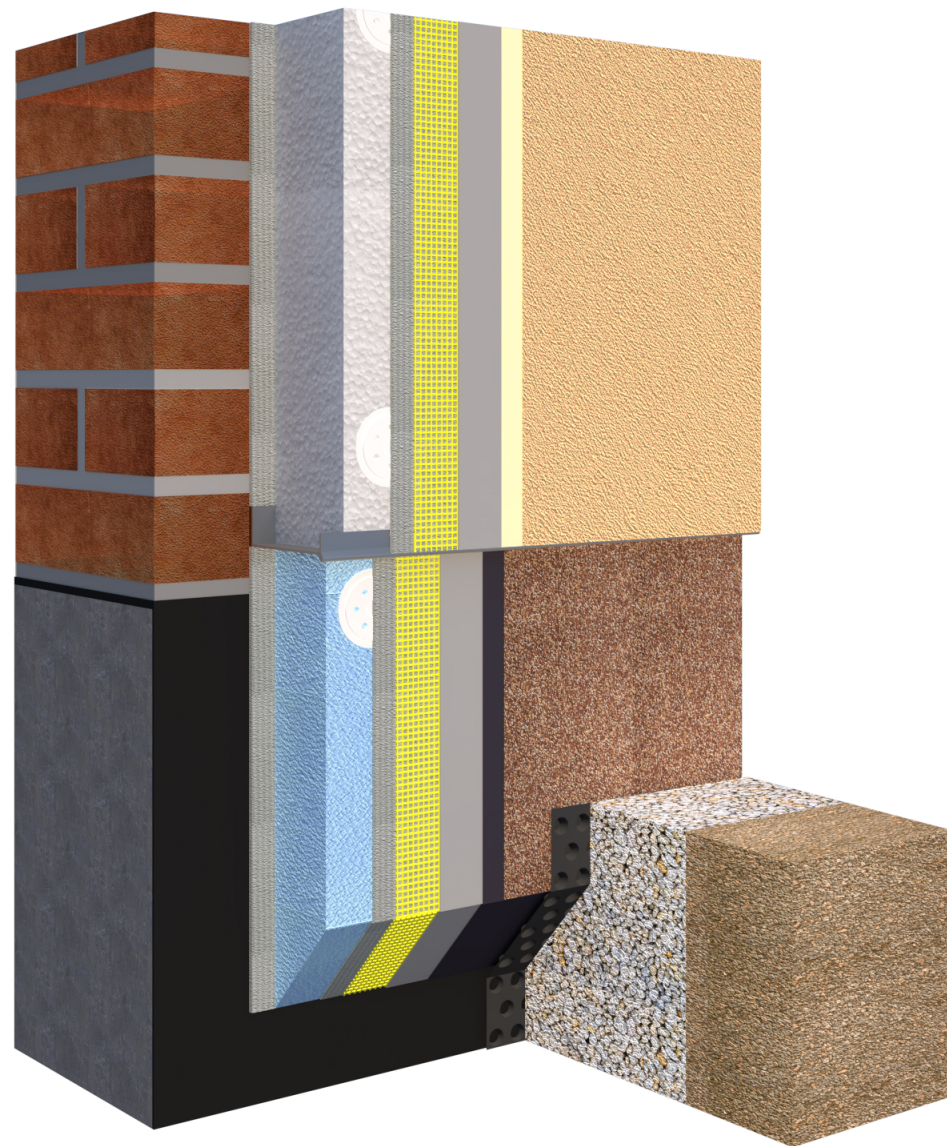
1. Damp-proof course zone (DPC)
2. Verge zone
3. Verge zone over gable wall
4. Window sill
5. Meter box
6. Flue outlet

sensitive points of the building

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thermal insulation of the existing building wall in damp-proof course zone (DPC)

recommended solution



EPS - EXPANDED POLYSTYRENE

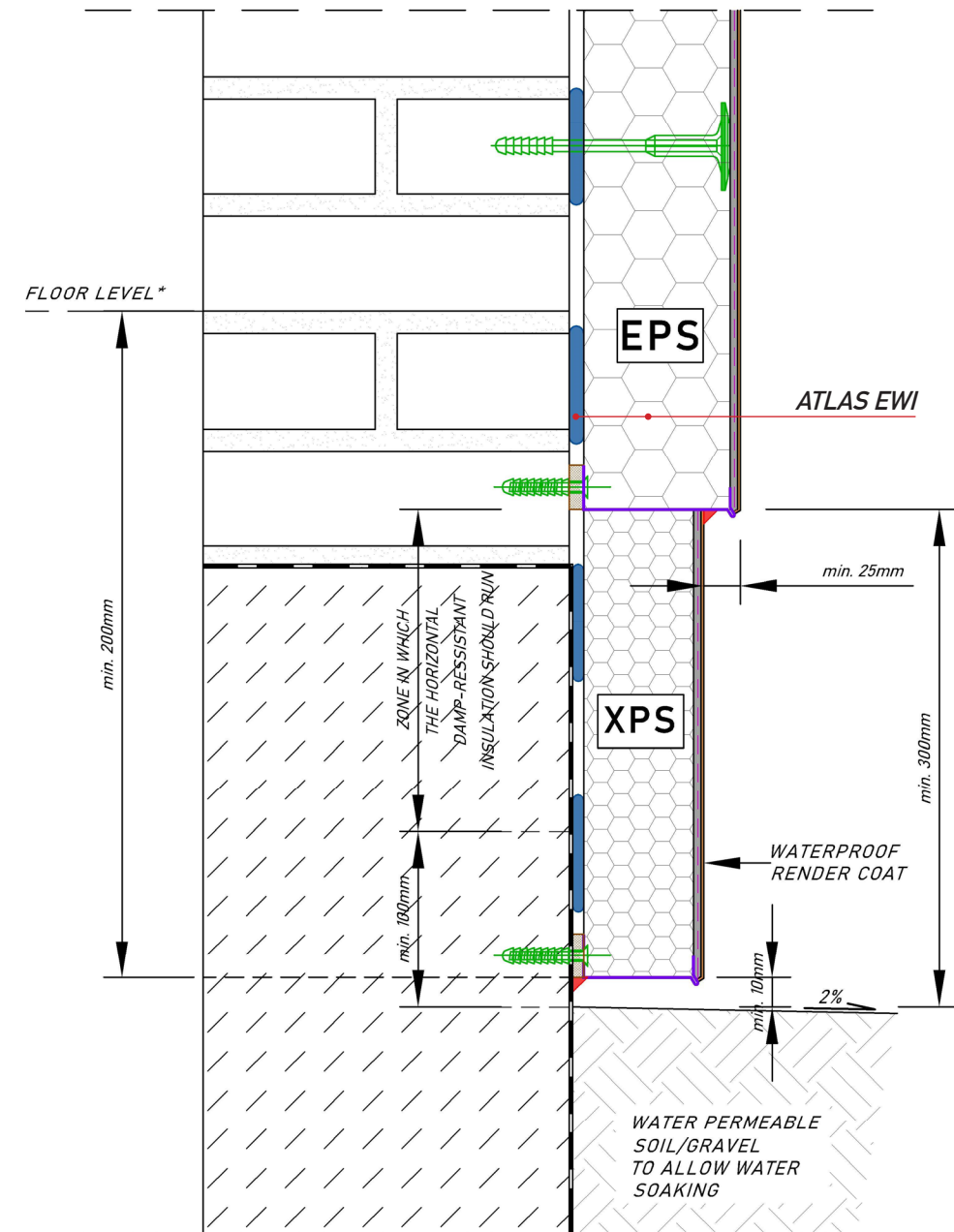
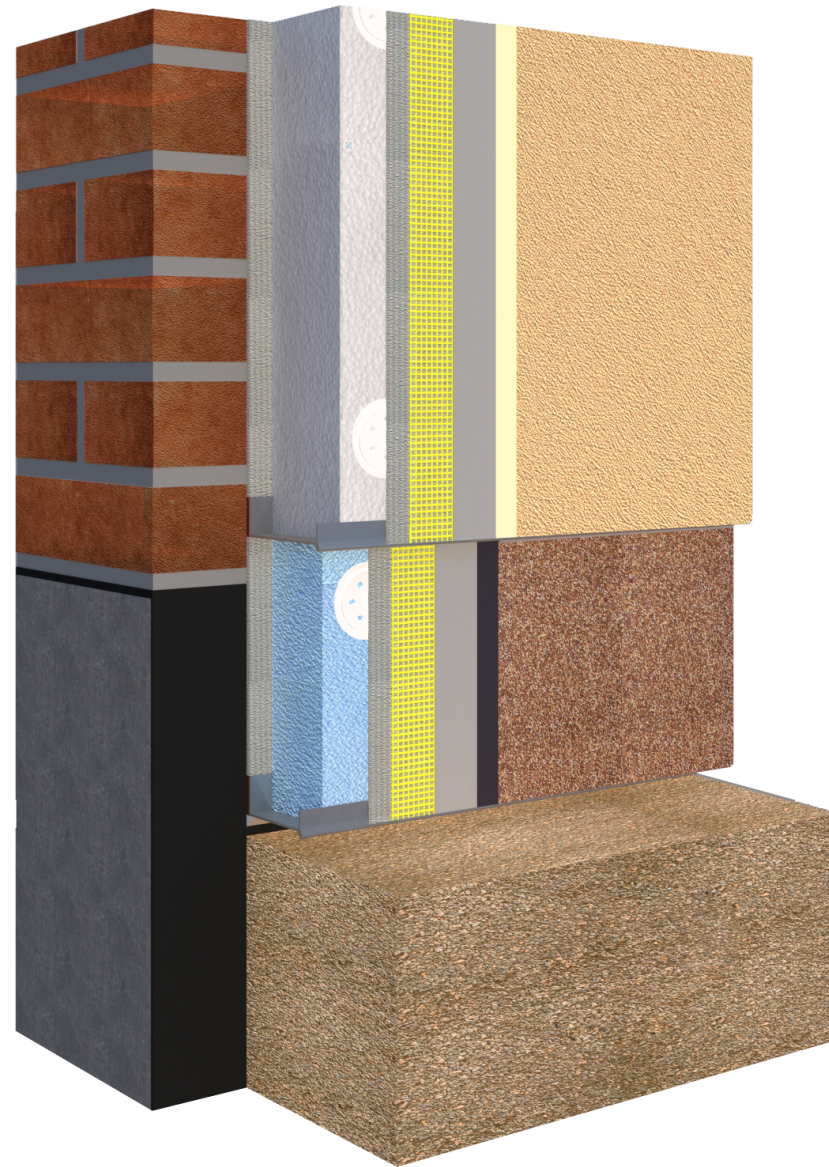
XPS - EXTRUDED POLYSTYRENE
(HIGH DENSITY PLINTH INSULATION WITH
THERMAL RESISTANCE NOT LESS THAN 75% OF THE THERMAL
RESISTANCE OF THE MAIN WALL
INSULATION)

NOTICE:

