GLASSLINE

PLANNINGHANDBOOK

FIX'N SLIDE *panel facade*

SYSTEM WITH THERMAL SEPARATION FOR SECURE ATTACHMENT OF ADD-ON ELEMENTS TO THERMOPANEL BUILDING ENVELOPES

FIX"N SLIDE *panel facade*

FOR HALL CONSTRUCTION

- Reduction of thermal bridges
- Secure attachment of add-on elements
- Thermal properties/
  energy planning according to EnEV 2016
- Safe load introduction
- Variable attachment methods
- Modular and flexible
- Application-independent
  bridging of the insulation system
- Safety in case of fire
- Flexibly applicable – for new
  constructions or retrofitting

SMOOTH SHEET METAL THERMOPANEL

Page 18

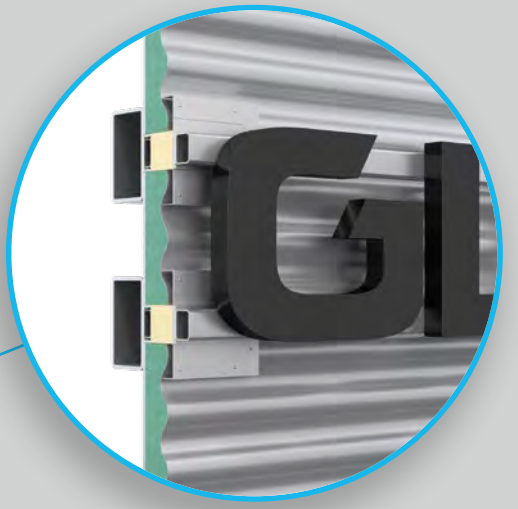
FIX'N

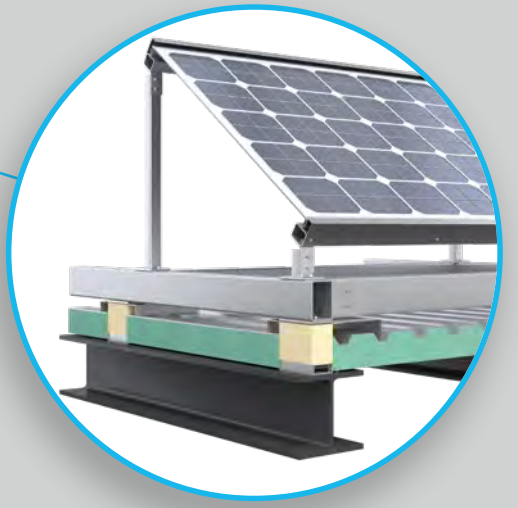
TRAPEZOIDAL SHEET METAL THERMOPANEL

Page 50

SLIDE

THERMAL PANEL
THERMOPANEL
Page 34

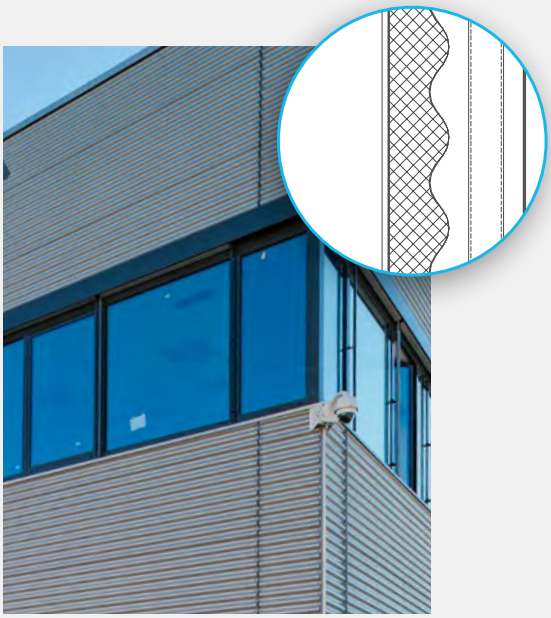




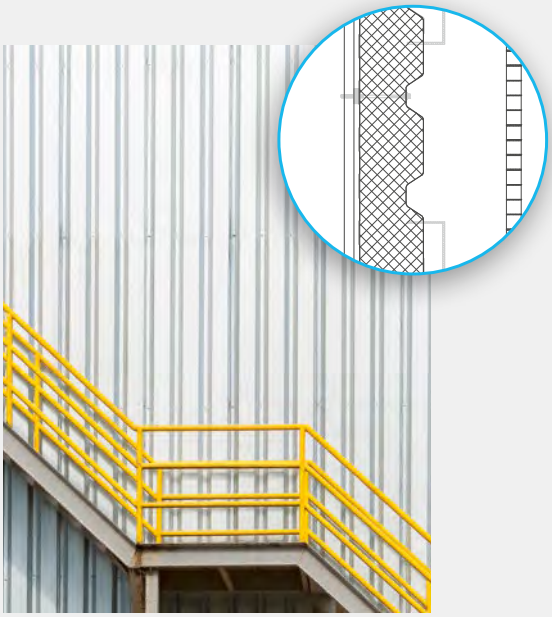
ROOF
THERMOPANEL
Page 66

CONTENTS

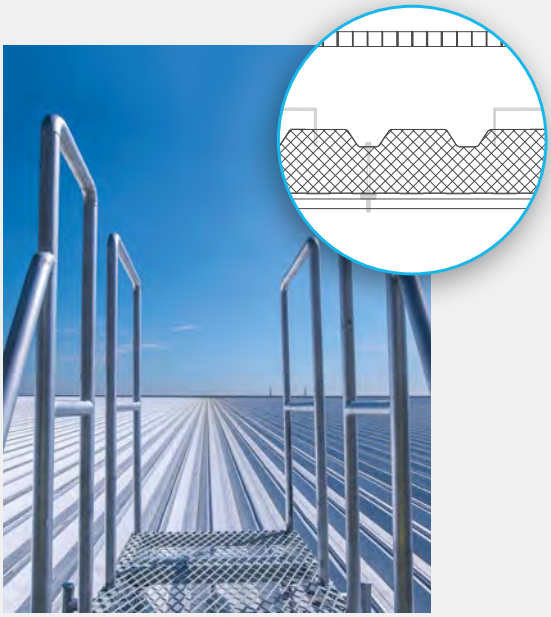
SMOOTH SHEET METAL
Page 18



THERMAL PANEL
Page 34



TRAPEZOIDAL SHEET METAL FACADE
Page 50



TRAPEZOIDAL SHEET METAL ROOF
Page 66

FIX"N SLIDE *panel facade*

COMPONENT ANCHORING WITH A SYSTEM THROUGH THE REDUCTION OF THERMAL BRIDGES

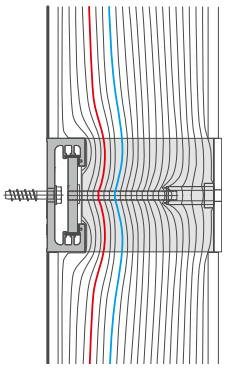
Flexible, easy to install and absolutely safe - the new FIX"N SLIDE revolutionises component assembly for thermopanel building envelopes. FIX"N SLIDE ensures the secure attachment of add-on elements and simultaneously reduces thermal bridges in new constructions and retrofitting.

With just a few components and different insulation thicknesses, almost every thickness of a thermopanel wall canbe thermally and statically bridged. FIX"N SLIDE accommodates every on-site situation as a rail for linear assembly and as a system component for point-to-point mounting. Both designs can also be combined.

THE ADVANTAGES

FOR THERMOPANEL BUILDING ENVELOPES

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



Isothermal flow

Thermal properties/energy planning according to EnEV 2016

The existing isothermal calculations/thermal verifications prove that the use of FIX'N SLIDE reduces the thermal bridges to a minimum. The system is ideally suited to energy planning in new constructions or installation in existing structures.

Safe load application

The system allows for a broad spectrum of application through the introduction of traction, shearing and torques.

Variable attachment method

Through the variable arrangement of the attachment elements, the load application can be optimally tailored to the substructure and optimised and adapted to the local conditions.

Modular and flexible

The system is modularly built and as flexible as the application requires. The different insulation thicknesses allow for easy bridging of every insulation thickness up to 315 mm.

Application-independent bridging of the insulation system

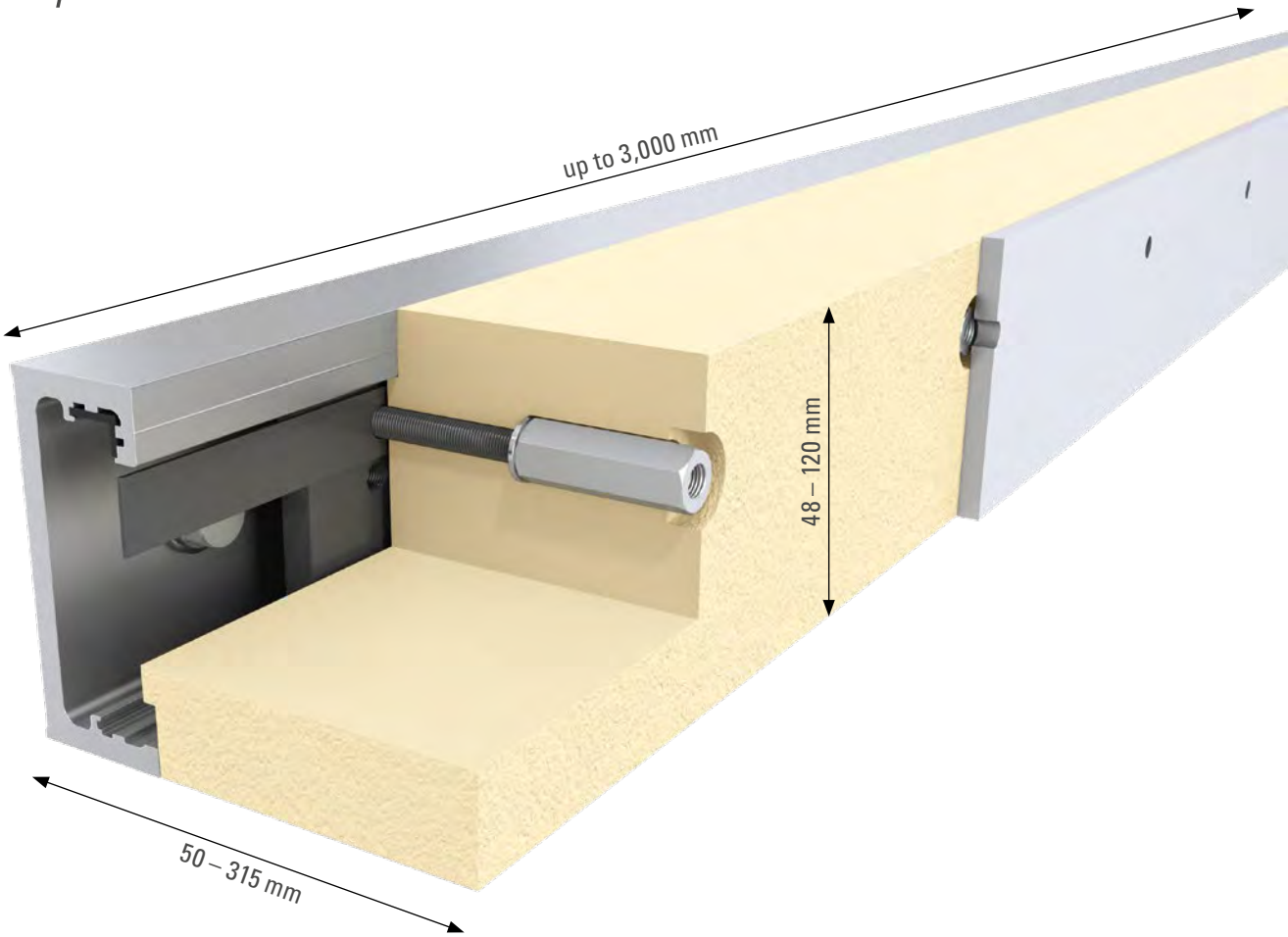
The slide-in bearing elements with their tensile threaded rods can be flexibly adapted to the supporting profile by being shifted. This makes the mounting of the aluminium rail to the substructure independent of the attachment of the add-on elements.

Safety in case of fire

In the event of failure, such as due to fire, constructive residual load-bearing capacity is guaranteed by the metallic supporting components.

Flexibly applicable – for new constructions or retrofitting

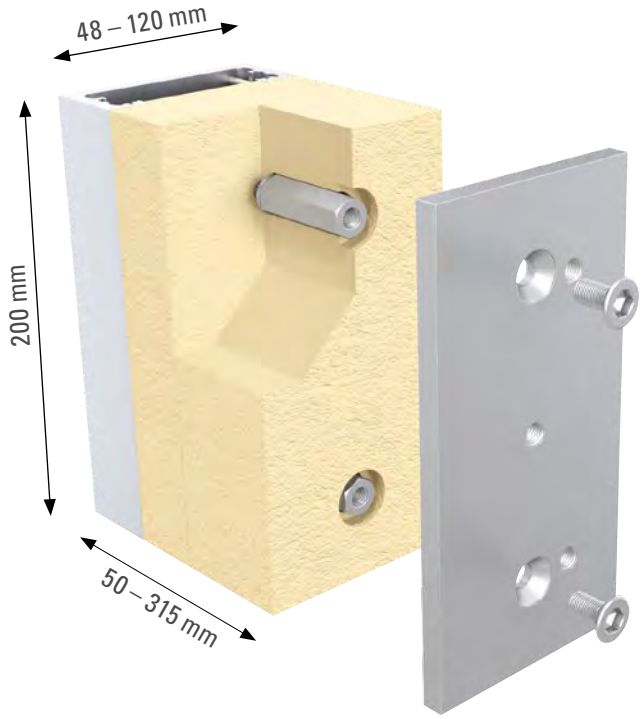
Advertising, canopies, awnings, photovoltaics and vertical ladders.



THE SYSTEM FOR LINEAR CONNECTION

The system is modularly built and as flexible as the application requires. The main components are application-independent aluminium rails for pre-assembly and connection to the substructure, slide-in plates made of stainless steel with tensile threaded rods and threaded sockets, pressure-resistant insulatingelements and an optional aluminium connecting plate.

- Rails in fixed bearing lengths and individual lengths up to 3,000 mm
- 5 system widths from 48 to 120 mm
- The holes can be additionally variably bored for attachment of the rails
- Insulation thicknesses of 50 to 315 mm
- Slide-in plates with tensile threaded rods can be adapted to the attachment points of the add-on elements by being shifted
- Optional aluminium flush plaster/connecting plate (8 mm thickness) with self-adhesive EPDM tape for outdoor use
- Pre-drilled insulating element for the mounting of threaded rods and threaded sockets, additional holes can be variably drilled



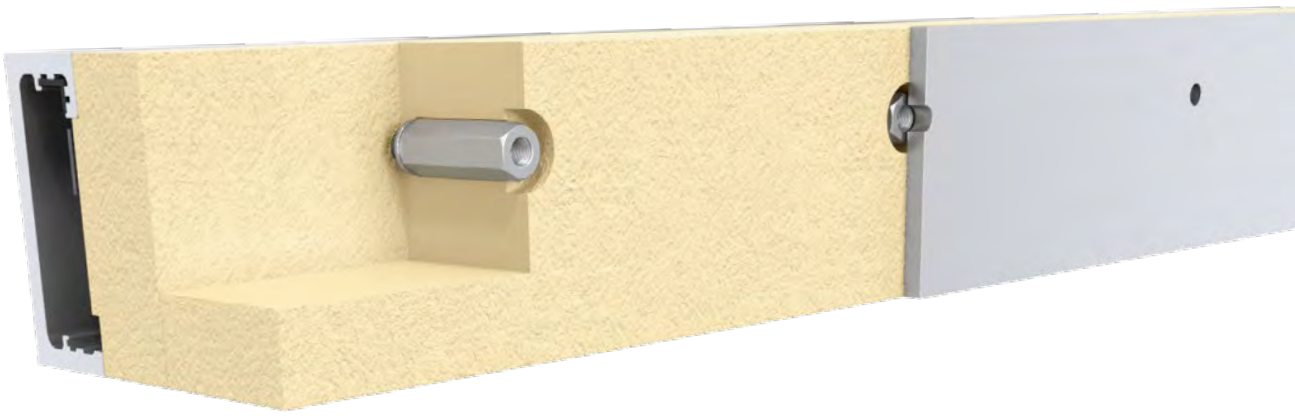
SYSTEM COMPONENT WITH ADAPTOR PLATES FOR POINT-TO-POINT CONNECTION

Strictly defined complete system. The main components are the C profile for pre-assembly and connection to the substructure, two slide-in plates made of stainless steel with tensile threaded rods and threaded sockets, pressure-resistant insulating elements and optional stainless steel adaptor plates.

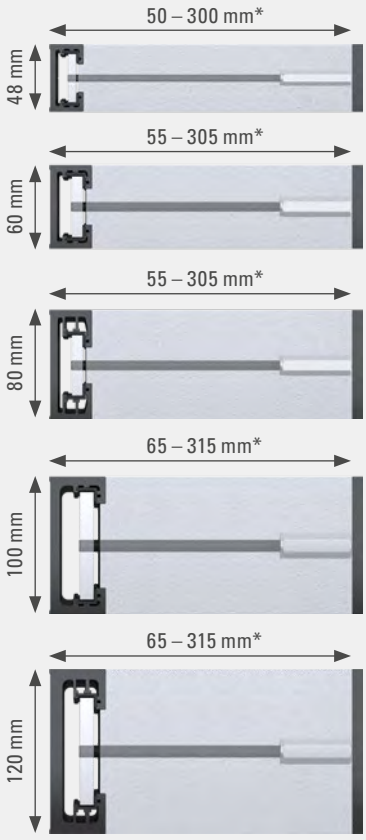
- Length 200 mm
- 5 system widths from 48 to 120 mm
- Strictly defined holes for attachment of the profile
- Insulation thicknesses of 50 to 315 mm
- Pre-drilled insulating elements for the mounting of the threaded rods and threaded sockets
- Optional stainless steel adaptor plates
- The attachment can also be used with or without on-site adaptor plates

THE SYSTEM

FOR LINEAR CONNECTION



FIX▪N SLIDE – LINEAR CONNECTION



48

Available depths without optional connecting plate

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

60

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

80

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

100

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

120

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

Available lengths

Further sizes upon request

600	800	1,200	1,400	1,600	2,000	2,400	2,800	3,000

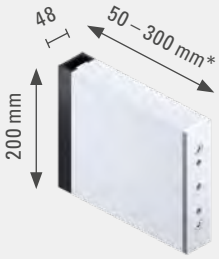
*Depths without an optional connecting plate t = 8 mm (aluminium, surface E6/EV1)

FOR POINT-TO-POINT CONNECTION

The system component can also be used with or without on-site adaptor plates for flexible mounting of attachments.

FIX▪N SLIDE – POINT-TO-POINT CONNECTION

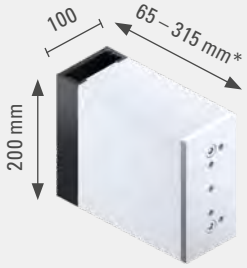
48



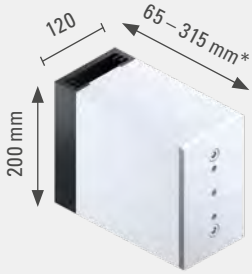
60

80

100



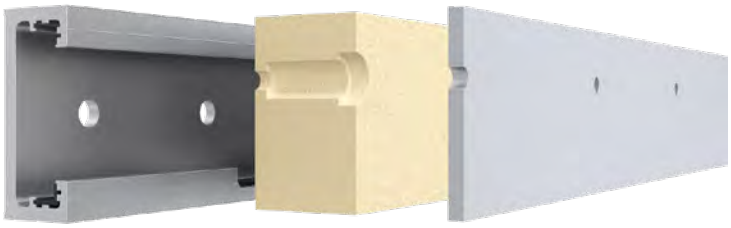
120



Available depths as in the case of a linear connection.

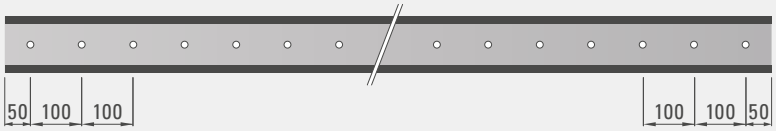
*Depths without an optional adaptor plate in stainless steel: 48, 60, 80 = 8 mm/100, 120 = 10 mm

BOREHOLE SPACINGS



LINEAR CONNECTION

ALUMINIUM RAIL BOREHOLE PATTERN



Aluminum rail	48	60 / 80	100 / 120
Borehole diameter	10	12	14.5

BOREHOLE PATTERN FOR INSULATING BLOCK AND CONNECTING PLATES (ALU)

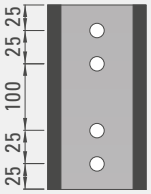
All system widths
Centred boreholes

System widths 100
Off-centre boreholes
Ideal for the GLASSLINE all-glass canopy system CANOPY CLOUD (profile type 1)

System widths 120
Off-centre boreholes
Ideal for the GLASSLINE all-glass canopy system CANOPY CLOUD (profile type 3)

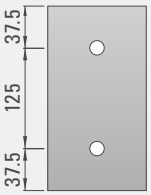
POINT-TO-POINT CONNECTION

ALUMINIUM RAIL BOREHOLE PATTERN

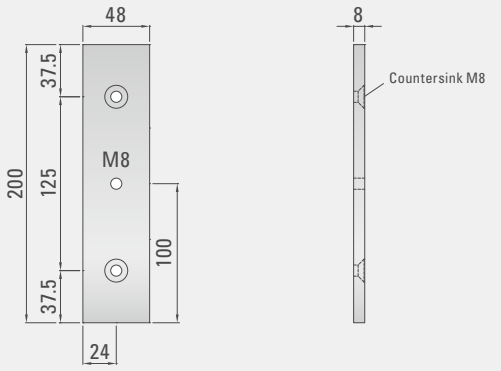


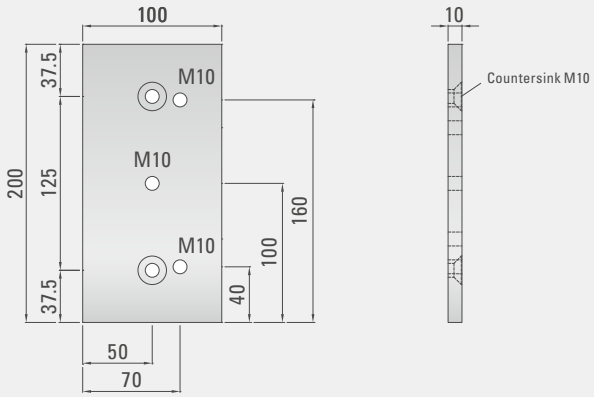
Aluminum rail	48	60 / 80	100 / 120
Borehole diameter	10	12	14.5

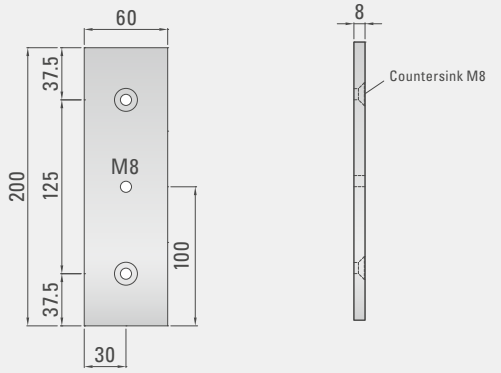
BOREHOLE PATTERN FOR INSULATING BLOCK WITH ADAPTOR PLATE

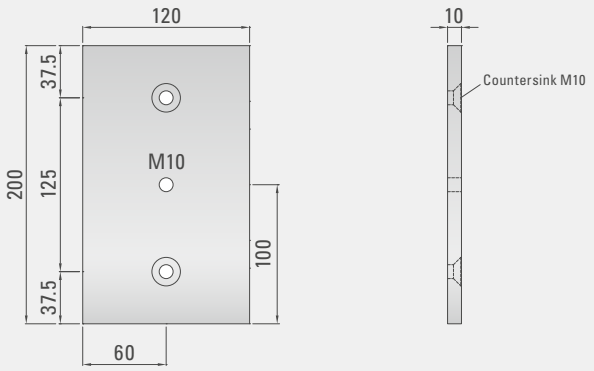


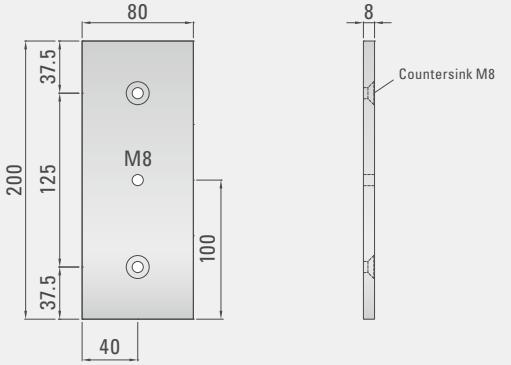
STAINLESS STEEL ADAPTOR PLATES





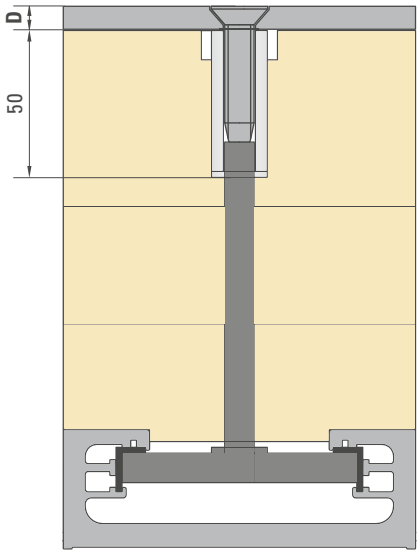


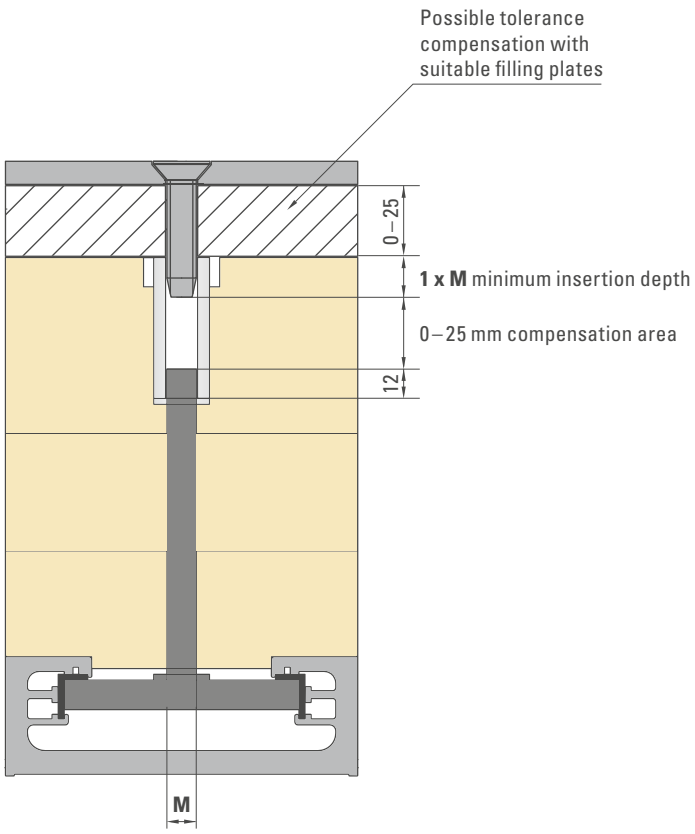




LEVEL COMPENSATION

WITH ON-SITE RELINING





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

VARIO SYSTEM MODULE

INFINITELY ADJUSTABLE
FOR INTERIOR CONSTRUCTION

The infinitely adjustable FIX'N SLIDE VARIO system module allows for the precise compensation of height differences in the on-site foundation of up to 30 mm in the mounting of wall elements, support posts and other components.

1

Screw 6 pressure pins into the base plate

2

Place the compensating plate with 2 screw connections on to the base plate

3

Screw both screw connections to the desired height

4

Move the compensating plate upwards against the screw connection using the pressure elements

