



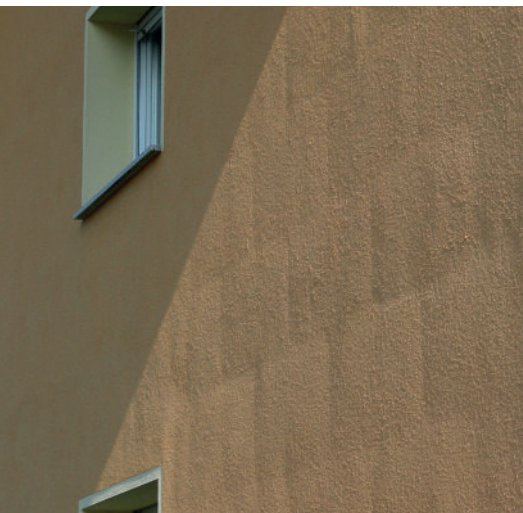
Second layer with Aerogel  
Insulating-Plaster

# The advantages of a second layer with Aerogel insulating-plaster



## ✓ Anchor bolt marks disappear

Aerogel insulating plaster completely covers over unsightly anchor bolt marks in the façade. Since the applied layer is only 3 cm thick (instead of 6 cm in the case of conventional insulation) the overall layer thicknesses is reduced.



## ✓ Improved thermal insulation

Applying even a thin layer of Aerogel insulating plaster of the existing render results in a considerable improvement in thermal insulation, thus adding value to the building being renovated. The layer thickness can be calculated and applied in a carefully controlled manner to give exactly the required U-value.

## ✓ No visible outlines of underlying panels

The application of aerogel insulating plaster results in a homogeneous layer through which traces of the underlying panel structure are not visible. The facade will not bow in or bulge out, as can occur with sheet insulation.



## ✓ Use of anchor bolts not necessary

Buildings undergoing renovation and improvement work often remain inhabited during the work. Fitting anchor bolts to secure panels is a noisy process which is made unnecessary when Aerogel insulating plaster is applied over existing render. Using Fixit 222 Aerogel Insulating Plaster means no anchor bolts are necessary.

## ✓ No surface condensation

The higher mass in weight as with conventional insulation and the absorbency properties of Aerogel insulating plaster reduce the humidity on the surface. This reduce the algae and fungal infestation on the façade and the maintenance.

## ✓ No hollow spaces between insulating layers

When applying render over existing insulating façades, adhesive must be applied to the whole of the joint surface, and hollow spaces cannot be entirely avoided. The dew point increases as a result of the application of additional insulation, but the capillary effect of the Aerogel insulating plaster transports humidity to the outdoors. The façade remains intact.

# Preparation and evaluation of the situation

## Substrate matrix

Substrate	Layer thickness < 5 cm	Layer thickness < 7 cm	Layer thickness ≥ 7 cm
EPS / Mineral wool	Fixit 439*	Fixit 439 + Welnet 3 cm	Fixit 439 + Welnet 5 cm
Embedded mesh	Fixit 462*	Welnet 3 cm	Welnet 5 cm
Finish coat	Fixit 462*	Welnet 3 cm	Welnet 5 cm

\* = apply a 5 mm layer and roughen horizontally with a brush.

## Fire block

### Fire Safety Standard 1 – 15

#### Art2, §2 – Applicability

- 2 Existing buildings and structures must be modified appropriately to meet fire safety standards
  - a in the case of significant constructional or operational modifications, extensions or change of use.
  - b if the danger to persons is particularly high.

The decision as to whether fire blocks must be implemented or not is **ALWAYS** and **SOLELY** the responsibility of the competent authority.

## Checklist for assessing substrate before applying a second layer with Fixit Aerogel insulating plaster

**>> CHECK**

**Checklist for Evaluating Substrate Quality when Applying a second layer with Fixit Aerogel Insulating Plaster**

Sole consultant: \_\_\_\_\_ Appointment date: \_\_\_\_\_  
 Tel. no. for queries: \_\_\_\_\_

Client  
 Architect  
 Contractor

Tel. no.: \_\_\_\_\_  
 E-Mail address: \_\_\_\_\_  
 Building address: \_\_\_\_\_

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**Assessment of existing render**

Is the base coat layer sufficiently strong (2 – 7 mm layer thickness)?  
 Yes  
 No → Remove render completely down to insulation layer

Is the reinforcement completely embedded in the base coat layer?  
 Yes  
 No → Remove render completely down to insulation layer

Is the adhesion of final render adequate (pull-off test)?  
 Yes  
 No → Remove final render

Is the final render water absorbent (wetting test)?  
 Yes → pre-coat excessively absorbing surfaces with penetrating primer coat  
 No

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**>> CHECK**

Does the render surface show signs of bowing or (sub)surface bubbles, hollows etc.?  
 Yes → cut open and level surface with Fixit 462 / 439  
 No

Does the render surface show signs of algae or fungal attack?  
 Yes → clean surface and apply Fixit 383 Facade Algicide  
 No

**Assessment of water drainages in the vicinity of the external insulation**

Is the external render in contact with a water drainage surface?  
 Yes → corrective work necessary  
 No

Does rainwater drain away from the facade?  
 Yes  
 No → corrective work to give an external drainage slope of 1.5% necessary

**Assessment of other shortcomings**

Are obvious defects visible, with detachment of sheet material?  
 Yes → cut away and replace detached sheets  
 No

Are hidden defects such as insect or small animal infestation present?  
 Yes → cut away and replace detached sheets  
 No

Are the facade fixed in place with anchor bolts?  
 Yes  
 No → before applying Fixit 462 or 439 the existing sheets of insulation must be fixed in place with repair anchor bolts. If Welnet is to be used no additional mounting of anchor bolts is required.

Are the insulating sheets firmly butted together?  
 Yes  
 No → if the space between sheets are more than 2mm wide these must be closed with EPS wedges.

**FDIT**



to the checklist

# U-value Calculations using Fixit 222 Aerogel High-Performance Insulating Plaster

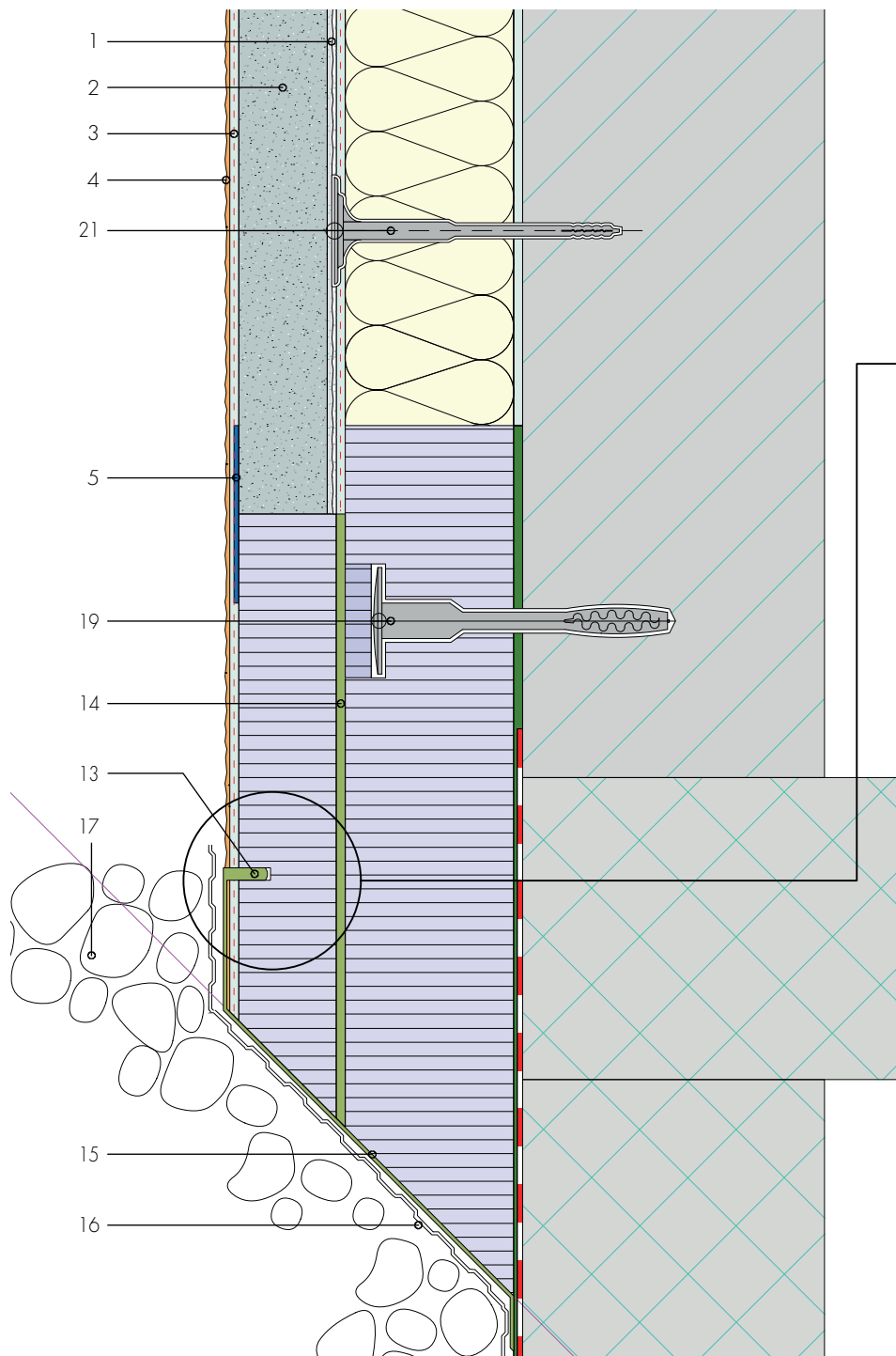
## Standing building with standard 17.5 cm brickwork, EPS insulated, not monitored

