

GLASSLINE

PLANNING MANUAL

FIX'N SLIDE *outside*

SYSTEM WITH THERMAL BREAK FOR
SECURE ATTACHMENT OF ADD-ON ELEMENTS
ON BUILDING ENVELOPES

FIX'N SLIDE

THE ADVANTAGES

- Reduction of thermal bridges
- Secure attachment of add-on elements
- Thermal characteristics /
Energy planning pursuant EnEV 2016
- Safe load input
- Variable attachment methods
- Modular and flexible
- Application-independent
bridging of the insulation system
- Safety in case of fire
- Flexible application – for new buildings
or retrofitting



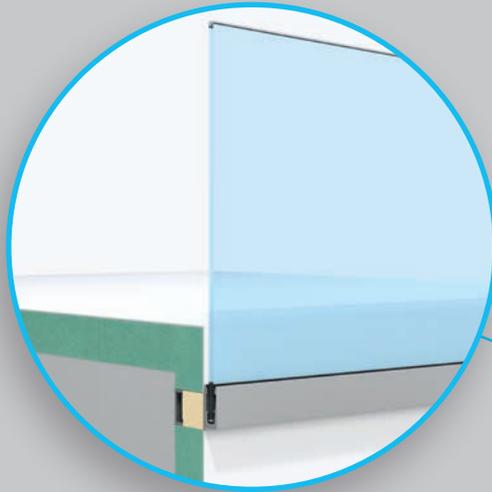
CANOPIES

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RAILINGS

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FIX'N



RESCUE LADDERS

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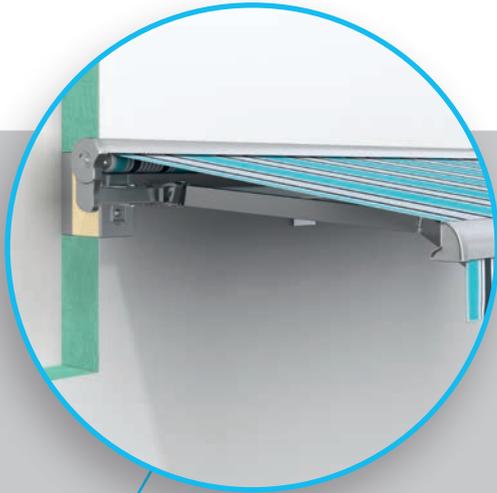
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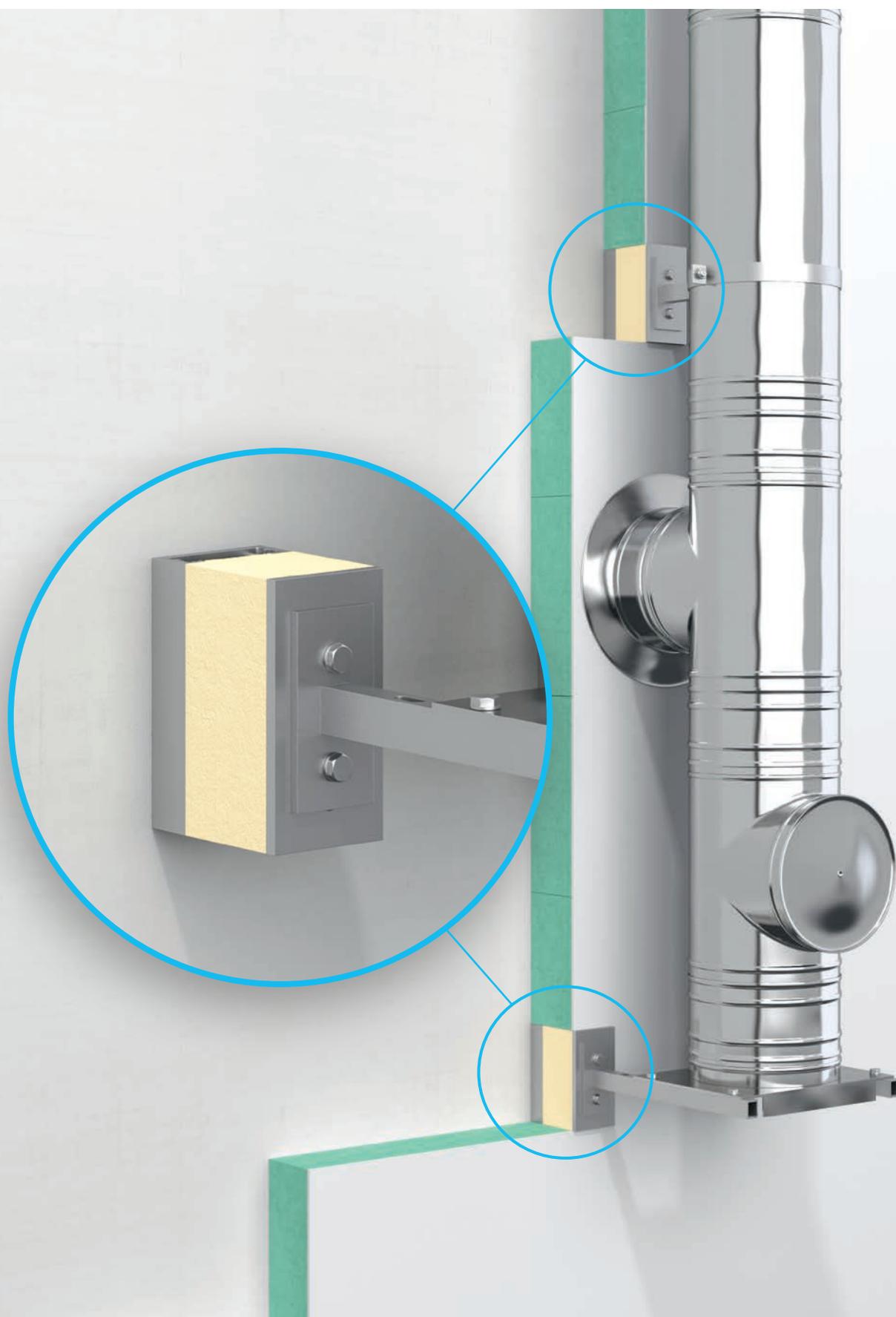


ADVERTISING SYSTEMS

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SLIDE





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Natural stone and soft insulation

92 CANOPY CLOUD glass canopy
Natural stone and soft insulation

94 CANOPY CLOUD glass canopy
Solid clinker brick and soft insulation (160 mm)

96 CANOPY CLOUD glass canopy
Solid clinker brick and soft insulation (200 mm)

98 CANOPY CLOUD glass canopy
Finish plaster and hard insulation

100 CANOPY CLOUD glass canopy
Clinker brick facing and hard insulation

102 CANOPY CLOUD glass canopy
Natural stone and hard insulation

104 CANOPY CLOUD glass canopy
Finish plaster and soft insulation

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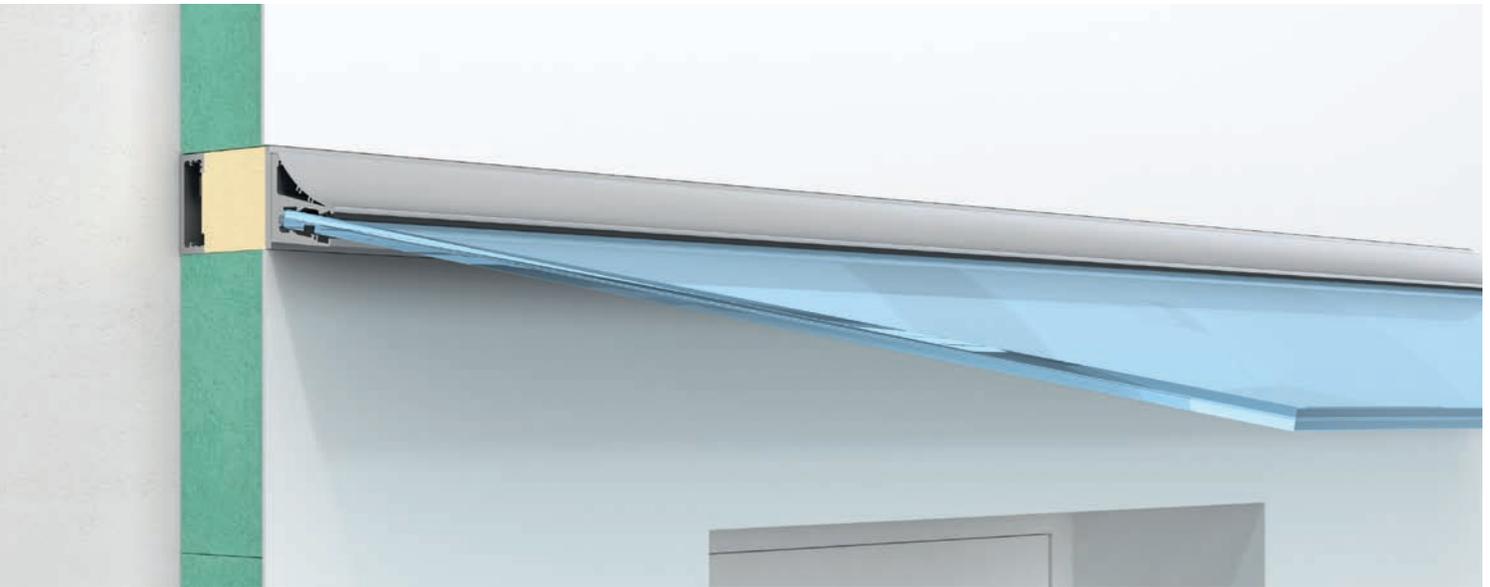
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FIX*N SLIDE

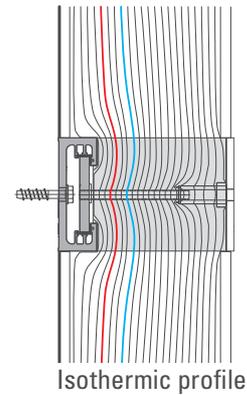
SYSTEMATIC COMPONENT ANCHORING THROUGH THE REDUCTION OF THERMAL BRIDGES

Flexible, easy to assemble and absolutely safe - the new FIX*N SLIDE revolutionises component mounting in the ETICS sector. FIX*N SLIDE ensures secure attachment of add-on elements and simultaneously reduces thermal bridges in new buildings and retrofitting.

With only a few components and different insulating thicknesses almost any insulation thickness can be thermally and statically bridged without problem. FIX*N SLIDE used as a rail for linear installation and as a system component for point-to-point attachment is suitable for every on-site situation. Furthermore, both versions can be combined.

THE ADVANTAGES

- REDUCTION OF THERMAL BRIDGES
- SECURE ATTACHMENT OF ADD-ON ELEMENTS



Thermal properties / energy planning in accordance with EnEV 2016

The existing isotherm calculations / thermal proofs prove that the use of FIX*N SLIDE reduces thermal bridges to a minimum. The system is optimally suited for energy planning in new or existing buildings.

Safe load transfer

The tension, shearing and torque transfer allows the system to cover a wide range of applications.

Variable mounting design

The variable arrangement of the fasteners allows the load transfer to be optimally adapted to the substructure and adapted and optimised to the local conditions.

Modular and flexibel

The system is modular and as flexible as the application requires. Thanks to the different insulating thicknesses, any insulation thickness up to 315 mm can be easily bridged.

Application-independent bridging of the insulation system

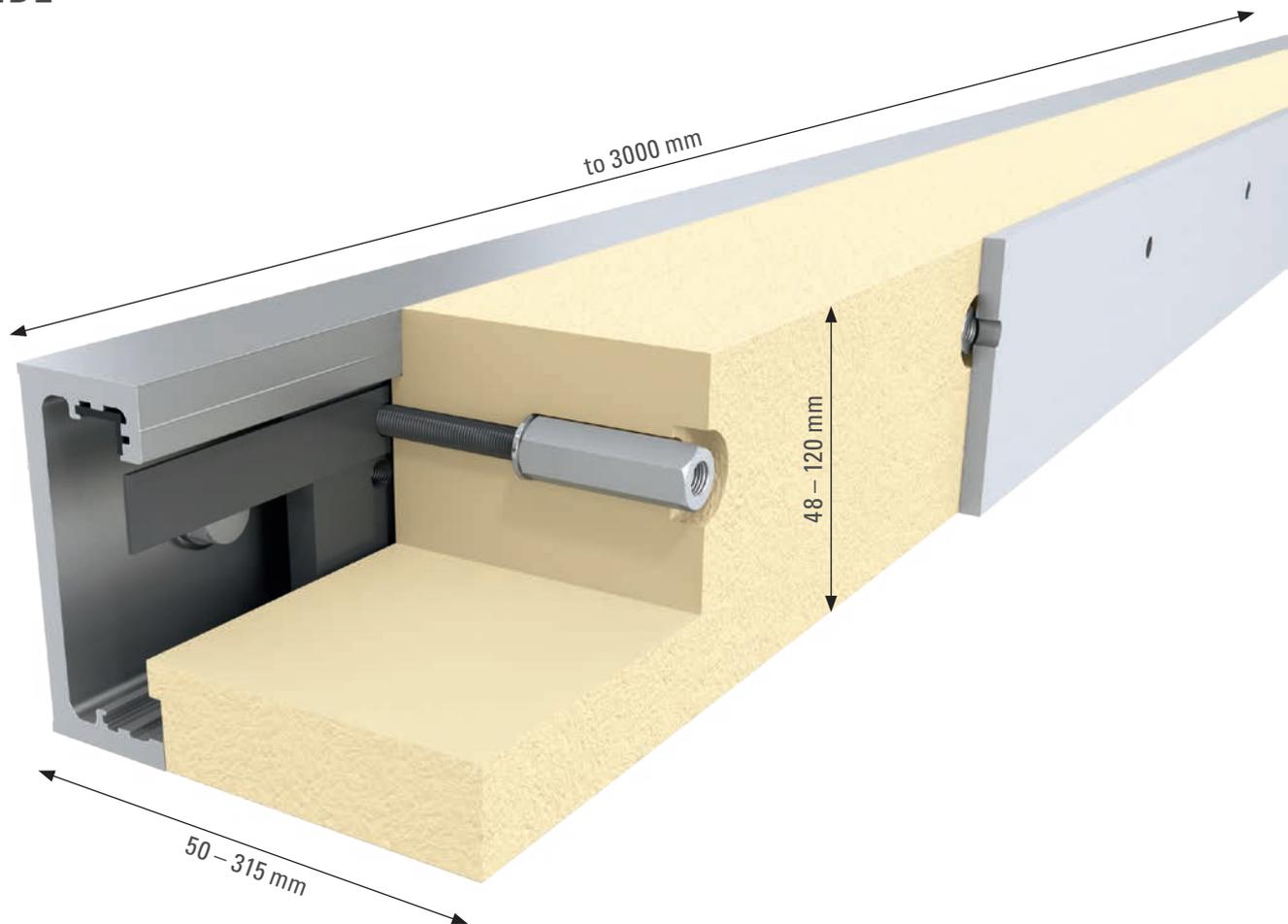
The insert support elements with their high-tensile threaded rods can be flexibly adjusted by locating in the support profile. As a result, the attachment of the aluminium rail to the substructure is independent of the mounting of the attachment elements.

Safety in case of fire

In case of failure, e. g. due to fire, a residual support capacity is ensured via the metallic supporting components.

Flexible deployment - for new construction or retrofitting

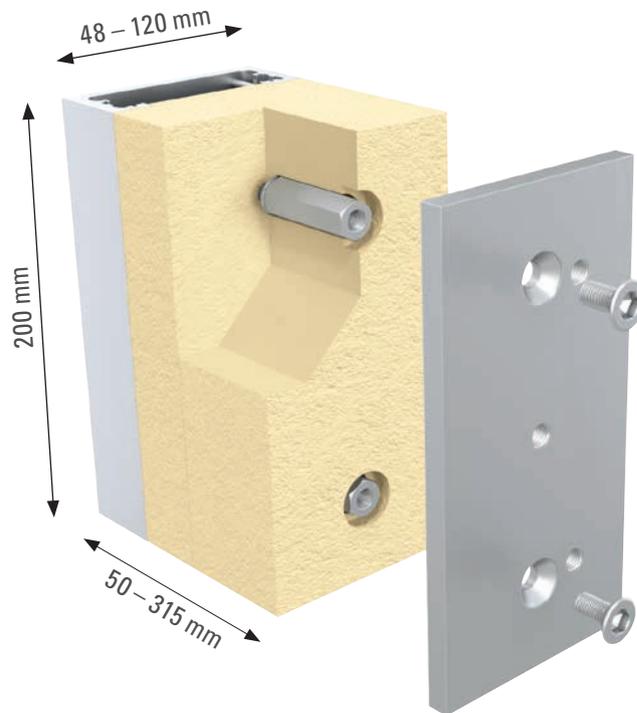
Canopies, conservatories, front facades, sunscreens and awnings, wind and visual protection, decoration and lighting, add-on elements on facades, such as fire escape ladders or stainless steel Chimneys, all types of parapet elements in attic, balcony and roof areas.



THE SYSTEM FOR LINEAR CONNECTION

The system is modular and as flexible as the application requires. The main components are the application-independent aluminium mounting rail for pre-assembly and connection to the substructure, stainless steel insert plates with high-tensile threaded rods and threaded sleeves, pressure-resistant insulating elements and an optional aluminium connection plate.

- Rails in fixed stock lengths and custom lengths up to 3000 mm
- 5 system widths from 48 to 120 mm
- For fixing the rail, the holes can also be drilled variably
- Insulation thicknesses from 50 to 315 mm
- The insert support elements with their high-tensile threaded rods can be flexibly adjusted by locating in the support profile
- Optional aluminium surface-mount / connection plate (8 mm thickness) with self-adhesive EPDM membrane for outside areas
- Pre-drilled insulating elements for holding the threaded rods and threaded sleeves, additional holes can be drilled variably



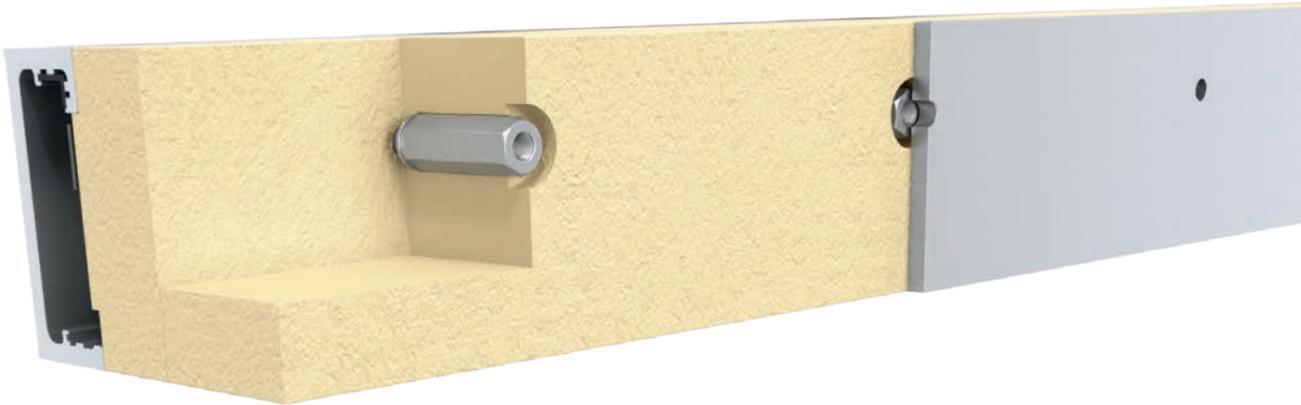
SYSTEM COMPONENT WITH ADAPTER PLATES FOR POINT-TO-POINT CONNECTION

Firmly defined complete system. The main components are the C-profile for pre-assembly and connection to the substructure, two stainless steel insert plates with high-tensile threaded rods and threaded sleeves, pressure-resistant insulating elements and optional stainless steel adapter plates.

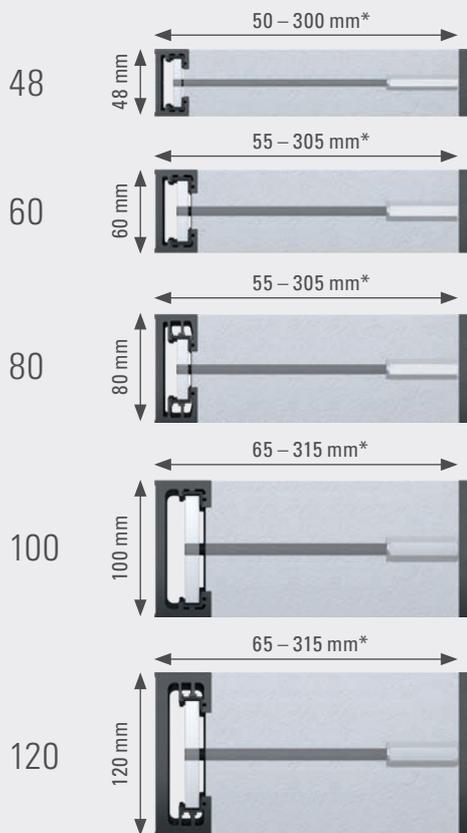
- Length 200 mm
- 5 system widths from 48 to 120 mm
- Fixed holes for fixing the profile
- Insulation thickness from 50 to 315 mm
- Pre-drilled insulating element for holding the threaded rods and threaded sleeves
- Optional stainless steel adapter plates
- The attachment can also be used without or with on-site adapter plates

THE SYSTEM

FOR LINEAR CONNECTION



FIX'N SLIDE – LINEAR CONNECTION



Available depths without optional connection plate

50	70	80	100	120	140	160	180	200	220	240	260	280	300
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55	75	85	105	125	145	165	185	205	225	245	265	285	305
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55	75	85	105	125	145	165	185	205	225	245	265	285	305
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65	85	95	115	135	155	175	195	215	235	255	275	295	315
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65	85	95	115	135	155	175	195	215	235	255	275	295	315
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Available lengths

600	800	1200	1400	1600	2000	2400	2800	3000
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Other sizes on request

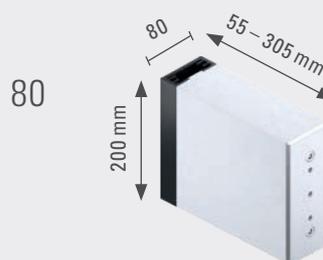
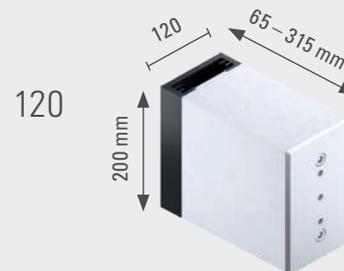
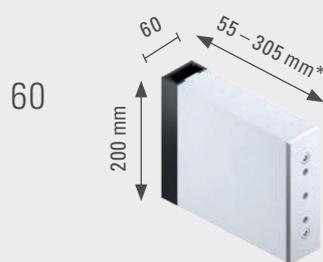
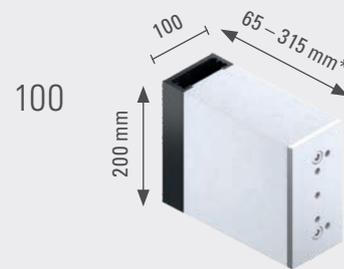
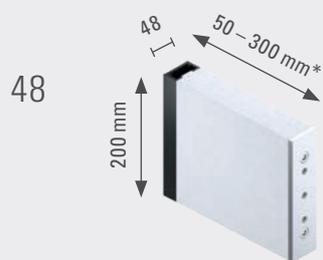
*Depths without optional connection plate t = 8 mm (aluminium, E6/EV1 surface)

FOR POINT-TO-POINT CONNECTION

The system component can also be used without or with on-site adapter plates for flexible mounting of add-on components.

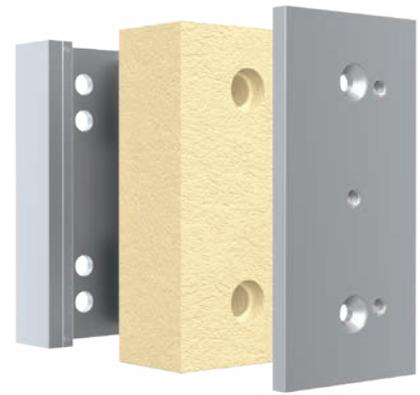
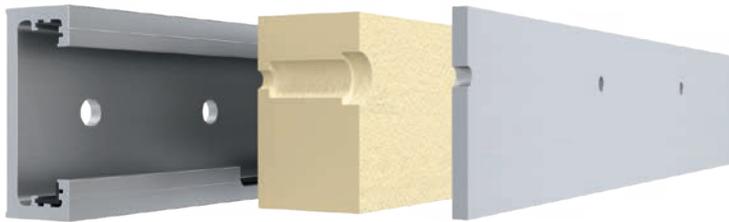


FIX*^N SLIDE – POINT-TO-POINT CONNECTION



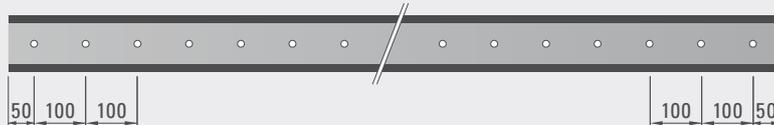
*Depths without optional stainless steel adapter plate: 48, 60, 80 = 8 mm / 100, 120 = 10 mm

DRILL HOLE SPACINGS



LINEAR CONNECTION

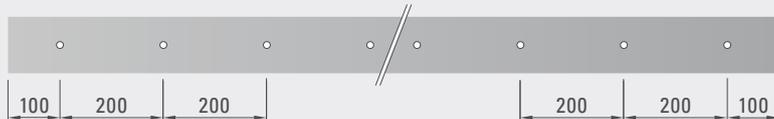
HOLE PATTERN, ALUMINIUM MOUNTING RAIL



Aluminium mounting rail	48	60 / 80	100 / 120
Hole diameter	10	12	14.5

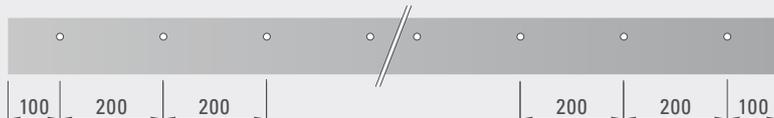
HOLE PATTERN, INSULATION BLOCK AND CONNECTING PLATES (ALU)

All system widths central holes



System widths 100 off-centre holes

ideal for the GLASSLINE all-glass awning system CANOPY CLOUD (Profile type 1)



System widths 120 off-centre holes

ideal for the GLASSLINE all-glass awning system CANOPY CLOUD (Profile type 3)



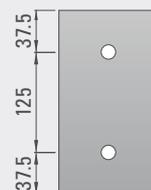
POINT-TO-POINT CONNECTION

HOLE PATTERN, ALUMINIUM MOUNTING RAIL

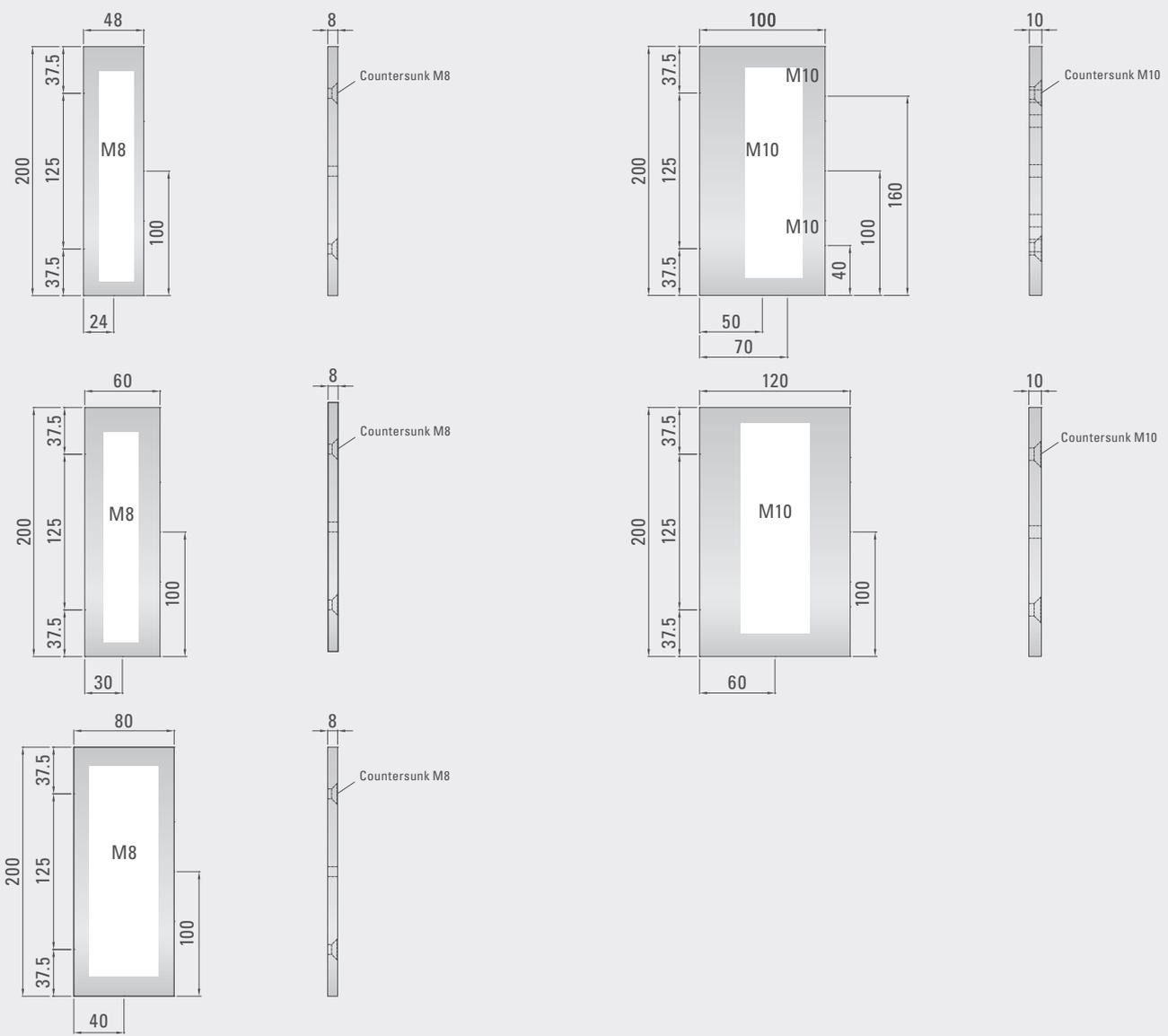


Aluminium mounting rail	48	60 / 80	100 / 120
Hole diameter	10	12	14.5

HOLE PATTERN, INSULATION BLOCK WITH ADAPTER PLATE

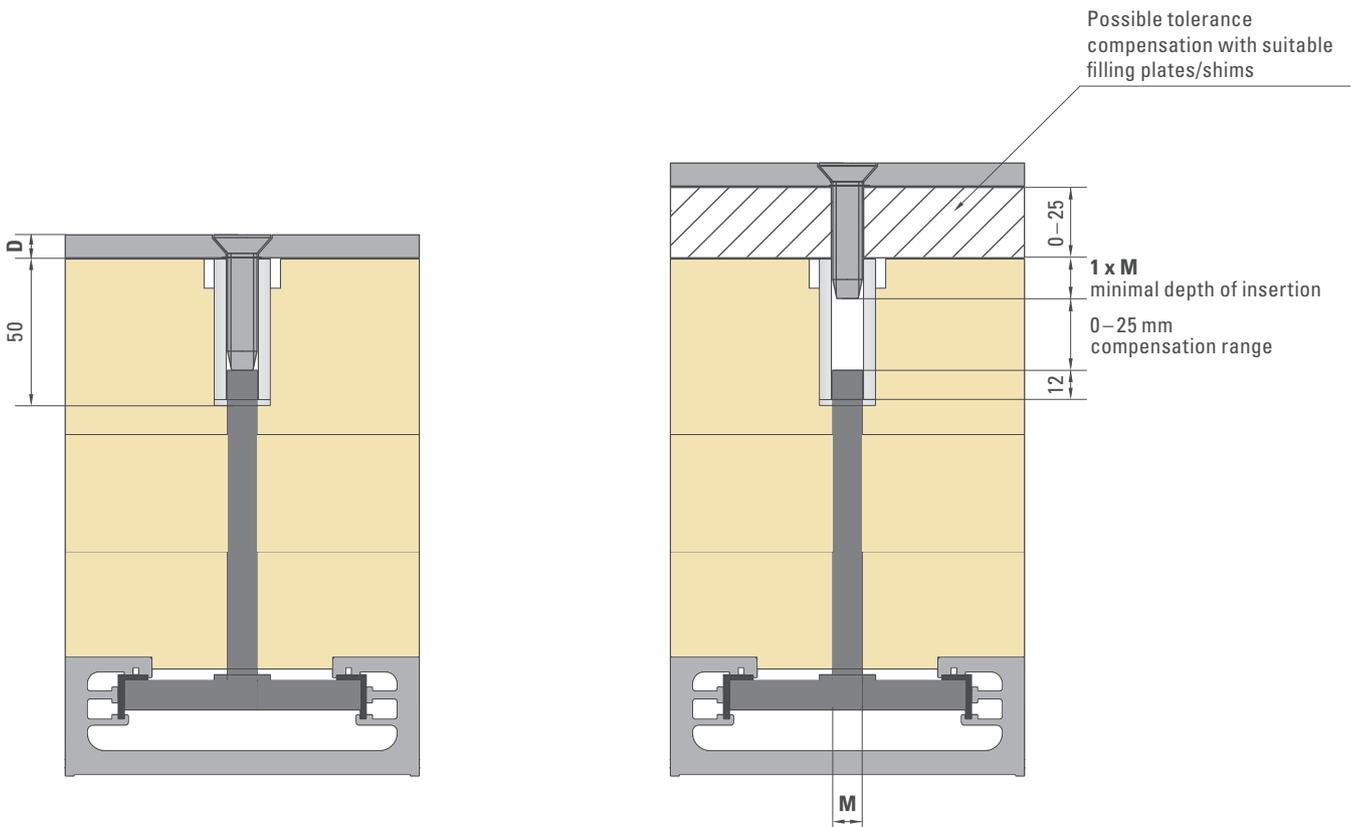


STAINLESS STEEL ADAPTER PLATES



LEVEL COMPENSATION

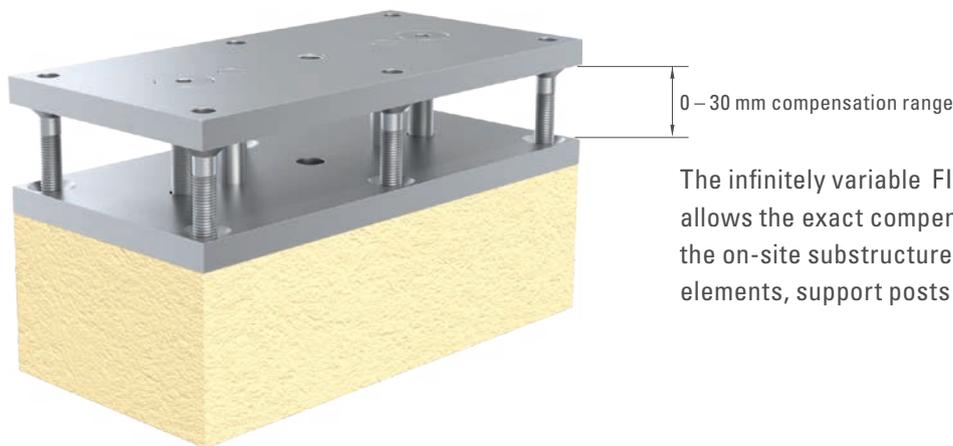
WITH ON-SITE UNDERLINING



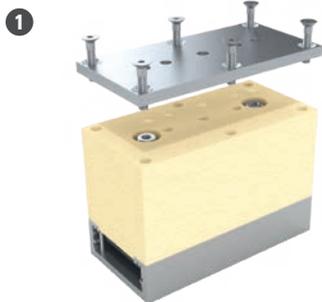
Size	M	D
48	8	8
60	8	8
80	8	8
100	10	10
120	10	10

VARIO SYSTEM MODULE

CONTINUOUSLY ADJUSTABLE
FOR INTERIOR FITTING



The infinitely variable FIX*N SLIDE VARIO system module allows the exact compensation of differences in height of the on-site substructure of up to 30 mm when mounting wall elements, support posts and other components.



1 Screw 6 pressure pins in the base plate



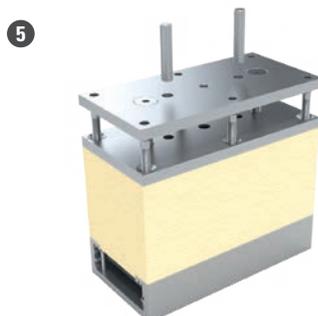
2 Place compensation plate with 2 screw connections on the base plate



3 Screw in the two screwed connections to the desired height



4 Use the pressure elements to move the compensation plate upwards against the screw connection



5 Insert the 2 locking pins

EXTERIOR FACADES – EXTERIOR INSULATION

Due to the legal requirements such as the German Energy Saving Act [EnEG], Energy Saving Ordinances [EnEV] resp. the planned Building Energy Law (summary of EnEG, EnEV and others) and economic aspects, the casings of heated buildings are provided with thicker insulating layers.

Under structural physics aspects, the placement of insulation on the outside of building shell components (exterior walls, roofs) is preferable. It is therefore most commonly deployed.

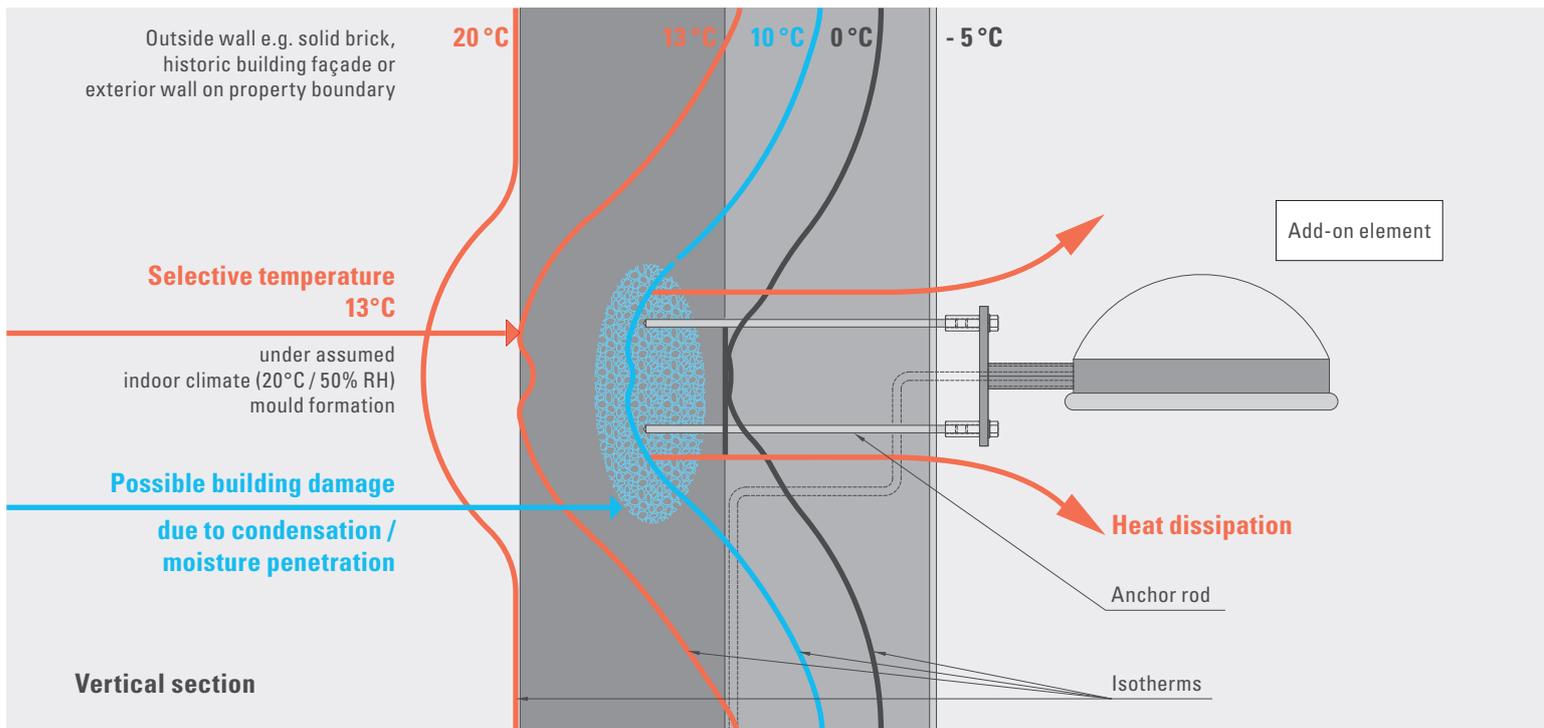
Elements such as canopies, sun protection systems, advertising systems and railings must or should be placed on the outside of buildings. The insulating materials used are inherently unsuitable to support anchoring loads from the above-mentioned elements. Their anchorages must therefore be led through the insulation layers to a load-bearing component (solid wall, concrete ceiling, columns).

In order to avoid the formation of thermal bridges and resulting heat losses / avoid structural damage, the element anchoring must be consistently thermally separated in the insulation layer.

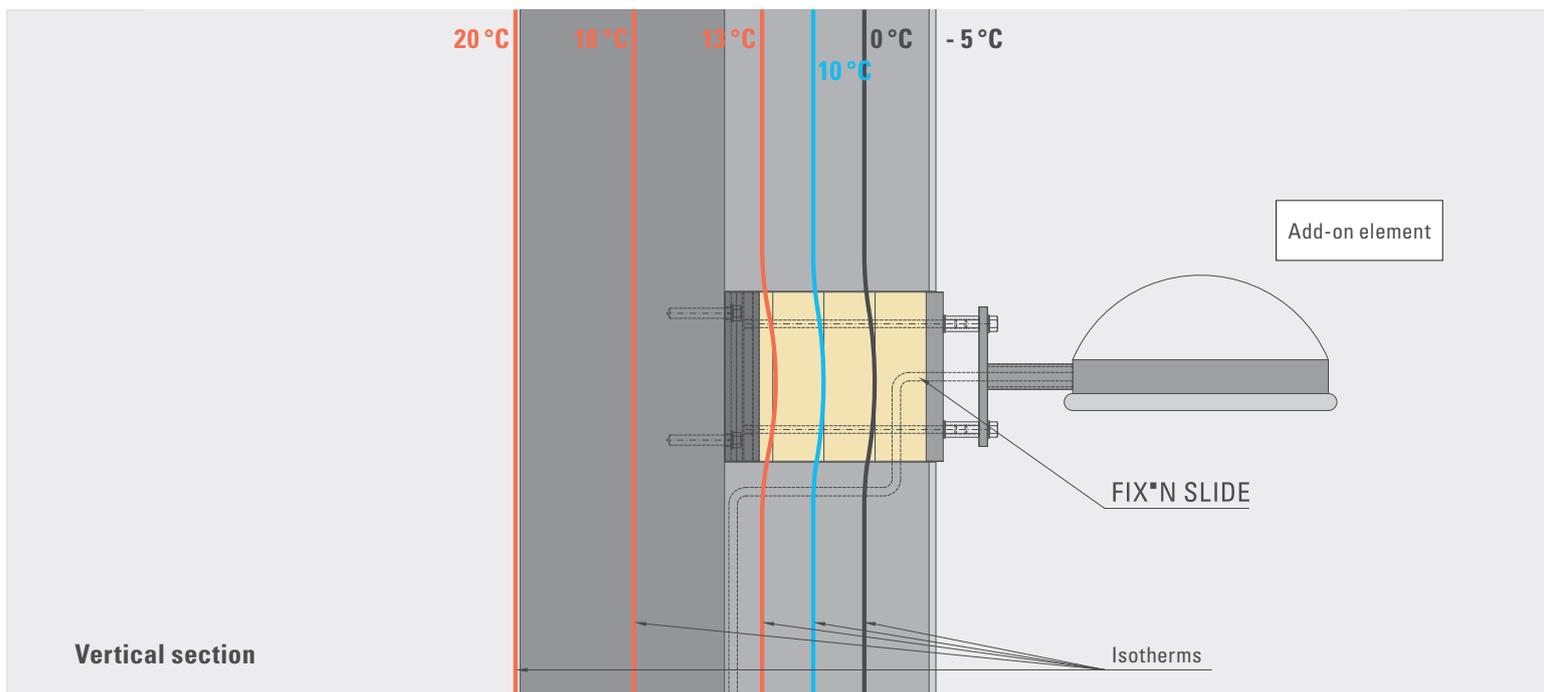
The consistent thermal insulation of component connections is essential to avoid thermal bridges and thus structural damage. This applies in particular to highly insulated building envelopes.

Thermal bridges primarily lead to heat losses. From an energetic point of view, locally limited thermal bridges might be negligible, but in fact even isolated thermal bridges can lead to considerable (construction) damage. The following building physics relationships are responsible for this.