5

Insertion of the 2 locking pins

INDUSTRIAL HALL WITH SMOOTH SHEET METAL THERMOPANEL AND CANOPY CLOUD

APPLICATION EXAMPLES

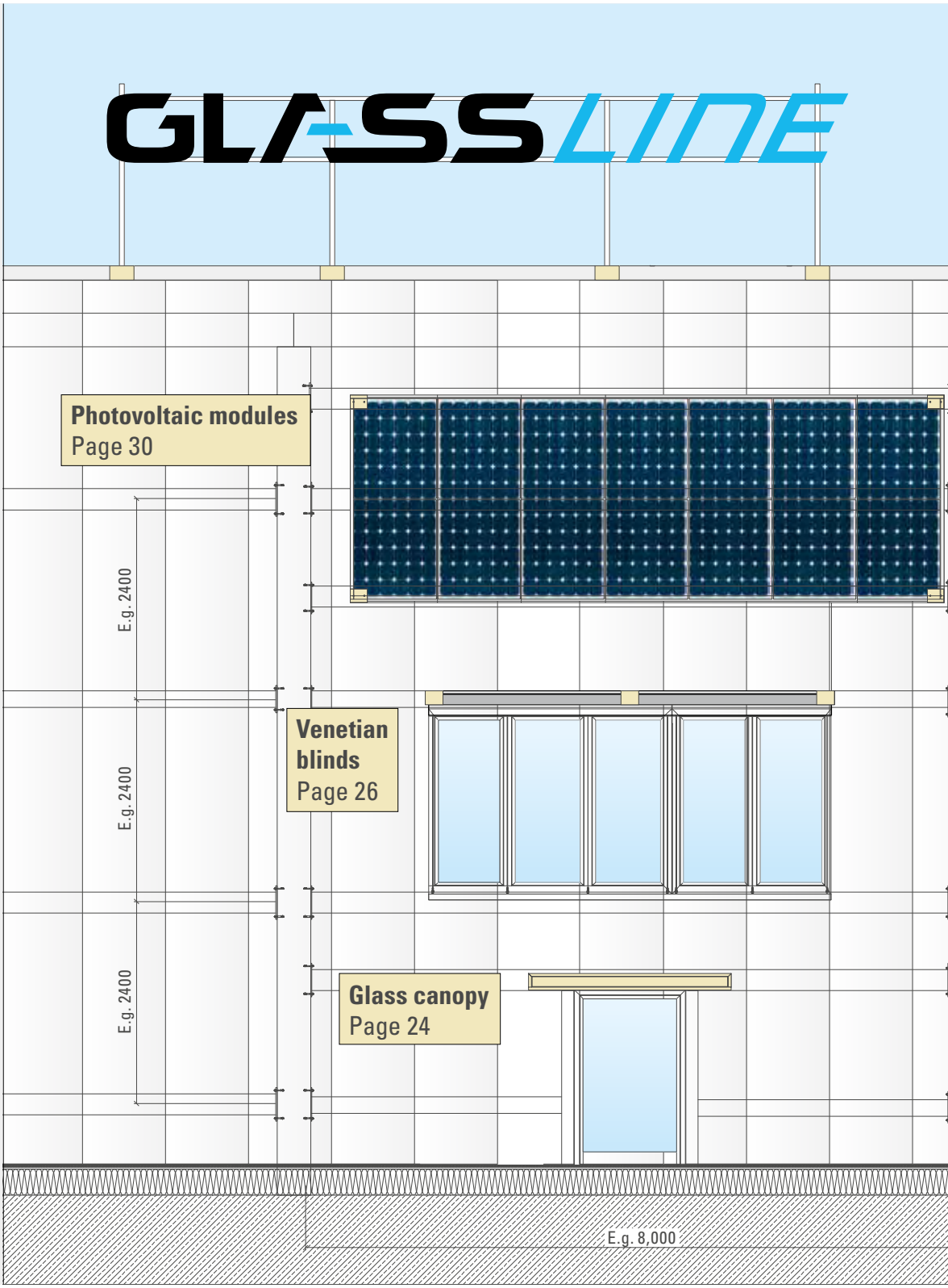
View of an industrial hall

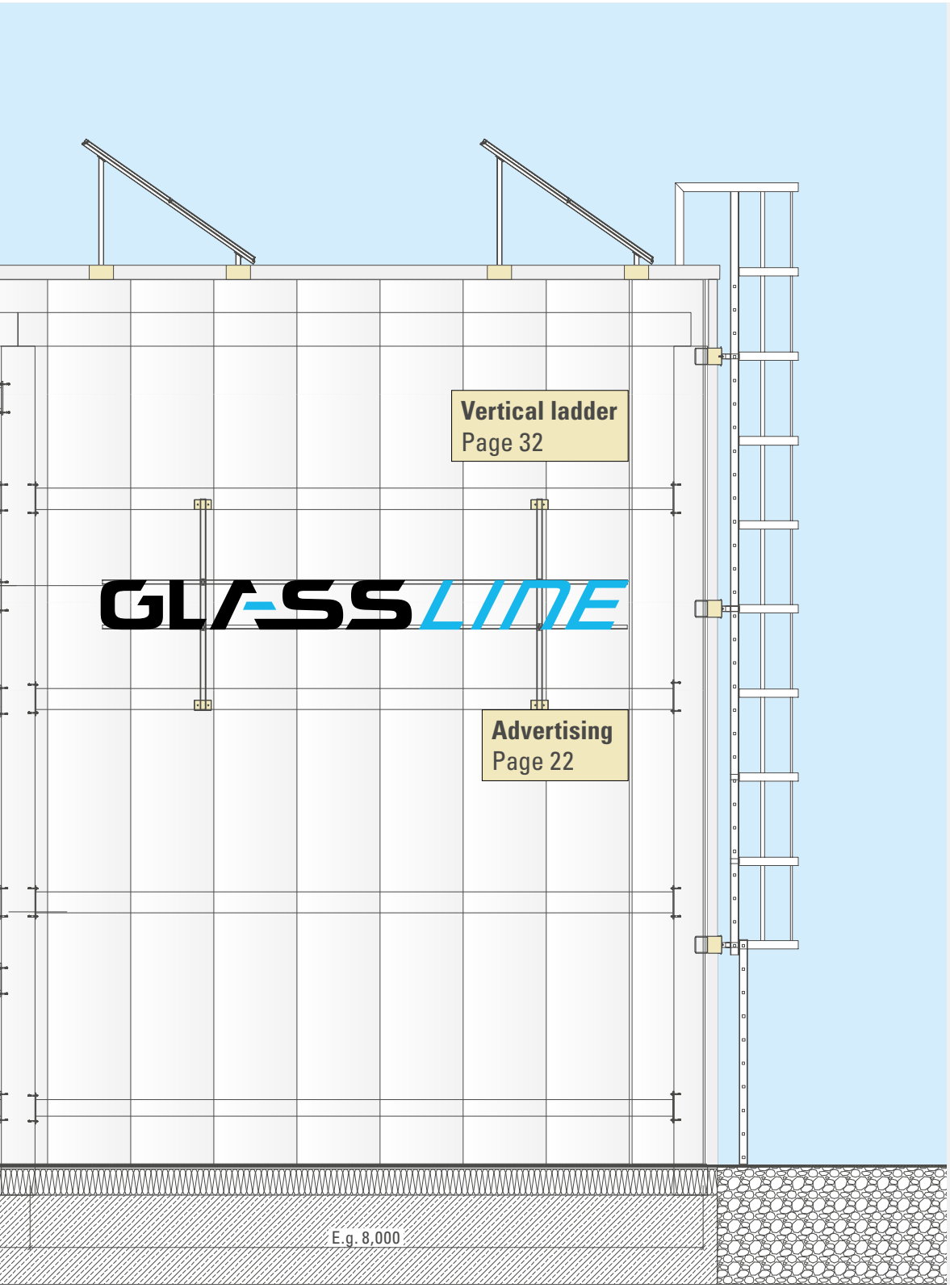
with smooth sheet metal thermopanel

Photovoltaic modules

Venetian blinds

Glass canopy




Vertical ladder
Page 32
GLASSLINE
Advertising
Page 22
E.g. 8,000

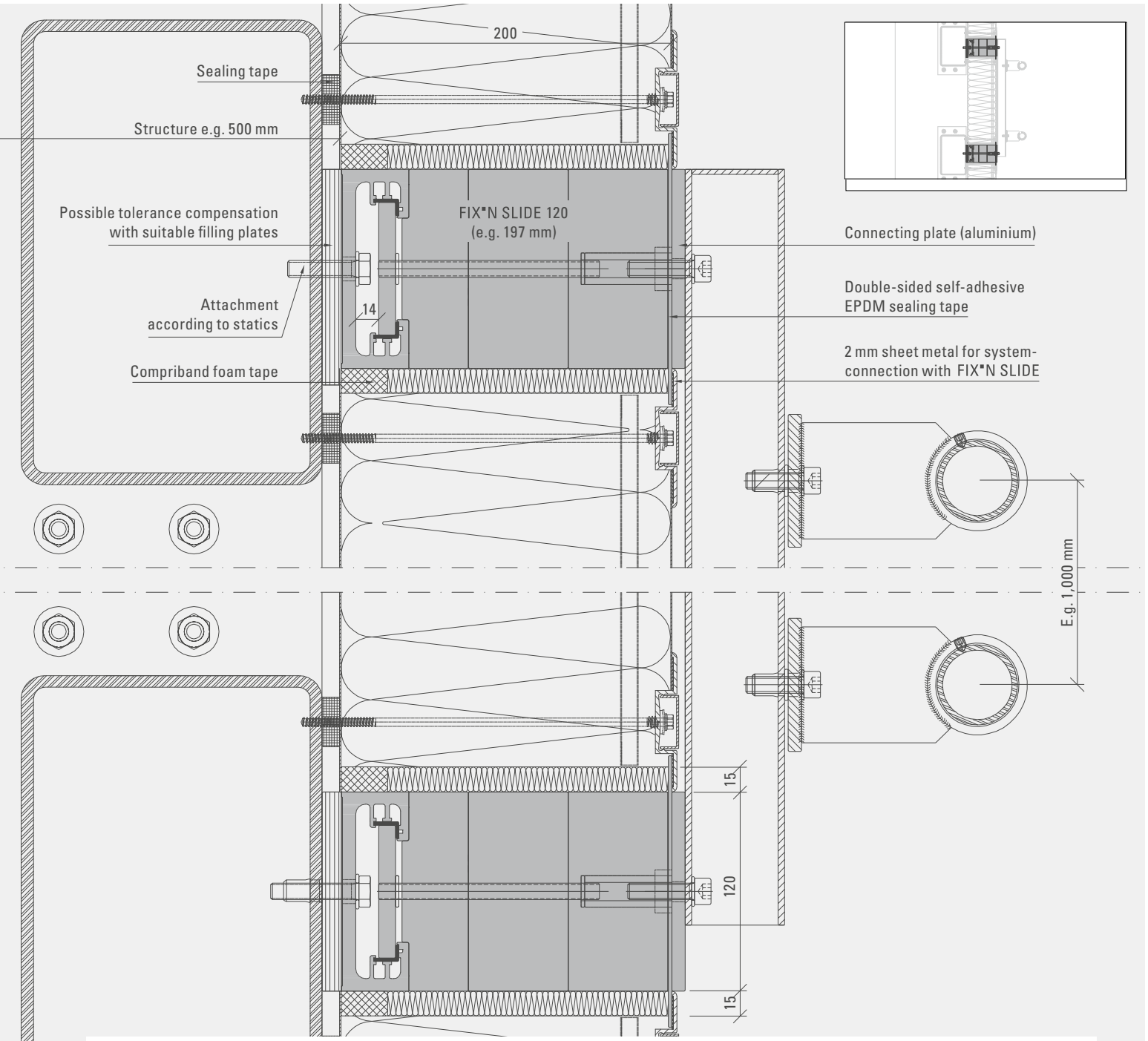

Vertical ladder


Advertising

Advertising on an industrial hall

Smooth sheet metal sandwich panel facade

Vertical section



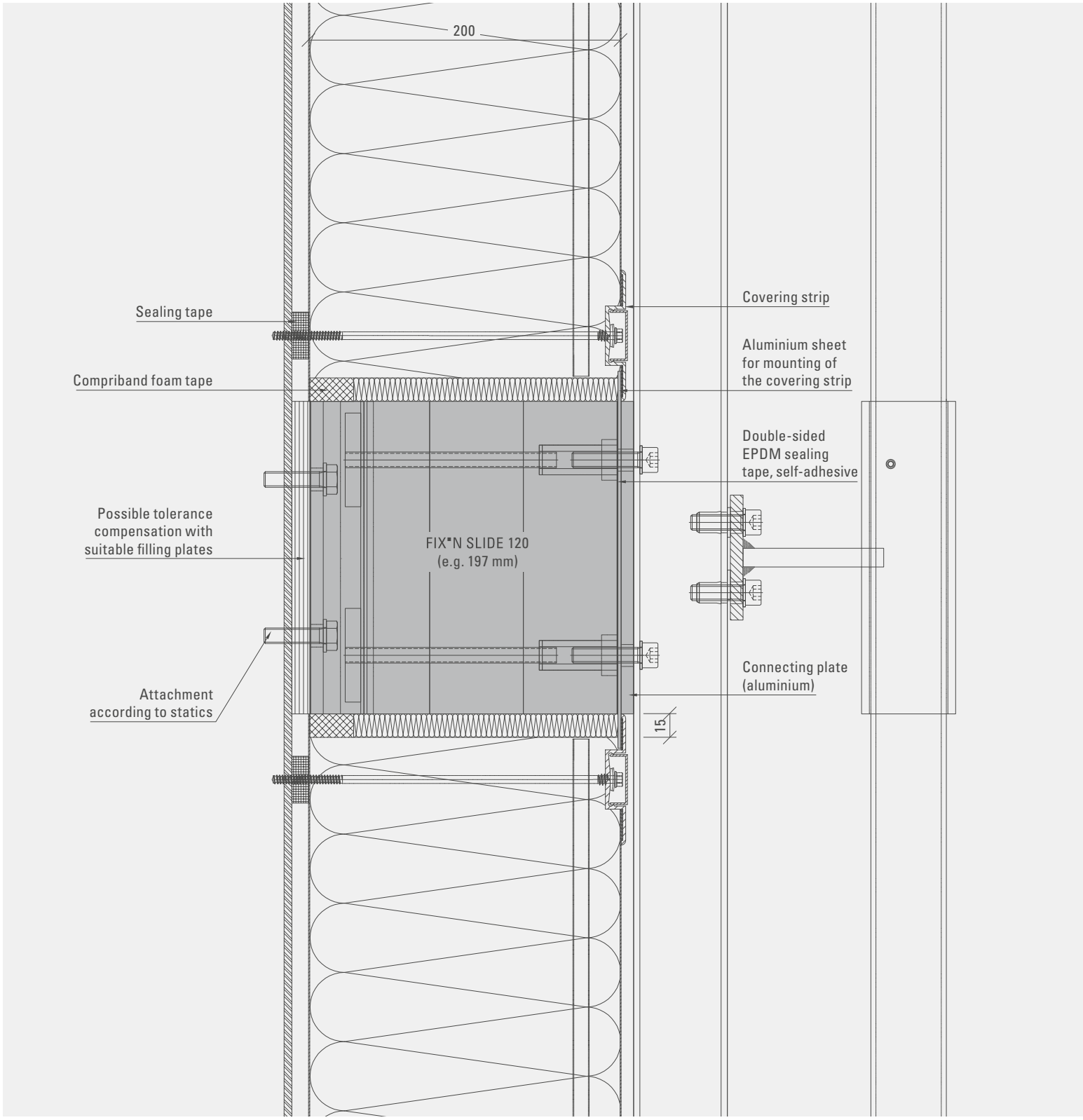
ASSEMBLY RECOMMENDATION

- Mark out building (cut out thermopanel)
- Mounting of FIX"N SLIDE (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Mounting of adaptor plate
- Establishment of a system connection with pressure profile
- Mounting of building advertising

Drawing number: FS-TP-501

Verifications of load application and transfer are to be carried out on-site

Horizontal section

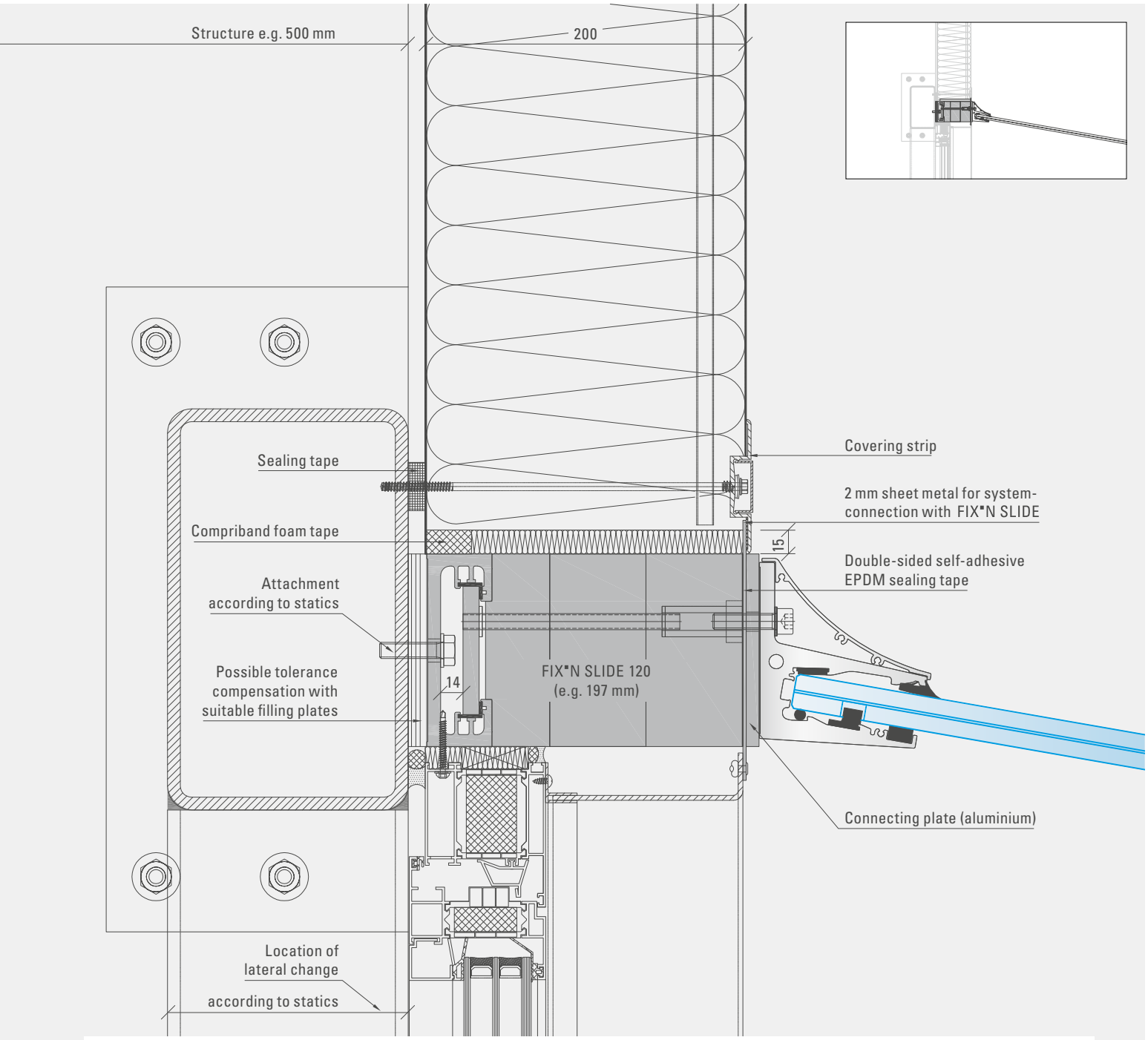


Drawing number: FS-TP-001
Verifications of load application and transfer are to be carried out on-site

Glass canopy CANOPY CLOUD

Smooth sheet metal thermowall with door element

Vertical section



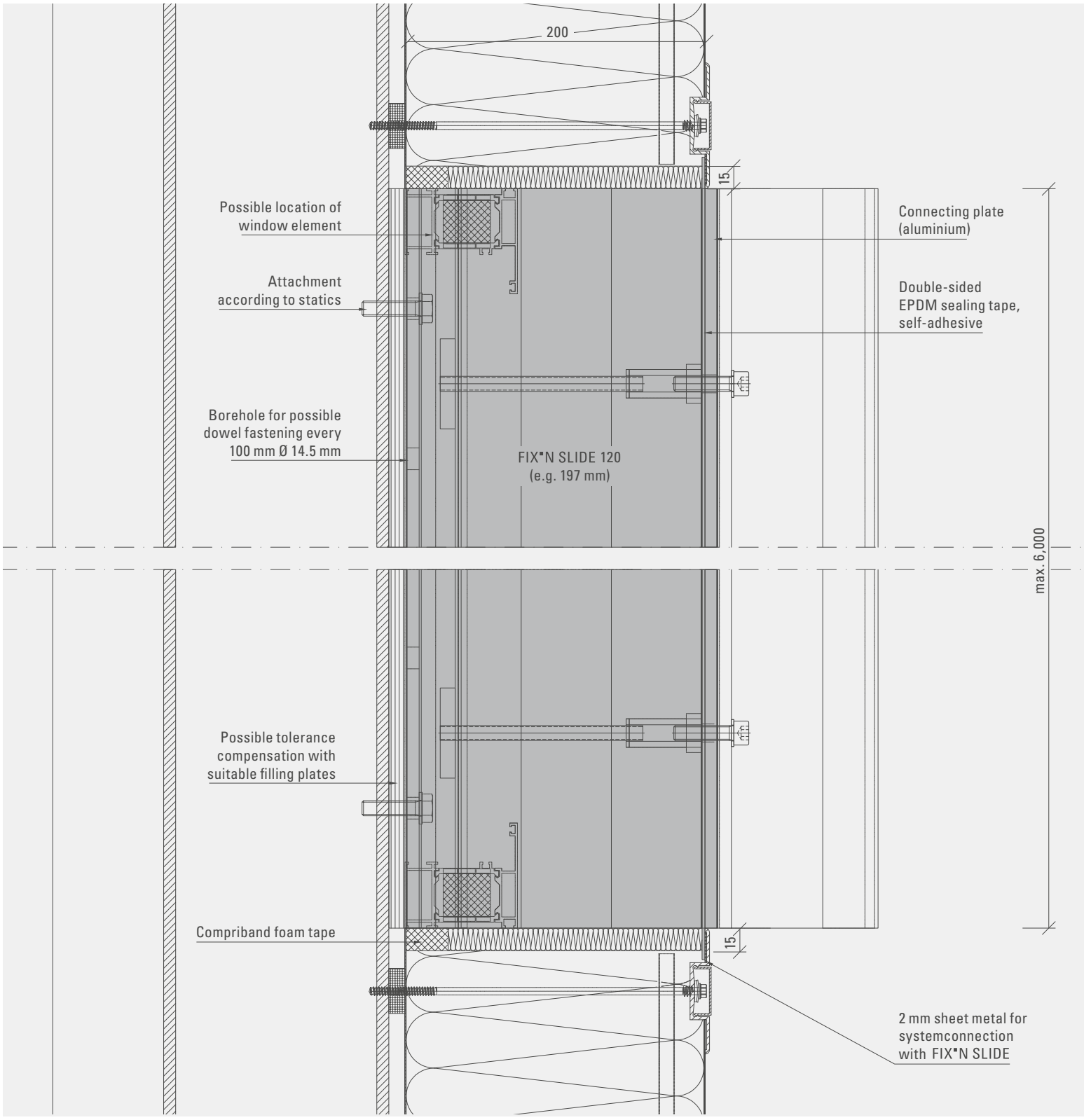
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of FIX"N SLIDE
  (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Installation of the door including panelling
- Mounting of the canopy

Drawing number: FS-TP-502

Verifications of load application and transfer are to be carried out on-site

Horizontal section

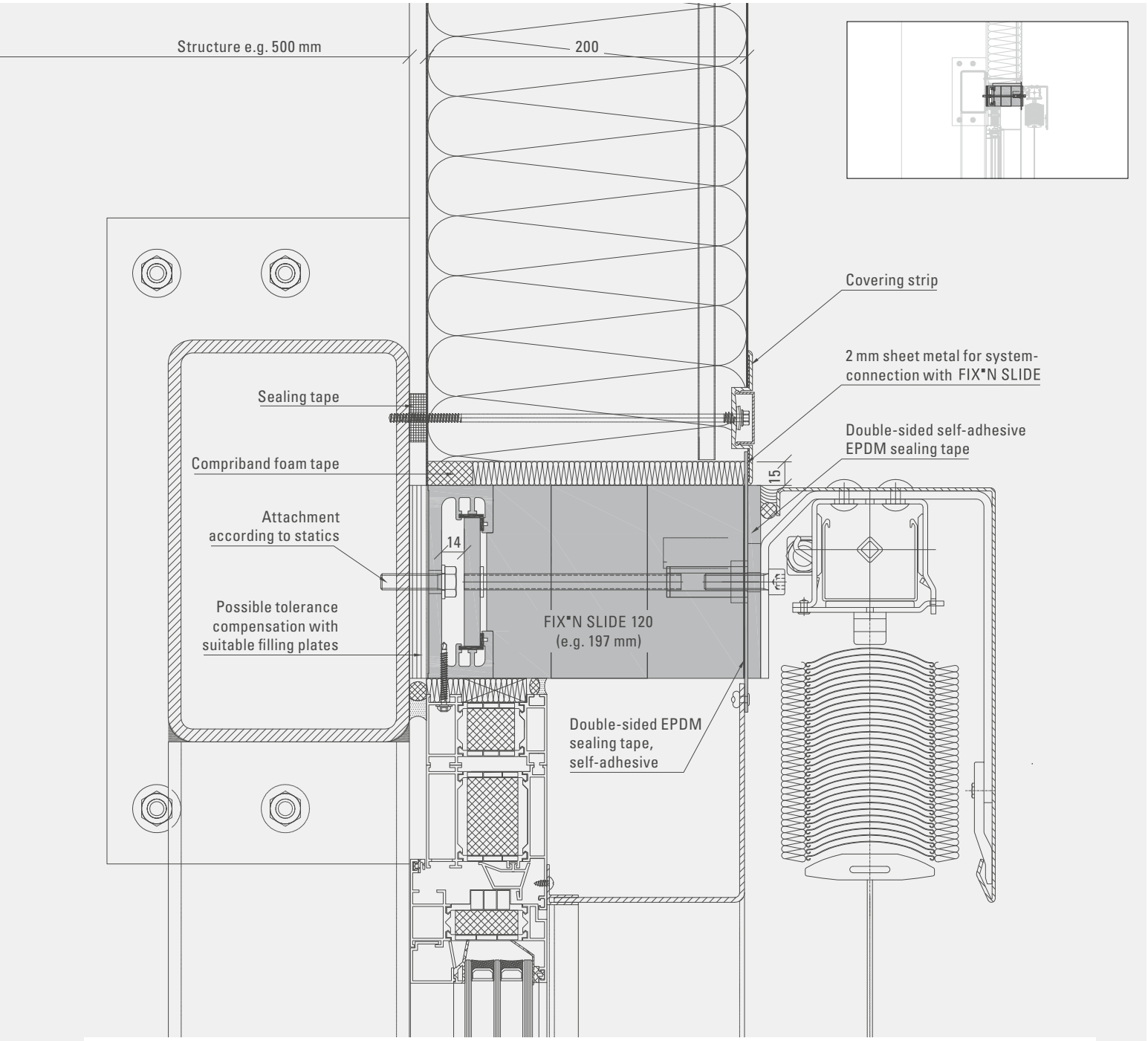


Drawing number: FS-TP-002
Verifications of load application and transfer are to be carried out on-site

Upper connection of the **Venetian blind** with cable guide

Window element in the smooth sheet metal thermopanel

Vertical section



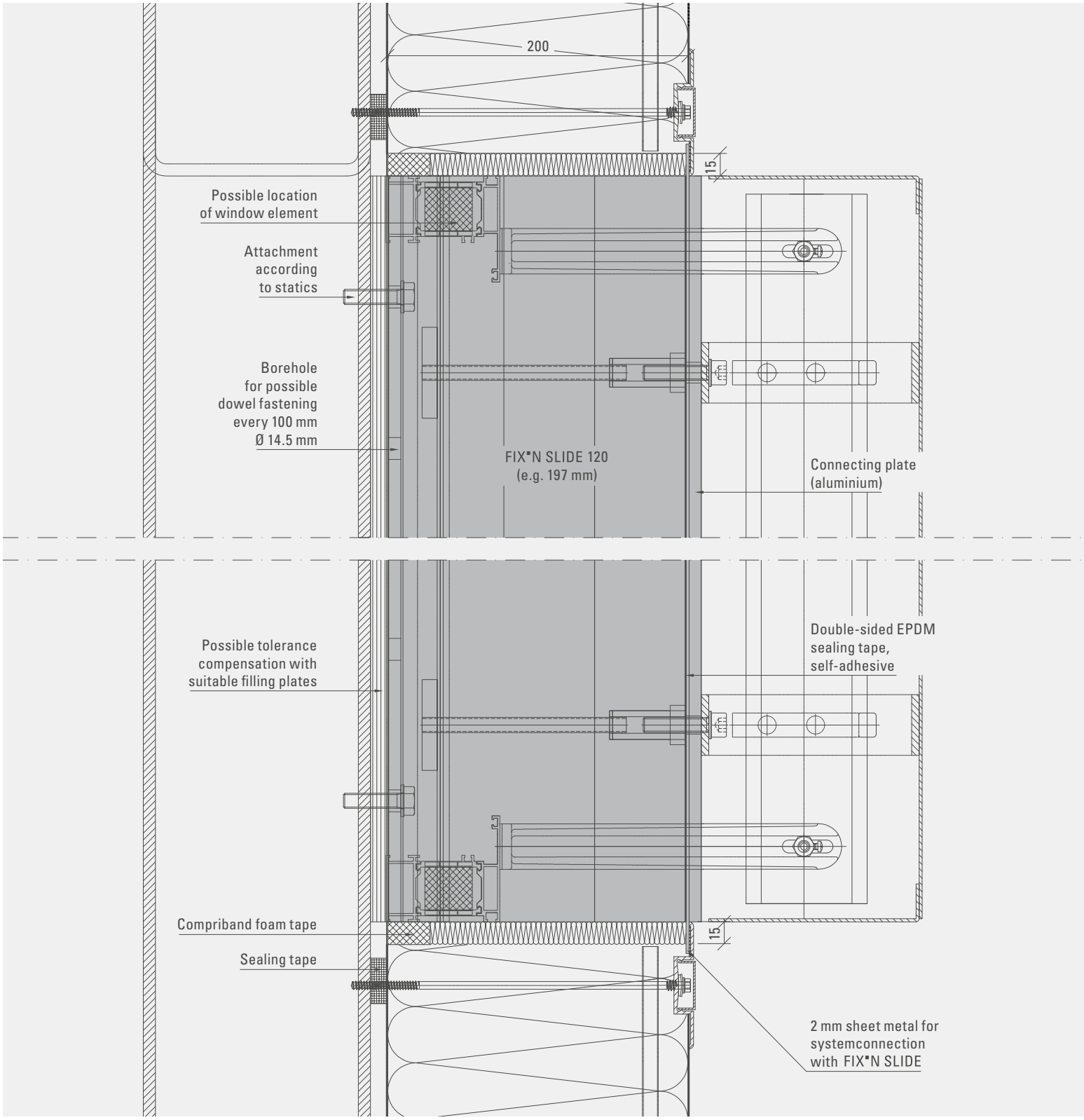
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of FIX"N SLIDE (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Installation of window element including panelling
- Mounting of sunscreen

Drawing number: FS-TP-503

Verifications of load application and transfer are to be carried out on-site

Horizontal section

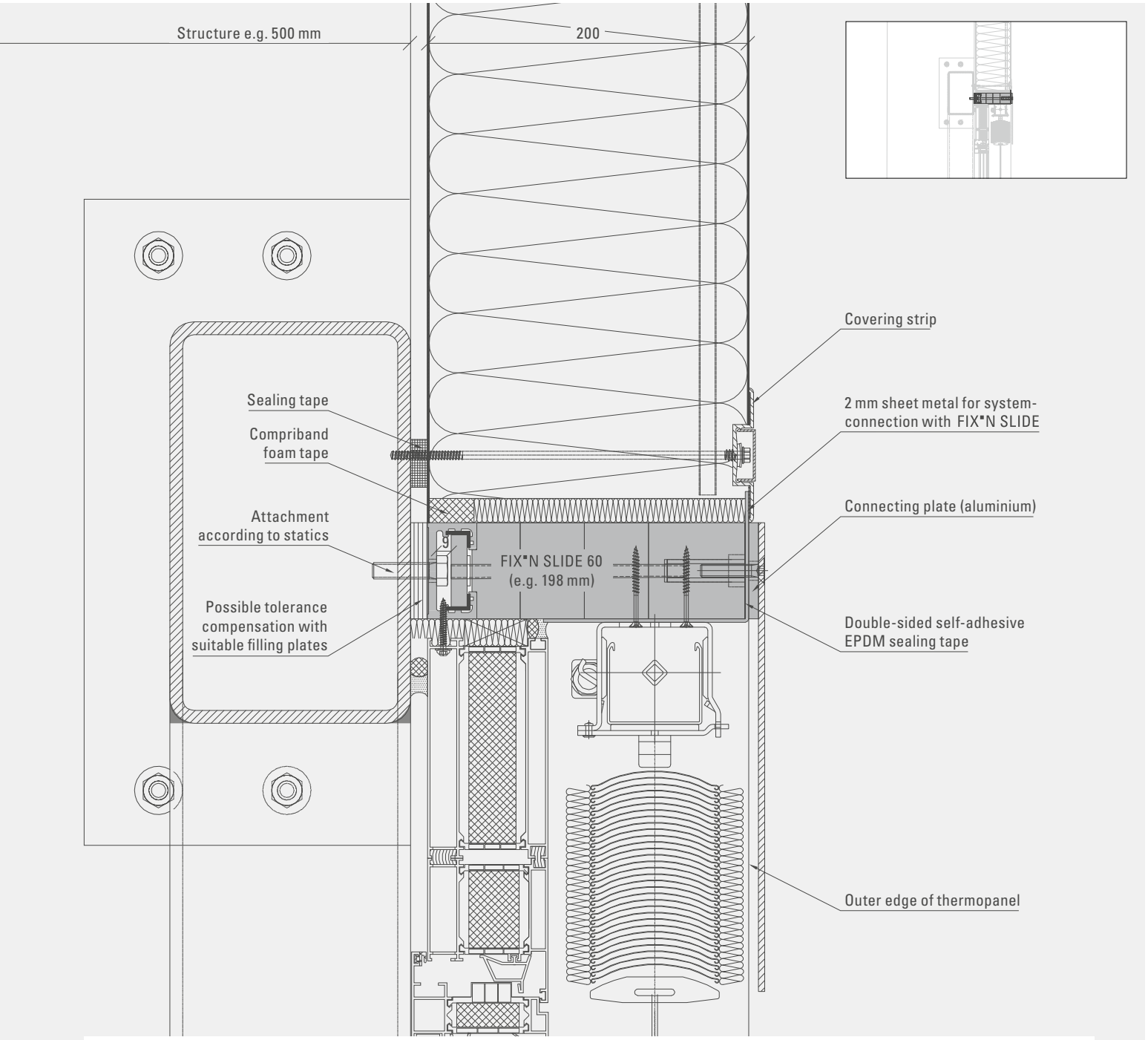


Drawing number: FS-TP-003
Verifications of load application and transfer are to be carried out on-site

Venetian blind with cable guide

Smooth sheet metal thermopanel in the soffit

Vertical section



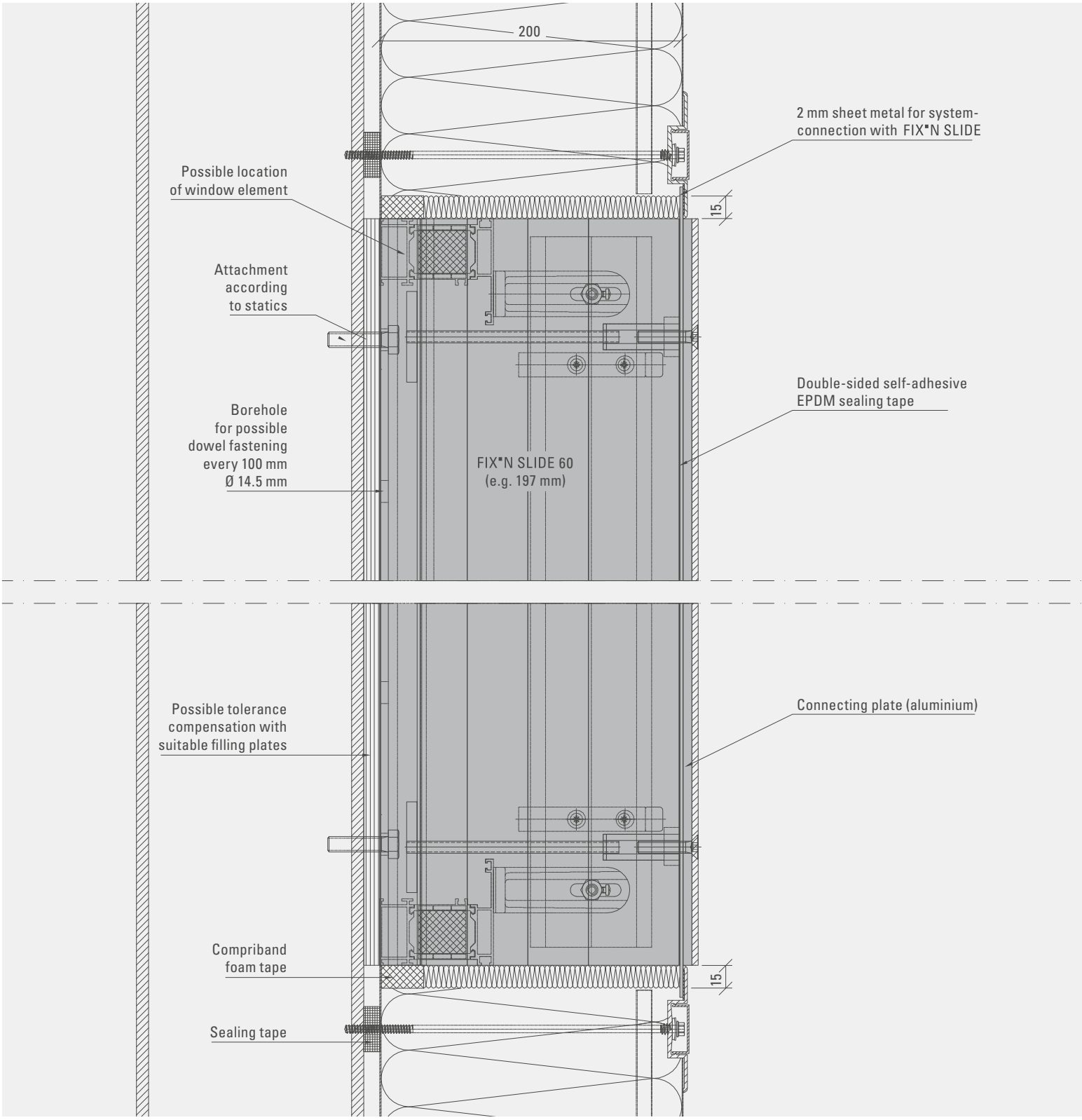
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of FIX"N SLIDE (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Installation of window element including panelling
- Mounting of sunscreen

Drawing number: FS-TP-510

Verifications of load application and transfer are to be carried out on-site

Horizontal section

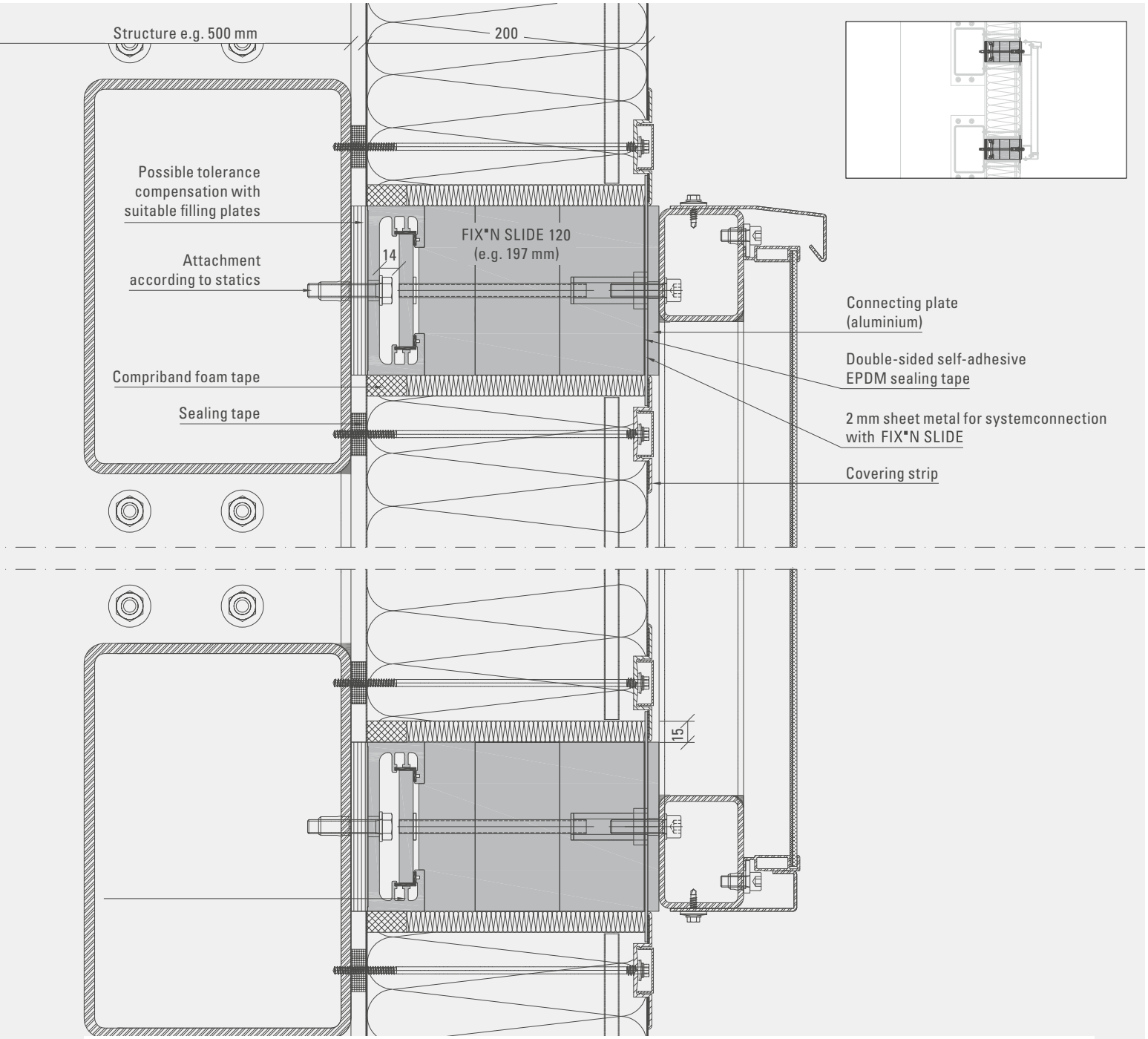


Drawing number: FS-TP-010
Verifications of load application and transfer are to be carried out on-site

