



## European Technical Assessment

**ETA 25/0282  
of 12/05/2025**

### General part

<b>Technical Assessment Body issuing the ETA</b>	<b>TECNALIA RESEARCH &amp; INNOVATION</b>
<b>Trade name of construction product</b>	<b>Ariostea/Fiandre/FMG/Iris/Porcelaingres GHX XSLAB</b>
<b>Product family to which the construction product belongs</b>	Kits for external wall claddings mechanically fixed
<b>Manufacturer</b>	Granitech by GranitiFiandre S.p.A Via Radici Nord - 112, 42014 Castellarano (RE), Italy
<b>Manufacturing plants</b>	GranitiFiandre Factory Via Radici Nord 112, 42014 Castellarano (RE), Italy  Sassuolo Factory Via Valle d'Aosta 37, 41049 Sassuolo (MO), Italy  Porcelaingres GmbH, Irisstraße 1, 03226 Vetschau/Spreewald, Germany
<b>This European Technical Assessment contains</b>	34 pages including 2 annexes which form an integral part of this assessment
<b>This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of</b>	EAD 090062-01-0404 Kits for external wall claddings mechanically fixed

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## SPECIFIC PARTS

### 1. Technical description of the product

The subject of this European Technical Assessment (ETA) is a kit for ventilated external wall claddings (**Ariostea/Fiandre/FMG/Iris/Porcelaingres GHX XSLAB** façade system) according to the EAD 090062-01-0404 “Kits for external wall claddings mechanically fixed” edition October 2021.

**Ariostea/Fiandre/FMG/Iris/Porcelaingres GHX XSLAB** façade system is supplied as a kit comprised of:

- Ariostea/Fiandre/FMG/Iris/Porcelaingres XSLAB ceramic cladding element according to EN 14411.
- Metallic subframe composed of brackets with thermo-stop pads, vertical T-section aluminium profiles and rivets for connecting metal elements.
- Undercut anchoring for fixing the cladding to the metal subframe, clamps with EPDM compressible gaskets and horizontal C-section aluminium profiles.

Components are detailed in table 1. Technical information on the components is given in the annexes to this ETA.

Ariostea/Fiandre/FMG/Iris/Porcelaingres GHX XSLAB façade system corresponds to a type B fastening system according to EAD 090062-01-0404.

Components		Ariostea/Fiandre/FMG/Iris/Porcelaingres GHX XSLAB façade system	Technical description ANNEX A
Cladding elements		Ariostea/Fiandre/FMG/Iris/Porcelaingres XSLAB	A.1
Cladding fixing components	Undercut anchors	Keil (KH 5,5) mechanical anchor	A.2
	Clamps	EN AW 6060 T6 aluminium alloy extruded clamps with EPDM compressible gasket	A.3
	Horizontal profiles	EN AW 6060 T6 aluminium alloy C-section extruded profiles	A.4
Subframe components	Vertical profiles	EN AW 6060 T6 aluminium alloy T-section extruded profiles	A.5
	Brackets	EN AW 6060 T6 aluminium alloy extruded profiles with thermo-stop pads	A.6
	Fixings between brackets and vertical profiles, and between vertical and horizontal profiles	Rivets 4,8/12/14	A.7

**Table 1.** Ariostea/Fiandre/FMG/Iris/Porcelaingres GHX XSLAB façade components.

Fixings for brackets to the substrate and other ancillary components are not part of the kit.



## **2. Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)**

### **2.1 Intended use**

Ariostea/Fiandre/FMG/Iris/Porcelaingres GHX XSLAB façade system is a kit for mechanical fixed ventilated facade, which can be fixed to the external walls of new or existing buildings. The supporting walls could be made of masonry (stone, ceramic or concrete) or concrete (cast in situ or with prefabricated panels).

The kit for ventilated external wall claddings is a non-load-bearing construction system. It does not contribute to the stability of the wall on which it is installed, but it can contribute to its durability by providing enhanced protection from the effect of weathering. The kit is not intended to ensure the air tightness of the building structure.