		New U-value after a second layer	
		0, 25 W/m <sup>2</sup> K	0, 20 W/m <sup>2</sup> K
Current insulation thickness	Current U-value	Required second layer thickness of Fixit 222 Aerogel insulating plaster	
EPS 6 cm	0,53 W/m <sup>2</sup> K	6,0 cm	8,5 cm
EPS 8 cm	0,43 W/m <sup>2</sup> K	4,5 cm	7,5 cm
EPS 10 cm	0,36 W/m <sup>2</sup> K	3,5 cm	6,5 cm
EPS 12 cm	0,31 W/m <sup>2</sup> K	3,0 cm	5,0 cm
EPS 14 cm	0,27 W/m <sup>2</sup> K	–	3,5 cm
EPS 16 cm	0,24 W/m <sup>2</sup> K	–	3,0 cm

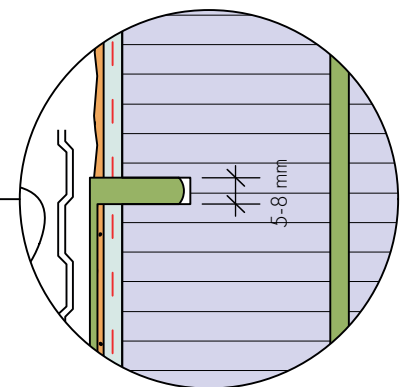
## Standing building with standard 17.5 cm brickwork, mineral wool insulated, not monitored

		New U-value after a second layer	
		0, 25 W/m <sup>2</sup> K	0, 20 W/m <sup>2</sup> K
Current insulation thickness	Current U-value	Required second layer thickness of Fixit 222 Aerogel insulating plaster	
SW 6 cm	0,60 W/m <sup>2</sup> K	6,5 cm	9,5 cm
SW 8 cm	0,50 W/m <sup>2</sup> K	5,5 cm	8,5 cm
SW 10 cm	0,42 W/m <sup>2</sup> K	4,5 cm	7,5 cm
SW 12 cm	0,36 W/m <sup>2</sup> K	3,5 cm	6,5 cm
SW 14 cm	0,30 W/m <sup>2</sup> K	3,0 cm	5,5 cm
SW 16 cm	0,28 W/m <sup>2</sup> K	–	4,5 cm

**Detail second layer –  
base cladding flush with  
perimeter insulation**

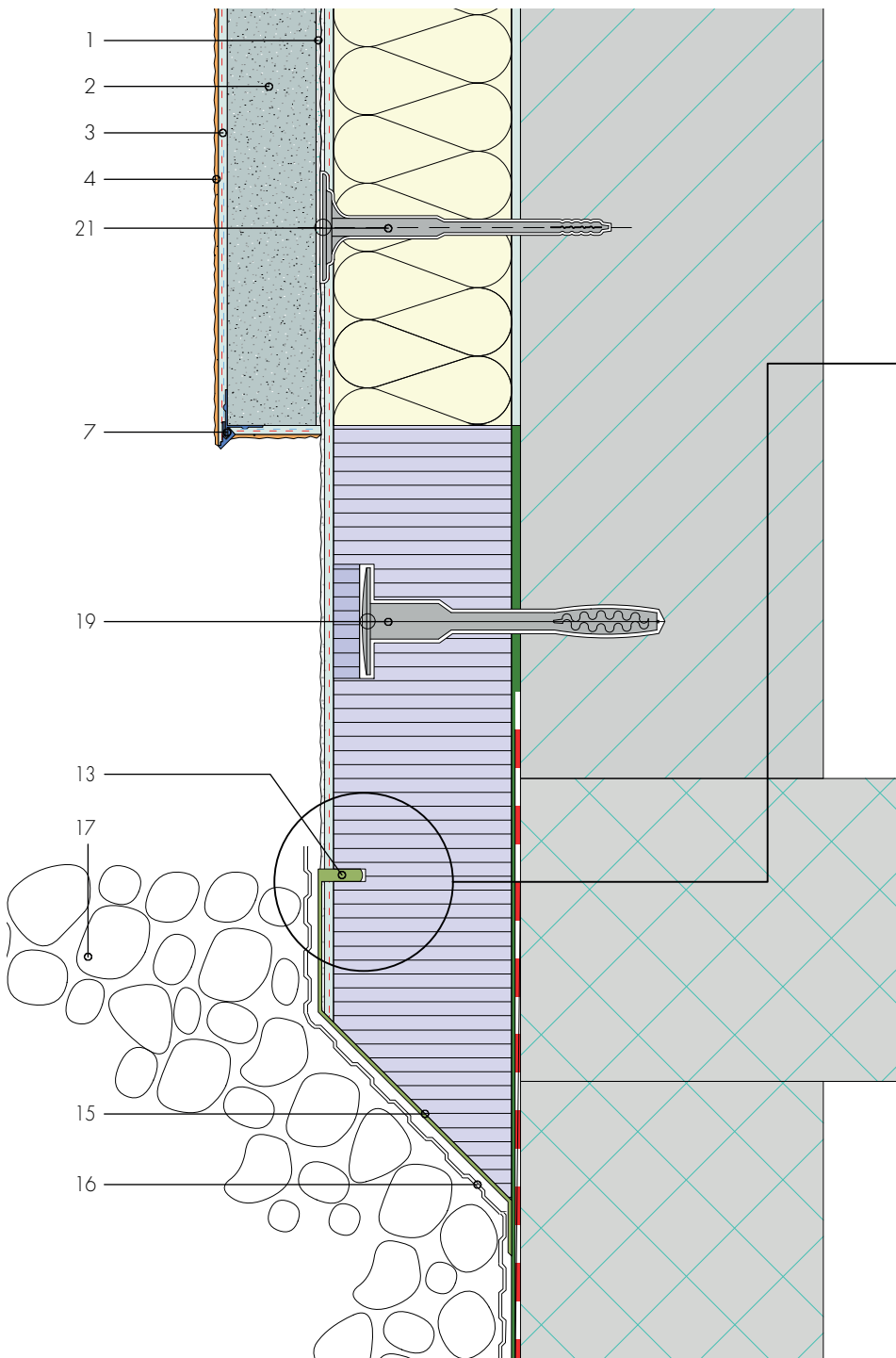


Detail of capillary slot 5 to 8 mm wide.  
Fill with Fixit 373 Multiflex

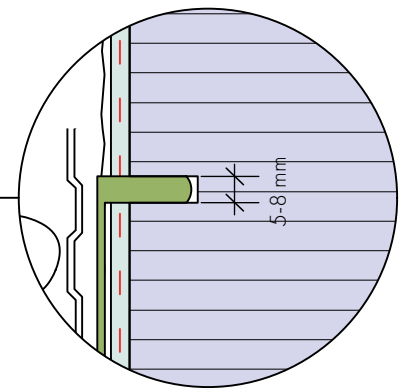


- 1 Substrate preparation  
Fixit 462 Renovation plaster or Welnet
- 2 Fixit 222 Aerogel high performance  
insulating plaster
- 3 Fixit 223 Embedding mortar with  
embedded fabric
- 4 Mineral finishing coat
- 5 Barrier textile
- 13 Capillary slot
- 14 Base cladding, outer surface completely  
covered with Fixit 373 Multiflex
- 15 Apply a layer of Fixit 373 Multiflex
- 16 Profiled drainage sheet
- 17 Rubble fill
- 19 Mounting anchor bolt
- 21 Impact anchor bolt H1 eco