Photovoltaic modules on the substructure

Smooth sheet metal thermopanel

Vertical section



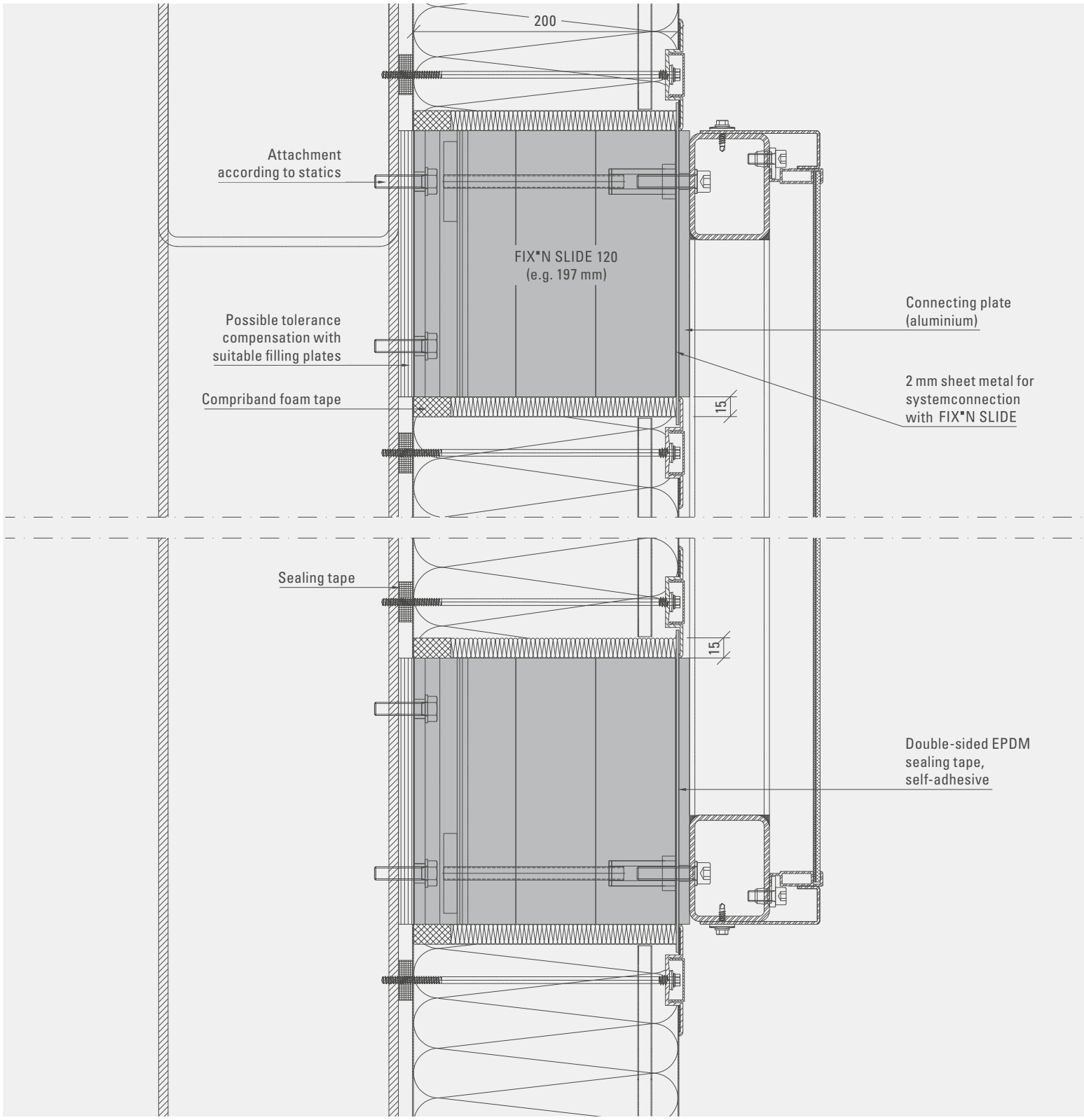
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of FIX"N SLIDE (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Installation of window element including panelling
- Installation of photovoltaic system

Drawing number: FS-TP-505

Verifications of load application and transfer are to be carried out on-site

Horizontal section

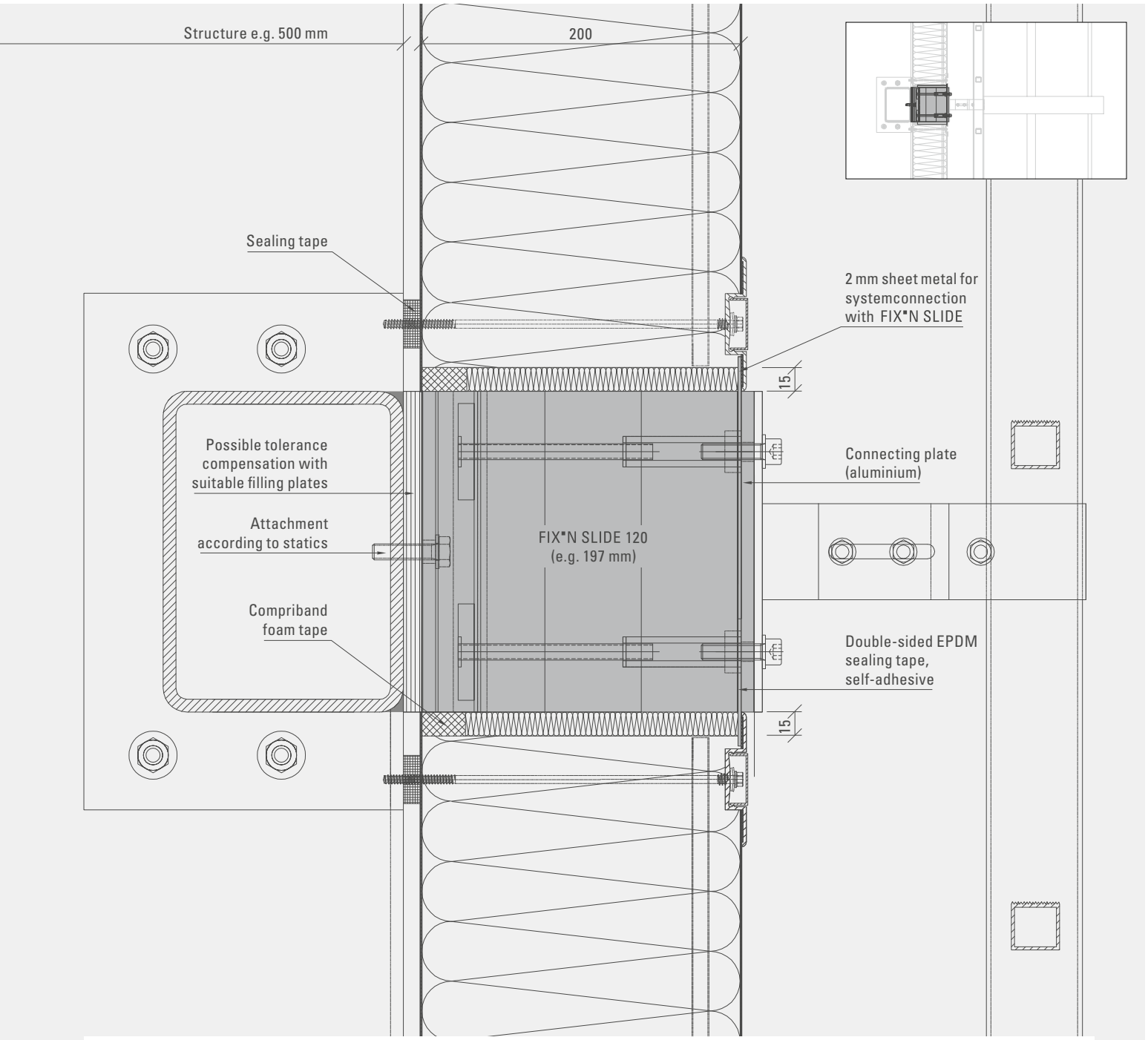


Drawing number: FS-TP-005
Verifications of load application and transfer are to be carried out on-site

Fixed **ladder** DIN 18799-1

Smooth sheet metal thermopanel

Vertical section



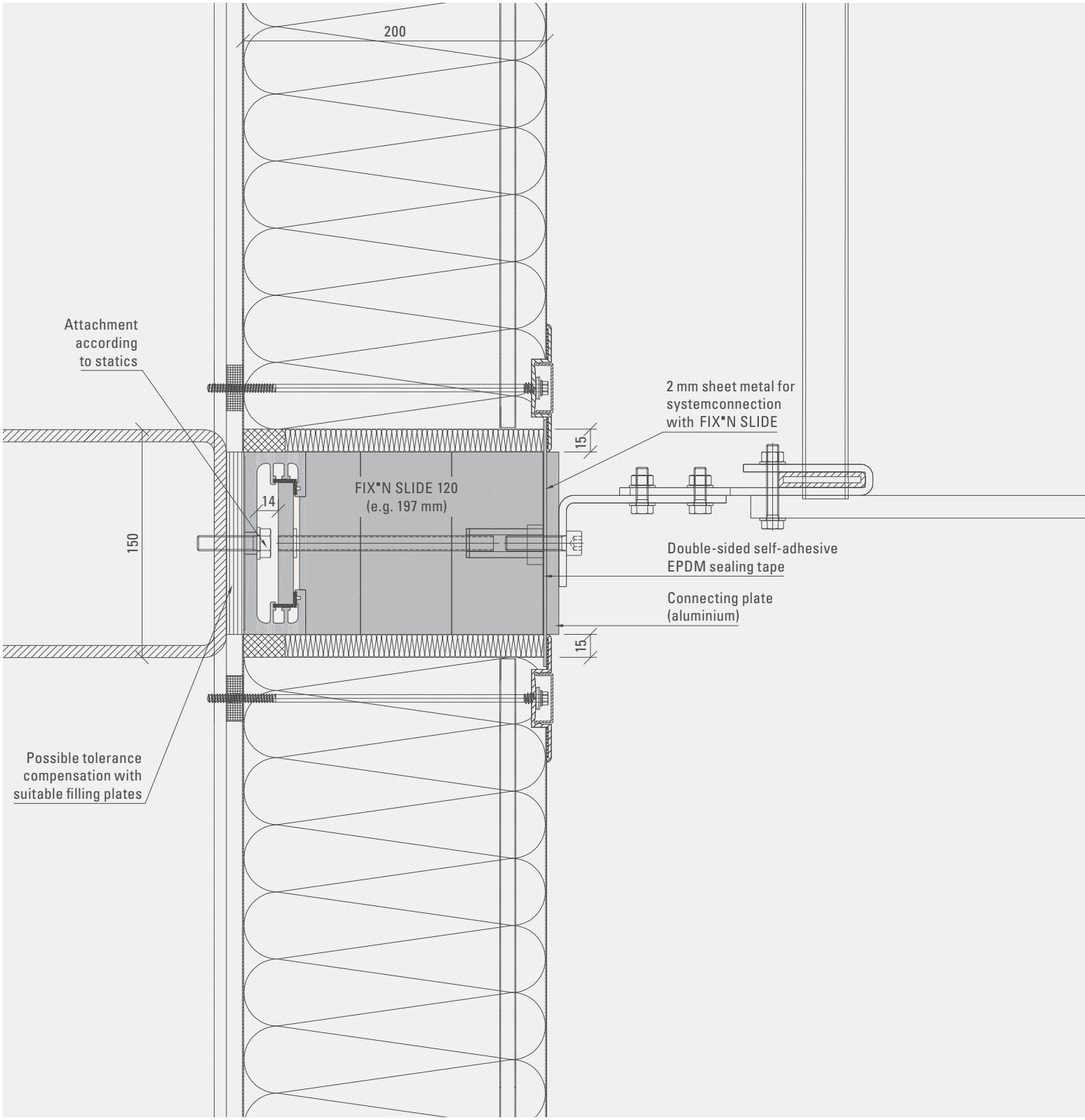
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of FIX"N SLIDE (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Installation of the vertical ladder

Drawing number: FS-TP-506

Verifications of load application and transfer are to be carried out on-site

Horizontal section



Drawing number: FS-TP-006
Verifications of load application and transfer are to be carried out on-site

GLASSLINE

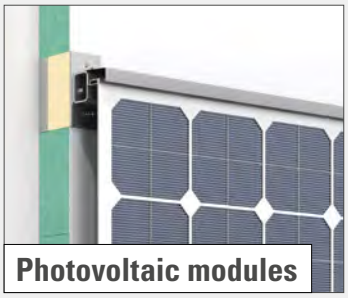
FIX'N SLIDE *panel facade*

INDUSTRIAL HALL WITH THERMAL PANEL THERMOPANEL AND ADVERTISING MEDIUM

APPLICATION EXAMPLES

View of an industrial hall

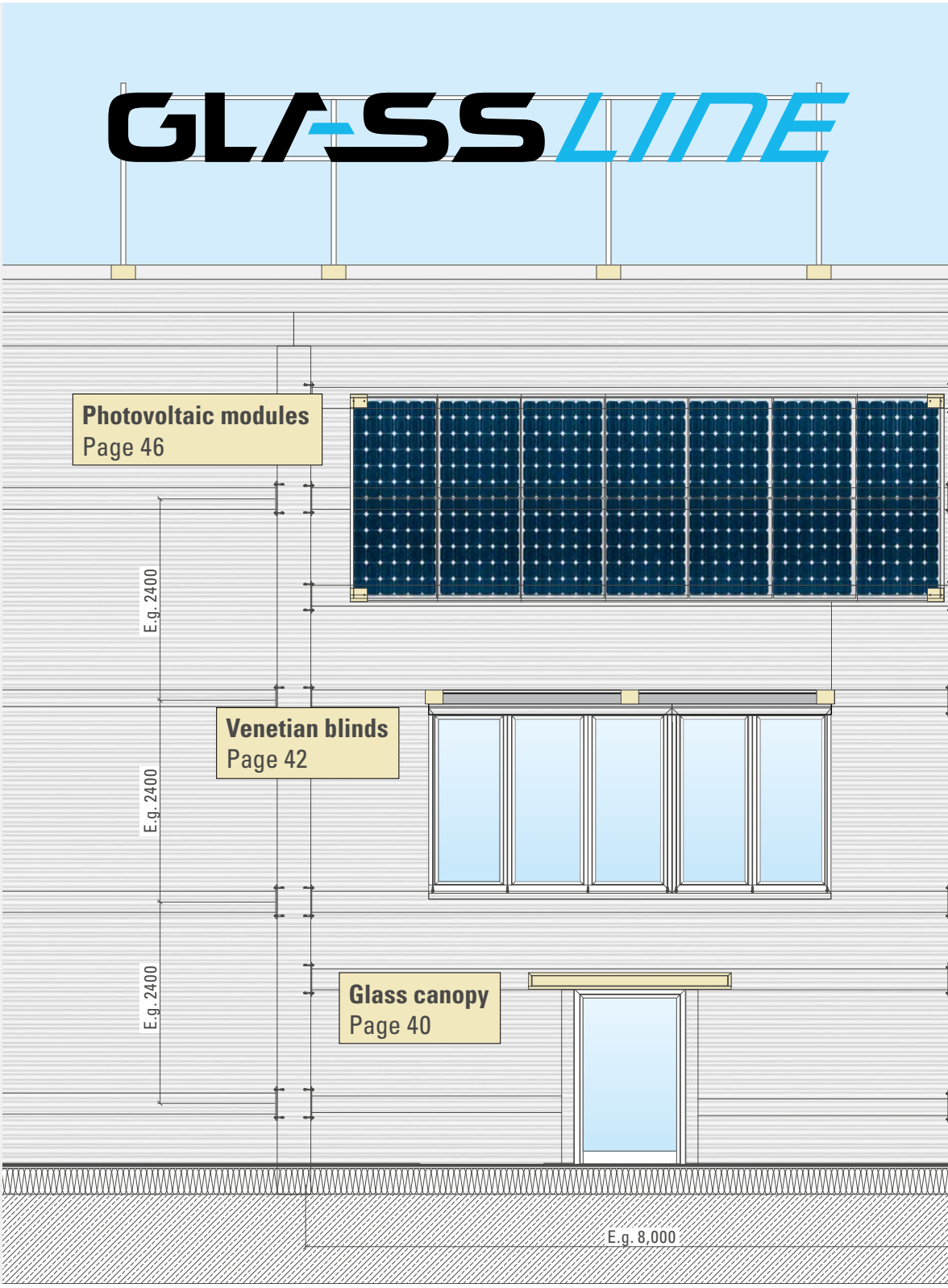
with thermal panel thermopanel

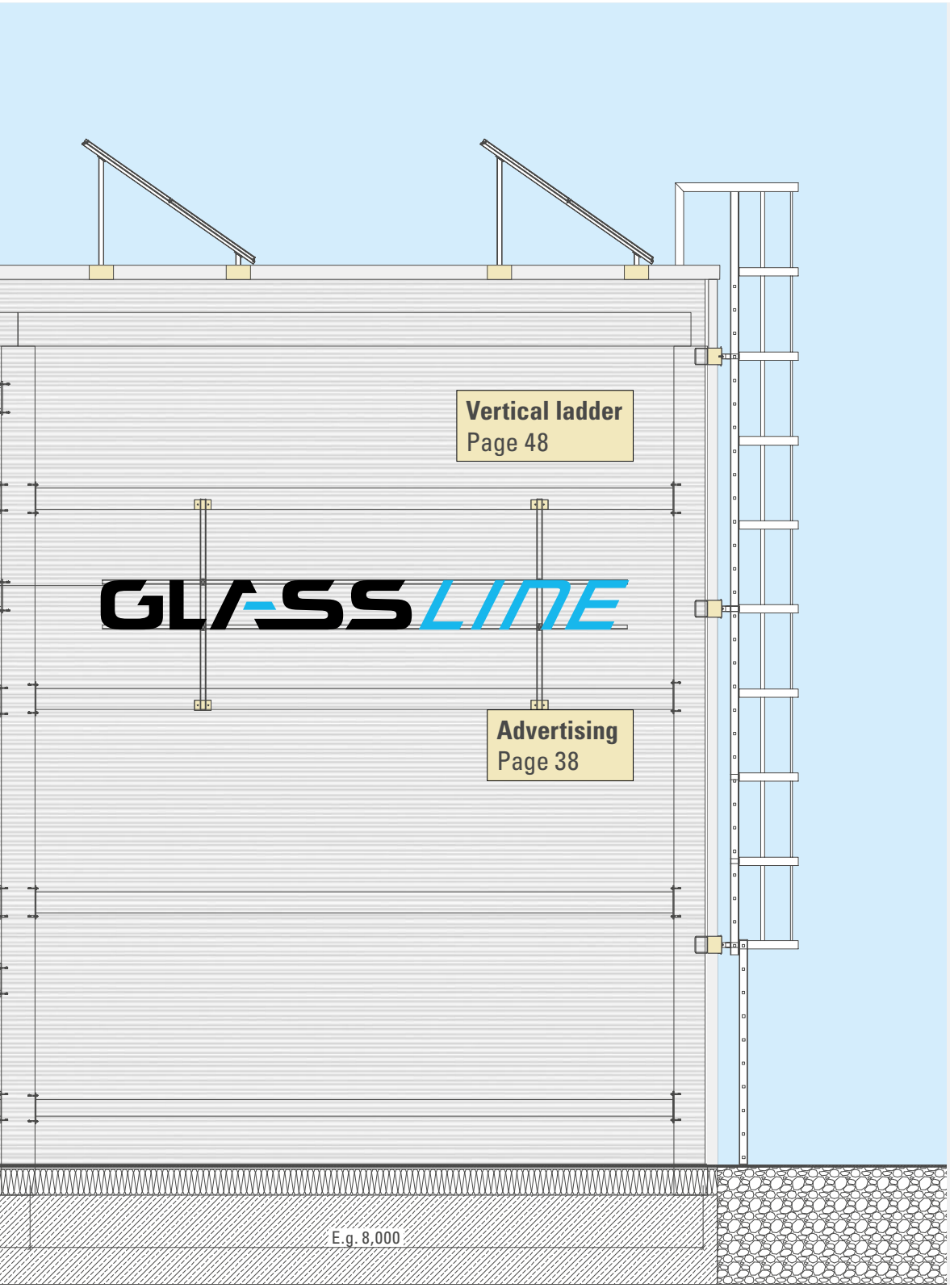


Photovoltaic modules

Venetian blinds

Glass canopy




Vertical ladder
Page 48
GLASSLINE
Advertising
Page 38
E.g. 8,000

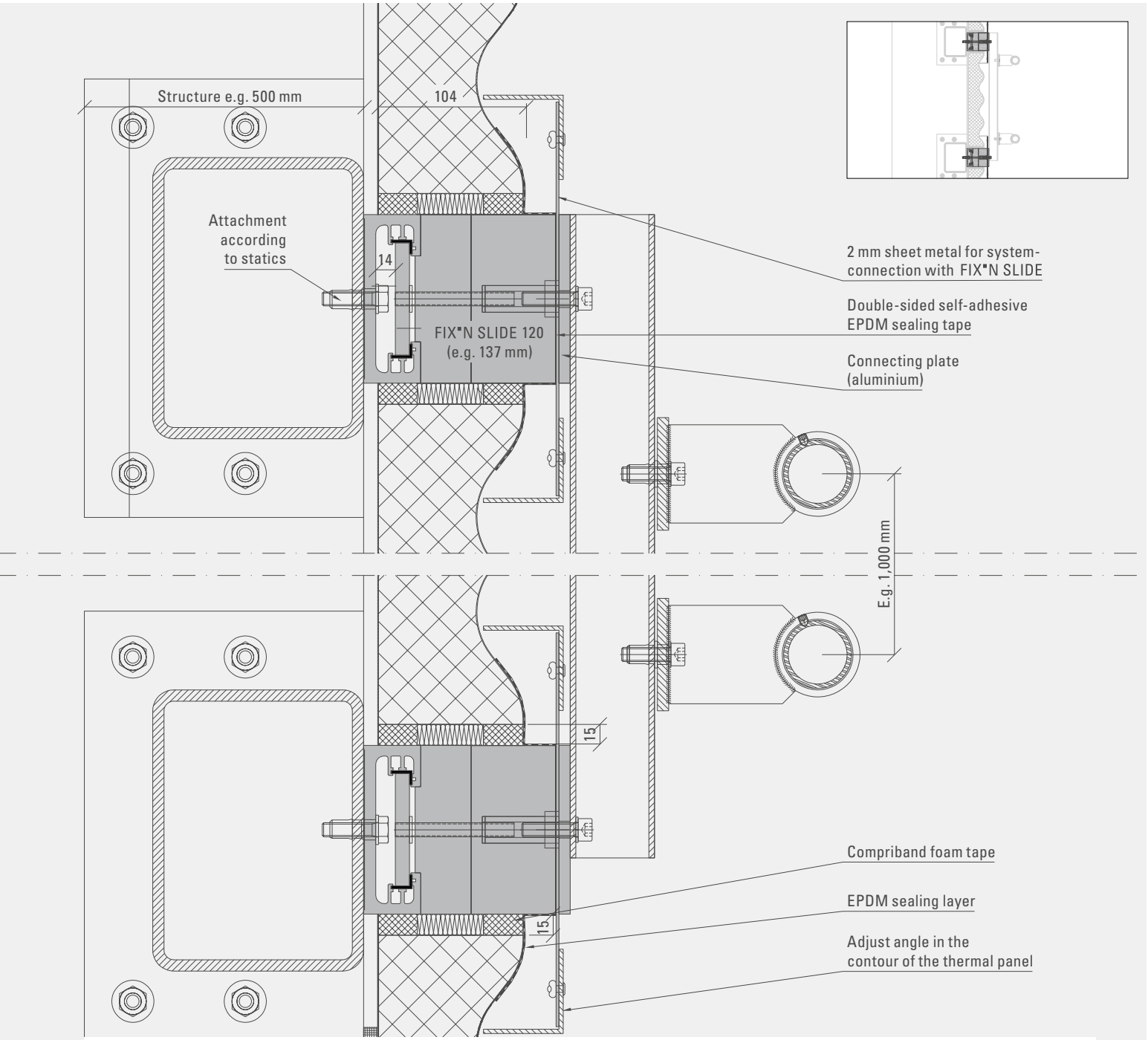

Vertical ladder


Advertising

Advertising on an industrial hall

Thermal panel thermopanel

Vertical section



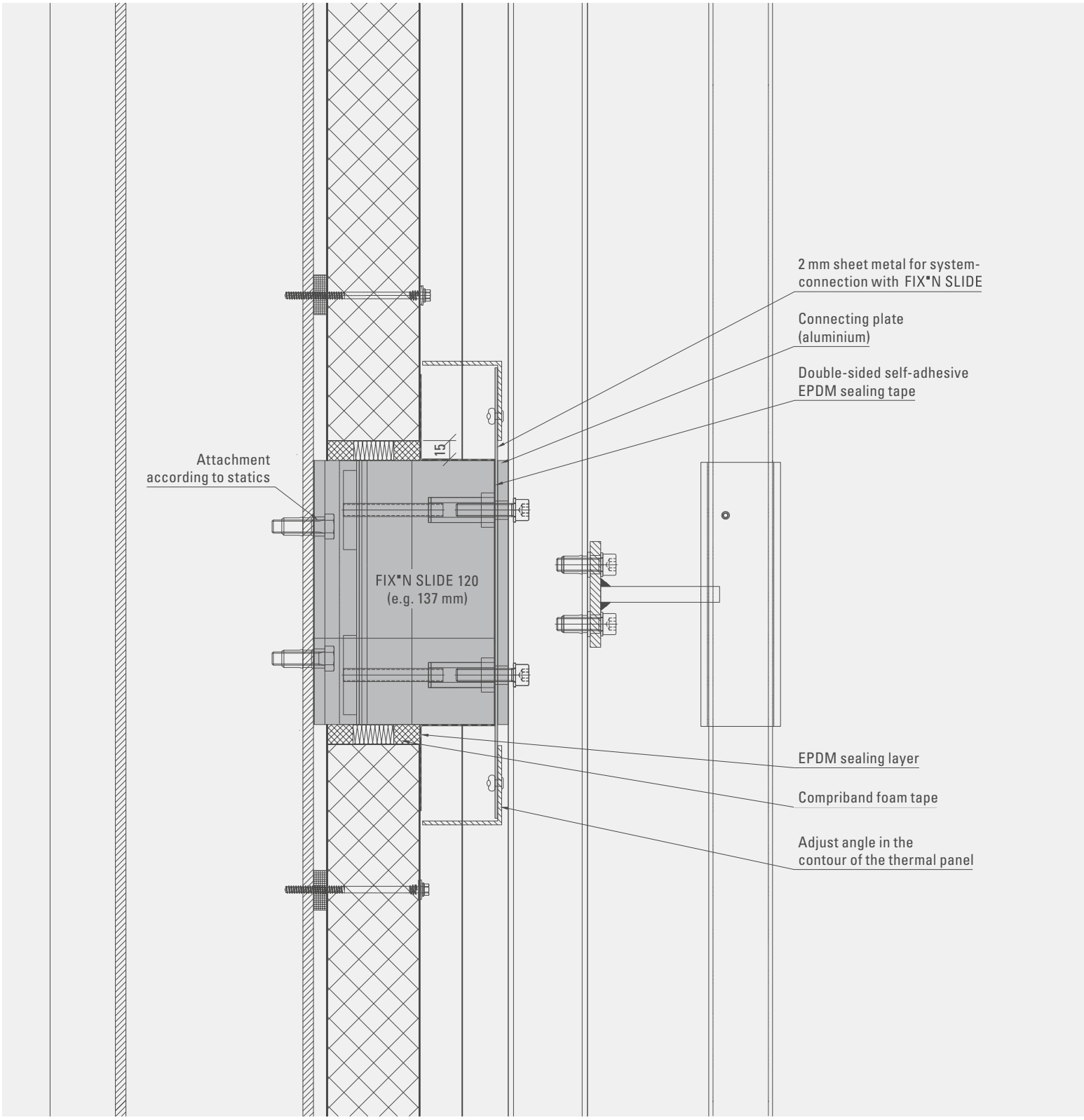
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of FIX"N SLIDE (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Mounting of the advertising medium

Drawing number: FS-TP-601

Verifications of load application and transfer are to be carried out on-site

Horizontal section

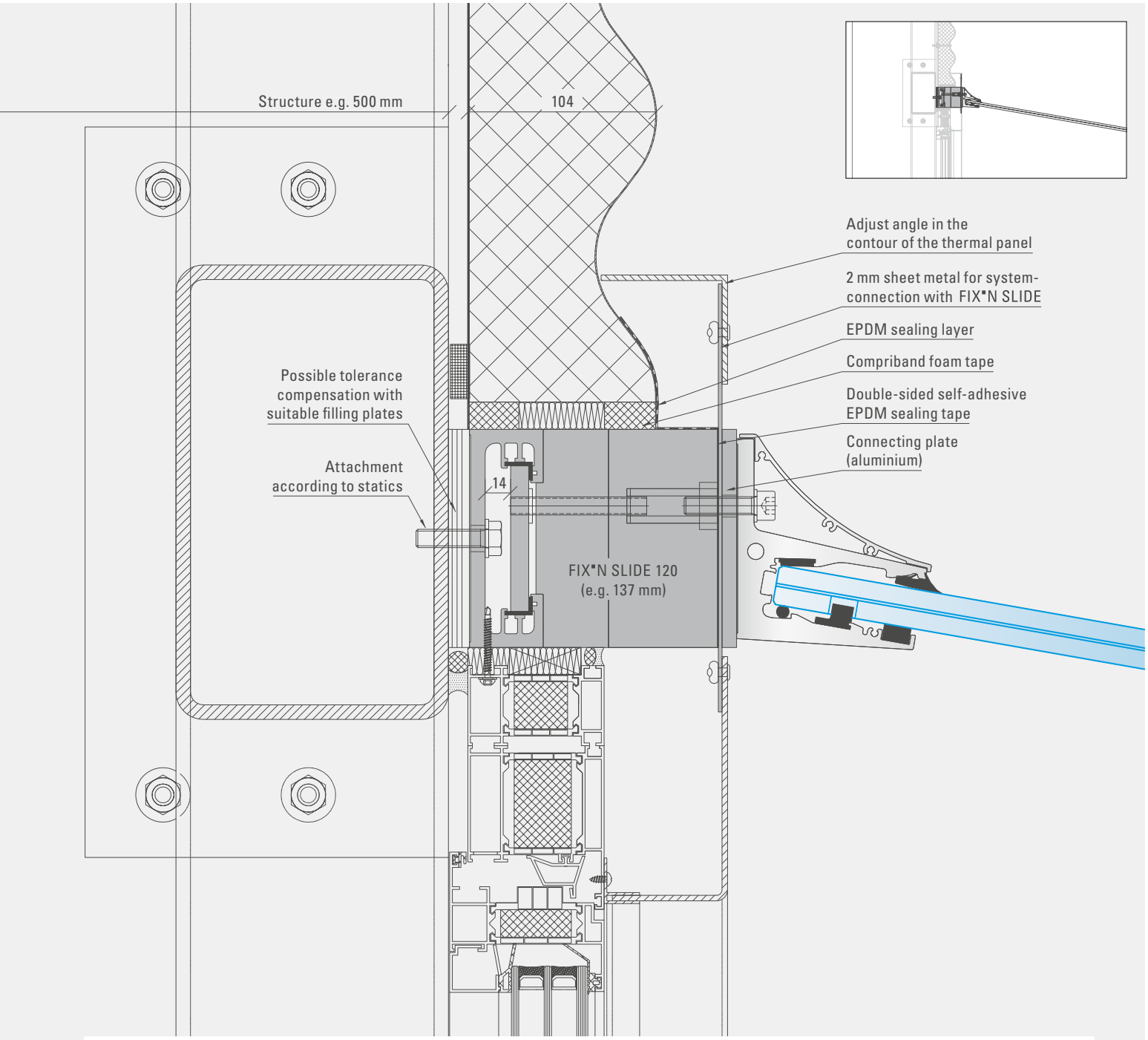


Drawing number: FS-TP-101
Verifications of load application and transfer are to be carried out on-site