External component **without** thermal insulation

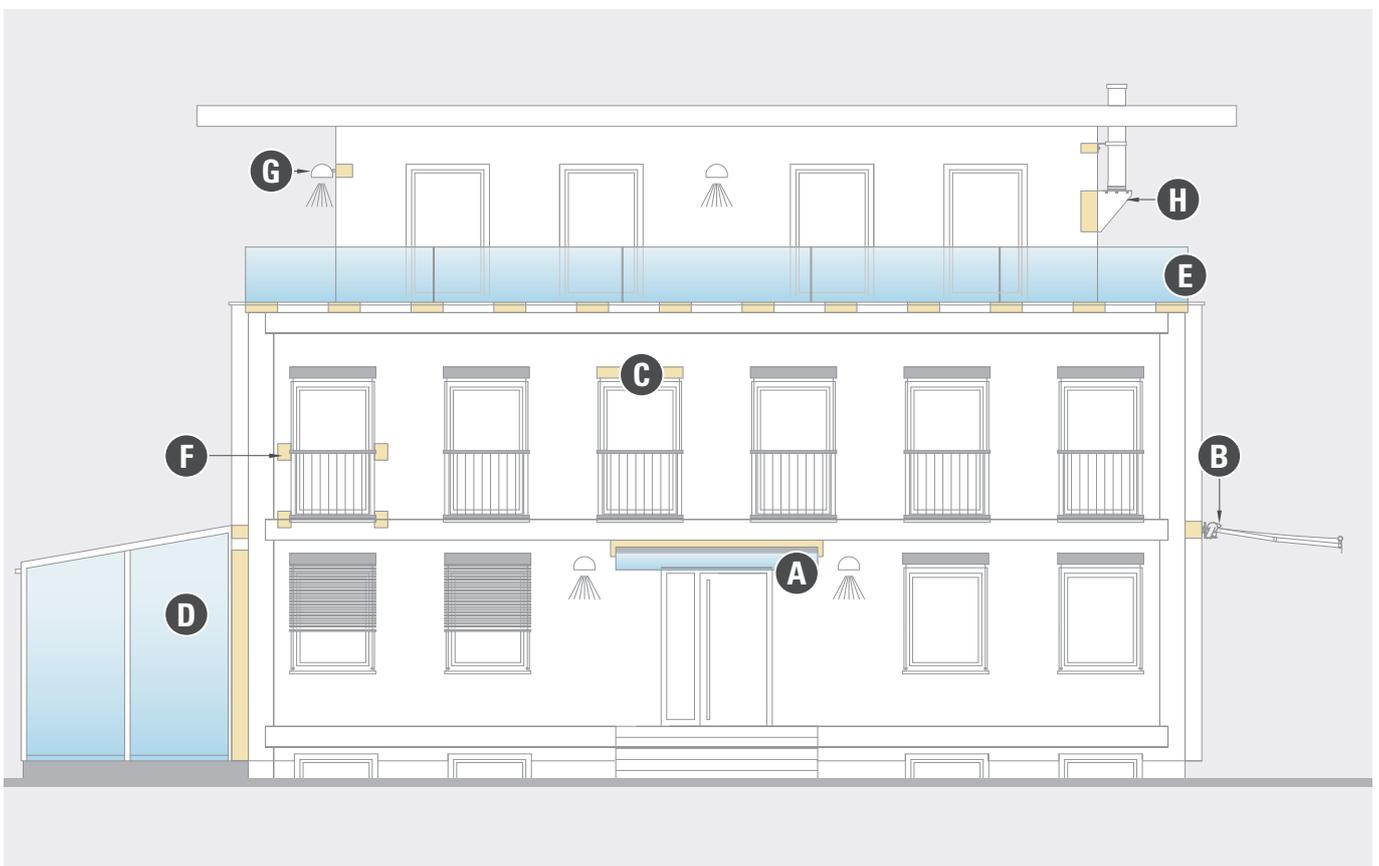


External component **with** thermal insulation FIX[®]N SLIDE



COMPONENTS ON THE OUTSIDE OF BUILDINGS

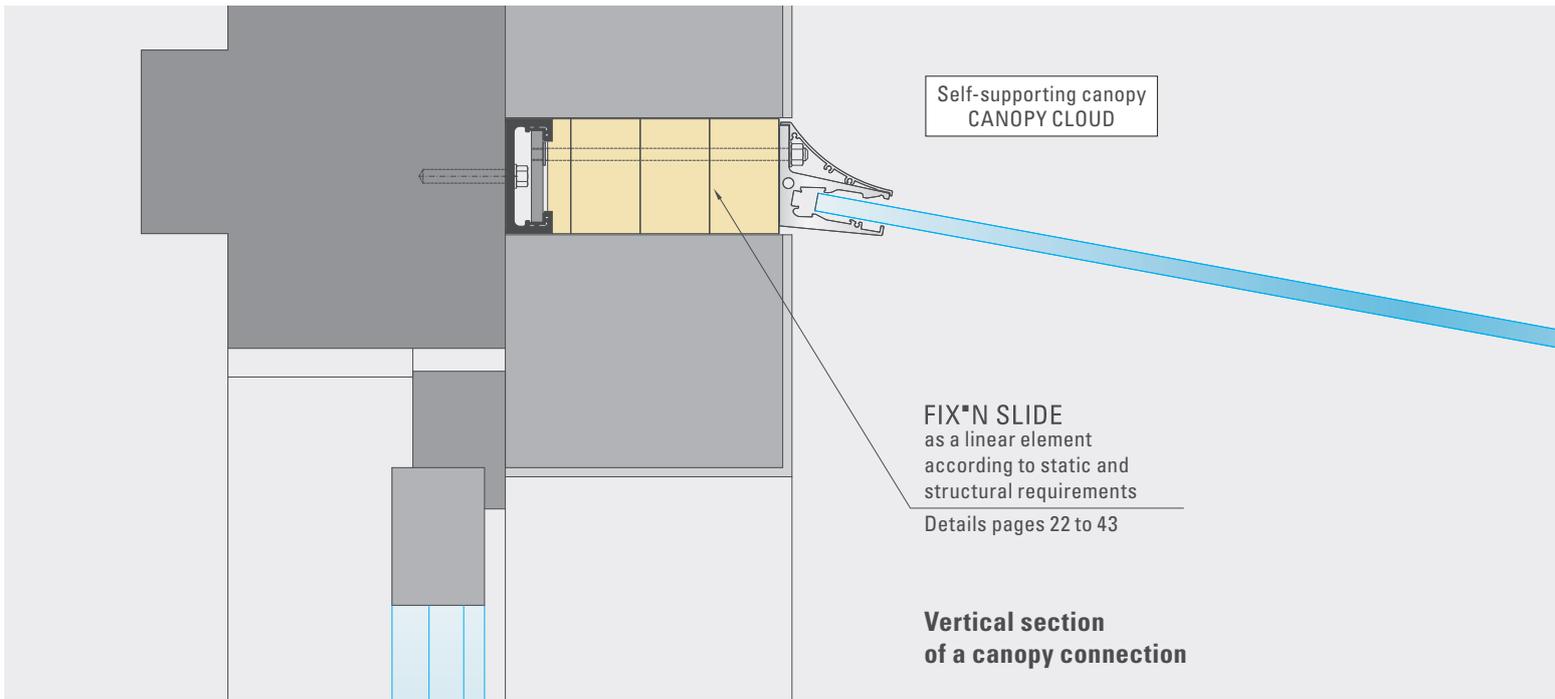
Situations with outdoor applications



- A** Canopy e.g. CANOPY CLOUD
- B** Articulated arm awning
- C** External venetian blind systems
- D** Conservatory unheated
- E** Railings on roof terrace
- F** Railings in front of French doors (French balconies)
- G** Outdoor wall lights
- H** Chimney flue

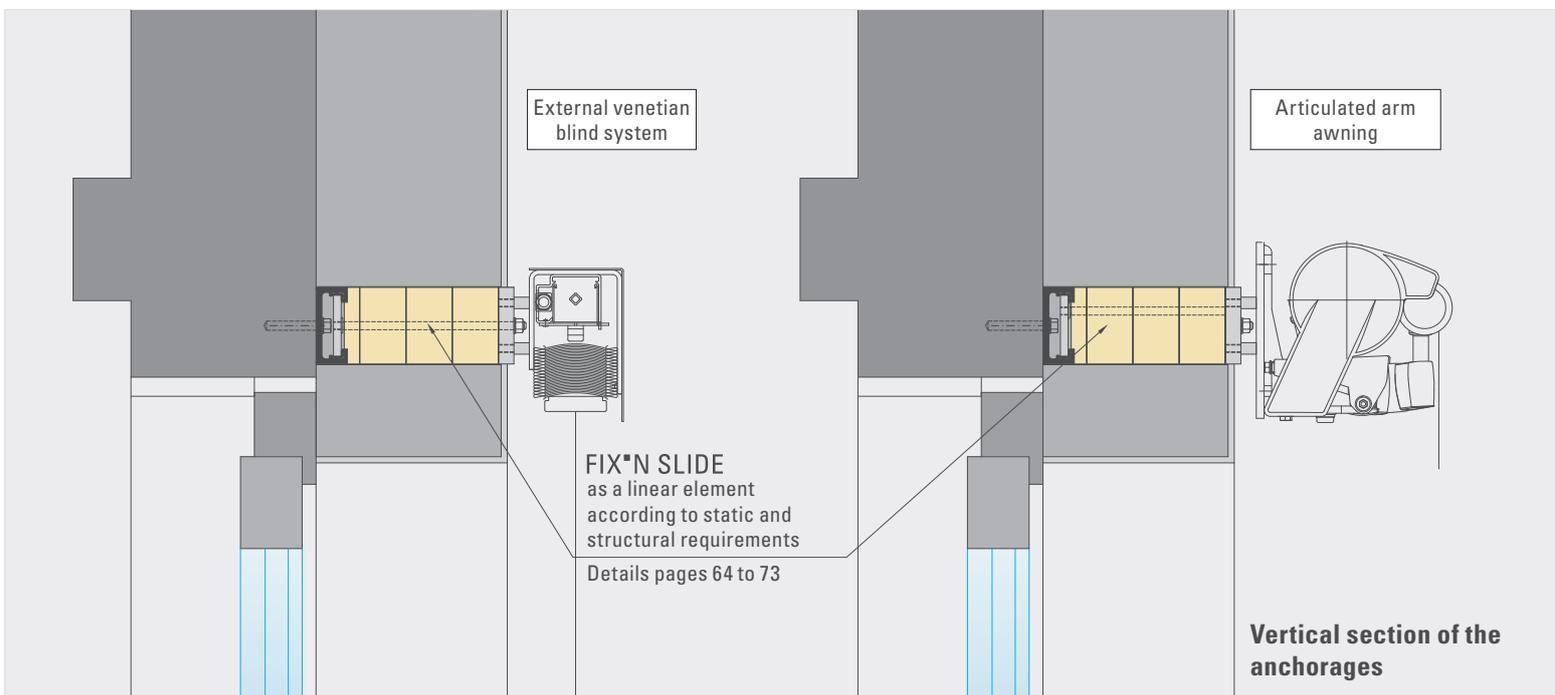
Situation **A** – glass canopy

e.g. CANOPY CLOUD



Situation **B** and **C** – sun protection systems

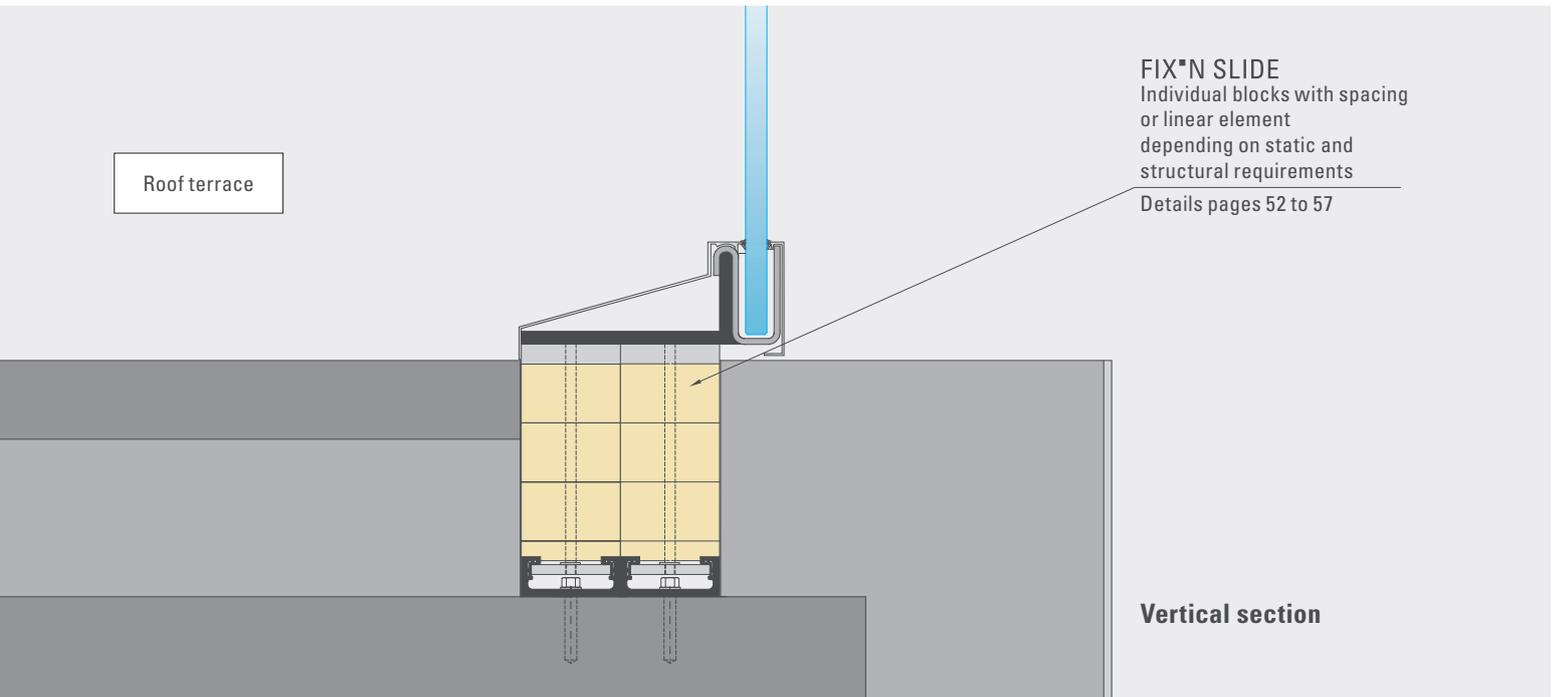
e.g. external venetian blinds or articulated awnings



FIX*N SLIDE WITH BALARDO STEEL

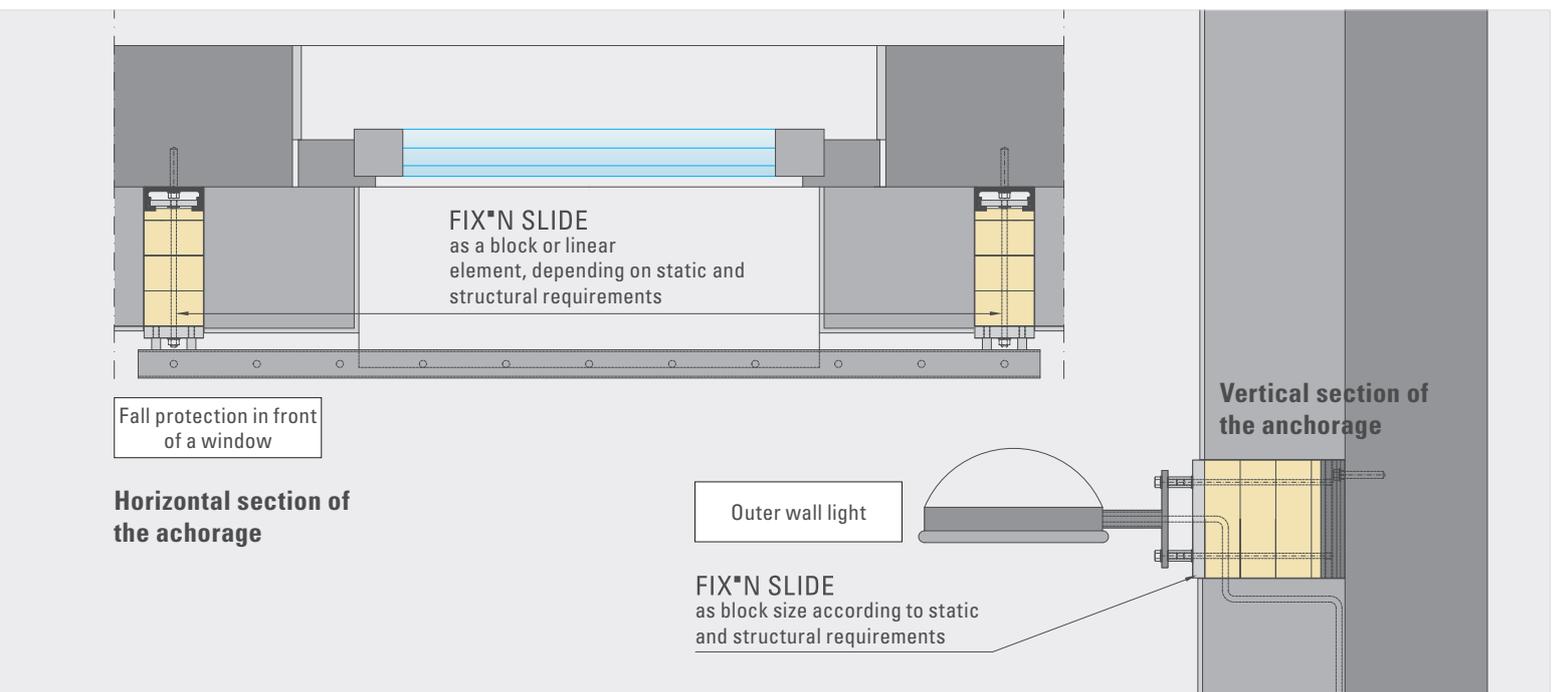
Situation **E** – railings

e.g. All-glass railing BALARDO STEEL on a roof terrace

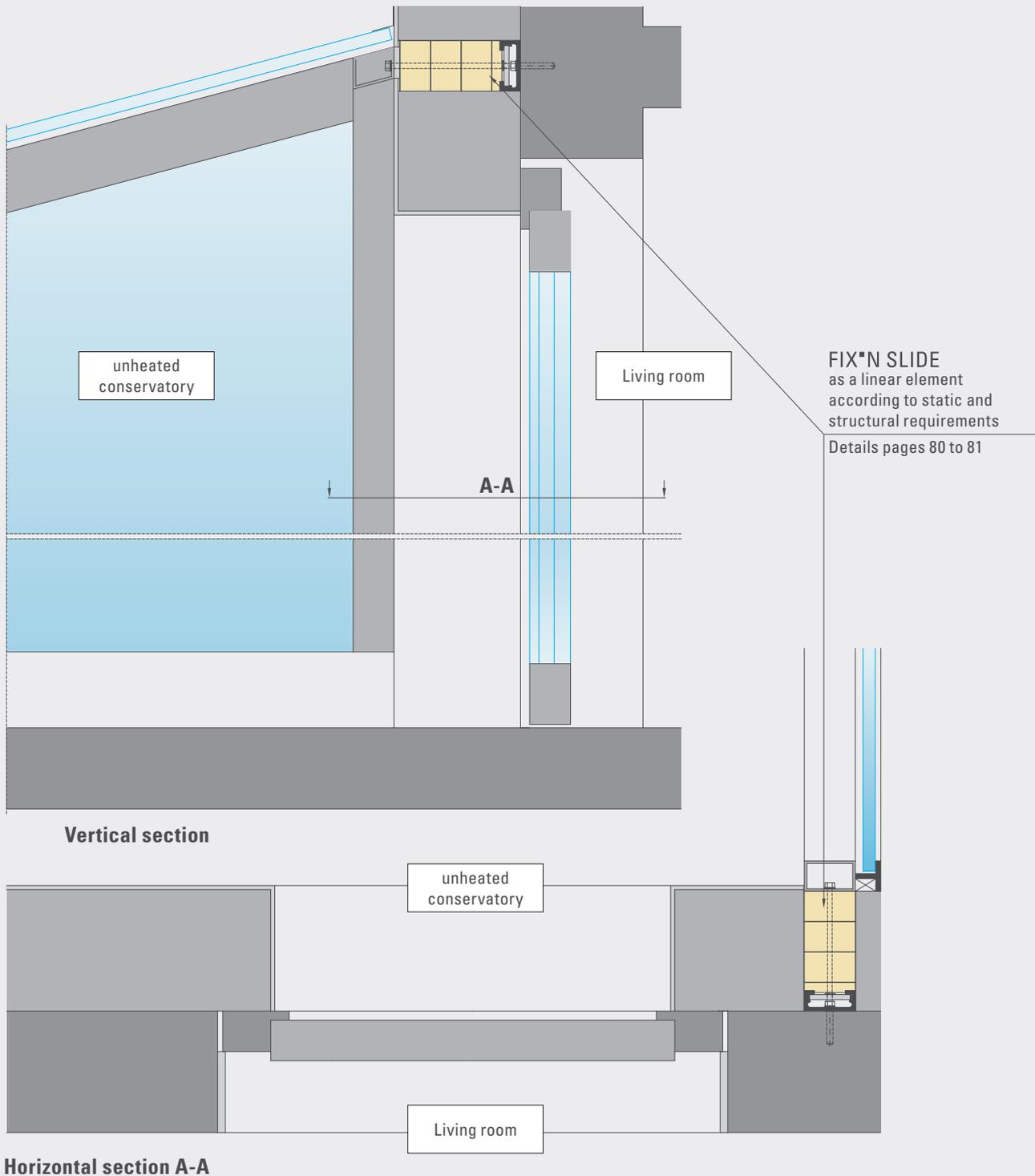


Situation **F** and **G** – Outer wall

e.g. fall protection in front of a window or exterior wall light



Situation **D** – Conservatory
on an exterior wall



GLASSLINE

FIX'N SLIDE



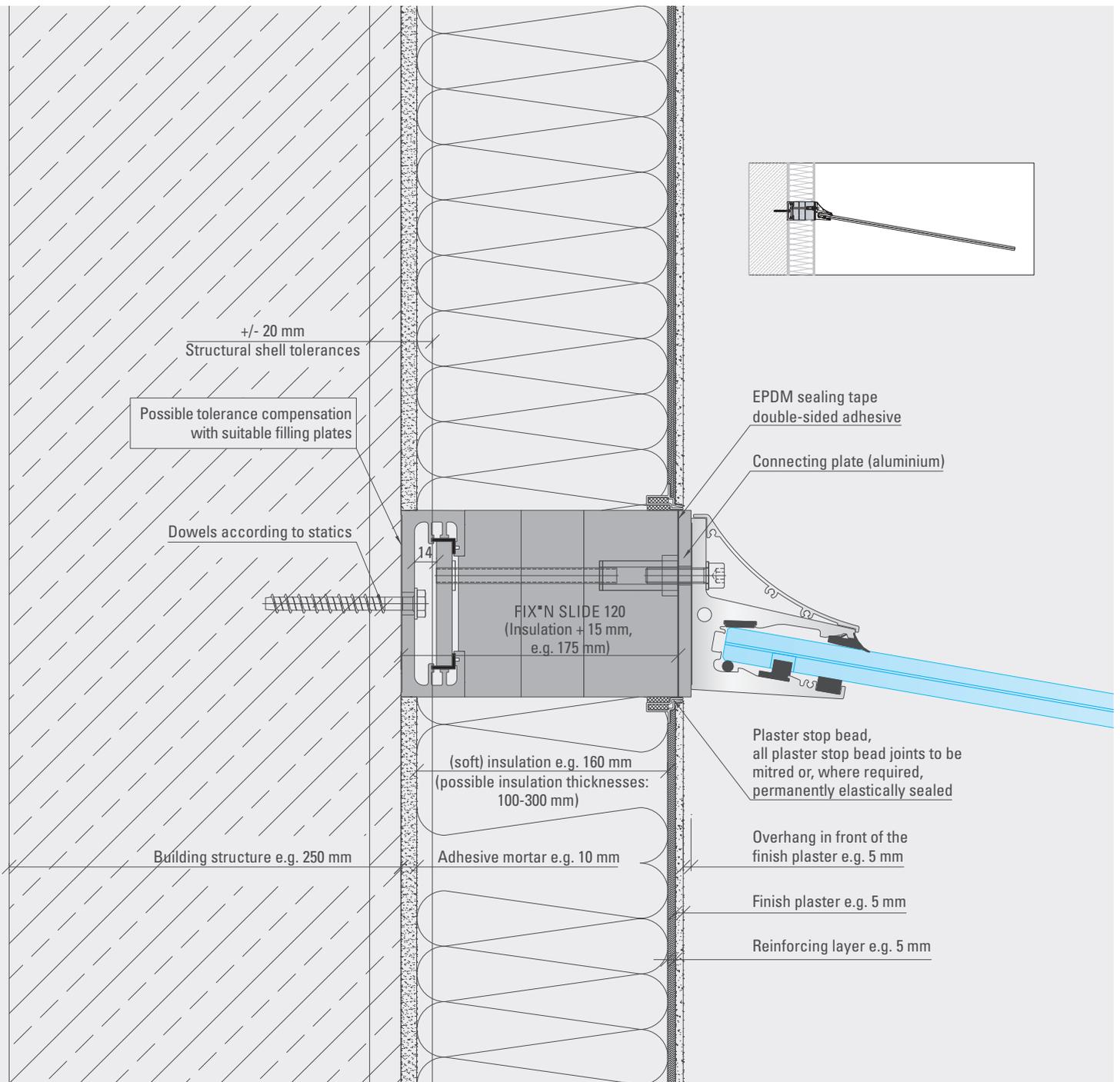
CANOPIES

APPLICATION EXAMPLES

Self-supporting glass canopy, e.g. CANOPY CLOUD

Finish plaster and soft insulation

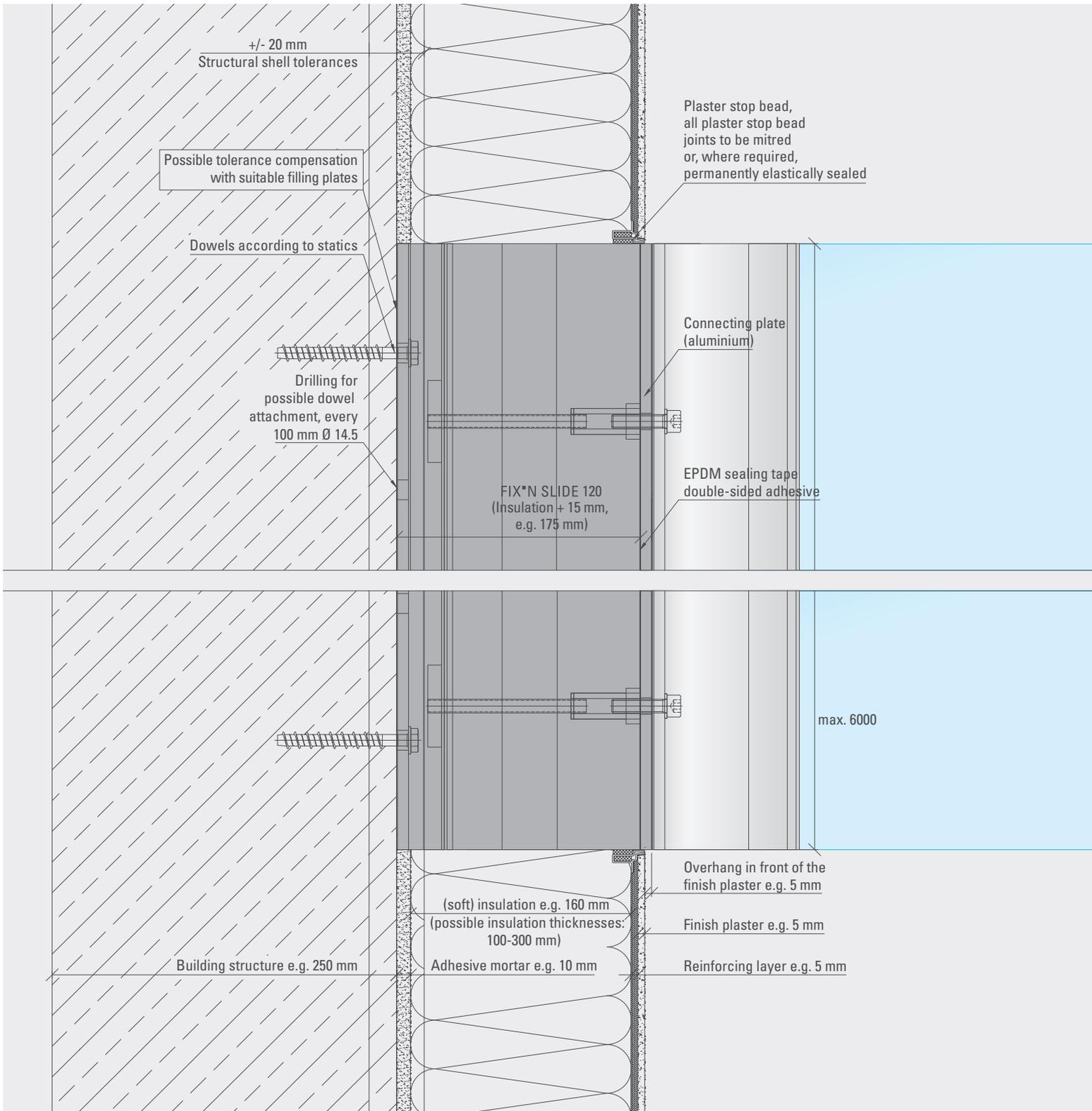
Vertical section



INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE
 - adhesive EPDM sealing membrane
 - Fix connection plate
 - Create ETICS with finish plaster
 - Install canopy
- Ensure exterior impermeability with double-sided
- Possible tolerance compensation with suitable filler plates/shims

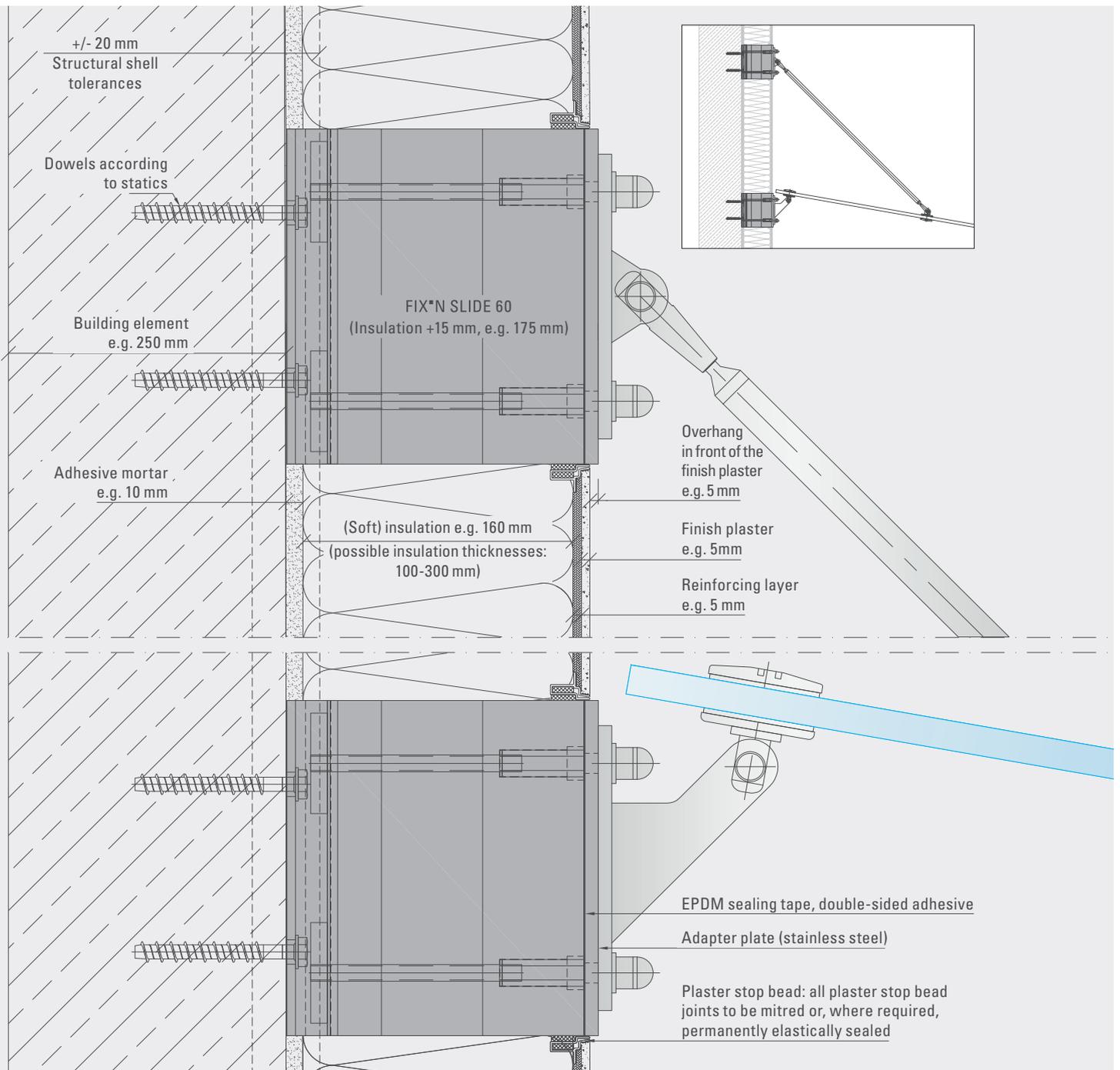
Horizontal section



Point-retained glass canopy, e.g. CANOPY CLASSIC

Finish plaster and soft insulation

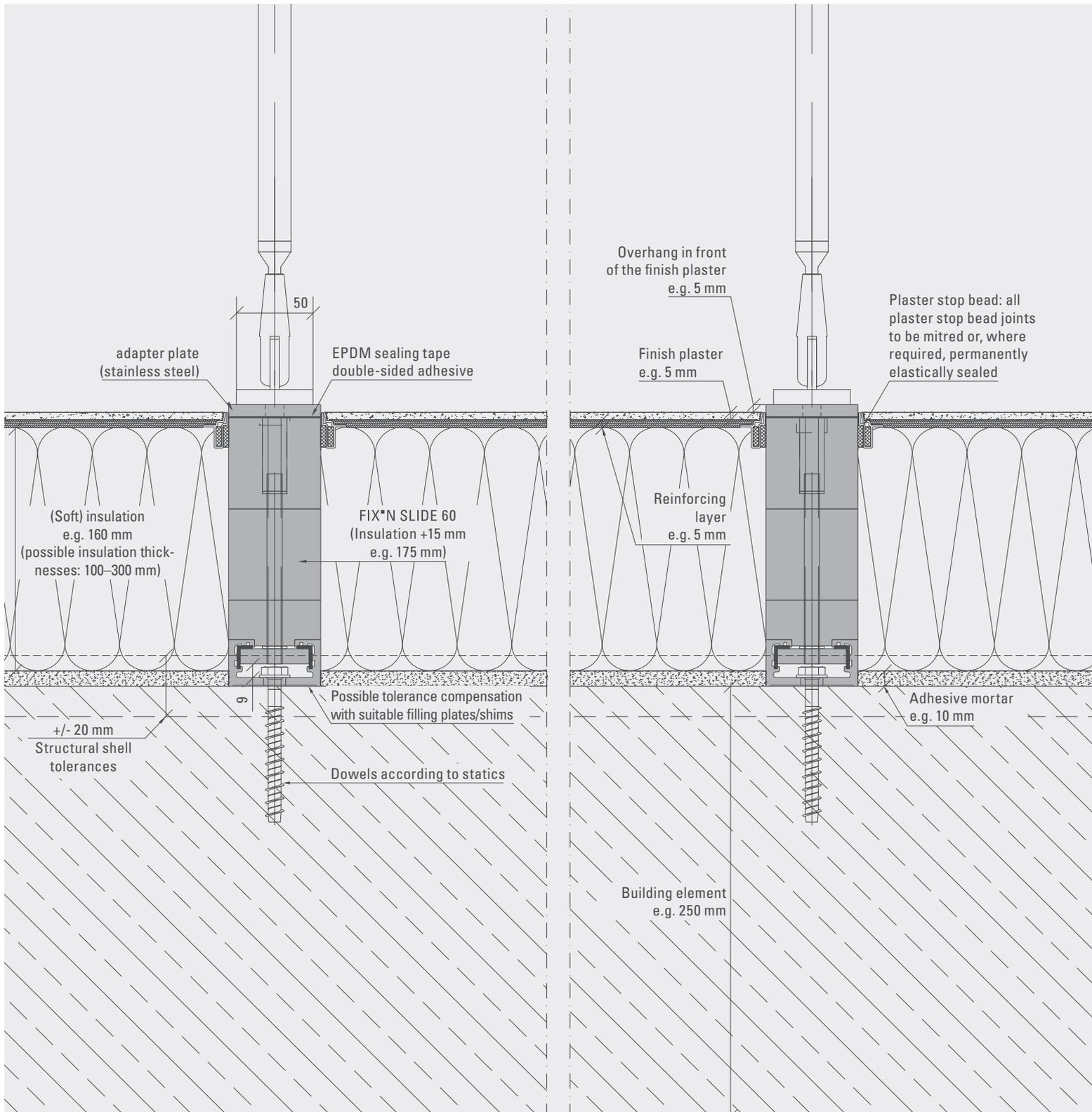
Vertical section



INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filler plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix adapter plate
- Create ETICS with finish plaster
- Install canopy

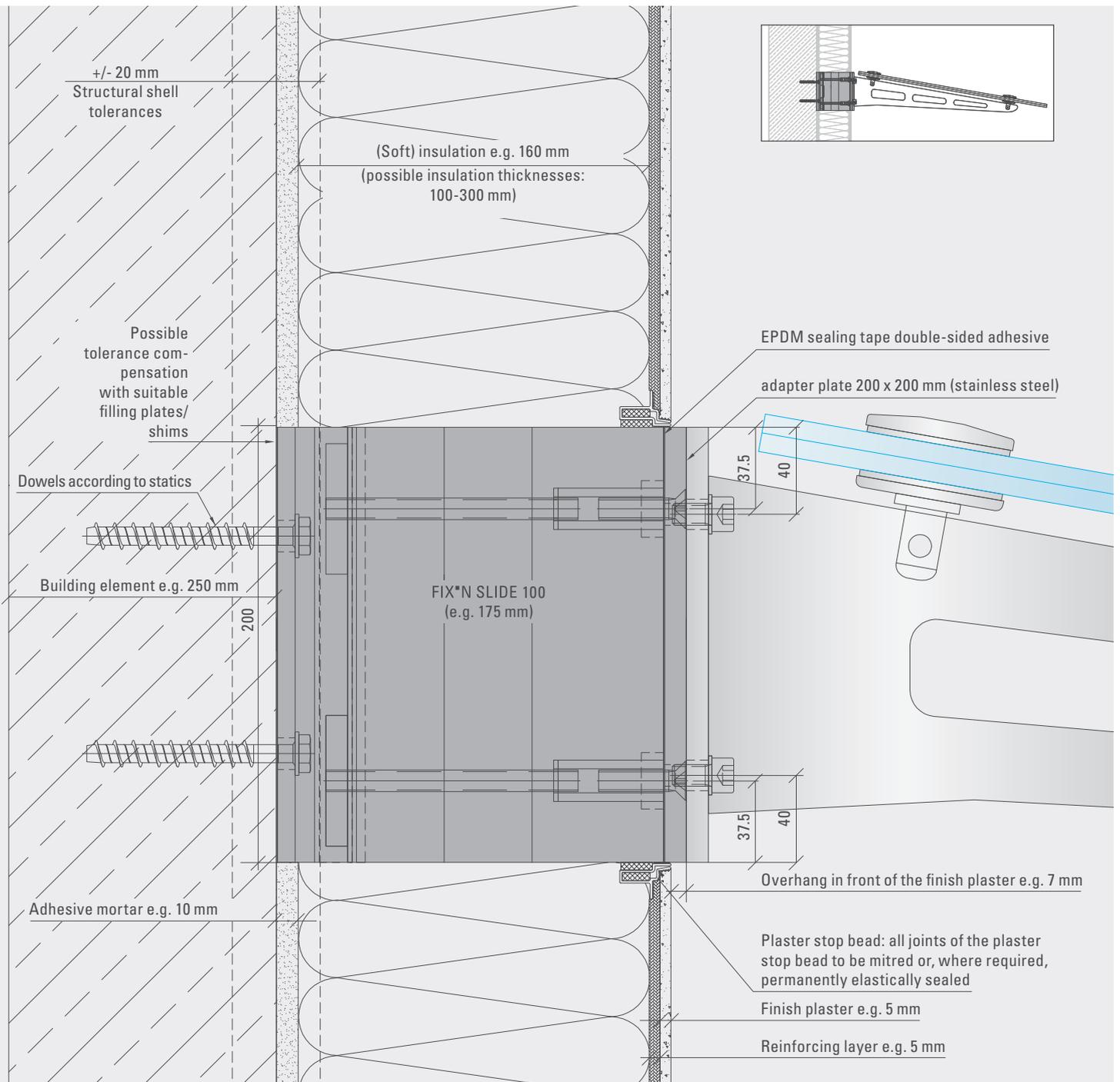
Horizontal section



Glass canopy with brackets, e.g. CANOPY BLADE

Finish plaster and soft insulation

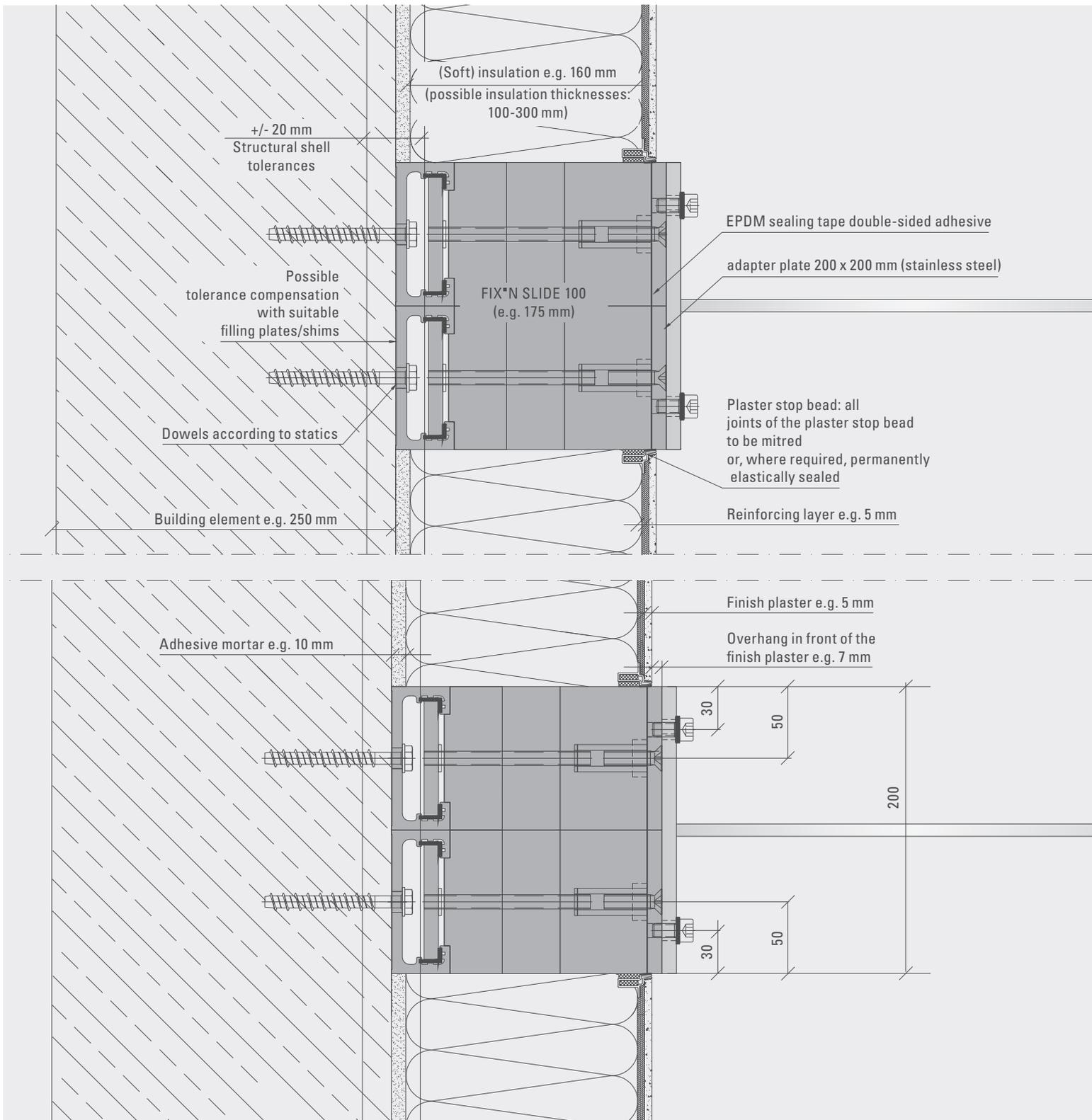
Vertical section



INSTALLATION RECOMMENDATION

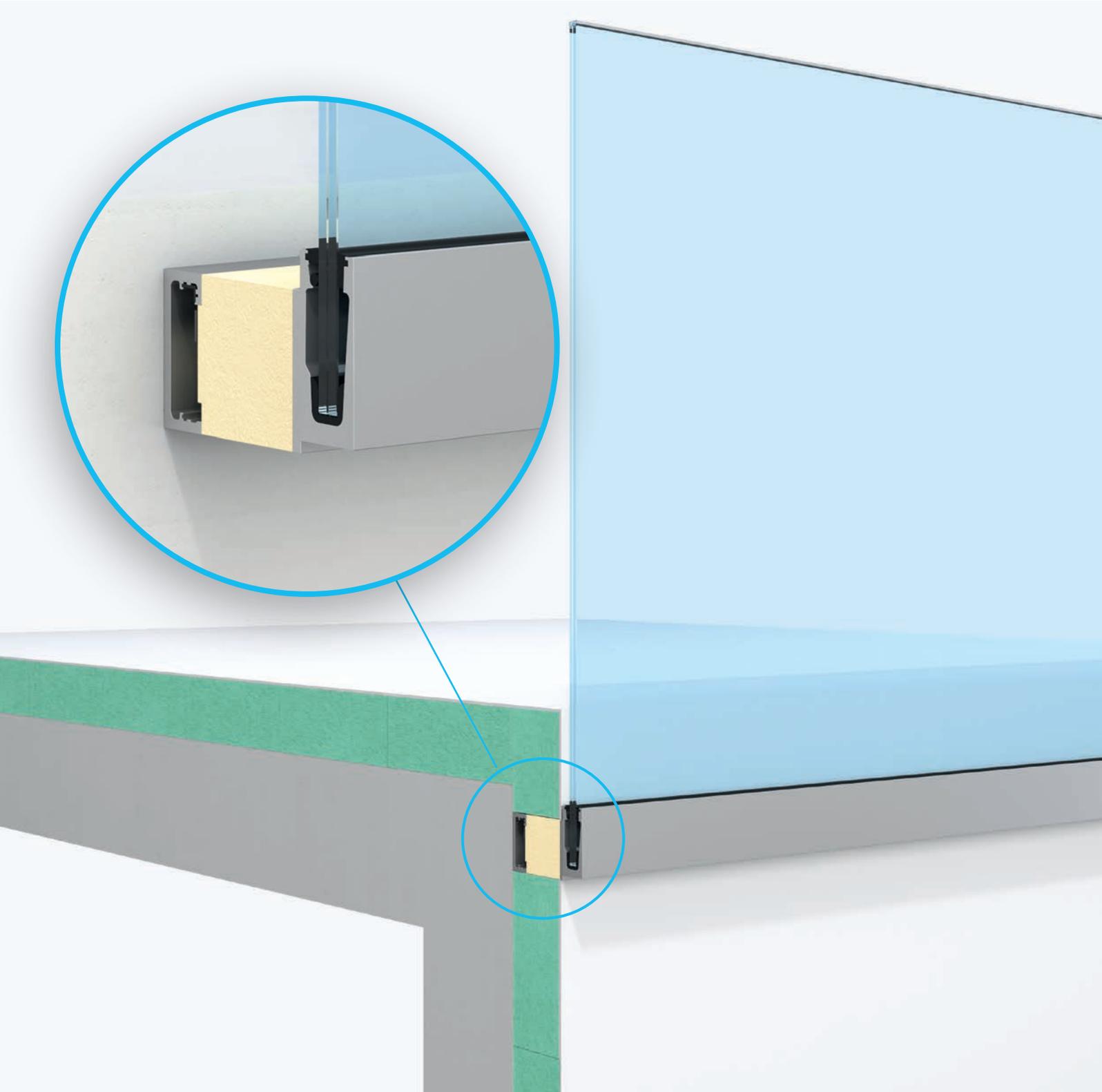
- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filler plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix adapter plate
- Create ETICS with finish plaster
- Install canopy