**Detail second layer –  
base cladding with  
perimeter insulation**

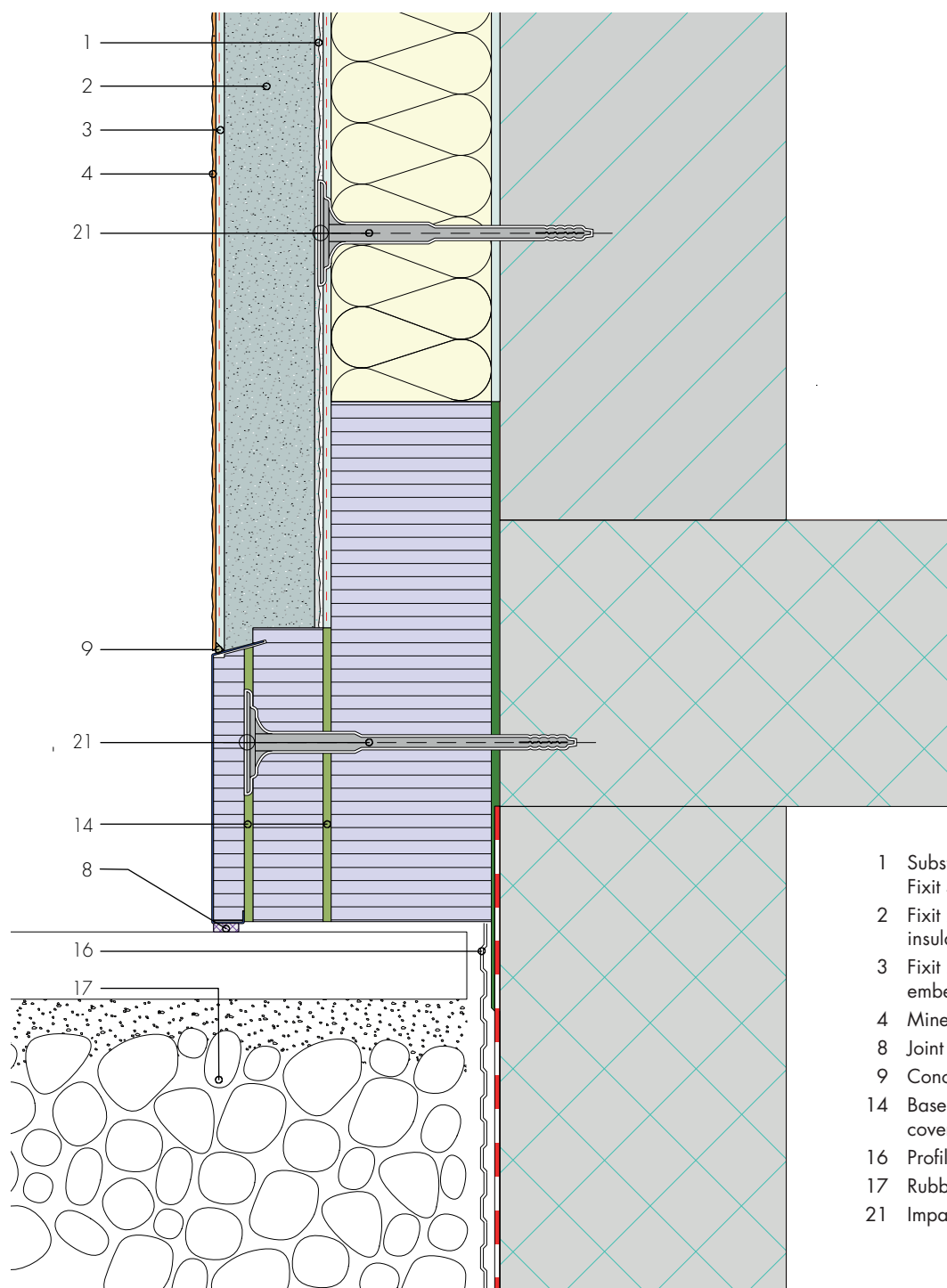


Detail of capillary slot 5 to 8 mm wide.  
Fill with Fixit 373 Multiflex



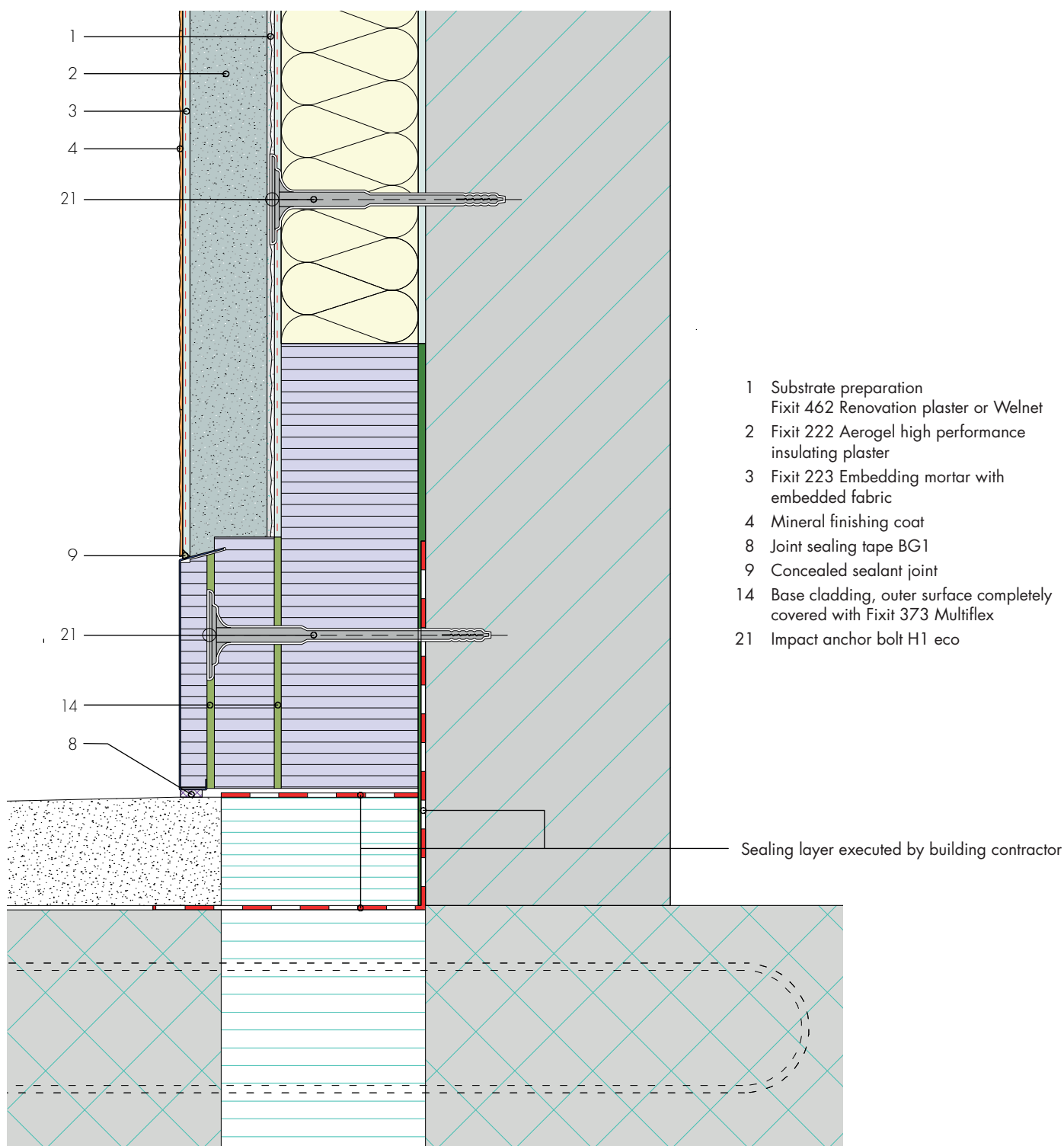
- 1 Substrate preparation  
Fixit 462 Renovation plaster or Welnet
- 2 Fixit 222 Aerogel high performance  
insulating plaster
- 3 Fixit 223 Embedding mortar with  
embedded fabric
- 4 Mineral finishing coat
- 7 Edged drip profile with textile inlay
- 13 Capillary slot
- 15 Apply a layer of Fixit 373 Multiflex
- 16 Profiled drainage sheet
- 17 Rubble fill
- 19 Mounting anchor bolt
- 21 Impact anchor bolt H1 eco