- (*) SUSPENDED TIMBER FLOOR SHOULD BE INSULATED, AND THE SPACE BELOW VENTILATED IN ACCORDANCE WITH SEPARATE REGULATIONS,
- THE ZONE OF THE BASIC EWI SYSTEM — EPS INSULATION SHOULD START NOT HIGHER THAN FLOOR LEVEL
- WATERPROOF RENDER COAT — FOR EXAMPLE CONSISTS OF ATLAS WODER DUO + ATLAS MOSAIC RENDER

thermal insulation of the existing building wall in damp-proof course zone (DPC)

admissible solution



EPS - EXPANDED POLYSTYRENE

XPS - EXTRUDED POLYSTYRENE
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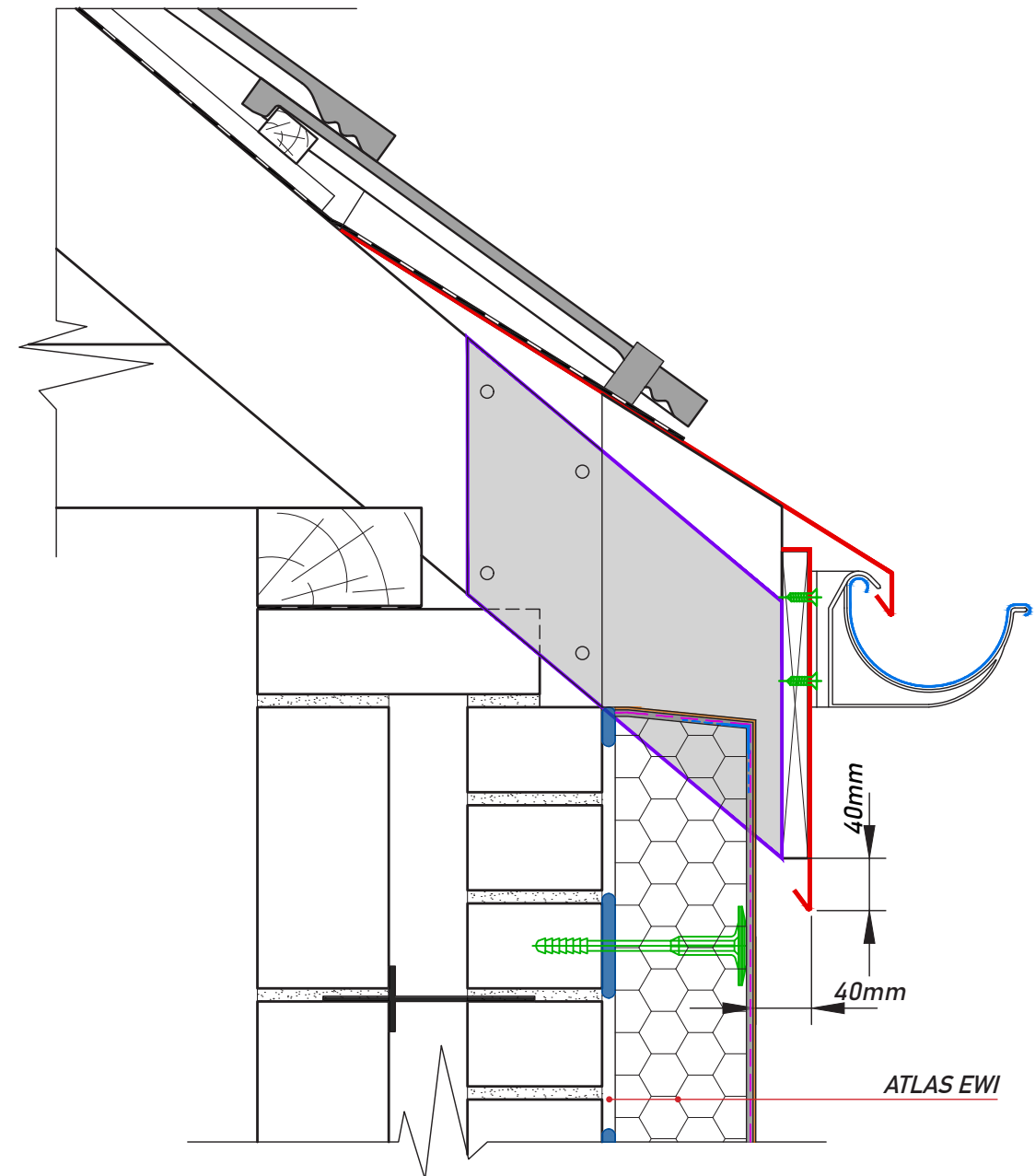
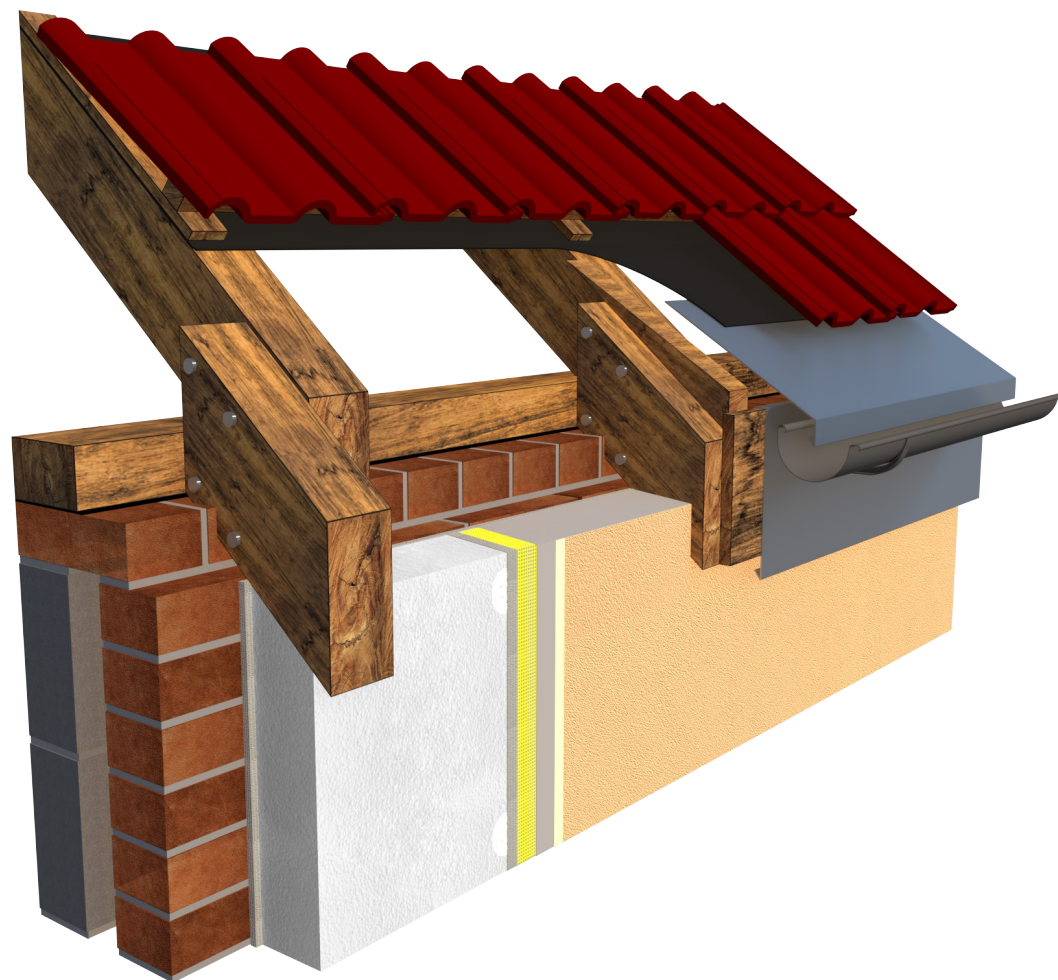
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- WATERPROOF RENDER COAT — FOR EXAMPLE CONSISTS OF ATLAS WODER DUO + ATLAS MOSAIC RENDER

thermal insulation of the wall in the zone under the verge of a pitched roof

a case where the roof slope is not overhanging
in front of the wall face

recommended solution:

- extension of the rafters and overhanging the roof edge



SOLUTION REQUIRES FOLLOWING PROCEDURE:

- DISMANTLE THE GUTTERS WITH HANGERS AND THE FASCIA BOARD. REASSEMBLE AFTER EXTENDING THE RAFTERS.
- INSTALL ADDITIONAL FLASHINGS BY INSERTING THEM UNDER THE EXISTING FLASHING AND FASTEN MECHANICALLY
- ALL VERGE TILES MUST BE MECHANICALLY FIXED IN ACCORDANCE WITH SEPARATE REGULATIONS BY NAILING, CLIPPING OR SCREWING TO PROTECT THEM AGAINST THE WIND ACTION

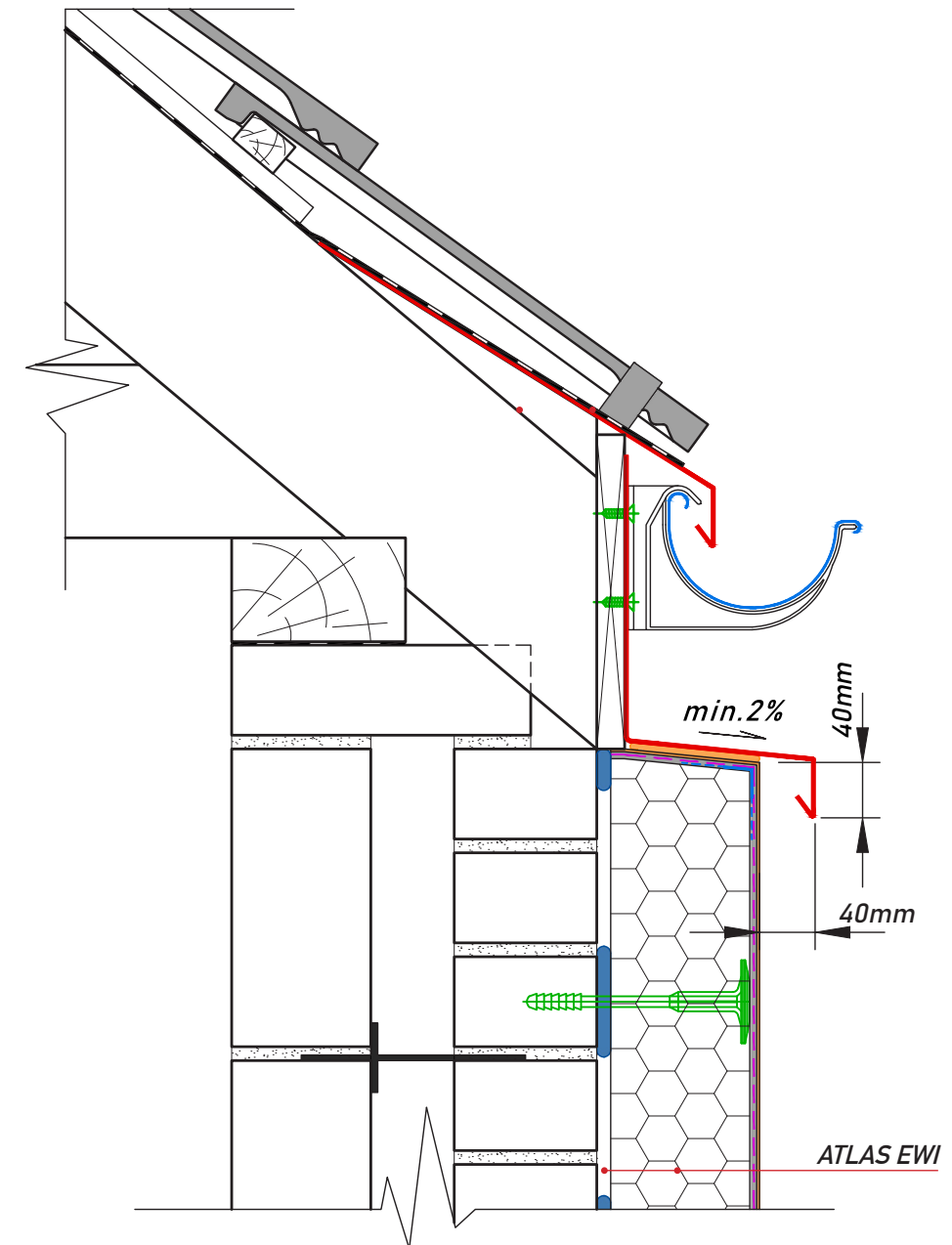
THE DRAWING DOES NOT COVER THE SOLUTION OF ROOF INSULATION (OR CEILING), WHICH SHOULD BE EXECUTED IN ACCORDANCE WITH APPROPRIATE REGULATIONS:

- WALL AND ROOF INSULATIONS SHOULD BE CONTINUOUS TO MINIMIZE THE RISK OF THERMAL BRIDGES
- ADEQUATE VENTILATION SHOULD BE MAINTAINED
- ALL CONTACT POINTS MUST BE SEALED

thermal insulation of the wall in the zone under the verge of a pitched roof

a case where the roof slope is not overhanging
in front of the wall face

admissible solution:
only in case when extension of the rafters
and roof's edge overhanging is not possible.