The provisions made in this European Technical Assessment are based on an assumed working life of 25 years as minimum, provided that the cladding kits are subject to appropriate use and maintenance.

The indications given on the working life cannot be interpreted as a guarantee given by the producer or Assessment Body but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

### **2.2 Manufacturing**

The European Technical Assessment is issued for the external wall cladding for ventilated façade on the basis of agreed data/information, deposited at Tecnalia Research & Innovation, which identifies the kit that has been assessed and judged.

Changes to the kit or production process, which could result in this deposited data/information being incorrect, shall be notified to Tecnalia Research & Innovation before the changes are introduced. Tecnalia Research & Innovation will decide whether or not such changes affect the ETA and consequently, the validity of the CE marking on the basis of the ETA; and if so, whether further assessment or alterations to the ETA shall be necessary.

### **2.3 Design and installation**

The installation instructions including special installation techniques and provisions for the qualification of the personnel are given in the manufacturer's technical documentation.

Design, installation and execution of Ariostea/Fiandre/FMG/Iris/Porcelaingres GHX XSLAB façade system is to be in conformity with national documents. Such documents and the level of their implementation in Member States' legislation are different. Therefore, the assessment is done taking into account the general assumptions introduced in EAD 090062-01-0404 used as EAD, which summarizes how information introduced in the ETA and related documents is intended to be used in the construction process and gives advice to all parties interested when normative documents are missing.





## **2.4 Packaging, transport and storage**

The information on packaging, transport and storage is given in the manufacturer's technical documentation. It is the responsibility of the manufacturer(s) to ensure that this information is effectively communicated to the concerned people.

## **2.5 Use, maintenance and repair**

The maintenance of Ariostea/Fiandre/FMG/Iris/Porcelaingres GHX XSLAB façade system includes inspections on site, taking into account the following aspects:

- Regarding the panels: Appearance of any damage such as cracking or detachment due to permanent and irreversible deformation.
- Regarding metallic components: Presence of corrosion or water accumulation.
- Necessary repairs should be done rapidly, using the same kit components, and following the repair instructions given by ETA holder.

The information on use, maintenance and repair is given in the manufacturer's technical documentation. It is the responsibility of the manufacturer(s) to ensure that this information is effectively communicated to the concerned people.



### 3. Performance of the product and references to the methods used for its assessment

The assessment for the intended use of Ariostea/Fiandre/FMG/Iris/Porcelaingres GHX XSLAB façade system according to the Basic Work Requirements (BWR) were carried out according to EAD 090062-01-0404 “Kits for external wall claddings mechanically fixed”.

The characteristics of the components shall correspond to the respective values laid down in the technical documentation of this ETA, checked by Tecnalia Research & Innovation.

Basic Works Requirement	Essential characteristic	ETA clause	Performance
<b>BWR 2 Safety in case of fire</b>	Reaction to fire	3.1	See § 3.1
	Façade fire performance	-	Not assessed
	Propensity to undergo continuous smouldering	-	Not relevant
<b>BWR 3 Hygiene, health and the environment</b>	Watertightness of joints (protection against driving rain)	3.2	Not watertight (open joints)
	Water absorption	-	Not assessed
	Water vapour permeability (for non-ventilated façades)	-	Not relevant
	Drainability	3.3	See § 3.3 and Annex B
	Content, emission and/or release of dangerous substances	-	Not assessed
<b>BWR 4 Safety and accessibility in use</b>	Wind load resistance	3.4	See § 3.4
	Resistance to horizontal point loads	3.5	See § 3.5
	Impact resistance	3.6	See § 3.6 (Table 3)
	Bending strength	-	Not assessed
	Resistance to long term or permanent dead load (Creep test)	-	Not relevant
	Axial tension resistance	3.7	See § 3.7 (Table 4)