Horizontal section



GLASSLINE

FIX'N SLIDE



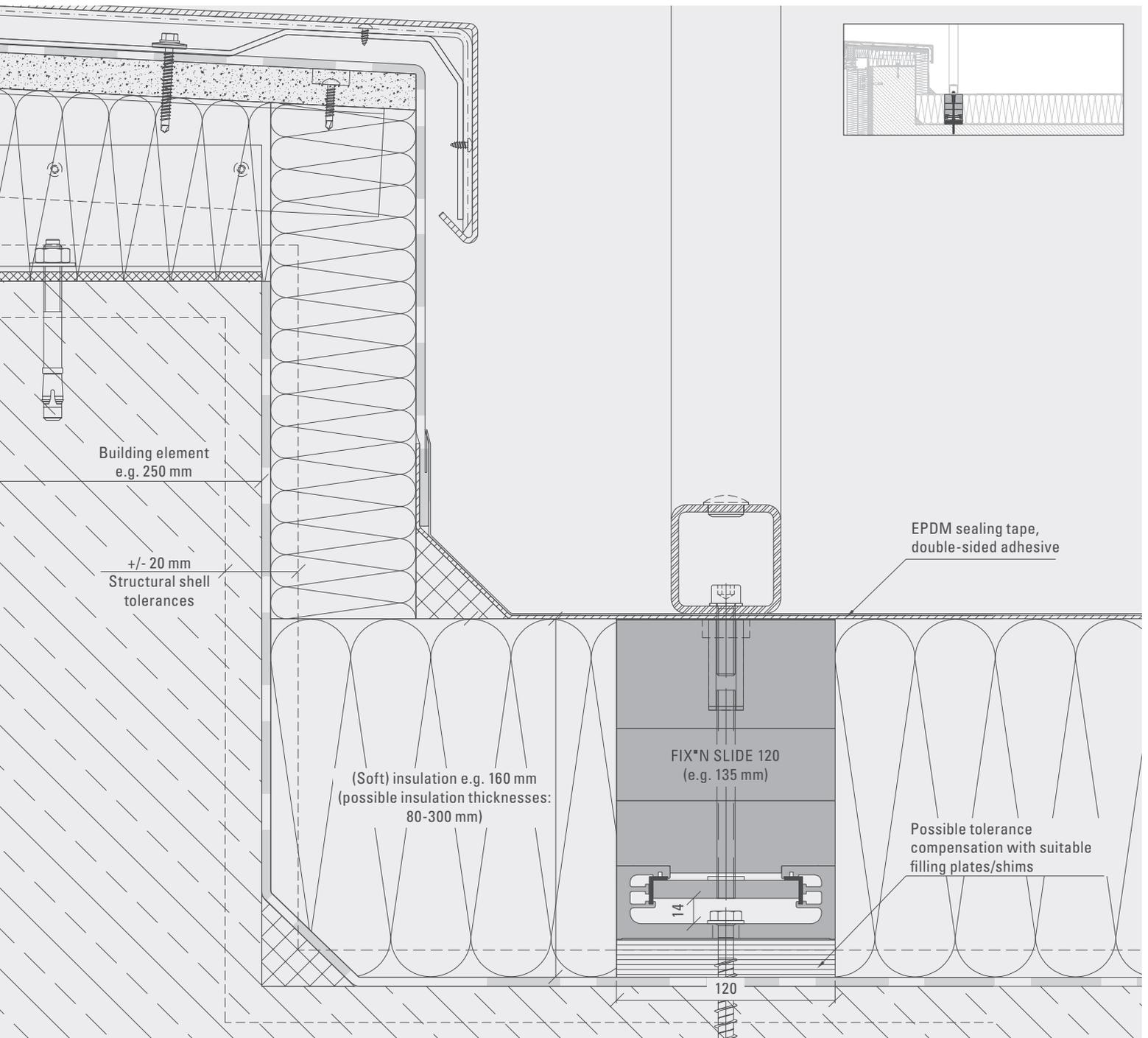
RAILINGS

APPLICATION EXAMPLES

Steel railing

Terrace

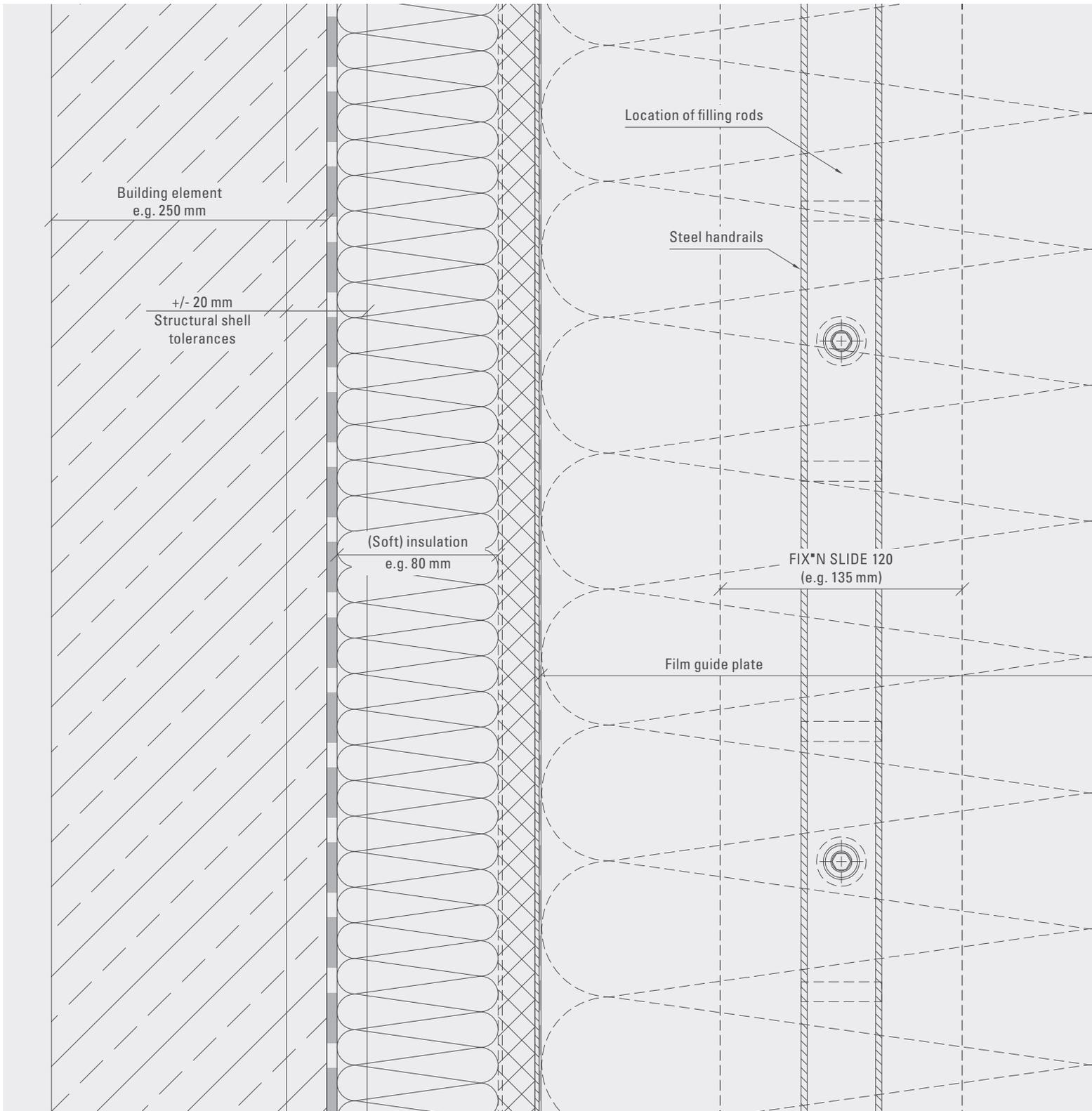
Vertical section



INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filler plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix film guide plate
- Execute building sealing e.g. with liquid plastic
- Install steel railing

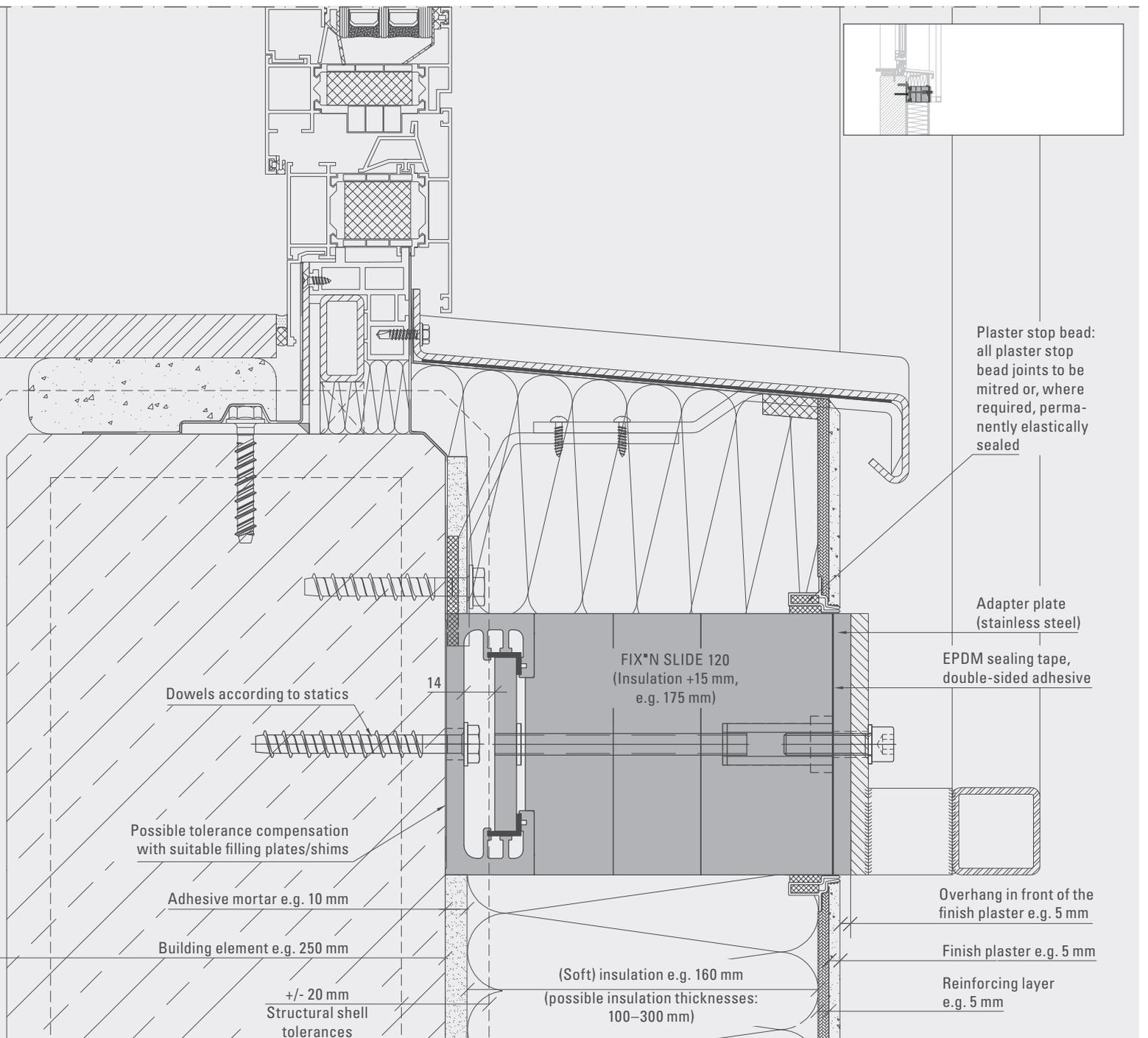
Horizontal section



Parapet railing (window fall protection)

Finish plaster and soft insulation

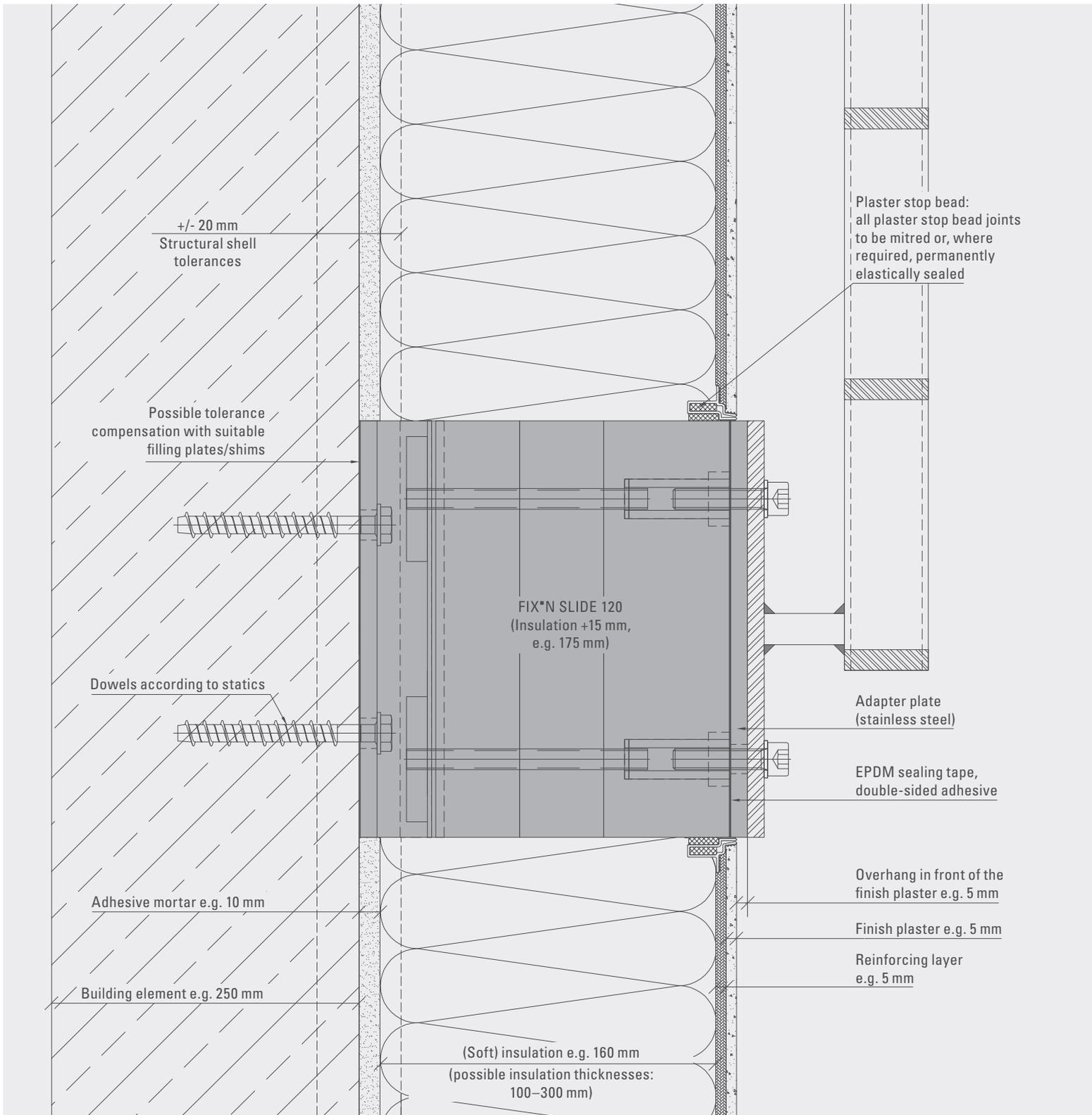
Vertical section



INSTALLATION RECOMMENDATION

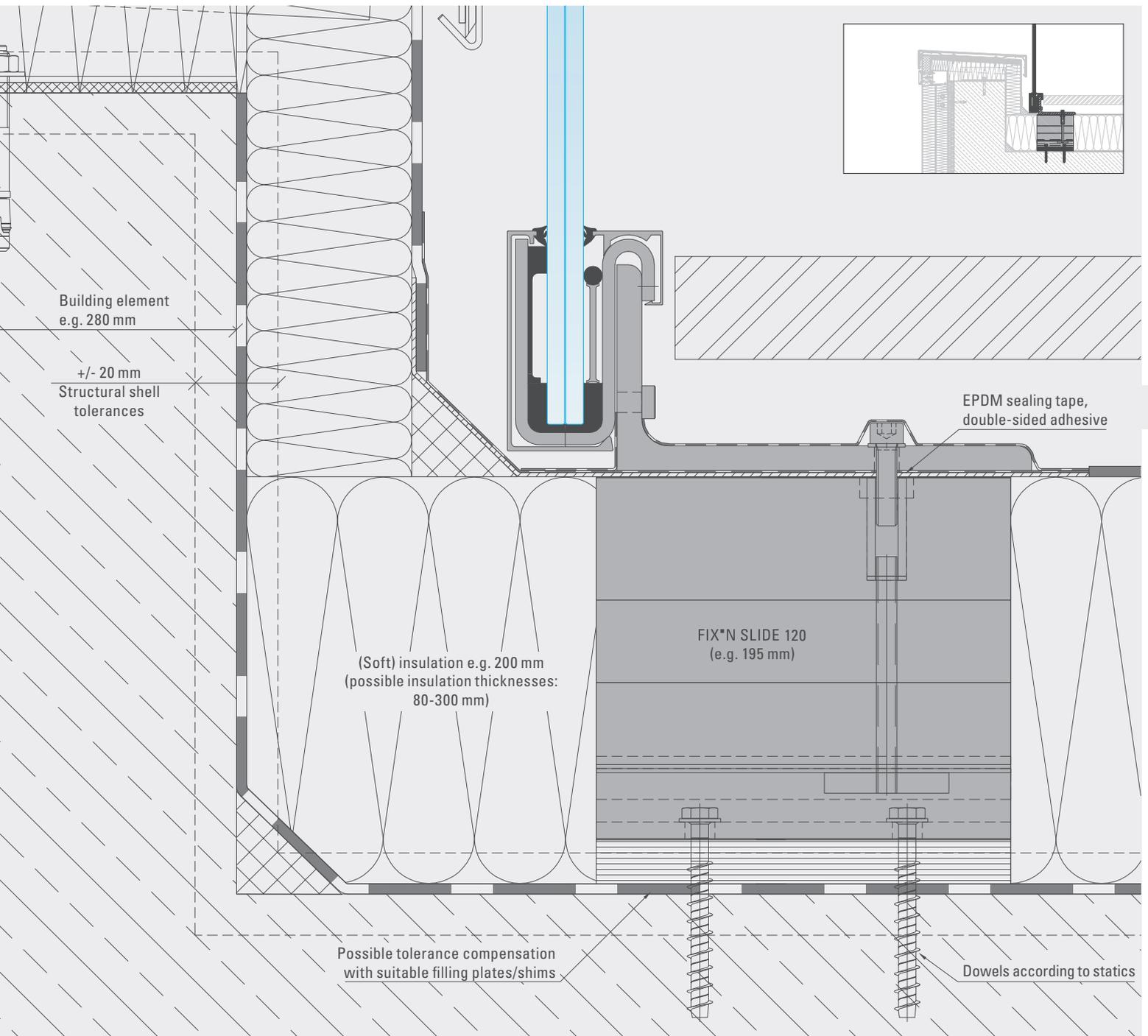
- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filler plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix the adapter plate
- Execute building sealing e.g. with liquid plastic
- Create ETICS with finish plaster
- Install steel railing

Horizontal section



Attic cover all-glass railing, e.g. BALARDO STEEL with soft insulation

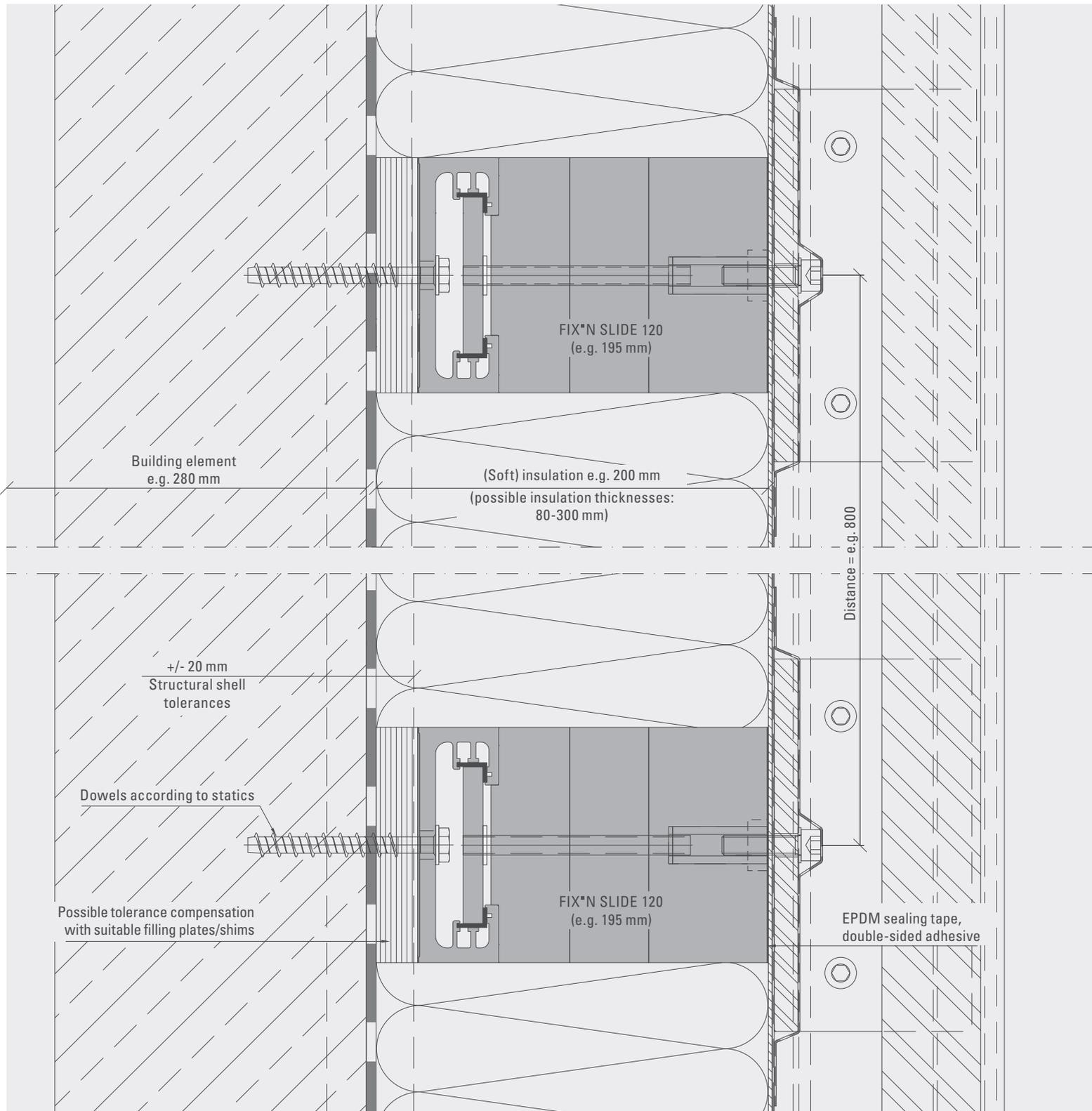
Vertical section



INSTALLATION RECOMMENDATION

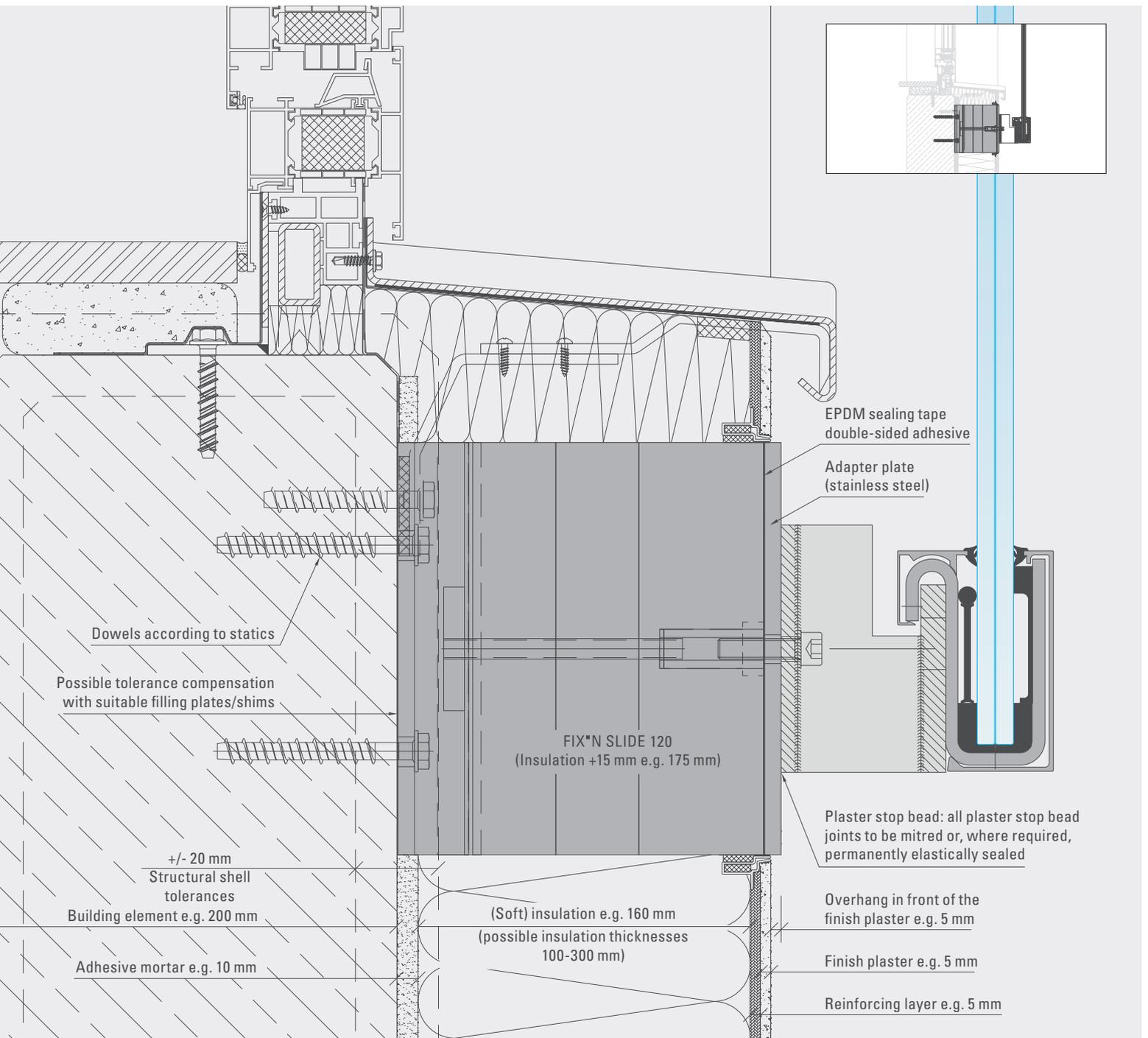
- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE
(possible tolerance compensation with suitable filler plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix film guide plate
- Execute building sealing
- Install BALARDO STEEL

Horizontal section



Parapet glazing all-glass railing, e.g. BALARDO STEEL with soft insulation

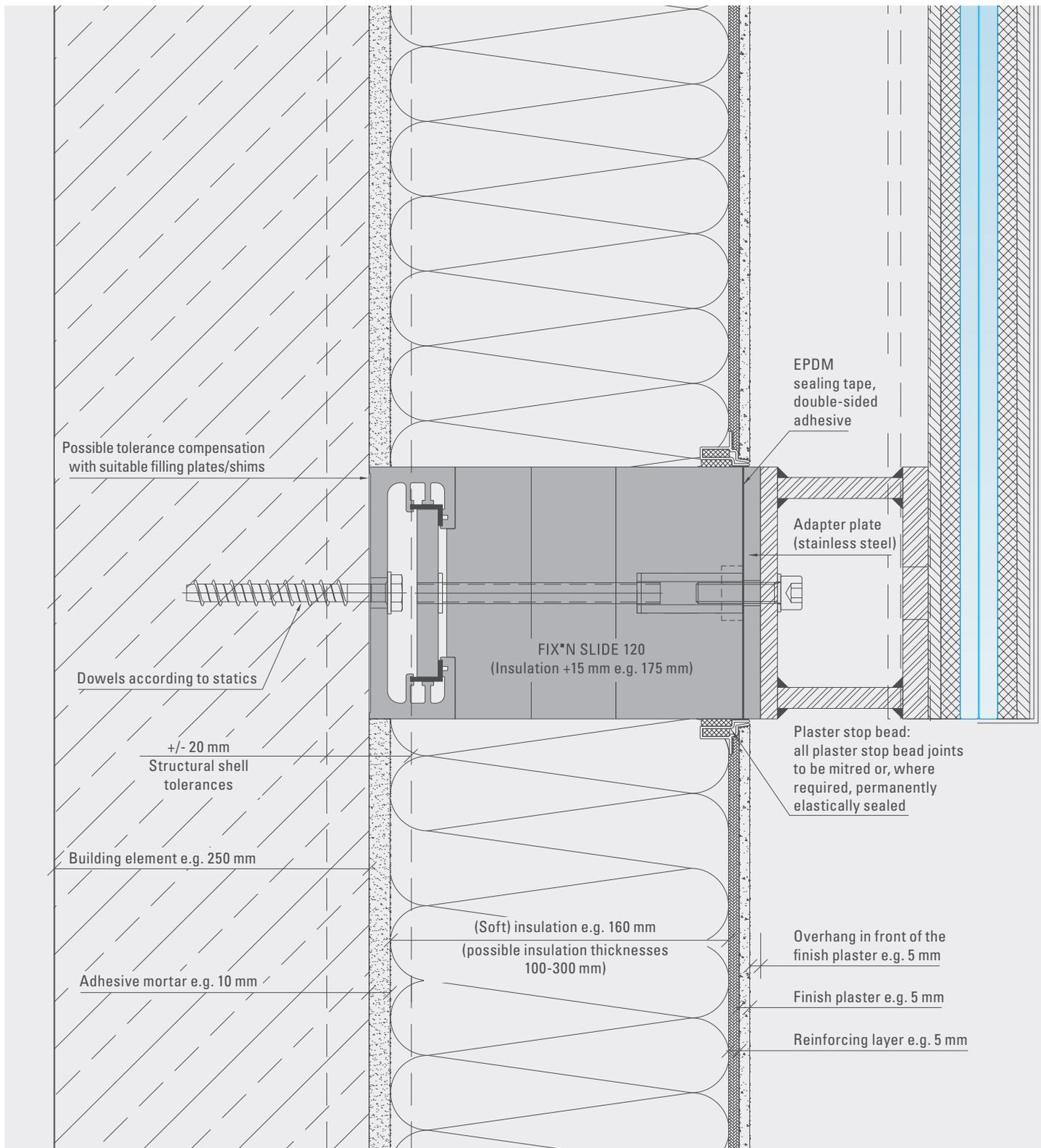
Vertical section



INSTALLATION RECOMMENDATION

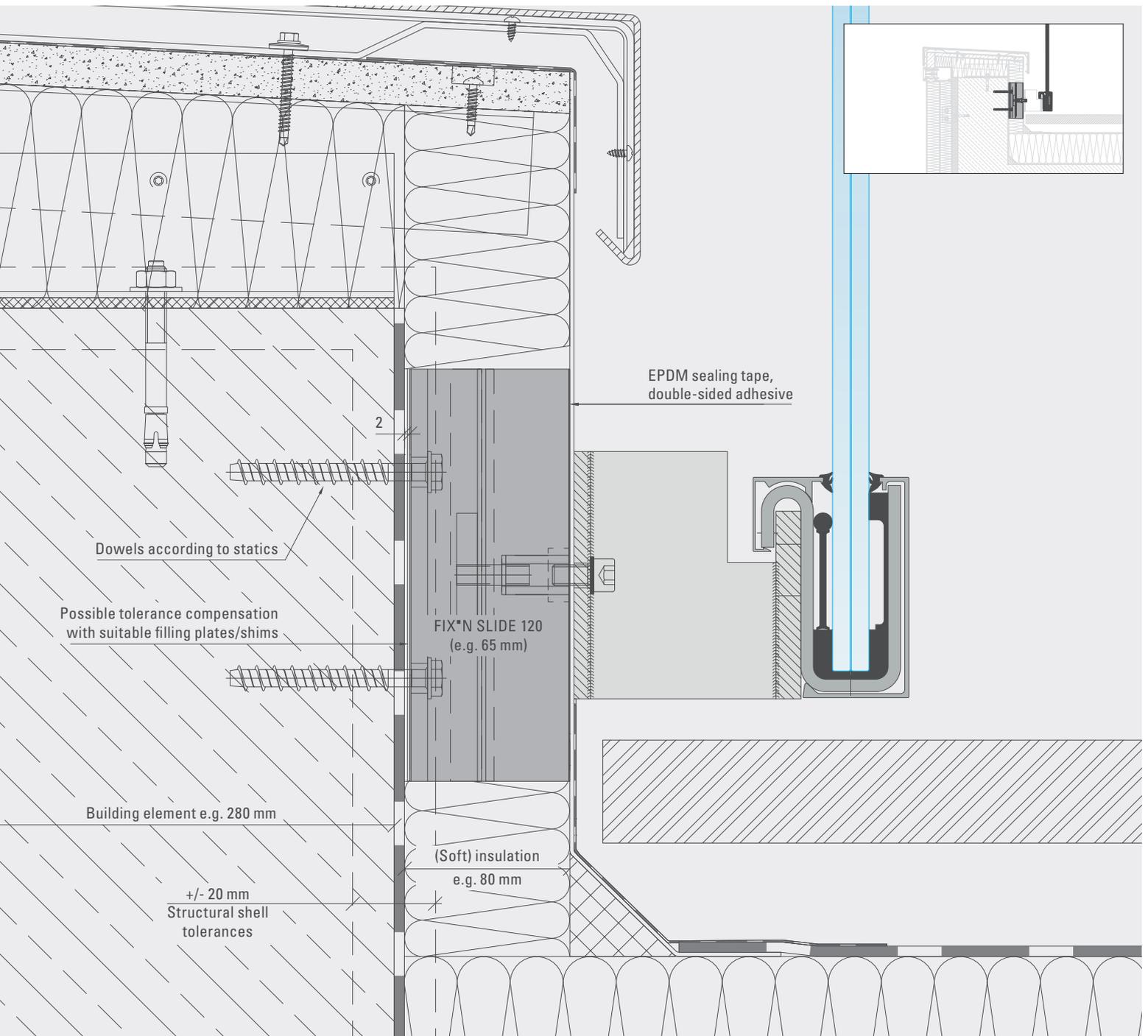
- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filler plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix connecting plate
- Install BALARDO STEEL

Horizontal section



Attic cover all-glass railing, e.g. BALARDO STEEL with soft insulation

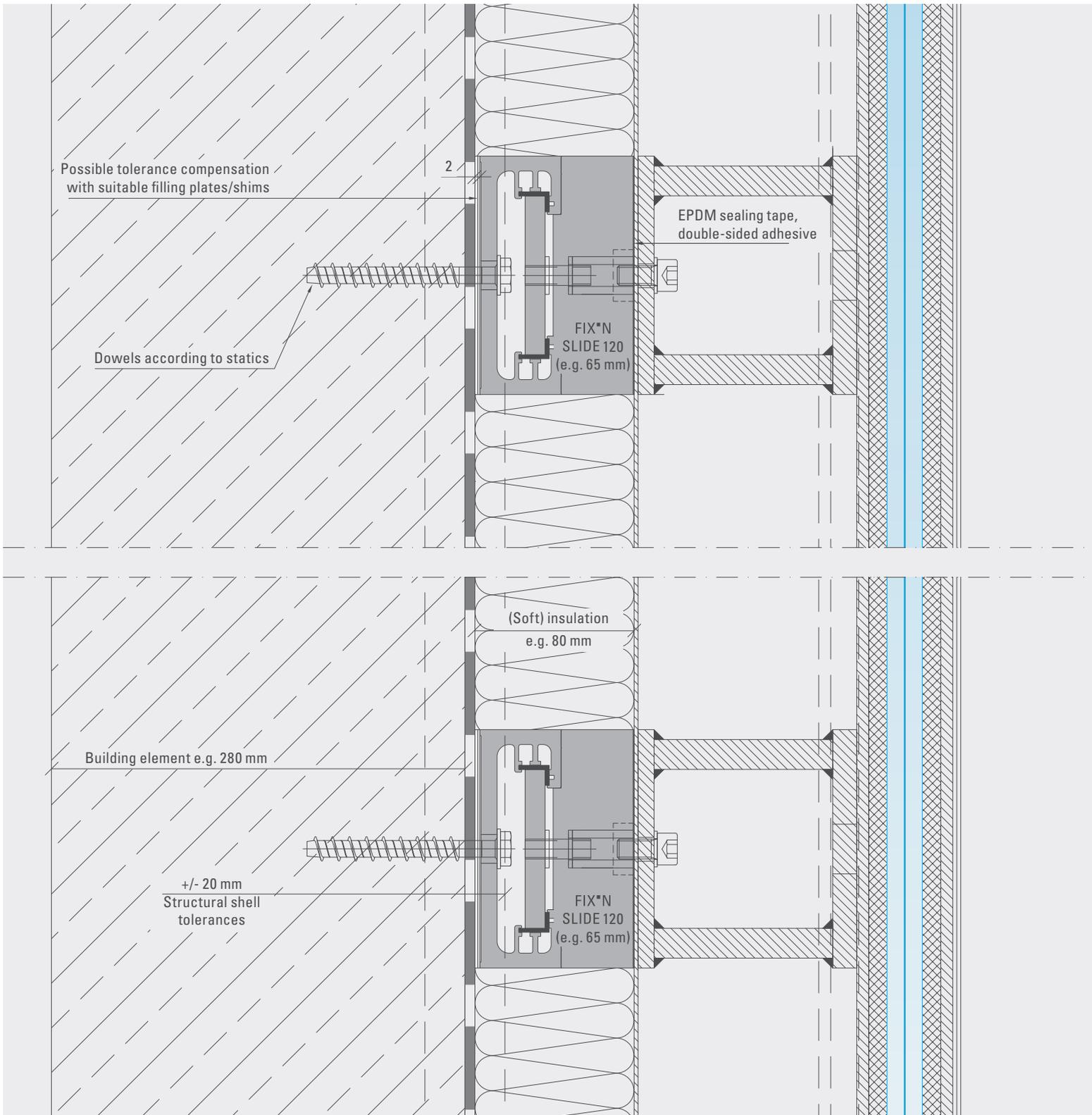
Vertical section



INSTALLATION RECOMMENDATION

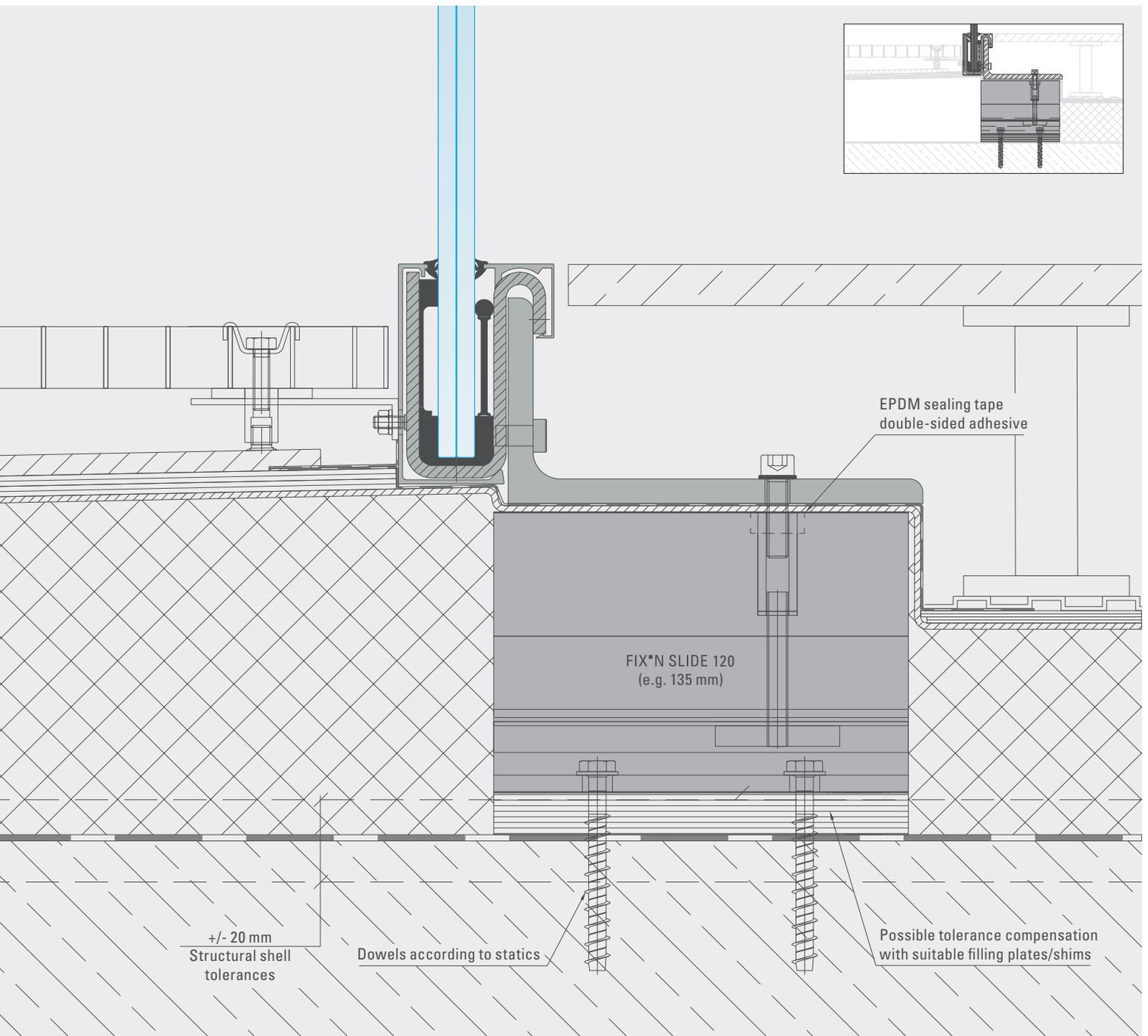
- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE
(possible tolerance compensation with suitable filler plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix film guide plate
- Install BALARDO STEEL

Horizontal section



Maintenance passage all-glass railing, e.g. BALARDO STEEL with hard insulation

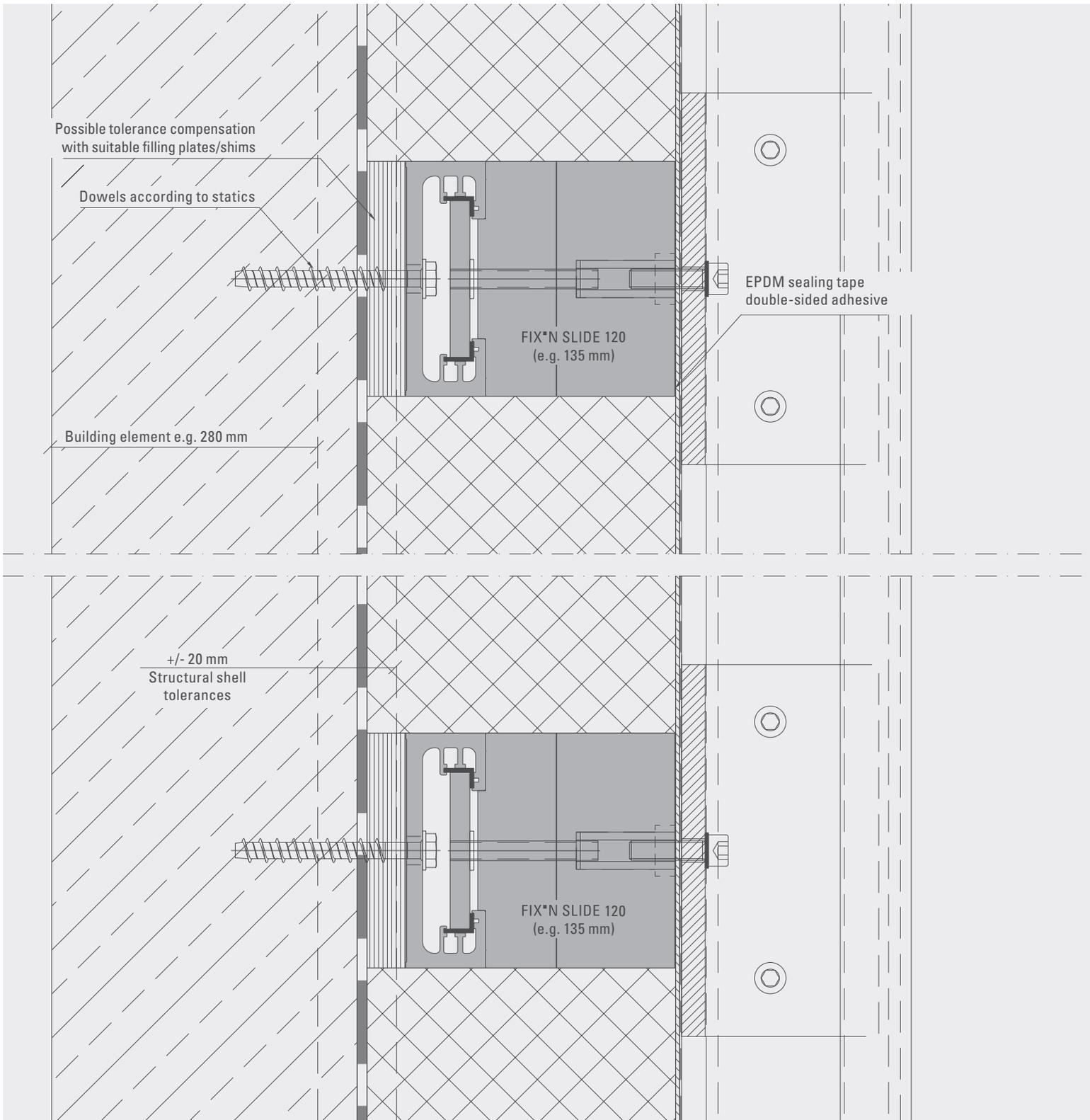
Vertical section



INSTALLATION RECOMMENDATION

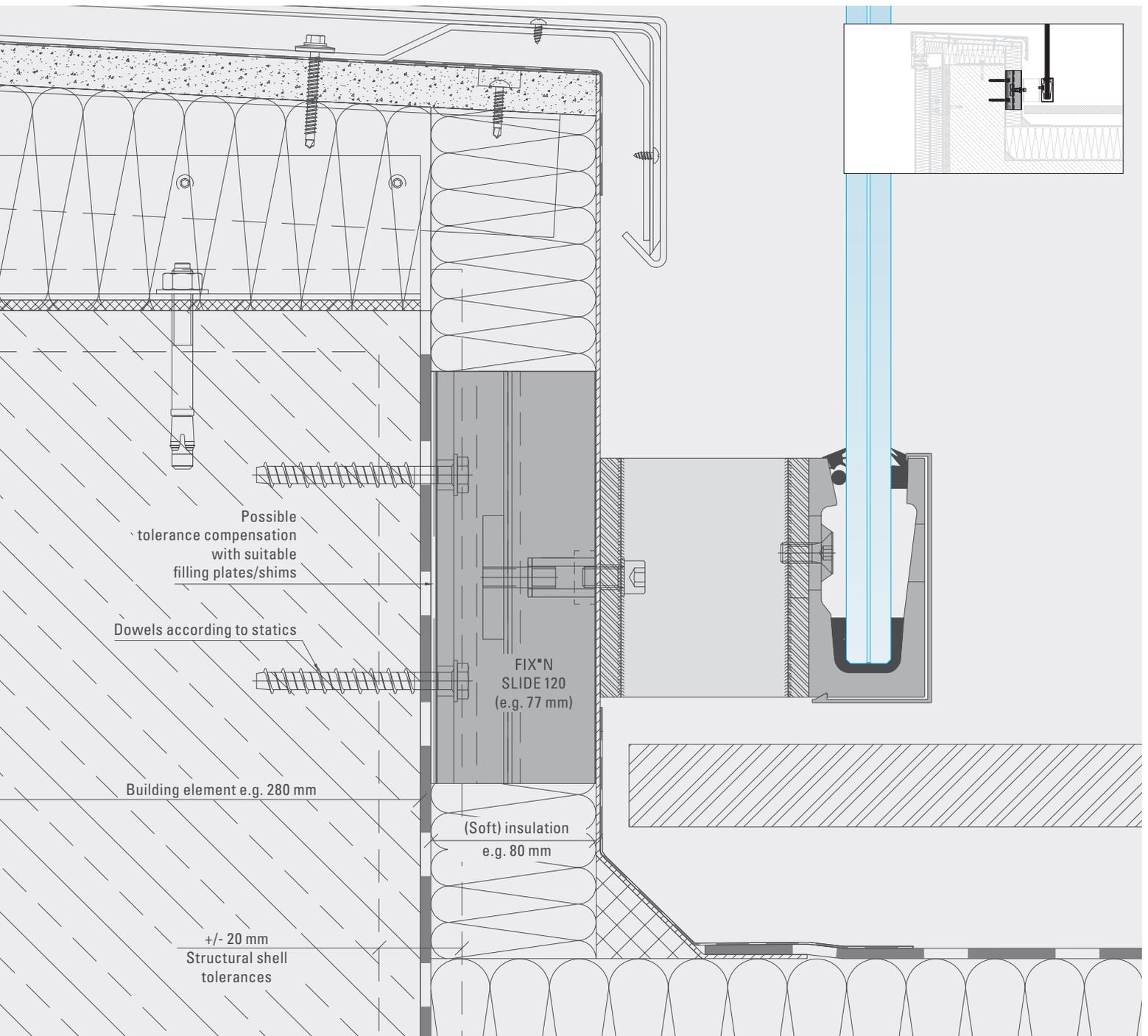
- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE
(possible tolerance compensation with suitable filler plates/shims)
- Ensure exterior impermeability with double-sided adhesive
EPDM sealing tape
- Fix film guide plate
- Execute building sealing
- Install BALARDO STEEL