SOLUTION REQUIRES FOLLOWING PROCEDURE:

- DISMANTLE THE GUTTERS WITH HANGERS.
REASSEMBLE AFTER ADDITIONAL FLASHING INSTALLATION.
- INSTALL ADDITIONAL FLASHINGS BY INSERTING THEM UNDER THE EXISTING FLASHING AND FASTEN MECHANICALLY
- ALL VERGE TILES MUST BE MECHANICALLY FIXED IN ACCORDANCE WITH SEPARATE REGULATIONS BY NAILING, CLIPPING OR SCREWING TO PROTECT THEM AGAINST THE WIND ACTION

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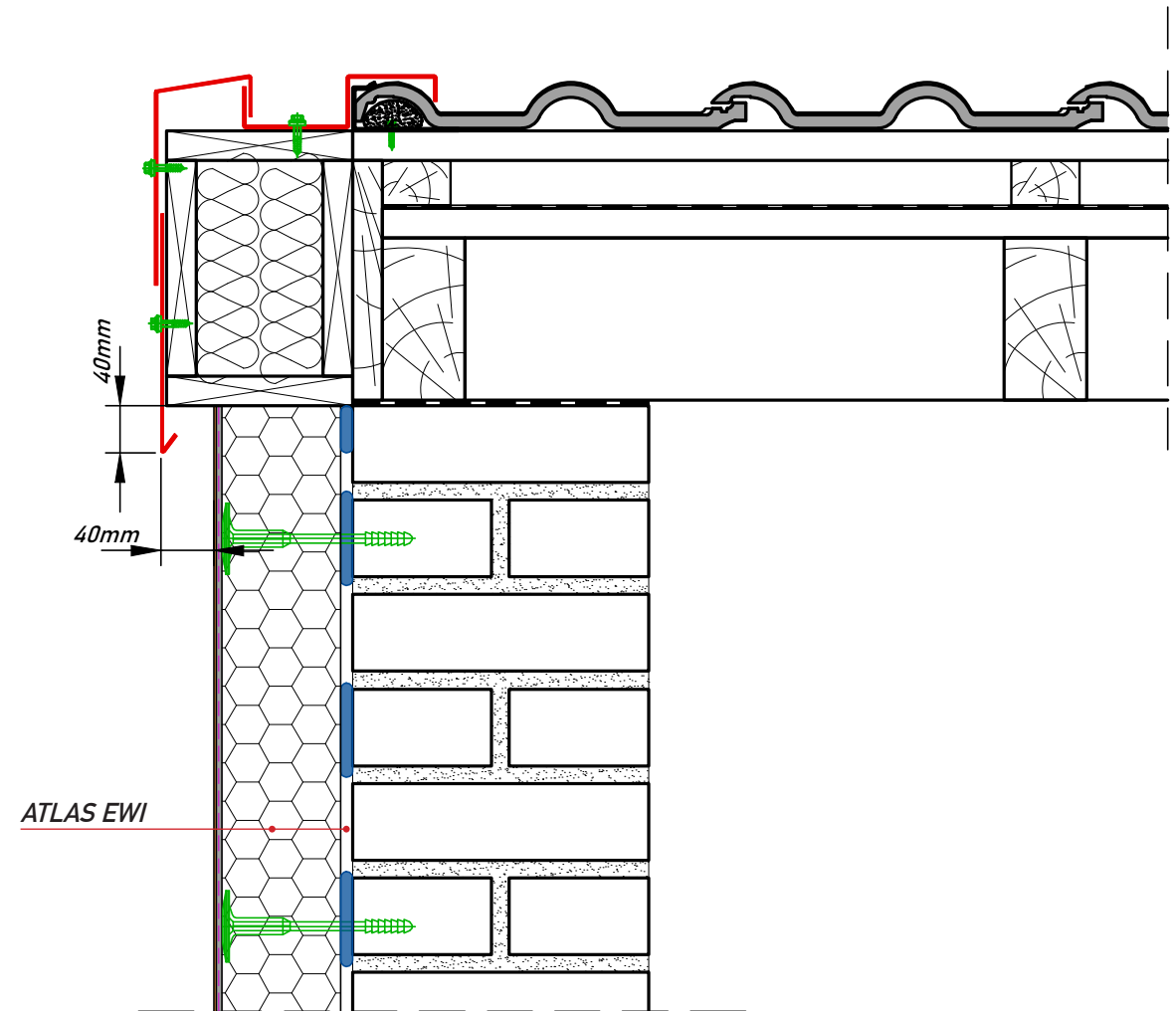
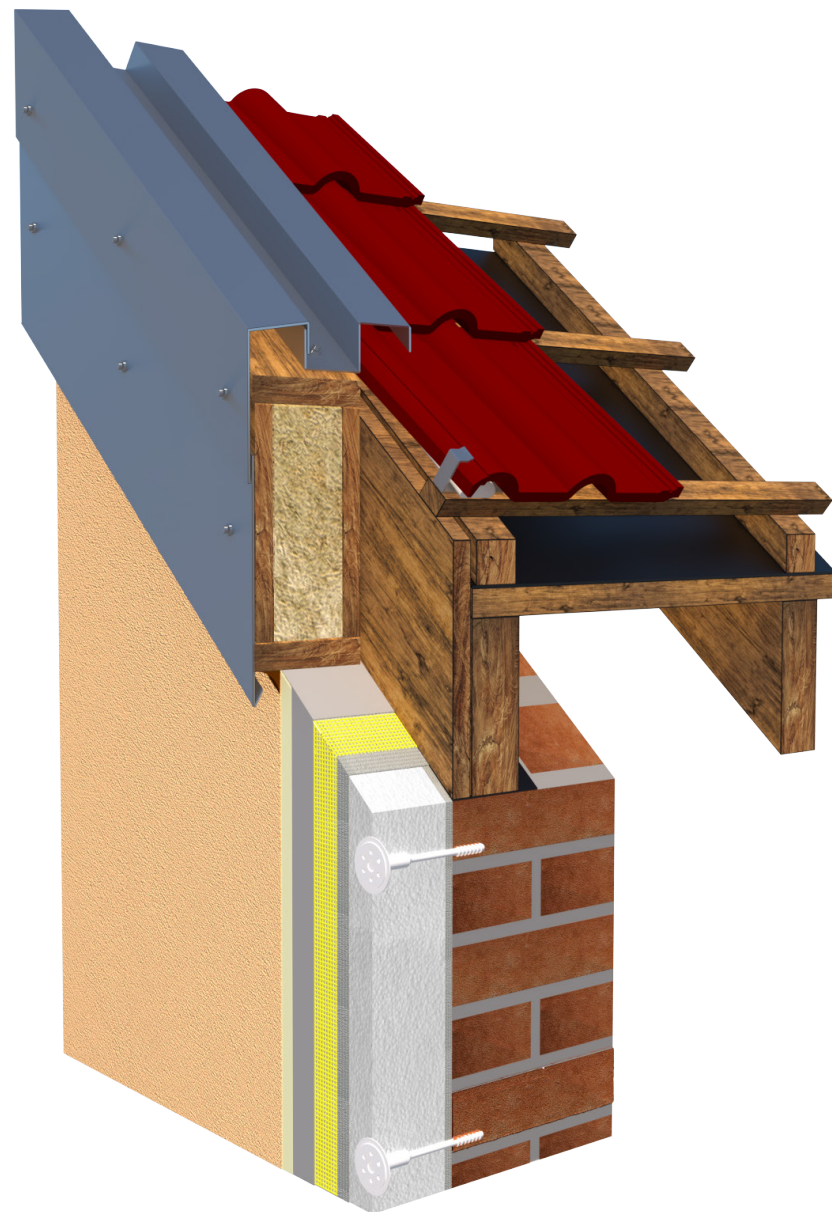
NOTICE:

the possibility of local occurrence of thermal bridges should be taken into account.

thermal insulation of the wall in the roof's verge zone over gable wall

a case where the roof slope is not overhanging
in front of the gable wall

recommended solution:
roof slope extension implemented by ladder frame



- A SET OF FLASHINGS ENSURING TIGHTNESS AGAINST PRECIPITATION SHOULD BE PERFORMED BY A TINSMITH-ROOFER ON SITE. ALTERNATIVELY READY-MADE FLASHING SETS AVAILABLE ON THE MARKET CAN BE USED
- TO ENSURE TIGHTNESS, USE SELF-DRILLING ROOFING SCREWS WITH A GASKET AND APPROPRIATE ROOFING SEALANTS INTENDED FOR FLASHINGS.
- EVE TILES ABOVE THE GABLE WALL MUST BE MECHANICALLY FIXED IN ACCORDANCE WITH SEPARATE REGULATIONS

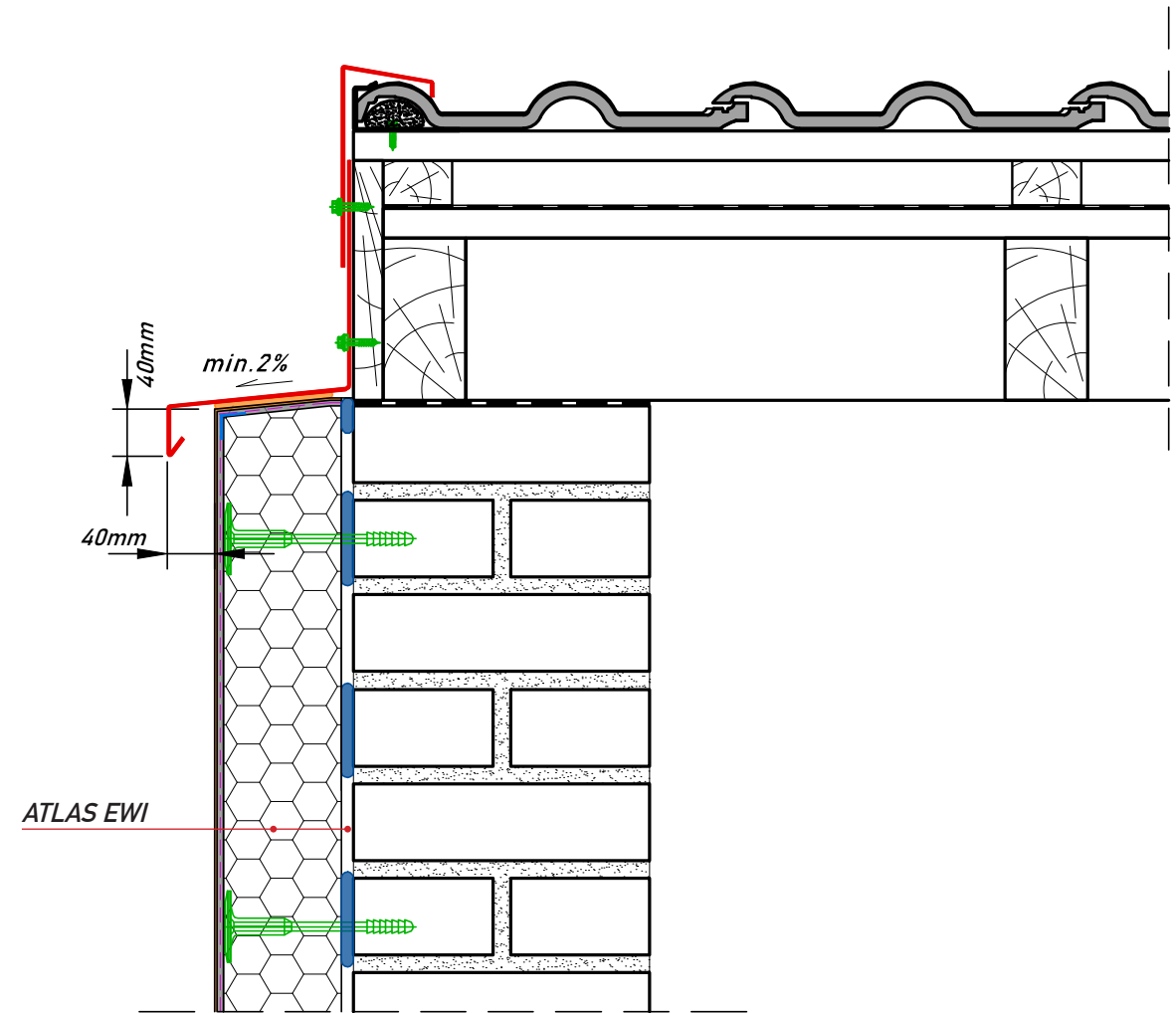
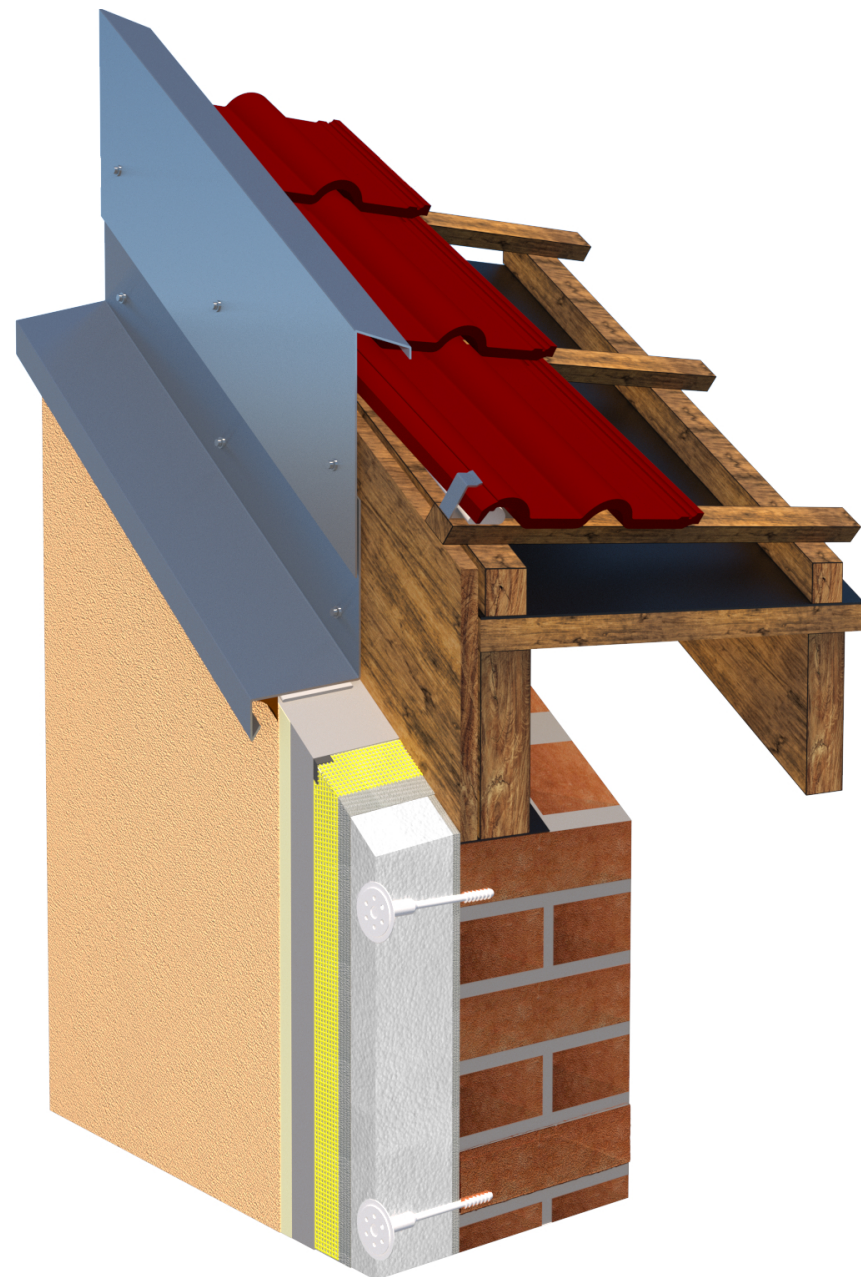
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- ALL CONTACT POINTS MUST BE SEALED