**Detail second layer –  
base cladding of sheet  
metal over existing  
surface**



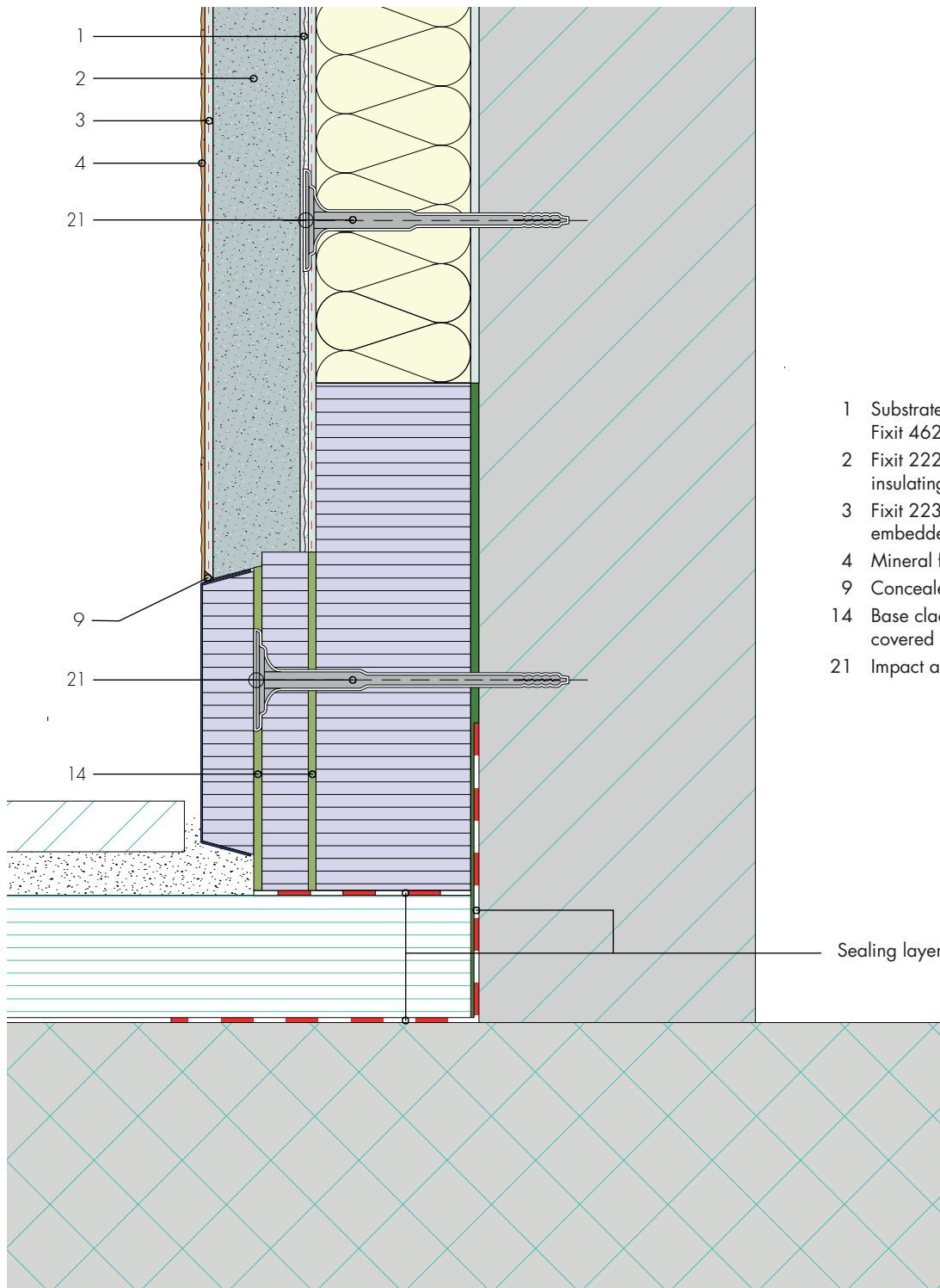
- 1 Substrate preparation  
Fixit 462 Renovation plaster or Welnet
- 2 Fixit 222 Aerogel high performance  
insulating plaster
- 3 Fixit 223 Embedding mortar with  
embedded fabric
- 4 Mineral finishing coat
- 8 Joint sealing tape BG1
- 9 Concealed sealant joint
- 14 Base cladding, outer surface completely  
covered with Fixit 373 Multiflex
- 16 Profiled drainage sheet
- 17 Rubble fill
- 21 Impact anchor bolt H1 eco

**Detail second layer –  
junction to base with  
base skirting of sheet  
metal**





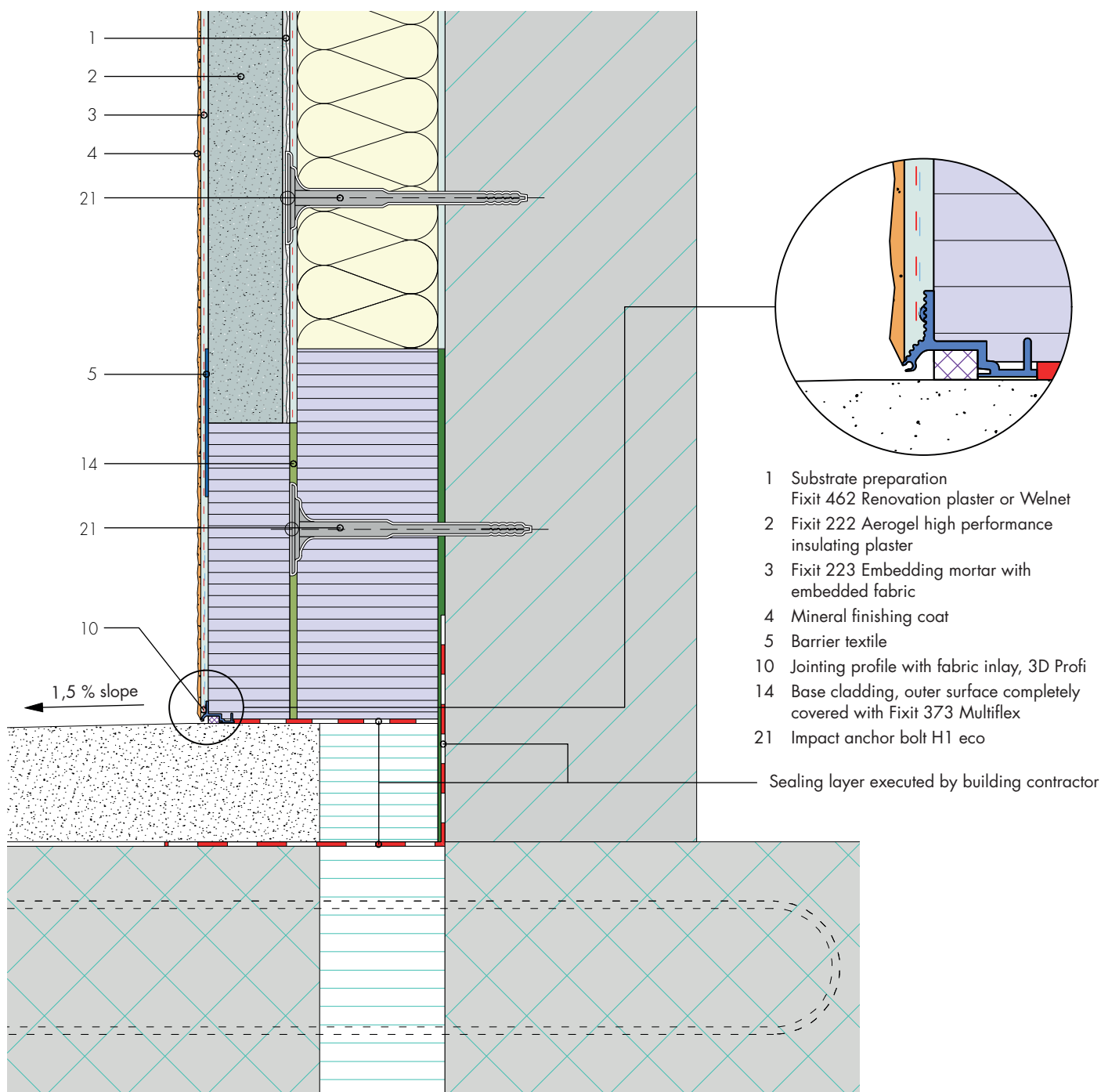
**Detail second layer –  
junction to base with  
insulated sheet metal  
base**



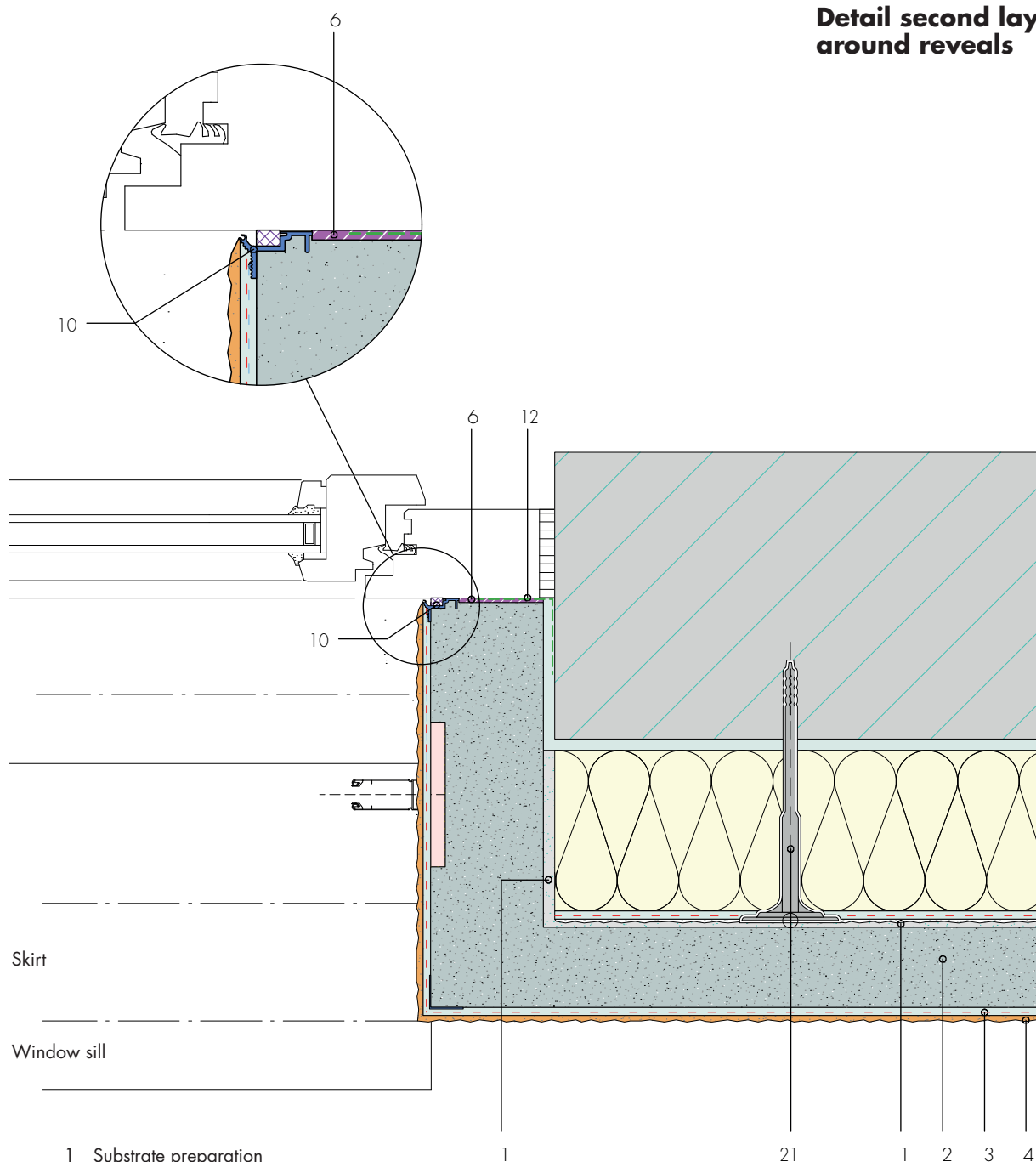
- 1 Substrate preparation  
Fixit 462 Renovation plaster or Welnet
- 2 Fixit 222 Aerogel high performance  
insulating plaster
- 3 Fixit 223 Embedding mortar with  
embedded fabric
- 4 Mineral finishing coat
- 9 Concealed sealant joint
- 14 Base cladding, outer surface completely  
covered with Fixit 373 Multiflex
- 21 Impact anchor bolt H1 eco