Horizontal section



Attic cover all-glass railing, e.g. BALARDO ALU SIDE 1 with soft insulation

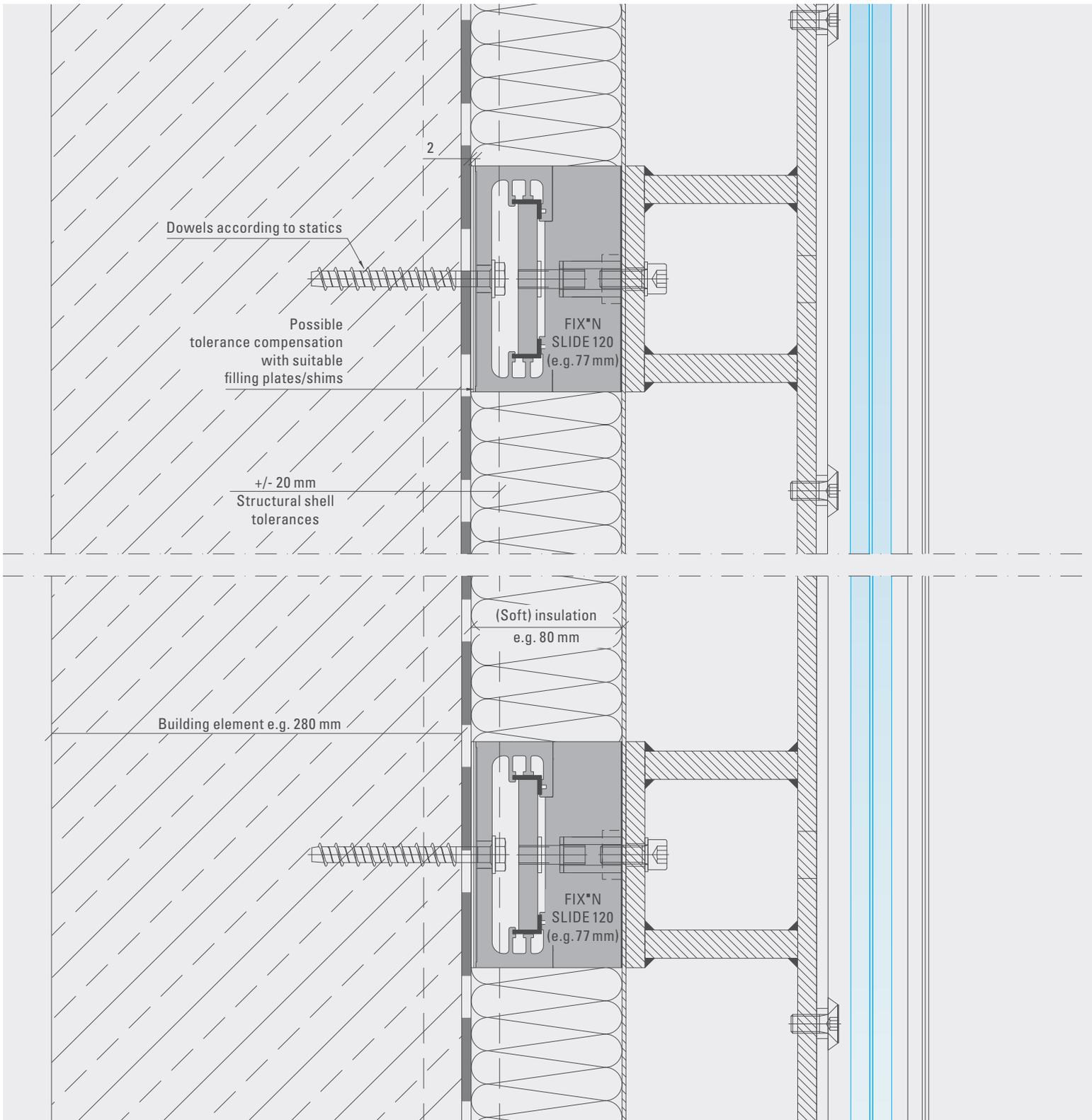
Vertical section



INSTALLATION RECOMMENDATION

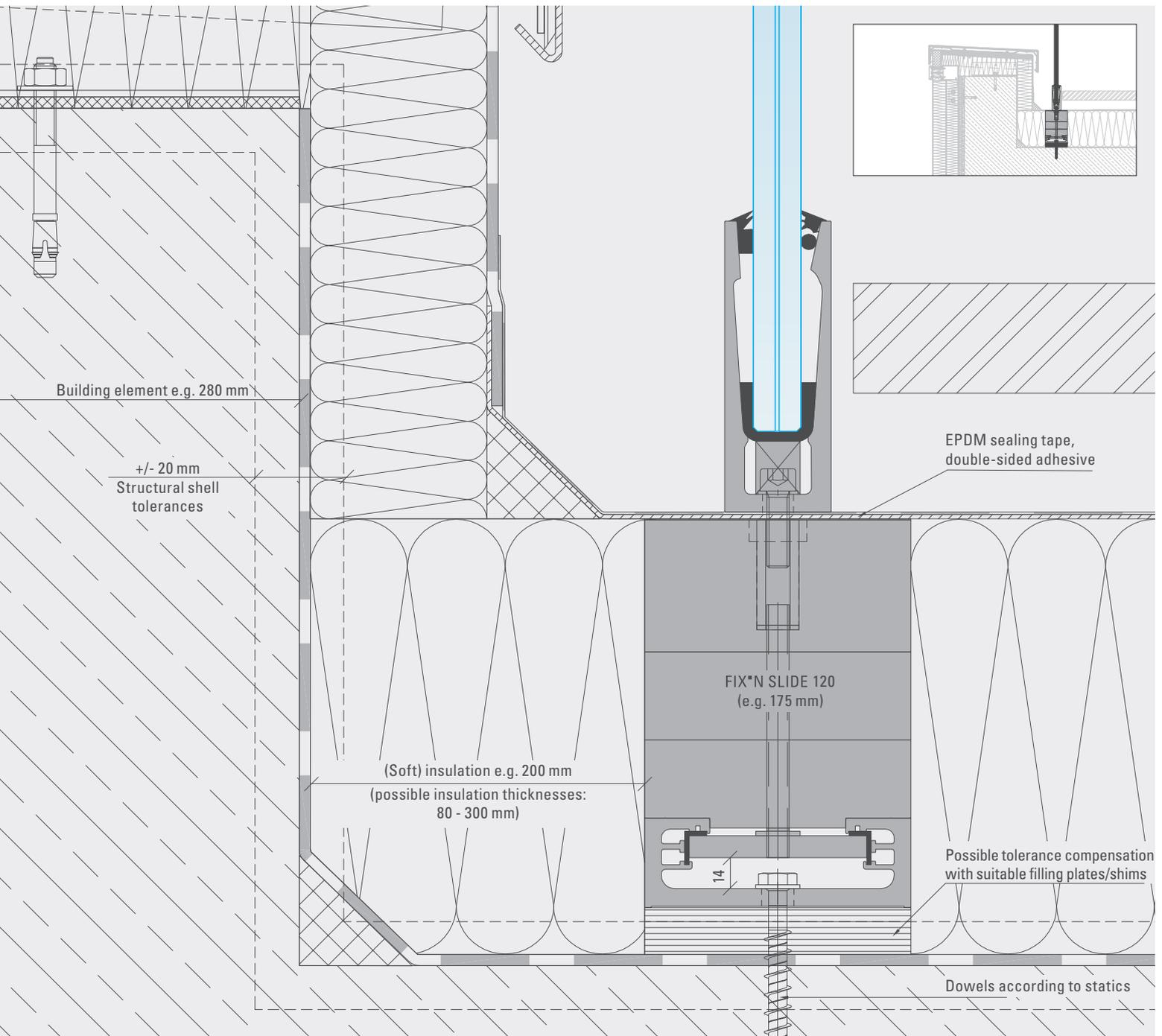
- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filler plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix film guide plate
- Execute building sealing
- Install BALARDO ALU SIDE 1

Horizontal section



Attic cover all-glass railing, e.g. BALARDO ALU TOP 3 with soft insulation

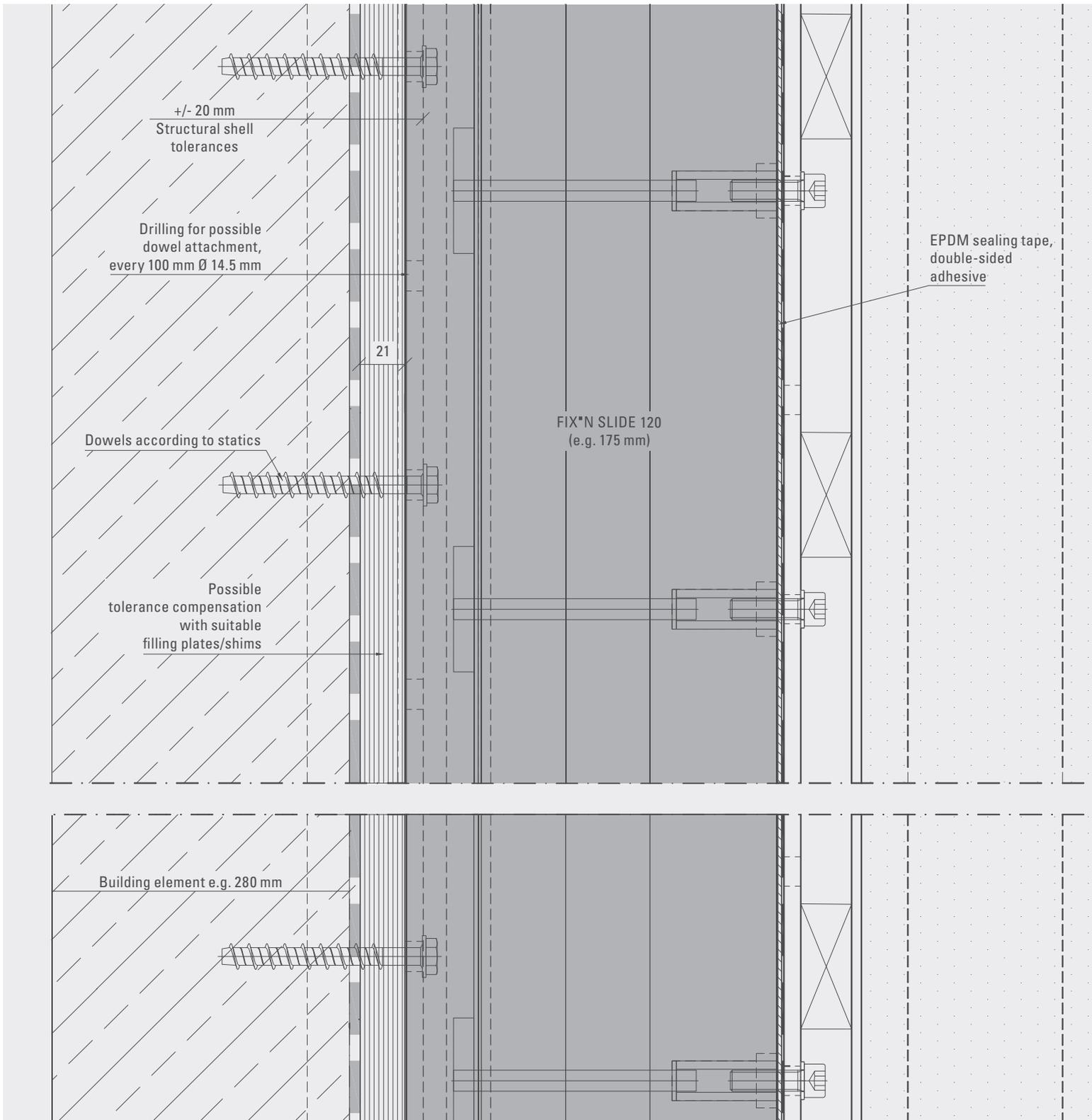
Vertical section



INSTALLATION RECOMMENDATION

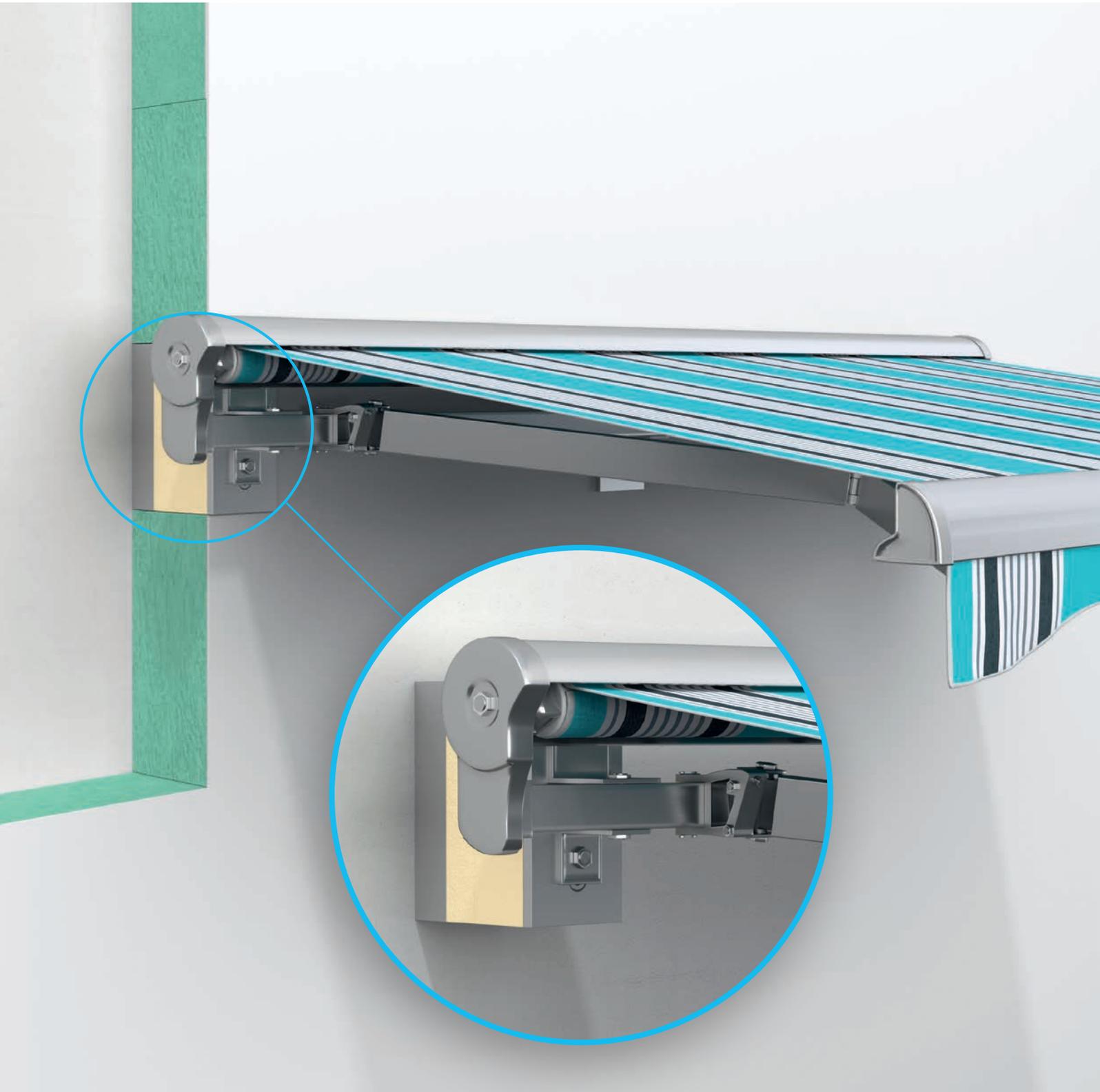
- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE
(possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix film guide plate
- Execute building sealing
- Install BALARDO ALU
- Profile spacing for drainage: max. 40 mm

Horizontal section



GLASSLINE

FIX'N SLIDE



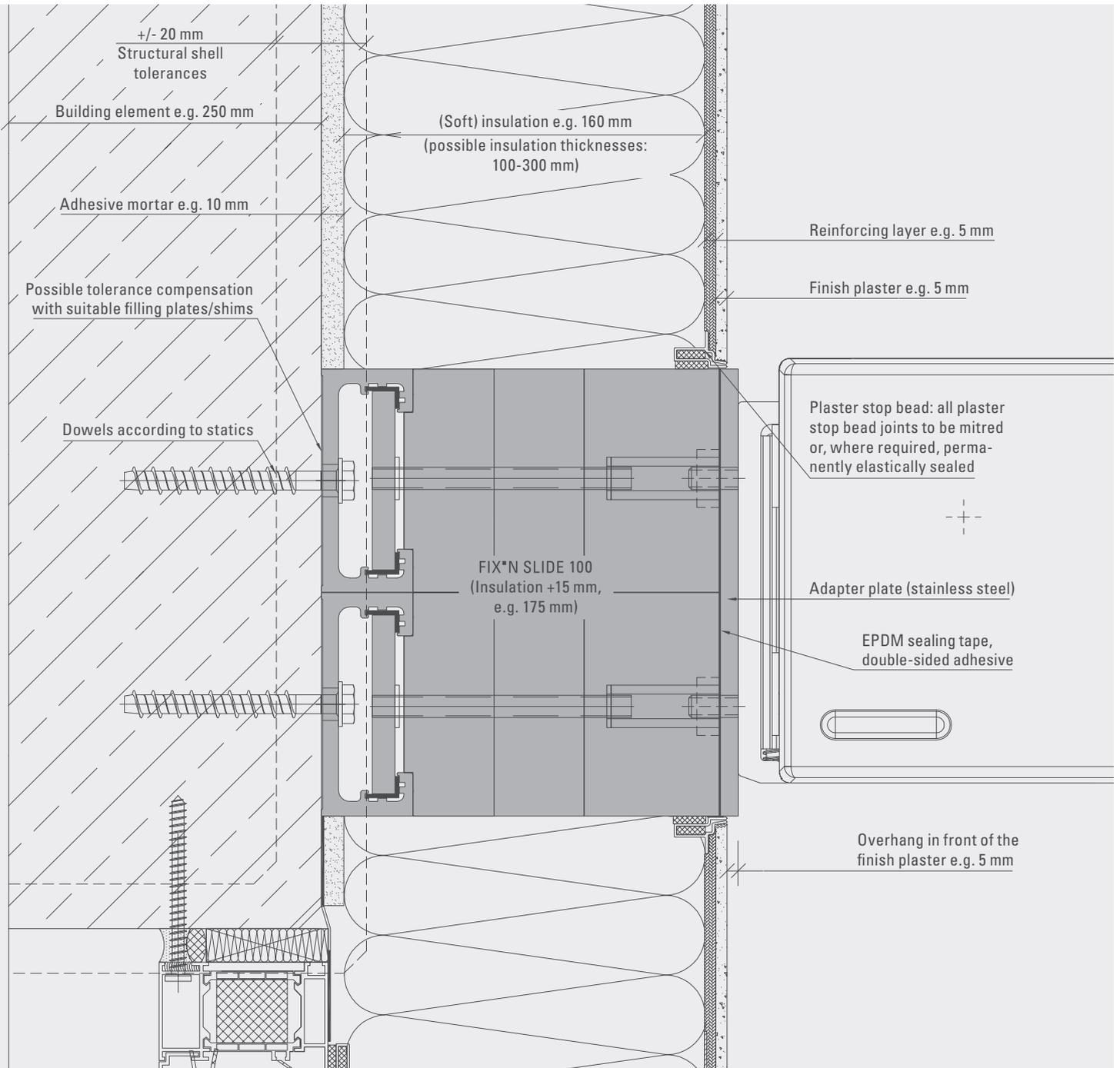
AWNINGS

APPLICATION EXAMPLES

Articulated arm awning

Finish plaster and soft insulation

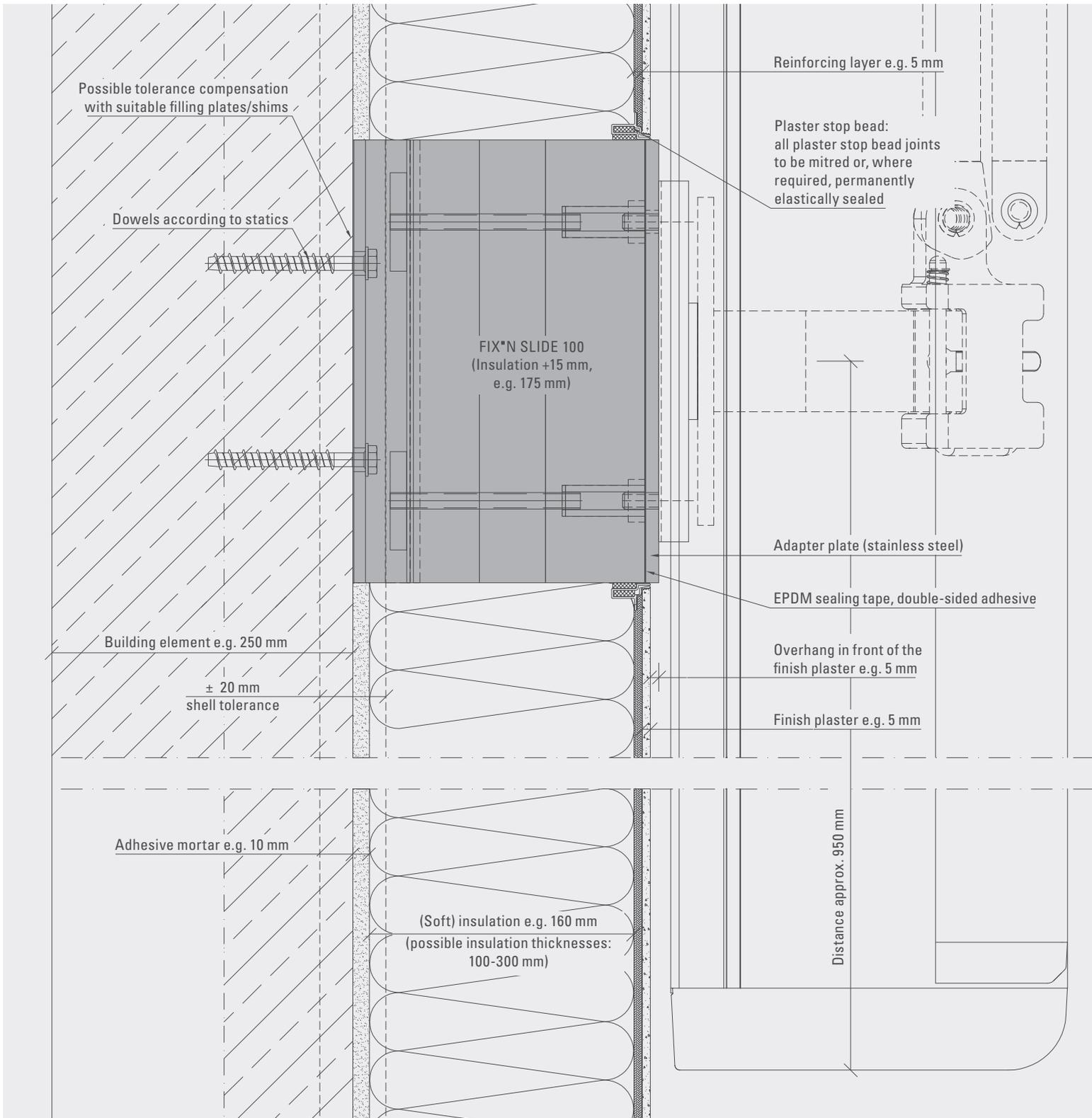
Vertical section



INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix adapter plate
- Ensure ETICS with finish plaster
- Install sun protection system

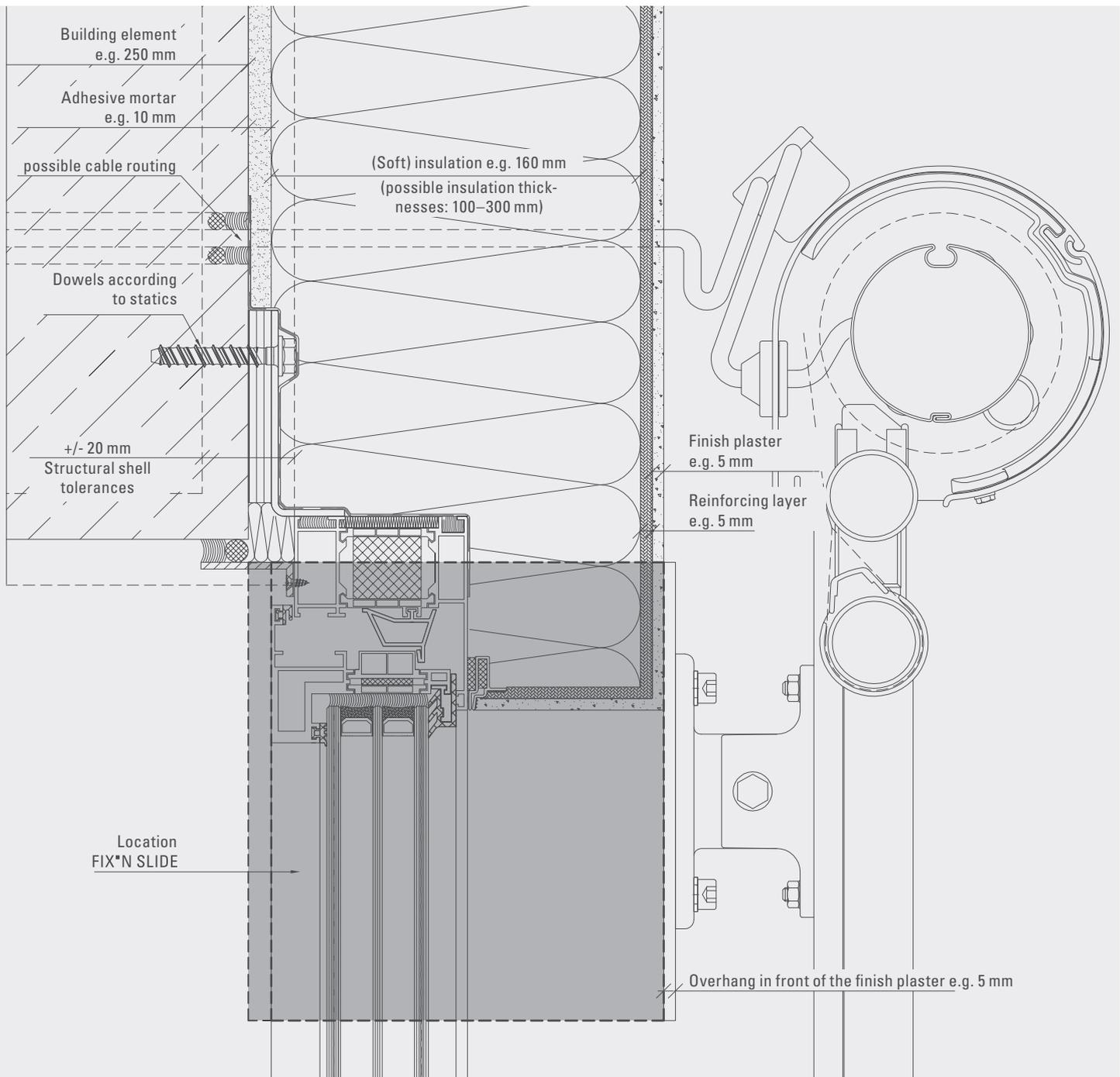
Horizontal section



Drop arm awning

Finish plaster and soft insulation

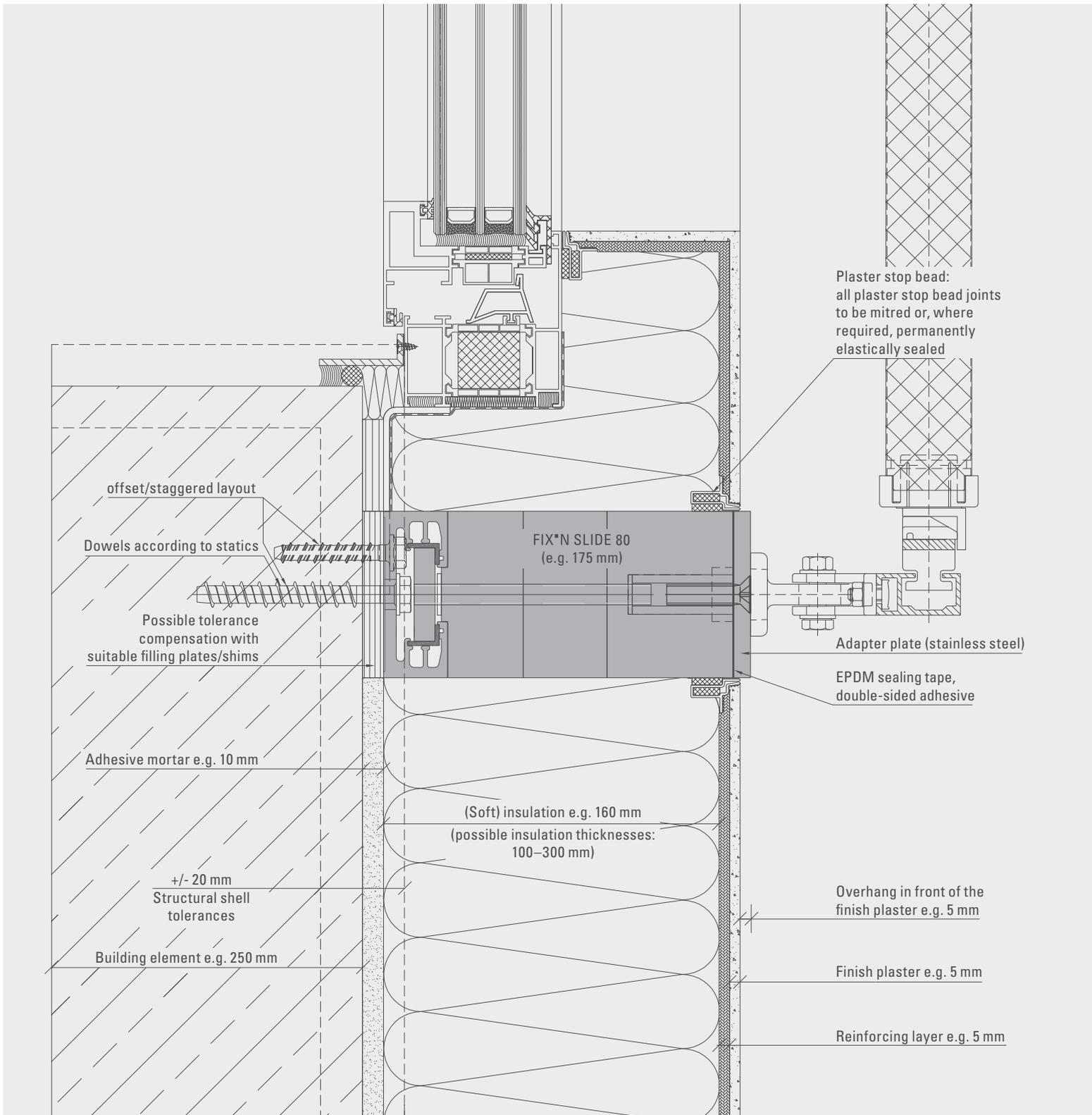
Vertical section

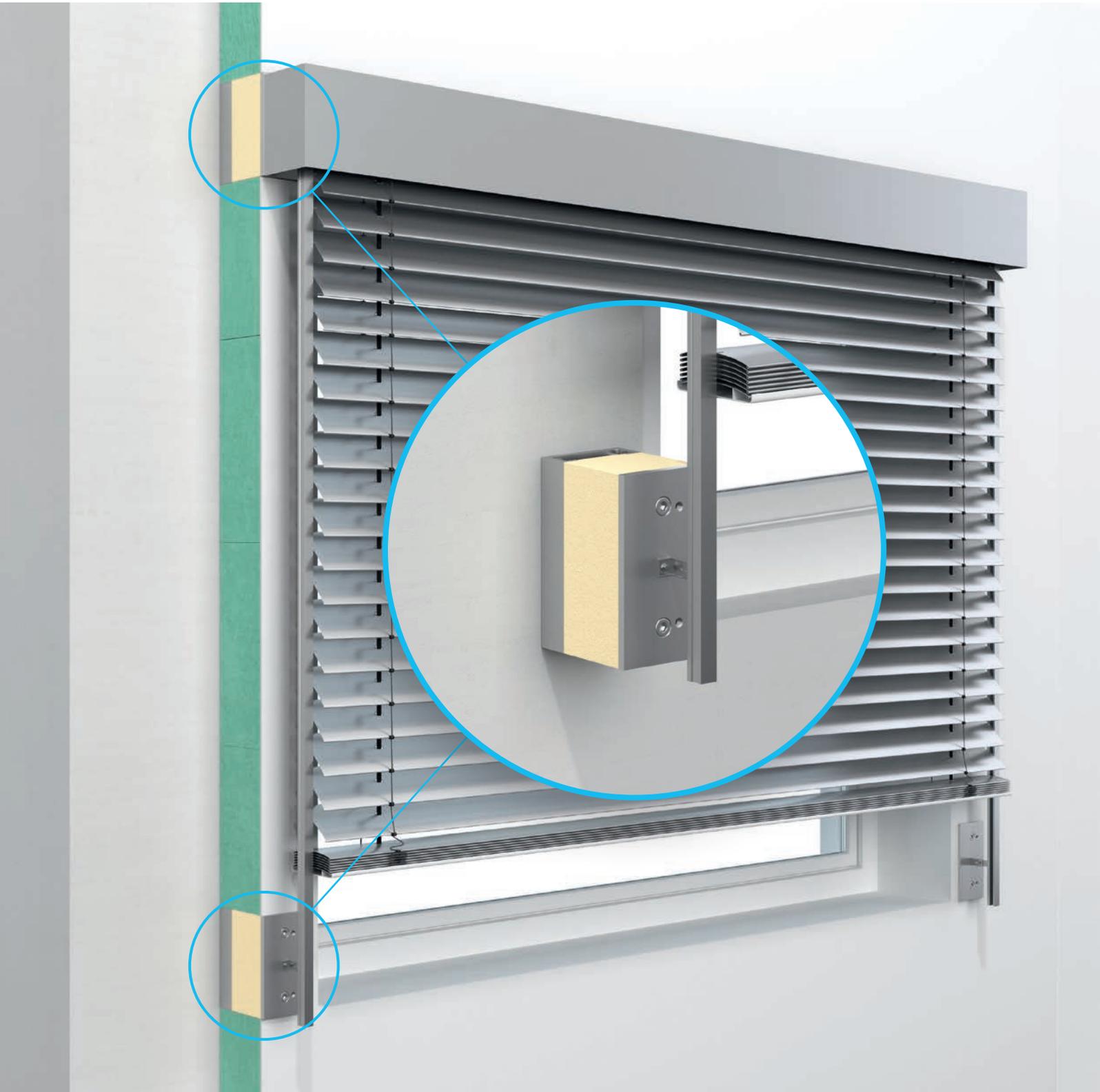


INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE
(possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix adapter plate
- Ensure ETICS with finish plaster
- Install sun protection system

Horizontal section





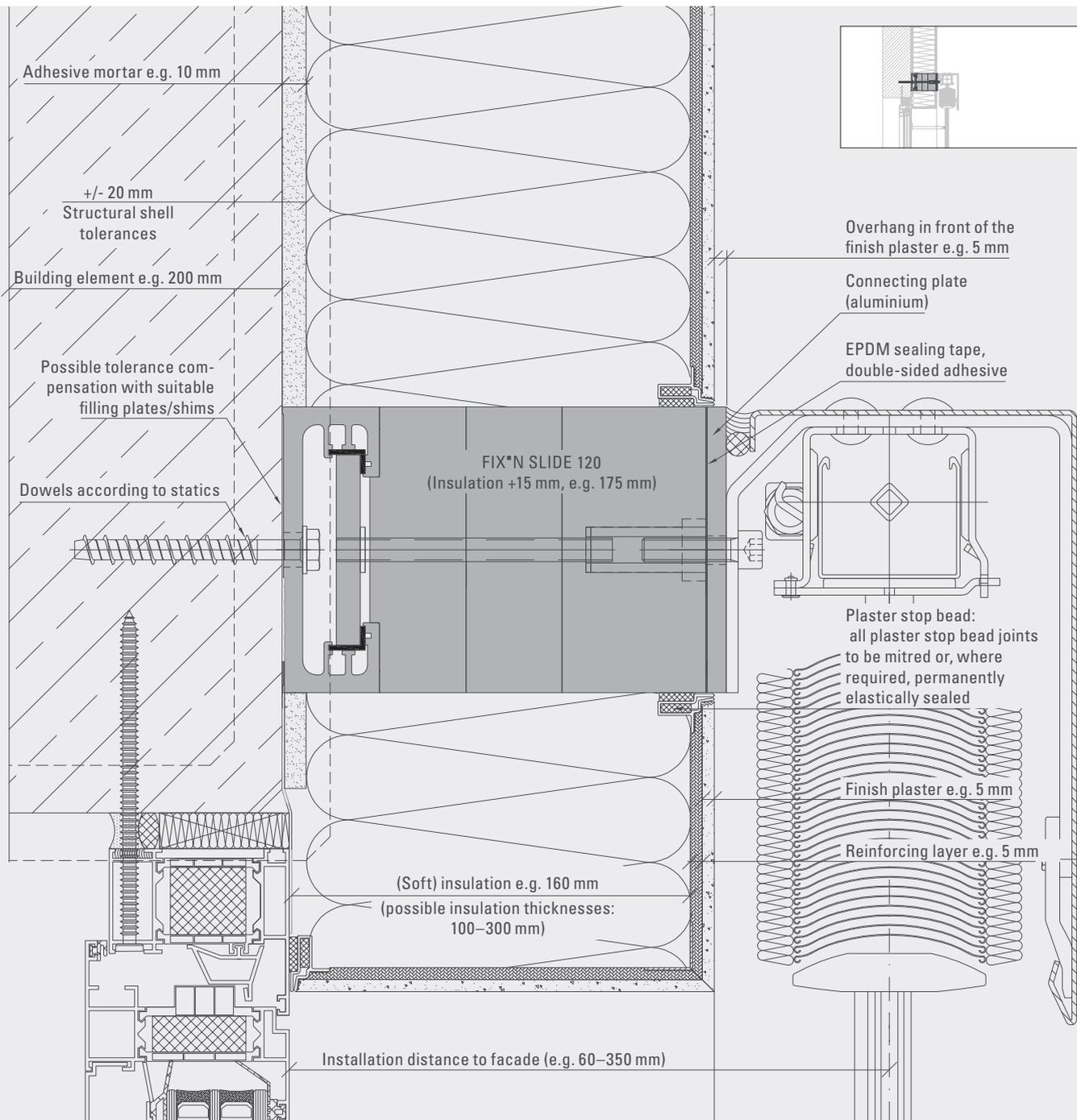
EXTERNAL VENETIAN BLINDS

APPLICATION EXAMPLES

External venetian blind

with guide rail

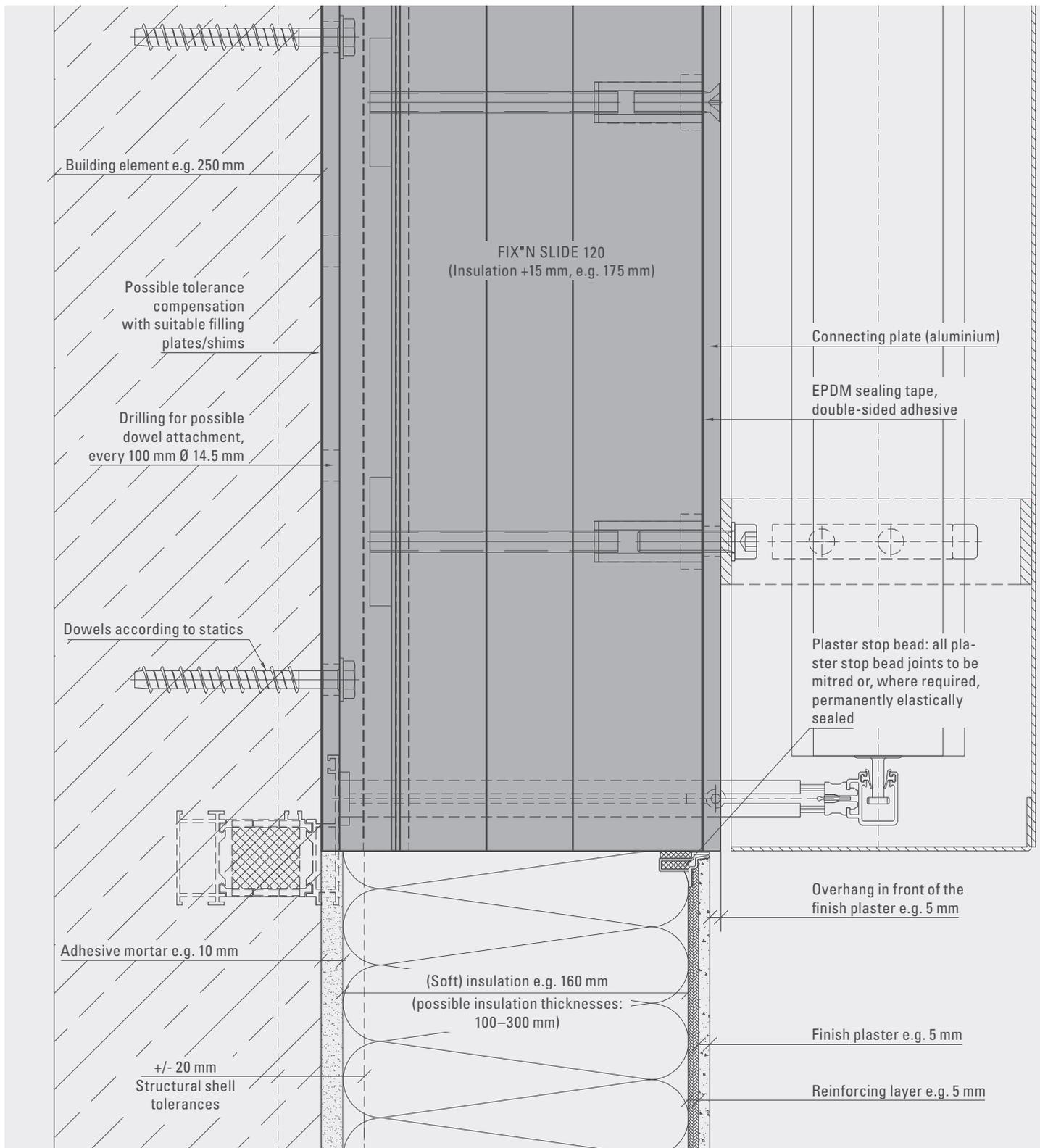
Vertical section



INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix connecting plate
- Ensure building sealing e.g. with liquid plastic
- Create ETICS with finish plaster
- Install sun protection system

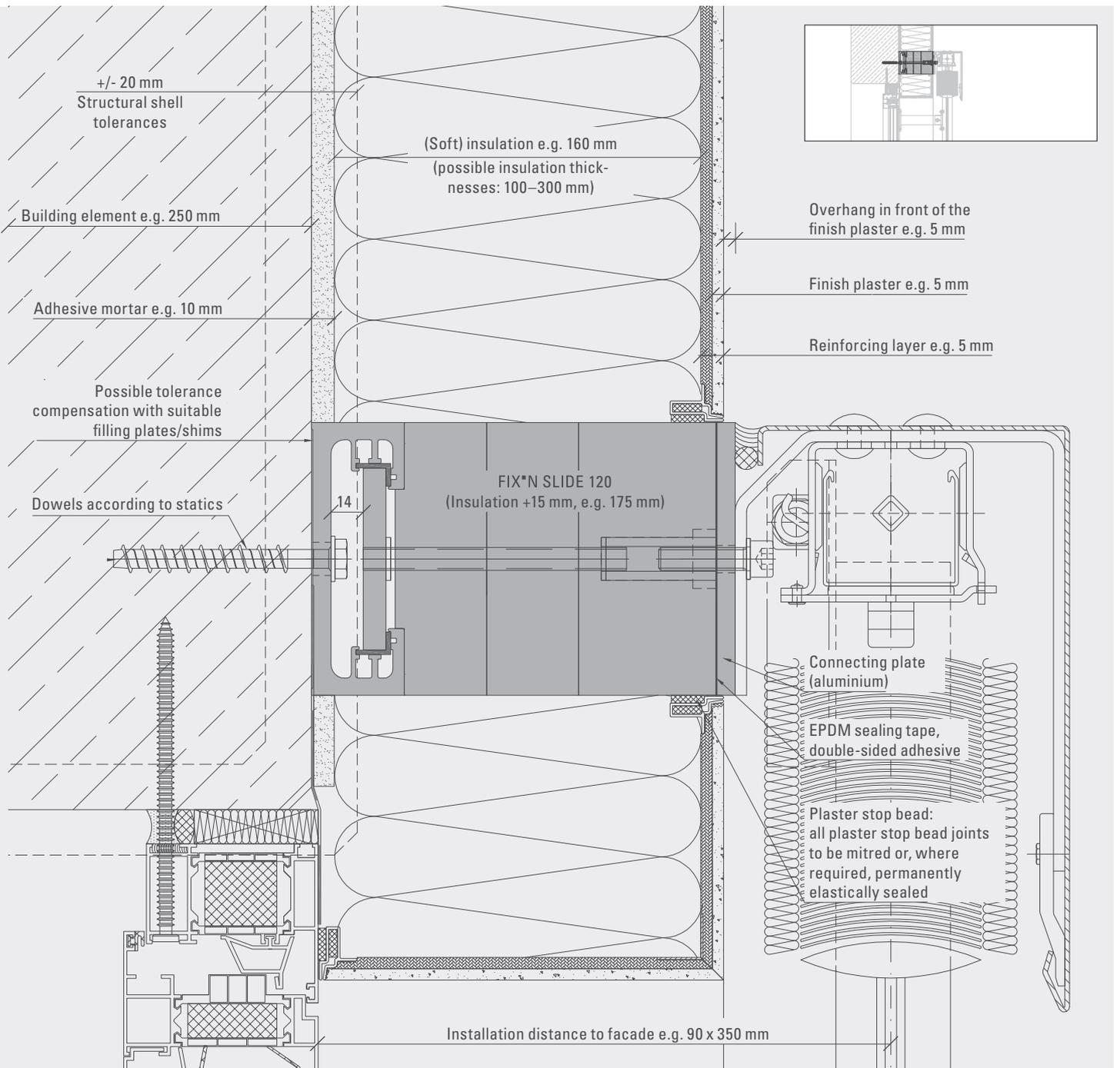
Horizontal section



Wind-resistant external venetian blinds

Finish plaster and soft insulation

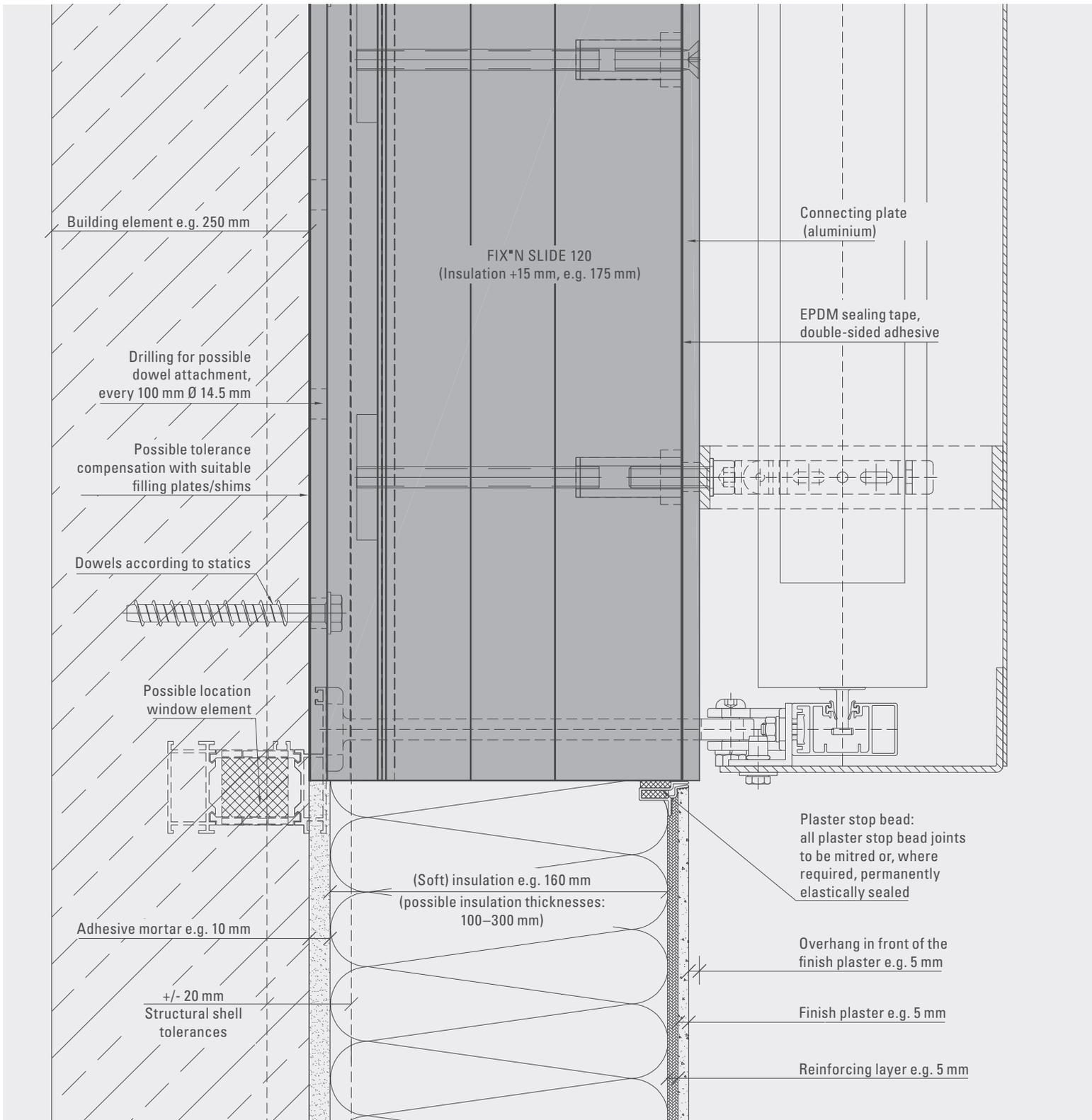
Vertical section



INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE
(possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix adapter plate
- Ensure ETICS with finish plaster
- Install sun protection system