thermal insulation of the wall in the roof's verge zone over gable wall

a case where the roof slope is not overhanging
in front of the gable wall

admissible solution:
only in case when roof slope extension
is not possible to perform



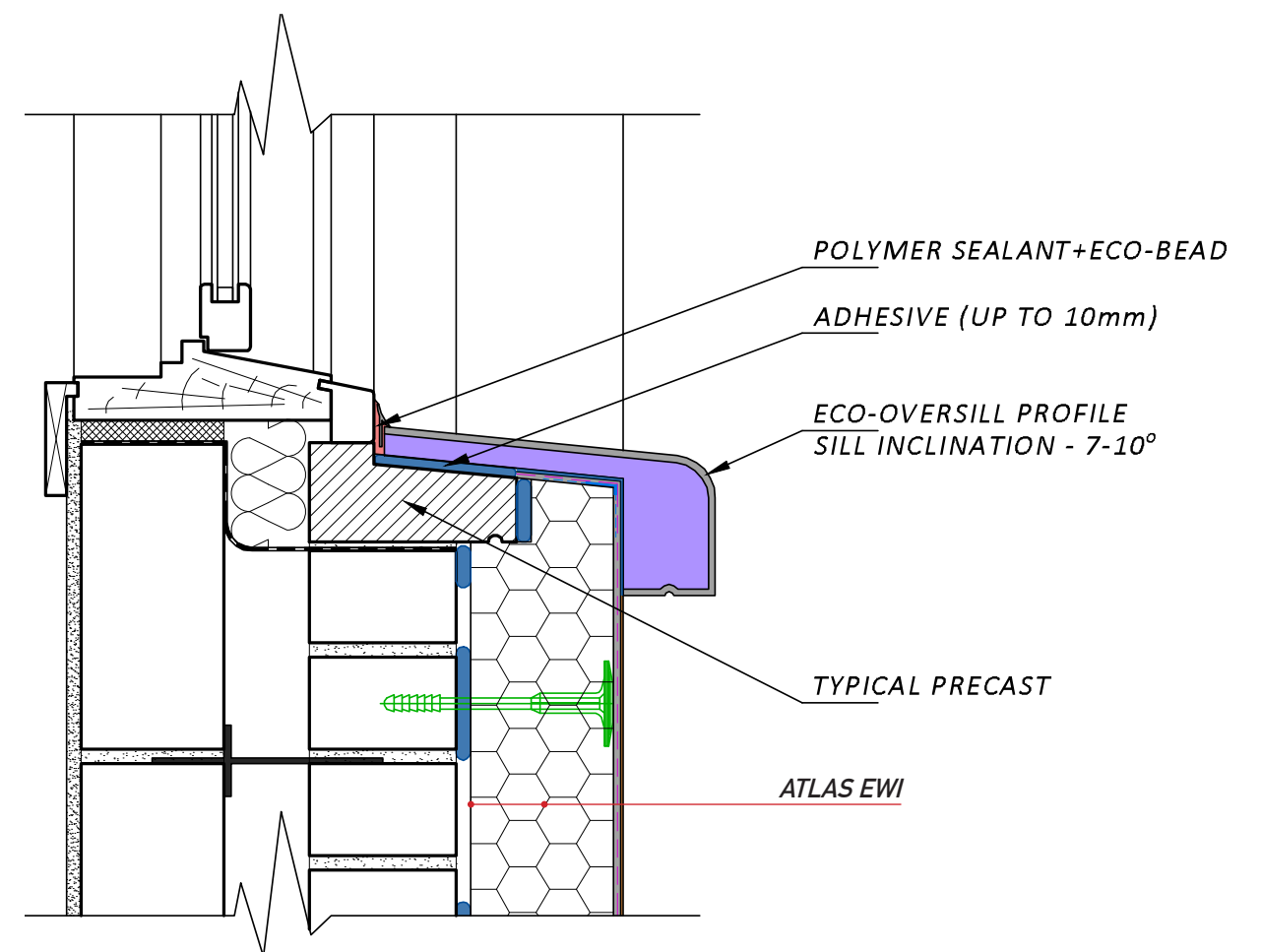
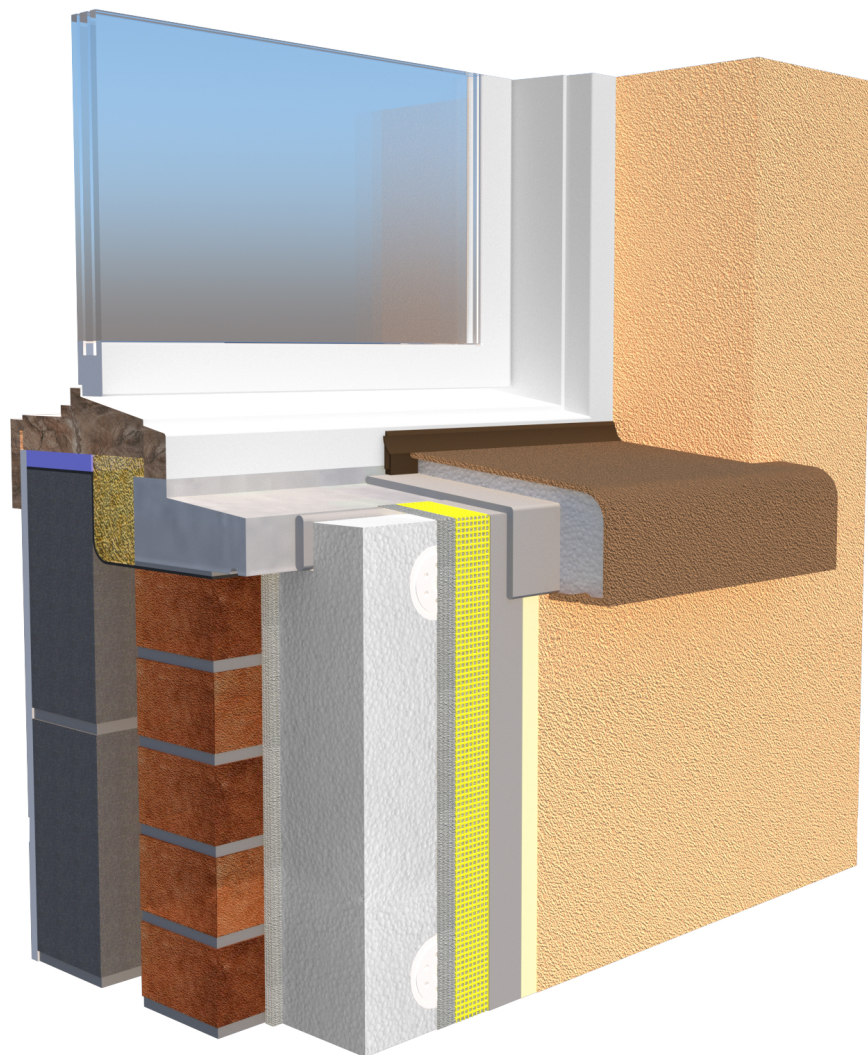
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- ALL CONTACT POINTS MUST BE SEALED

thermal insulation of the wall under reveal with the use of a precast window sill

an exemplary solution using a patented
window sill profile by **ECO-OVERSILL LTD.**



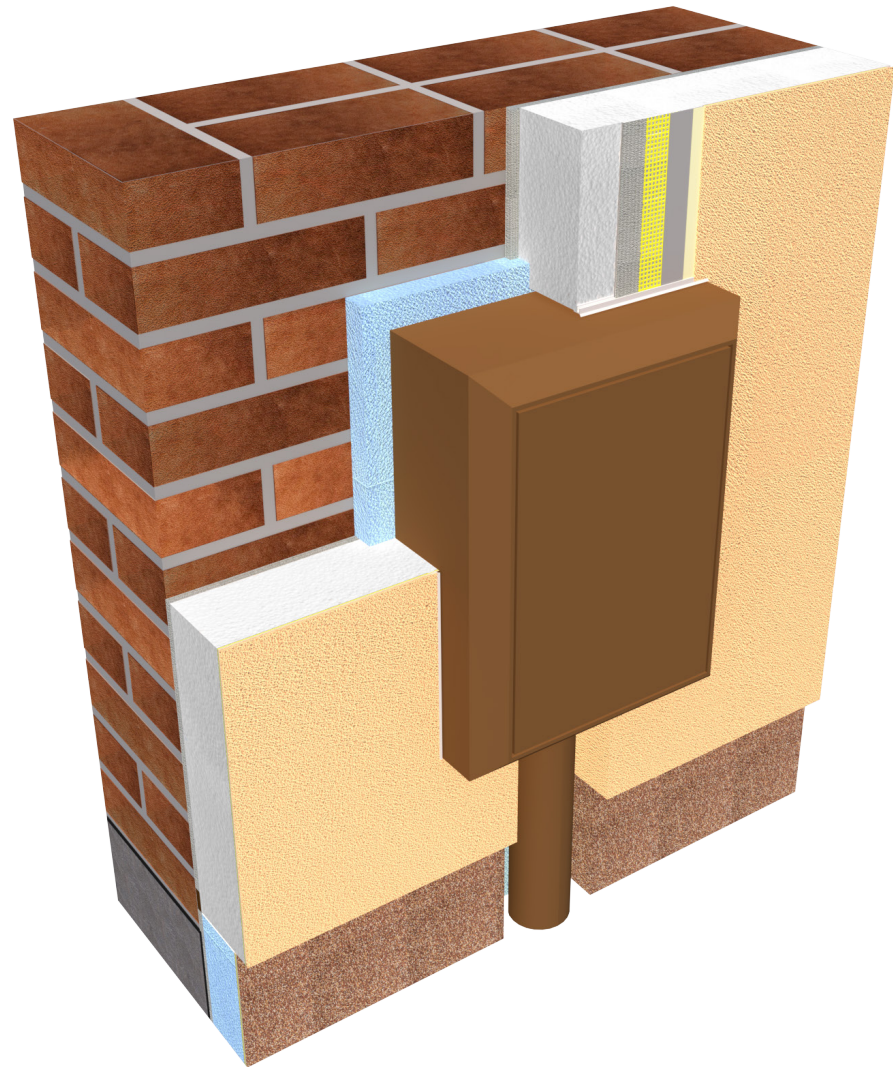
- ONE MUST REMEMBER ABOUT DIAGONAL PATCHES OF FIBERGLASS MESH IN THE REINFORCED LAYER OF THE MAIN COAT IN THE WINDOW SILLS CORNERS