Basic Works Requirement	Essential characteristic	ETA clause	Performance
	Shear load resistance	3.8	See § 3.8 (Table 5)
	Combined tension and shear load resistance	-	Not relevant
	Pull-through resistance of fixings from profile	-	Not assessed
	Resistance of profiles	3.9	See § 3.9
	Tension/pull-out resistance of subframe fixings	-	Not assessed
	Shear load resistance of subframe fixings	-	Not assessed
	Brackets resistance (horizontal and vertical load)	-	Not assessed
	Resistance to seismic loads. Out-of-plane fundamental vibration period	-	Not assessed
	Resistance to seismic loads. Out-of-plane acceleration	-	Not assessed
	Resistance to seismic loads. In-plane displacement	-	Not assessed
<b>BWR 5 Protection against noise</b>	Airborne sound insulation	-	Not assessed
<b>BWR 6 Energy economy and heat retention</b>	Thermal resistance	-	Not relevant
<b>Aspects of durability</b>	Hygrothermal behaviour	-	Not assessed
	Behaviour after pulsating load	3.10	See § 3.10 (Table 6)

Basic Works Requirement	Essential characteristic	ETA clause	Performance
	Freeze-thaw resistance	-	Not assessed
	Behaviour after immersion in water	-	Not assessed
	Dimensional stability by humidity	-	Not assessed
	Linear thermal expansion	-	Not assessed
	Chemical and biological resistance	-	Not relevant
	UV radiation resistance	-	Not relevant
	Corrosion	3.11	See § 3.11
	Accelerated ageing behaviour of kits when the cladding element is made of thin metallic composite sheets/panels (TMCS/TMCP)	-	Not relevant

**Table 2.** Ariostea/Fiandre/FMG/Iris/Porcelaingres GHX XSLAB façade kit performance summary (see also the performance details in the relevant sections of the ETA)





### 3.1 Reaction to fire

Reaction to fire of Ariostea/Fiandre/FMG/Iris/Porcelaingres GHX XSLAB kit is Class A2-s1,d0 according to Commission Delegated Regulation (EU) 2016/364 and EN 13501-1.

This classification is valid if the insulation layer placed in the ventilated air space is made of a non-combustible material (mineral wool) or if the layer behind the cladding elements is a mineral substrate like masonry or concrete (A1 or A2-s1, d0).

Note: A European reference fire scenario has not been laid down for façades. In some Member States, the classification of external wall cladding kits according to EN 13501-1 might not be sufficient for the use in façades. An additional assessment of external wall cladding kits according to national provisions (e.g., on the basis of a large-scale test) might be necessary to comply with Member State regulations, until the existing European classification system has been completed.

### 3.2 Watertightness of joints (protection against driving rain)

Joints between the cladding elements in the external wall cladding for ventilated façades are open, therefore Ariostea/Fiandre/FMG/Iris/Porcelaingres GHX XSLAB kit is not watertight.

### 3.3 Drainability

On the basis of the construction details (Annex B), the installation criteria and the available knowledge and experience, it is considered that the water which penetrates into the air space or the condensation water can be drained out from the cladding without accumulation or moisture damage or leakage into the substrate.

### 3.4 Wind load resistance

Wind load resistance has been assessed according to § 2.2.9 and Annex E of EAD 090062-01-0404.

The wind pressure and wind suction resistance have been tested in its most unfavourable arrangement: maximum width of the cladding element and maximum distance between vertical profiles.

#### Tested specimen:

- Cladding elements: 3 panels (1.000 x 3.000) mm.
- Subframe: 4 brackets H155/40/L (50-175) mm and 16 brackets H75/40/L (50-175) mm / 4 vertical profiles T 55/65 / 5 horizontal profiles C 57/30 / 60 clamps / 60 Keil anchors / Rivets.
- Vertical distance between brackets: 750 mm.
- Distance between vertical profiles: 1.000 mm.
- Distance between horizontal profiles: 700 mm

Maximum wind load resistance,  $Q = 2,2 \text{ kN/m}^2$ .

### 3.5 Resistance to horizontal point loads

Resistance to horizontal point loads has been assessed according to § 2.2.10 and Annex F of EAD 090062-01-0404.