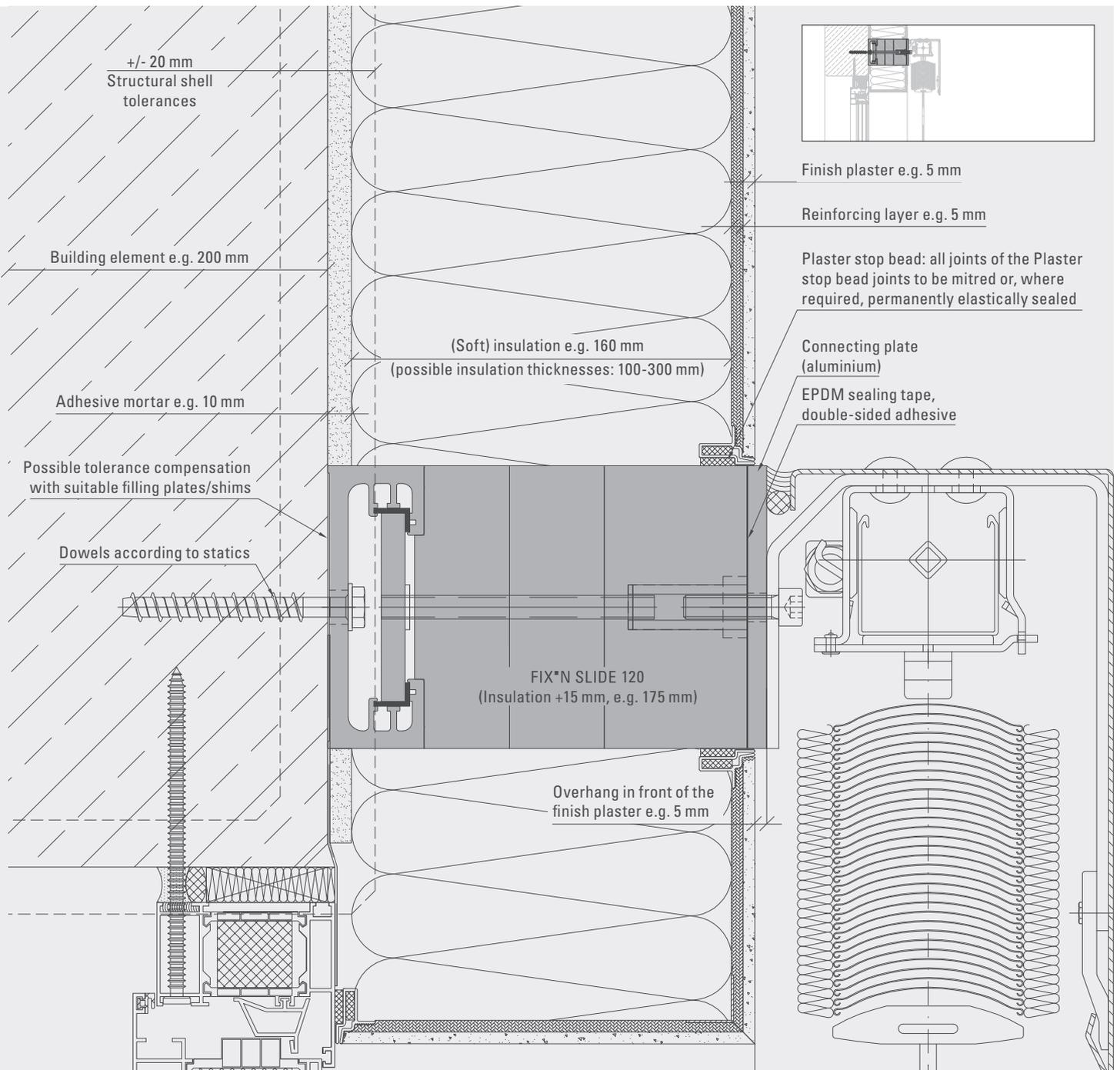
Horizontal section



External venetian blind

Finish plaster and soft insulation

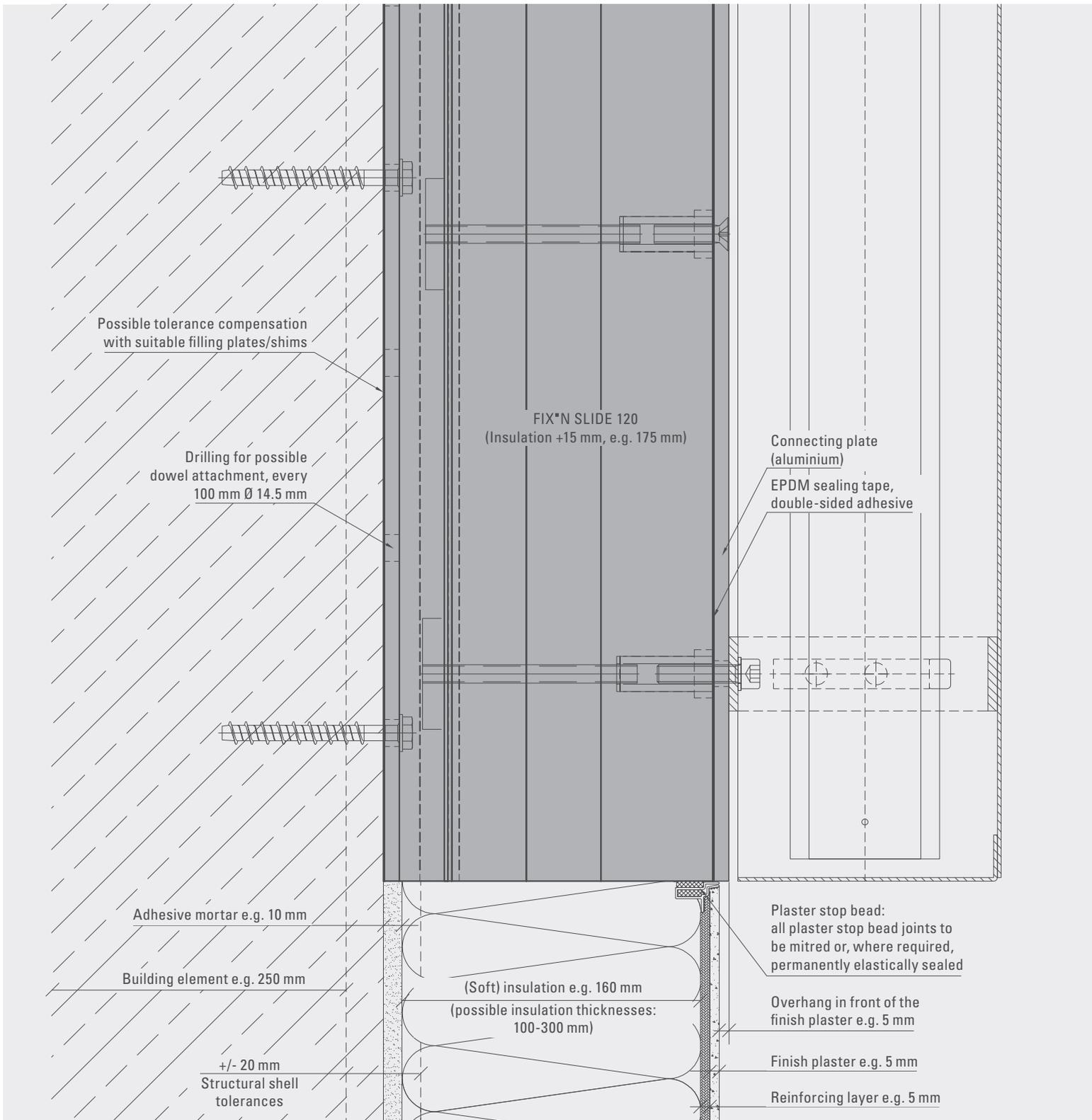
Vertical section



INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix connecting plate
- Ensure ETICS with finish plaster
- Install sun protection system

Horizontal section





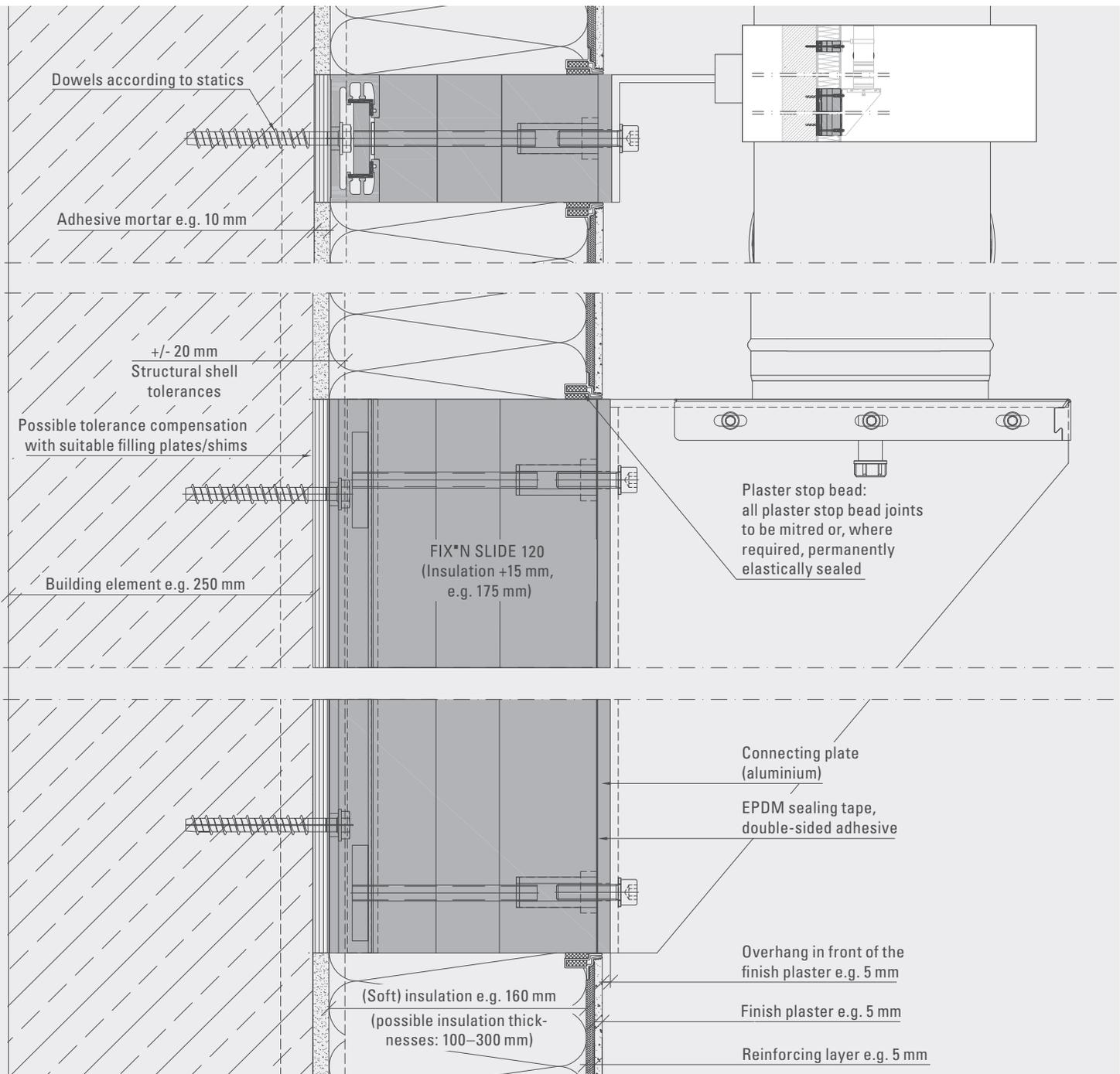
CHIMNEYS, RESCUE LADDERS

APPLICATION EXAMPLES

Chimney flue

Finish plaster and soft insulation

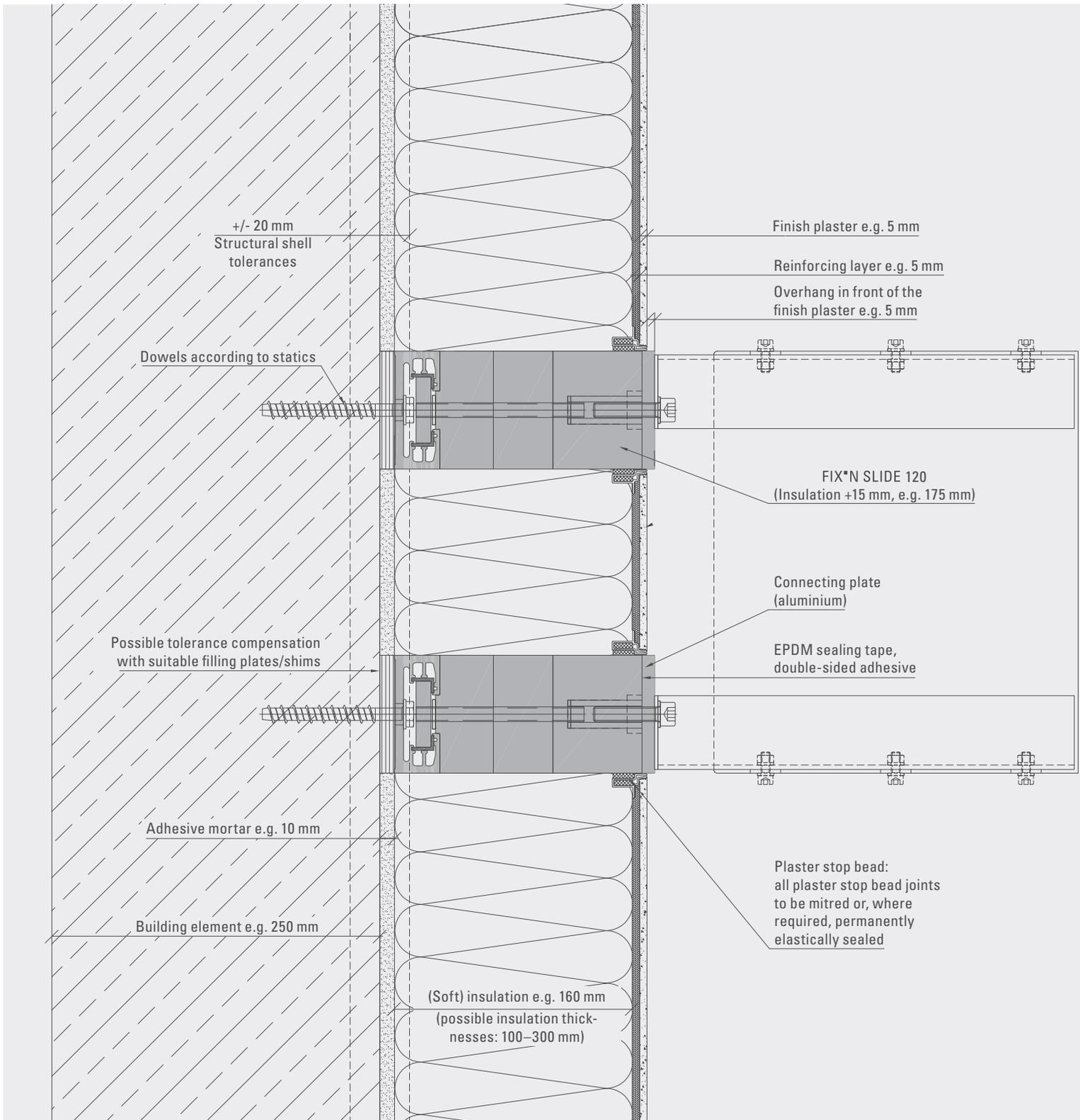
Vertical section



INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix connecting plate
- Install adapter console, chimney flue and bracket
- Create ETICS with finish plaster
- Install chimney flue

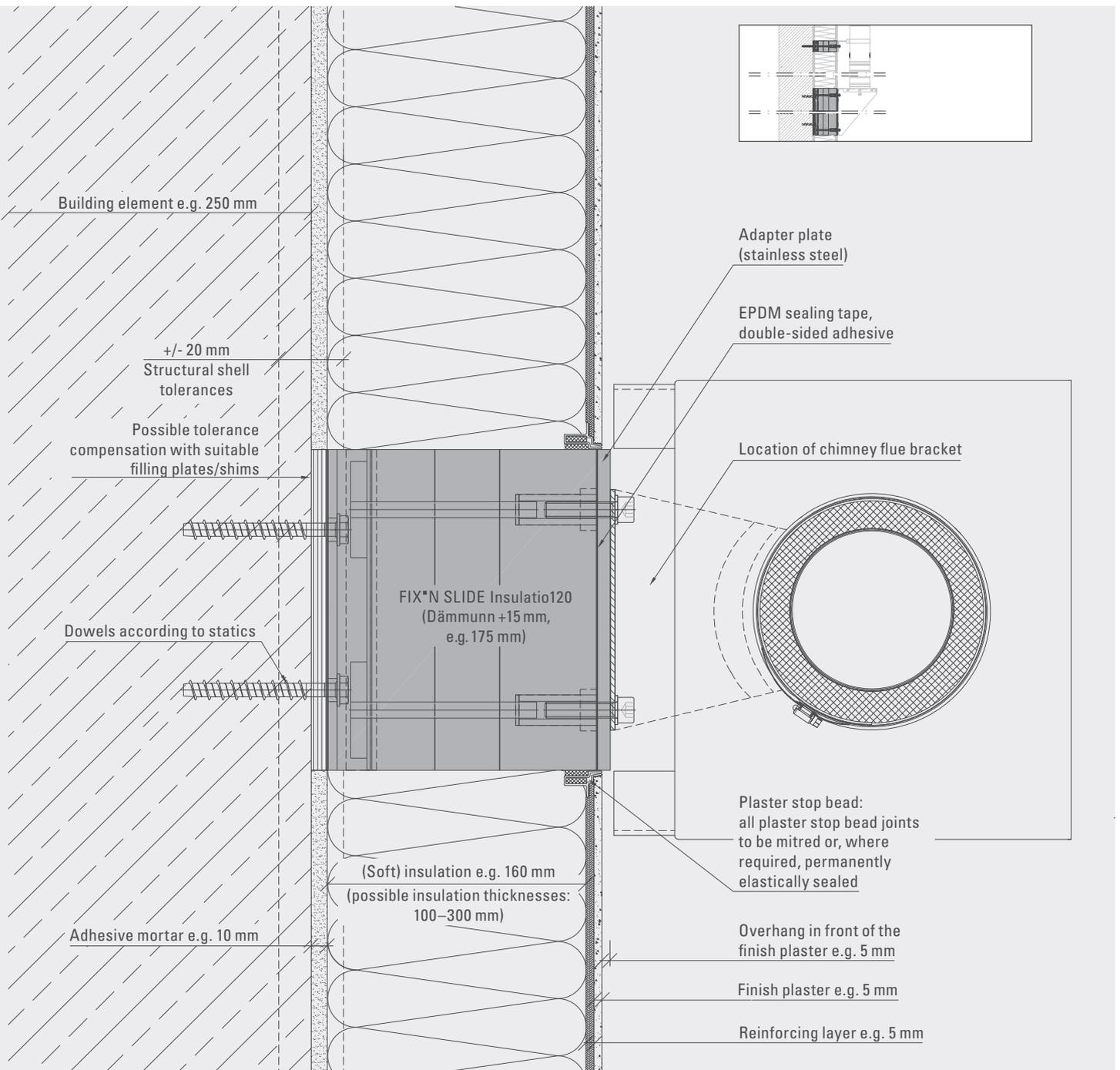
Horizontal section



Chimney flue

Finish plaster and soft insulation

Vertical section



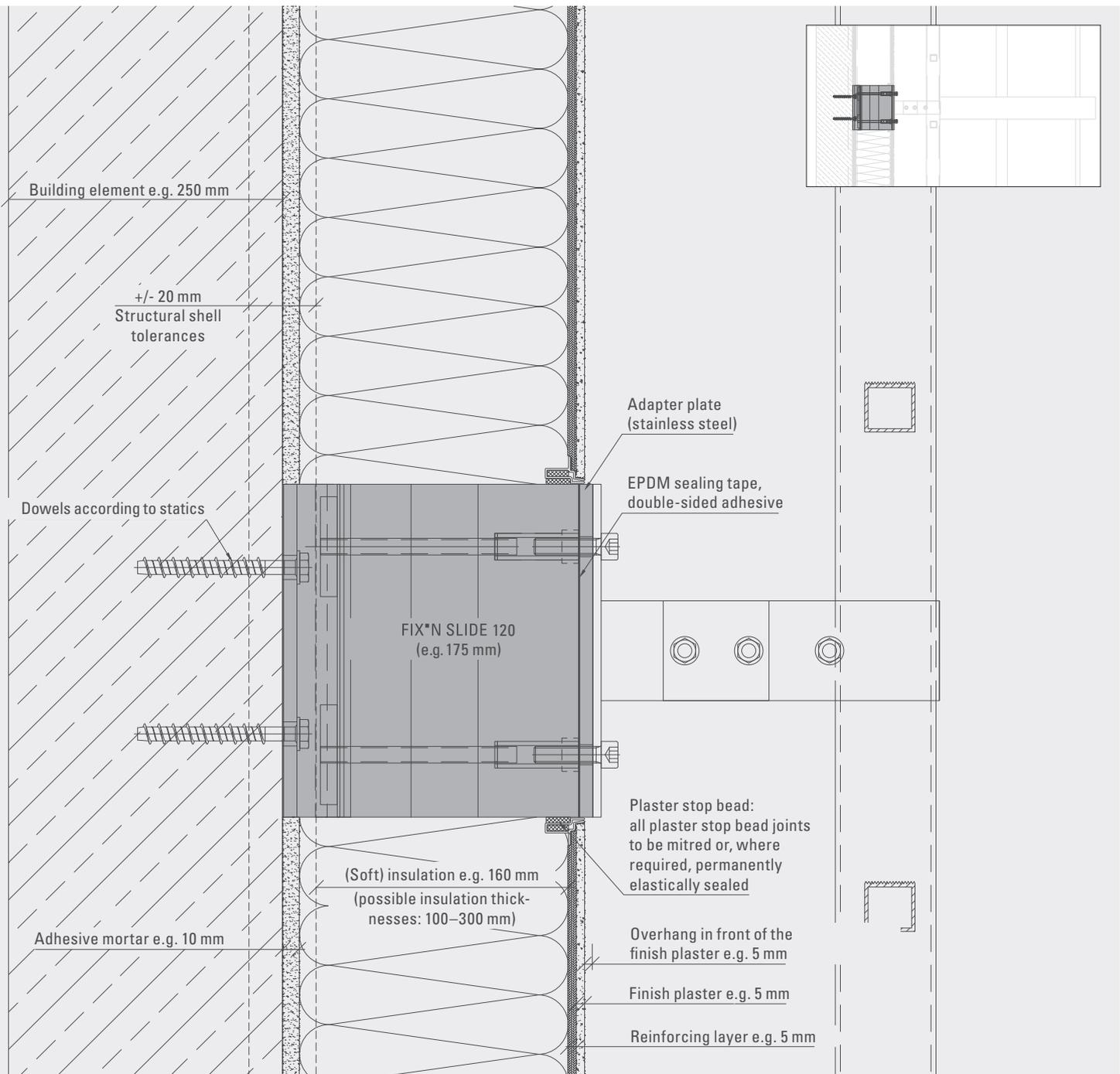
INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix adapter plate
- Install adapter console, chimney flue and bracket
- Create ETICS with finish plaster
- Install chimney flue

Rescue ladders

Finish plaster and soft insulation

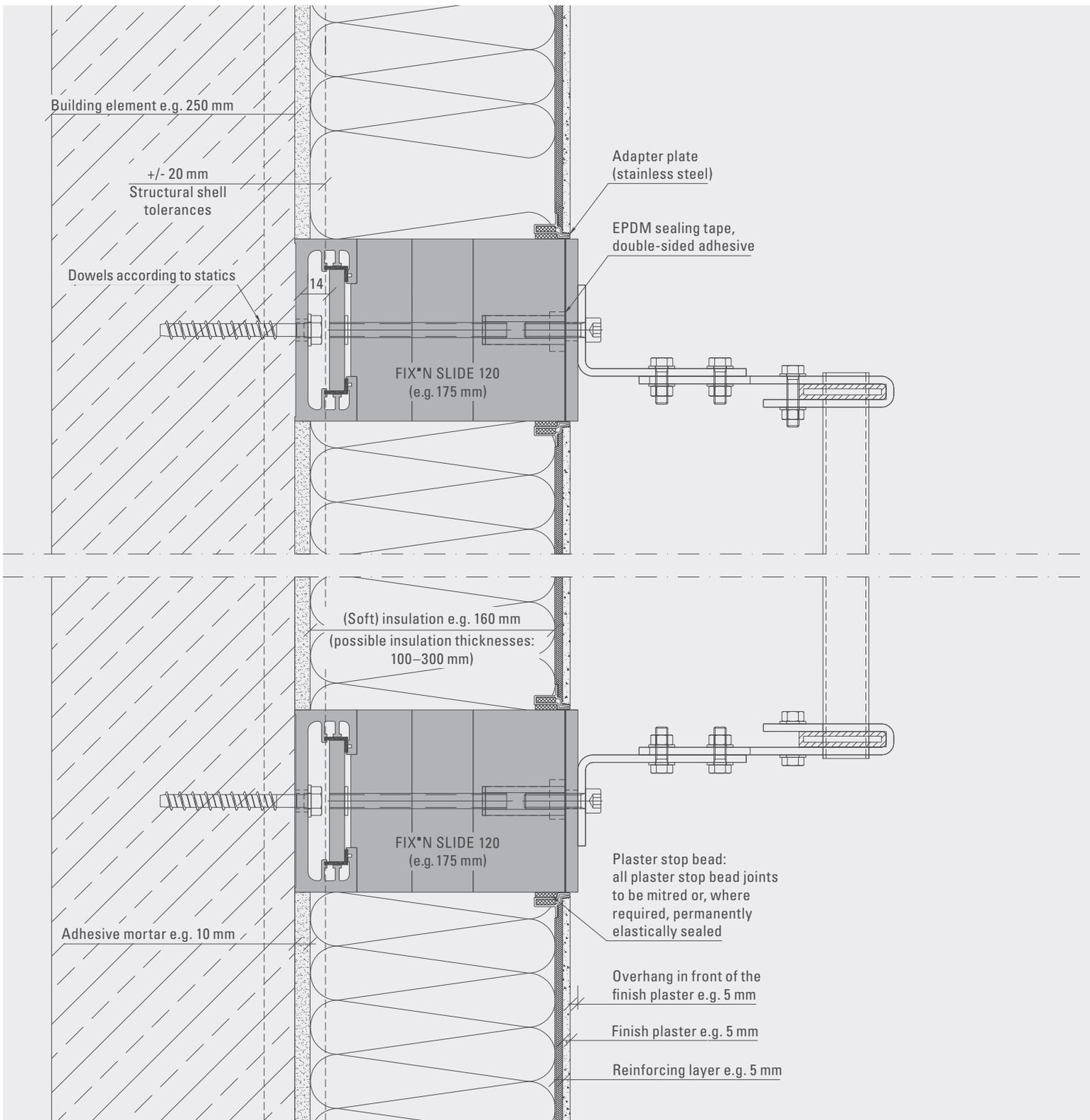
Vertical section



INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix adapter plate
- Create ETICS with finish plaster
- Install fixed ladder

Horizontal section





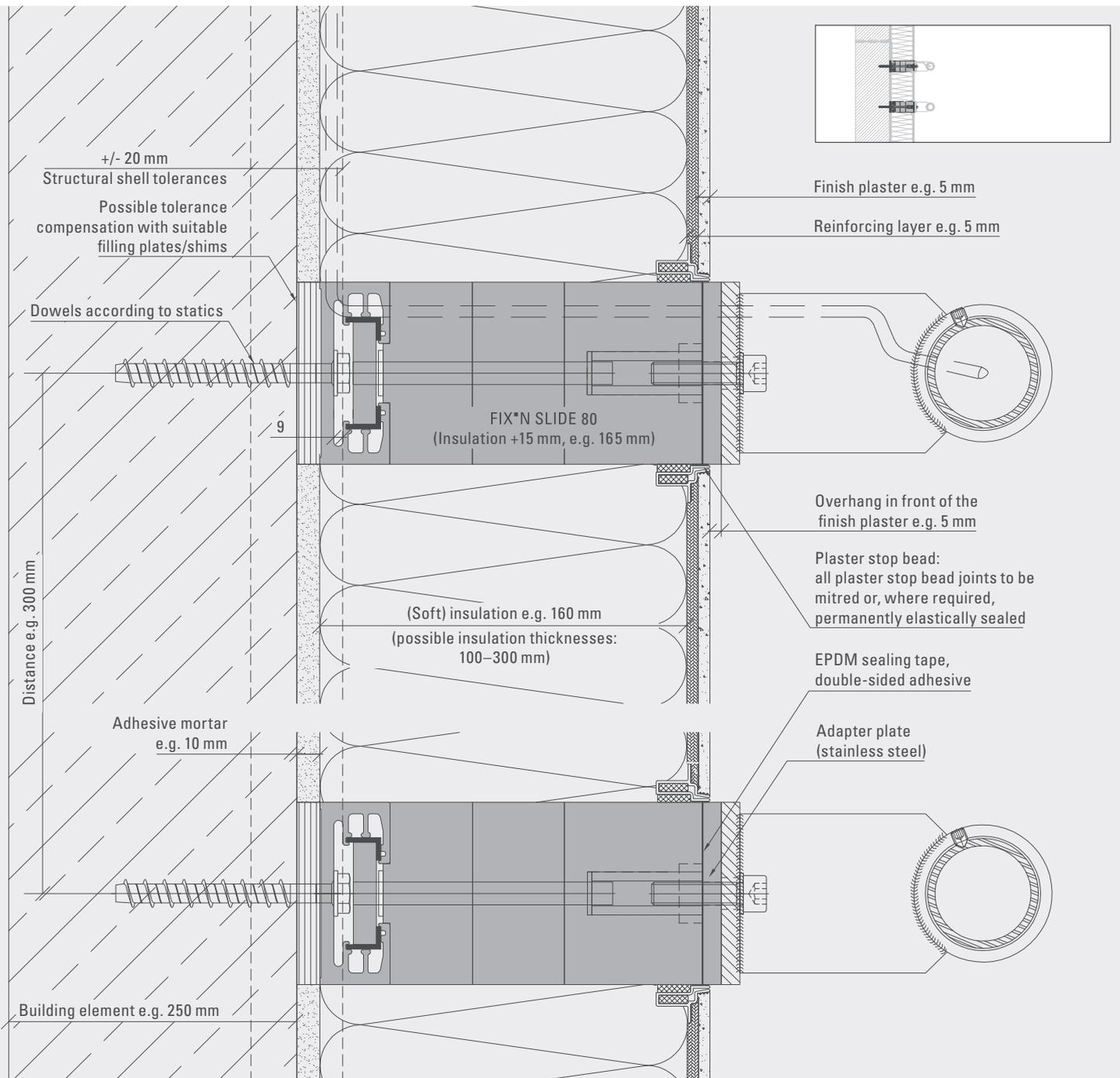
ADVERTISING MEDIA AND ADVERTISING SYSTEMS

APPLICATION EXAMPLES

Advertising media

Finish plaster and soft insulation

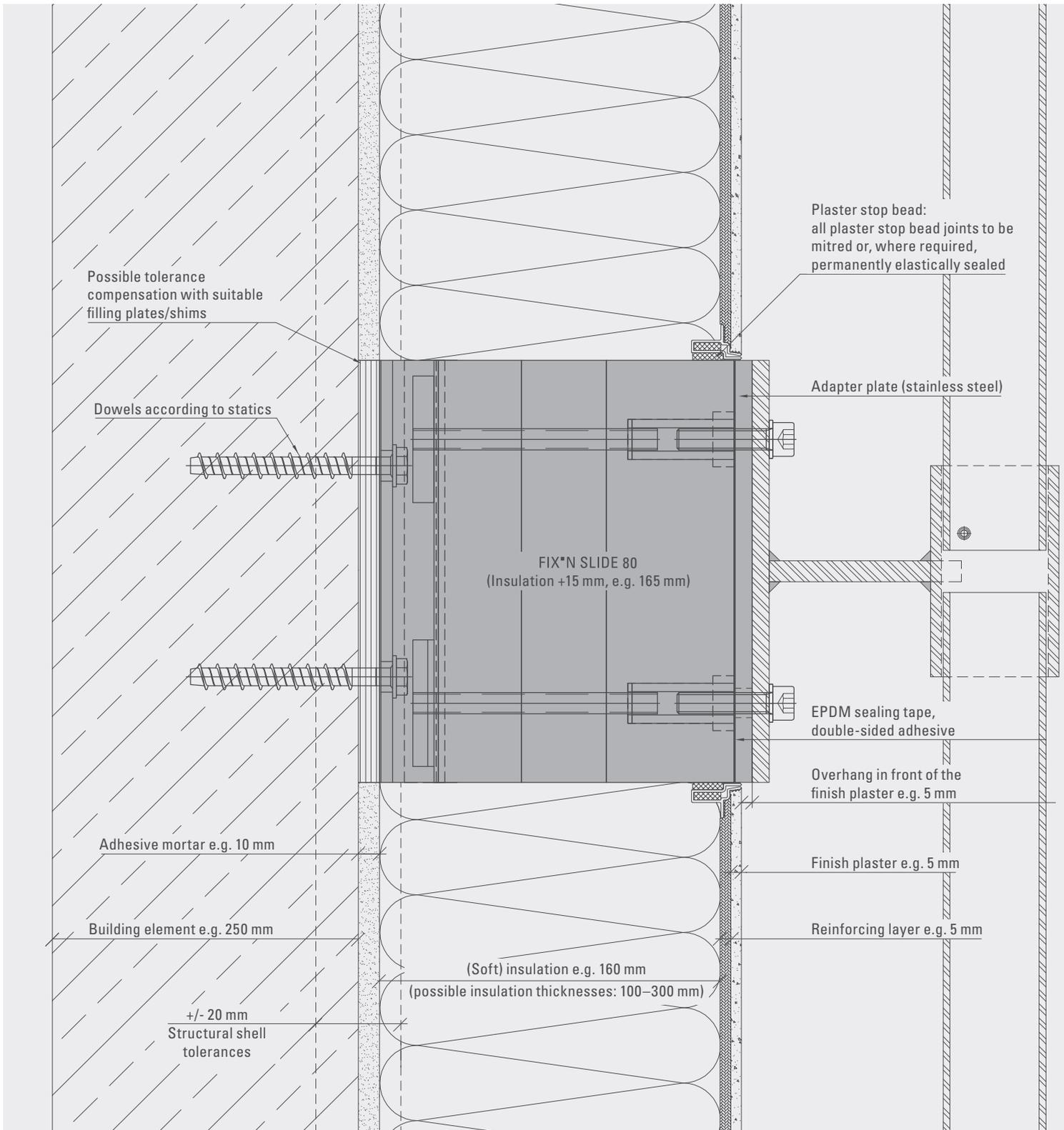
Vertical section



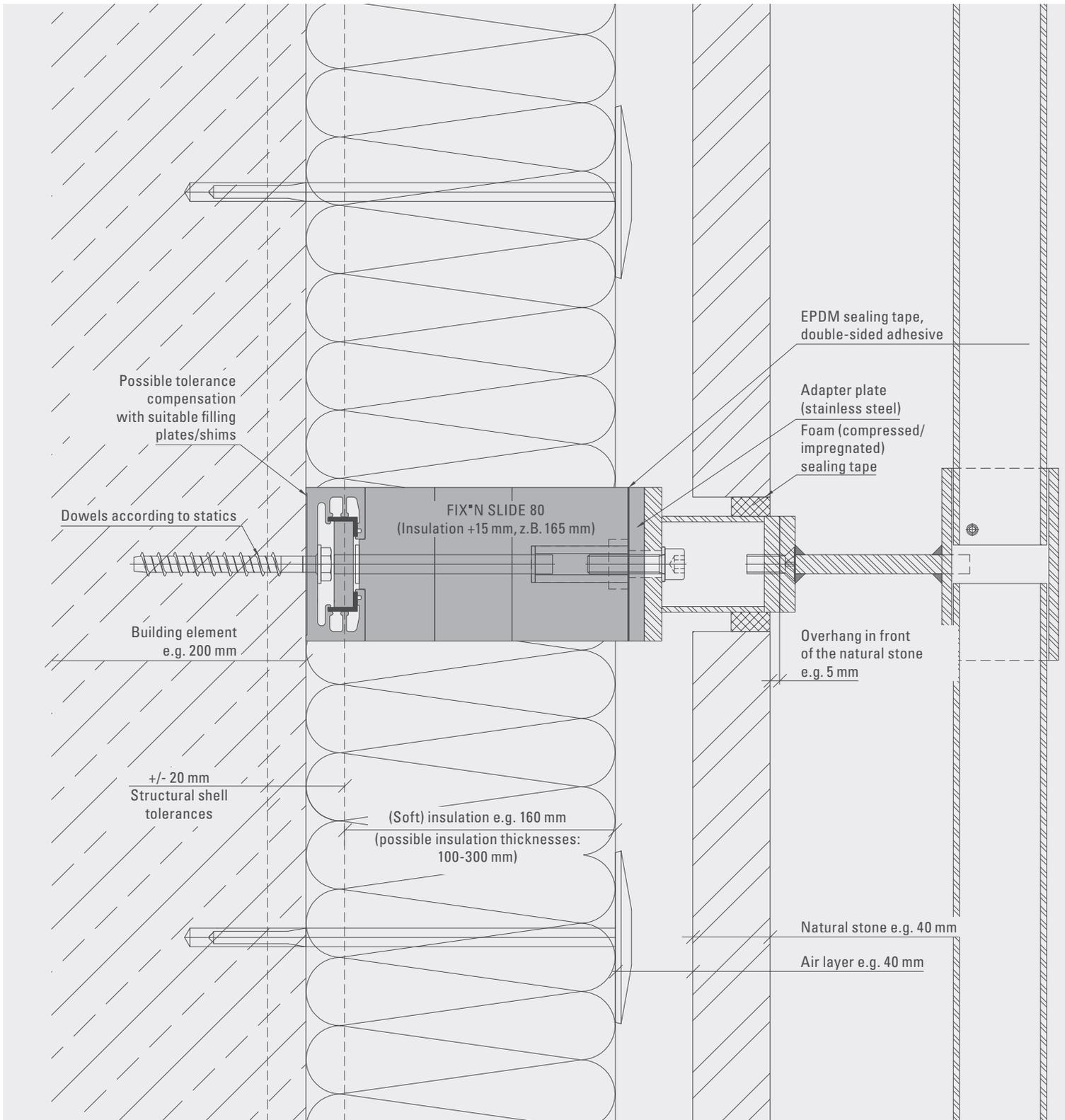
INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix adapter plate
- Create ETICS with finish plaster
- Install advertising media

Horizontal section



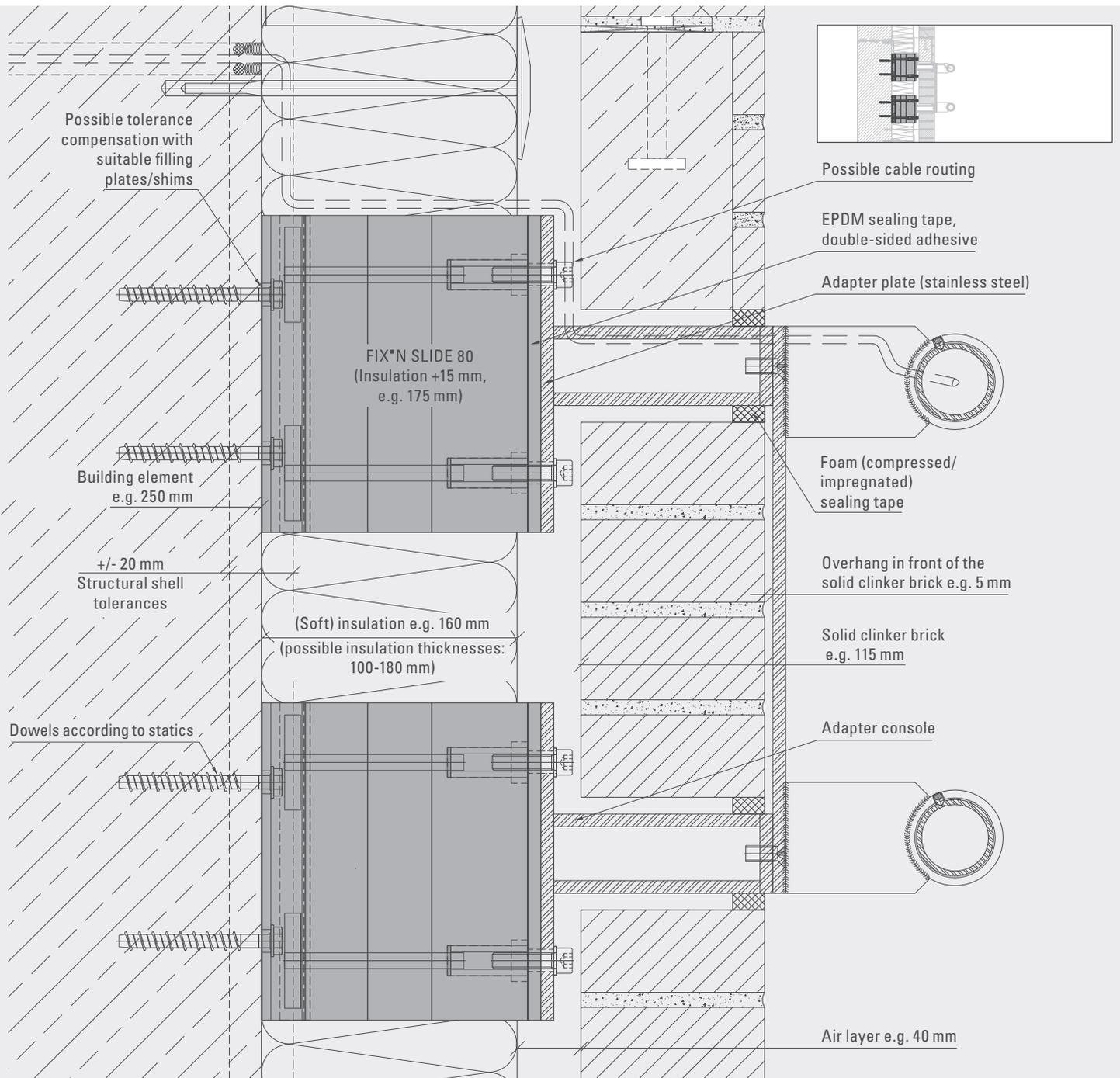
Horizontal section



Advertising media

Clinker

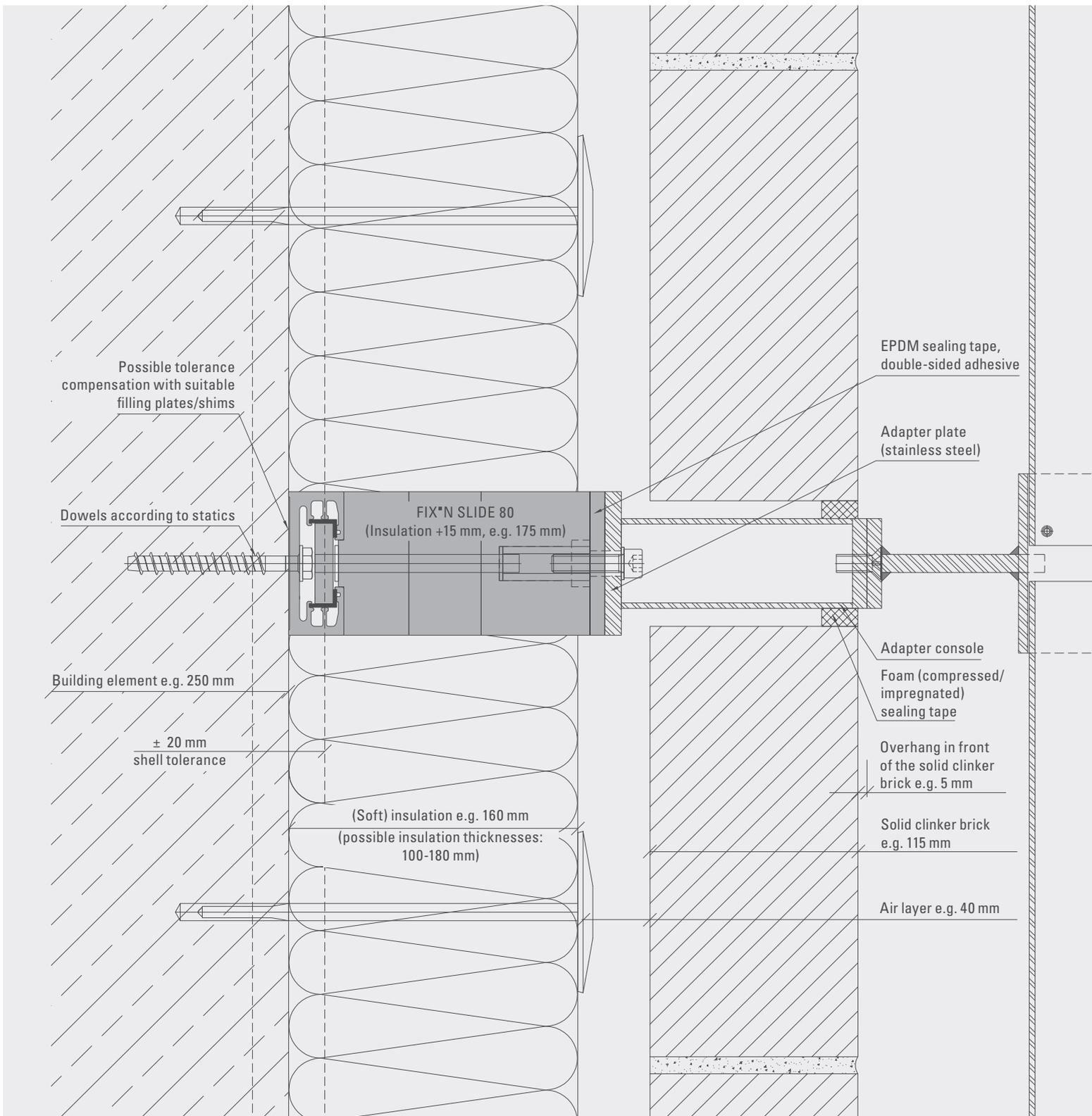
Vertical section

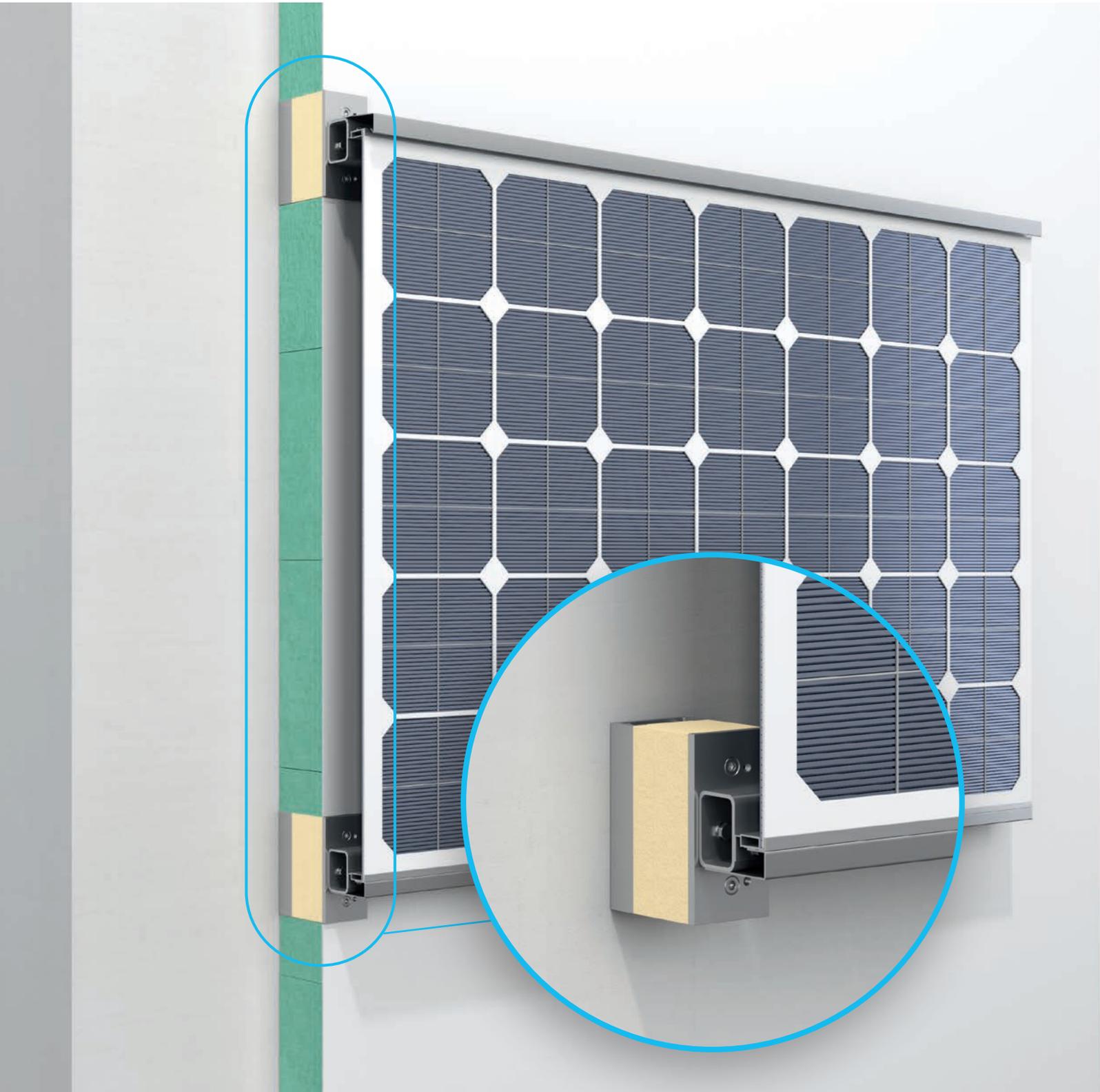


INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix adapter plate
- Install adapter console
- Install solid clinker brick
- Install advertising media
- Apply foam (compressed/impregnated) sealing tape