Window sill profile by ECO-OVERSILL LTD. Patent no. S86111

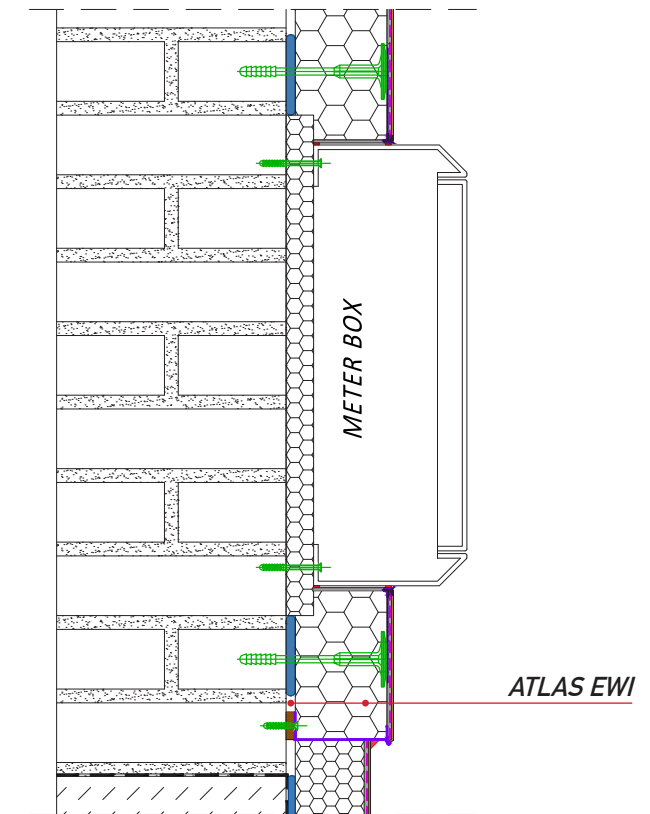
http://www.greenzoneproducts.ie/pages/products_eco-oversill.html

thermal insulation of the wall around meter box

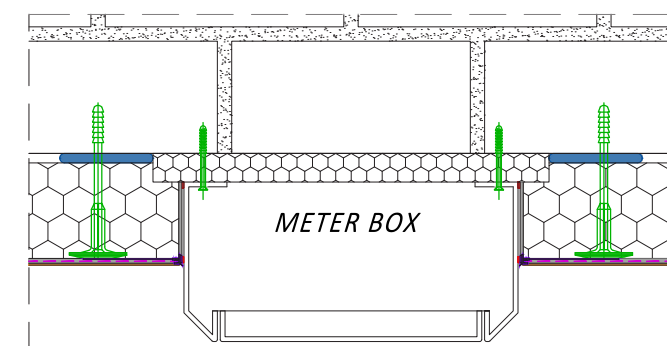
a case where it is not possible to mount the meter box on the external insulation of the wall, and it does not require service access to the regulator valve, but it is possible to move the box away from the wall and insert insulation



Vertical section:



Horizontal cross-section:

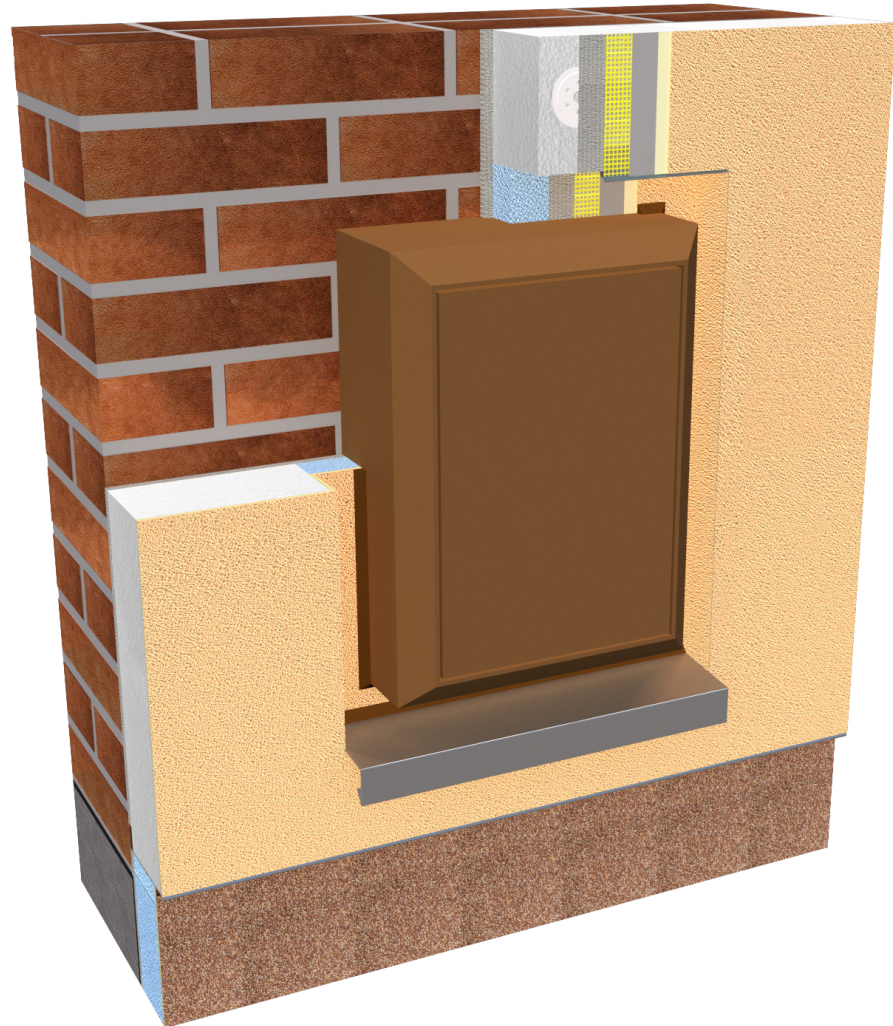


- Service box relocation can only be done by the owner of the box (i.e. utility provider). Otherwise, it may be considered an act of trespass.
- Installation of insulation with a limited thickness only improves the thermal insulation parameters of the partition, but does not completely eliminate the thermal bridge.

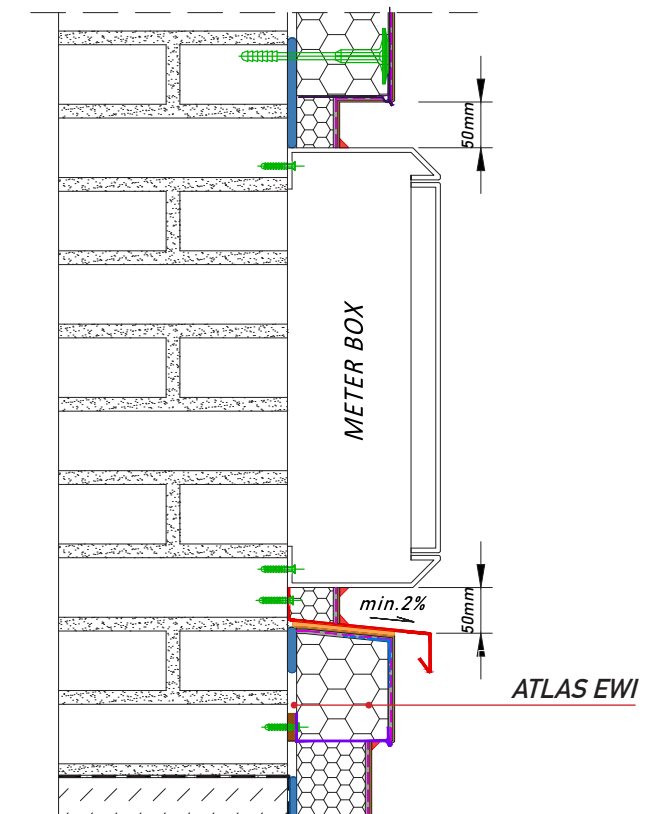
- *INSULATION BEHIND THE BOX MADE OF HARD INSULATING MATERIAL (E.G. XPS)*
- *USE PVC SYSTEM WINDOW PROFILES WITH REINFORCING MESH, ENSURING THE NECESSARY PROTECTION AGAINST RAINWATER AROUND THE METER BOX (E.G. PVC BB 13MIDI BY BELLA PLAST)*

thermal insulation of the wall around meter box

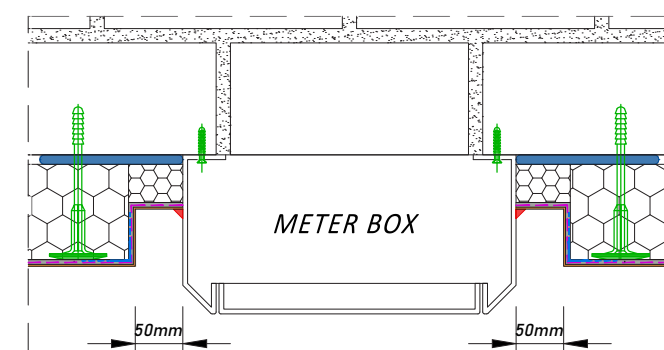
a case where it is not possible to move the meter box but service access to the regulator valve is required



Vertical section:

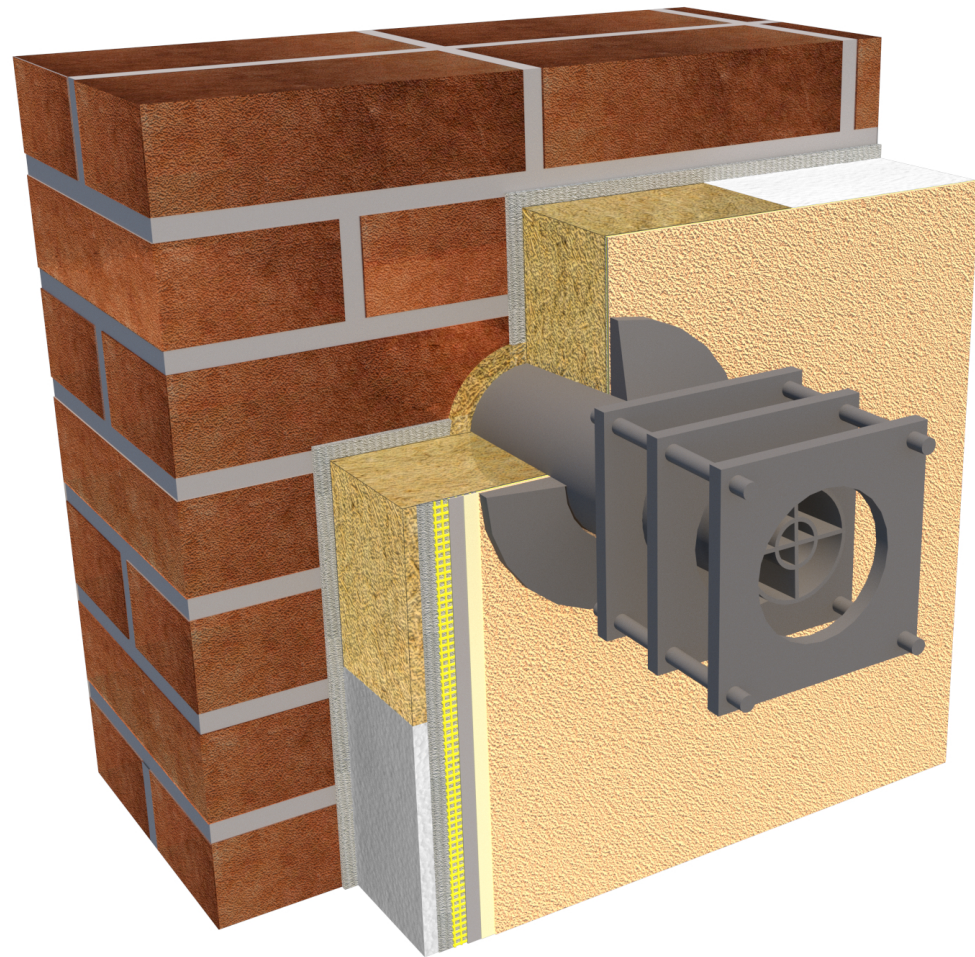


Horizontal cross-section:



- Leave a gap of about 50 millimeters between the wall insulation and the meter box on all sides to ensure service access to the regulator valve
- Use insulation of the wall directly around the box with EPS insulation, the thickness of which will not limit service access
- In order to protect against rainwater, appropriate corner profiles with a reinforcing mesh should be used in the EWI SYSTEM
- Sealant should be used additionally in places where rainwater could get under the EWI system
- **Thermal bridge cannot be avoided due to the lack of insulation behind the meter box**

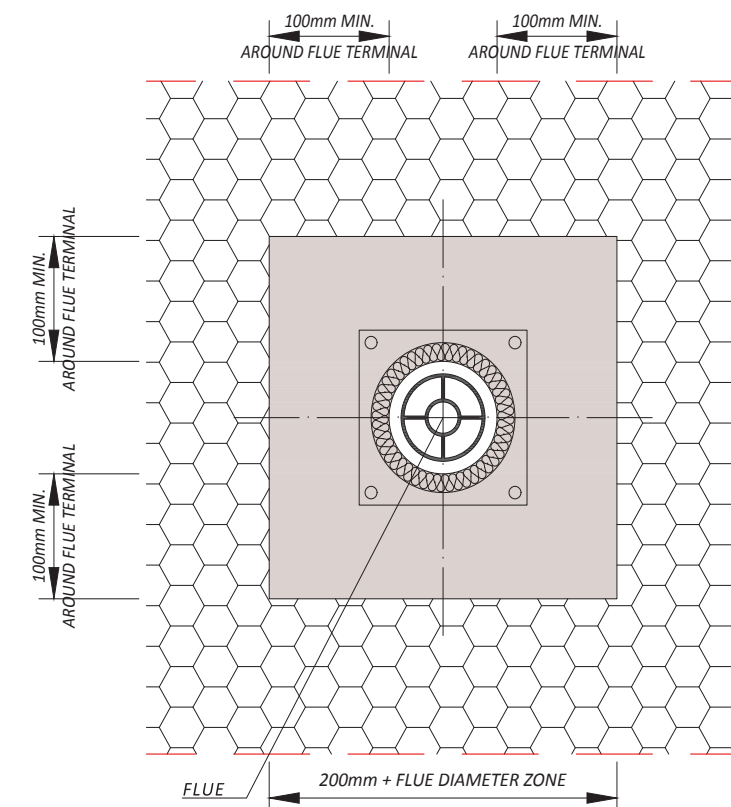
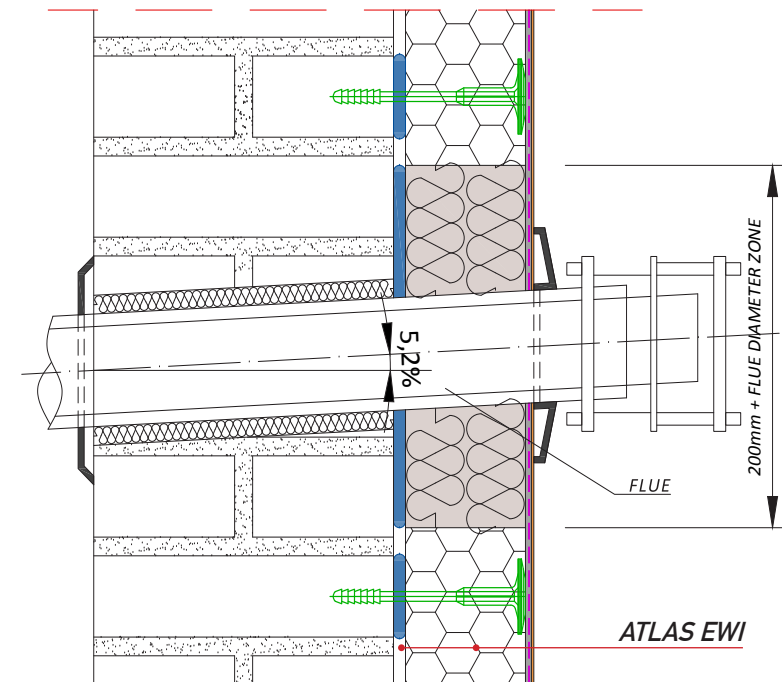
thermal insulation of the wall around flue outlet on the building façade



A non-combustible insulation (*) should be provided around the hot extract flue with a minimum of 100mm clearance around the flue terminal.

Make sure that there are no additional requirements regarding exhaust gas outlet issued by the manufacturer of the heating device.

(*) Mineral fibre board

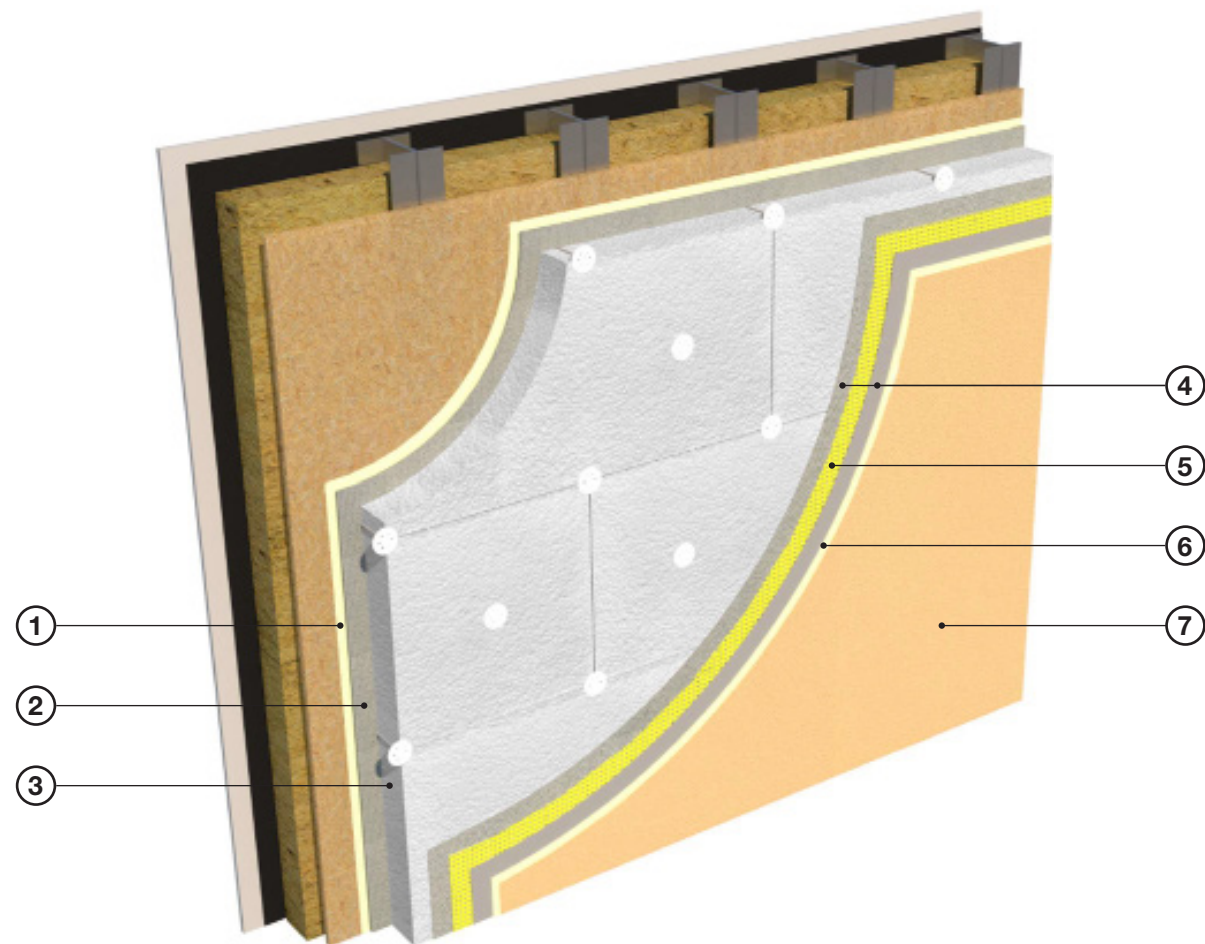




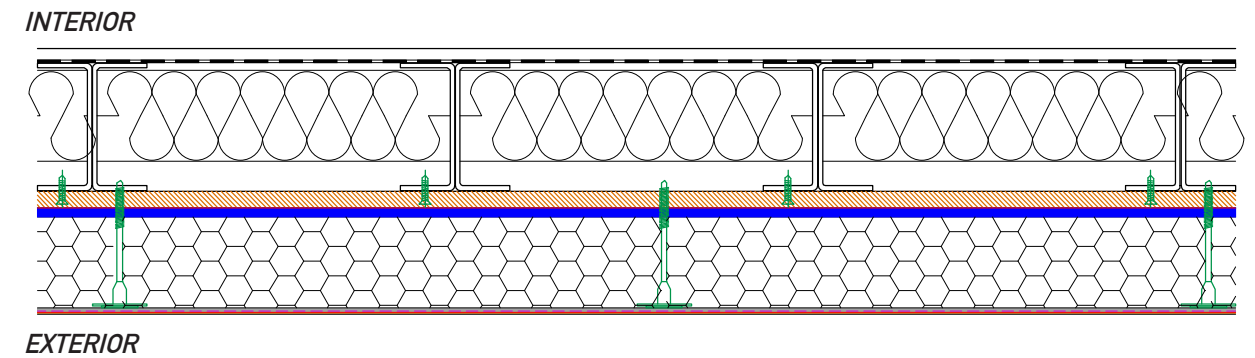
external wall insulation systems on frame structure

- | | | |
|-----|--|-----------|
| 2.1 | external wall insulation system with expanded polystyrene panels (EPS) on a substrate made of oriented strand board (OSB) based on a steel frame structure | 30 |
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**external wall insulation system
with expanded polystyrene panels (EPS)
on a substrate made of oriented strand board (OSB)
based on a steel frame structure**



This EWI system can be used in this arrangement on OSB/3 or OSB/4 boards, as well as on sheathing made of Fibre Cement Boards and Gypsum Fiber Boards approved for such use by the manufacturer.



SUBSTRATE: OSB SHEETING ON STEEL FRAME
STRUCTURE FILLED WITH MINERAL WOOL
INSULATION

COMPONENTS OF EXTERNAL WALL INSULATION SYSTEM:

1. PRIMER:

ATLAS ULTRAGRUNT
ATLAS CERPLAST

2. ADHESIVE FOR THERMAL INSULATION BOARD FIXING:

ATLAS STOPTER K-50
ATLAS STOPTER K-20
ATLAS HOTER U
ATLAS HOTER S
ATLAS GRAWIS U
ATLAS GRAWIS S
ATLAS ROKER U

3. THERMAL INSULATION:

Expanded polystyrene slabs (EPS)
according to EN 13163

4. BASE COAT:

ATLAS STOPTER K-50
ATLAS STOPTER K-20
ATLAS HOTER U
ATLAS GRAWIS U
ATLAS ROKER U

5. REINFORCING FIBERGLASS MESH:

ATLAS 150
ATLAS 165

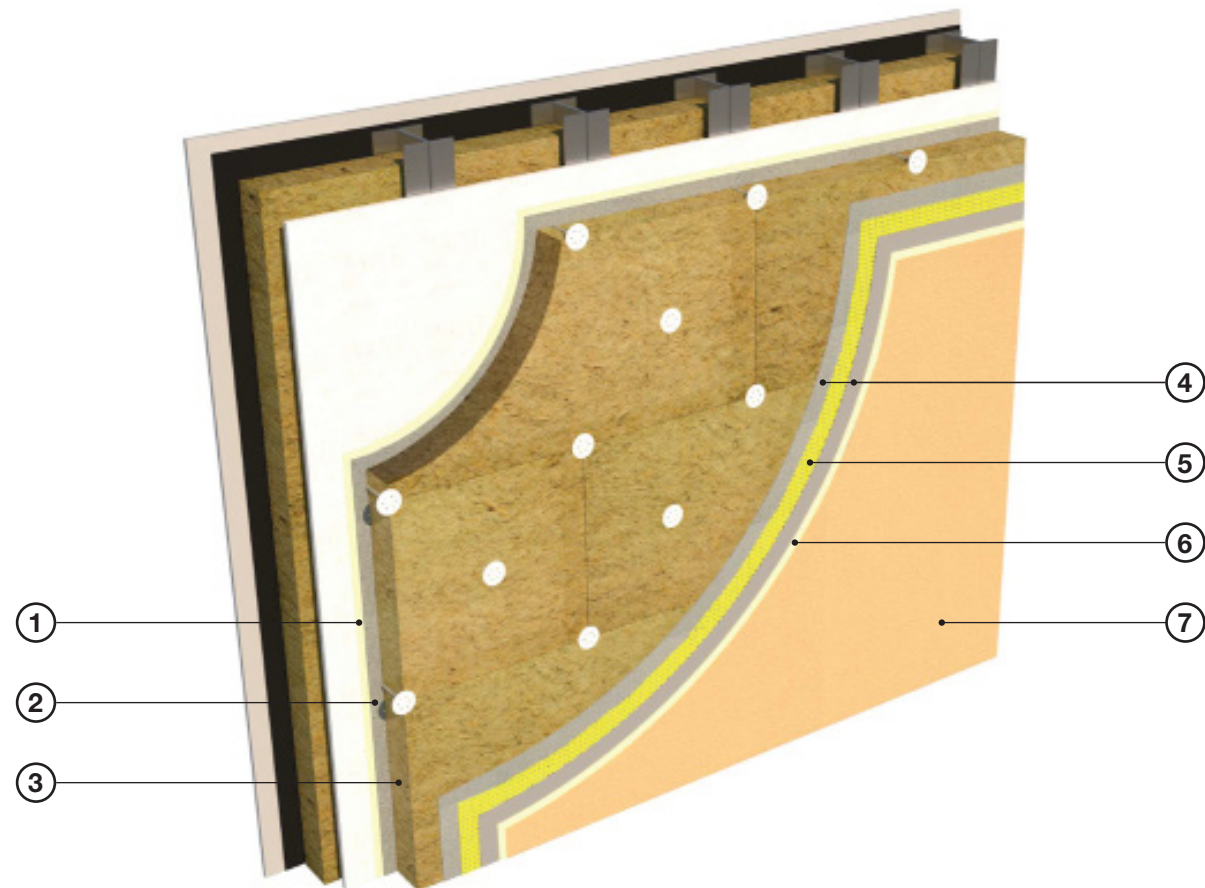
6. PRIMER FOR FINISHING COAT:

not necessary for ATLAS STOPTER K-50
ATLAS CERPLAST underlay for
ATLAS SILICONE HYBRID RENDER
ATLAS ACRYLIC RENDER
ATLAS CERMIT ND
ATLAS CERMIT N-100
ATLAS CERMIT BA-M
ATLAS CERMIT WN
ATLAS SILKON BA
ATLAS DEKO M
ATLAS SILKON ANX underlay for
ATLAS SILICONE RENDER
ATLAS SILICONE HYBRID RENDER
ATLAS SILICONE-SILICATE RENDER
ATLAS SILKON BA

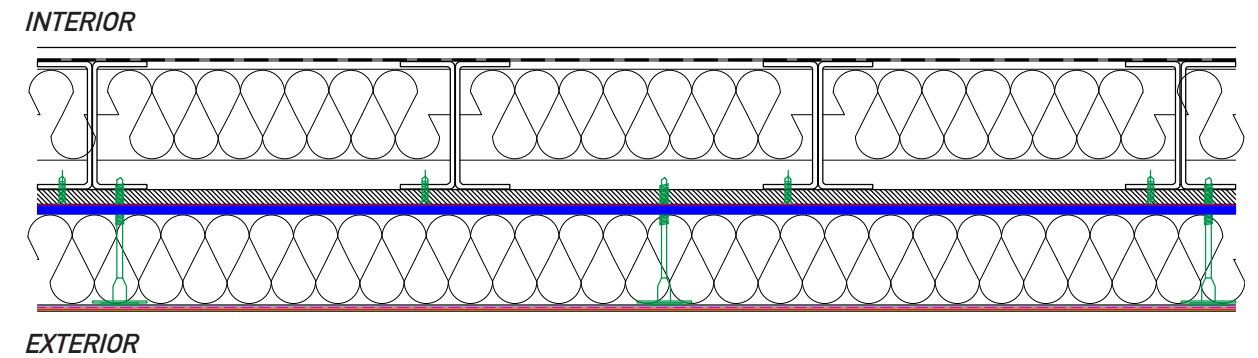
7. THIN-COAT FAÇADE RENDER:

ATLAS SILICONE RENDER
ATLAS SILICONE HYBRID RENDER
ATLAS SILICONE-SILICATE RENDER
ATLAS ACRYLIC RENDER
ATLAS CERMIT ND
ATLAS CERMIT N-100
ATLAS CERMIT BA-M
ATLAS CERMIT WN
ATLAS SILKON BA
ATLAS DEKO M

**external wall insulation system
with mineral wool (MW)
on a substrate made of fibre cement board (FCB)
based on a steel frame structure**



This EWI system can be used in this arrangement on Fibre Cement Boards (FCB), as well as on sheathing made of OSB/3 or OSB/4 boards and Gypsum Fiber Boards approved for such use by the manufacturer.



SUBSTRATE: FCB SHEETING ON STEEL FRAME
STRUCTURE FILLED WITH MINERAL WOOL
INSULATION

COMPONENTS OF EXTERNAL WALL INSULATION SYSTEM:

1. PRIMER:

ATLAS ULTRAGRUNT
ATLAS CERPLAST

2. ADHESIVE FOR THERMAL INSULATION BOARD FIXING:

ATLAS STOPTER K-50
ATLAS ROKER U

3. THERMAL INSULATION:

mineral wool panels according to EN-13162

4. BASE COAT:

ATLAS STOPTER K-50
ATLAS ROKER U

5. REINFORCING FIBERGLASS MESH:

ATLAS 150
ATLAS 165

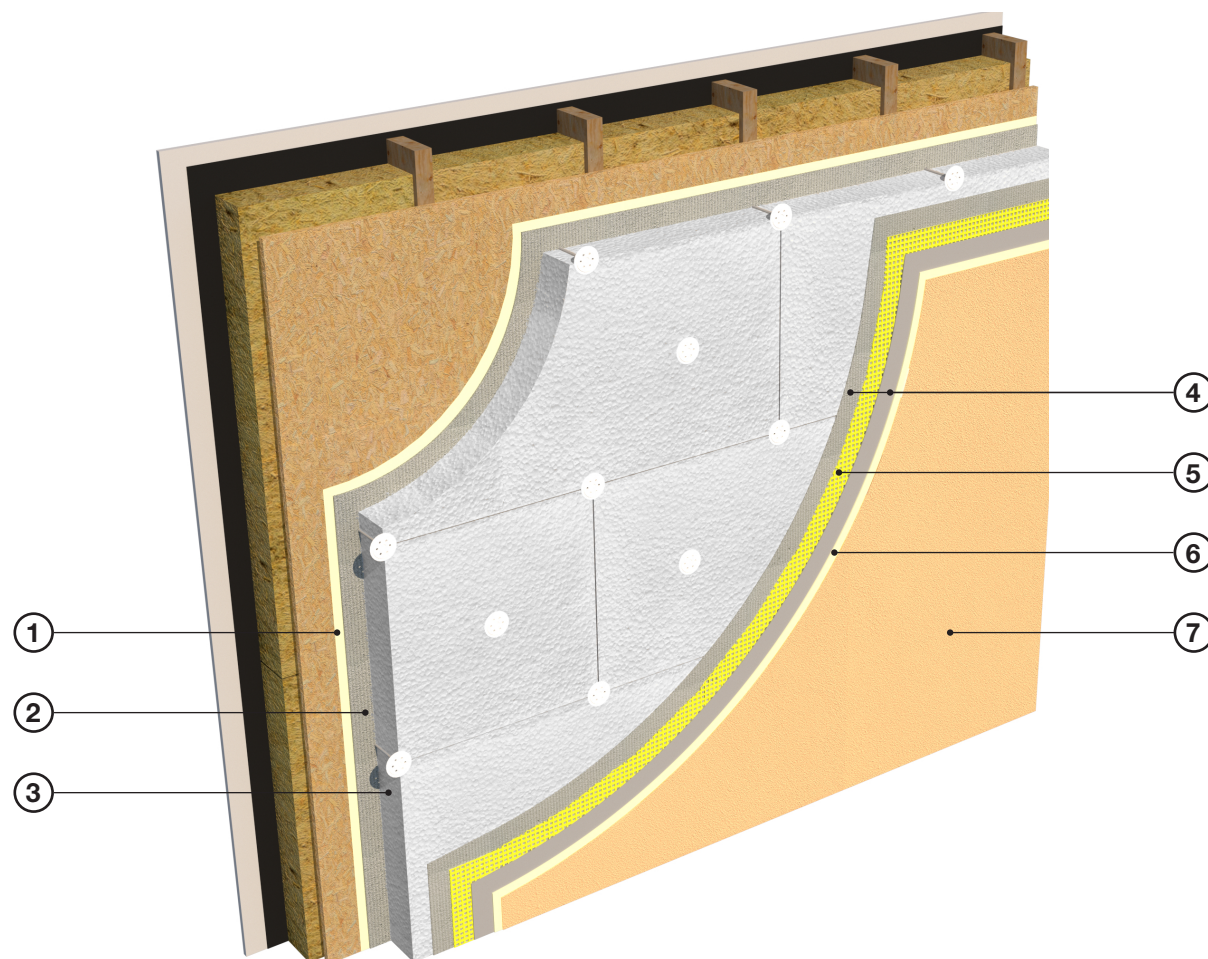
6. PRIMER FOR FINISHING COAT:

not necessary for ATLAS STOPTER K-50
ATLAS CERPLAST underlay for
ATLAS CERMIT ND
ATLAS CERMIT N-100
ATLAS CERMIT BA-M
ATLAS CERMIT WN
ATLAS SILKON ANX underlay for
ATLAS SILICONE RENDER
ATLAS SILICONE HYBRID RENDER
ATLAS SILICONE-SILICATE RENDER
ATLAS SILKON BA

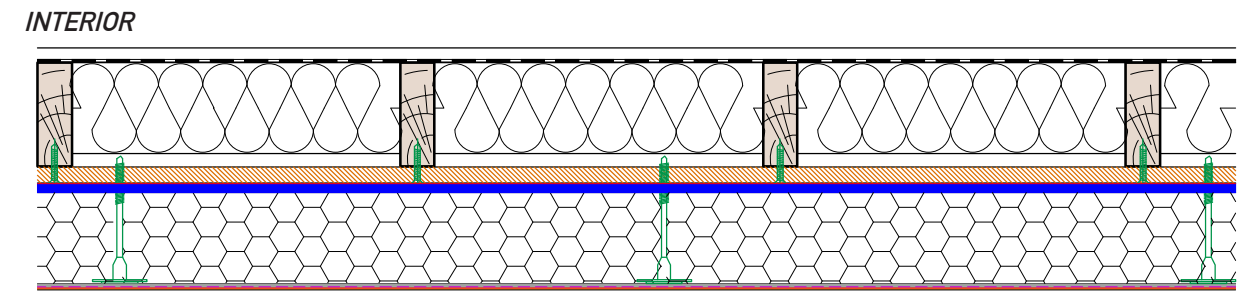
7. THIN-COAT FAÇADE RENDER:

ATLAS CERMIT ND
ATLAS CERMIT N-100
ATLAS CERMIT BA-M
ATLAS CERMIT WN
ATLAS SILICONE RENDER
ATLAS SILICONE HYBRID RENDER
ATLAS SILICONE-SILICATE RENDER
ATLAS SILKON BA

**external wall insulation system
with expanded polystyrene panels (EPS)
on a substrate made of oriented strand board (OSB)
based on a timber frame structure**



This EWI system can be used in this arrangement on OSB/3 or OSB/4 boards, as well as on sheathing made of Fibre Cement Boards and Gypsum Fiber Boards approved for such use by the manufacturer.