The resistance to horizontal point loads has been tested in its most unfavourable arrangement: maximum width of the cladding element (1.000 mm) and maximum distance between vertical profiles (1.000 mm).

No permanent (visible deformation) has been observed after the test.

### 3.6 Impact resistance

Impact resistance has been assessed according to § 2.2.11 and Annex G of EAD 090062-01-0404.

Cladding element		Impact resistance passed	Degree of exposure in use (*)
Length (mm)	Width (mm)		
≤ 3.000	≤ 1.000	Hard body (0,5 kg) 3 impacts of 3 J Hard body (1 kg) 3 impacts of 10 J Soft body (3 kg) 3 impacts of 60 J Soft body (50 kg) 1 impact of 400 J	CATEGORY I

(\*) Category I: A zone readily exposed to impacts but not subject to abnormally rough use (e.g., ground level or façade base accessible to the public, such as squares, parking, schoolyards, parks, etc.). For instance, cleaning gondolas may be used on the façade.

Category II-a: A zone liable to impacts from thrown or kicked objects but not subject to abnormally rough use, where the height of the kit will limit the size of the impact (e.g., at upper façade levels that occasionally can be hit by a thrown object); or at lower levels (e.g., ground level or façade base) where access to the façade is primarily to those with some incentive to exercise care. For instance, cleaning gondolas may be used on the façade.

Category II-b: A zone liable to impacts from thrown or kicked objects but not subject to abnormally rough use, either where the height of the kit will limit the size of the impact (e.g., at upper façade levels that occasionally can be hit by a thrown object); or at lower levels (e.g., ground level or façade base) where the area surrounding the kit will limit the size of the impact or access to the façade is controlled and under surveillance). For instance, cleaning gondolas may be used on the façade.

Category III: A zone not likely to be damaged by normal impacts caused by people or by thrown or kicked objects, either where the height of the kit will limit the size of the impact (e.g., high façade levels in buildings - not including the subsequent above ground level or façade base). For instance, cleaning gondolas shall not be used on the façade.

Category IV: A zone out of reach from ground level in which the risk to be hit by a thrown object is very low because the height of the kit will limit the size of the impact (e.g., high façade levels in buildings (not including the subsequent above ground level or façade base). For instance, cleaning gondolas shall not be used on the façade.

Tested specimen:

Cladding elements: 3 panels (1.000 x 3.000) mm  
Subframe: 4 brackets H155/40/L (50-175) mm and 16 brackets H75/40/L (50-175) mm / 4 vertical profiles T 55/65 / 5 horizontal profiles C 57/30 / 60 clamps with EPDM gasket / 60 Keil anchors / Rivets.  
Vertical distance between brackets: 750 mm.  
Distance between vertical profiles: 1.000 mm.  
Distance between horizontal profiles: 700 mm.

**Table 3.** Impact resistance

### 3.7 Axial tension resistance

Axial tension resistance between the cladding element and the cladding fixing has been assessed according to §2.2.12.7 of EAD 090062-01-0404.

Position of the fixing and testing details		$F_{m,u}^{(1)}$ (N)	$F_{c,u}^{(2)}$ (N)
Centre	$D_{ring, min} = 70$ mm	627,4	433,4
	$D_{ring, max} = 112$ mm	686,4	536,9
Border	$D_{ring, min} = 70$ mm	520	336,9
	$D_{ring, max} = 112$ mm	516,4	316,2
Corner	$D_{ring, min} = 70$ mm	524,1	384,0
	$D_{ring, max} = 112$ mm	575,4	401,9
<p>(1) Arithmetic mean value.</p> <p>(2) Characteristics values giving 75% confidence that the 95% of test results will be higher than this value.</p>			

**Table 4.** Axial tension resistance of the connection between the cladding element and the cladding fixing

### 3.8 Shear load resistance

Shear load resistance between the cladding element and the cladding fixing has been assessed according to §2.2.12.8 of EAD 090062-01-0404.