Horizontal section



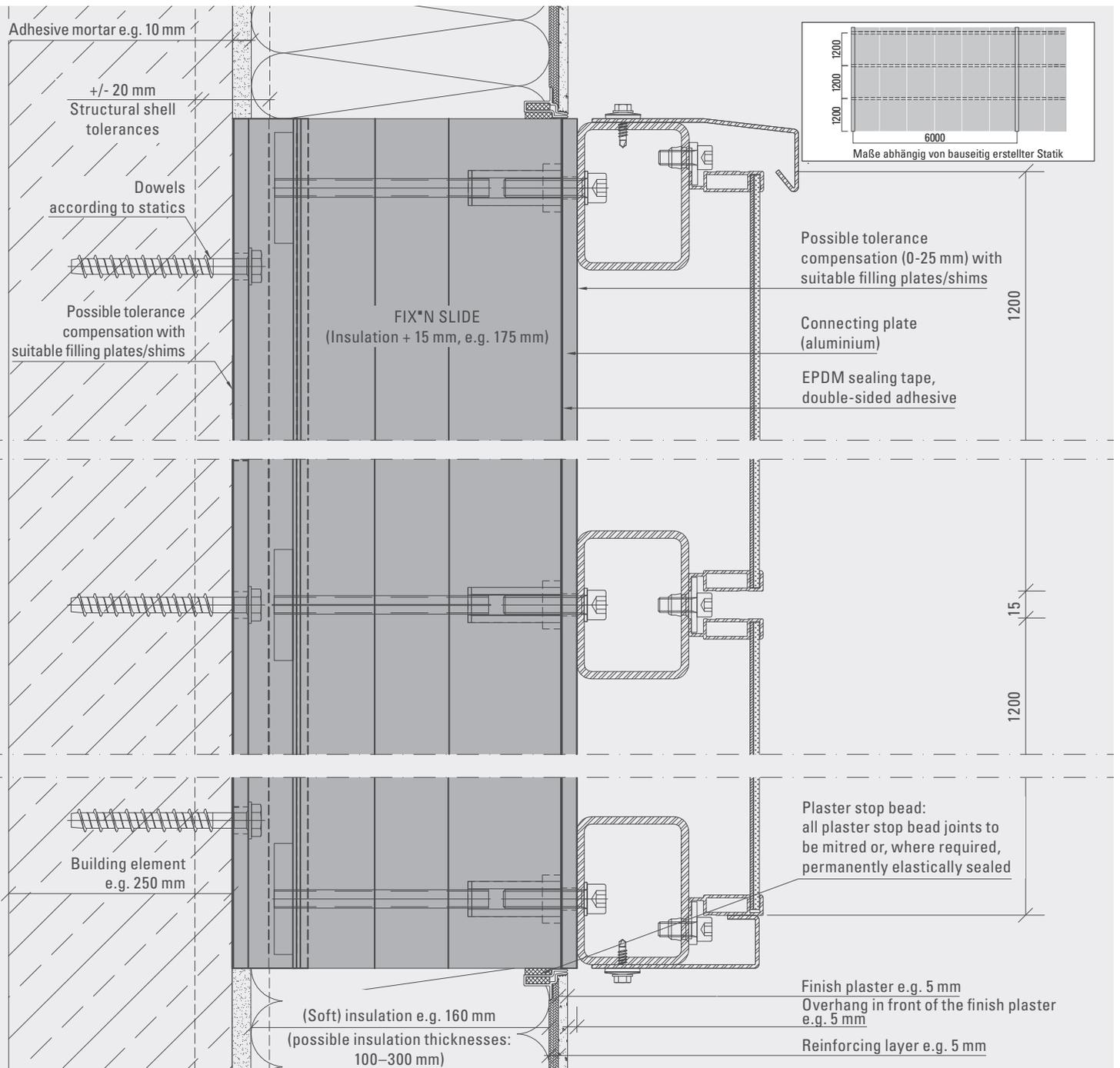


PHOTOVOLTAIC MODULES

APPLICATION EXAMPLES

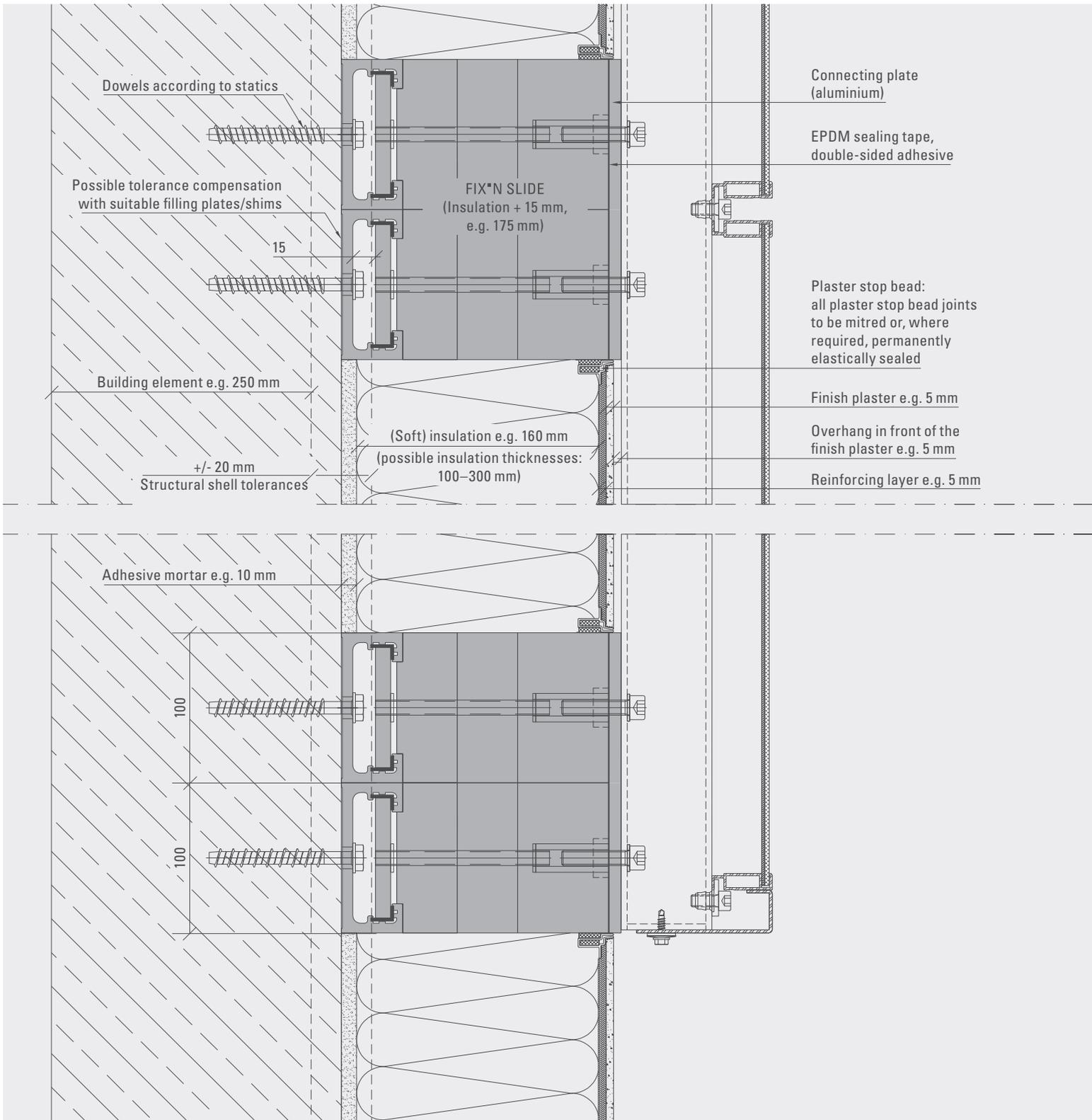
Photovoltaic modules on substructure

Finish plaster and soft insulation



INSTALLATION RECOMMENDATION

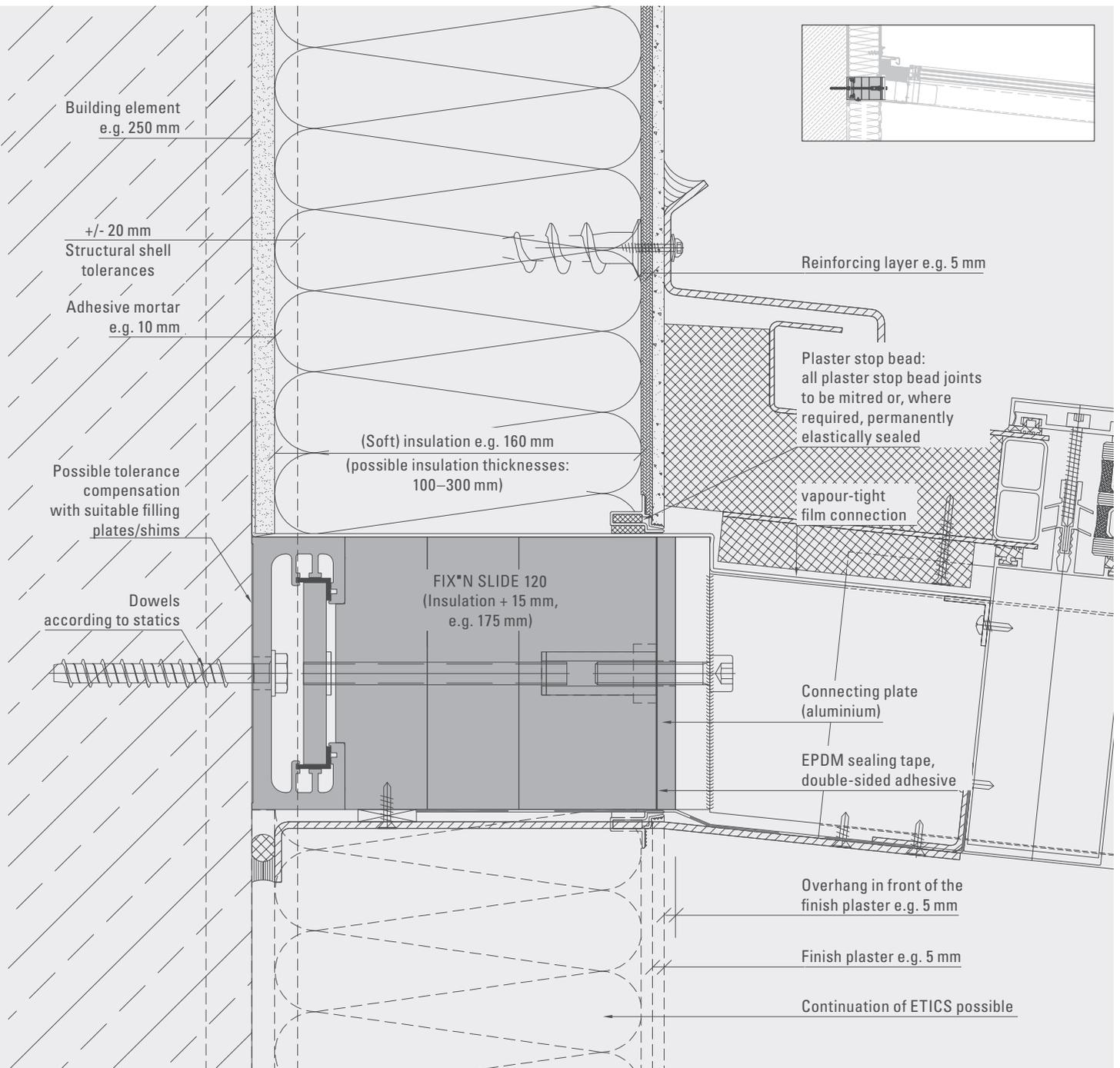
- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix connecting plate
- Execute building sealing e.g. with liquid plastic
- Create ETICS with finish plaster
- Install photovoltaic modules



Conservatory roof ridge connection

Finish plaster and soft insulation

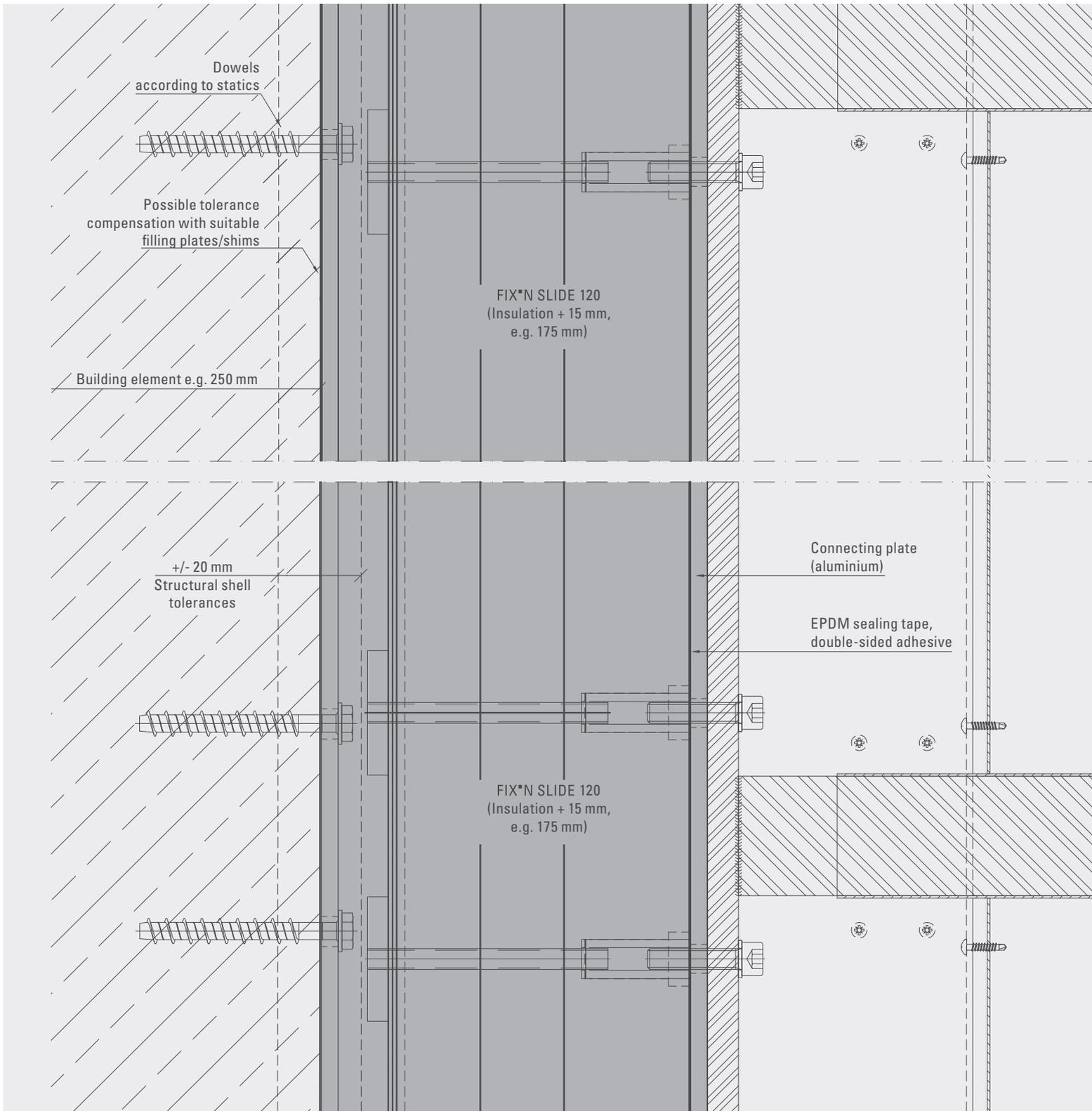
Vertical section



INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix end plate
- Create ETICS with finish plaster
- Install conservatory

Horizontal section





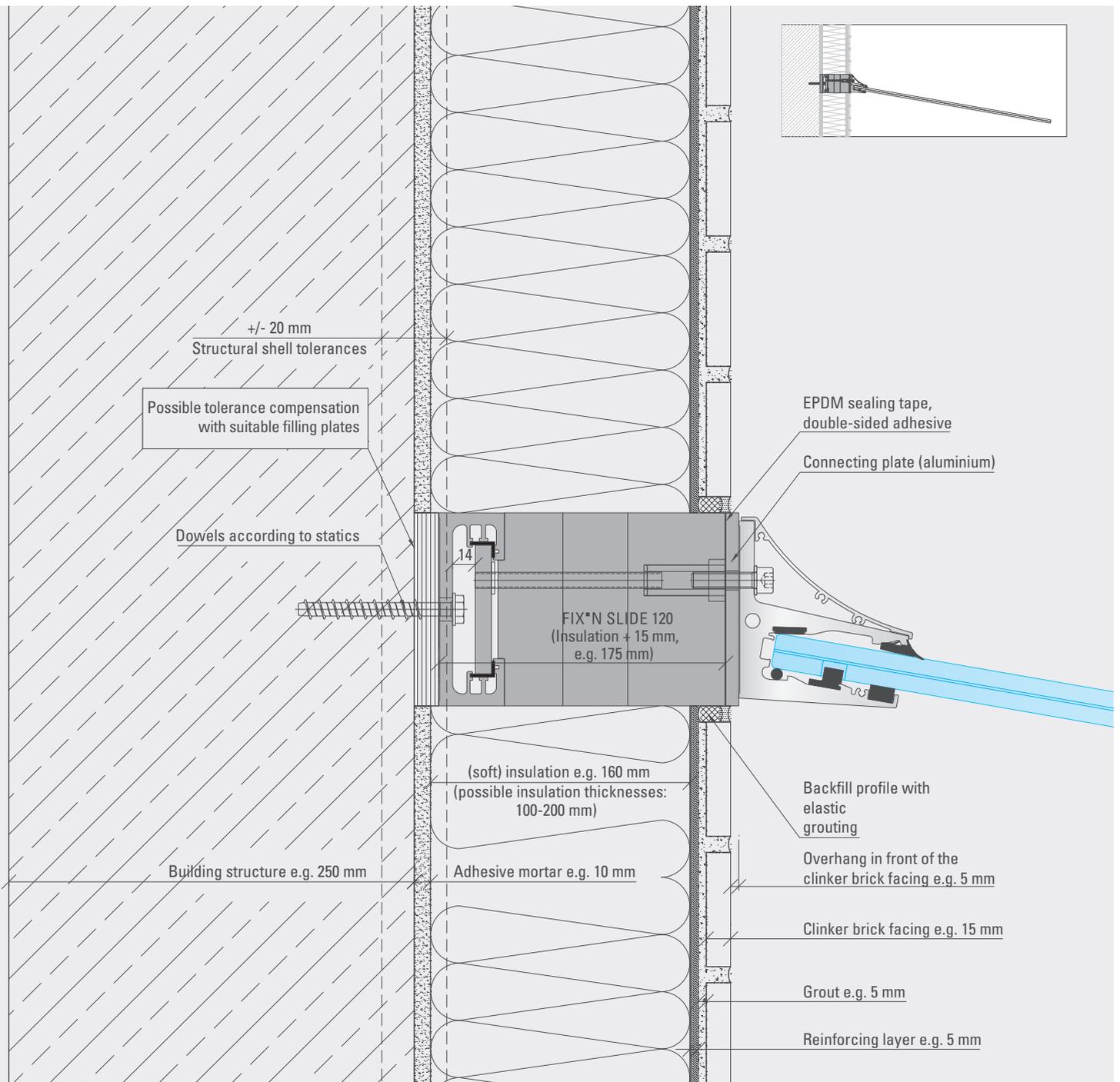
DIFFERENT FACADES WITH GLASS CANOPY CLOUD

APPLICATION EXAMPLES

Glass canopy CANOPY CLOUD

Clinker brick facing and soft insulation

Vertical section

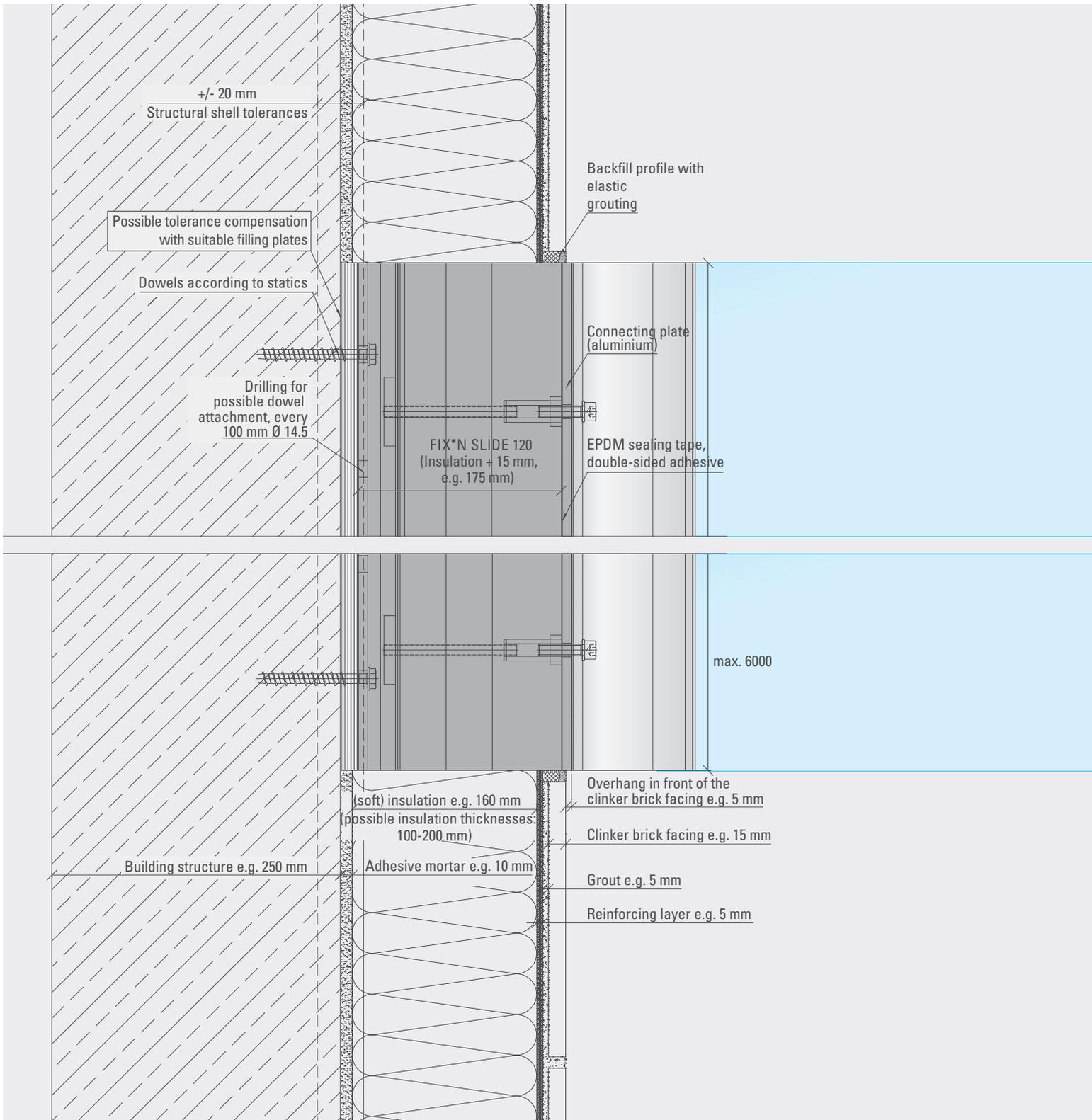


INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix connecting plate
- Create ETICS with clinker brick facing
- Install the canopy

FIX*N SLIDE WITH CANOPY CLOUD

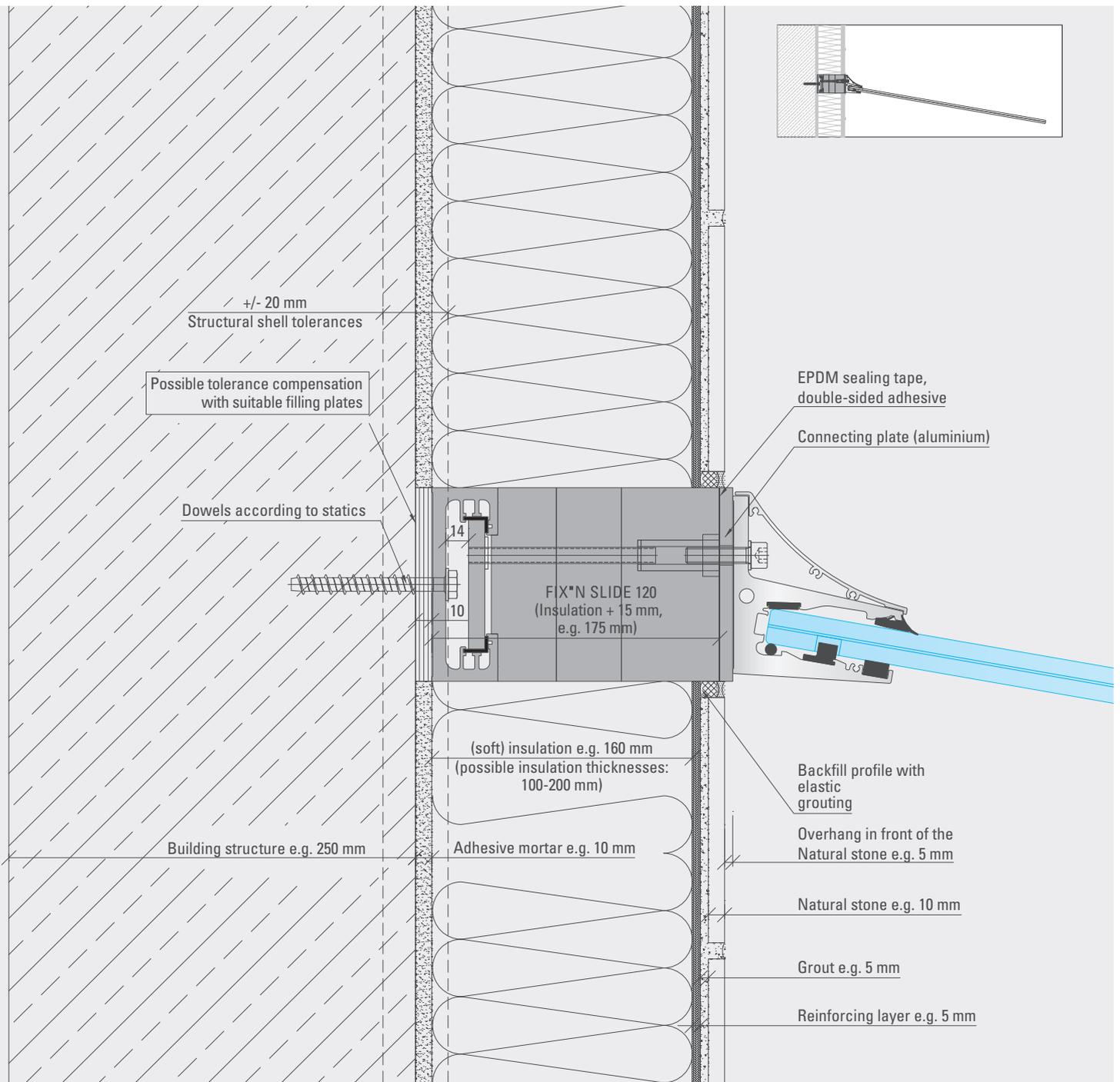
Horizontal section



Glass canopy CANOPY CLOUD

Natural stone and soft insulation

Vertical section

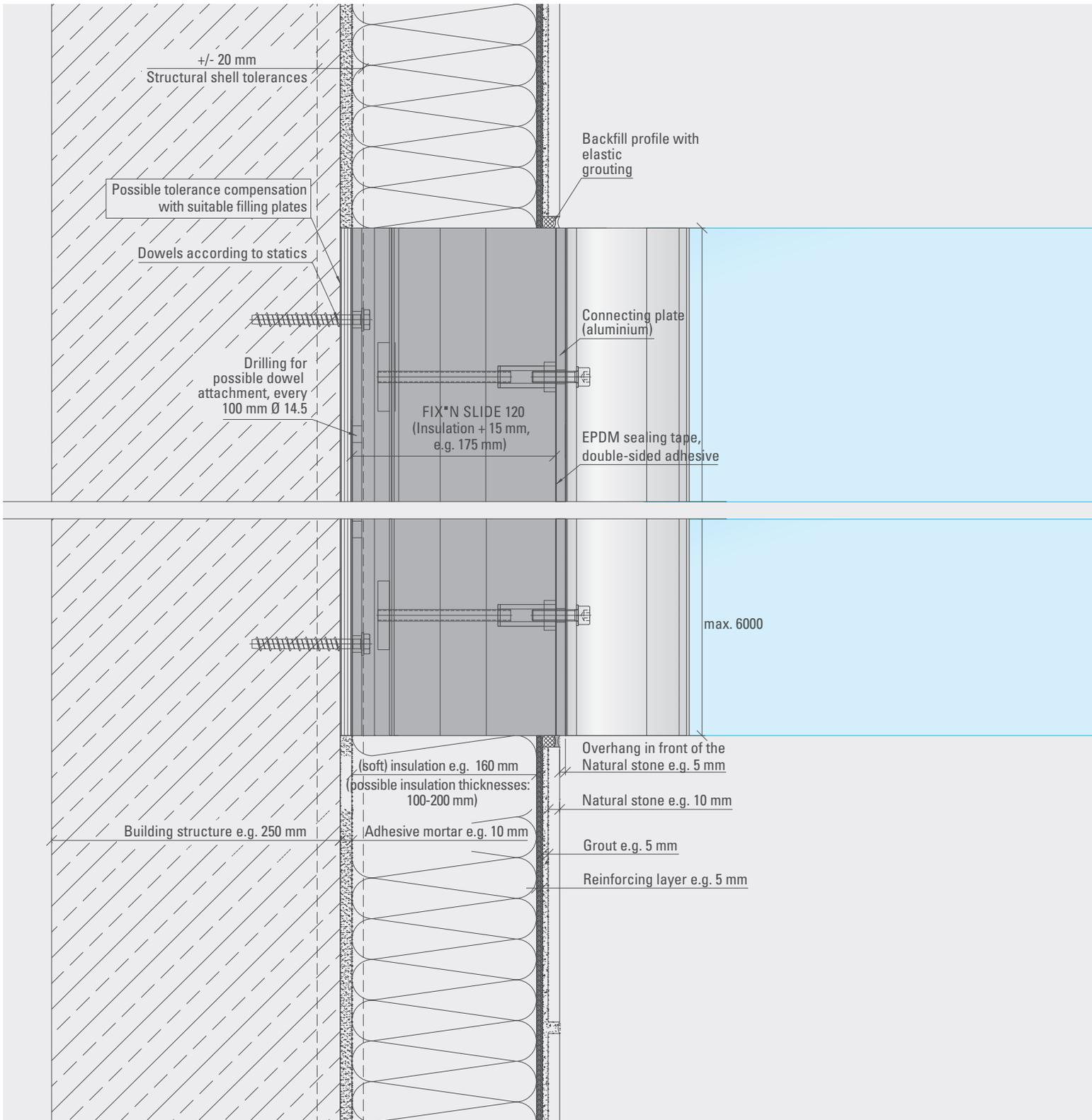


INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix connecting plate
- Create ETICS with natural stone
- Install the canopy

FIX*N SLIDE WITH CANOPY CLOUD

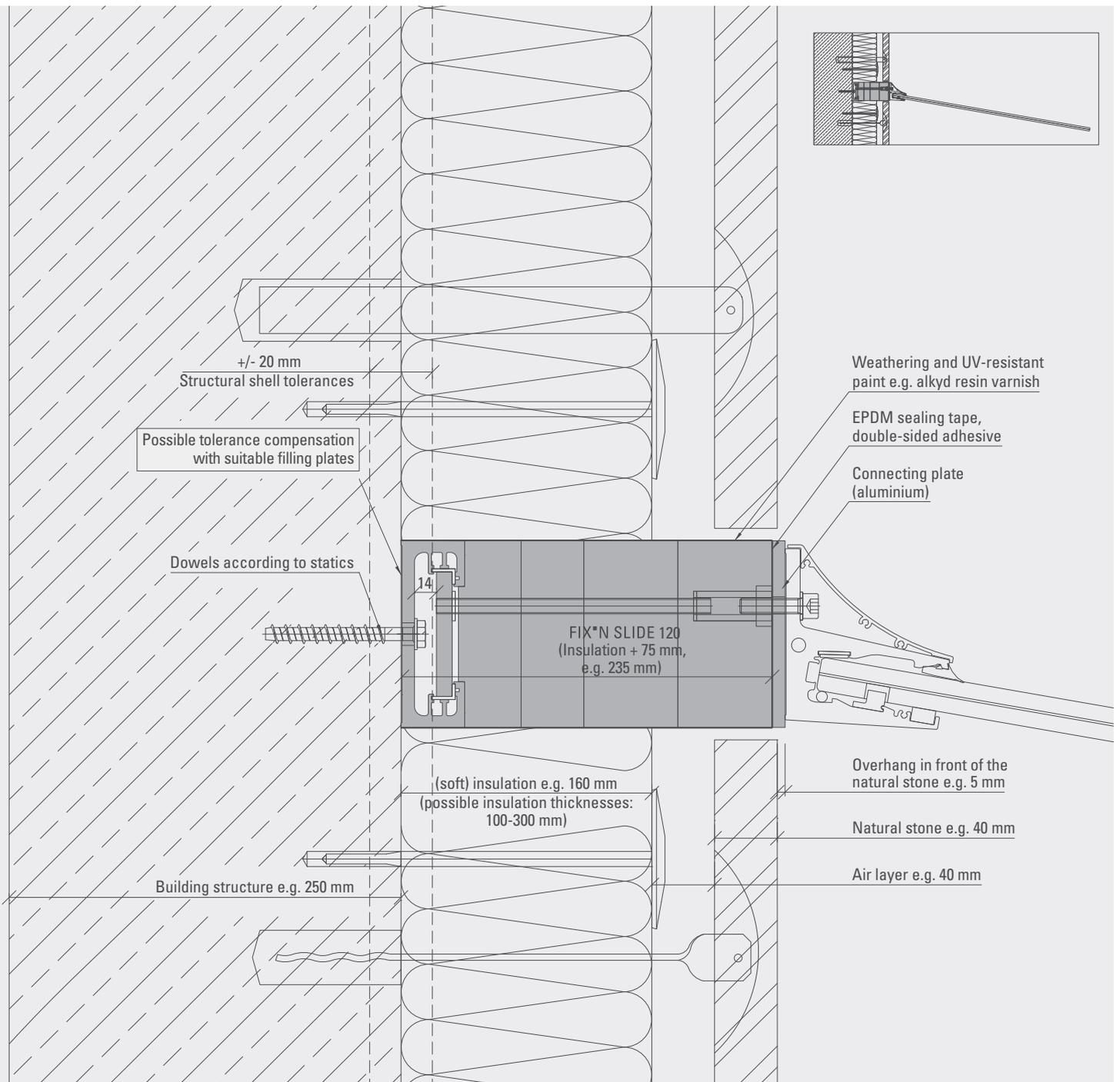
Horizontal section



Glass canopy CANOPY CLOUD

Natural stone and soft insulation

Vertical section

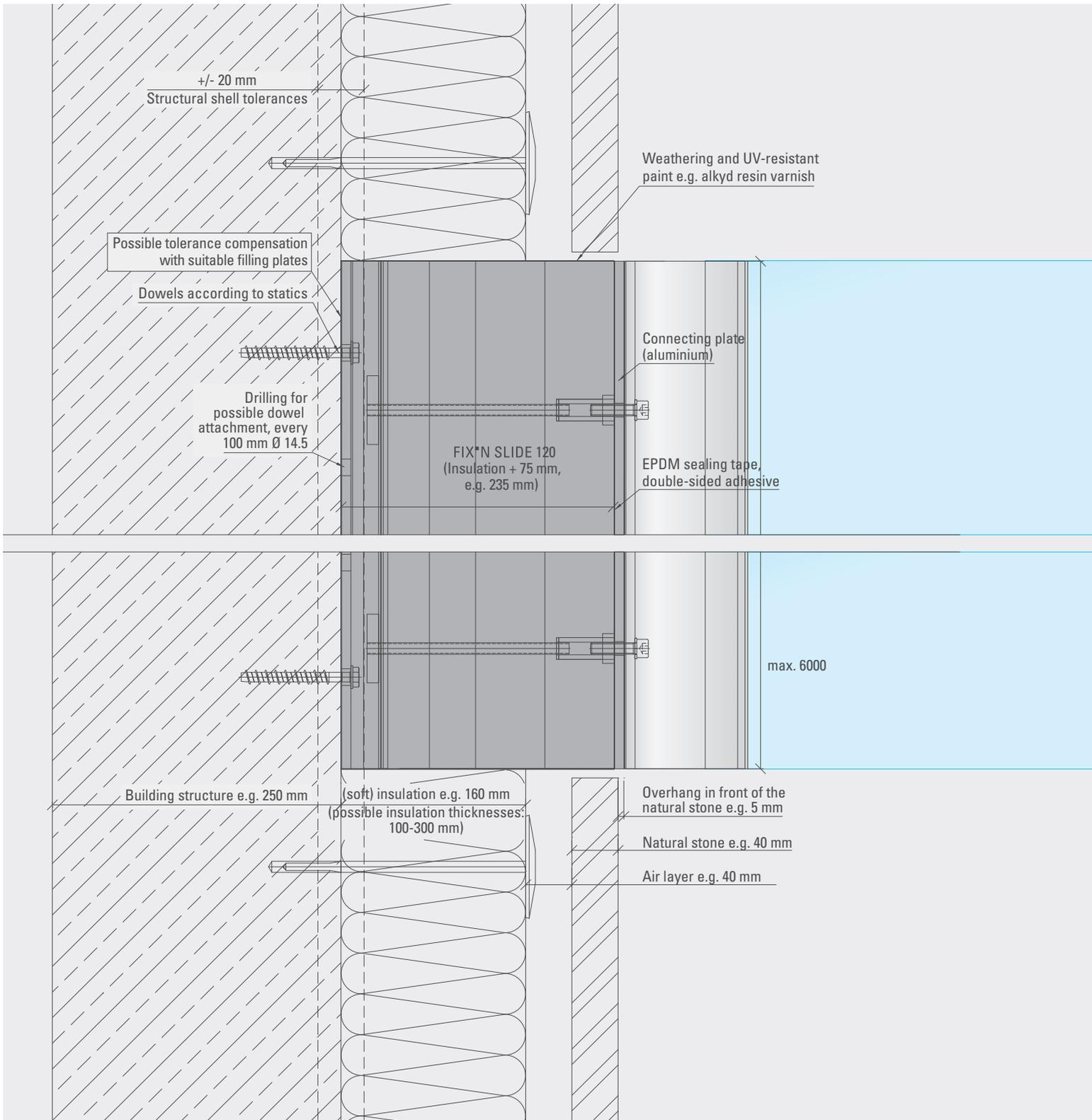


INSTALLATION RECOMMENDATION

- String out building (determine outer edge of natural stone)
- Installation FIX*N SLIDE
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Weathering and UV resistant paint e.g. alkyd resin paint
- Install natural stone
- Install the canopy

FIX*N SLIDE WITH CANOPY CLOUD

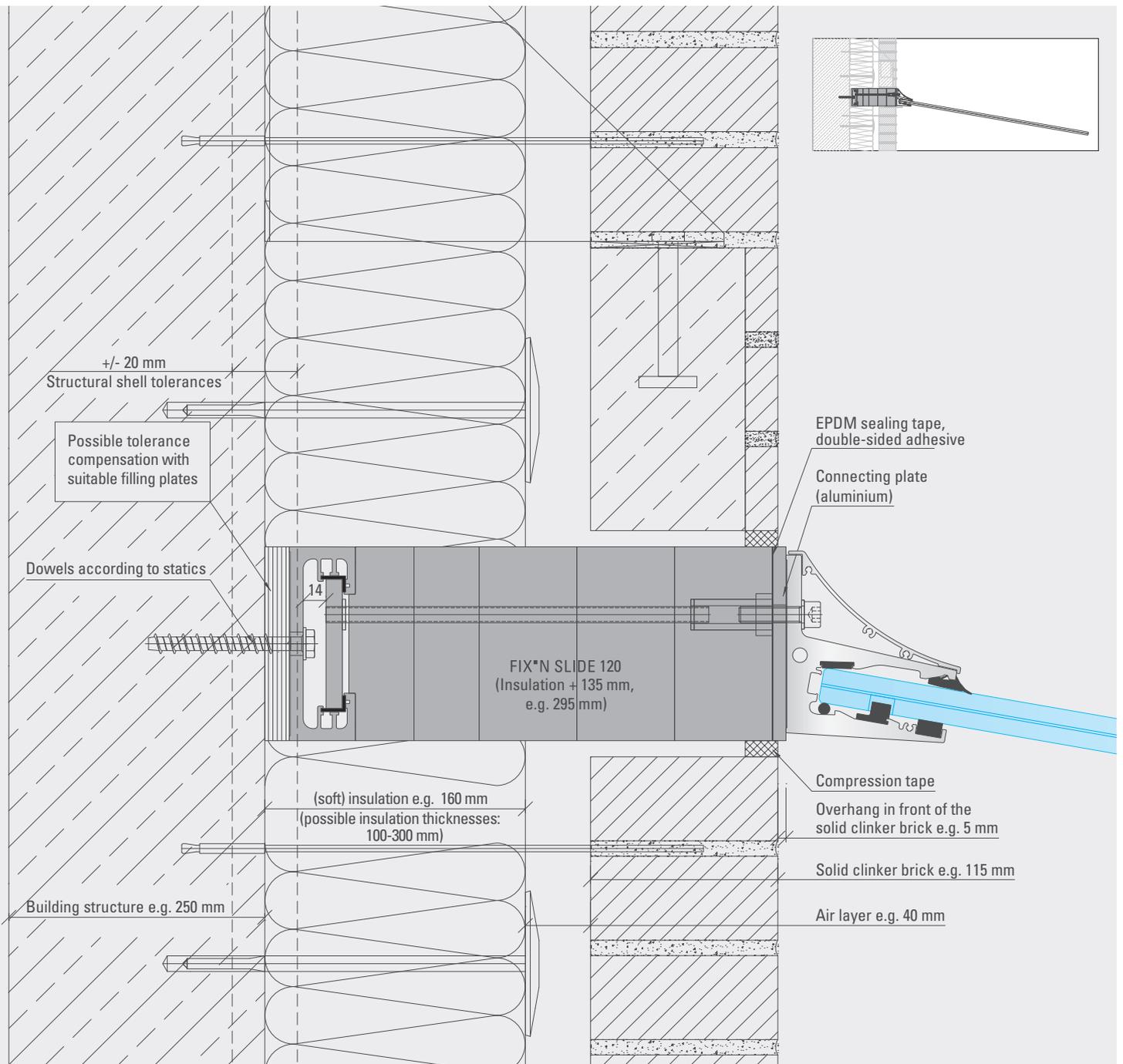
Horizontal section



Glass canopy CANOPY CLOUD

Solid clinker brick and soft insulation (160 mm)

Vertical section

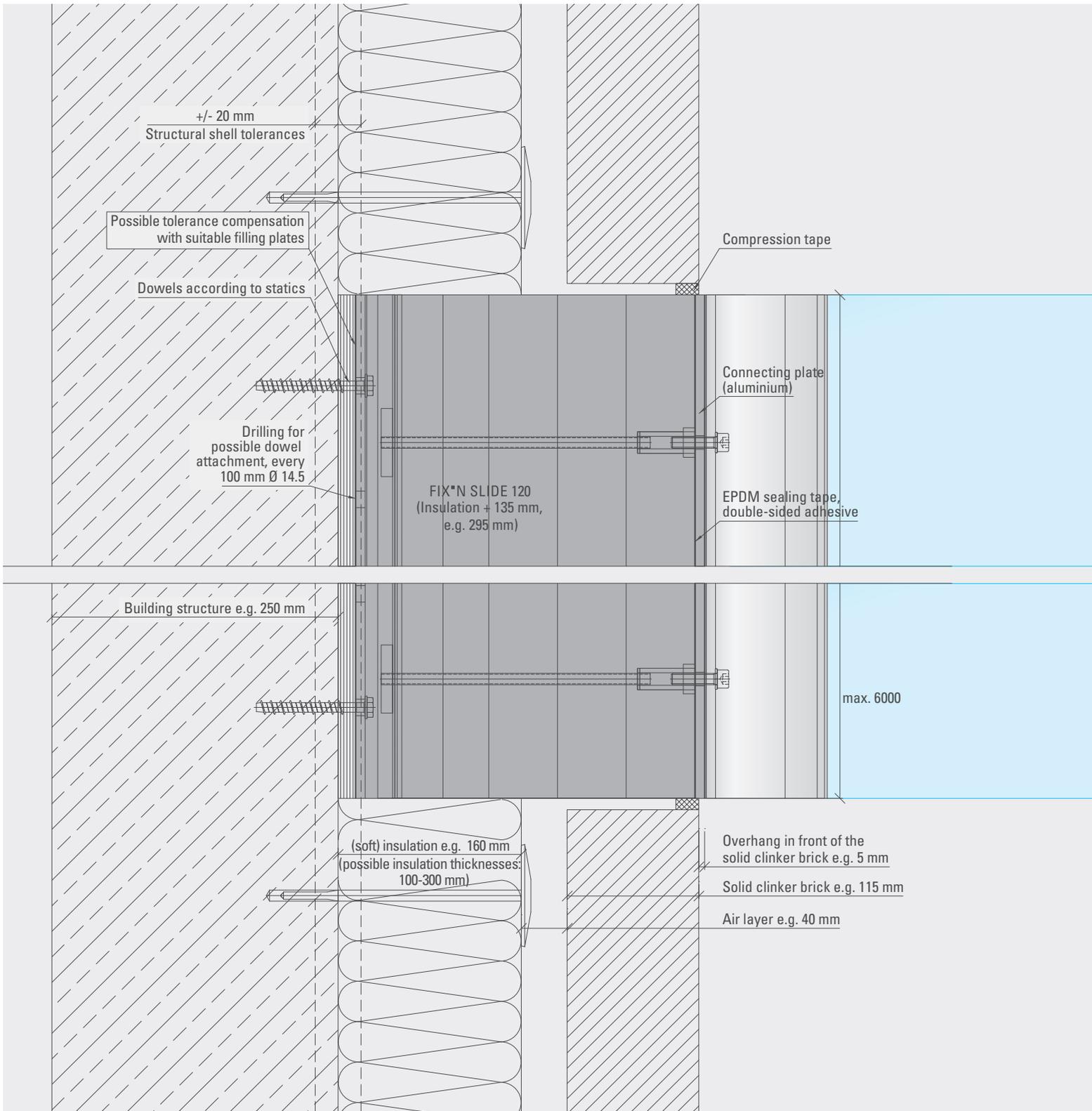


INSTALLATION RECOMMENDATION

- String out building (determine outer edge of solid clinker brick)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Fix connecting plate
- Install solid clinker brick
- Install the canopy
- Install foam (compressed/impregnated) sealing tape