Sealing layer executed by building contractor

**Detail second layer –  
junction to base with  
jointing profile**

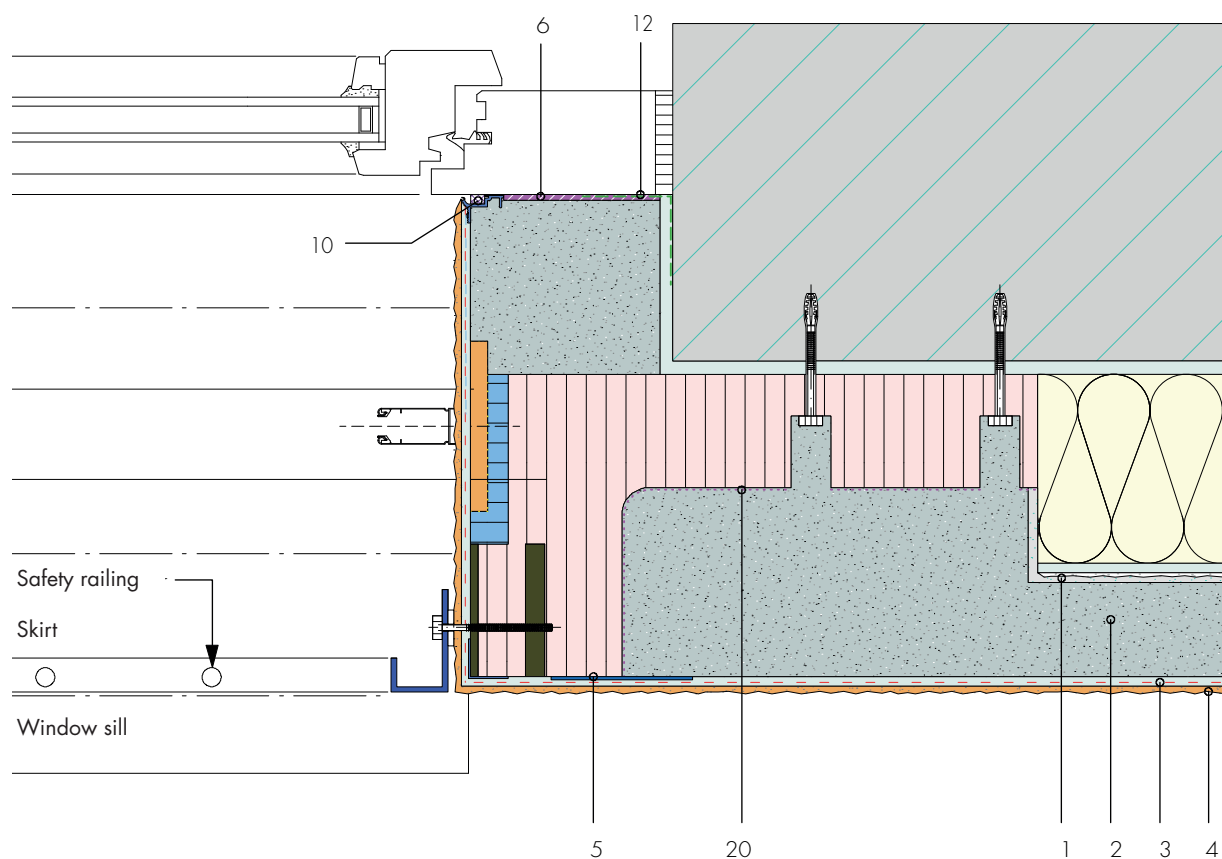


**Detail second layer -  
around reveals**



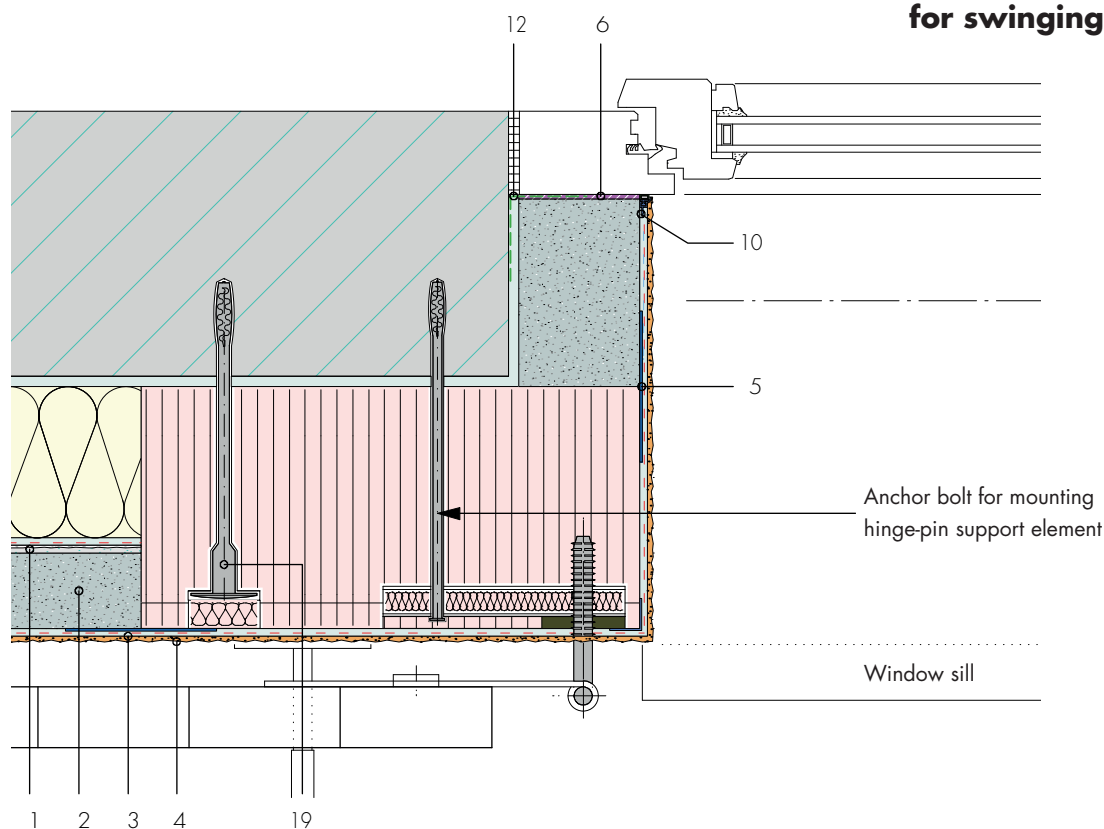
- 1 Substrate preparation  
Fixit 462 Renovation plaster or Welnet
- 2 Fixit 222 Aerogel high performance  
insulating plaster
- 3 Fixit 223 Embedding mortar with  
embedded fabric
- 4 Mineral finishing coat
- 6 Thermal barrier tape
- 10 Jointing profile with fabric inlay, 3D Profi
- 12 Air-tight membrane  
(fitted by building contractor)
- 21 Impact anchor bolt H1 eco