Position of the fixing and testing details	$F_{m,u}^{(1)}$ (N)	$F_{c,u}^{(2)}$ (N)
Border	1.398	989,9
<p>(1) Arithmetic mean value.</p> <p>(2) Characteristics values giving 75% confidence that the 95% of test results will be higher than this value.</p>		

**Table 5.** Shear load resistance



### 3.9 Resistance of profiles

Performance not assessed. See Annex A.4 and A.5 for profiles main characteristics.

### 3.10 Behaviour after pulsating load

Behaviour after pulsating load of the connection between the cladding element and the cladding fixing has been evaluated according to § 2.2.16.2 and the method specified in Annex M.2 of EAD 090062-01-0404.

Position of the fixing and testing details		$F_{m,u}^{(1)}$ (N)	$F_{c,u}^{(2)}$ (N)
Centre	$D_{ring} = 112$ mm	491	267,9
Border	$D_{ring} = 112$ mm	380,1	237,8
Corner	$D_{ring} = 112$ mm	482,1	314,4
<p>(1) Arithmetic mean value.</p> <p>(2) Characteristics values giving 75% confidence that the 95% of test results will be higher than this value.</p>			

**Table 6.** Behaviour after pulsating load of the connection between the cladding element and the cladding fixing

### 3.11 Corrosion of metal components

This performance has not been assessed.

The materials of the kit components are defined in the relevant tables in Annexes A.2, A.3, A.4, A.5, A.6 and A.7.



#### 4. Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to the European Commission Decision 2003/640/EC, the AVCP System (see Delegated Regulation (EU) No 568/2014 amending Annex V to Regulation (EU) No 305/2011) given in the following table applies:

Product	Intended use	Level or class	System
Kit for external wall cladding	Uses not subject to fire regulations	Any	2+
	Uses subject to fire regulations	A2	3

#### 5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the Assessment and Verification of Constancy of Performance (AVCP) system are laid down in the control plan deposited at Tecnalia Research & Innovation.

The Control Plan is a confidential part of the ETA and is only handed over to the notified body involved in the assessment and verification of constancy of performance.

Issued in Azpeitia, on 12/05/2025

Miguel Mateos  
Innovation and Conformity Assessment Point  
Tecnalia Research & Innovation



## ANNEX A: TECHNICAL DESCRIPTION

### A.1 Cladding elements

Ariostea/Fiandre/FMG/Iris/Porcelaingres XSLAB ceramic cladding elements are delivered with an ancillary mineral sheet, bonded in their rear side by means of a polyurethane adhesive.