Glass canopy CANOPY CLOUD

Thermal panel thermopanel with door element

Vertical section



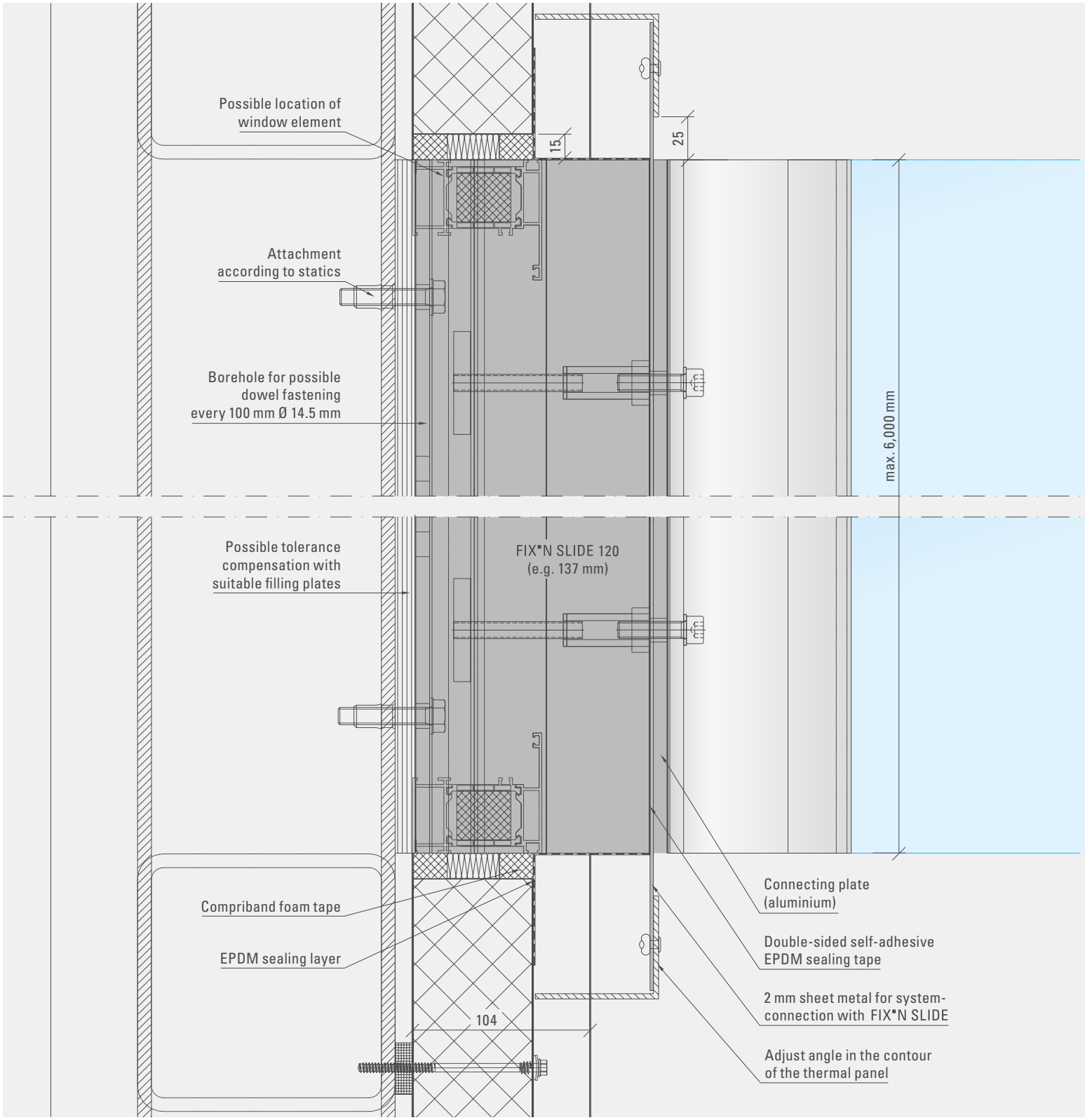
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of FIX"N SLIDE (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Mounting of the canopy

Drawing number: FS-TP-602

Verifications of load application and transfer are to be carried out on-site

Horizontal section

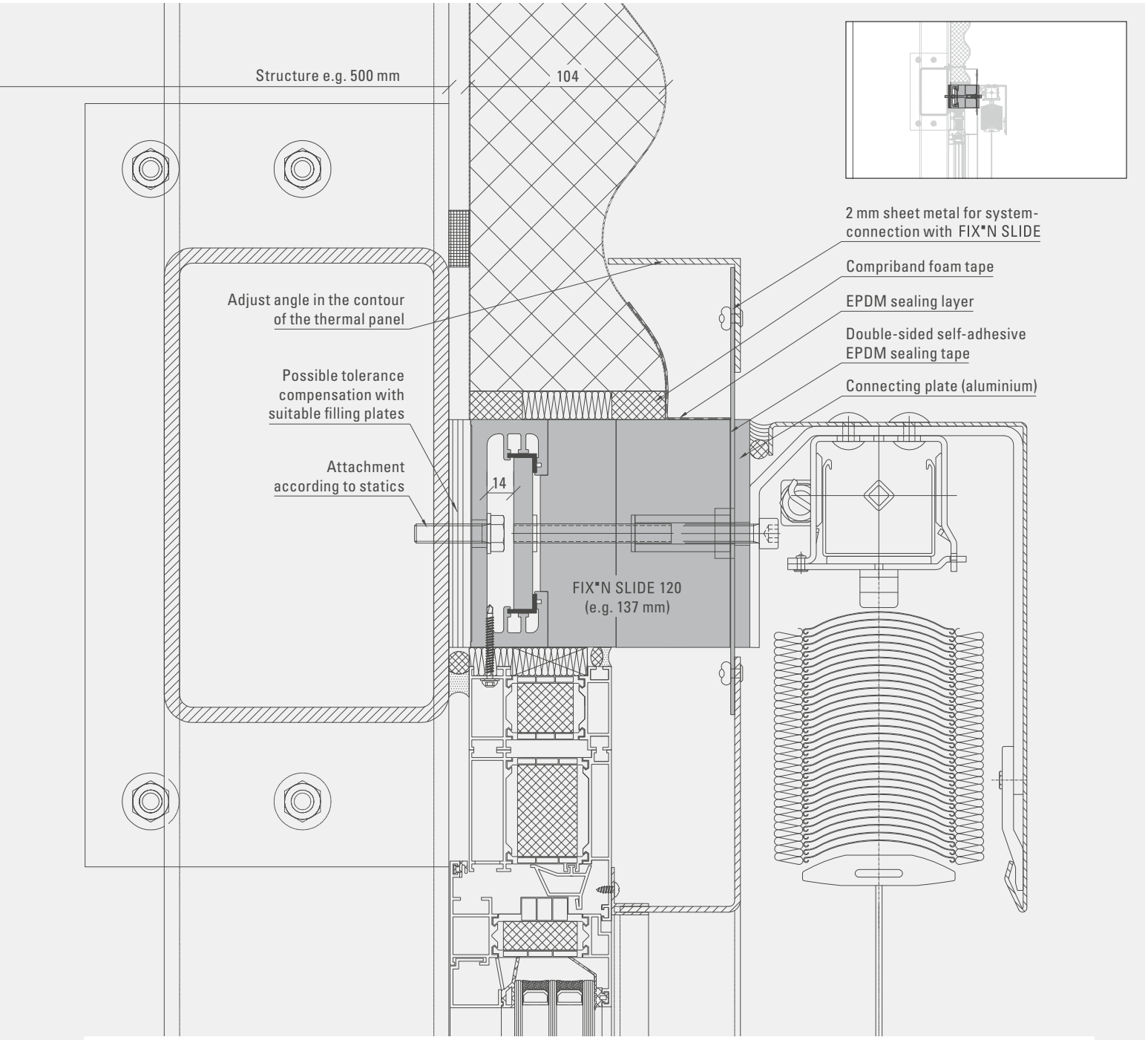


Drawing number: FS-TP-102
Verifications of load application and transfer are to be carried out on-site

Upper connection of the **Venetian blind** with cable guide

Window element in thermal panel thermopanel

Vertical section



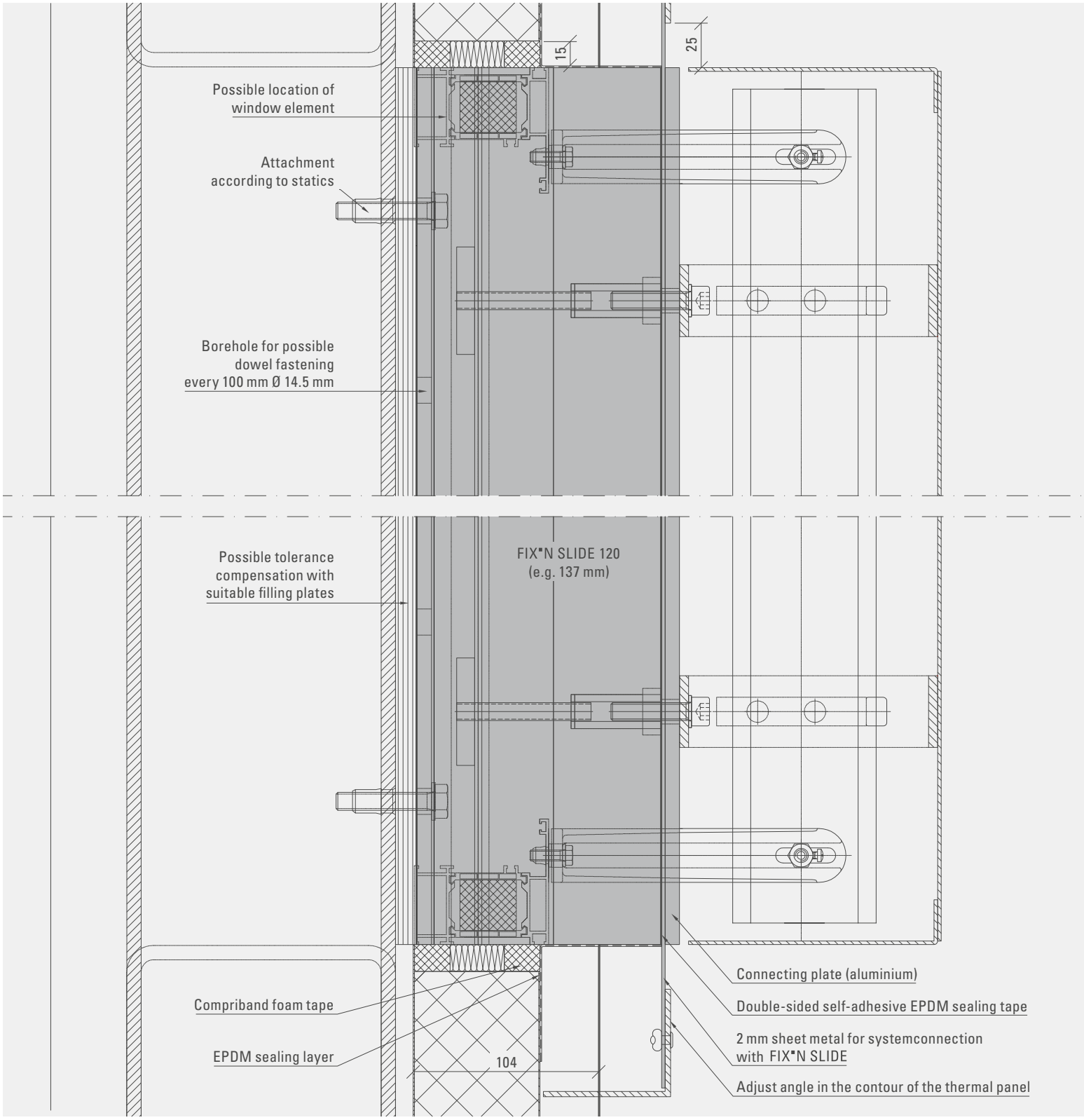
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of thermopanel FIX"N SLIDE (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Mounting of sunscreen

Drawing number: FS-TP-602

Verifications of load application and transfer are to be carried out on-site

Horizontal section

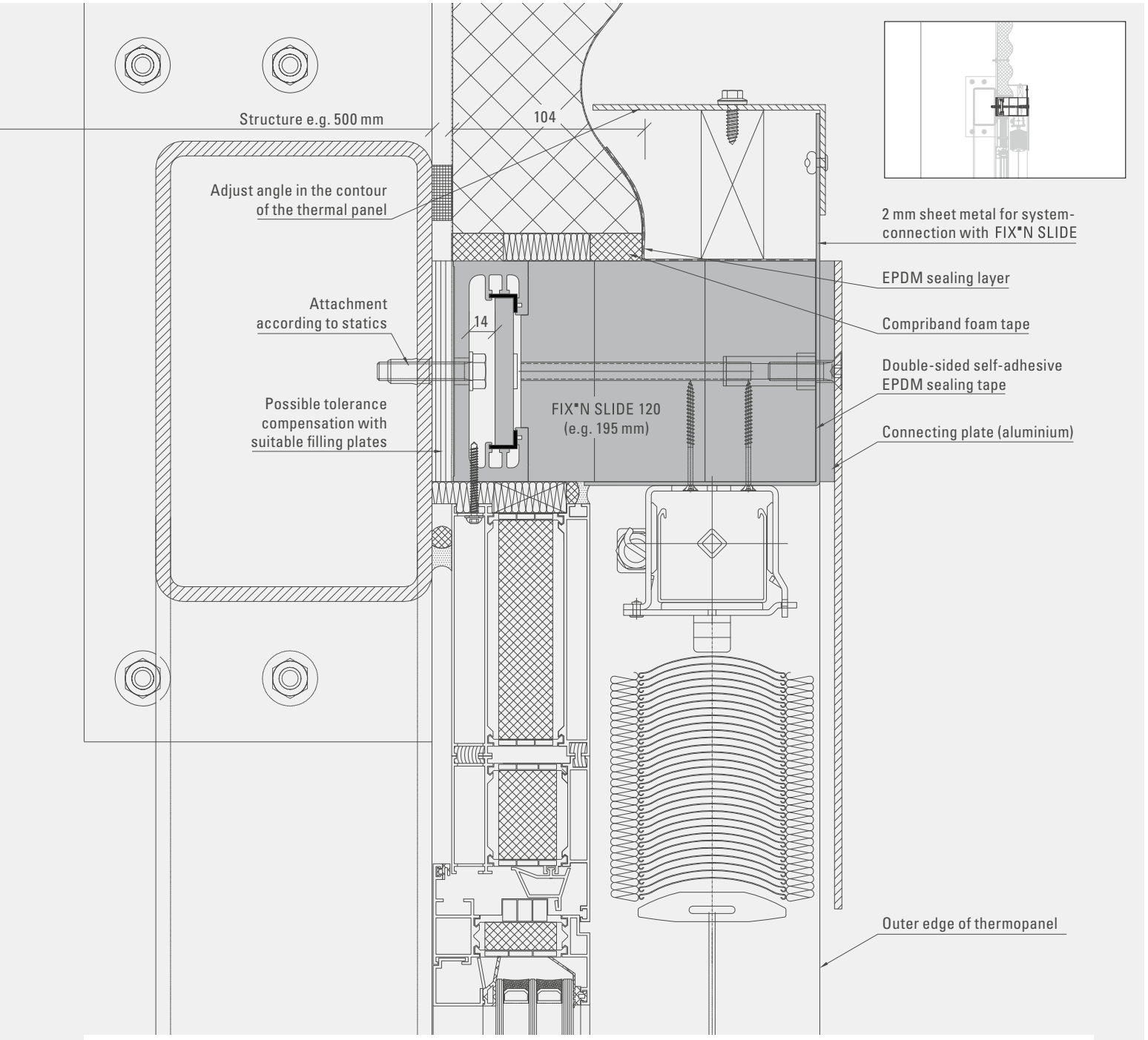


Drawing number: FS-TP-102
Verifications of load application and transfer are to be carried out on-site

Venetian blind with cable guide

Smooth sheet metal thermopanel in the soffit

Vertical section



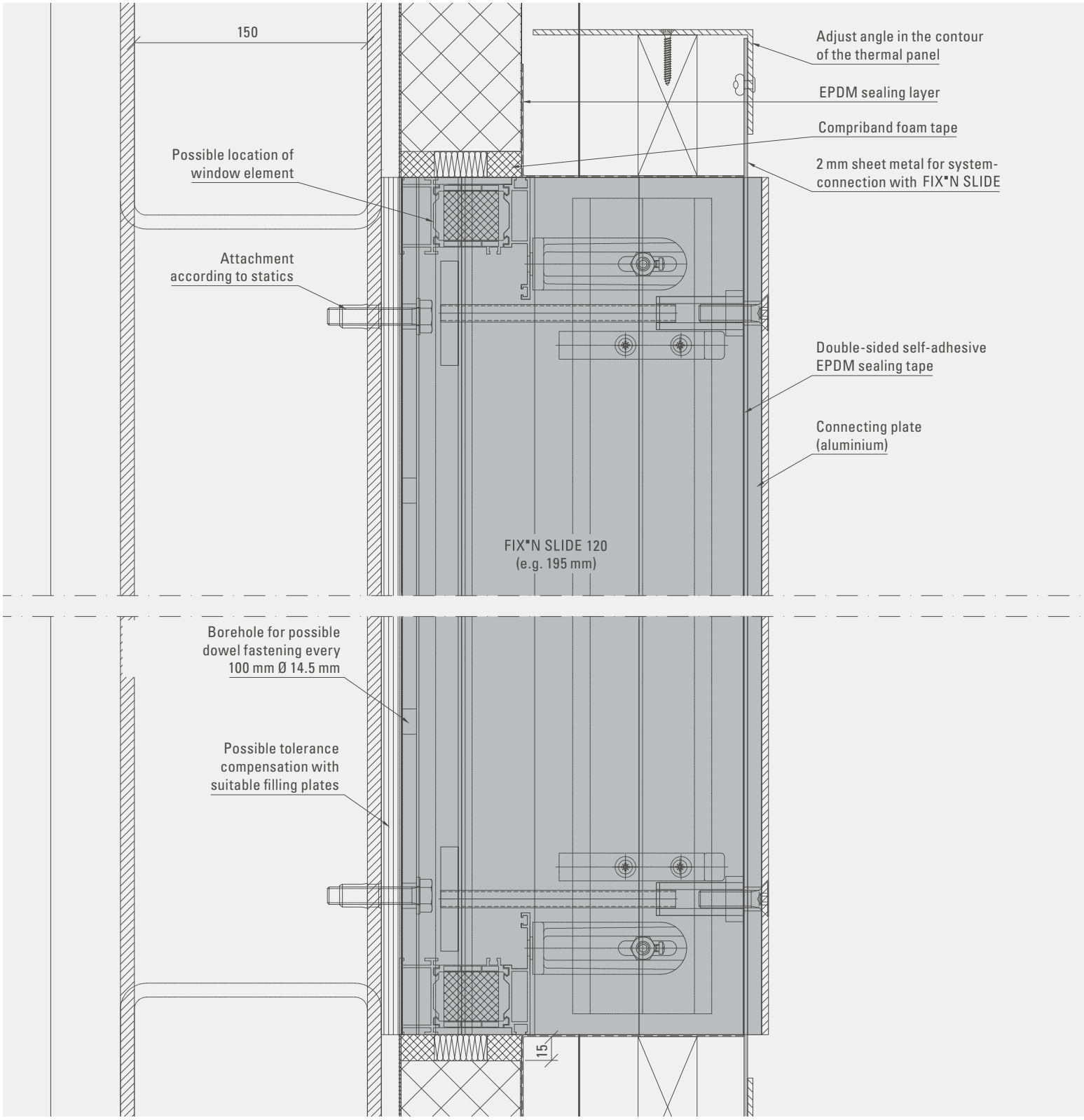
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of thermopanel FIX▪N SLIDE (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Mounting of sunscreen

Drawing number: FS-TP-610

Verifications of load application and transfer are to be carried out on-site

Horizontal section

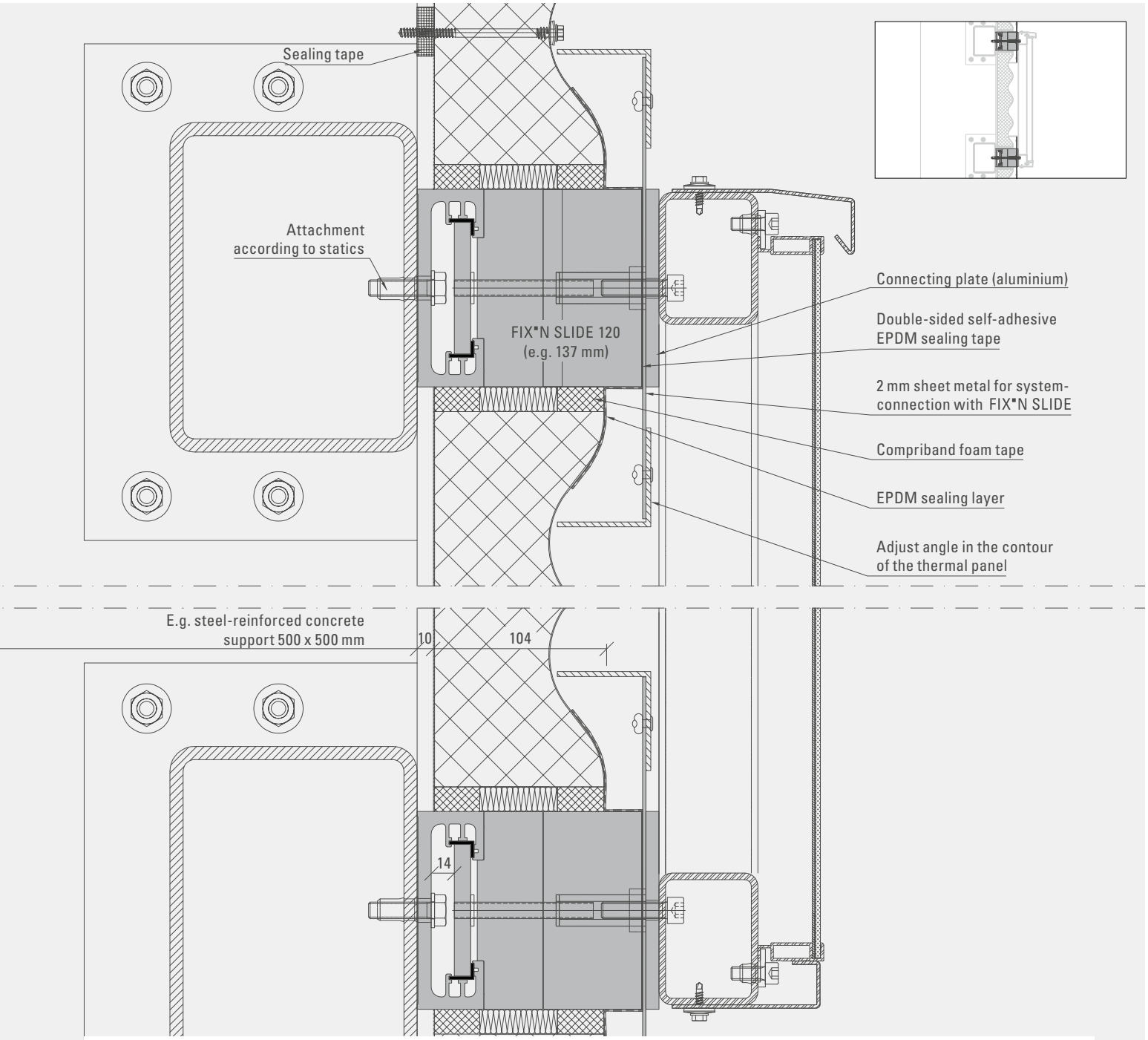


Drawing number: FS-TP-110
Verifications of load application and transfer are to be carried out on-site

Photovoltaic modules on the substructure

Thermal panel thermopanel

Vertical section



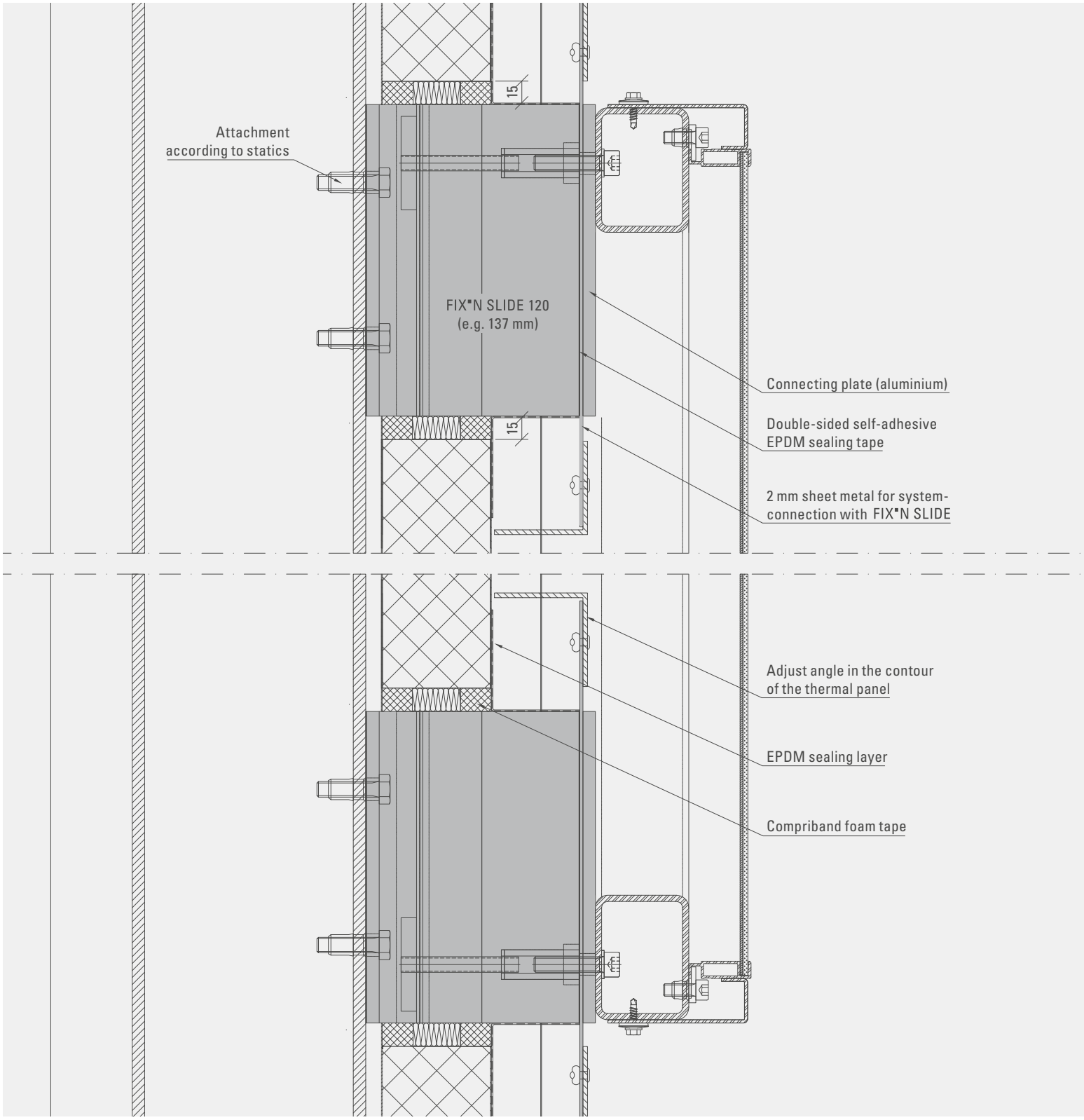
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of thermopanel FIX"N SLIDE
  (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive
  EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Mounting of photovoltaic modules

Drawing number: FS-TP-605

Verifications of load application and transfer are to be carried out on-site

Horizontal section

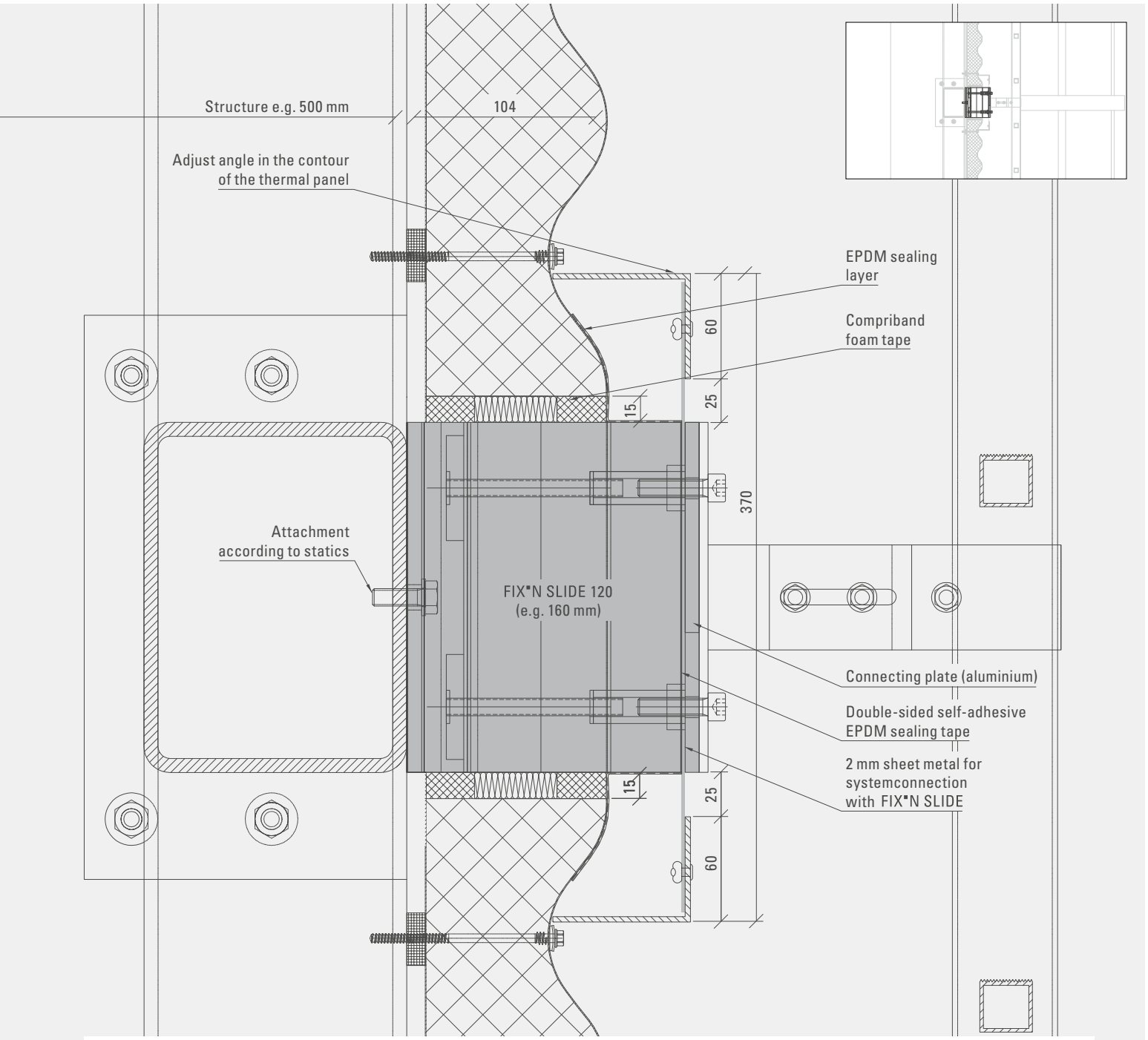


Drawing number: FS-TP-105
Verifications of load application and transfer are to be carried out on-site

Fixed **ladder** DIN 18799-1

Thermal panel thermopanel

Vertical section



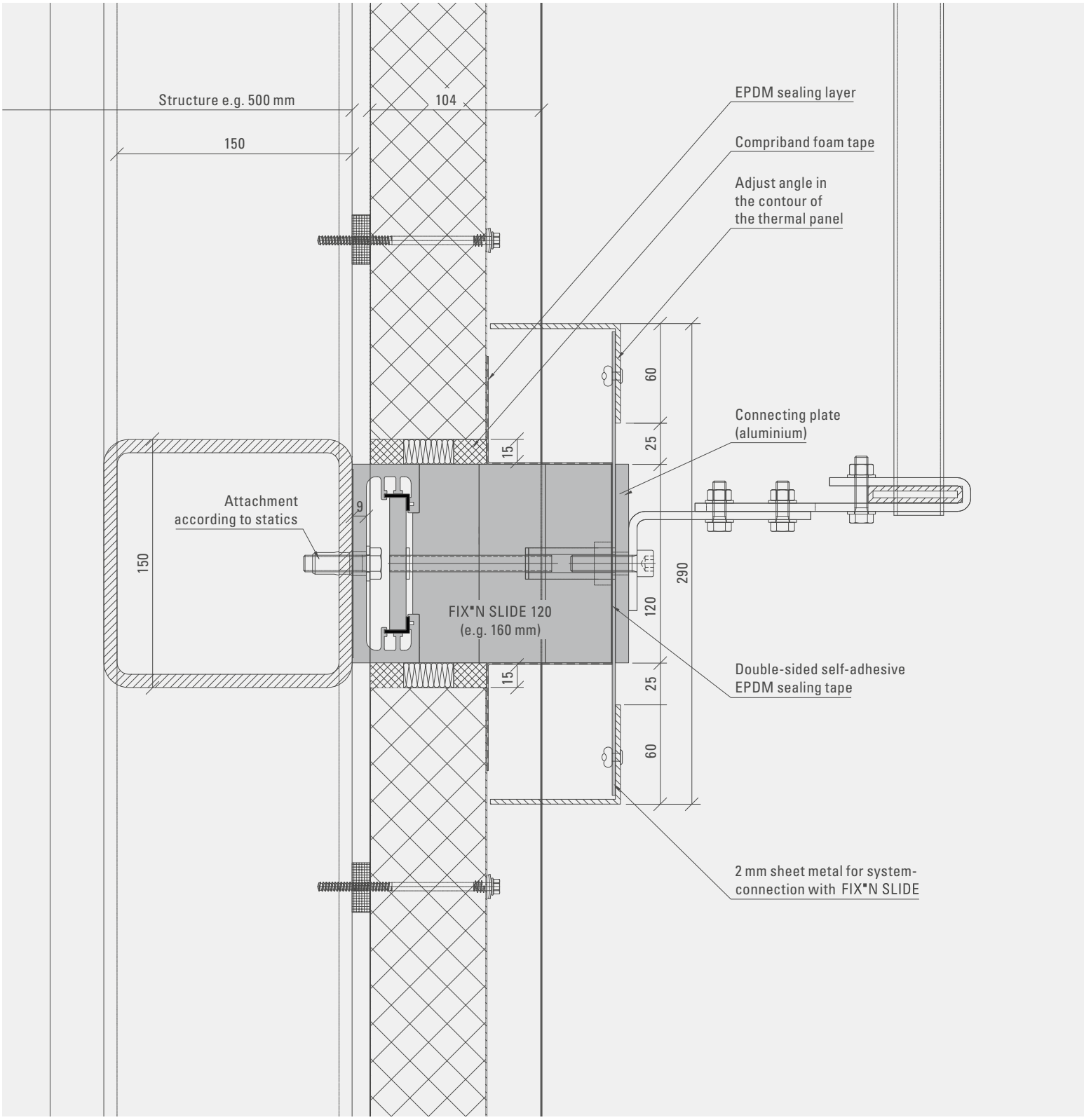
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of thermopanel FIX"N SLIDE (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Installation of vertical ladder