**Detail second layer –  
around a French balcony**



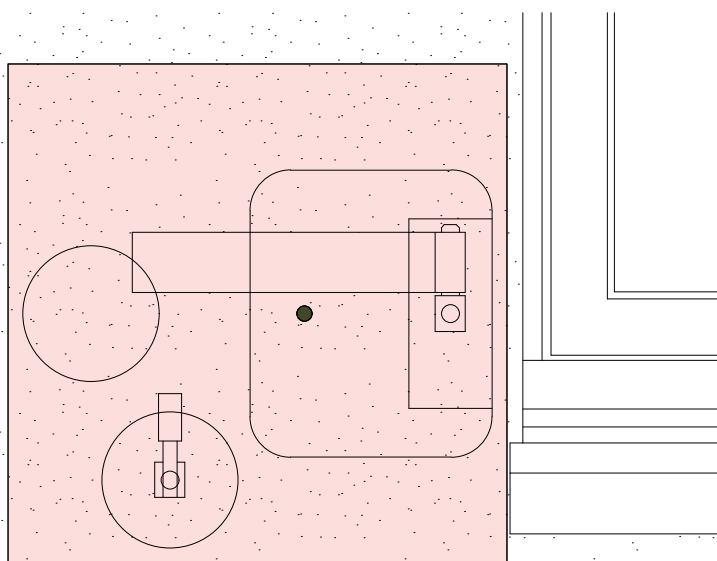
- 1 Substrate preparation  
Fixit 462 Renovation plaster or Welnet
- 2 Fixit 222 Aerogel high performance  
insulating plaster
- 3 Fixit 223 Embedding mortar with  
embedded fabric
- 4 Mineral finishing coat
- 5 Barrier textile
- 6 Thermal barrier tape
- 10 Jointing profile with fabric inlay, 3D Profi
- 12 Air-tight membrane  
(fitted by building contractor)
- 20 Fixit 346 quartz special adhesive bridge

**Detail second layer –  
around a hinge-pin support  
for swinging shutters**



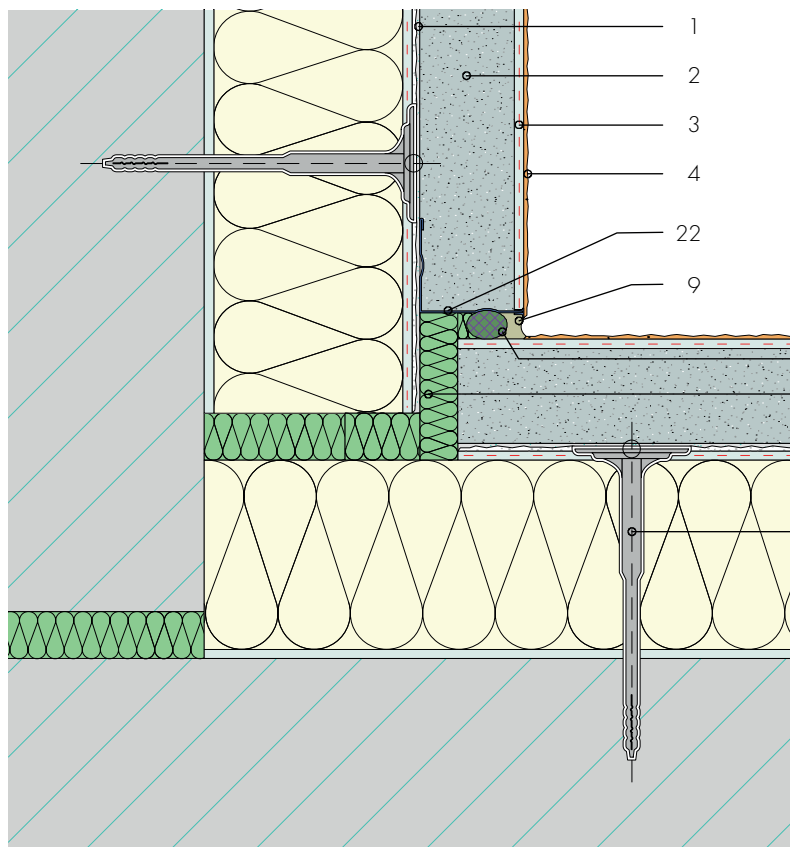
Anchor bolt for mounting  
hinge-pin support element

Window sill



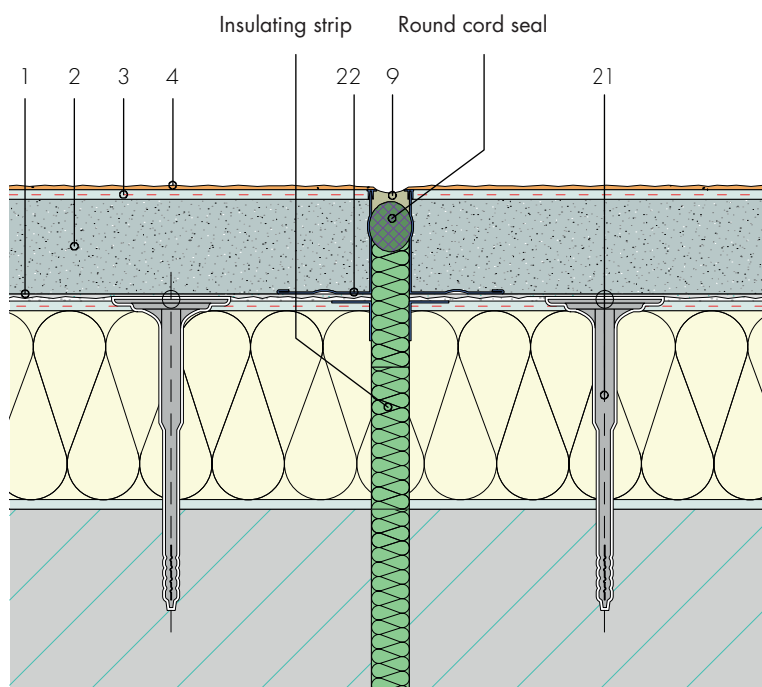
- 1 Substrate preparation  
Fixit 462 Renovation plaster or Welnet
- 2 Fixit 222 Aerogel high performance  
insulating plaster
- 3 Fixit 223 Embedding mortar with  
embedded fabric
- 4 Mineral finishing coat
- 5 Barrier textile
- 6 Thermal barrier tape
- 10 Jointing profile with fabric inlay, 3D Profi
- 12 Air-tight membrane  
(fitted by building contractor)
- 19 Mounting anchor bolt