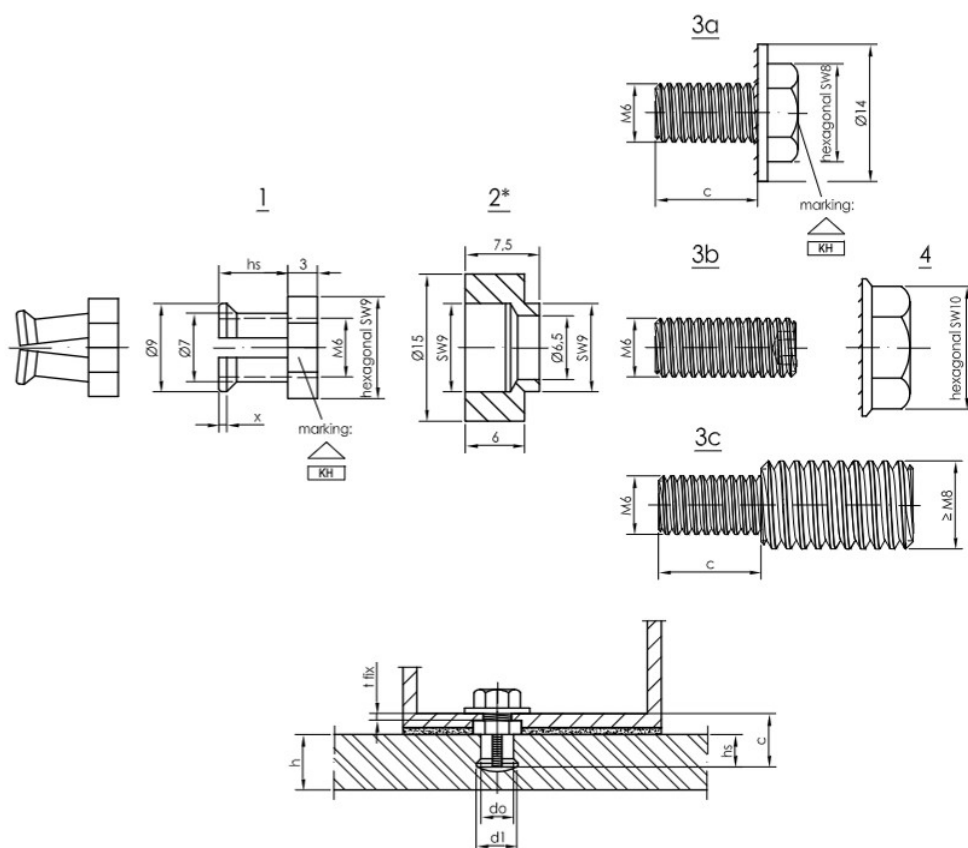
Ariostea/Fiandre/FMG/Iris/Porcelaingres XSLAB (according to EN 14411)			
Characteristics	Reference	Value	Tolerance
Water absorption (%)	EN ISO 10545-3	$\leq 0,1$	-
Nominal length (mm)	EN ISO 10545-2	3.000	$\pm 0,1 \%$
Nominal width (mm)		1.000	$\pm 0,1 \%$
Thickness (mm)		6	$\pm 5 \%$
Rectangularity		-	$\pm 0,1 \%$
Linearity		-	$\pm 0,1 \%$
Surface flatness		-	$\pm 0,2 \%$
Modulus of rupture (N/mm <sup>2</sup> )	EN ISO 10545-4	49	-
Resistance to deep abrasion (N/mm <sup>2</sup> )	EN ISO 10545-6	140	-
Thermal expansion coefficient (°C <sup>-1</sup> )	EN ISO 10545-8	$6,5 \times 10^{-6}$	-
Thermal shock resistance	EN ISO 10545-9	Resistant	-
Frost resistance	EN ISO 10545-14	On request	-

**Table A.1** Ariostea/Fiandre/FMG/Iris/Porcelaingres XSLAB characteristics

## A.2 Keil mechanical undercut anchors

Anchor type		KH 5,5
Diameter of drill hole	$d_o$ (mm)	7,0
Diameter of undercut	$d_1$ (mm)	9,0
Screw length	$c$ (mm)	$H_s + 3 \text{ mm} + t_{\text{fix}}$
Installation torque moment	$T_{\text{inst}}$ (Nm)	$2,5 \leq T_{\text{inst}} \leq 4,0$
<b>Material characteristics</b>		
Anchor sleeve		1.4404 stainless steel according to EN 10088
Hexagon screw with tooth lock washer		1.4401, 1.4404 or 1.4578 stainless steel according to EN 10088