Drawing number: FS-TP-606

Verifications of load application and transfer are to be carried out on-site

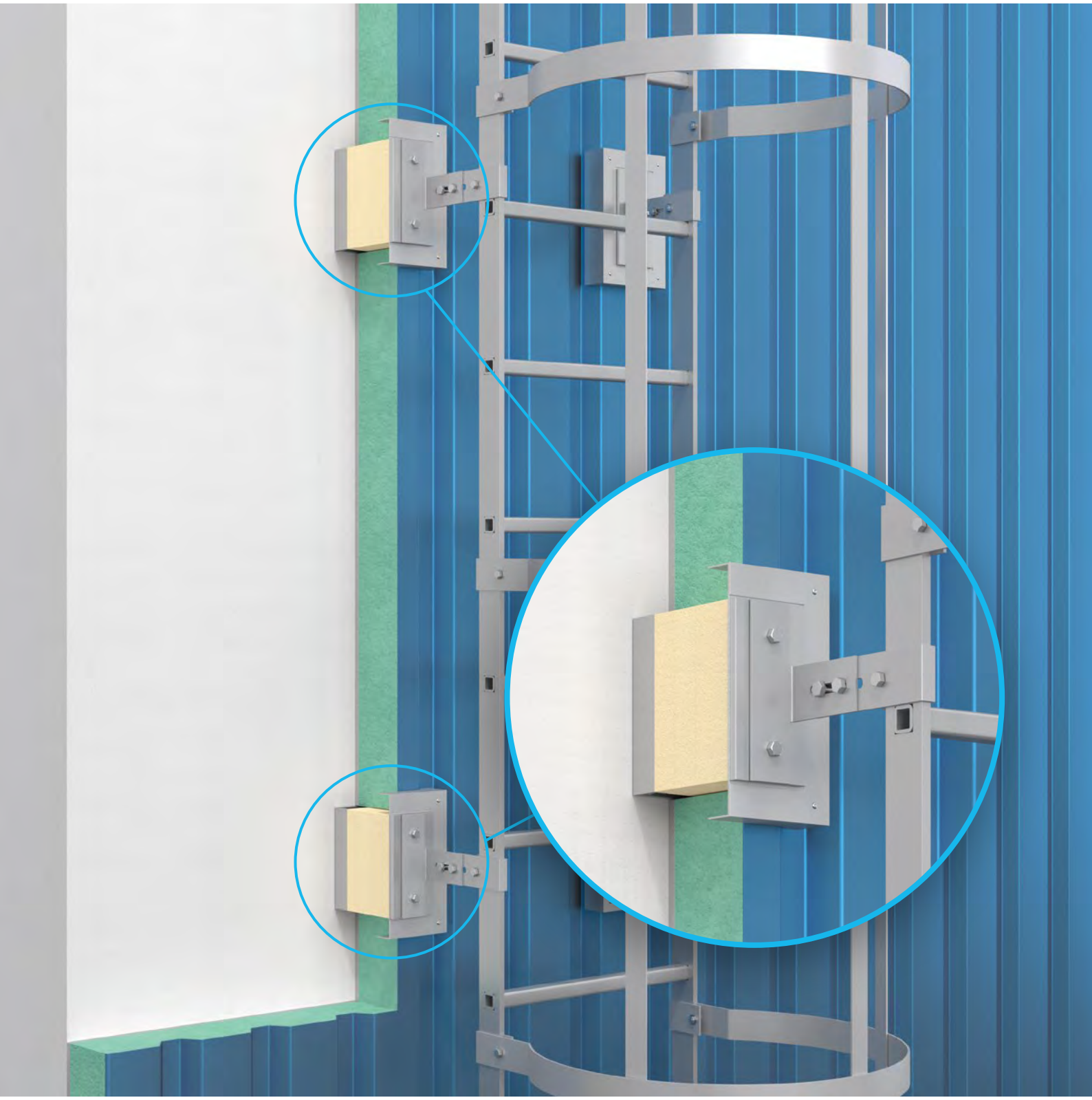
Horizontal section



Drawing number: FS-TP-106
Verifications of load application and transfer are to be carried out on-site

GLASSLINE

FIX'N SLIDE *panel facade*



INDUSTRIAL HALL WITH TRAPEZOIDAL SHEET METAL THERMOPANEL AND VERTICAL LADDER

APPLICATION EXAMPLES

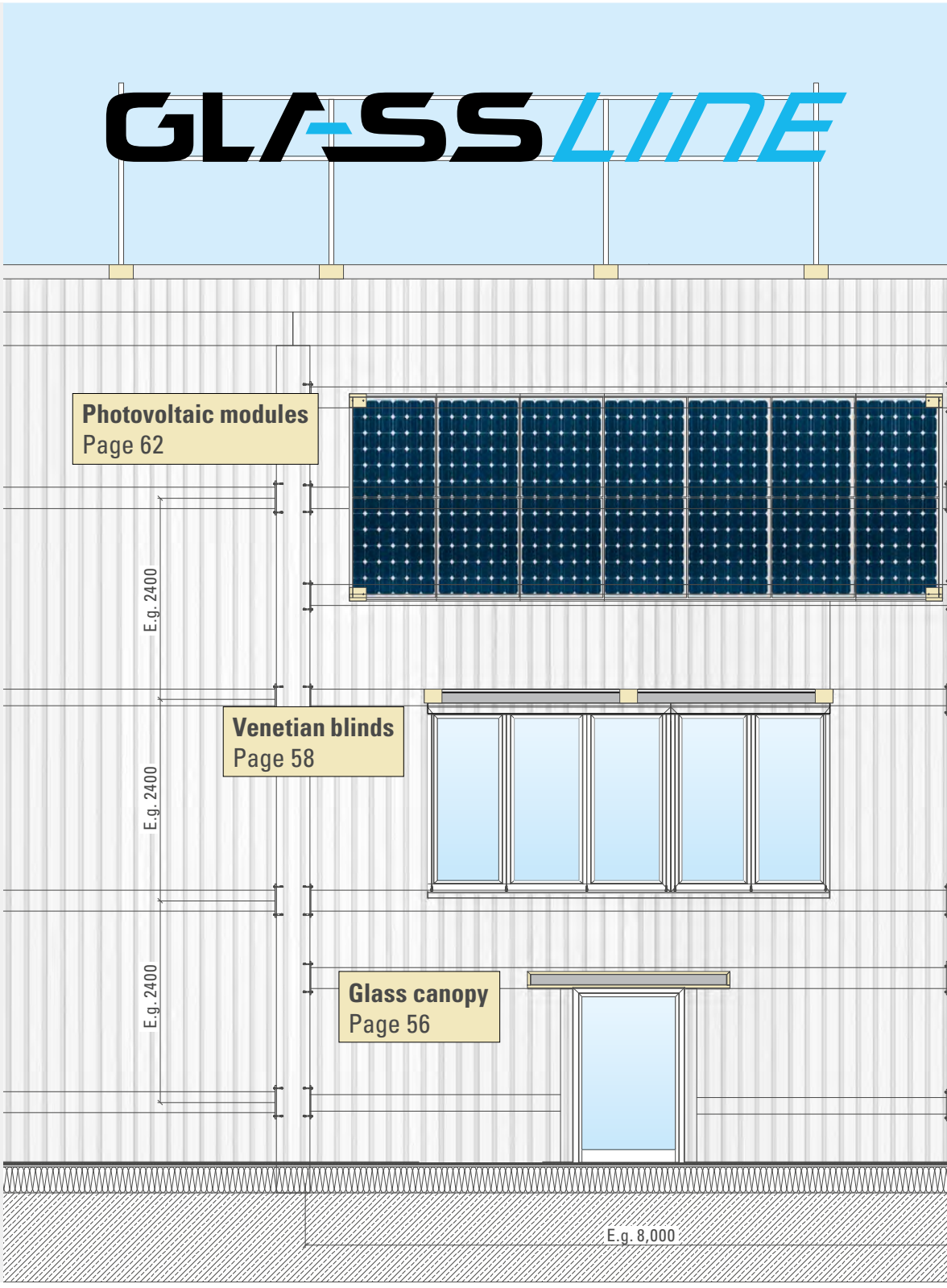
View of an industrial hall

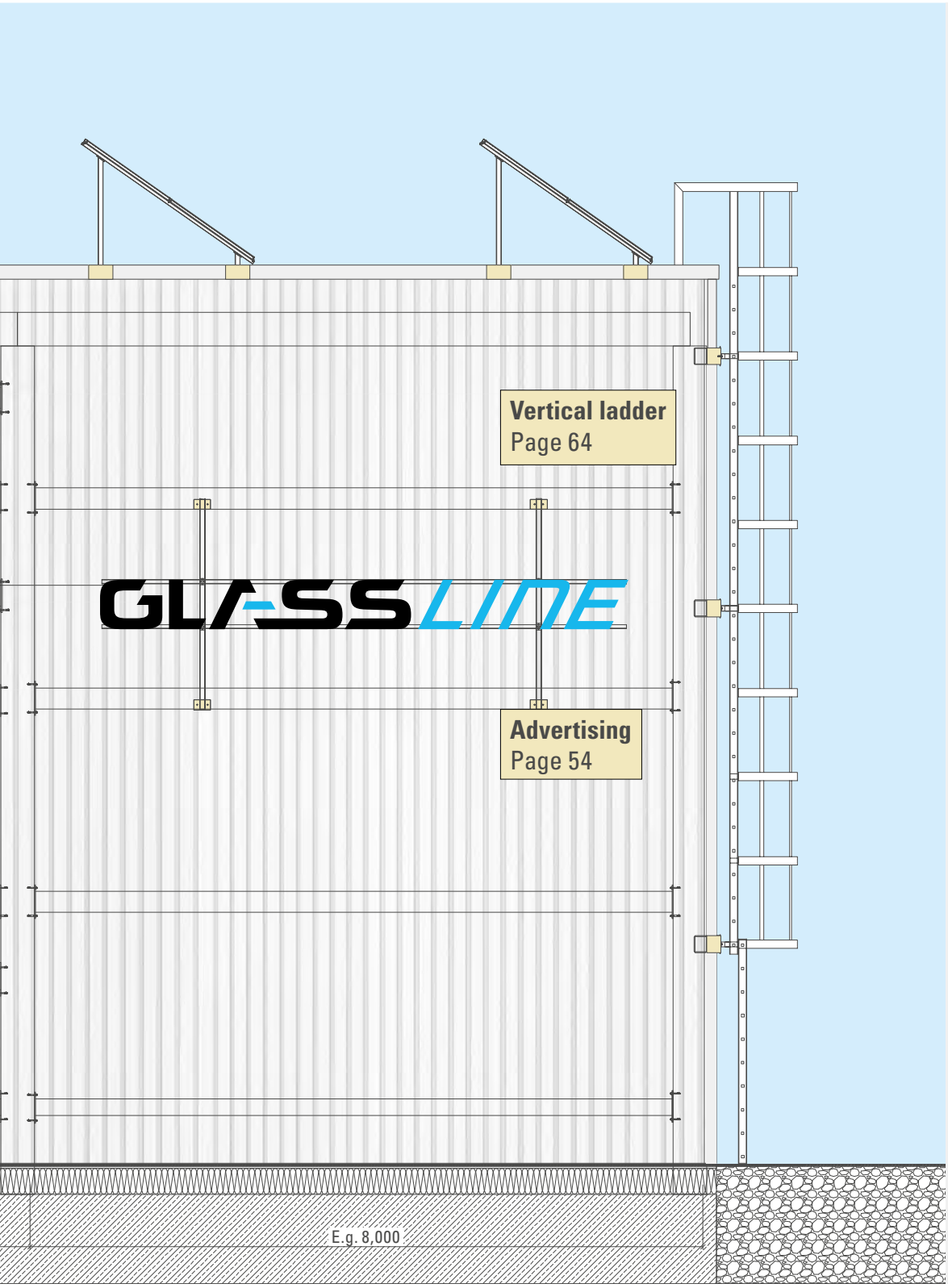
with trapezoidal sheet metal thermopanel

Photovoltaic modules

Venetian blinds

Glass canopy




Vertical ladder
Page 64
GLASSLINE
Advertising
Page 54
E.g. 8,000

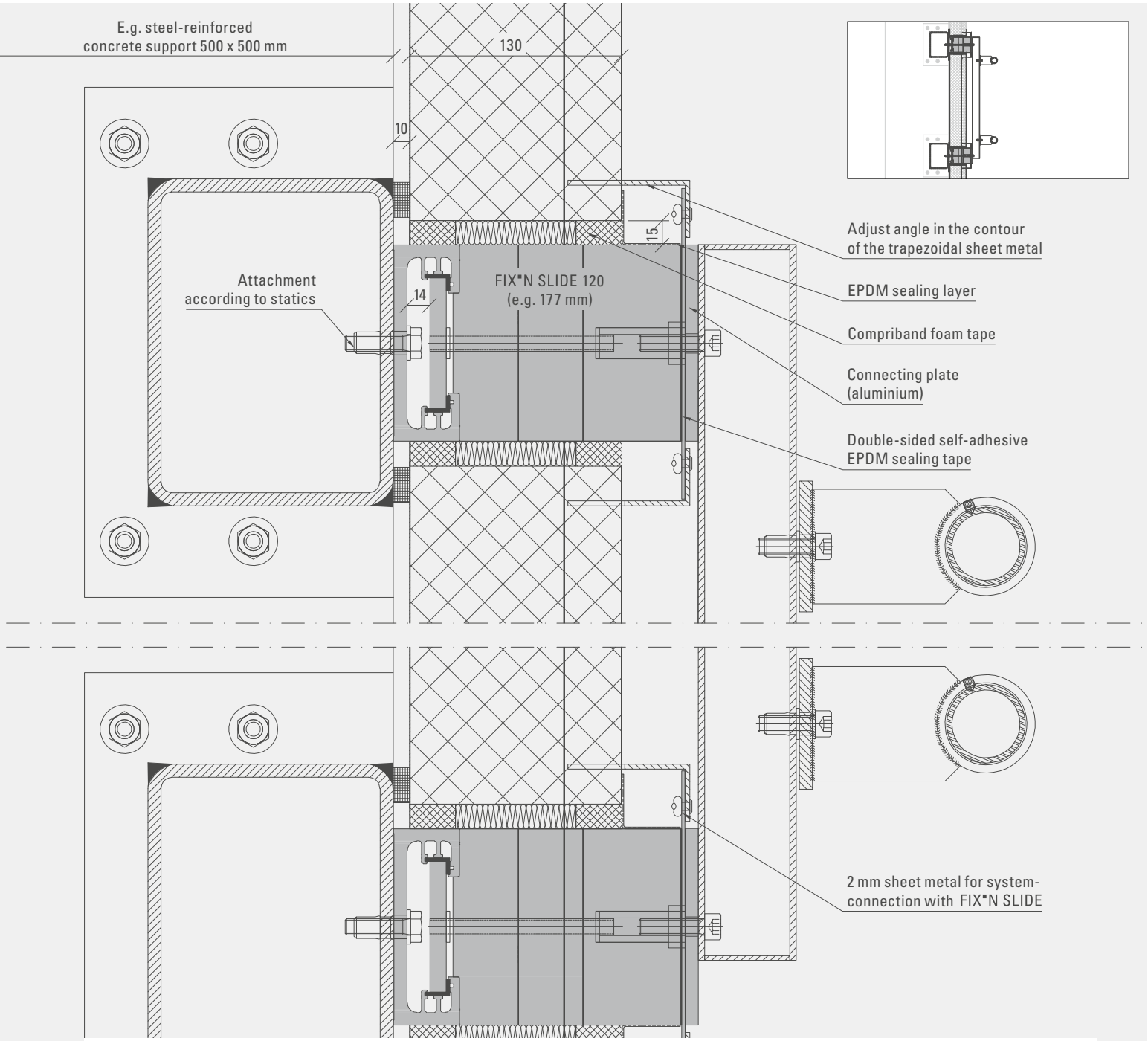

Vertical ladder


Advertising

Advertising on sandwich panel façade

Trapezoidal sheet metal thermopanel

Vertical section



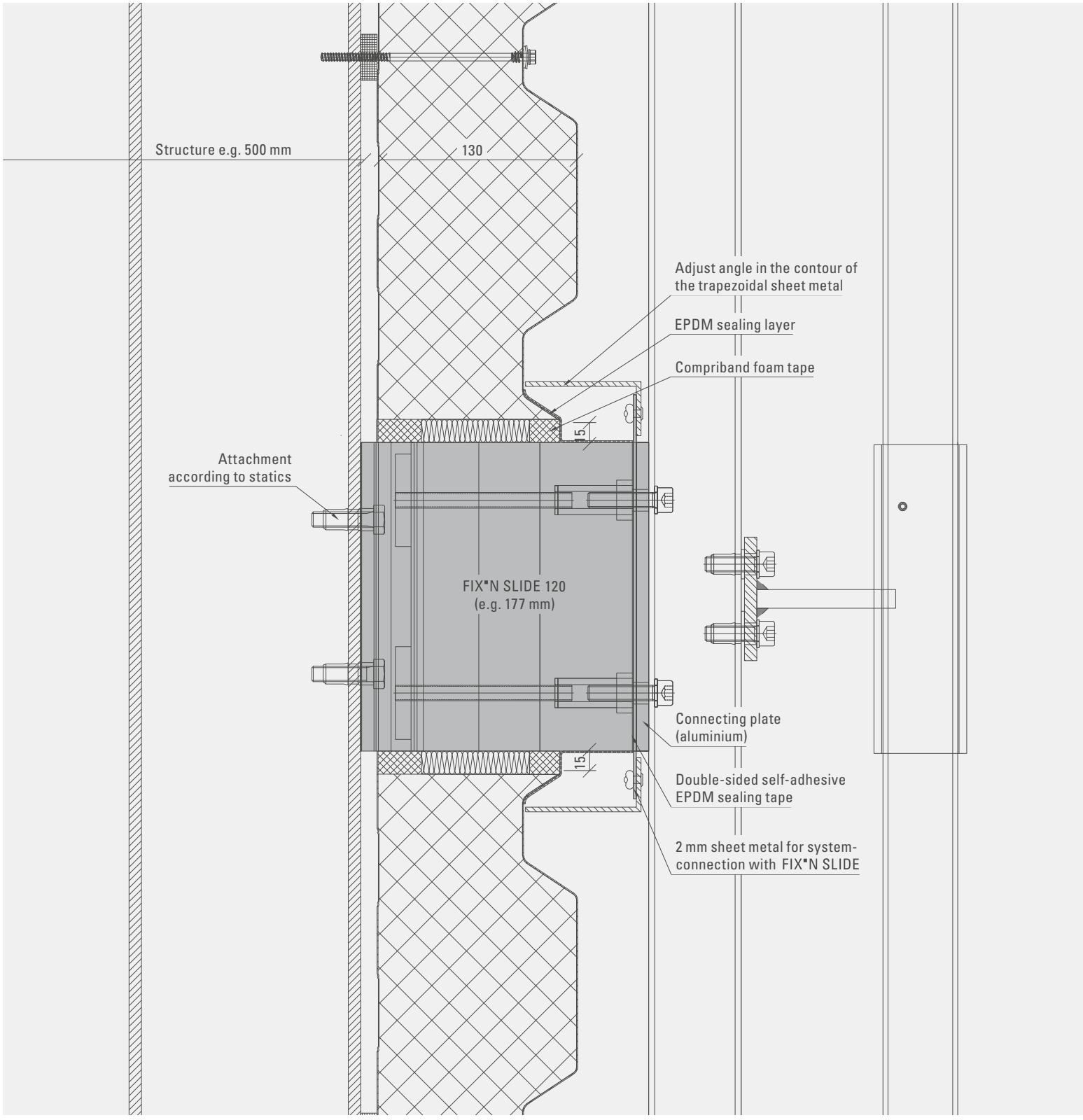
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of thermopanel FIX"N SLIDE
  (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive
  EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Mounting of advertising

Drawing number: FS-TP-701

Verifications of load application and transfer are to be carried out on-site

Horizontal section

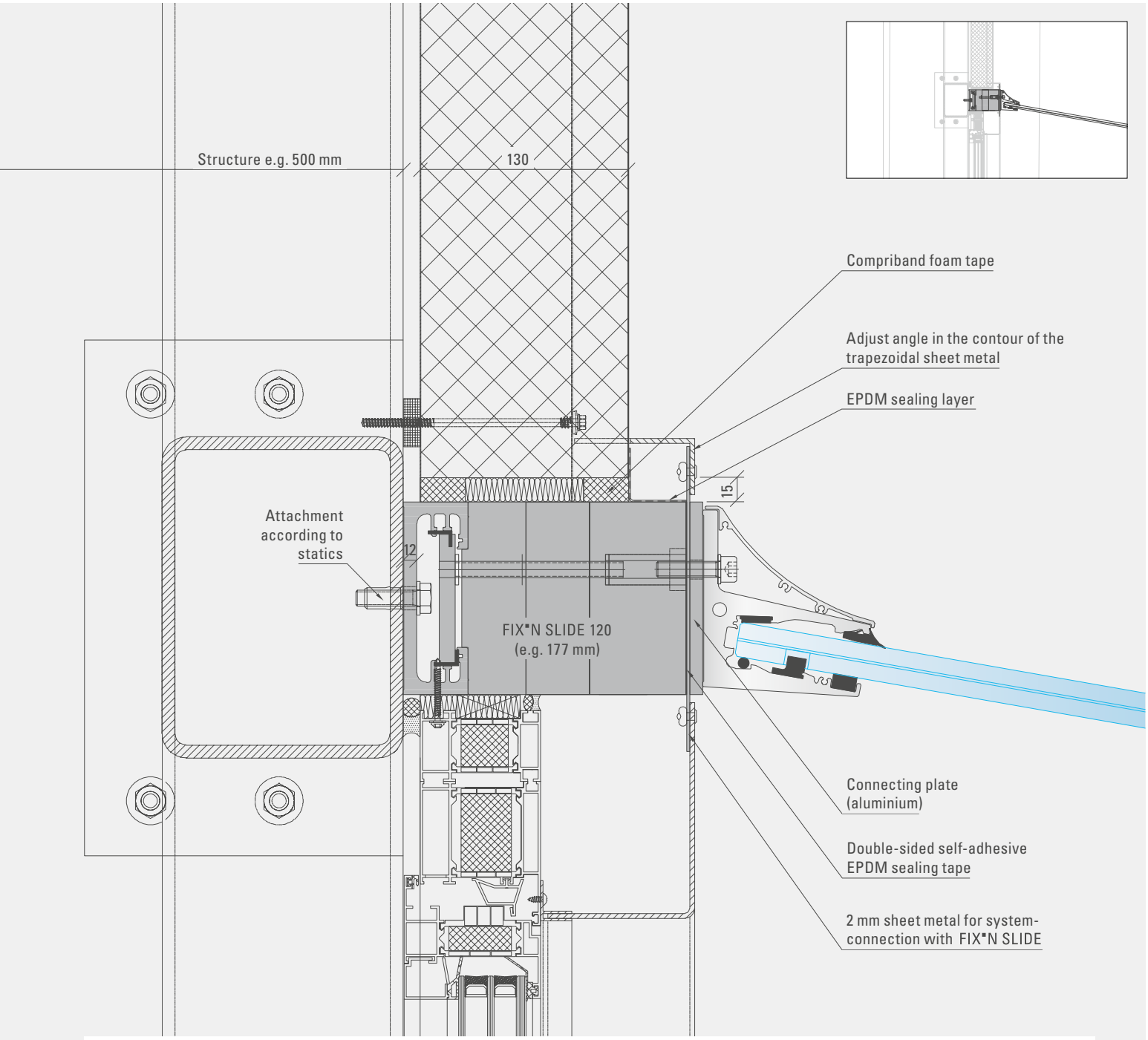


Drawing number: FS-TP-201
Verifications of load application and transfer are to be carried out on-site

Glass canopy CANOPY CLOUD

Trapezoidal sheet metal thermopanel with door element

Vertical section



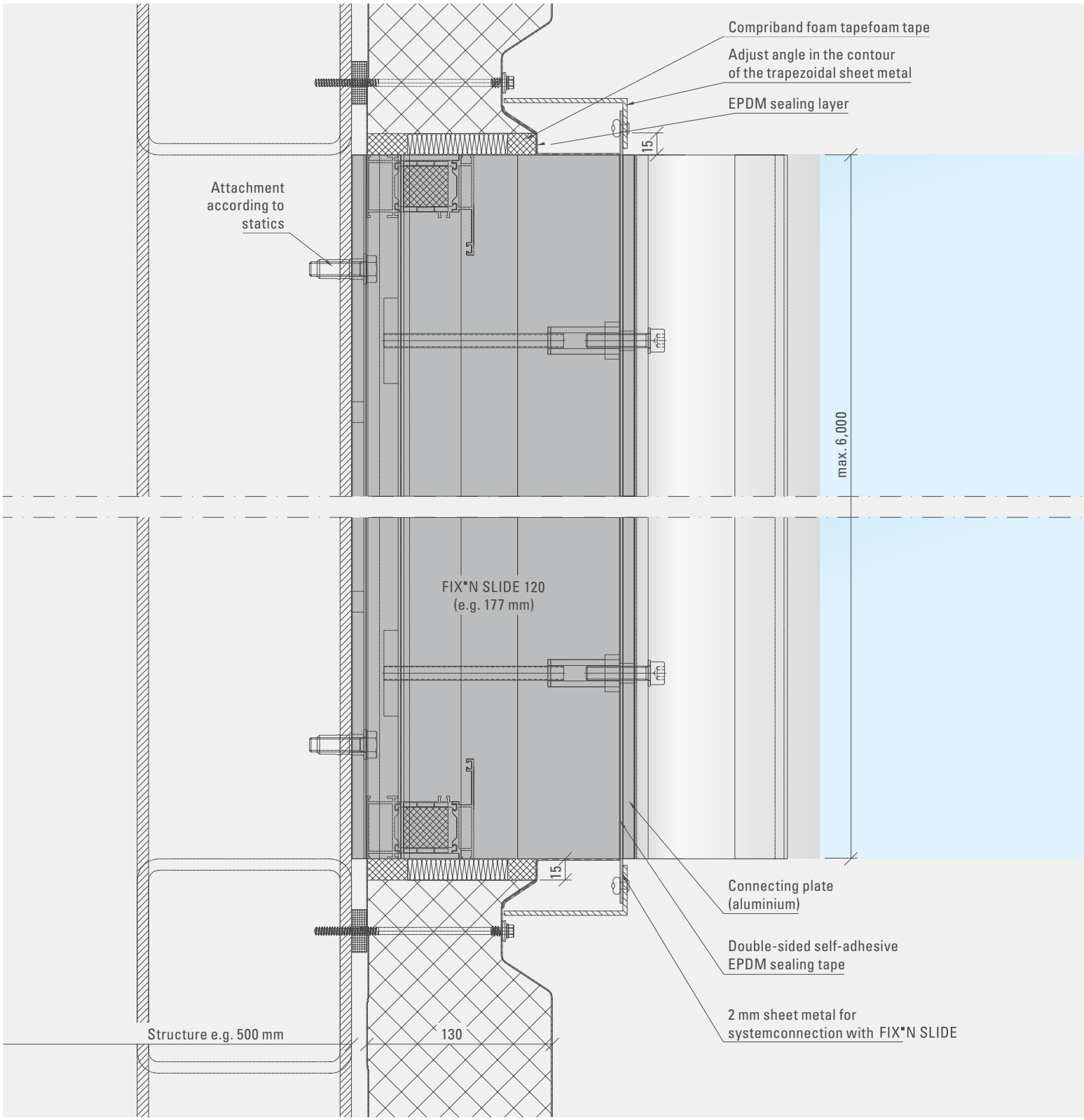
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of thermopanel FIX"N SLIDE (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Mounting of the canopy

Drawing number: FS-TP-702

Verifications of load application and transfer are to be carried out on-site

Horizontal section

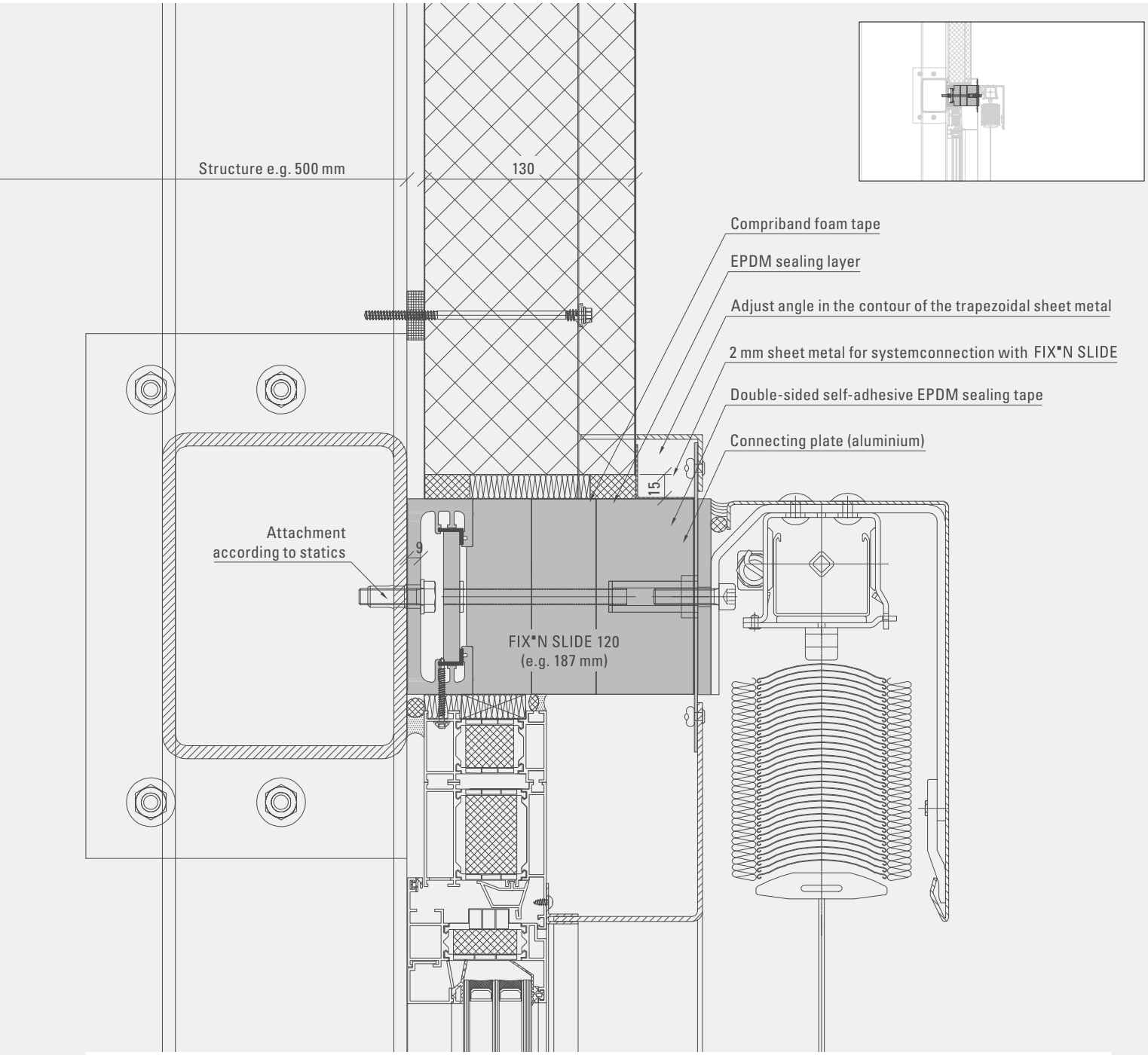


Drawing number: FS-TP-202
Verifications of load application and transfer are to be carried out on-site

Upper connection of the **Venetian blind** with cable guide

Window element in trapezoidal sheet metal thermopanel

Vertical section



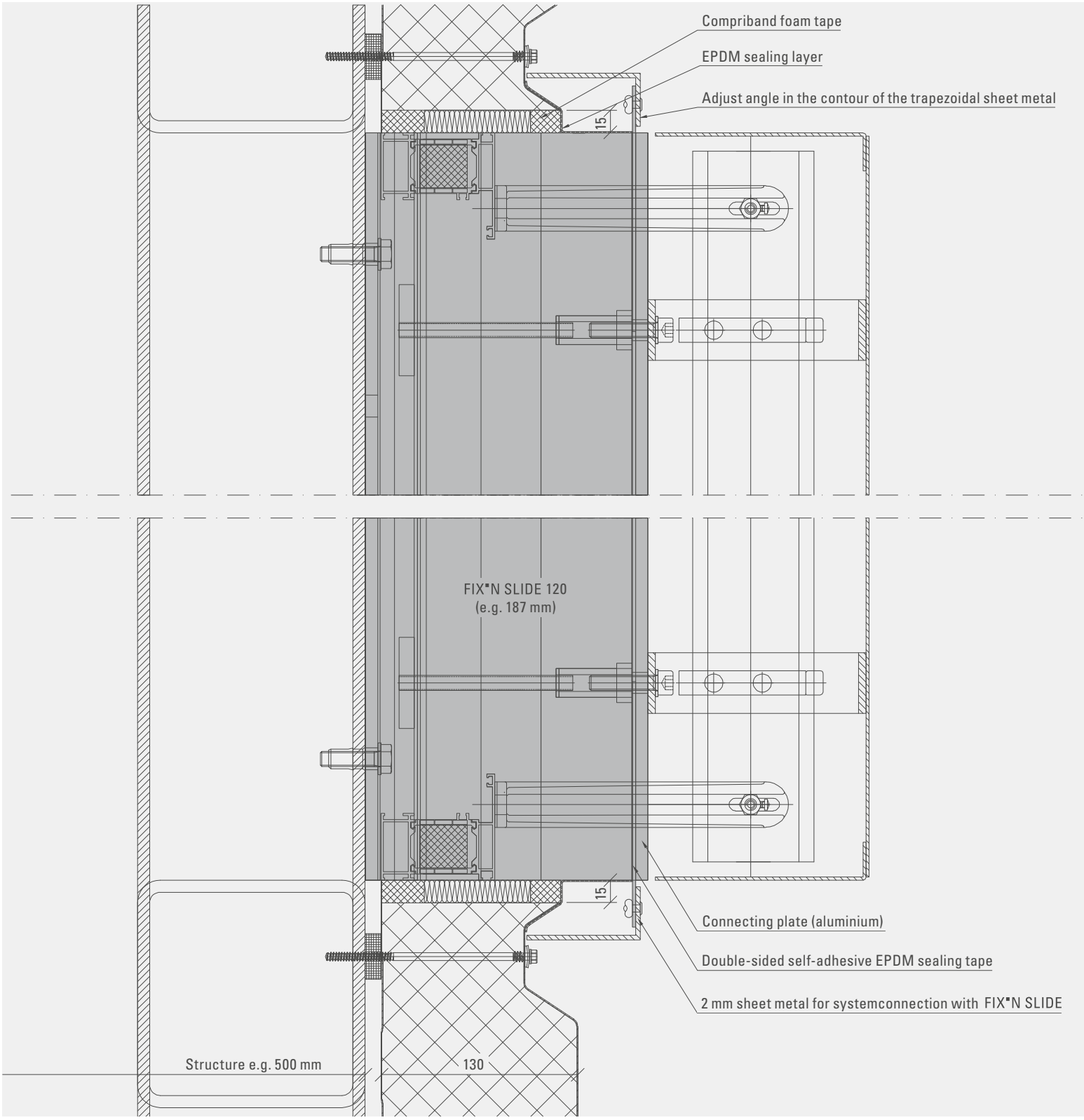
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of thermopanel FIX▪N SLIDE
  (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Mounting of sunscreen