### Detail second layer – around expansion joints

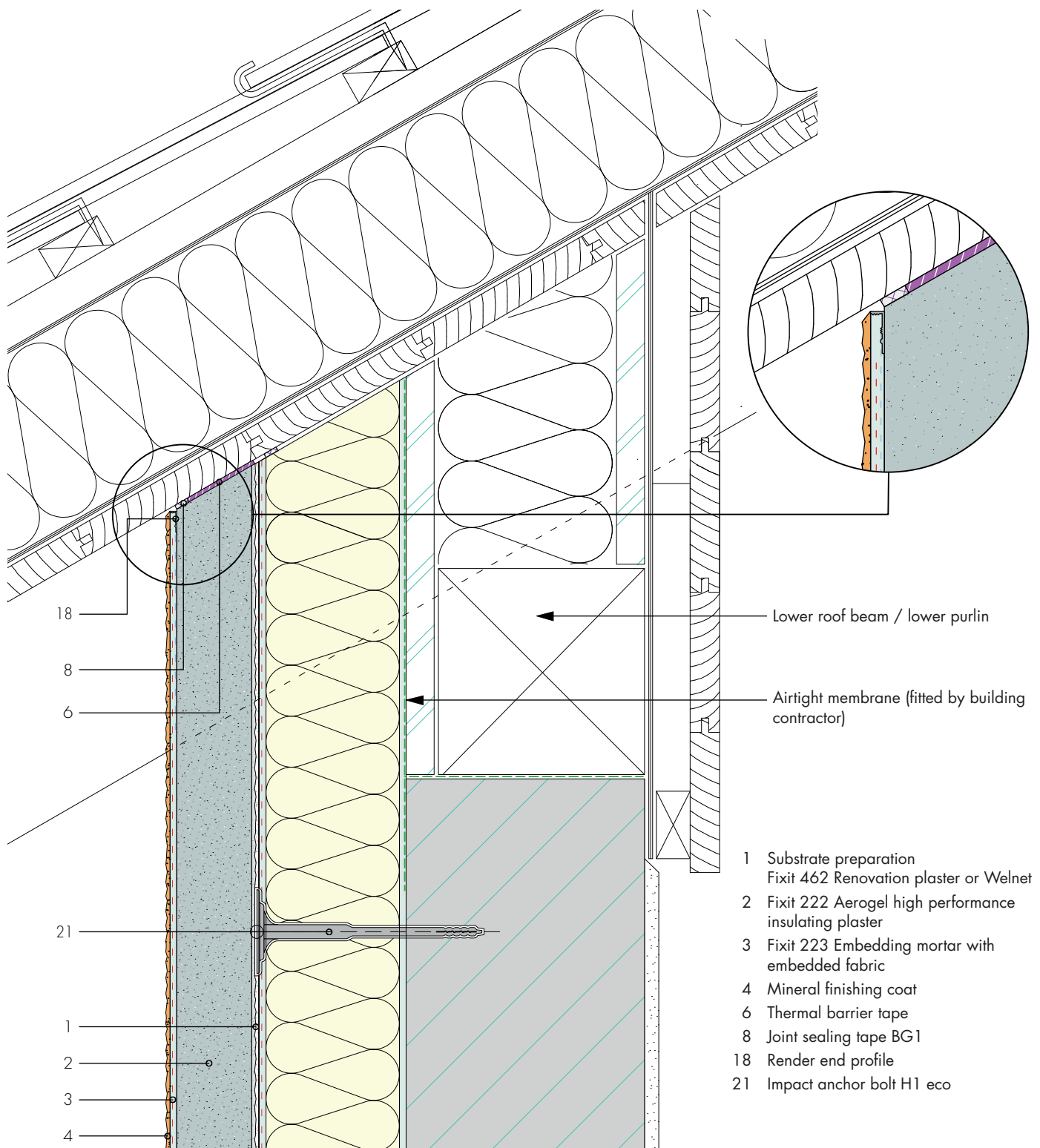


Round cord seal  
Insulating strip

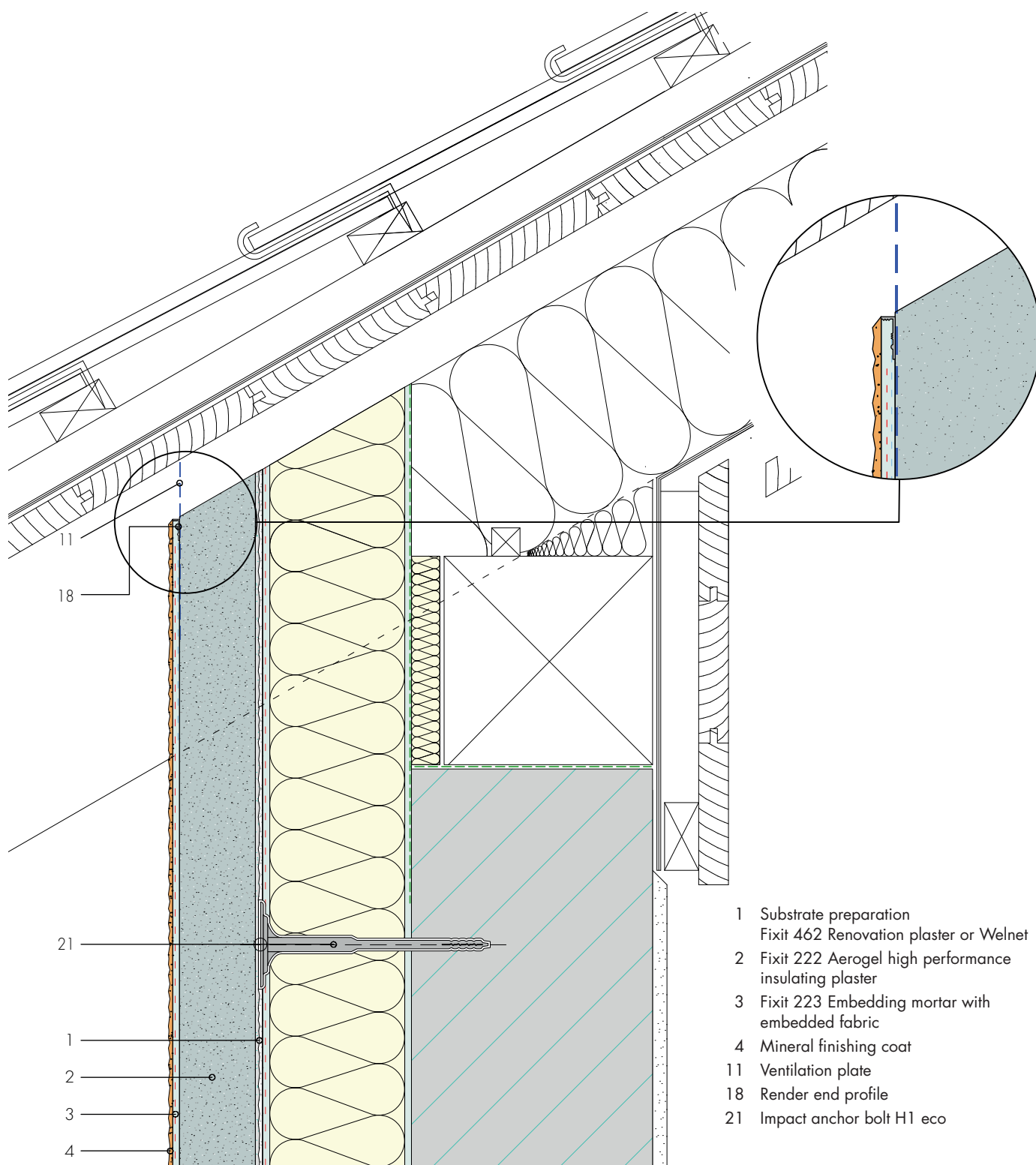
- 1 Substrate preparation  
Fixit 462 Renovation plaster or Welnet
- 2 Fixit 222 Aerogel high performance insulating plaster
- 3 Fixit 223 Embedding mortar with embedded fabric
- 4 Mineral finishing coat
- 9 Concealed sealant joint
- 21 Impact anchor bolt H1 eco
- 22 Insulating render end profile



**Detail second layer –  
single-skin unventilated  
roof (warm roof)**



**Detail second layer –  
twin-skin ventilated roof  
(cold roof)**



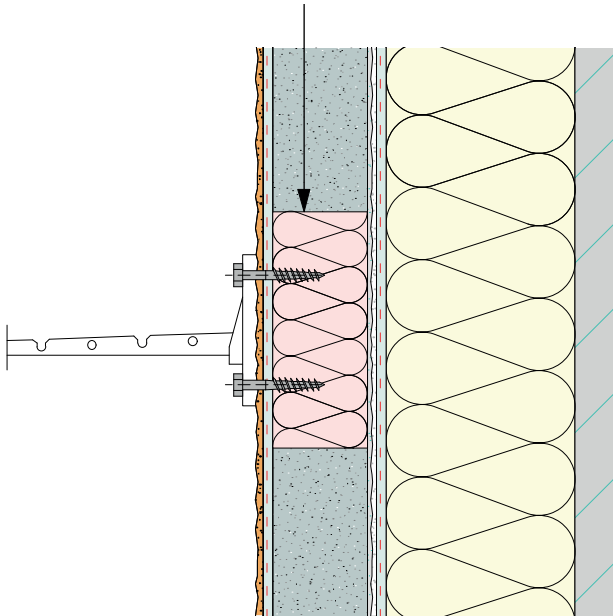
- 1 Substrate preparation  
Fixit 462 Renovation plaster or Welnet
- 2 Fixit 222 Aerogel high performance  
insulating plaster
- 3 Fixit 223 Embedding mortar with  
embedded fabric
- 4 Mineral finishing coat
- 11 Ventilation plate
- 18 Render end profile
- 21 Impact anchor bolt H1 eco