**Table A.2** Keil fixing characteristics



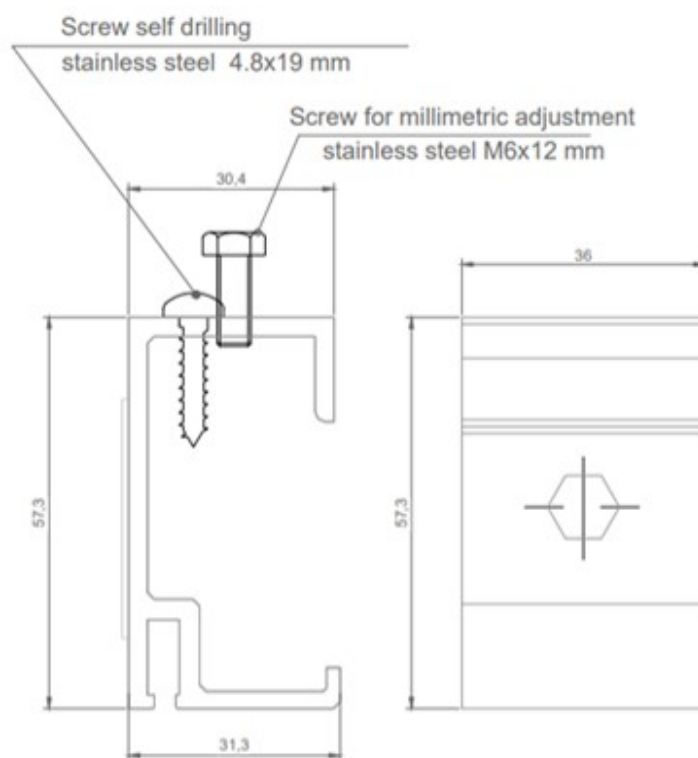
**Figure A.2** Keil fixing



### A.3 Clamps with EPDM gaskets

Characteristics	Value	Reference
Material	Powder coated EN AW 6060 T6 aluminium alloy	EN 1999-1-1 EN 755-2
Durability class	B	
Specific gravity (kg/m <sup>3</sup> )	2.700	
Modulus of elasticity (MPa)	69.000	
Poisson coefficient	0,33	
Thermal expansion coefficient (100°C) (10 <sup>-6</sup> /K)	23,4	
Elongation 50 (%)	6	
Tensile strength (MPa)	190	