Drawing number: FS-TP-703

Verifications of load application and transfer are to be carried out on-site

Horizontal section

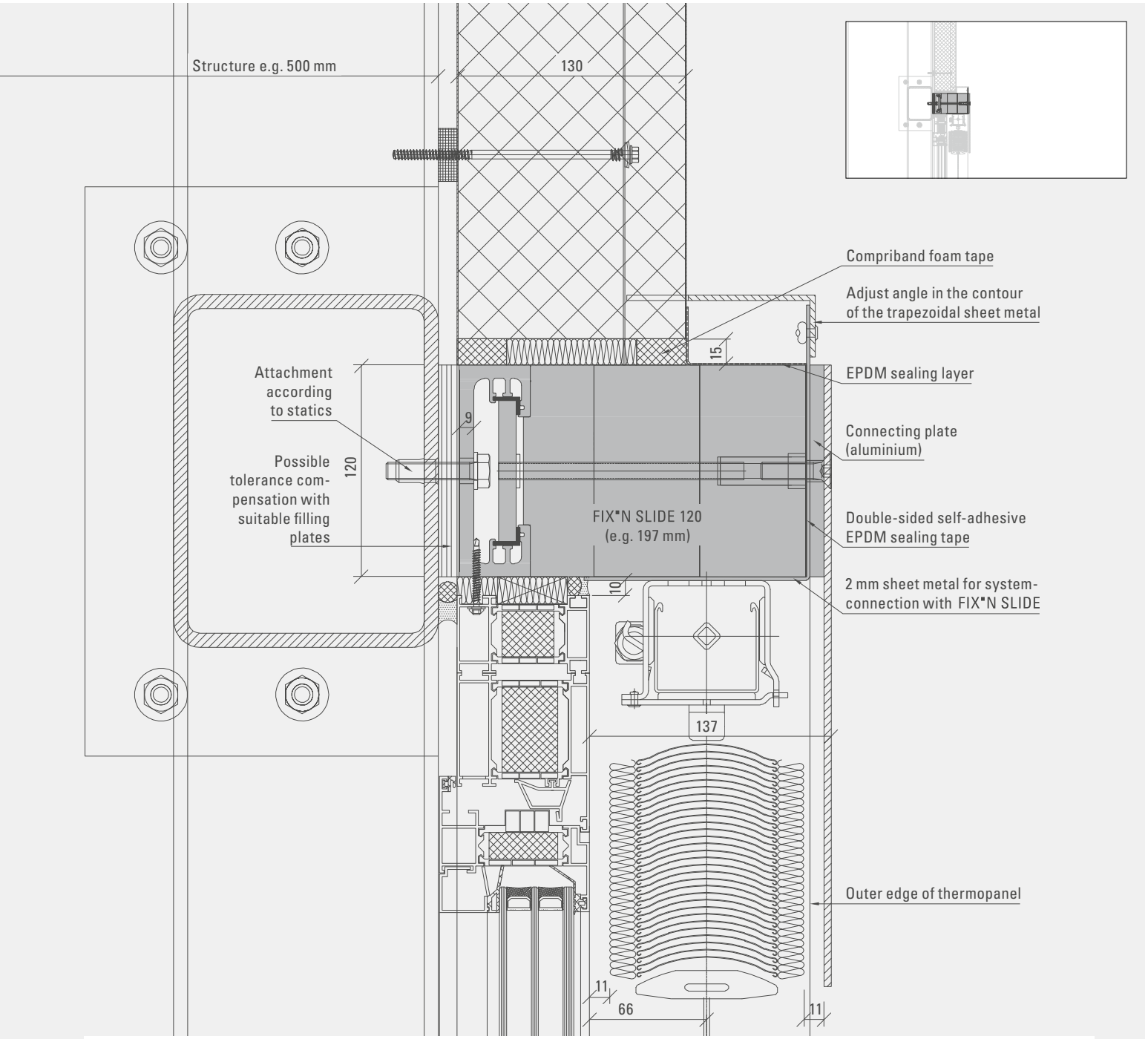


Drawing number: FS-TP-203
Verifications of load application and transfer are to be carried out on-site

Venetian blind with cable guide

Smooth sheet metal thermopanel in the soffit

Vertical section



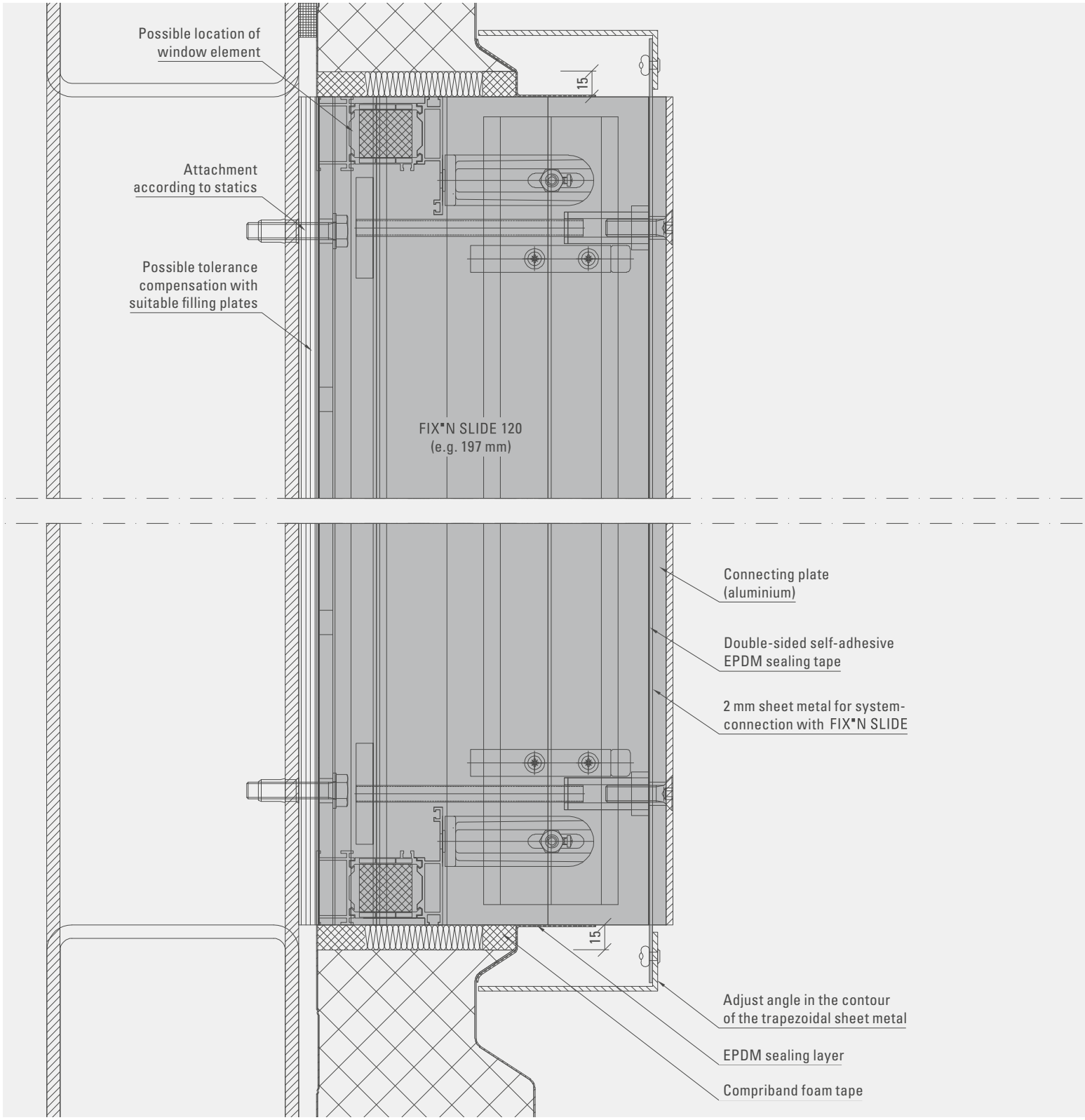
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of thermopanel FIX"N SLIDE (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Mounting of sunscreen

Drawing number: FS-TP-710

Verifications of load application and transfer are to be carried out on-site

Horizontal section

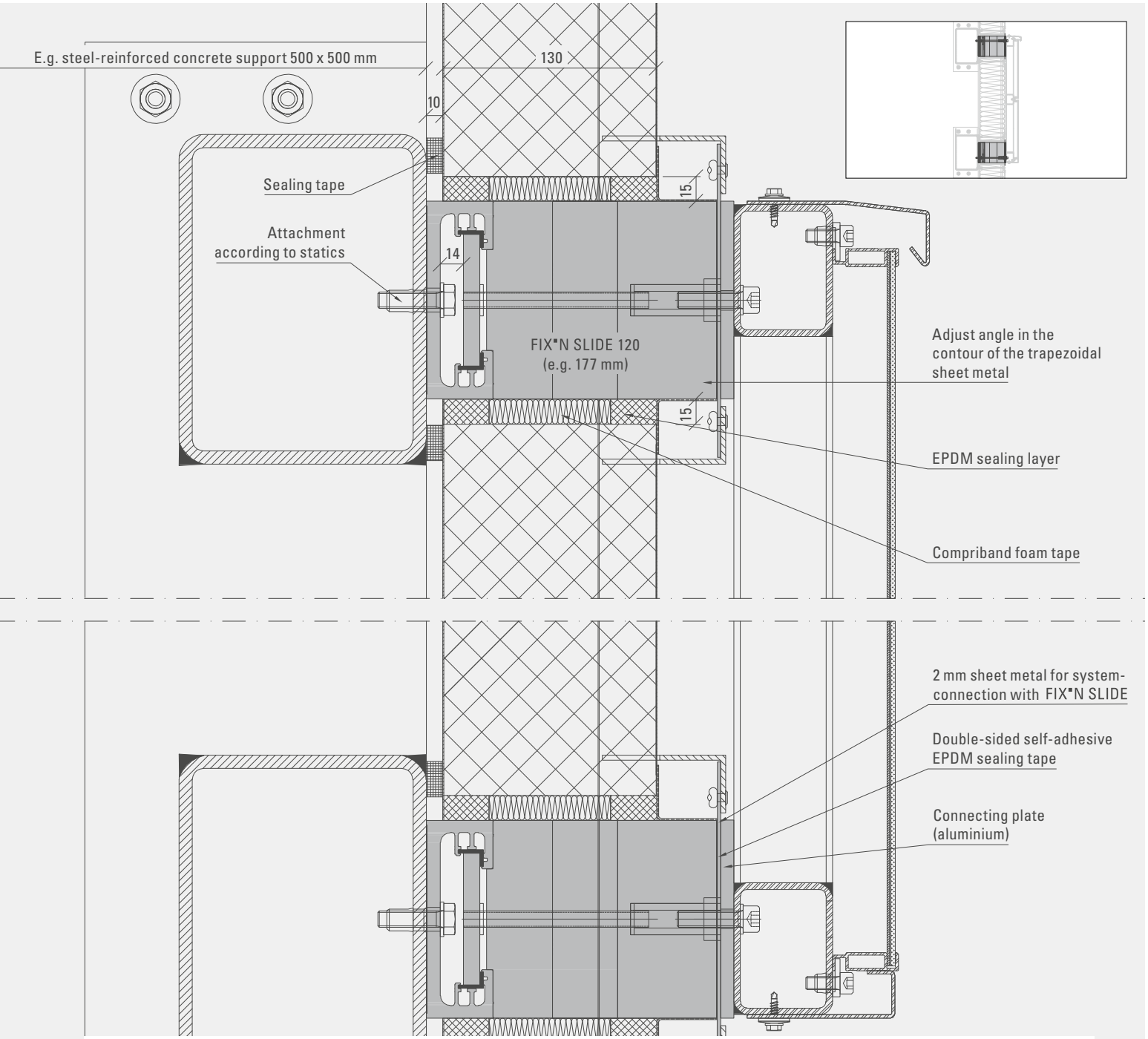


Drawing number: FS-TP-210
Verifications of load application and transfer are to be carried out on-site

Photovoltaic modules on the substructure

Trapezoidal sheet metal thermopanel

Vertical section



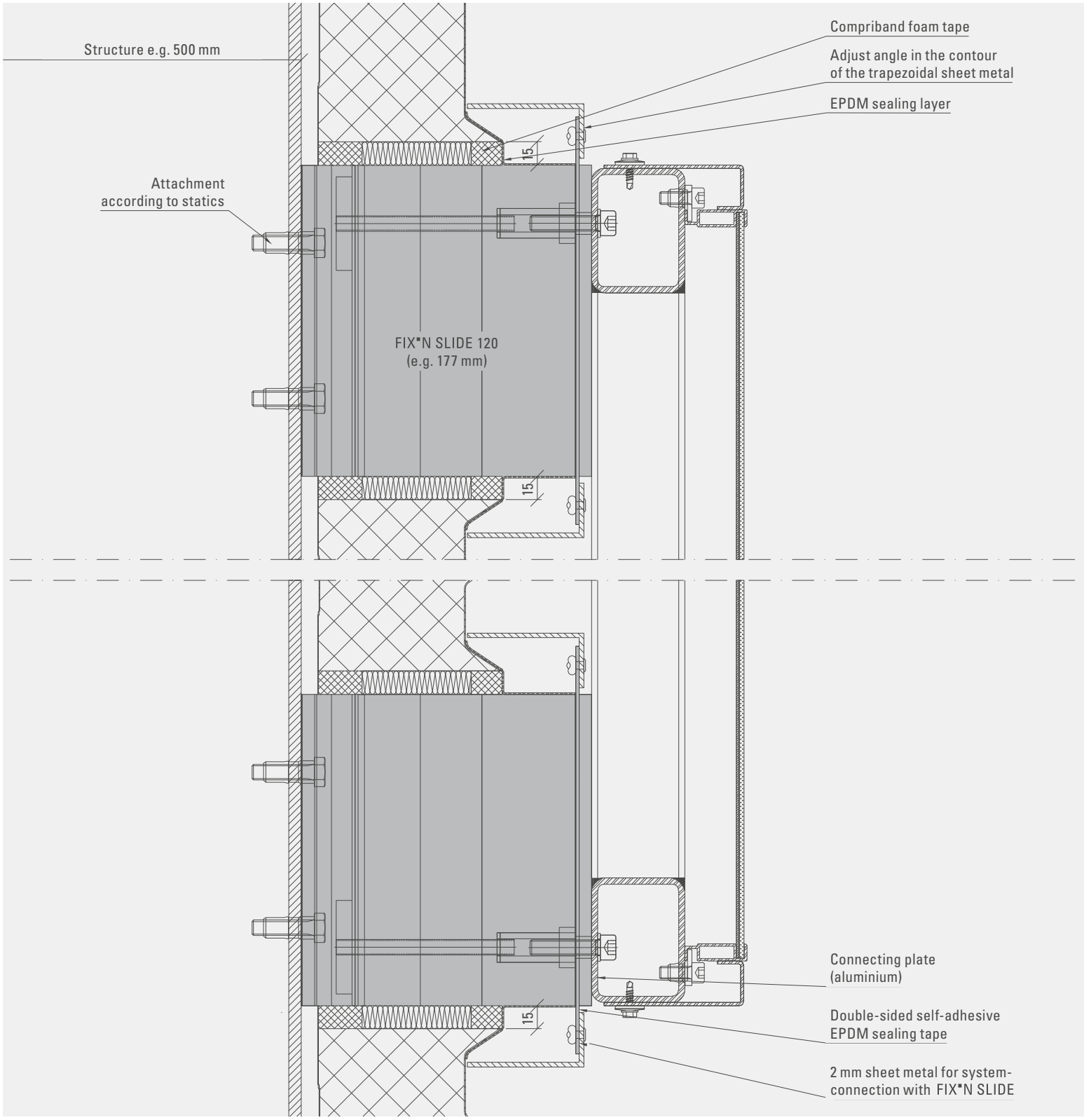
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of thermopanel FIX"N SLIDE
  (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive
  EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Installation of photovoltaic system

Drawing number: FS-TP-705

Verifications of load application and transfer are to be carried out on-site

Horizontal section

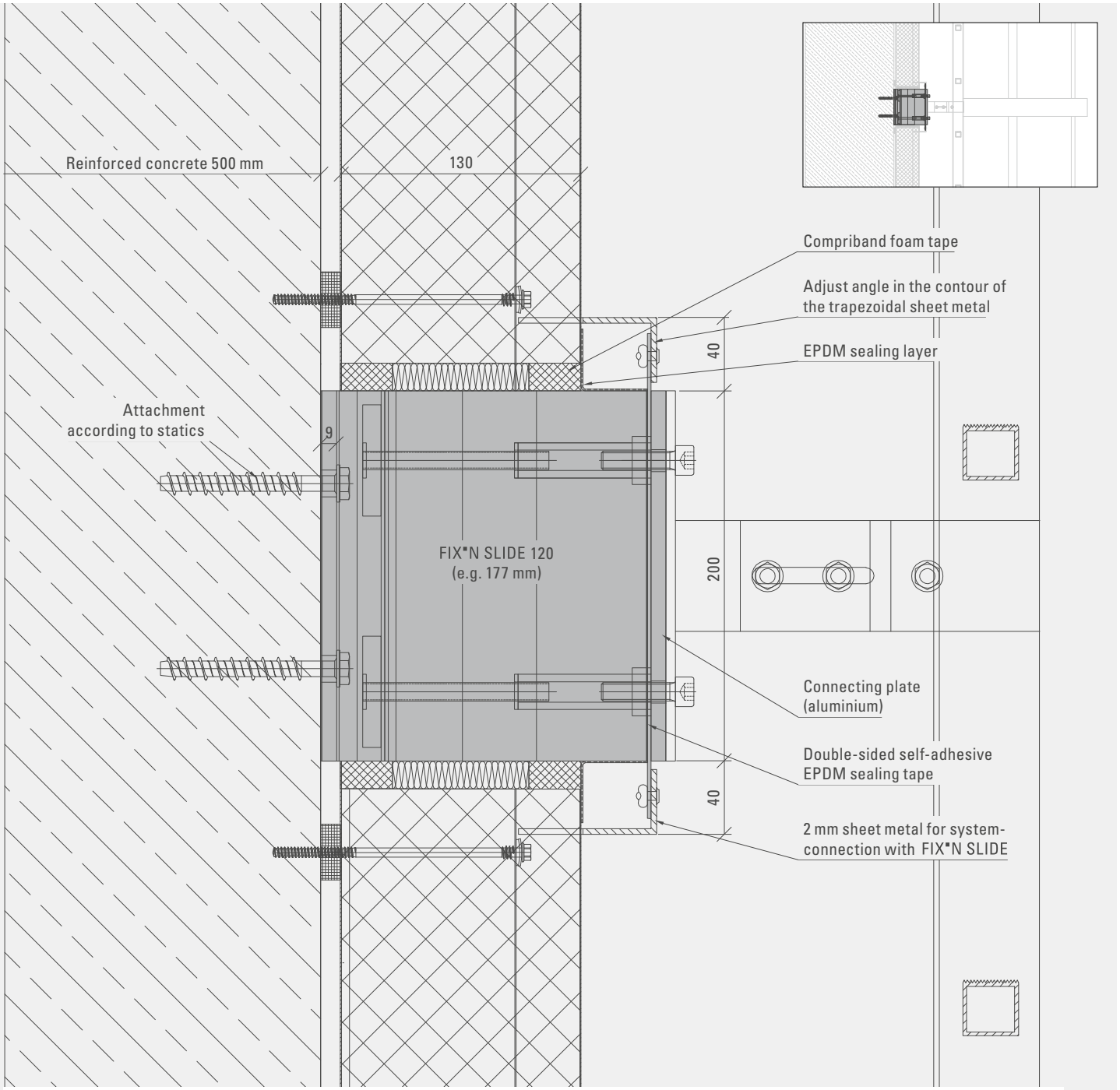


Drawing number: FS-TP-205
Verifications of load application and transfer are to be carried out on-site

Fixed **ladder** DIN 18799-1

Trapezoidal sheet metal thermopanel

Vertical section



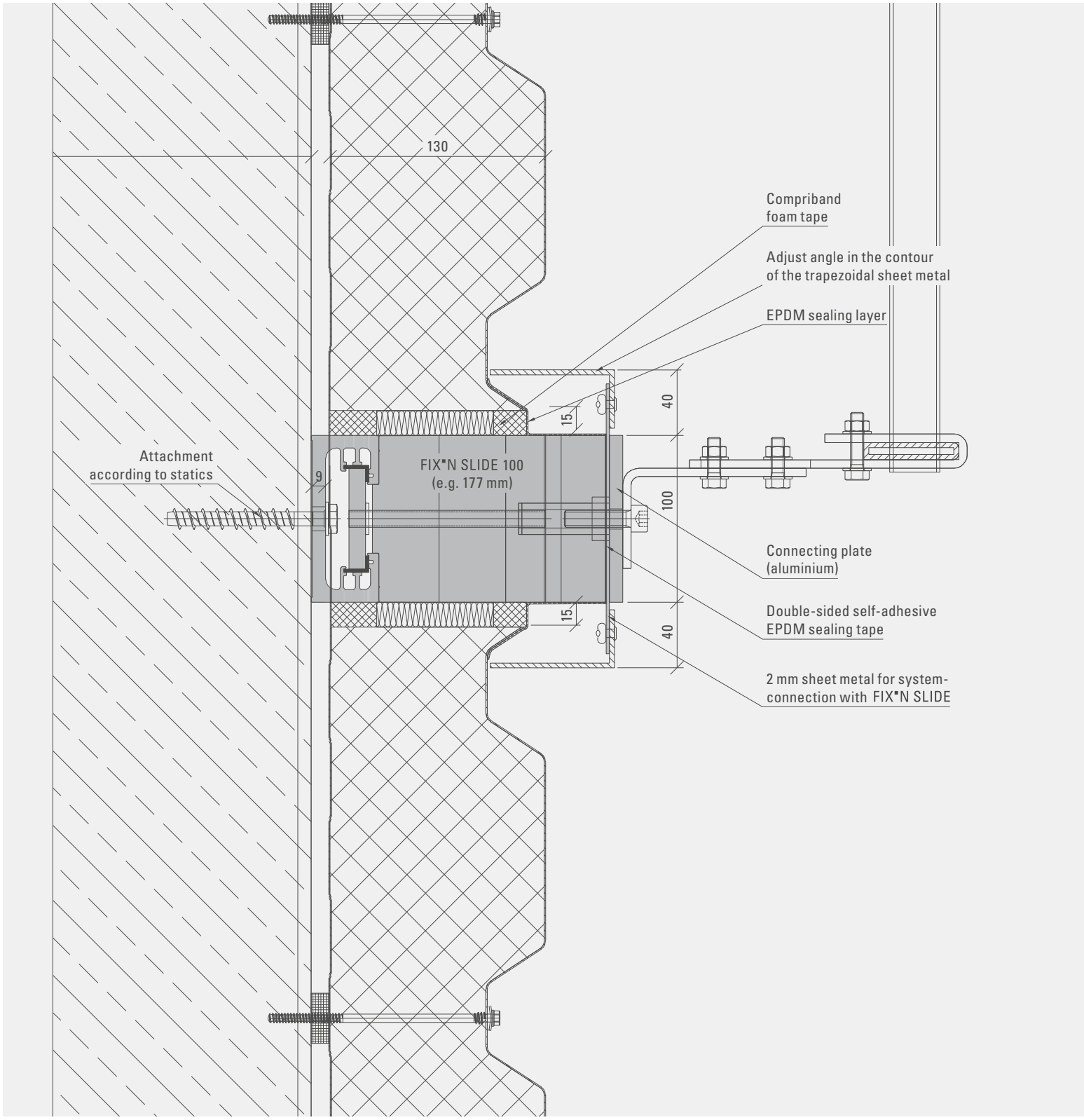
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of thermopanel FIX"N SLIDE (possible tolerance compensation with suitable filling plates)
- Establishment of the outer sealing using double-sided adhesive EPDM sealing tape
- Connecting plate fixation
- Building of the thermopanel façade
- Installation of vertical ladder

Drawing number: FS-TP-706

Verifications of load application and transfer are to be carried out on-site

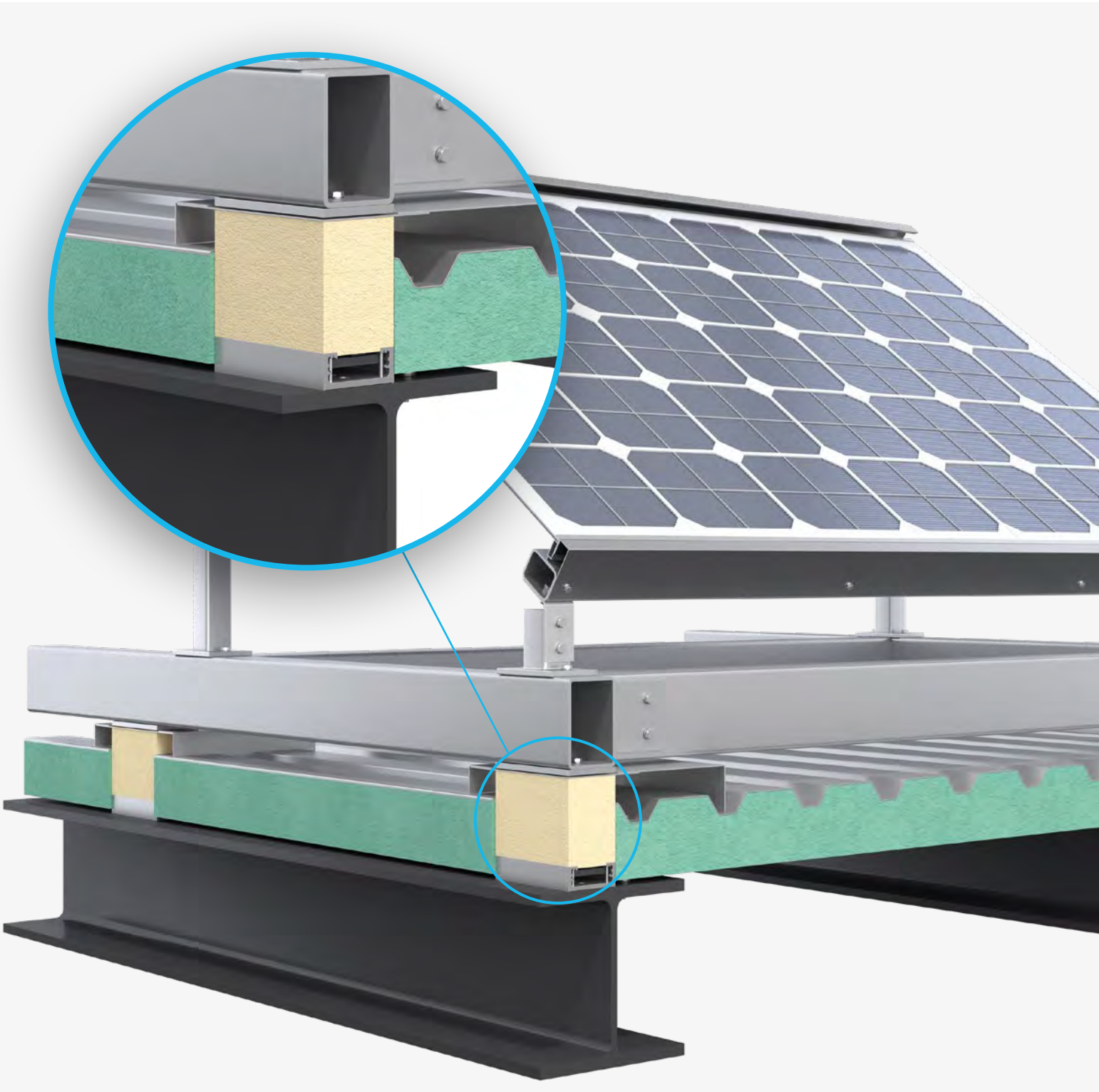
Horizontal section



Drawing number: FS-TP-206
Verifications of load application and transfer are to be carried out on-site