FIX*N SLIDE WITH CANOPY CLOUD

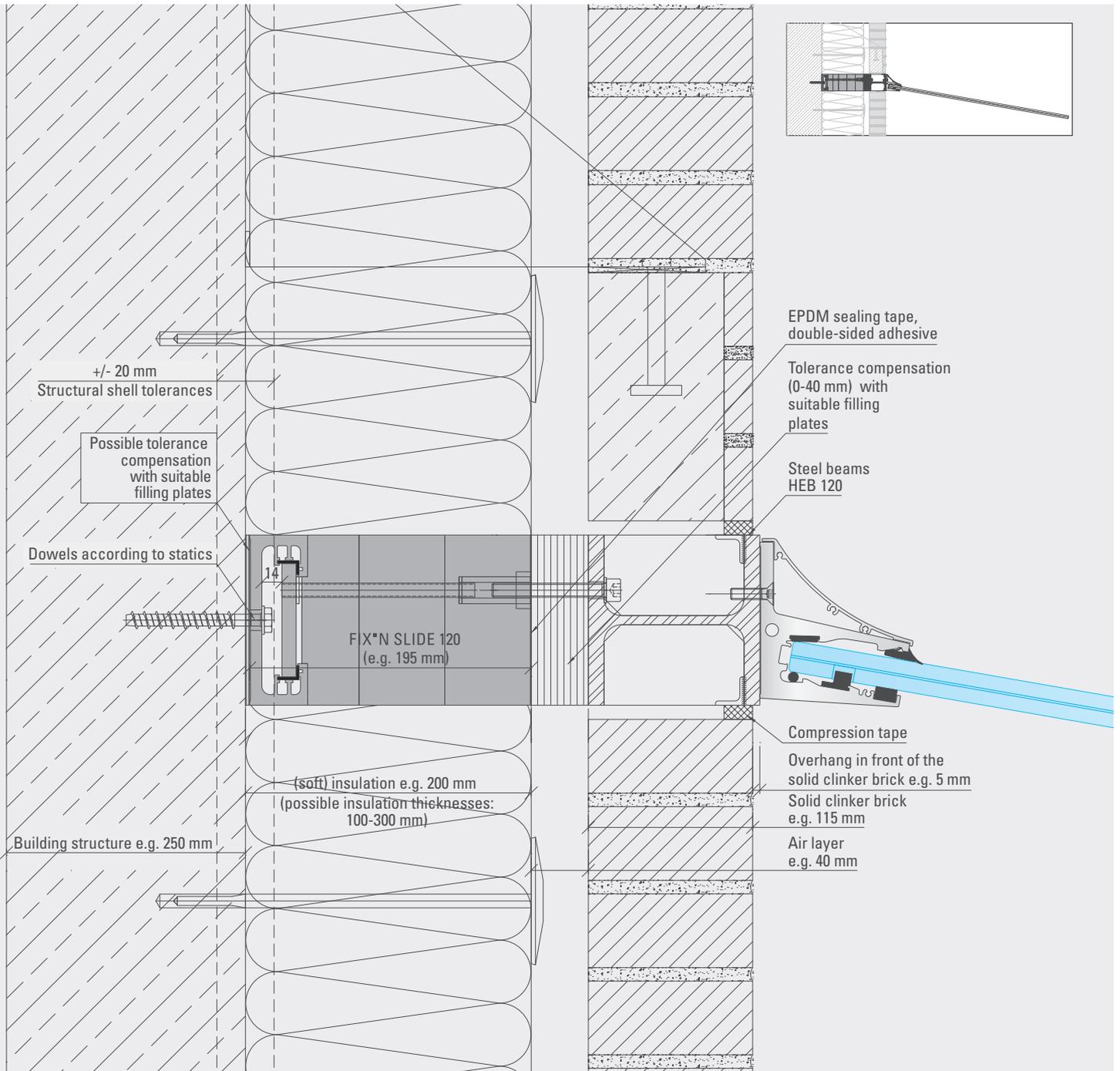
Horizontal section



Glass canopy CANOPY CLOUD

Solid clinker brick and soft insulation (200 mm)

Vertical section

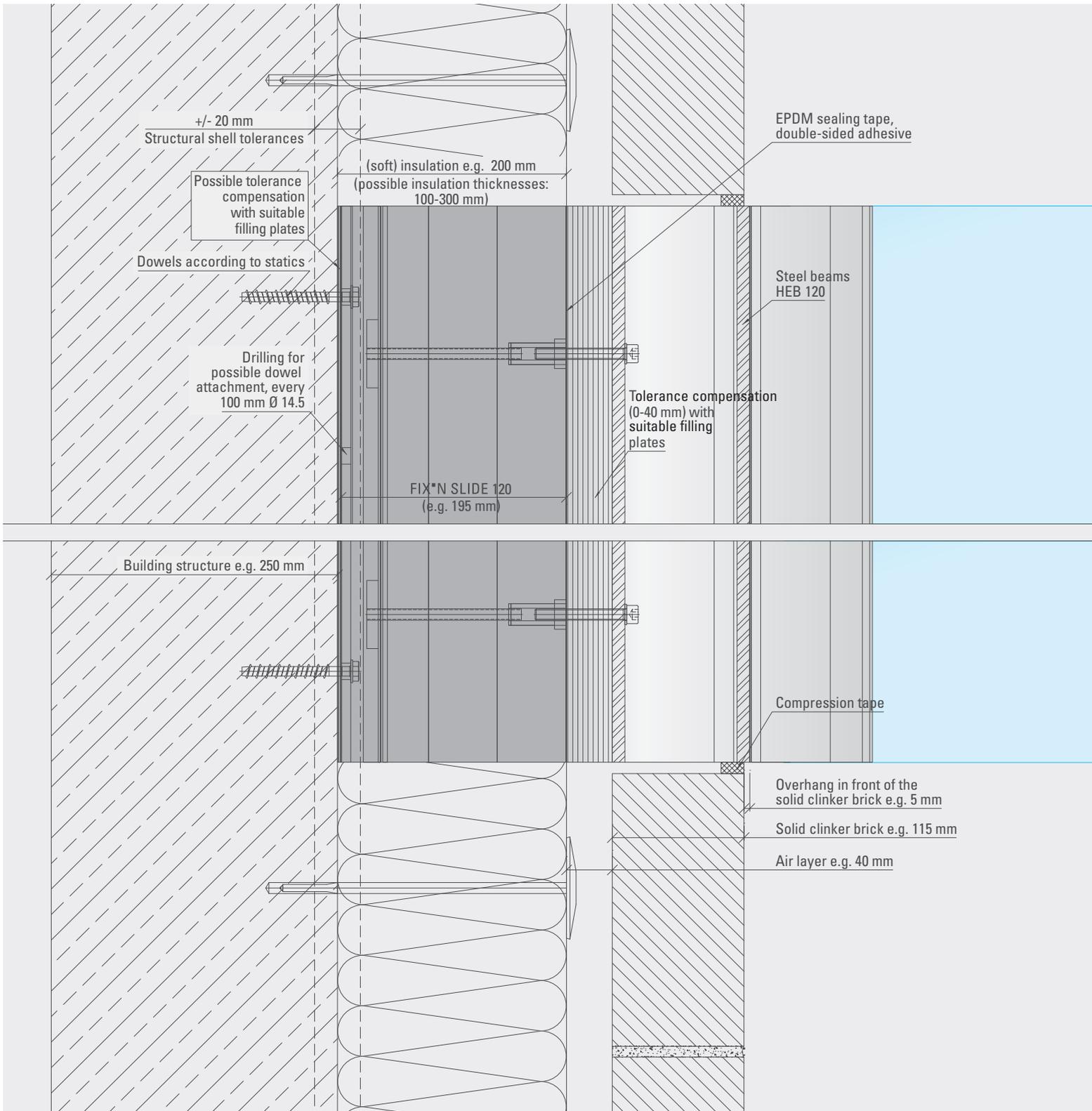


INSTALLATION RECOMMENDATION

- String out building (determine outer edge of solid clinker brick)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Ensure exterior impermeability with double-sided adhesive EPDM sealing tape
- Install further filling plates/shims
- Fix steel beam
- Install solid clinker brick
- Install the canopy
- Install foam (compressed/impregnated) sealing tape

FIX*N SLIDE WITH CANOPY CLOUD

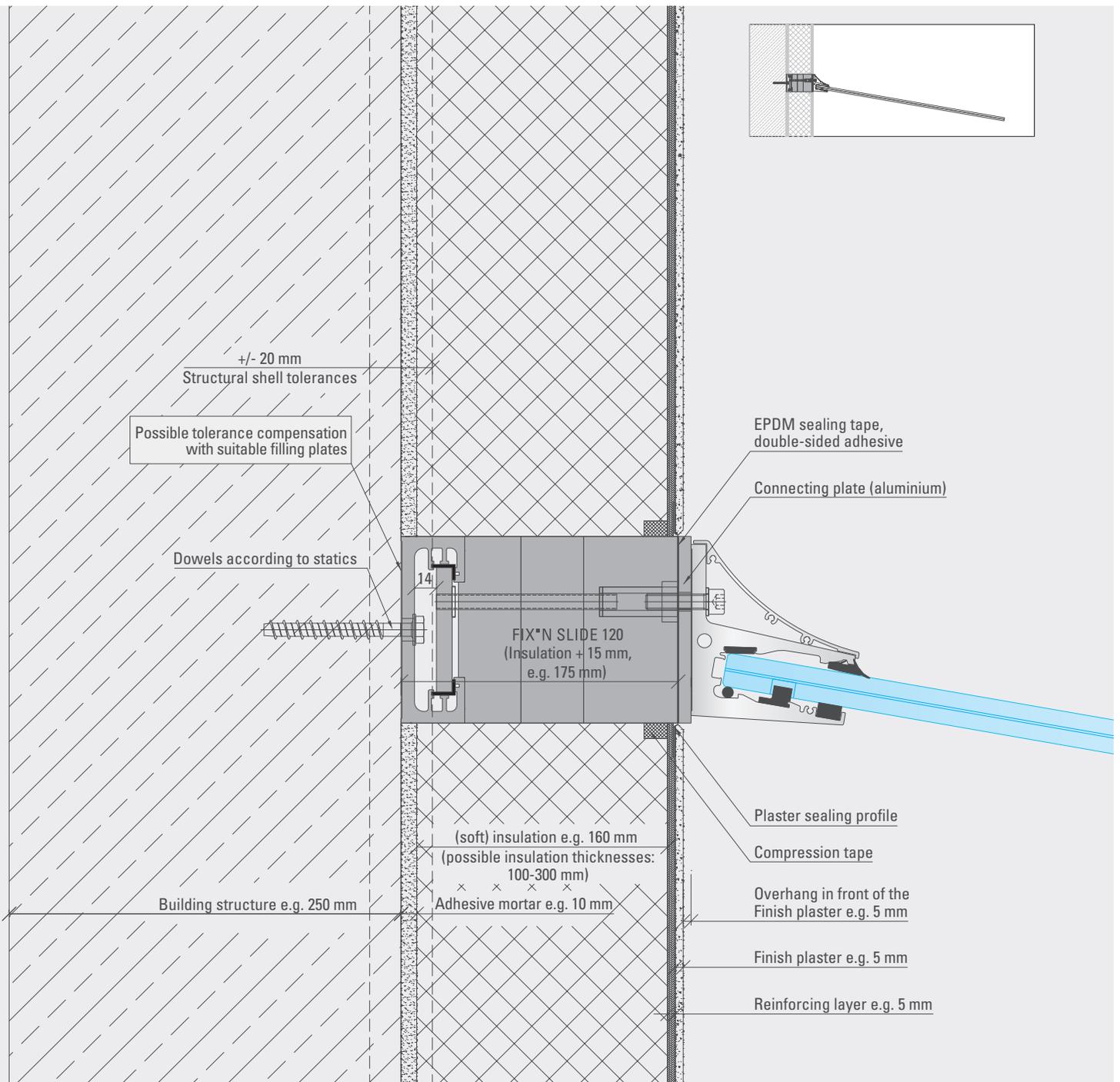
Horizontal section



Glass canopy CANOPY CLOUD

Finish plaster and hard insulation

Vertical section

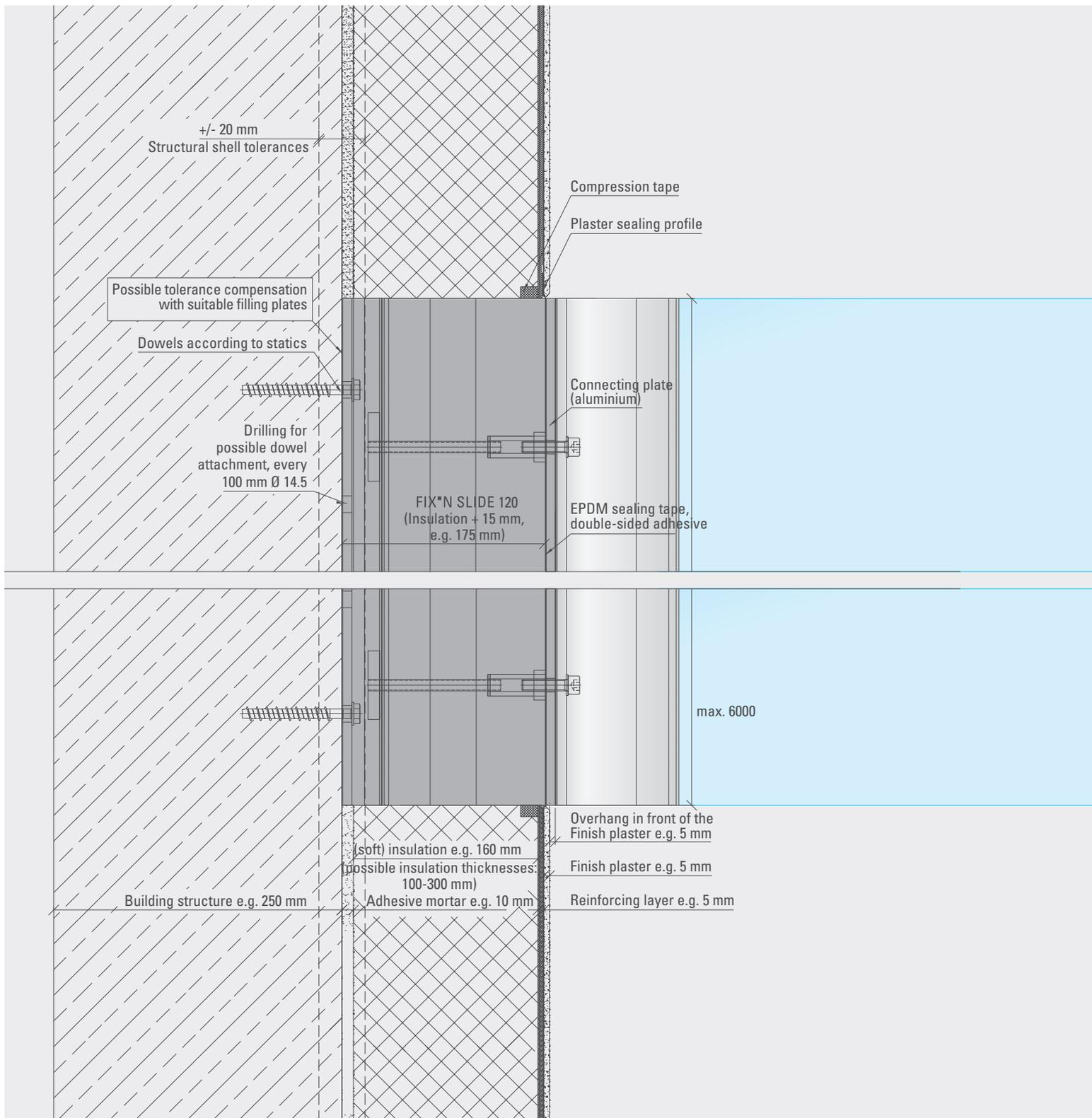


INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Fix connecting plate
- Ensure exterior impermeability durch double-sided adhesive EPDM sealing tape
- Create ETICS with finish plaster
- Install the canopy

FIX*N SLIDE WITH CANOPY CLOUD

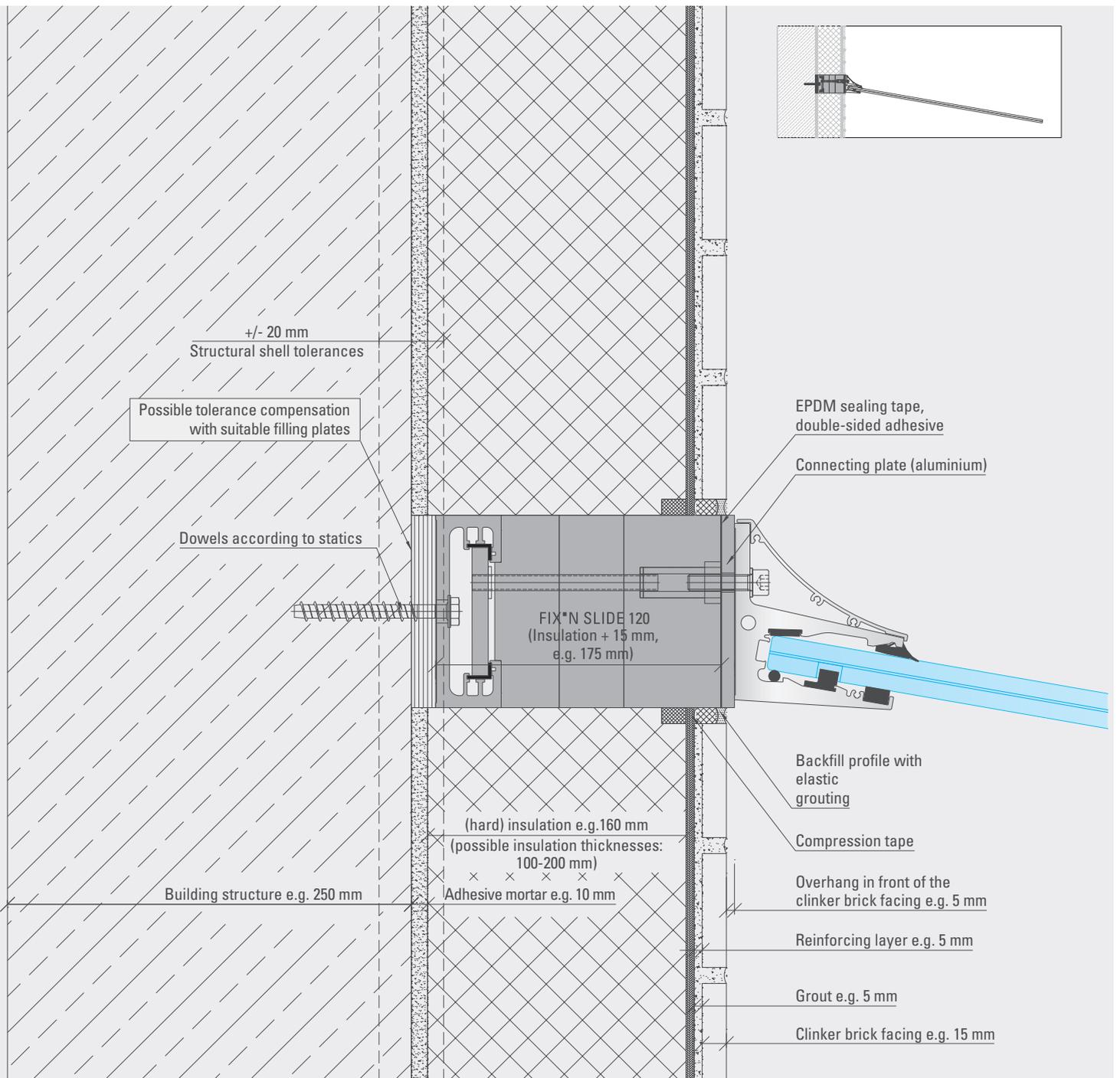
Horizontal section



Glass canopy CANOPY CLOUD

Clinker brick facing and hard insulation

Vertical section

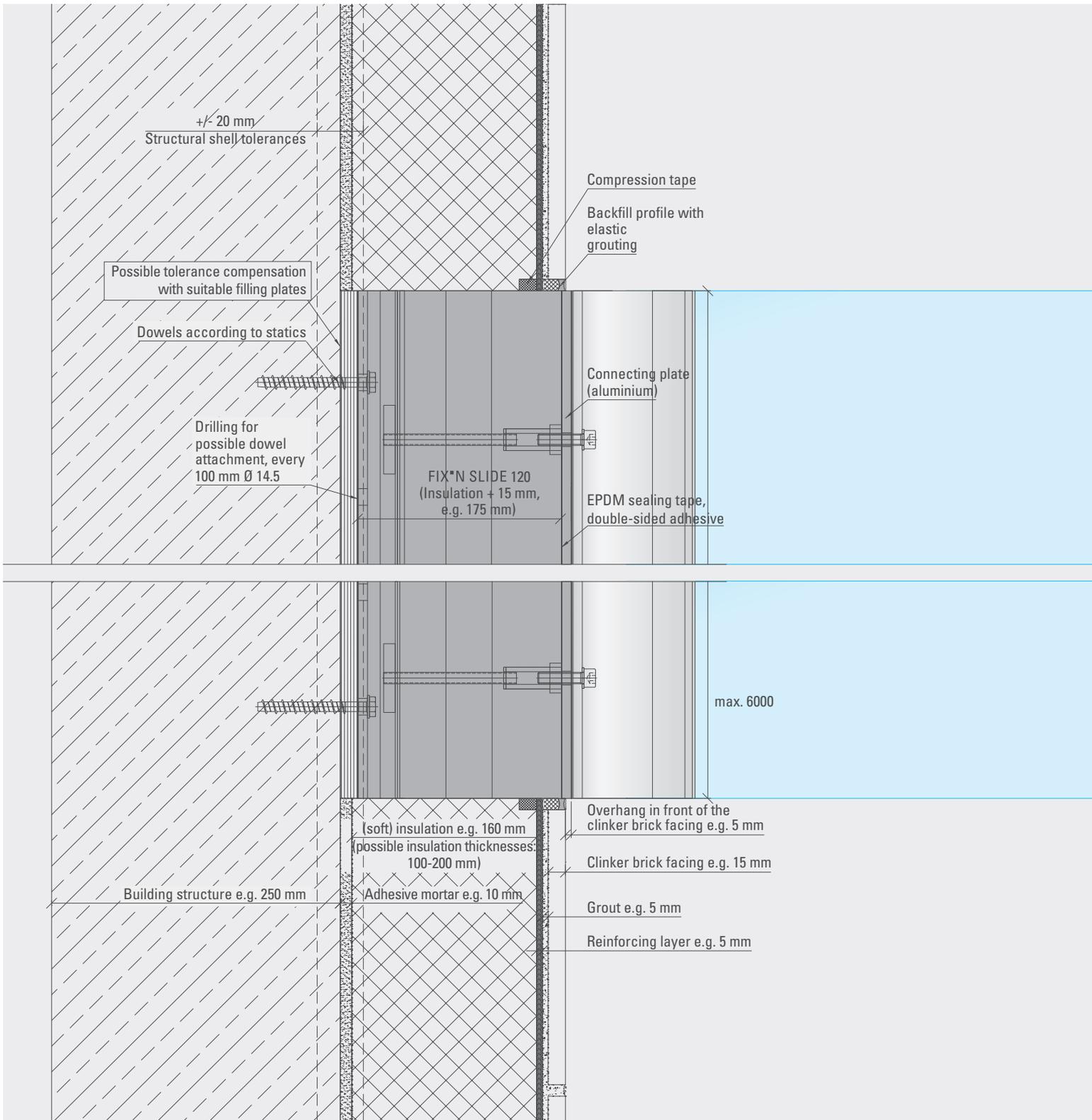


INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE (possible tolerance compensation with suitable filling plates/shims)
- Fix connecting plate
- Ensure exterior impermeability durch double-sided adhesive EPDM sealing tape
- Create ETICS with clinker brick facing
- Install the canopy

FIX*N SLIDE WITH CANOPY CLOUD

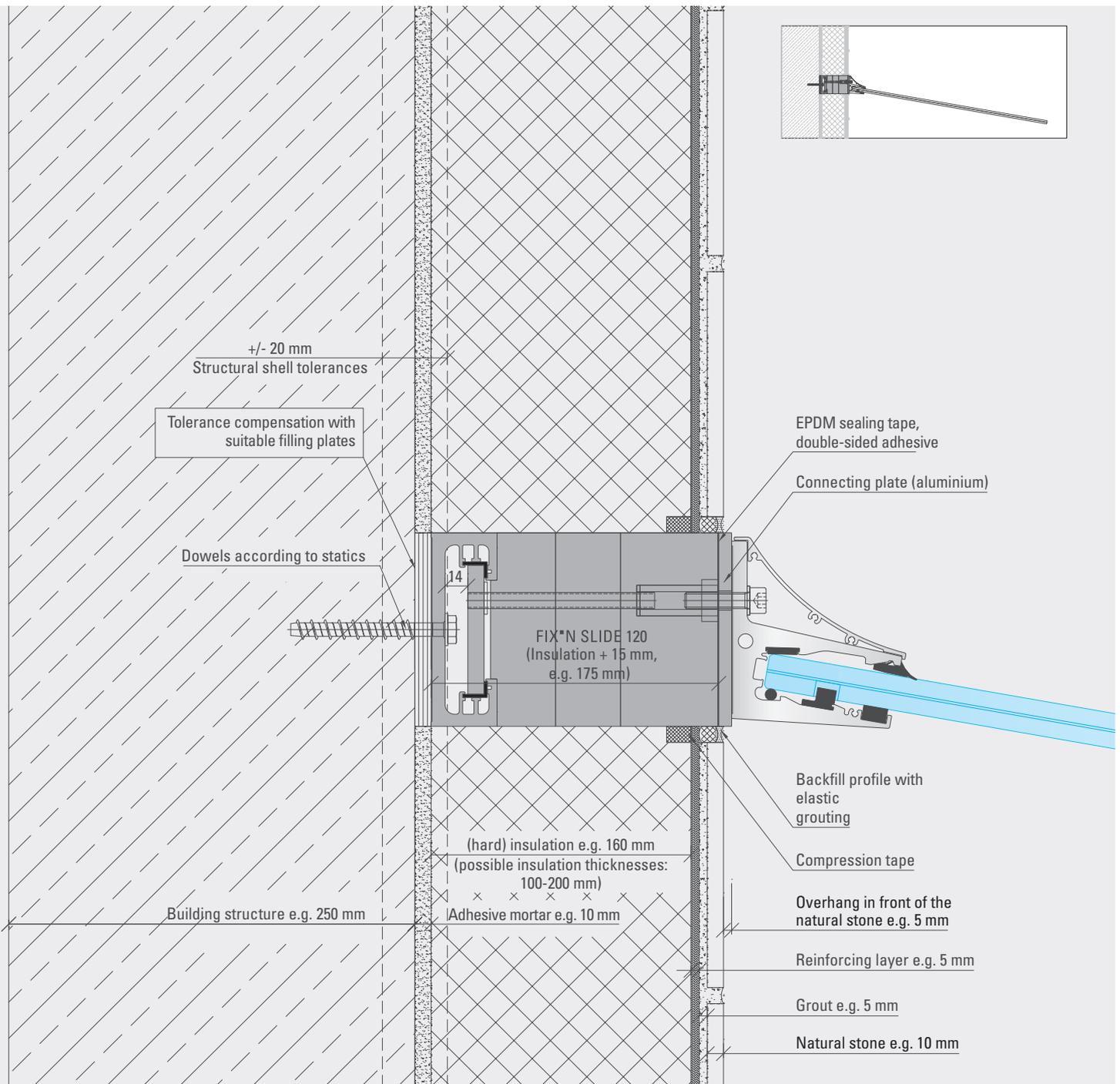
Horizontal section



Glass canopy CANOPY CLOUD

Natural stone and hard insulation

Vertical section

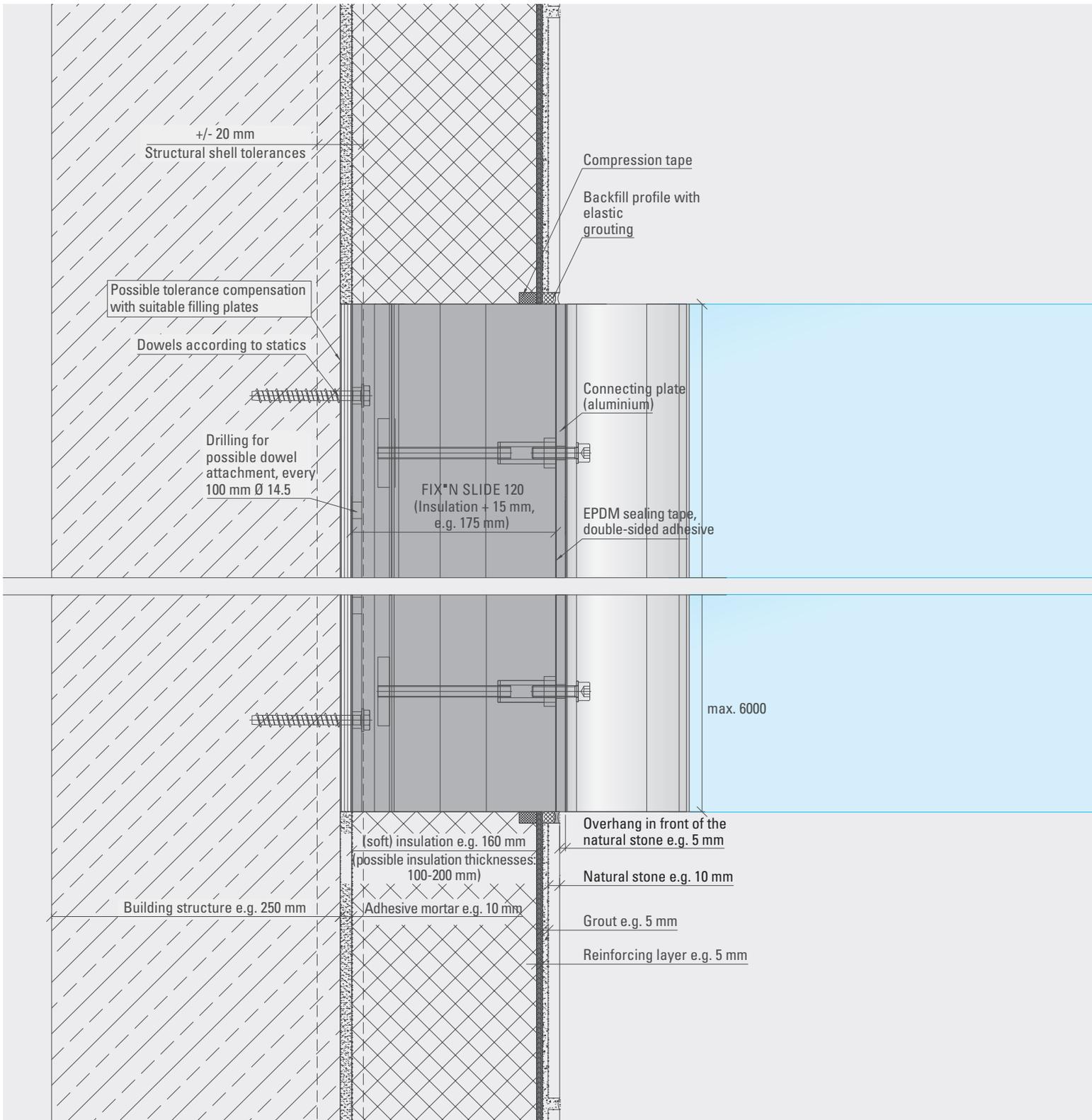


INSTALLATION RECOMMENDATION

- String out building (determine insulation outer edge)
- Installation FIX*N SLIDE
(possible tolerance compensation with suitable filling plates/shims)
- Fix connecting plate
- Ensure exterior impermeability durch double-sided adhesive EPDM sealing tape
- Create ETICS with natural stone
- Install the canopy

FIX*N SLIDE WITH CANOPY CLOUD

Horizontal section

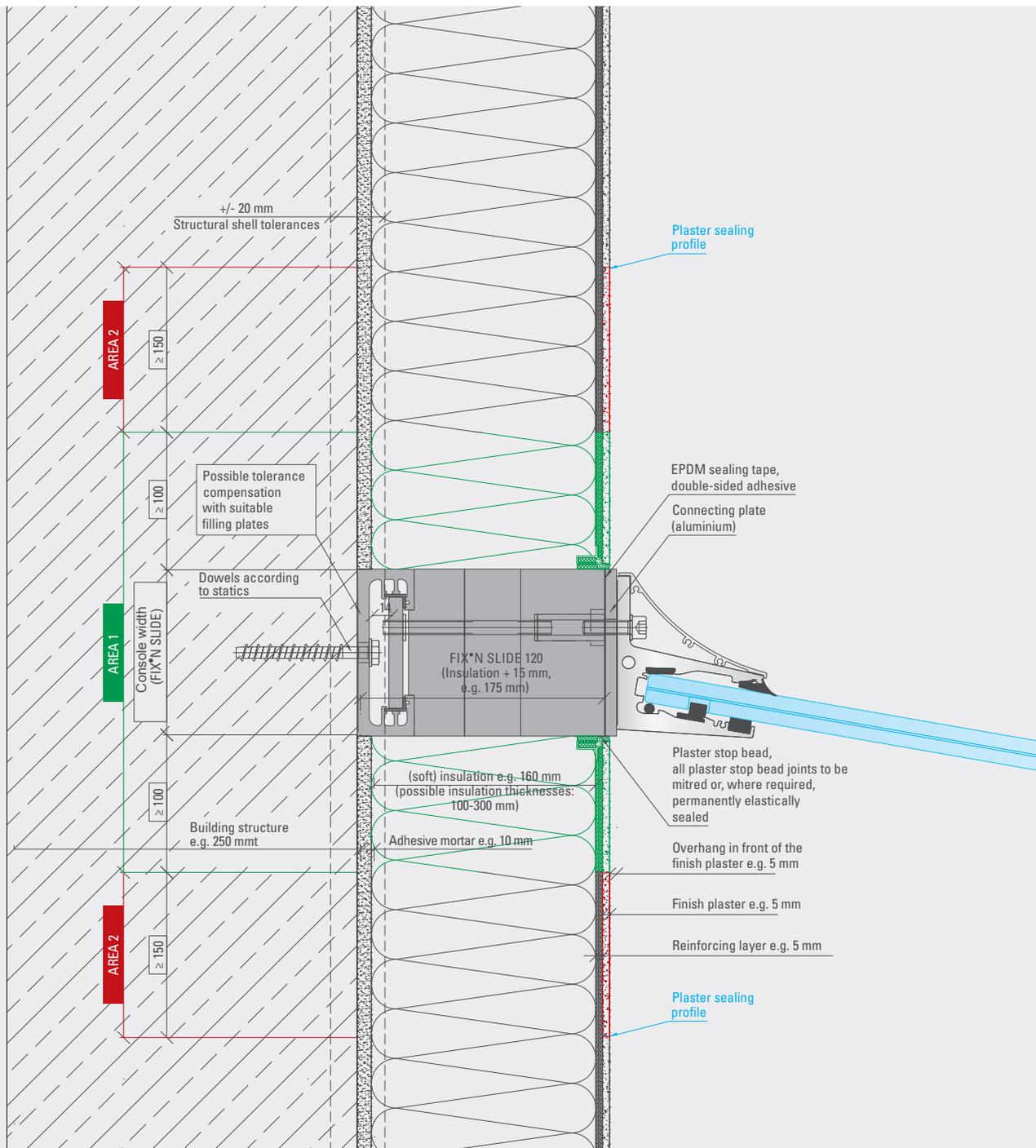


APPLICATION EXAMPLES EXISTING BUILDING

Glass canopy CANOPY CLOUD

Finish plaster and soft insulation

Vertical section

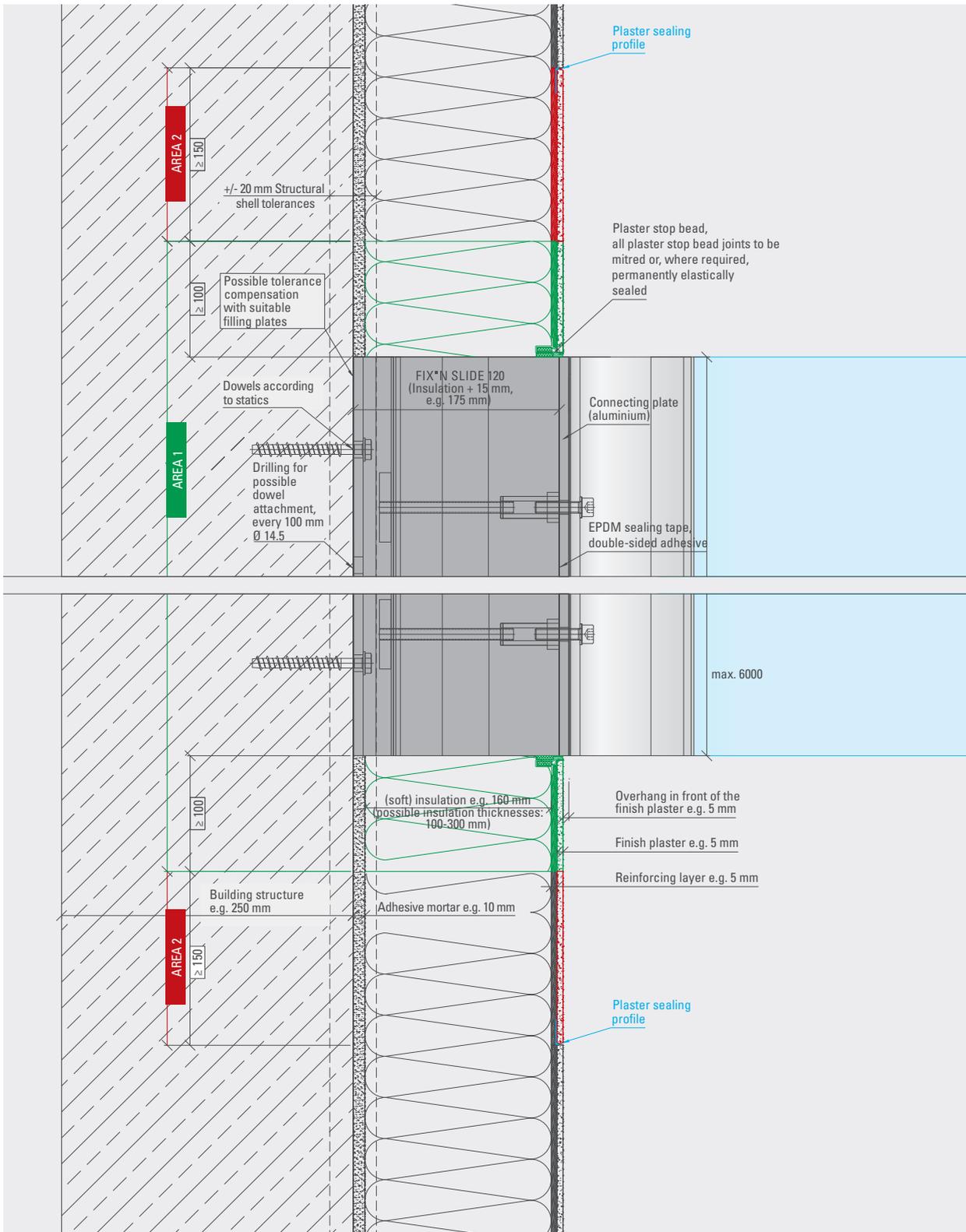


INSTALLATION RECOMMENDATION

- Cut ETICS back: **AREA 1** (console width FIX*N SLIDE + 200 mm)
- Mill off finish plaster to reinforcing layer: **AREA 2**
- FIX*N SLIDE install
- Execute insulation and reinforcing layer (reinforcing layer must overlap existing reinforcing layer by approx. 150 mm).
- It is recommended to plaster the **finish plaster with the plaster finish profile**
- Restore ETICS with finish plaster

FIX*N SLIDE WITH CANOPY CLOUD

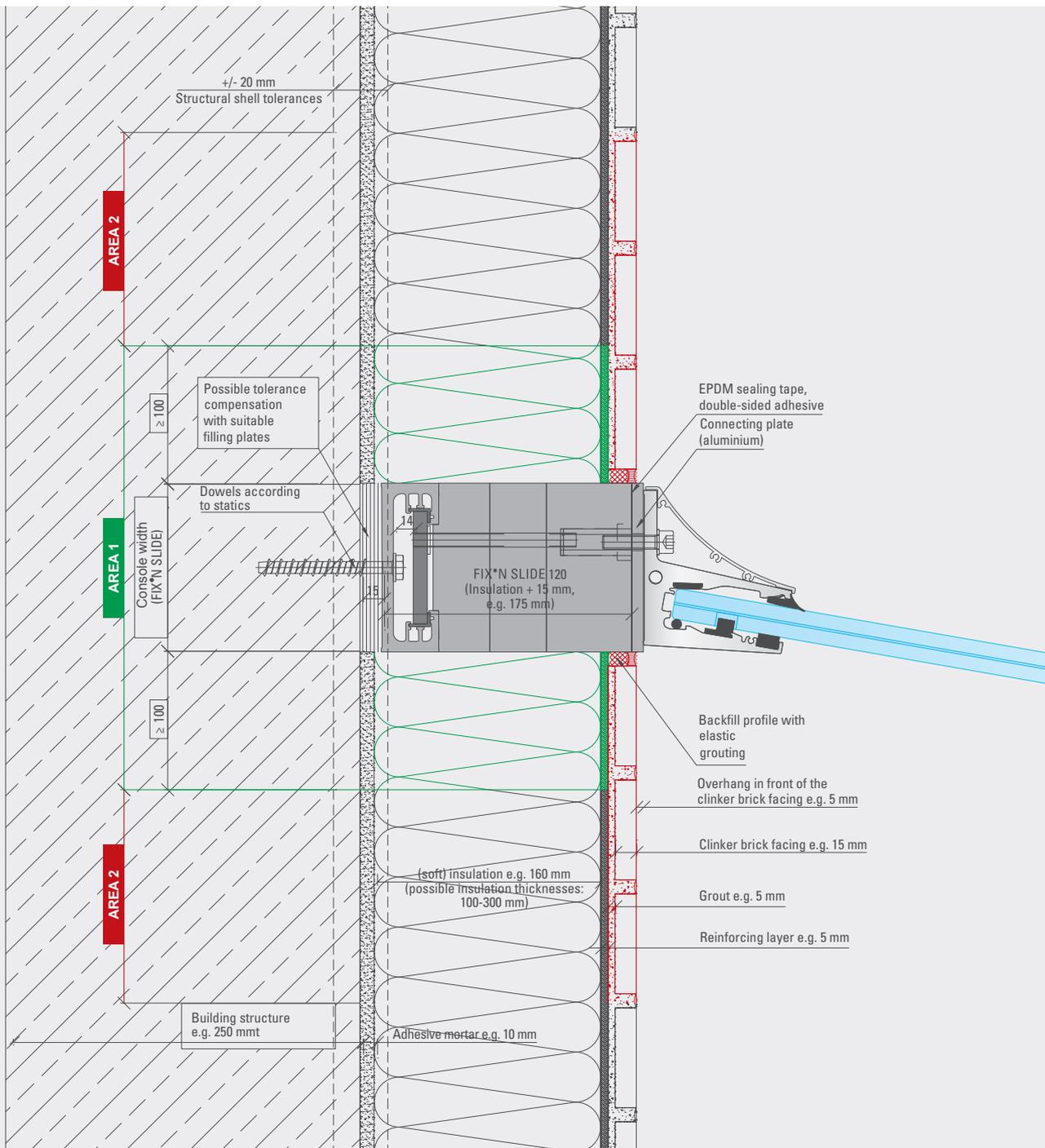
Horizontal section



Glass canopy CANOPY CLOUD

Clinker brick facing and soft insulation

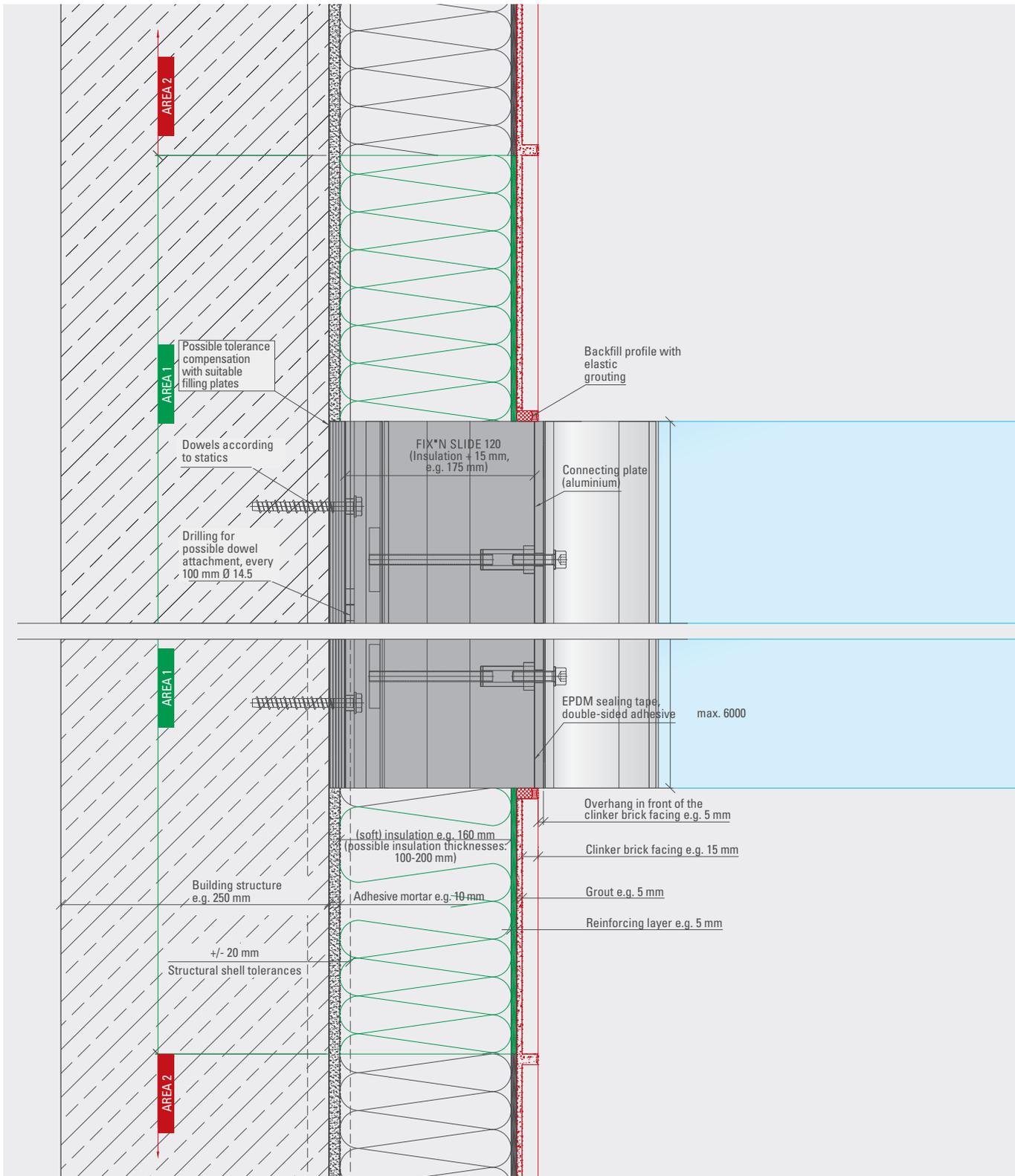
Vertical section



INSTALLATION RECOMMENDATION

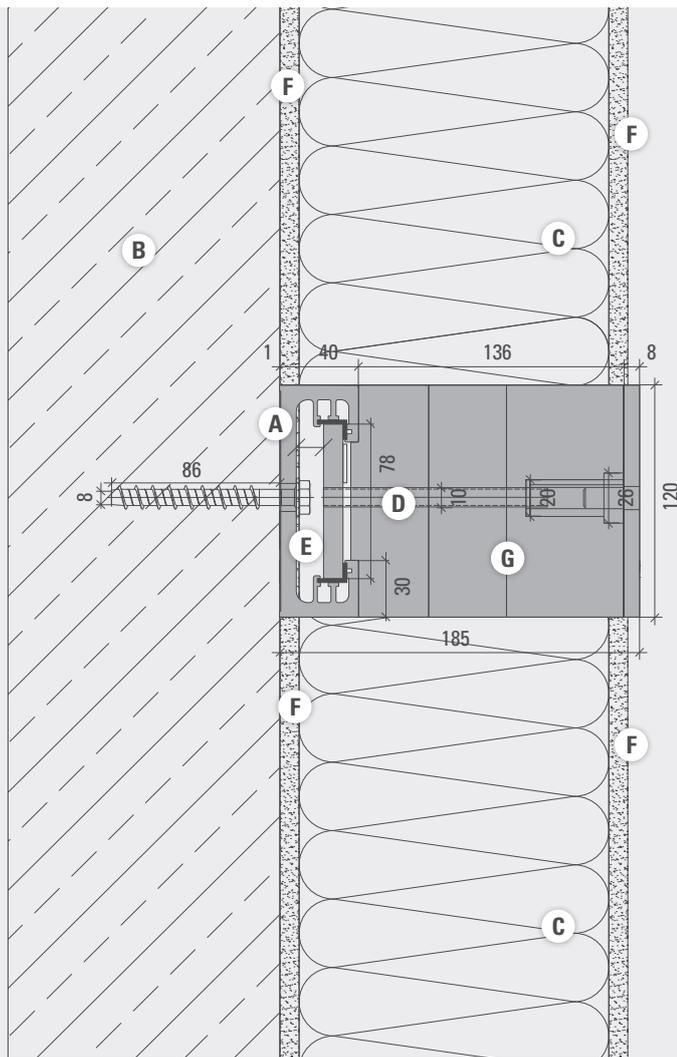
- Cut ETICS back: **AREA 1** (console width FIX*N SLIDE + 200 mm)
- Mill off clinker brick facing to reinforcing layer: **AREA 2**
- FIX*N SLIDE install
- Execute insulation and reinforcing layer (reinforcing layer must overlap existing reinforcing layer by approx. 150 mm).
- Observe the specifications of the ETICS system provider
- Restore ETICS with clinker brick facing