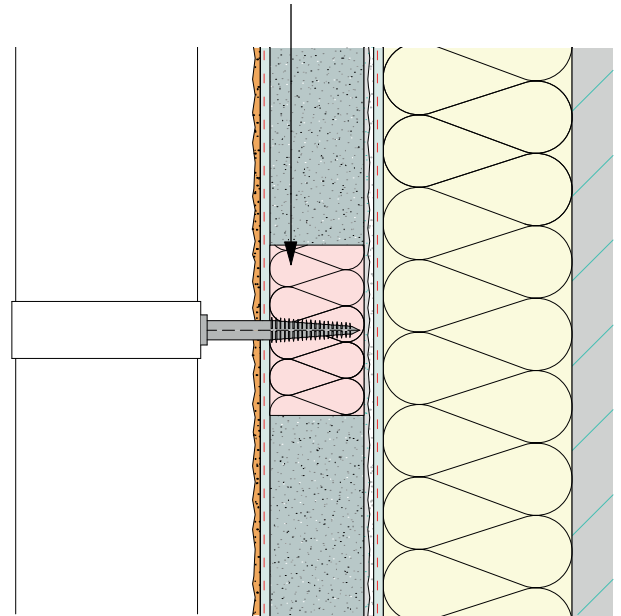
**Mounting other objects**

**for EPS**

Mounting cylinder VARIZ Ø 125 mm

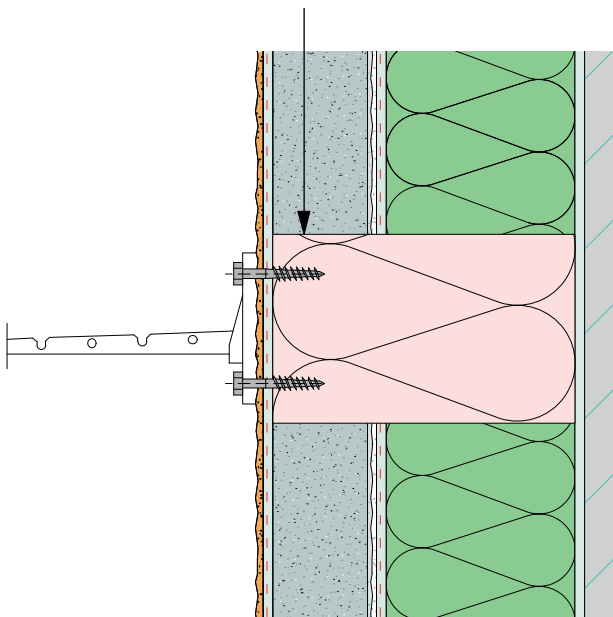


Mounting cylinder VARIZ Ø 90 mm

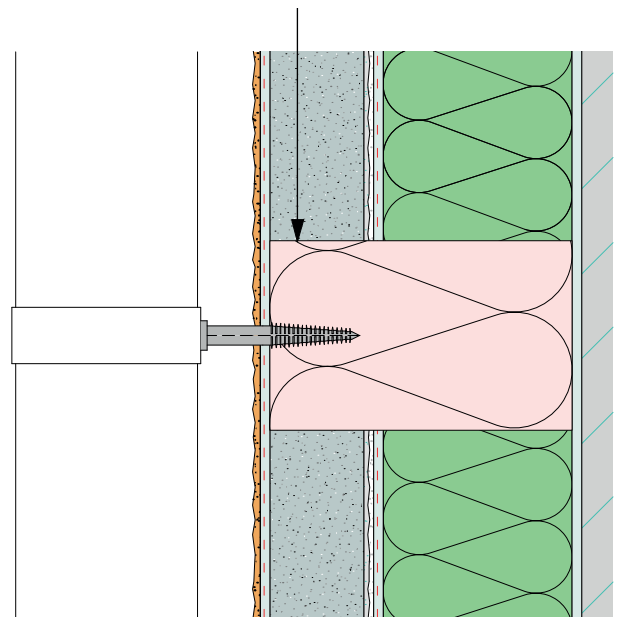


**for mineral wool**

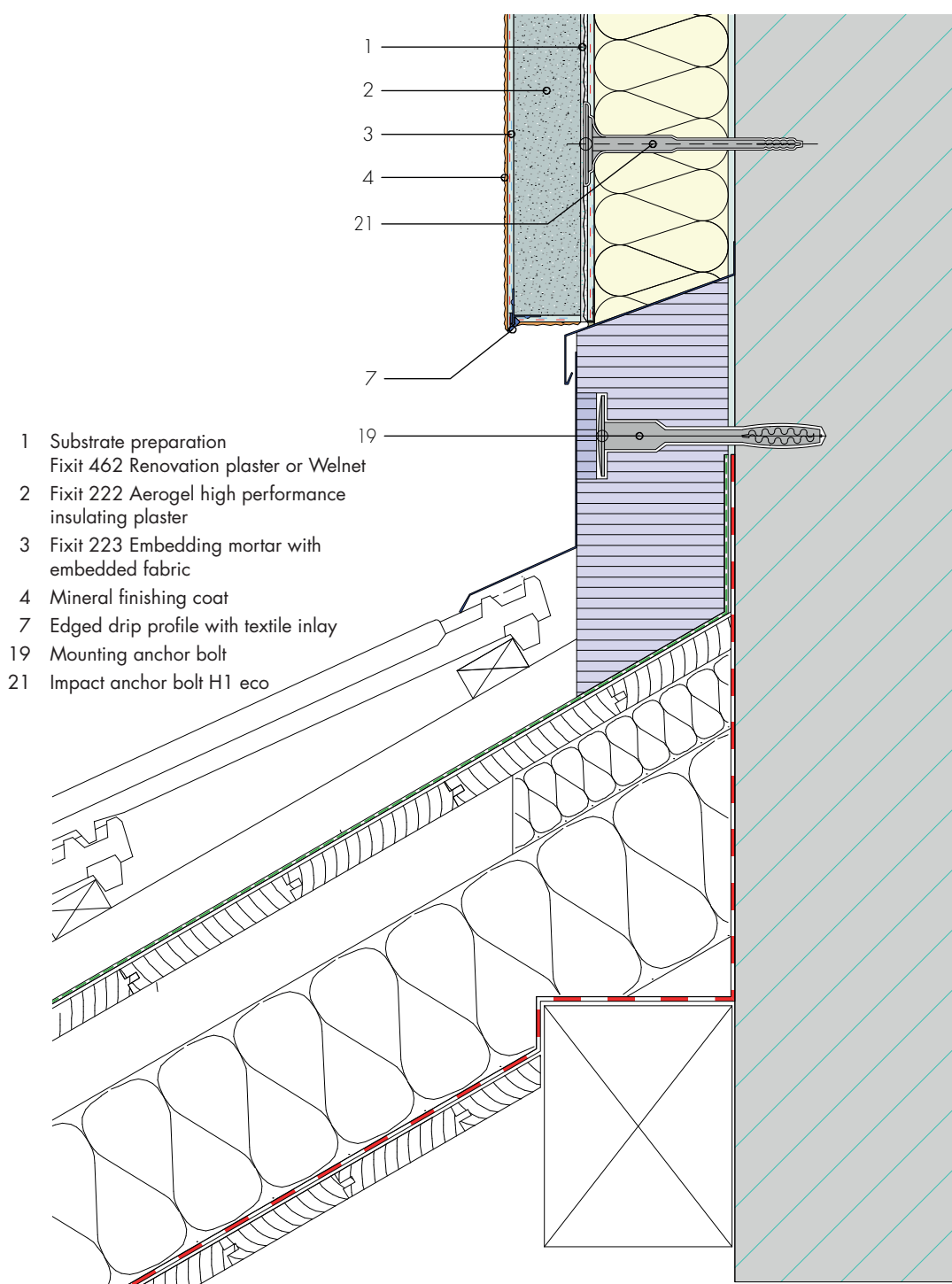
Mounting block VARIR 100 x 150 mm



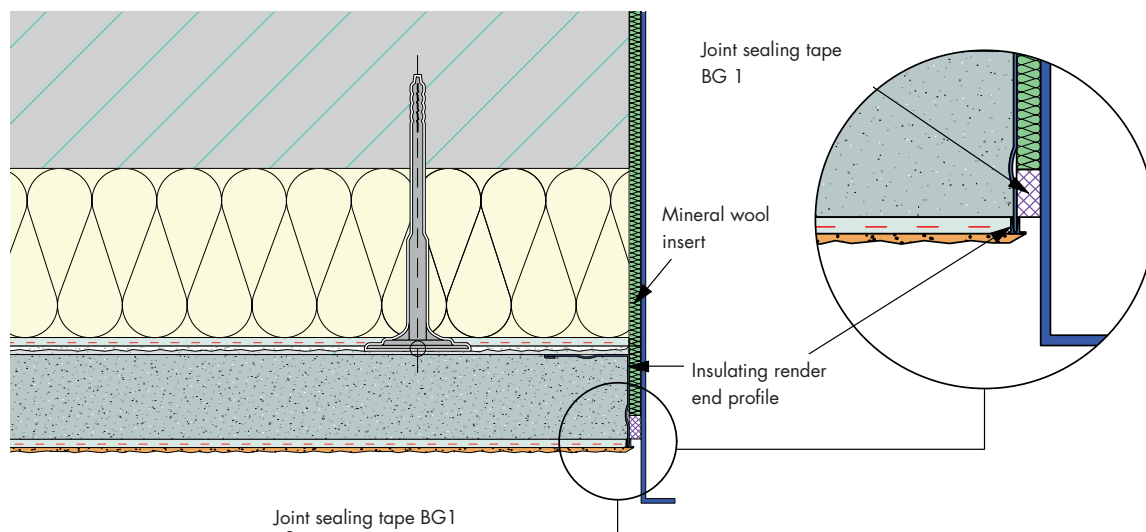
Mounting block VARIR 100 x 100 mm



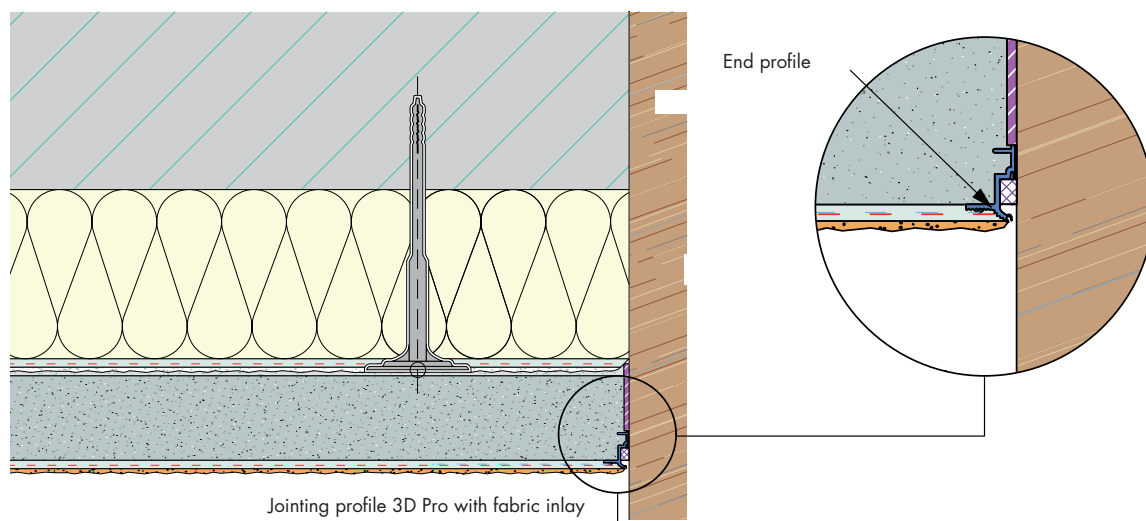
**Detail second layer –  
joint with sloping roof**



**Separating cut with pre-compressed joint sealing tape (metal door-frame)**



**Joint with end profile (wood)**



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