EXTERIOR

SUBSTRATE: OSB SHEETING ON TIMBER FRAME
STRUCTURE FILLED WITH MINERAL WOOL
INSULATION

COMPONENTS OF EXTERNAL WALL INSULATION SYSTEM:

1. PRIMER:

ATLAS ULTRAGRUNT
ATLAS CERPLAST

2. ADHESIVE FOR THERMAL INSULATION BOARD FIXING:

ATLAS STOPTER K-50
ATLAS STOPTER K-20
ATLAS HOTER U
ATLAS HOTER S
ATLAS GRAWIS U
ATLAS GRAWIS S
ATLAS ROKER U

3. THERMAL INSULATION:

Expanded polystyrene slabs (EPS)
according to EN 13163

4. BASE COAT:

ATLAS STOPTER K-50
ATLAS STOPTER K-20
ATLAS HOTER U
ATLAS GRAWIS U
ATLAS ROKER U

5. REINFORCING FIBERGLASS MESH:

ATLAS 150
ATLAS 165

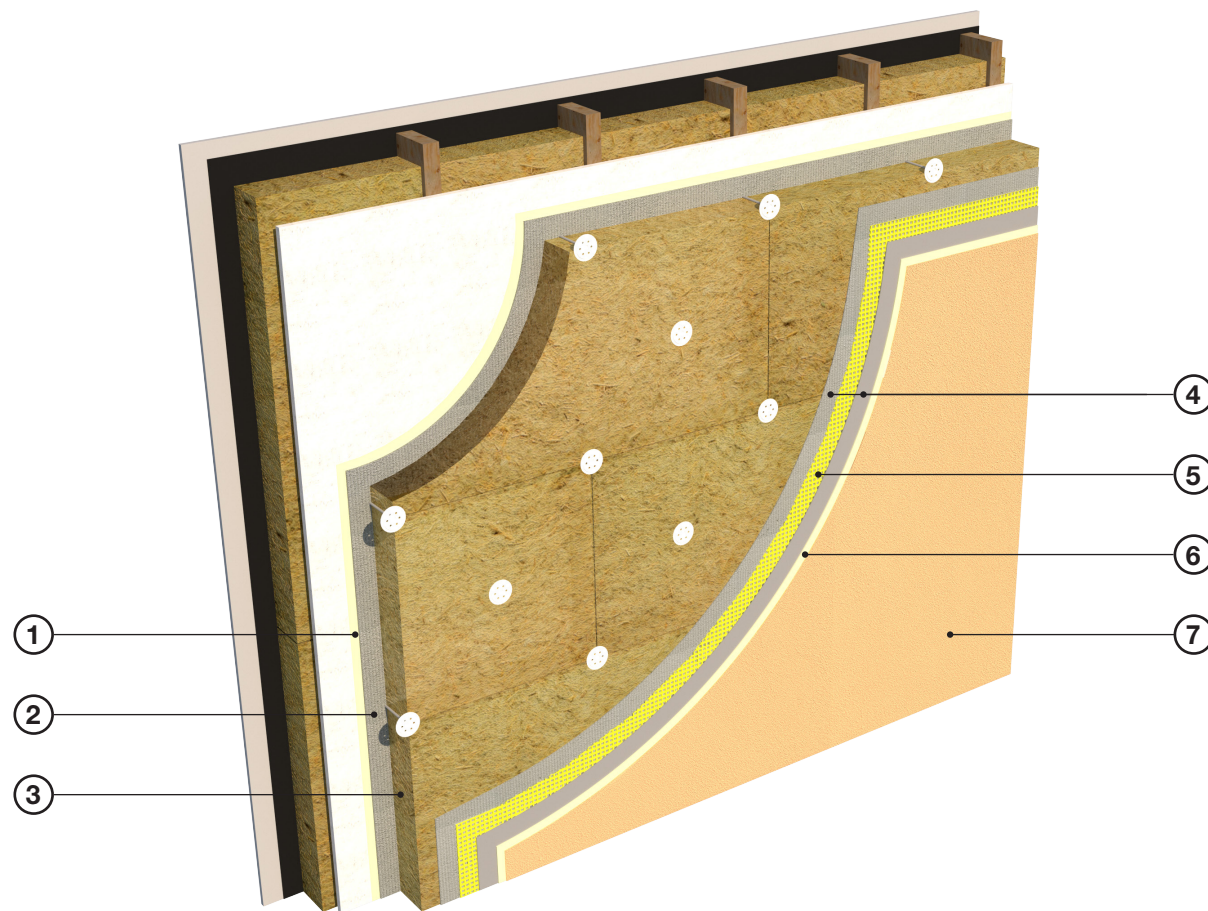
6. PRIMER FOR FINISHING COAT:

not necessary for ATLAS STOPTER K-50
ATLAS CERPLAST underlay for
ATLAS SILICONE HYBRID RENDER
ATLAS ACRYLIC RENDER
ATLAS CERMIT ND
ATLAS CERMIT N-100
ATLAS CERMIT BA-M
ATLAS CERMIT WN
ATLAS SILKON BA
ATLAS DEKO M
ATLAS SILKON ANX underlay for
ATLAS SILICONE RENDER
ATLAS SILICONE HYBRID RENDER
ATLAS SILICONE-SILICATE RENDER
ATLAS SILKON BA

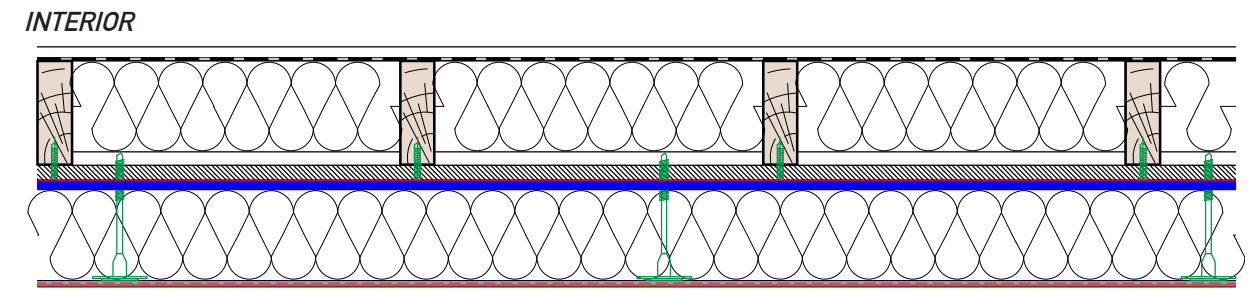
7. THIN-COAT FAÇADE RENDER:

ATLAS SILICONE RENDER
ATLAS SILICONE HYBRID RENDER
ATLAS SILICONE-SILICATE RENDER
ATLAS ACRYLIC RENDER
ATLAS CERMIT ND
ATLAS CERMIT N-100
ATLAS CERMIT BA-M
ATLAS CERMIT WN
ATLAS SILKON BA
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**external wall insulation system
with mineral wool (MW)
on a substrate made of fibre cement board (FCB)
based on a timber frame structure**



This EWI system can be used in this arrangement on Fibre Cement Boards (FCB), as well as on sheathing made of OSB/3 or OSB/4 boards and Gypsum Fiber Boards approved for such use by the manufacturer



EXTERIOR

SUBSTRATE: FCB SHEETING ON TIMBER FRAME
STRUCTURE FILLED WITH MINERAL WOOL
INSULATION

COMPONENTS OF EXTERNAL WALL INSULATION SYSTEM:

1. PRIMER:

ATLAS ULTRAGRUNT
ATLAS CERPLAST

2. ADHESIVE FOR THERMAL INSULATION BOARD FIXING:

ATLAS STOPTER K-50
ATLAS ROKER U

3. THERMAL INSULATION:

mineral wool panels according to EN-13162

4. BASE COAT:

ATLAS STOPTER K-50
ATLAS ROKER U

5. REINFORCING FIBERGLASS MESH:

ATLAS 150
ATLAS 165

6. PRIMER FOR FINISHING COAT:

not necessary for ATLAS STOPTER K-50
ATLAS CERPLAST underlay for
ATLAS CERMIT ND
ATLAS CERMIT N-100
ATLAS CERMIT BA-M
ATLAS CERMIT WN
ATLAS SILKON ANX underlay for
ATLAS SILICONE RENDER
ATLAS SILICONE HYBRID RENDER
ATLAS SILICONE-SILICATE RENDER
ATLAS SILKON BA

7. THIN-COAT FAÇADE RENDER:

ATLAS CERMIT ND
ATLAS CERMIT N-100
ATLAS CERMIT BA-M
ATLAS CERMIT WN
ATLAS SILICONE RENDER
ATLAS SILICONE HYBRID RENDER
ATLAS SILICONE-SILICATE RENDER
ATLAS SILKON BA

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Detailed information on ATLAS products and solutions can also be given by our technical advisors and representatives listed on our web site www.atlas.com.pl/en.

ATLAS FOREIGN SALES OFFICE

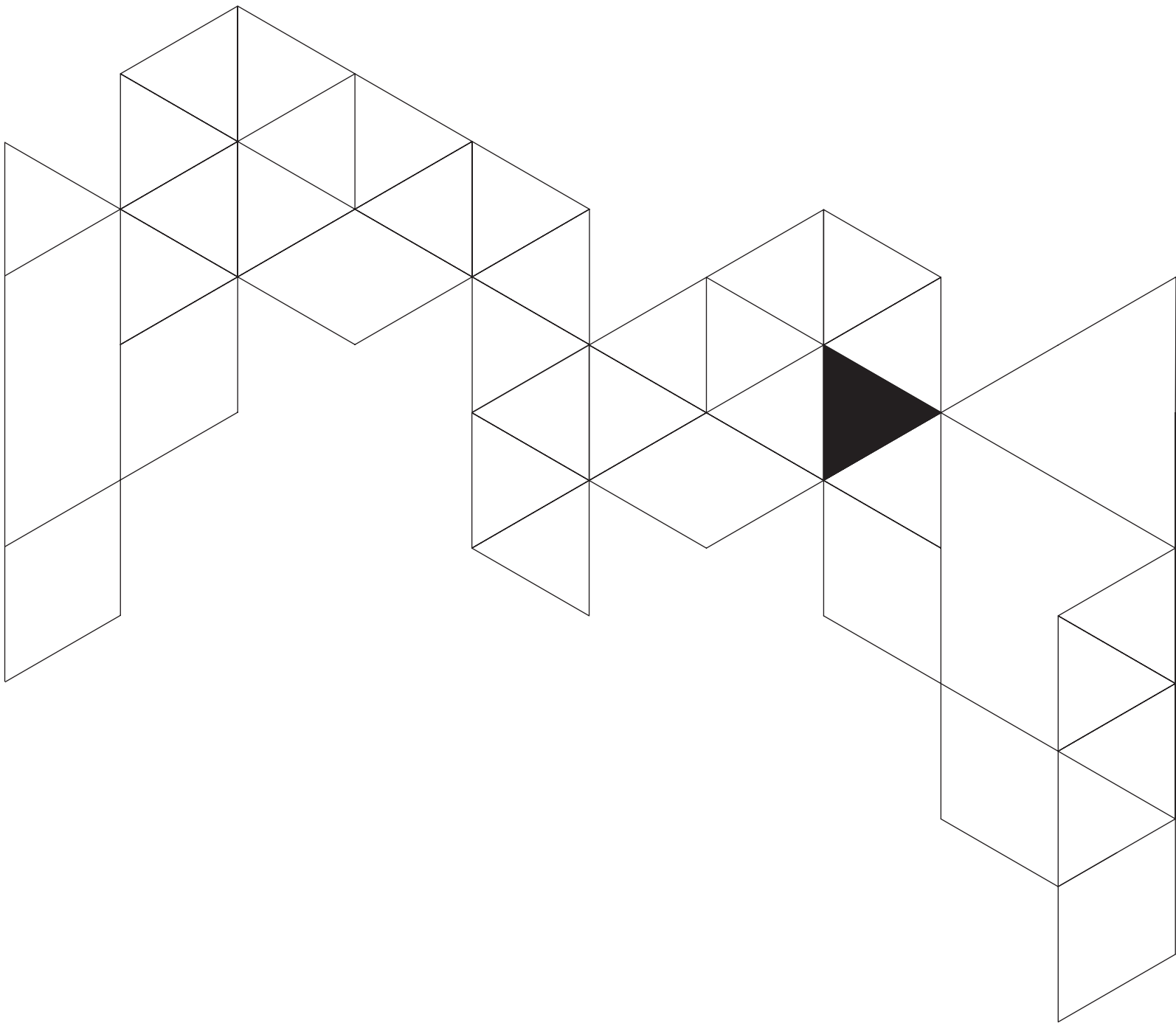
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