Horizontal section



THERMAL INSULATION CALCULATIONS

Linear connection purs. DIN 4108-2 and χ value calculation (example)

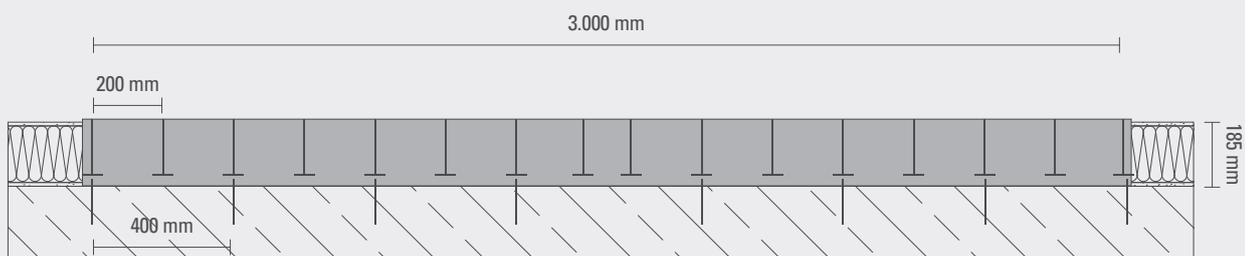


Characteristics

- Construction component (W x H x L)
120 mm x 185 mm x 3000 mm
- 400 mm dowel spacing
- 200 mm tension rod/sleeve spacing

Materials

	λ [W/(m·K)]	ϵ
A Aluminium profile	160.000	0.900
B Concrete reinforced (with 2% steel)	2,500	0,900
C Insulation WLG 035	0.035	0.900
D Stainless steel	17.00	0.900
E Air		
F plaster	0.870	0.900
G Pressure-resistant system insulation	0.083	0.900



Constraints

- Exterior temperatures

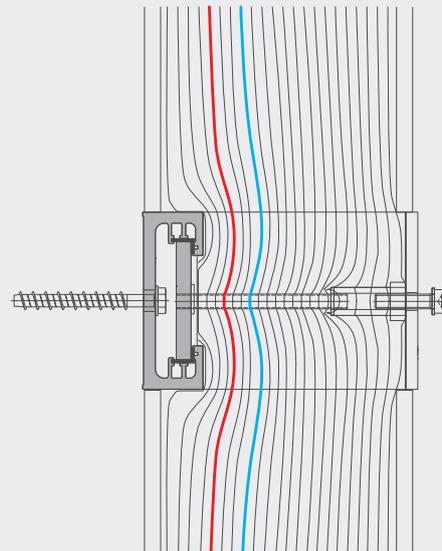
: $T_a = -5^\circ\text{C}$
inside: $T_i = 20^\circ\text{C}$

- External thermal transfer

: $R_a = 0.04\text{ m}^2\text{K/W}$
inside: $R_i = 0.13\text{ m}^2\text{K/W}$ (heat flow)
 $R_i = 0.25\text{ m}^2\text{K/W}$ (temperature)

Isotherm calculation

12.6° C isotherm ————
10.0° C isotherm ————



Results

- Minimum heat insulation

$f_{RSI} = 0.930 (>0.70)$
 $T = 18.13^\circ\text{C}$

Minimum heat insulation complied with

- Wall structure $U = 0.20\text{ W/m}^2\text{K}$
250 mm reinforced concrete
10 mm plaster
160 mm insulation WLG 035
10 mm reinforcing, plaster

- Extracts from relevant standards/norms

DIN 4108-2
DIN EN ISO 13788
DIN EN ISO 10211
DIN EN ISO 10077
DIN EN ISO 12631
DIN EN ISO 6946

- Thermal bridge surcharge for energy planning according to EnEV 2016

χ value of the punctiform thermal bridge
 $\chi = 0.277\text{ W/K}$

- Audit/test report of the thermal simulation

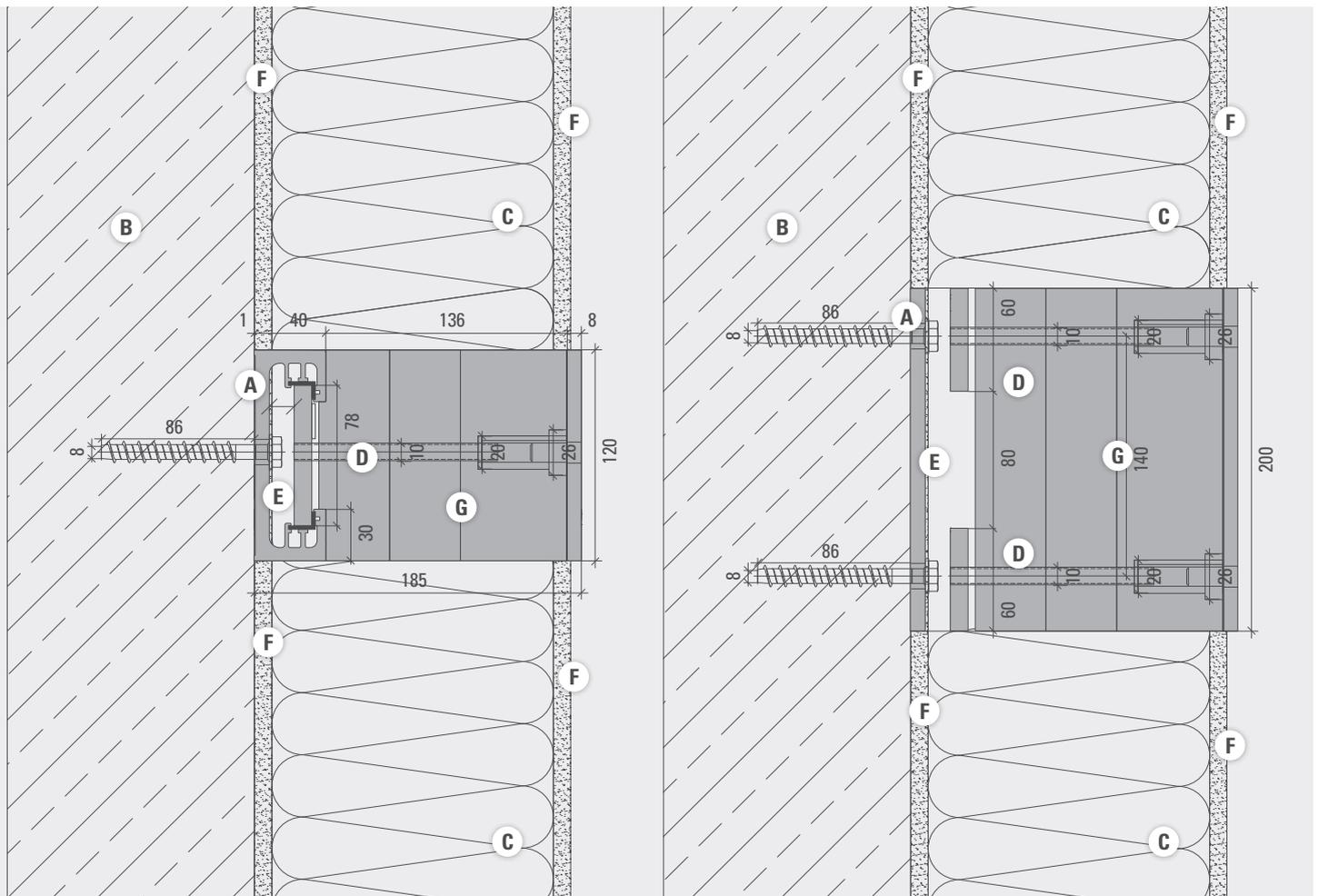
Audit/test report No.
FS_120_3000_WDVS_160_P

Linear connection

FIX'N SLIDE	Insulation thickness mm	χ value W/K	$f_{RSI} > 0.70$	T °C
100	80	0.507	0.870	16.63
	160	0.250	0.930	18.20
	300	0.130	0.960	19.02
120	80	0.546	0.860	16.52
	160	0.277	0.930	18.13
	300	0.140	0.960	18.99

THERMAL INSULATION CALCULATIONS

Point-to-point connection purs. DIN 4108-2 and χ -value calculation (example)



Materials

	λ [W/(m·K)]	ϵ
A Aluminium profile	160.000	0.900
B Concrete reinforced (with 2% steel)	2,500	0,900
C Insulation WLG 035	0.035	0.900
D Stainless steel	17.00	0.900
E Air		
F Plaster	0.870	0.900
G Pressure-resistant system insulation	0.083	0.900

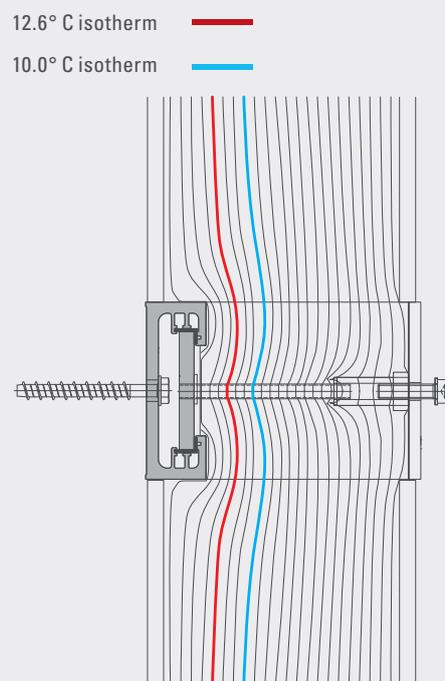
Characteristics

- Construction component (W x H x L)
120 x 185 x 200 mm
- 140 mm dowel spacing
- 140 mm tension rod/sleeve spacing

Constraints

- Exterior temperatures
: $T_a = -5^\circ\text{C}$
inside: $T_i = 20^\circ\text{C}$
- External thermal transfer
: $R_a = 0.04\text{ m}^2\text{K/W}$
inside: $R_i = 0.13\text{ m}^2\text{K/W}$ (heat flow)
 $R_i = 0.25\text{ m}^2\text{K/W}$ (temperature)
- Thermal bridge surcharge for
Energy planning according to EnEV 2016
Xi value of the punctiform
thermal bridge
= 0.028 W/K

Isotherm calculation



Results

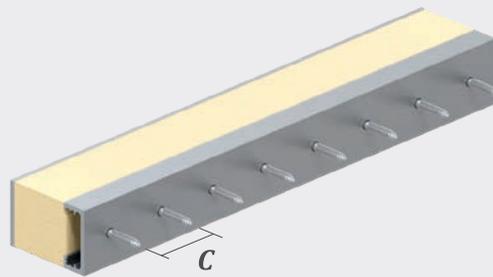
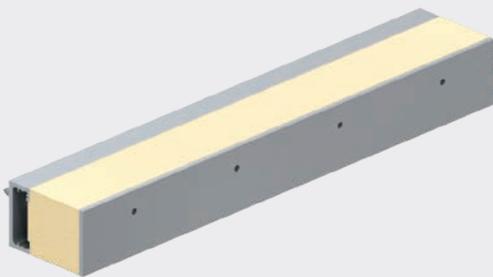
- Minimum heat insulation
 $f_{RSI} = 0.94 (>0.70)$
 $T = 18.51^\circ\text{C}$
- **Minimum heat insulation complied with**
 - Wall structure $U = 0.20\text{ W/m}^2\text{K}$
250 mm reinforced concrete
10 mm plaster
160 mm Insulation WLG 035
10 mm reinforcing, plaster
 - Audit/test report of the thermal simulation
Audit/test report No.
FS_120_0200_WDVS_160_D
 - Extracts from relevant standards/norms
DIN 4108-2, DIN EN ISO 13788, DIN EN ISO 10211, DIN EN ISO 10077, DIN EN ISO 12631
DIN EN ISO 6946

Point-to-point connection

FIX'N SLIDE	Insulation thickness mm	Xi value W/K	f_{RSI} >70	T °C
48	80	0.030	0.900	17.43
	160	0.012	0.950	18.64
	300	0.006	0.970	19.25
60	80	0.049	0.890	17.27
	160	0.019	0.940	18.59
	300	0.009	0.970	19.23
80	80	0.053	0.890	17.24
	160	0.020	0.940	18.57
	300	0.010	0.970	19.22
100	80	0.060	0.890	17.19
	160	0.026	0.940	18.53
	300	0.014	0.970	19.19
120	80	0.065	0.890	17.16
	160	0.028	0.940	18.51
	300	0.014	0.970	19.19

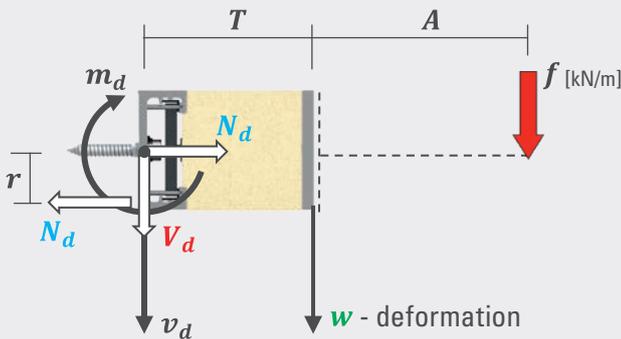
DIMENSIONING

linear connection (action perpendicular to element axis)

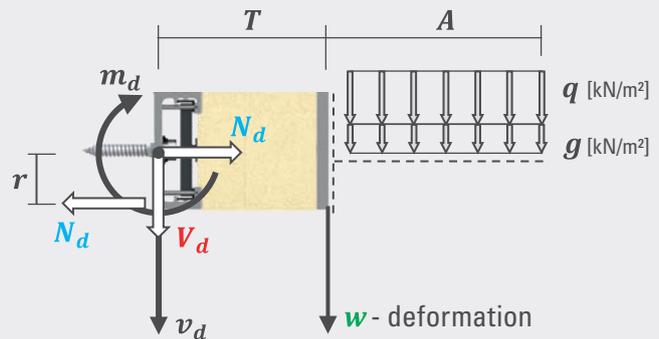


Actions / effects

Example 1 – linear action:



Example 2 – area load (q) and dead weight (g):



Limit state of carrying capacity $m_d \leq m_{R,d}$ and $v_d \leq v_{R,d}$

Calculated values of the linear bearing moments m_d and the linear bearing forces v_d :

Example 1

$$v_d \text{ [kN/m]} = \gamma_Q \cdot f \text{ [kN/m]}$$

$$m_d \text{ [kNm/m]} = v_d \text{ [kN/m]} \cdot (T_{[m]} + A_{[m]})$$

Example 2

$$v_d \text{ [kN/m]} = (\gamma_Q \cdot q_{[kN/m^2]} + \gamma_G \cdot g_{[kN/m^2]}) \cdot A_{[m]}$$

$$m_d \text{ [kNm/m]} = v_d \text{ [kN/m]} \cdot (T_{[m]} + A_{[m]}/2)$$

	T [mm]	to 90	90-100	100-120	120-140	140-160	160-180	180-200	200-220	220-240	240-260	260-280	280-300	300-320
FS 48	$m_{R,d}$ [kNm/m]	0.76	0.72	0.66	0.6	0.56	0.53	0.50	0.48	0.46	0.44	0.42	0.41	0.39
	$v_{R,d}$ [kN/m]	8.5	7.2	5.5	4.3	3.5	3.0	2.5	2.2	1.9	1.7	1.5	1.4	1.3
FS 60	$m_{R,d}$ [kNm/m]	1.00	1.32	1.20	1.11	1.04	0.98	0.93	0.88	0.85	0.81	0.78	0.75	0.73
	$v_{R,d}$ [kN/m]	15.5	13.2	10.0	8.0	6.5	5.5	4.7	4.0	3.6	3.2	2.8	2.5	2.3
FS 80	$m_{R,d}$ [kNm/m]	2.77	2.55	2.20	1.95	1.75	1.59	1.46	1.35	1.26	1.18	1.12	1.06	1.00
	$v_{R,d}$ [kN/m]	30.8	25.5	18.4	13.9	10.9	8.9	7.3	6.2	5.3	4.6	4.0	3.6	3.2
FS 100	$m_{R,d}$ [kNm/m]	4.24	3.98	3.56	3.25	2.99	2.79	2.62	2.47	2.34	2.23	2.14	2.05	1.97
	$v_{R,d}$ [kN/m]	47.1	39.8	29.7	23.2	18.7	15.5	13.1	11.3	9.8	8.6	7.7	6.9	6.2
FS 120	$m_{R,d}$ [kNm/m]	7.76	7.19	6.31	5.65	5.14	4.72	4.38	4.09	3.84	3.63	3.44	3.28	3.13
	$v_{R,d}$ [kN/m]	52.4	52.4	52.4	40.4	32.1	26.3	21.9	18.6	16.0	14.0	12.3	11.0	9.8

The values $m_{R,d}$ and $v_{R,d}$ in the table above apply to continuous and temporary measurement situations with short and/or long load duration (e.g. exposure to wind, snow or traffic loads and their combinations with the construction component weight). In load situations with predominantly permanent effects (e.g. only impact from the construction component weight), the values $m_{R,d}$ and $v_{R,d}$ from the table above should be multiplied by a reduction factor of 0.75. If dynamic, multi-axial or other special impact or effects which can result from adverse external influences (e.g. in exposed installation situations) must be taken into account, a separate consideration/calculation must take place.

Limit state of serviceability (deformation)

Characteristic values of the linear bearing moments m :

Example 1 – linear action:

$$m_{[kNm/m]} = f_{[kN/m]} \cdot (T_{[m]} + A_{[m]})$$

Example 2 – area load and dead weight:

$$m_{[kNm/m]} = (q_{[kN/m^2]} + g_{[kN/m^2]}) \cdot A_{[m]} \cdot (T_{[m]} + A_{[m]}/2)$$

Existing deformation w at the front edge of the FS element as a function of the element depth T and the characteristic linear moment m :

	T [mm]	to 90	90-100	100-120	120-140	140-160	160-180	180-200	200-220	220-240	240-260	260-280	280-300	300-320
	m [kNm/m]	existing deformation w [mm]*												
FS 48	to 0.20	<1	<1	2	3	3	3	4	4	5	5	5	5	5
	0.20 - 0.25	<1	<1	2	3	3								
	0.25 - 0.30	<1	<1	2	3	3								
FS 60	to 0.20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	2
	0.20 - 0.30	<1	<1	<1	<1	<1	2	2	2	2	3	3	3	4
	0.30 - 0.40	<1	<1	<1	2	2	2	3	3	4	4			
	0.40 - 0.50	<1	<1	<1	2	3	3	4						
	0.50 - 0.60	<1	<1	2	3	3	4							
FS 80	to 0.20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	2
	0.20 - 0.40	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	2	3	4
	0.40 - 0.60	<1	<1	<1	<1	<1	<1	<1	2	3	3	4		
	0.60 - 0.80	<1	<1	<1	<1	<1	2	2	3	4	5			
	0.80 - 1.00	<1	<1	<1	<1	2	3	3	4					
	1.00 - 1.20	<1	<1	<1	2	3	3							
FS 100	to 0.25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	2
	0.25 - 0.50	<1	<1	<1	<1	<1	<1	<1	2	2	2	2	2	3
	0.50 - 0.75	<1	<1	<1	<1	<1	<1	2	2	2	3	3	4	4
	0.75 - 1.00	<1	<1	<1	<1	<1	<1	2	2	3	3	4	5	5
	1.00 - 1.25	<1	<1	<1	<1	2	2	2	3	3	4			
	1.25 - 1.50	<1	<1	<1	<1	2	2	2	3	4				
	1.50 - 1.75	<1	<1	<1	<1	2	2	3	4					
FS 120	to 1.00	<1	<1	<1	<1	<1	<1	<1	<1	2	2	2	2	3
	1.00 - 1.25	<1	<1	<1	<1	<1	<1	2	2	2	2	3	3	4
	1.25 - 1.75	<1	<1	<1	<1	<1	<1	2	2	3	3	4	4	5
	1.75 - 2.00	<1	<1	<1	<1	<1	2	2	3	3	4	4	5	6
	2.00 - 2.25	<1	<1	<1	<1	2	2	2	3	4	4	5	6	
	2.25 - 2.75	<1	<1	<1	<1	2	2	3	3	4				
	2.75 - 3.25	<1	<1	<1	<1	2	2	3	4					

* For particularly deformation-sensitive installation situations and under high continuous loads, it is advisable to use a larger Fix 'n Slide (FS) element. The values are to be understood as expected deformation. The influence of the rigidity of the substructure has not been taken into account.

Bearing forces:

$$N_{d[kN]} = m_{d[kNm/m]} \cdot C_{[m]} / r_{[m]}$$

$$V_{d[kN]} = v_{d[kNm/m]} \cdot C_{[m]}$$

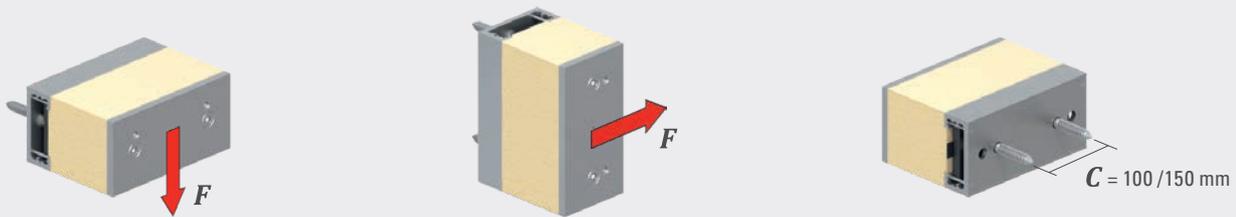
$C = \text{e.g. } 0.1 \text{ m}$

	FS 48	FS 60	FS 80	FS 100	FS 120
$r_{[m]}$	0.023	0.028	0.038	0.047	0.057

The proofs of the load input and forwarding and those for the substructure are not included/provided with the proofs for the FS elements.

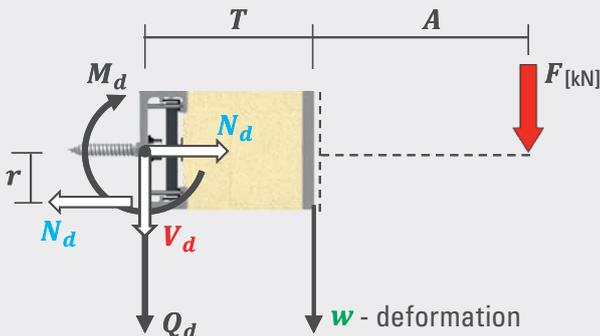
DIMENSIONING

Point-to-point connection (action perpendicular to element axis)



Actions / effects

Example – single load:



limit state of carrying capacity $M_d \leq M_{R,d}$ and $Q_d \leq Q_{R,d}$

Calculated values of the linear bearing moments M_d and the bearing forces Q_d per element 200 mm:

$$Q_{d [kN]} = \gamma_Q \cdot F_{[kN]}$$

$$M_{d [kNm]} = Q_{d [kN]} \cdot (T_{[m]} + A_{[m]})$$

	T [mm]	to 90	90-100	100-120	120-140	140-160	160-180	180-200	200-220	220-240	240-260	260-280	280-300	300-320
FS 48	$M_{R,d}$ [kNm]	0.26	0.25	0.23	0.22	0.20	0.19	0.18	0.18	0.17	0.16	0.16	0.16	0.15
	$Q_{R,d}$ [kN]	1.9	1.9	1.9	1.6	1.3	1.1	0.9	0.8	0.7	0.7	0.6	0.6	0.5
FS 60	$M_{R,d}$ [kNm]	0.35	0.34	0.32	0.3	0.29	0.28	0.27	0.26	0.26	0.25	0.24	0.24	0.23
	$Q_{R,d}$ [kN]	3.9	3.4	2.7	2.2	1.8	1.6	1.4	1.2	1.1	1.0	0.9	0.8	0.8
FS 80	$M_{R,d}$ [kNm]	0.74	0.70	0.65	0.60	0.57	0.54	0.51	0.49	0.47	0.45	0.44	0.43	0.41
	$Q_{R,d}$ [kN]	7.6	7.0	5.4	4.3	3.6	3.0	2.6	2.3	2.0	1.8	1.6	1.5	1.3
FS 100	$M_{R,d}$ [kNm]	1.32	1.26	1.16	1.08	1.01	0.96	0.91	0.87	0.84	0.81	0.78	0.76	0.74
	$Q_{R,d}$ [kN]	10.5	10.5	8.5	6.9	5.8	5.0	4.3	3.8	3.4	3.1	2.8	2.6	2.4
FS 120	$M_{R,d}$ [kNm]	1.88	1.81	1.70	1.61	1.54	1.48	1.42	1.38	1.34	1.30	1.27	1.24	1.21
	$Q_{R,d}$ [kN]	10.5	10.5	10.5	10.5	9.1	7.8	6.9	6.1	5.5	4.9	4.5	4.1	3.8

The values $M_{R,d}$ and $Q_{R,d}$ in the table above apply to continuous and temporary measurement situations with short and/or long load duration (e.g. exposure to wind, snow or traffic loads and their combinations with the construction component weight). In load situations with predominantly permanent effects (e.g. only impact from the construction component weight), the values $M_{R,d}$ and $Q_{R,d}$ from the table above should be multiplied by a reduction factor of 0.75. If dynamic, multi-axial or other special impact or effects which can result from adverse external influences (e.g. in exposed installation situations) must be taken into account, a separate consideration/calculation must take place.

Limit state of serviceability (deformation)

Characteristic values of the linear bearing moments M :

$$M_{[kNm]} = F_{[kN]} \cdot (T_{[m]} + A_{[m]})$$

Existing deformation w at the front edge of the FS element as a function of the element depth T and the characteristic linear moment M :

	T [mm]	to 90	90-100	100-120	120-140	140-160	160-180	180-200	200-220	220-240	240-260	260-280	280-300	300-320	
	M [kNm]	existing deformation w [mm]*													
FS 48	to 0.05	<1	<1	<1	<1	<1	2	2	3	3	3	3	3	4	
	0.05 - 0.10	<1	<1	<1	2	2									
	0.10 - 0.15	<1	2	2											
FS 60	to 0.05	<1	<1	<1	<1	<1	<1	<1	2	2	2	2	2	2	
	0.05 - 0.10	<1	<1	<1	2	2	2	3	3	3	4	4	5	5	
	0.10 - 0.15	<1	<1	2	2	3	4	4							
	0.15 - 0.20	<1	2												
FS 80	to 0.05	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	2	
	0.05 - 0.10	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	2	2	3	
	0.10 - 0.20	<1	<1	<1	<1	<1	<1	2	2	3	3	4	5	5	
	0.20 - 0.30	<1	<1	<1	2	2	3	3	4						
	0.30 - 0.40	<1	<1	2	3	3									
FS 100	to 0.10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	0.10 - 0.20	<1	<1	<1	<1	<1	<1	<1	<1	2	2	2	2	3	
	0.20 - 0.30	<1	<1	<1	<1	2	2	2	3	3	3	4	4	5	
	0.30 - 0.40	<1	<1	<1	2	3	3	4							
	0.40 - 0.50	<1	<1	2											
	0.50 - 0.60	<1	<1												
FS 120	to 0.40	<1	<1	<1	<1	<1	<1	2	2	2	2	3	3	3	
	0.40 - 0.50	<1	<1	<1	<1	2	2	2	2	3	3	4	4	4	
	0.50 - 0.60	<1	<1	<1	<1	2	2	3	3	4	4	5	5	6	
	0.60 - 0.70	<1	<1	<1	2	2	3	3	4	5	5				
	0.70 - 0.80	<1	<1	<1	2	3	3	4							
	0.80 - 0.90	<1	<1	2	2										
	0.90 - 1.00	<1	<1	2											

* For particularly deformation-sensitive installation situations and under high continuous loads, it is advisable to use a larger Fix 'n Slide (FS) element. The values are to be understood as expected deformation. The influence of the rigidity of the substructure has not been taken into account.

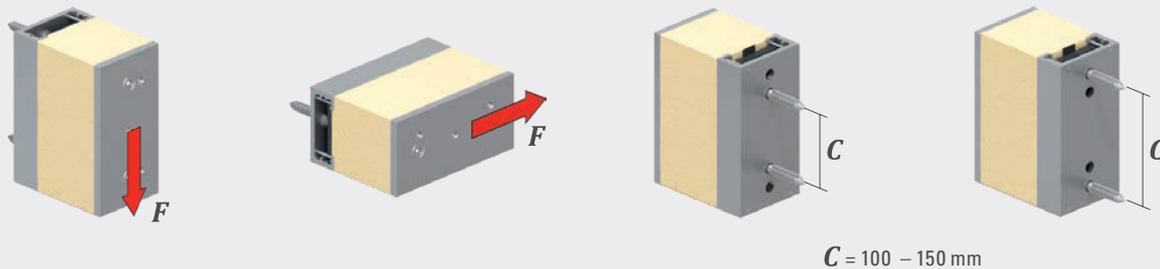
Bearing forces per connection (dowel / screw): $N_d_{[kN]} = M_d_{[kNm]} / (r_{[m]} \cdot 2)$ $V_d_{[kN]} = Q_d_{[kN]} / 2$

	FS 48	FS 60	FS 80	FS 100	FS 120
$r_{[m]}$	0.023	0.028	0.038	0.047	0.057

The proofs of the load input and forwarding and those for the substructure are not included/provided with the proofs for the FS elements.

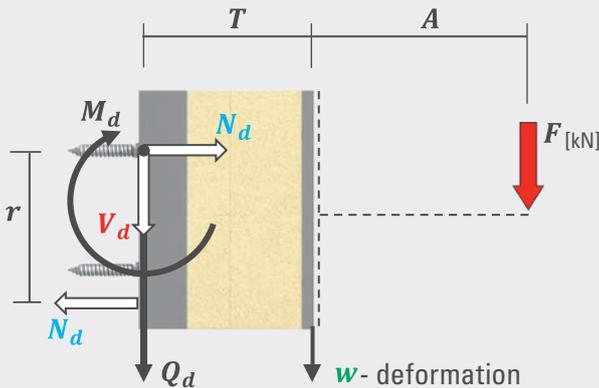
DIMENSIONING

Point-to-point connection (action parallel to element axis)



Actions / effects

Example – single load:



limit state of carrying capacity $M_d \leq M_{R,d}$ and $Q_d \leq Q_{R,d}$

Calculated values of the linear bearing moments M_d and the bearing forces Q_d per element 200 mm:

$$Q_{d [kN]} = \gamma_Q \cdot F_{[kN]}$$

$$M_{d [kNm]} = Q_{d [kN]} \cdot (T_{[m]} + A_{[m]})$$

	T [mm]	to 90	90-100	100-120	120-140	140-160	160-180	180-200	200-220	220-240	240-260	260-280	280-300	300-320
FS 48	$M_{R,d}$ [kNm]	1.10	1.07	1.01	0.96	0.92	0.89	0.86	0.83	0.81	0.79	0.77	0.75	0.74
	$Q_{R,d}$ [kN]	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
FS 60	$M_{R,d}$ [kNm]	1.78	1.72	1.63	1.55	1.49	1.44	1.39	1.35	1.31	1.28	1.25	1.23	1.20
	$Q_{R,d}$ [kN]	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
FS 80	$M_{R,d}$ [kNm]	1.48	1.44	1.37	1.31	1.26	1.22	1.19	1.16	1.13	1.10	1.08	1.06	1.04
	$Q_{R,d}$ [kN]	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.3
FS 100	$M_{R,d}$ [kNm]	3.61	3.36	2.97	2.67	2.44	2.25	2.10	1.96	1.85	1.75	1.67	1.59	1.52
	$Q_{R,d}$ [kN]	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
FS 120	$M_{R,d}$ [kNm]	2.85	2.66	2.35	2.12	1.94	1.8	1.67	1.57	1.48	1.41	1.34	1.28	1.22
	$Q_{R,d}$ [kN]	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.3	3.9

The values $M_{R,d}$ and $Q_{R,d}$ in the table above apply to continuous and temporary measurement situations with short and/or long load duration (e.g. exposure to wind, snow or traffic loads and their combinations with the construction component weight). In load situations with predominantly permanent effects (e.g. only impact from the construction component weight), the values $M_{R,d}$ and $Q_{R,d}$ from the table above should be multiplied by a reduction factor of 0.75. If dynamic, multi-axial or other special impact or effects which can result from adverse external influences (e.g. in exposed installation situations) must be taken into account, a separate consideration/calculation must take place.

Limit state of serviceability (deformation)

Characteristic values of the linear bearing moments M :

$$M_{[kNm]} = F_{[kN]} \cdot (T_{[m]} + A_{[m]})$$

Existing deformation w at the front edge of the FS element as a function of the element depth T and the characteristic linear moment M :

	T [mm]	to 90	90-100	100-120	120-140	140-160	160-180	180-200	200-220	220-240	240-260	260-280	280-300	300-320
	M [kNm]	existing deformation w [mm]*												
FS 48	to 0.20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	0.20 - 0.30	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	0.30 - 0.40	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	2
	0.40 - 0.50	<1	<1	<1	<1	<1	<1	<1	<1	2	2	2	2	2
	0.50 - 0.60	<1	<1	<1	<1	<1	<1	2	2	2	2	3	3	3
FS 60	to 0.30	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	0.30 - 0.40	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	0.40 - 0.50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	0.50 - 0.60	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	0.60 - 0.70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	0.70 - 0.80	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	2	2
FS 80	to 0.30	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	0.30 - 0.40	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	0.40 - 0.50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2
	0.50 - 0.60	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	2	2
	0.60 - 0.70	<1	<1	<1	<1	<1	<1	<1	<1	2	2	2	2	2
	0.70 - 0.80	<1	<1	<1	<1	<1	<1	2	2	2	2	2	3	3
FS 100	to 0.50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	0.50 - 0.75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	2	2
	0.75 - 1.00	<1	<1	<1	<1	<1	<1	<1	2	2	2	2	2	2
	1.00 - 1.25	<1	<1	<1	<1	2	2	2	2	2	3	3	3	3
	1.25 - 1.50	<1	<1	<1	2	2	2	2	3	3	3	4	4	4
FS 120	to 0.50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	0.50 - 0.75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	2	2
	0.75 - 1.00	<1	<1	<1	<1	<1	<1	<1	2	2	2	2	2	3
	1.00 - 1.25	<1	<1	<1	<1	<1	2	2	2	2	3	3	3	4
	1.25 - 1.50	<1	<1	<1	2	2	2	2	3	3	4	4	5	5

* For particularly deformation-sensitive installation situations and under high continuous loads, it is advisable to use a larger Fix 'n Slide (FS) element. The values are to be understood as expected deformation. The influence of the rigidity of the substructure has not been taken into account.

Bearing forces per connection (dowel / screw): $N_{d [kN]} = M_{d [kNm]} / r_{[m]}$ $V_{d [kN]} = Q_{d [kN]} / 2$

	when $C = 100$ mm					when $C = 150$ mm				
	FS 48	FS 60	FS 80	FS 100	FS 120	FS 48	FS 60	FS 80	FS 100	FS 120
$r_{[m]}$	0.135	0.137	0.140	0.143	0.144	0.158	0.159	0.161	0.162	0.163

The proofs of the load input and forwarding and those for the substructure are not included/provided with the proofs for the FS elements.

INSTALLATION MANUAL LINEAR CONNECTION

1



Slide the plastic elements for thermal bridging reduction into the areas of the aluminium mounting rail provided for this purpose.

2



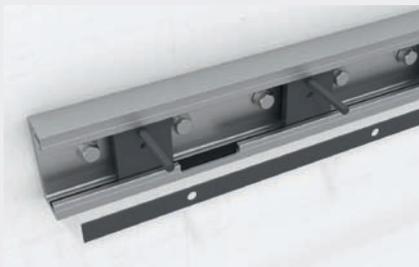
Determine the attachment points using the aluminium mounting rail. Attach the aluminium mounting rail to the substructure or building element with regulated/approved means of connection.

3



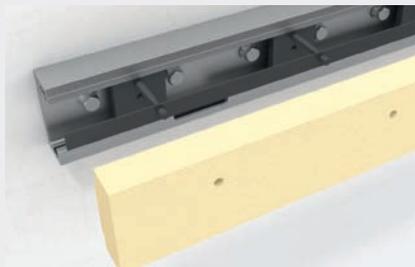
Screw the tension-resistant threaded rods into the insert plates and guide the insert plates into the aluminium mounting rail.

4



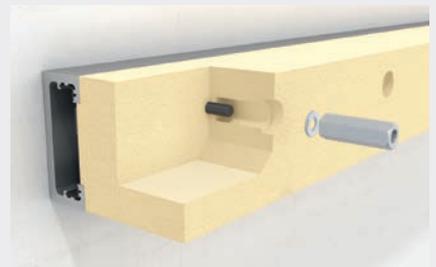
Align the insert plates according to the attachment points of the add-on element by sliding. Secure the insert plates with the pre-drilled installation aid.

5



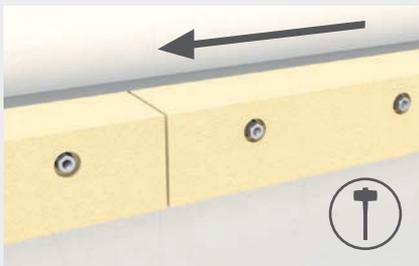
Slide the pre-drilled insulating elements over the threaded rods.

6



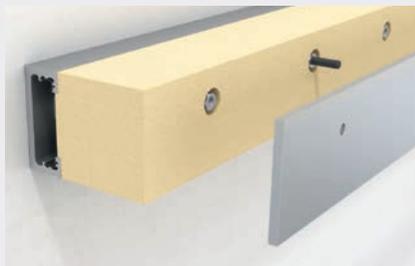
Insert the washers and threaded sleeves on the threaded rods and fasten them with a tightening torque of 10 Nm.

7



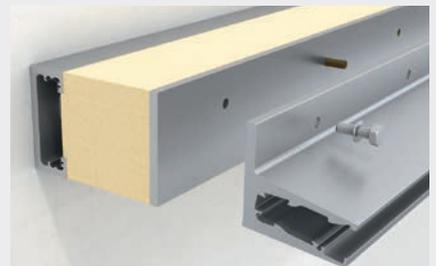
After attaching the first insulating elements, slide the other elements end-to-end together (if the case may be, knock with a hammer).

8



To help with installing, insert a bolt into a threaded sleeve and attach the optional aluminium connection plate with self-adhesive EPDM tape to the insulating element.

9



Align the attachment (here CANOPY CLOUD from GLASSLINE) with a bolt. Fasten the attachment to the substructure with regulated/approved means of connecting with a tightening torque of 24 Nm for M10 or M12 Nm for M8.

All screw connections must be secured against loosening with appropriate measures.

INSTALLATION MANUAL POINT-TO-POINT CONNECTION

1



Determine the attachment points using the U-profile. Attach the U-profile to the sub-structure or building element with regulated/ approved means of connection.

2



Screw the tension-resistant threaded rods into the insert plates.

3



Guide the insert plates into the aluminium mounting rail.

4



Align the insert plates by sliding them on the pre-drilled installation aid and fix them.

5



Slide the pre-drilled insulating elements over the threaded rods.

6



Insert the washers and threaded sleeves on the threaded rods and fasten them with a tightening torque of 10 Nm.

7



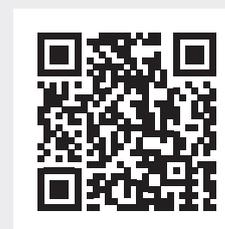
Mount an adapter plate with regulated/ approved means of connecting with a tightening torque of 24 Nm for M10 or 12 Nm for M8.

Installation video
Linear connection



www.glassline.de/fs-linear

Installation video
Point-to-point connection



www.glassline.de/fs-punktuell

All screw connections must be secured against loosening with appropriate measures.

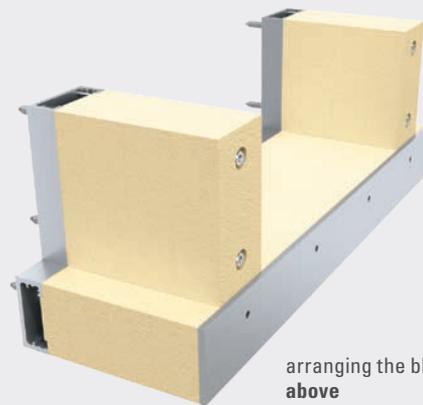
REINFORCEMENT SOLUTIONS

by FIX[®]N SLIDE

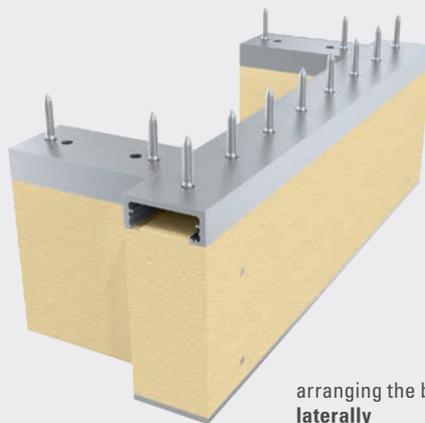
Arrangement of the stiffening elements



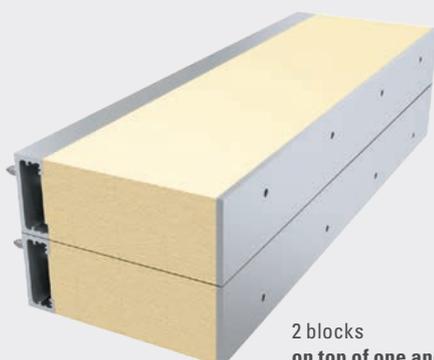
arranging the blocks **below**



arranging the blocks **above**



arranging the blocks **laterally**



2 blocks **on top of one another**



2 blocks **next to one another**

PRODUCT INQUIRY FIX'N SLIDE

Name _____

Company _____

Street address _____

Postcode/ City _____

Telephone _____

Telefax _____

Email _____

(Please fill in all fields)

The speedy inquiry:

- Print/save inquiry
- Fill in
- Fax to **+49 (0) 6291/6259-11** or
by email to **info@glassline.de**
Your inquiry will be processed
as soon as possible.

Construction project _____

FIX'N SLIDE

POINT-TO-POINT CONNECTION

_____ piece(s)



- Optional
adapter plate
(stainless steel)

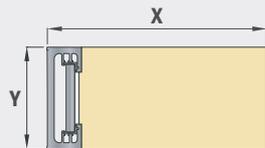
LINEAR CONNECTION

_____ piece(s)



- Optional
connecting plate
(aluminium, surface
E6/EV1)

BLOCK HEIGHTS



Sizes Y:

- 48
 60
 80
 100
 120

Special heights on request

Block heights X:

48

- 50
 70
 80
 100
 120
 140
 160
 180
 200
 220
 240
 260
 280
 300

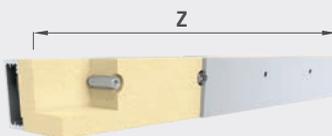
60 + 80

- 55
 75
 85
 105
 125
 145
 165
 185
 205
 225
 245
 265
 285
 305

100 + 120

- 65
 85
 95
 115
 135
 155
 175
 195
 215
 235
 255
 275
 295
 315

LINEAR CONNECTION



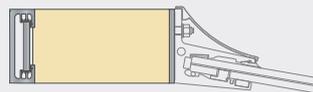
Lengths Z:

- 600 mm
 800 mm
 1400 mm
 1600 mm
 2000 mm
 2400 mm
 2.800 mm
 3.000 mm

Special lengths on request

FIX'N SLIDE FOR CANOPY CLOUD STOCK PROGRAM

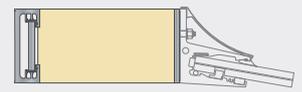
CANOPY CLOUD PROFILE TYPE 1



Lengths:

- 1400 mm _____ piece(s)
1600 mm _____ piece(s)
2000 mm _____ piece(s)
2400 mm _____ piece(s)

CANOPY CLOUD PROFILE TYPE 3



Lengths:

- 2400 mm _____ piece(s)
2800 mm _____ piece(s)

ACCESSORIES

FIX'N SLIDE VARIO system module: _____ piece(s)

GLASSLINE

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www.glassline.de

SYSTEM SOLUTIONS FOR SOPHISTICATED FRAMELESS GLASS ARCHITECTURE AND SECURE ATTACHMENT OF ADD-ON COMPONENTS TO ETICS

As a leading supplier, GLASSLINE develops, manufactures and sells high-quality system solutions in the areas of point fixing systems, all-glass railing systems, frameless canopy constructions and systems with thermal insulation for the secure attachment of add-on elements to building envelopes.

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- All drawings are sample applications. GLASSLINE assumes no guarantee or liability for a transferable application.
- Technical and design changes are reserved.
- All screw connections are permanent, e.g. to be secured against loosening with an adhesive bond.
- The pressure-resistant insulating elements must be protected against UV radiation and weathering.
- The object-specific application and the proofs for load input and forwarding are to be tested and provided on site.