GLASSLINE

FIX'N SLIDE *panel facade*

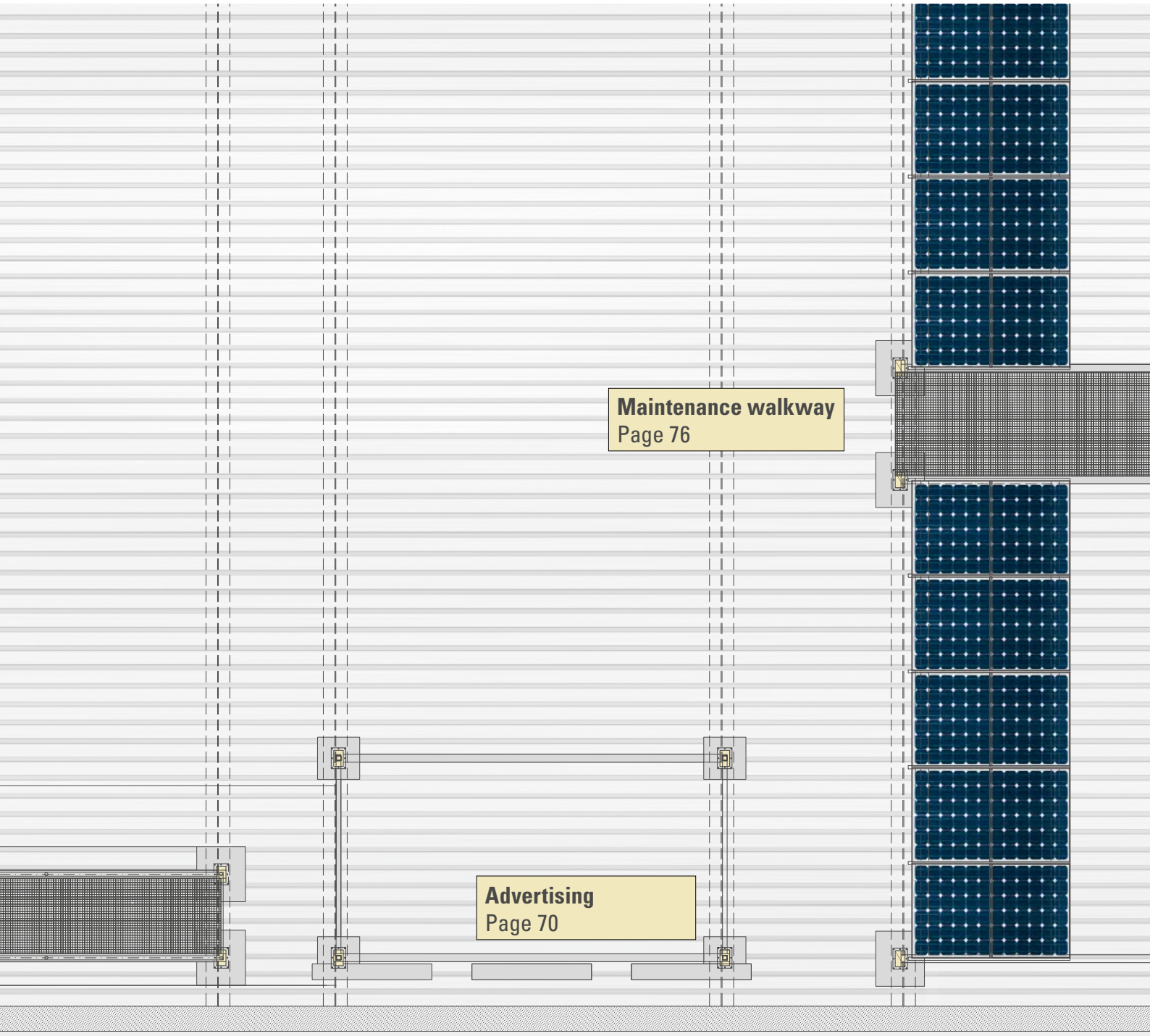


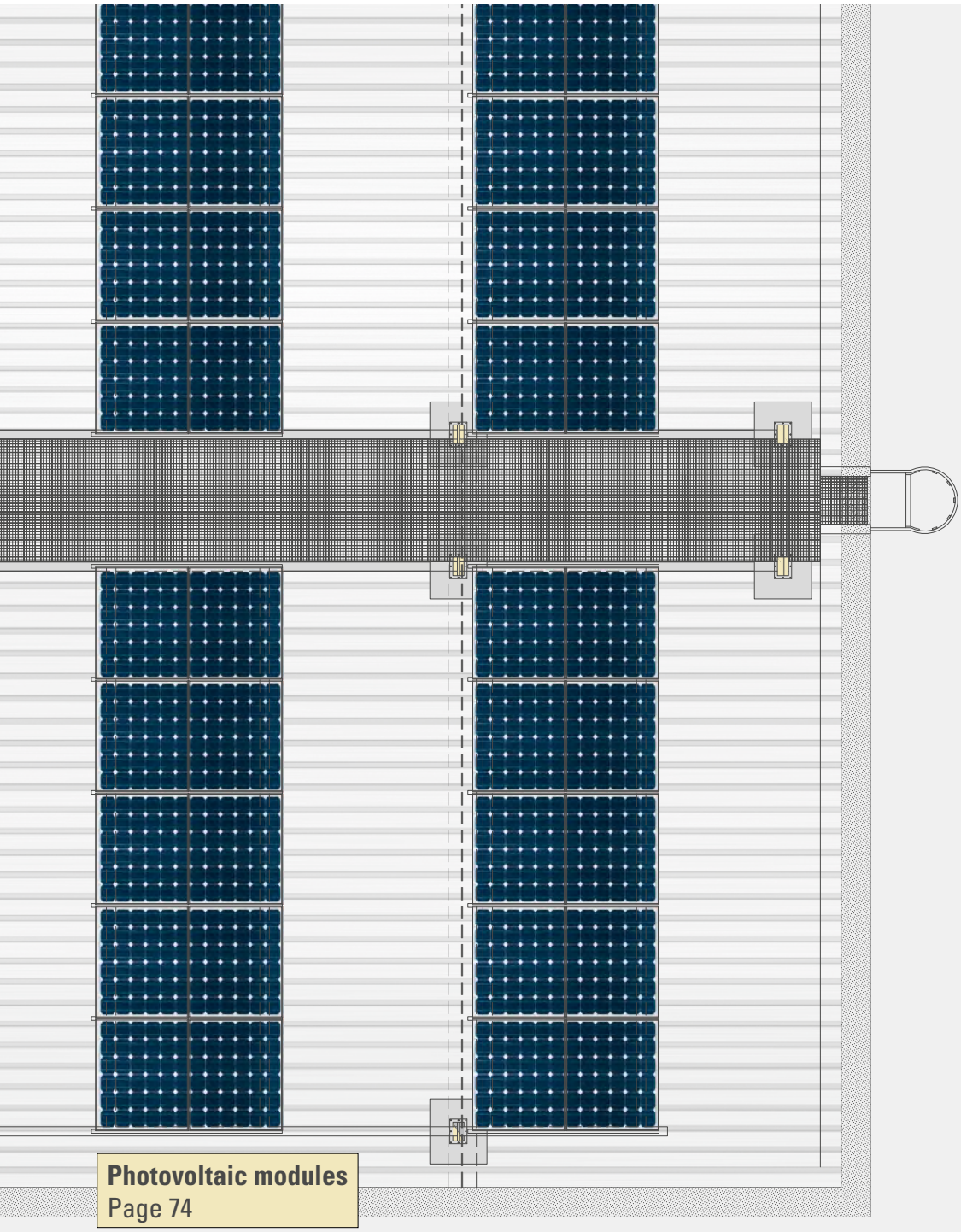
INDUSTRIAL HALL WITH ROOF THERMOPANEL AND PHOTOVOLTAIC MODULES

APPLICATION EXAMPLES

Top view of an industrial hall

with trapezoidal sheet metal thermopanel





Photovoltaic modules
Page 74

Maintenance walkway

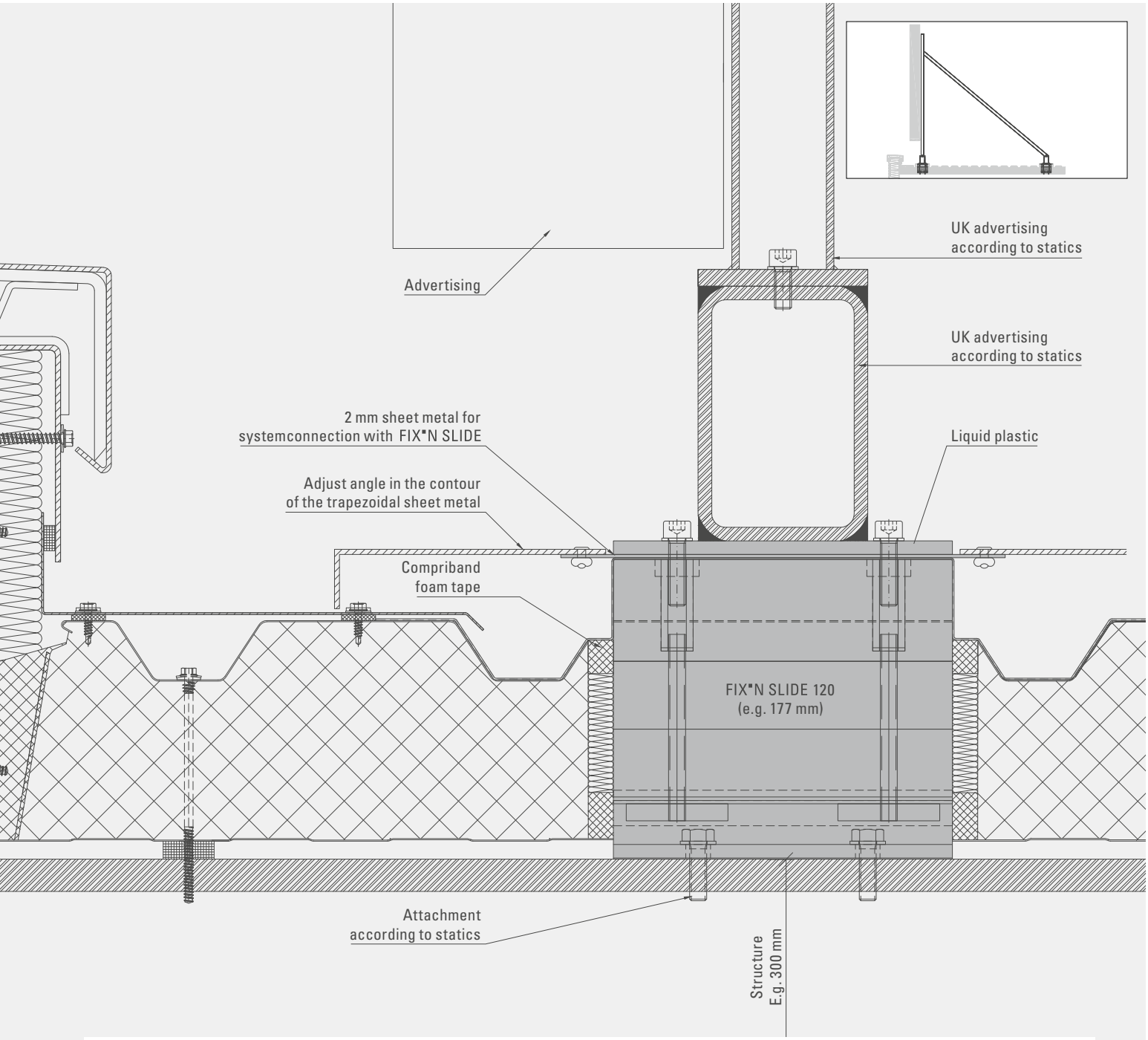
Photovoltaic modules

Advertising

Advertising on an industrial hall

Trapezoidal sheet metal roof thermopanel

Vertical section



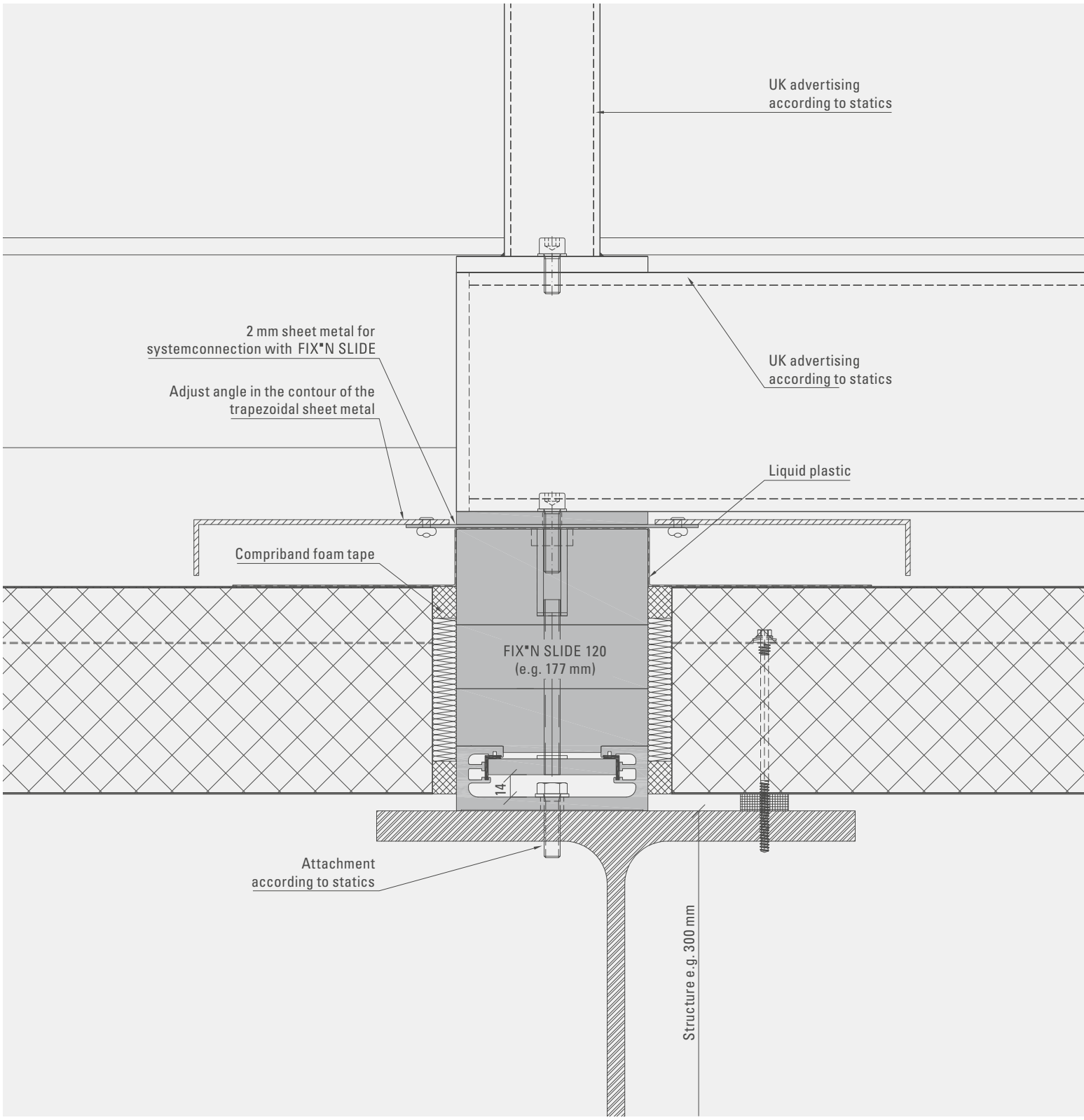
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of FIX"N SLIDE
  (possible tolerance compensation with suitable filling plates)
- Building of the roof thermopanel
- Establishment of the outer sealing using liquid plastic
- Connecting plate fixation
- Mounting of UK advertising

Drawing number: FS-TP-801

Verifications of load application and transfer are to be carried out on-site

Horizontal section

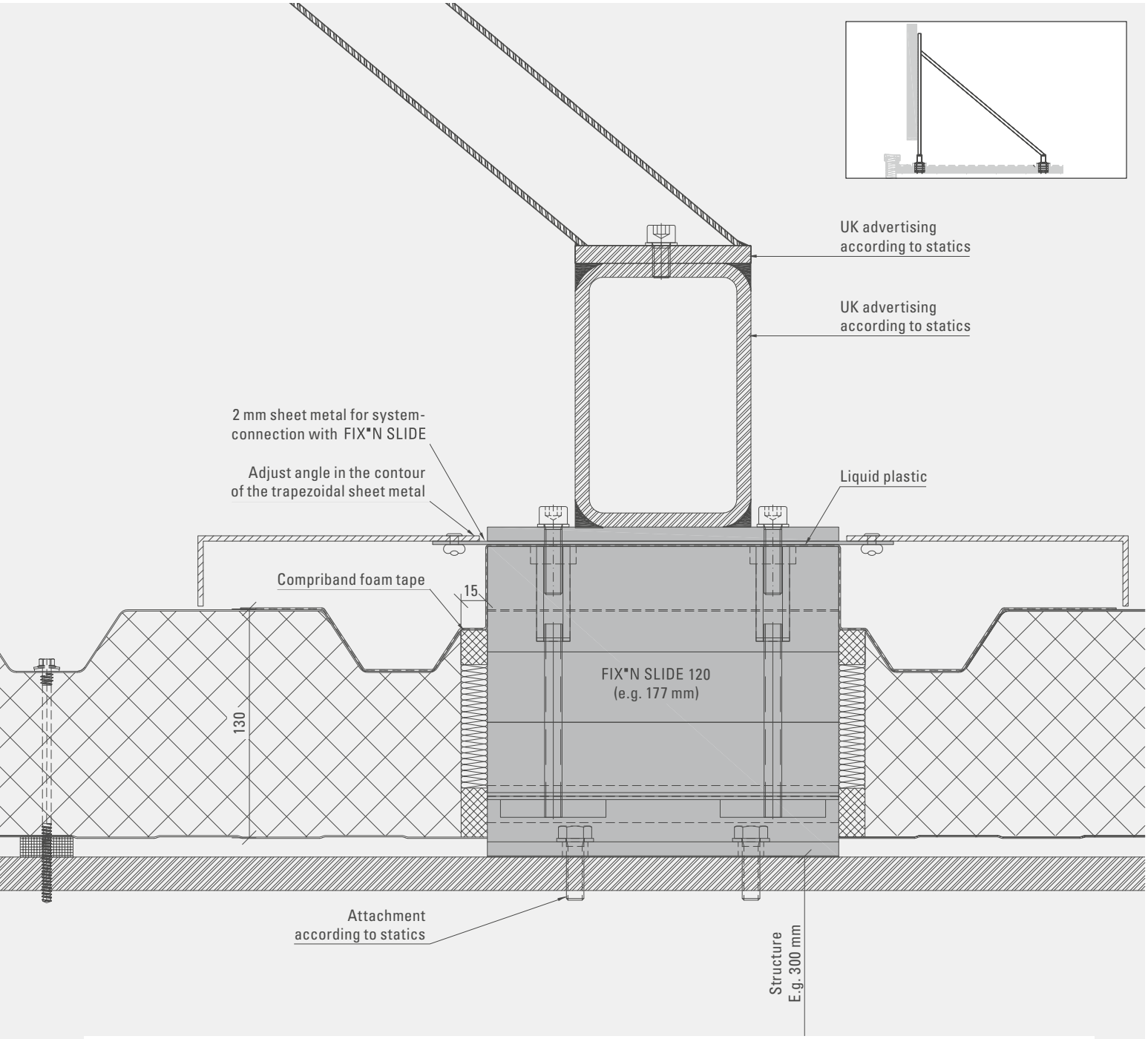


Drawing number: FS-TP-301
Verifications of load application and transfer are to be carried out on-site

Advertising on an industrial hall

Trapezoidal sheet metal roof thermopanel

Vertical section



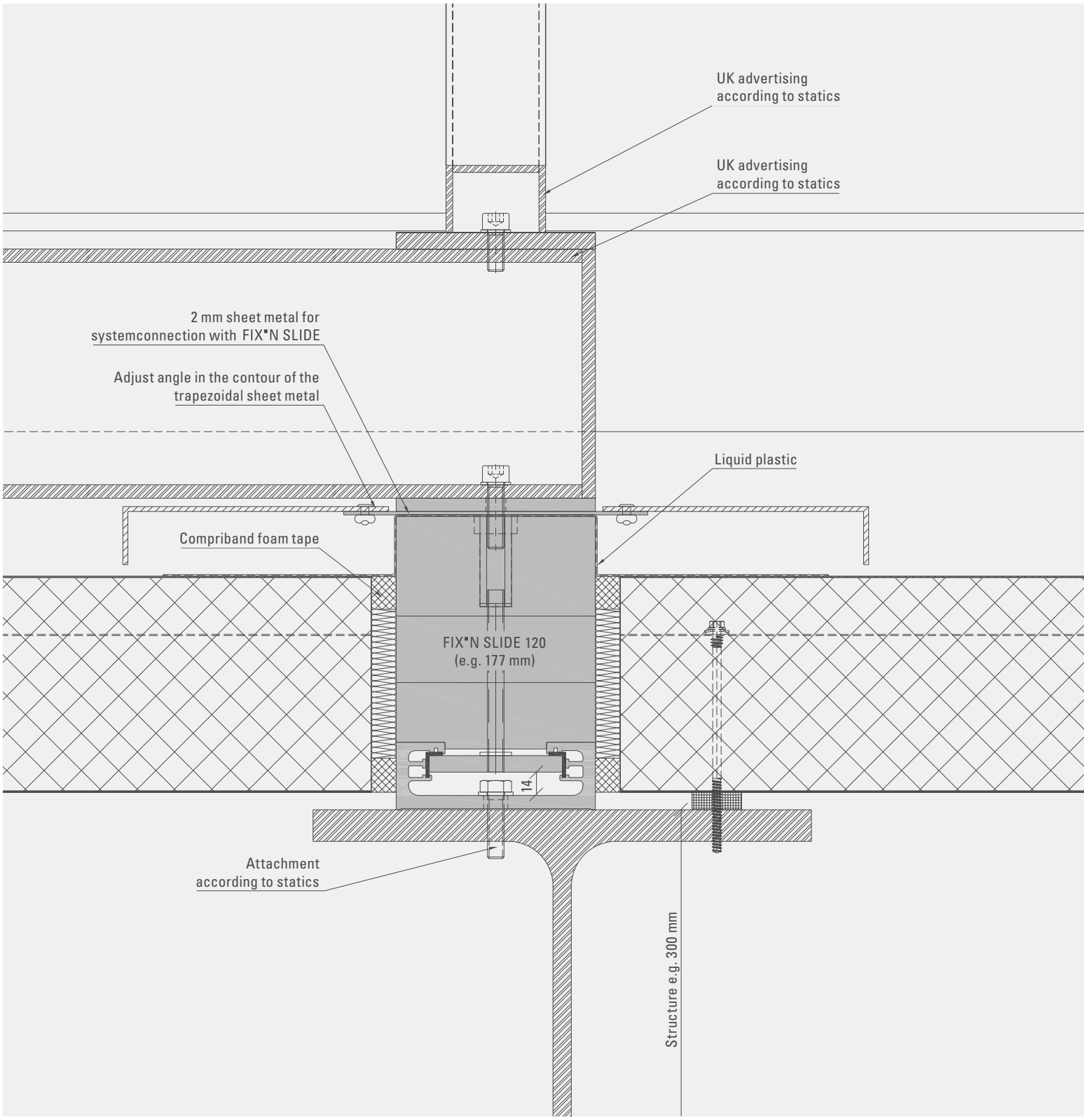
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of FIX"N SLIDE
  (possible tolerance compensation with suitable filling plates)
- Building of the roof thermopanel
- Establishment of the outer sealing using liquid plastic
- Connecting plate fixation
- Mounting of UK advertising

Drawing number: FS-TP-802

Verifications of load application and transfer are to be carried out on-site

Horizontal section

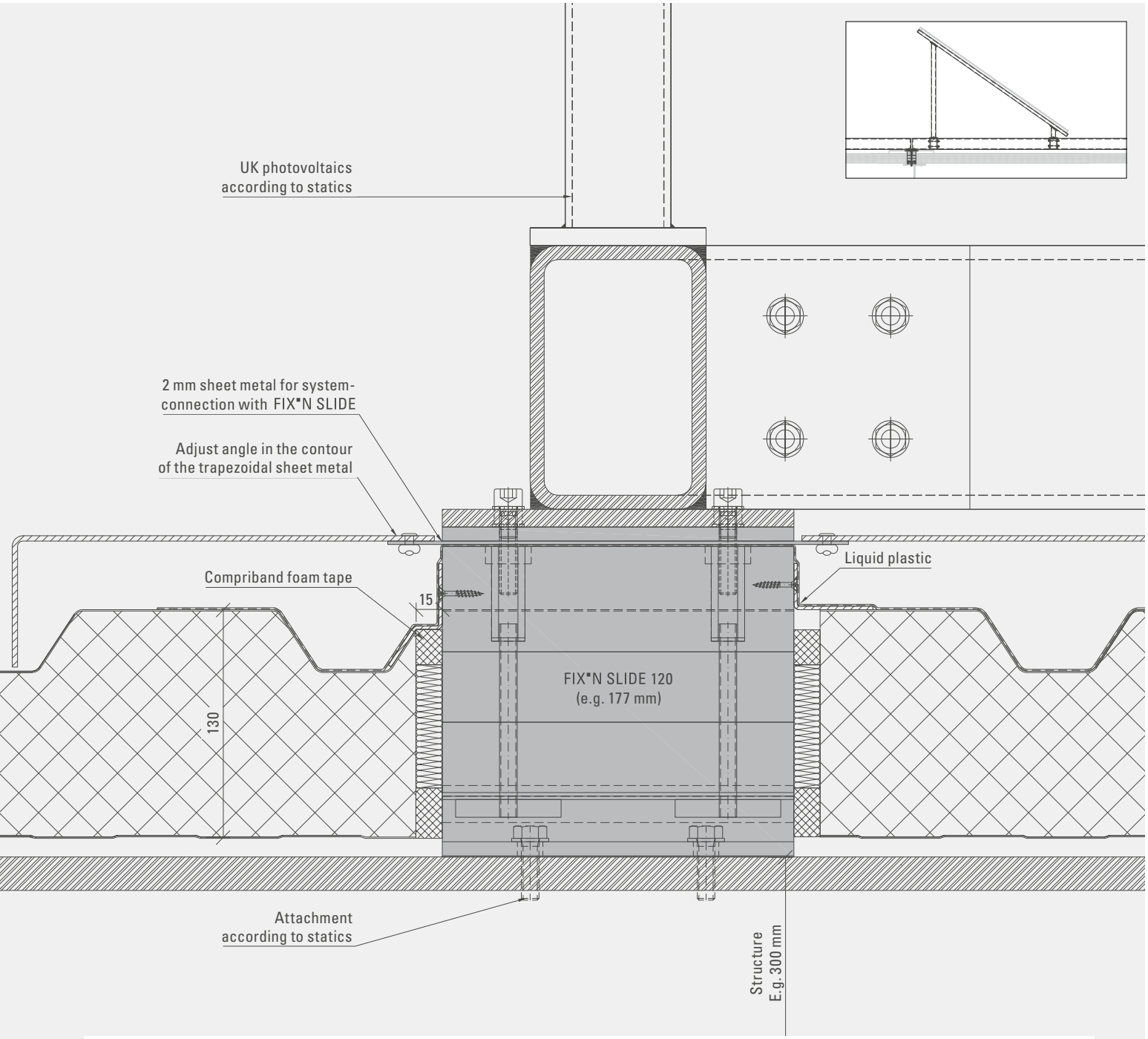


Drawing number: FS-TP-302
Verifications of load application and transfer are to be carried out on-site

Photovoltaic modules in the industrial hall

Substructure on roof

Vertical section



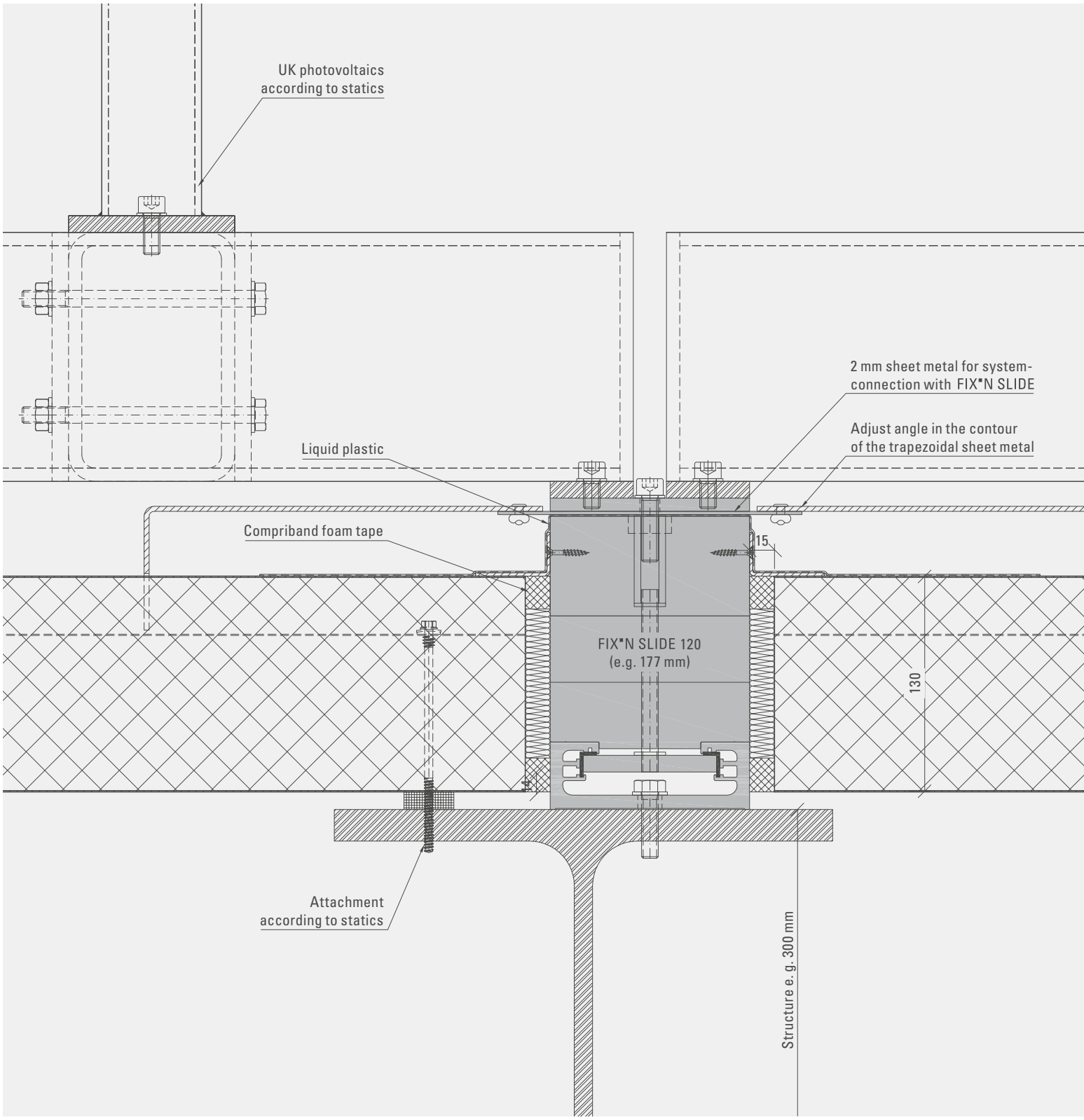
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of FIX"N SLIDE
  (possible tolerance compensation with suitable filling plates)
- Building of the roof thermopanel
- Establishment of the outer sealing using liquid plastic
- Connecting plate fixation
- Mounting of photovoltaic modules

Drawing number: FS-TP-803

Verifications of load application and transfer are to be carried out on-site

Horizontal section

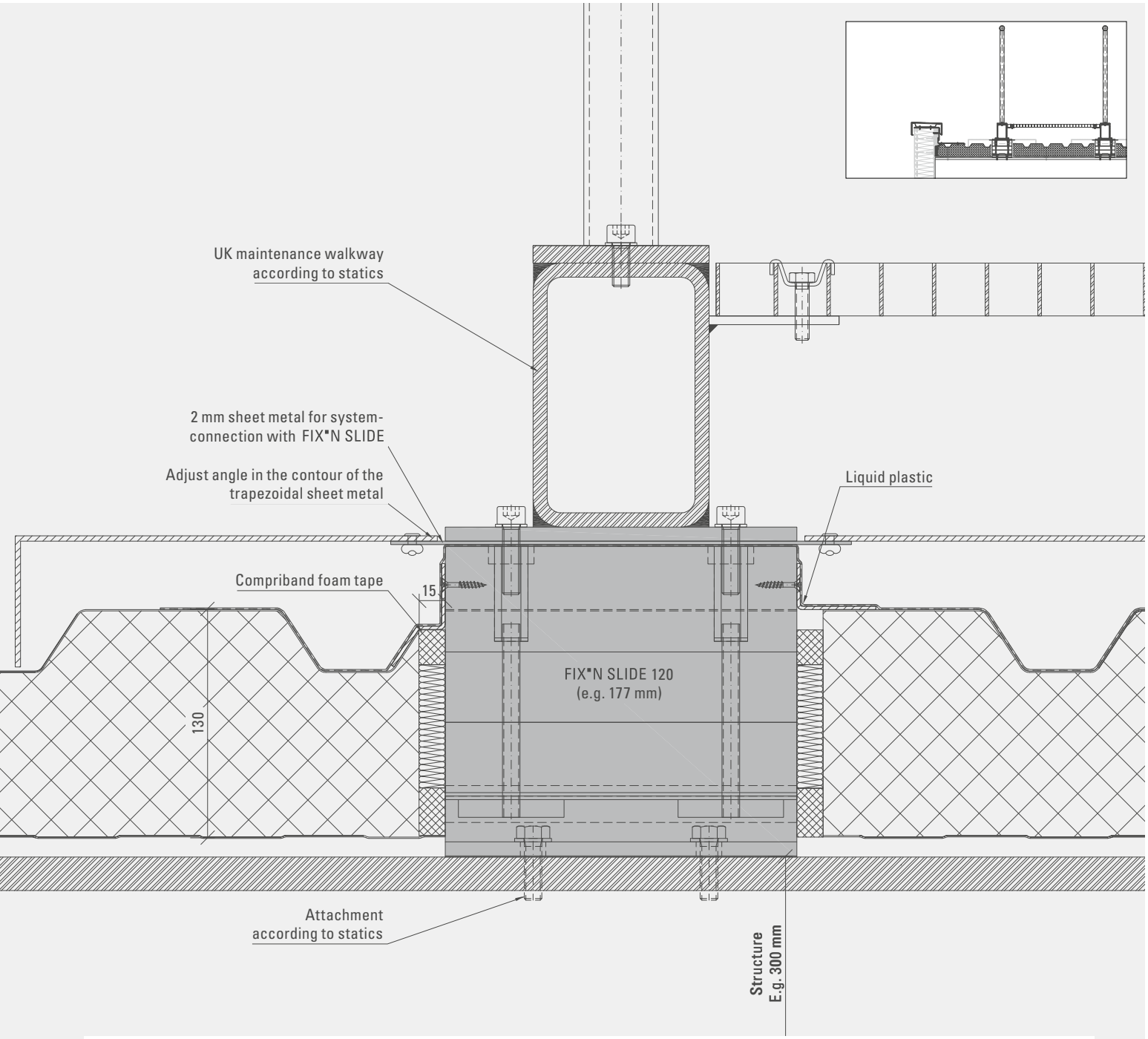


Drawing number: FS-TP-303
Verifications of load application and transfer are to be carried out on-site

Maintenance walkway

Trapezoidal sheet metal roof thermopanel

Vertical section



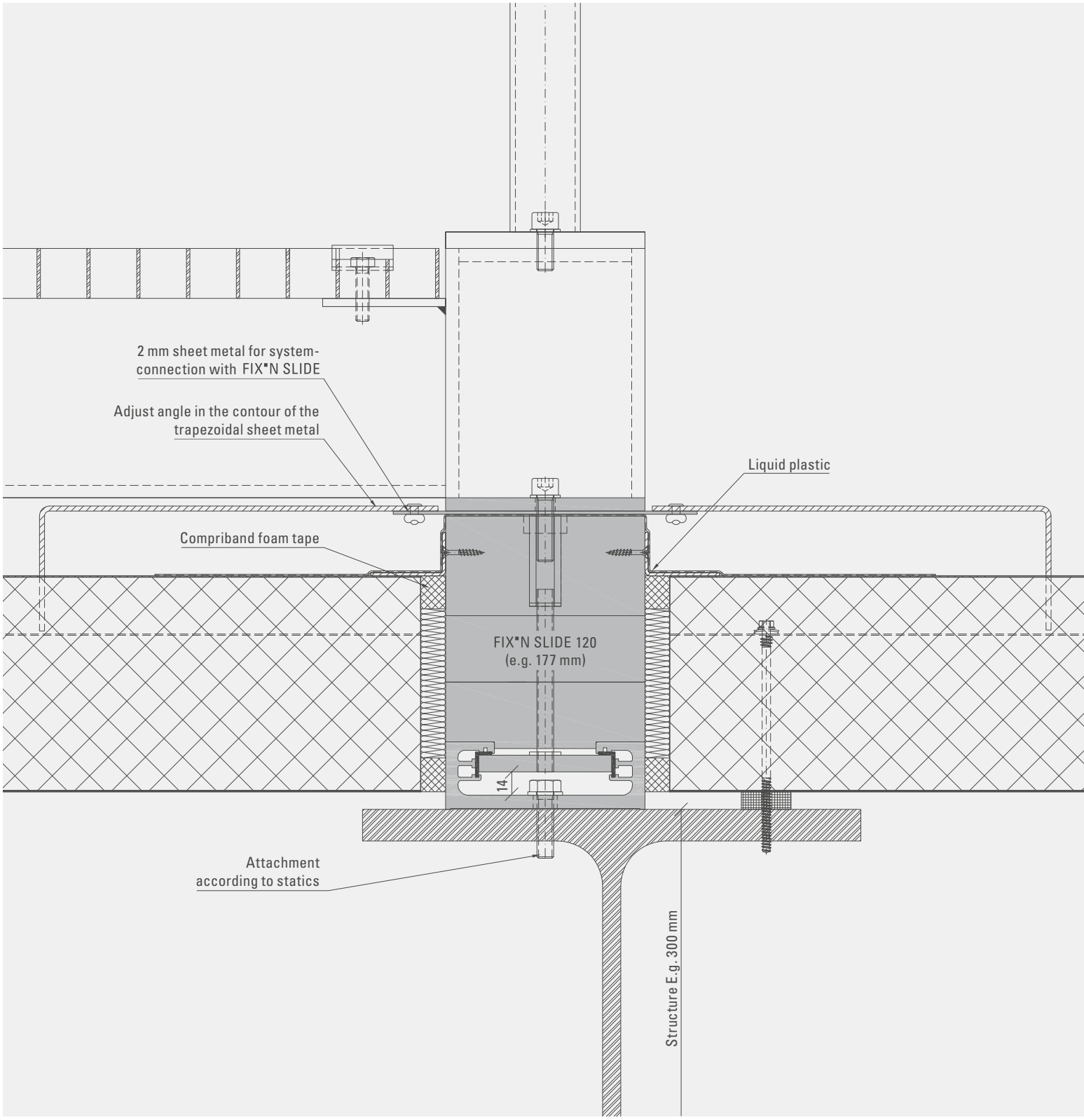
ASSEMBLY RECOMMENDATION

- Mark out building (determine outer edge insulation)
- Mounting of FIX"N SLIDE
  (possible tolerance compensation with suitable filling plates)
- Building of the roof thermopanel
- Establishment of the outer sealing using liquid plastic
- Connecting plate fixation
- Installation of maintenance walkway

Drawing number: FS-TP-804

Verifications of load application and transfer are to be carried out on-site

Horizontal section

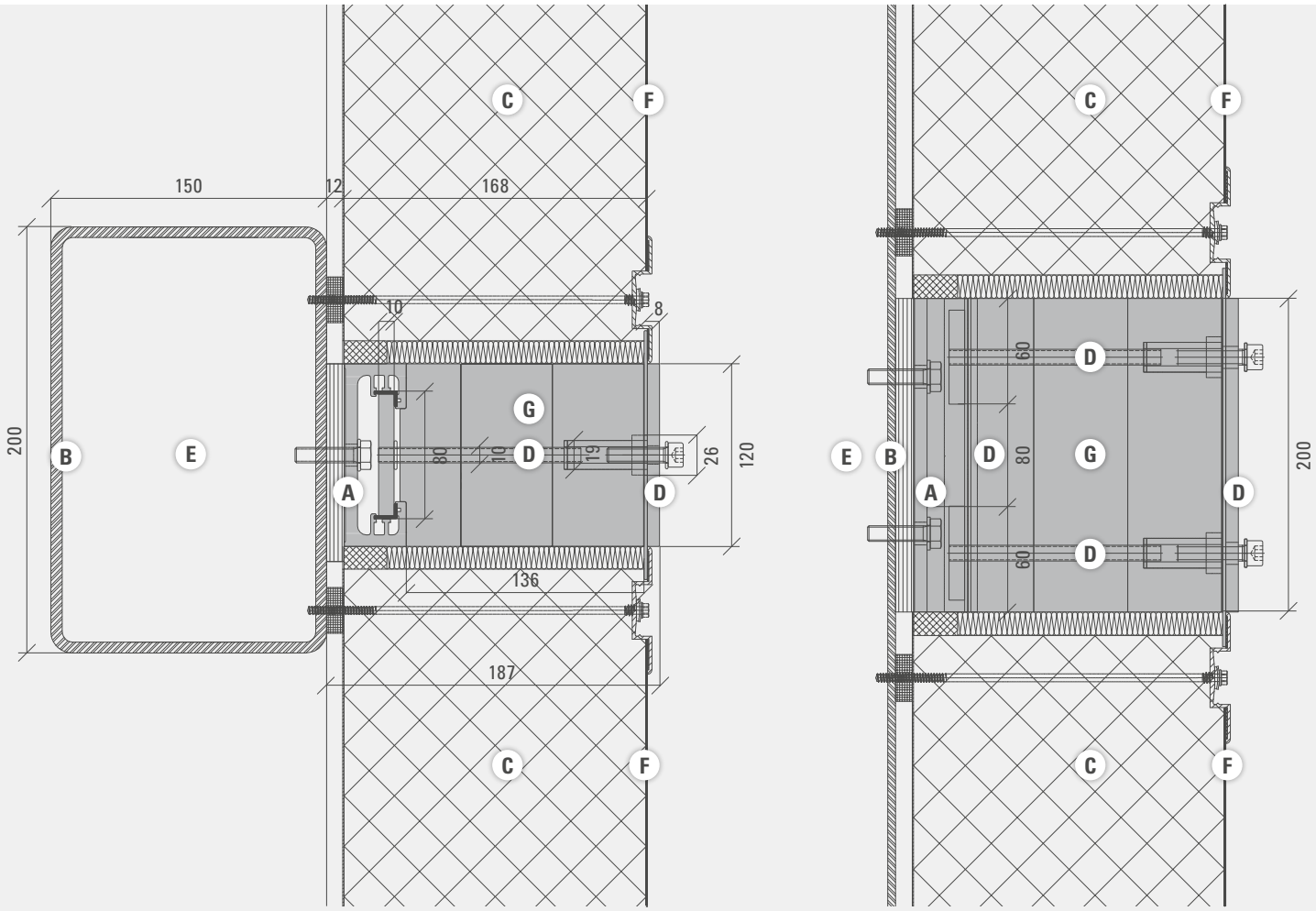


Drawing number: FS-TP-304
Verifications of load application and transfer are to be carried out on-site

THERMAL INSULATION CALCULATIONS

Point-to-point connection to smooth sheet metal

according to DIN 4108-2 and χ value calculation (example)



Materials

		λ [W7(m·K)]	ε
A	Aluminium profile	160,000	0.900
B	Steel profile	50,000	0.900
C	Insulation WLG 035	0.035	0.900
D	Stainless steel	17,000	0.900
E	Air		
F	Aluminium	160,000	0.900
G	Pressure-resistant system insulating material	0.083	0.900

Properties

- Component (B x H x L)

  120 x 187 x 200 mm

  140 mm screw spacing

Boundary conditions

- Temperatures

  Exterior: T_a = -5°C
  Interior: T_i = 20°C

- Heat transfer

  Exterior: R_a = 0.04 m²K/W

  Interior: R_i = 0.13 m²K/W (heat flow)

  R_i = 0.25 m²K/W (temperature)

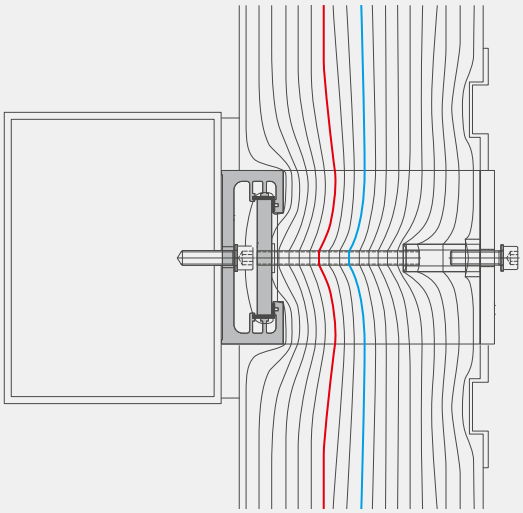
- Thermal bridge surcharge for energy planning according to EnEV 2016

  Xi value of the punctiform thermal bridge
  = 0.032 W/K

Isothermal calculations

12.6°C isotherm

10.0°C isotherm



Results

- Minimum thermal insulation

  f_{RSi} = 0.94 (>0.70)
  T = 18.52°C

  Minumum thermal insulation met

- Wall structure U = 0.20 W/m²K
  150 mm Steel profile
  168 mm Insulation WLG 035

- Inspection report for the thermal simulation

  Inspection report no.
  FS_120_0200_PANL_170_P

- Excerpt from the relevant standards

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

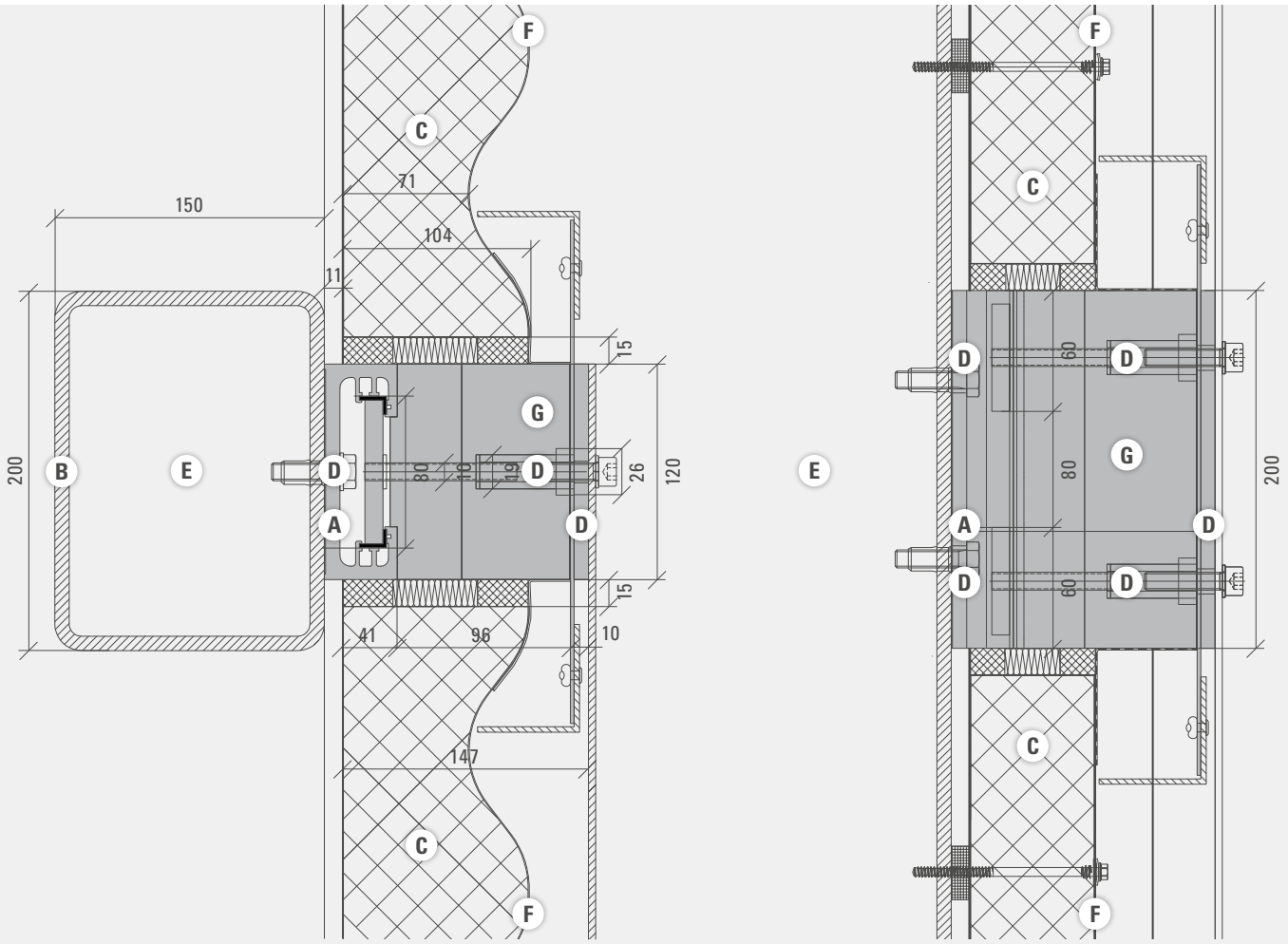
Point-to-point connection

FIX'N SLIDE	Insulation thickness mm	Xi value W/K	f_{RSI} >0.70	T °C
120	168	0.032	0.940	18.52

THERMAL INSULATION CALCULATIONS

Point-to-point connection to thermal panel

according to DIN 4108-2 and χ value calculation (example)



Materials

		λ [W7(m·K)]	ε
A	Aluminium	160,000	0.900
B	Steel profile	50,000	0.900
C	Insulation WLG 035	0.035	0.900
D	Stainless steel	17,000	0.900
E	Air		
F	Aluminium profile	160,000	0.900
G	Pressure-resistant system insulating material	0.083	0.900

Properties

- Component (B x H x L)

  120 x 147 x 200 mm

  140 mm screw spacing

Boundary conditions

- Temperatures

  Exterior: T_a = -5°C
  Interior: T_i = 20°C

- Heat transfer

  Exterior: R_a = 0.04 m²K/W

  Interior: R_i = 0.13 m²K/W (heat flow)

  R_i = 0.25 m²K/W (temperature)

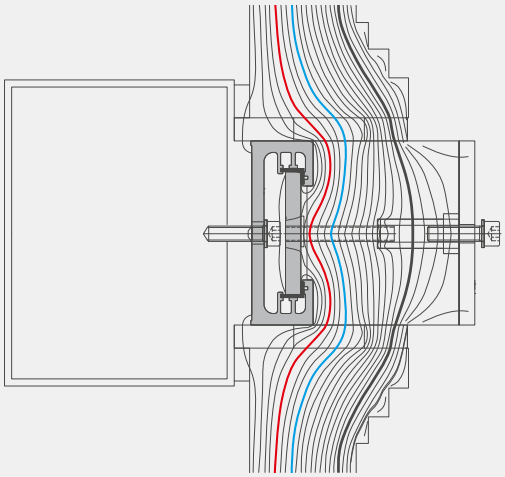
- Thermal bridge surcharge for energy planning according to EnEV 2016

  Xi value of the punctiform thermal bridge
  = 0.052 W/K

Isothermal calculations

12.6°C isotherm

10.0°C isotherm



Results

- Minimum thermal insulation

  f_{RSi} = 0.890 (>0.70)
  T = 17.22°C

  minimum thermal insulation met

- Wall structure U = 0.20 W/m²K
  150 mm Steel profile
  104 mm Insulation WLG 035

- Inspection report for the thermal simulation

  Inspection report no.
  FS_120_0200_ISOW_104_P

- Excerpt from the relevant standards

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

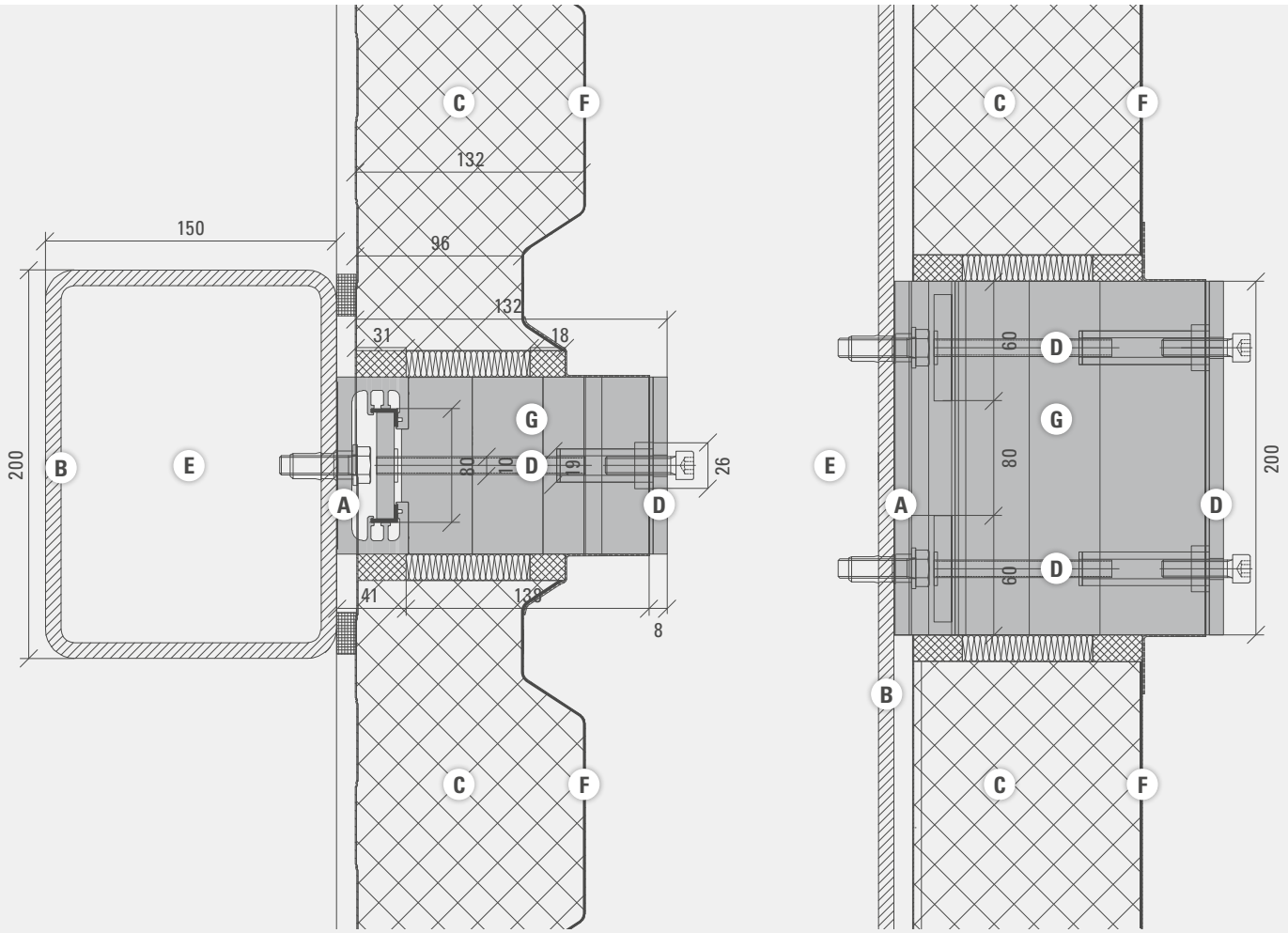
Point-to-point connection

FIX'N SLIDE	Insulation thickness mm	Xi value W/K	f_{RSI} >0.70	T °C
120	104	0.052	0.890	17.22

THERMAL INSULATION CALCULATIONS

Point-to-point connection to trapezoidal sheet metal

according to DIN 4108-2 and χ value calculation (example)



Materials

		λ [W7(m·K)]	ε
A	Aluminium profile	160,000	0.900
B	Steel profile	50,000	0.900
C	Insulation WLG 035	0.035	0.900
D	Stainless steel	17,000	0.900
E	Air		
F	Aluminium	160,000	0.900
G	Pressure-resistant system insulating material	0.083	0.900

Properties

- Component (B x H x L)

  120 x 132 x 200 mm

  140 mm screw spacing

Boundary conditions

- Temperatures

  Exterior: T_a = -5°C
  Interior: T_i = 20°C

- Heat transfer

  Exterior: R_a = 0.04 m²K/W

  Interior: R_i = 0.13 m²K/W (heat flow)

  R_i = 0.25 m²K/W (temperature)

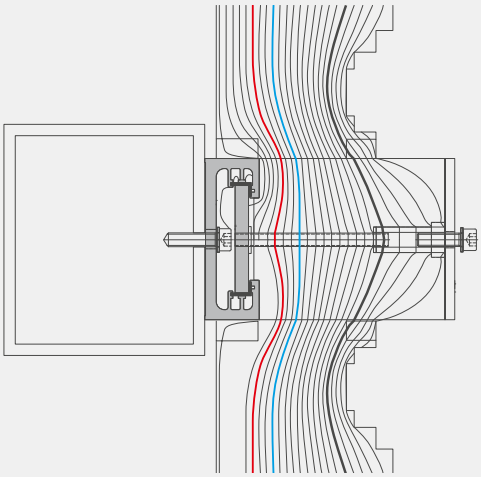
- Thermal bridge surcharge for energy planning according to EnEV 2016

  Xi value of the punctiform thermal bridge
  = 0.035 W/K

Isothermal calculations

12.6°C isotherm

10.0°C isotherm



Results

- Minimum thermal insulation

  f_{RSi} = 0.93 (>0.70)
  T = 18.16° C

  Minimum thermal insulation met

- Wall structure U = 0.20 W/m²K
  150 mm Steel profile
  132 mm Insulation WLG 035

- Inspection report for the thermal simulation

  Inspection report no.
  FS_120_0200_TRPZ_132_P

- Excerpt from the relevant standards

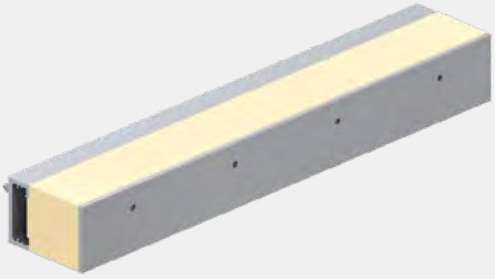
  DIN 4108-2, DIN EN ISO 13788, DIN EN ISO 10211, DIN EN ISO 10077, DIN EN ISO 12631
  DIN EN ISO 6946

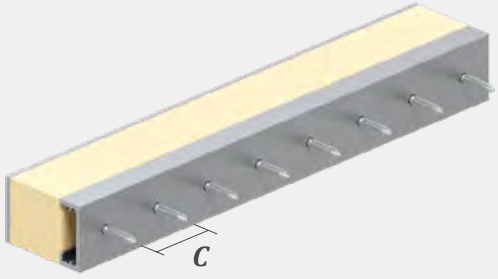
Point-to-point connection

FIX'N SLIDE	Insulation thickness mm	Xi value W/K	f_{RSI} >0.70	T °C
120	132	0.035	0.930	18.14

DIMENSIONS

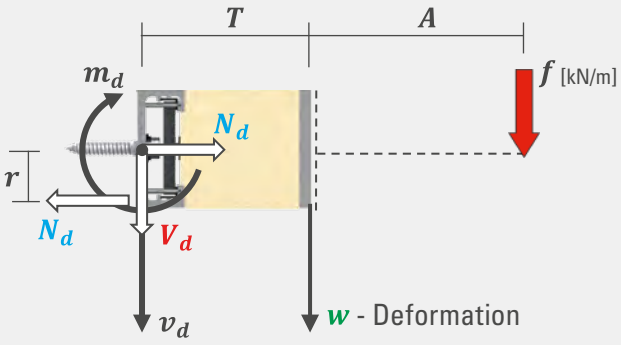
Linear connection (action perpendicular to element axis)



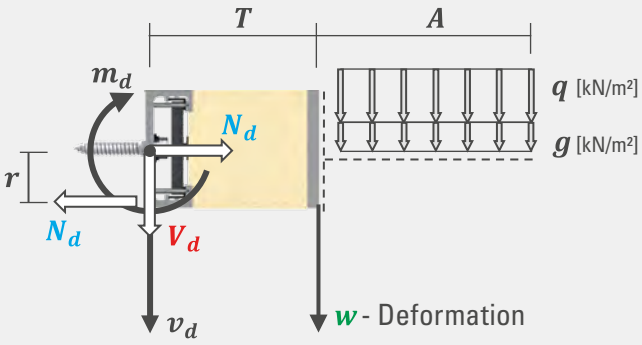


Actions/effects

Example 1 – Linear action:



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



Bearing capacity limit state $m_d \le m_{R.d}$ and $v_d \le v_{R.d}$

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

Example 1

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

Example 2

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

	T [mm]	Up 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 above table apply to permanent and temporary design situations with short and/or medium load durations (such as the action of wind, snow or traffic loads and their combinations with the attachment weight). In load situations with predominantly permanent actions (such as only the action of the attachment weight), the values $m_{R.d}$ and $v_{R.d}$ from the above table are to be multiplied with a reduction factor of 0.75. If consideration is to be given to dynamic, multiaxial or other special actions, or actions that may result from unfavourable external influences (such as in exposed installations), a separate analysis needs to be done.

Serviceability limit state (deformation)

Characteristic values of the linear bearing torques m :

Example 1 – Linear action:

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

Example 2 – distributed 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 on the front edge of the FS element subject to the element depth T and the characteristic linear torque m :

	T [mm]	Up 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	Up 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	Up 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	Up 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	Up 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	Up 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					

* In installations that are especially sensitive to deformation and installations under high sustained loads, the use of a larger FS element is recommended. The values are the expected deformation. The influence of the rigidity of the substructure is not taken into account.

Bearing forces:

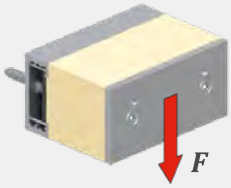
$$N_{d\,[kN]} = m_{d\,[kNm/m]} \cdot C_{[m]} / r_{[m]} \qquad V_{d\,[kN]} = v_{d\,[kNm/m]} \cdot C_{[m]} \qquad C = \text{E.g. 0.1 m}$$

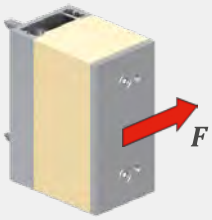
	FS 48	FS 60	FS 80	FS 100	FS 120
$r_{[m]}$	0.023	0.028	0.038	0.047	0.057

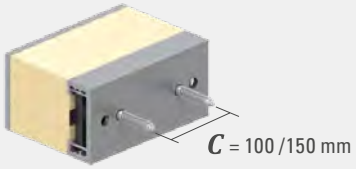
Verifications of load application and transfer, as well as of the substructure, are not recorded or produced together with the verifications of the FS elements.

DIMENSIONS

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

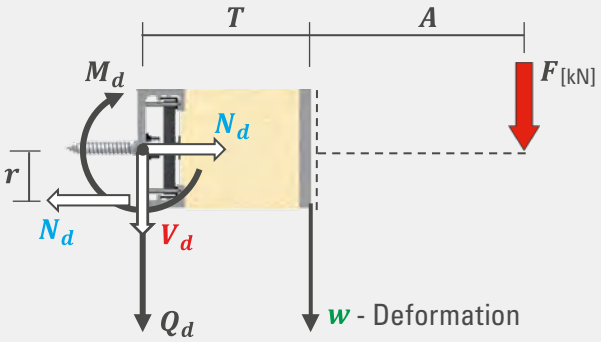






Actions/effects

Example – Individual load:



Bearing capacity limit state $M_d \leq M_{R.d}$ and $Q_d \leq Q_{R.d}$

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

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

	T [mm]	Up 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 above table apply to permanent and temporary design situations with short and/or medium load durations (such as the action of wind, snow or traffic loads and their combinations with the attachment weight). In load situations with predominantly permanent actions (such as only the action of the attachment weight), the values $M_{R.d}$ and $Q_{R.d}$ from the above table are to be multiplied with a reduction factor of 0.75. If consideration is to be given to dynamic, multiaxial or other special actions, or actions that may result from unfavourable external influences (such as in exposed installations), a separate analysis needs to be done.

Serviceability limit state (deformation)

Characteristic values of the linear bearing torques M :

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

Existing deformation w on the front edge of the FS element subject to the element depth T and the characteristic linear torque M :

	T [mm]	Up 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	Up 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	Up 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	Up 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	Up 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	Up 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										

* In installations that are especially sensitive to deformation and installations under high sustained loads, the use of a larger FS element is recommended. The values are the expected deformation. The influence of the rigidity of the substructure is not taken into account.

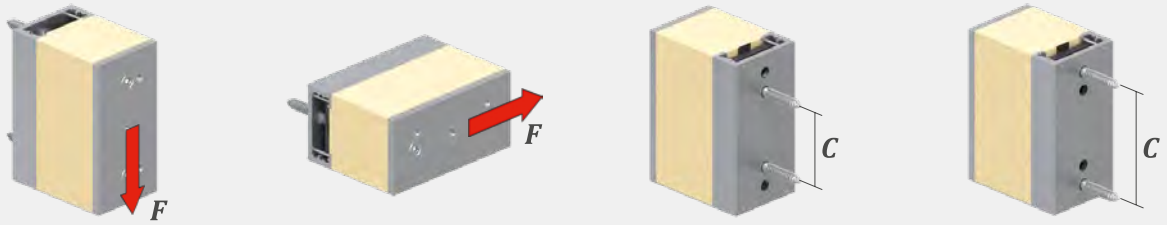
Bearing forces per connection (dowel/screw): $N_{d\,[kN]} = M_{d\,[kNm]} / (r_{[m]} \cdot 2)$ $V_{d\,[kN]} = Q_{d\,[kN]} / 2$

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

Verifications of load application and transfer, as well as of the substructure, are not recorded or produced together with the verifications of the FS elements.

DIMENSIONS

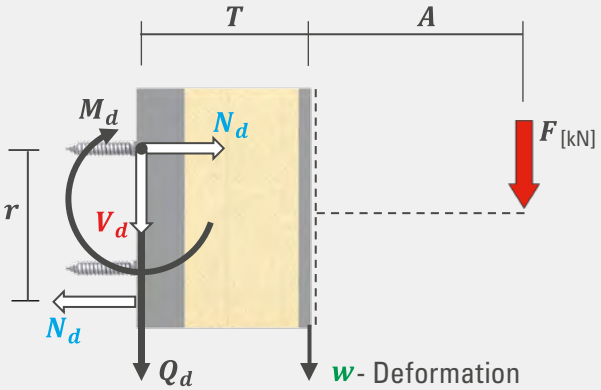
Point-to-point connection (action perpendicular to element axis)



C = 100 – 150 mm

Actions/effects

Example – Individual load:



Bearing capacity limit state $M_d \leq M_{R.d}$ and $Q_d \leq Q_{R.d}$

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

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

	T [mm]	Up 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	1.80	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 above table apply to permanent and temporary design situations with short and/or medium load durations (such as the action of wind, snow or traffic loads and their combinations with the attachment weight). In load situations with predominantly permanent actions (such as only the action of the attachment weight), the values $M_{R.d}$ and $Q_{R.d}$ from the above table are to be multiplied with a reduction factor of 0.75. If consideration is to be given to dynamic, multiaxial or other special actions, or actions that may result from unfavourable external influences (such as in exposed installations), a separate analysis needs to be done.

Serviceability limit state (deformation)

Characteristic values of the linear bearing torques M :

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

Existing deformation w on the front edge of the FS element subject to the element depth T and the characteristic linear torque M :

	T [mm]	Up 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	Up 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	Up 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
	0.80 - 0.90	< 1	< 1	< 1	< 1	< 1	< 1	< 1	2	2	2	2	2	3
FS 80	Up 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
	0.80 - 0.90	< 1	< 1	< 1	< 1	< 1	2	2	2	2	3	3	3	4
FS 100	Up 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	Up 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

* In installations that are especially sensitive to deformation and installations under high sustained loads, the use of a larger FS element is recommended. The values are the expected deformation. The influence of the rigidity of the substructure is not taken into account.

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

	Where C = 100 mm					Where 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

Verifications of load application and transfer, as well as of the substructure, are not recorded or produced together with the verifications of the FS elements.

ASSEMBLY INSTRUCTIONS LINEAR CONNECTION

1

Push the plastic elements for thermal bridge reduction into the intended areas of the aluminium rail.

2

Determine the attachment points with the aid of the assembly rail. Attach the aluminium rail to the structure or structure with regulated/ approved fasteners.

3

Screw the tensile threaded rods into the slide-in plates and guide the slide-in plates into the aluminium rail.

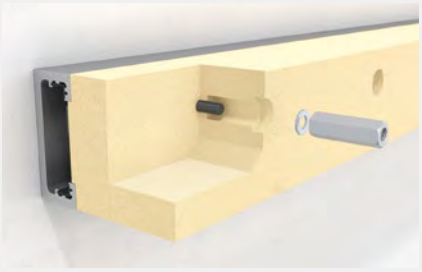
4

Straighten the slide-in plates according to the attachment points of the add-on element by shifting them. Fasten the slide-in plates with the pre-drilled mounting aids.

5

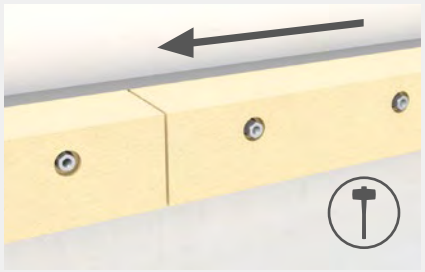
Push the pre-drilled insulating element over the threaded rods.

6



Guide the washers and threaded sockets up to the threaded rods and fasten these with a tightening torque of 10 Nm.

7

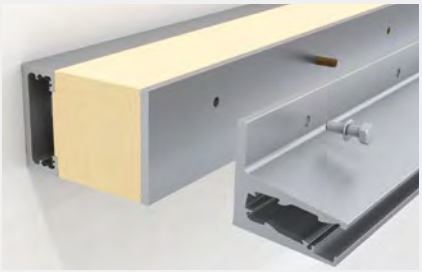


After attaching the first block, push the remaining blocks firmly together without gaps (optionally tap with a hammer).

8

Stick a bolt for mounting support into a threaded socket and stick the optional aluminium connecting plate with self-adhesive EPDM tape to the insulating element.

9



Adjust the add-on element (here the GLASSLINE CANOPY CLOUD) using the bolt and fasten it to the substructure with regulated/approved fasteners using a tightening torque of 24 Nm for M10 or 12 Nm for M8.

All screw connections are to be secured against loosening using suitable means.

ASSEMBLY INSTRUCTIONS

POINT-TO-POINT CONNECTION

1

Determine the attachment points with the aid of the U profile. Attach the U profile to the structure or structure with regulated/ approved fasteners.

2

Screw the tensile threaded rods into the slide-in plates.

3

Guide the slide-in plates into the aluminium rail.

4

Straighten the slide-in plates by shifting these to the pre-drilled mounting aid and fasten them.

5

Push the pre-drilled insulating element over the threaded rods.

6

Guide the washers and threaded sockets up to the threaded rods and fasten these with a tightening torque of 10 Nm.

7

Mount an adaptor plate with regulated/ approved fasteners using a tightening torque of 24 Nm for M10 or 12 Nm for M8.

Assembly video
Linear connection

www.glassline.de/fs-linear

Assembly video
Point-to-point connection

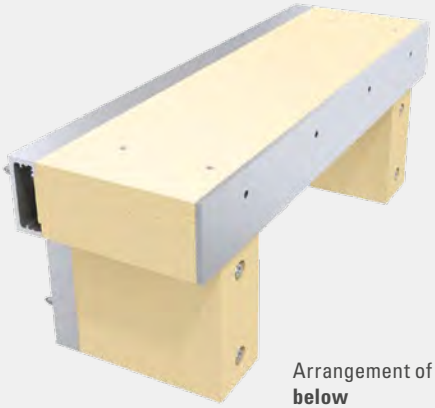
www.glassline.de/fs-point-to-point

All screw connections are to be secured against loosening using suitable means.

SOLUTIONS FOR REINFORCEMENT

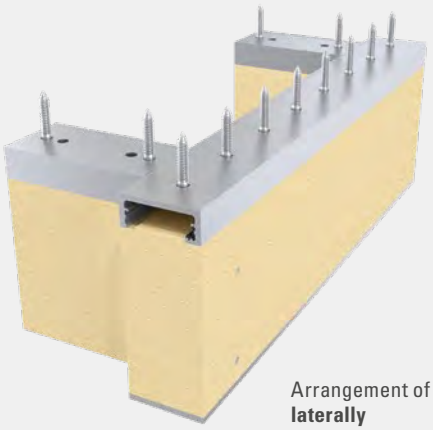
With FIX'N SLIDE

Arrangement of the reinforcement elements



Arrangement of the blocks
below

Arrangement of the blocks
above



Arrangement of the blocks
laterally

2 blocks
stacked

2 blocks
side by side

GLASSLINE

PRODUCT ENQUIRY **FIX"N SLIDE**

Quick enquiry:

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

Name

Company

Street/house number

Construction project

Postcode/city

Telephone

Telefax

Email

(Please fill out all fields)

FIX"N SLIDE

☐ POINT-TO-POINT CONNECTION

_____ piece(s)

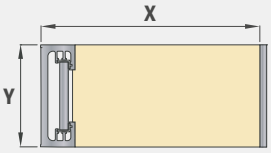
☐ Optional adaptor plate (stainless steel)

☐ 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	**60 + 80**	**100 + 120**
☐ 50	☐ 55	☐ 65
☐ 70	☐ 75	☐ 85
☐ 80	☐ 85	☐ 95
☐ 100	☐ 105	☐ 115
☐ 120	☐ 125	☐ 135
☐ 140	☐ 145	☐ 155
☐ 160	☐ 165	☐ 175
☐ 180	☐ 185	☐ 195
☐ 200	☐ 205	☐ 215
☐ 220	☐ 225	☐ 235
☐ 240	☐ 245	☐ 255
☐ 260	☐ 265	☐ 275
☐ 280	☐ 285	☐ 295
☐ 300	☐ 305	☐ 315

LINEAR CONNECTION

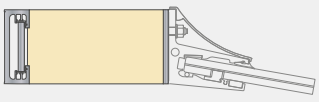
Lengths Z:

- ☐ 600 mm
- ☐ 800 mm
- ☐ 1,200 mm
- ☐ 1,400 mm
- ☐ 1,600 mm
- ☐ 2,000 mm
- ☐ 2,400 mm
- ☐ 2,800 mm
- ☐ 3,000 mm

Special lengths on request

FIX"N SLIDE FOR CANOPY CLOUD STOCK PROGRAMME

CANOPY CLOUD PROFILE TYPE 1



Lengths:

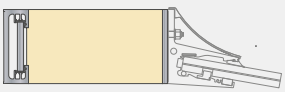
1,400 mm _____ piece(s)

1,600 mm _____ piece(s)

2,000 mm _____ piece(s)

2,400 mm _____ piece(s)

CANOPY CLOUD PROFILE TYPE 3



Lengths:

2,400 mm _____ piece(s)

2,800 mm _____ piece(s)

ACCESSORIES

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

GLASSLINE

FIX'N SLIDE *panel facade*

GLASSLINE

FIX'N SLIDE *panel facade*

GLASSLINE

GLASSLINE GmbH
Industriestrasse 7-8
74740 Adelsheim
Telephone +49 (0) 6291 6259-0
Fax +49 (0) 6291 6259-11
info@glassline.de
www.glassline.de

SYSTEM SOLUTIONS FOR SOPHISTICATED FRAMELESS GLASS ARCHITECTURE AS WELL AS THE SECURE ATTACHMENT OF ADD-ON PIECES TO ETICS

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

· All drawings are example applications. GLASSLINE assumes no warranty or liability for any transferable applications.
· Technical and constructional modifications are reserved.
· All screw connections are to be permanently secured against loosening, such as through gluing.
· The pressure-resistant insulating elements are to be protected against UV radiation and weather influences.
· Object-specific application as well as verifications of load application and transfer are to be checked or carried out on-site.