**Table A.3.1** Clamps characteristics

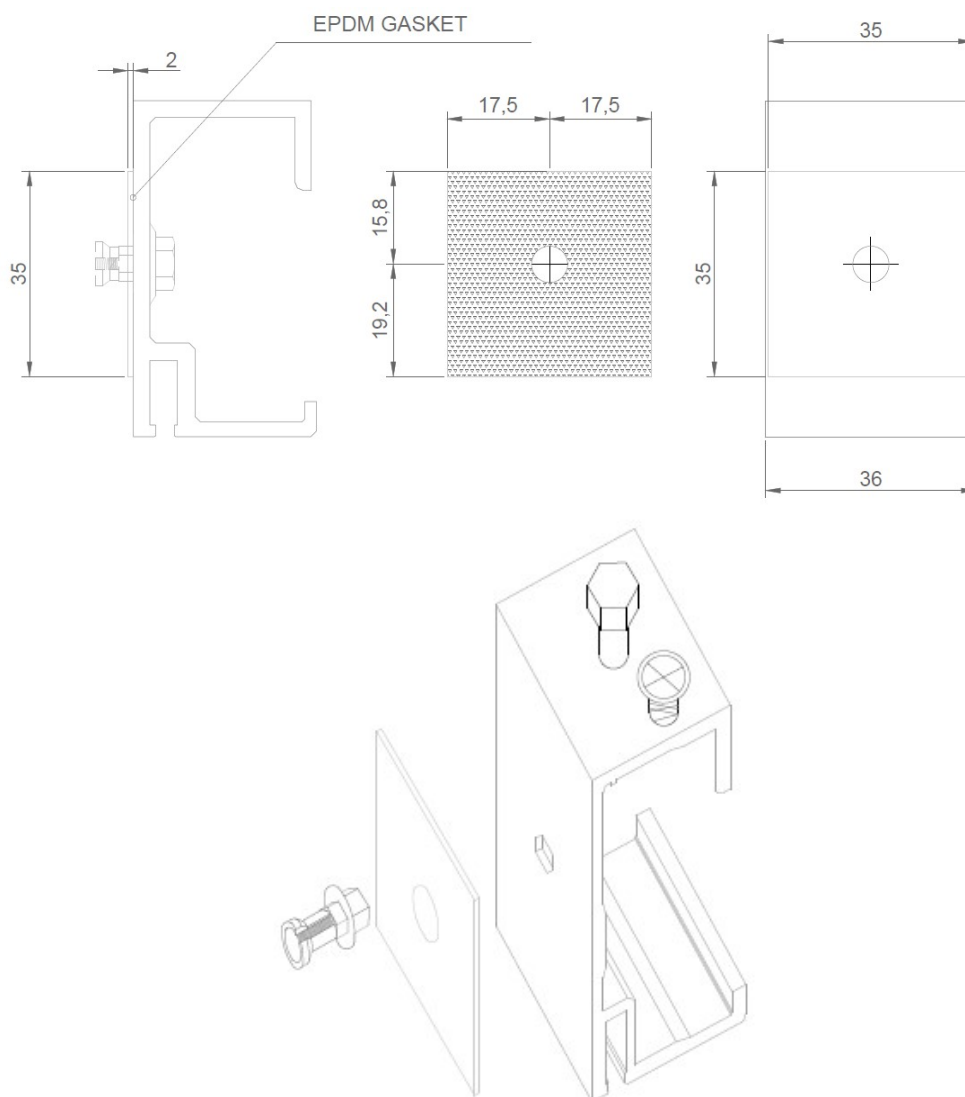


**Figure A.3.1** Clamps



Characteristics	Value	Tolerance	Reference
Material	Closed cell foam rubber	-	EN ISO 845 EN ISO 1798 ASTM D 1056
Hardness	55	$\pm 5$	
Specific weight (kg/m <sup>3</sup> )	120	$\pm 20$	
Load deformation 50 % (kPa)	110	-	
Compression set 50% / 22h / 70°C (%)	< 20	-	
Water absorption (%)	< 5	-	
Elongation at break (%)	$\geq 180$	-	
Breaking load (kPa)	$\geq 500$	-	

**Table A.3.2** EPDM gasket characteristics



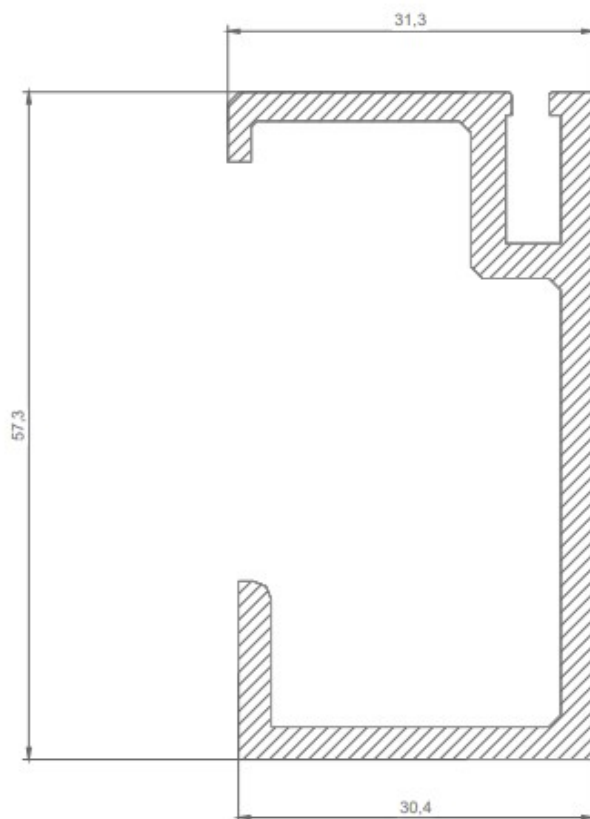
**Figure A.3.2** EPDM gasket and adjacent clamp



## A.4 Horizontal profiles

Characteristics	Reference	Value
Material	EN 1999-1-1 EN 755-2	Powder coated EN AW 6060 T6 aluminium alloy
Durability class		B
Specific gravity (kg/m <sup>3</sup> )		2.700
Modulus of elasticity (MPa)		69.000
Poisson coefficient		0,33
Thermal expansion coefficient (T 100°C) (10 <sup>-6</sup> /K)		23,4
Elongation 50 (%)		6
Tensile strength (MPa)		190

**Table A.4** Horizontal profiles characteristics



**Figure A.4** Horizontal profile

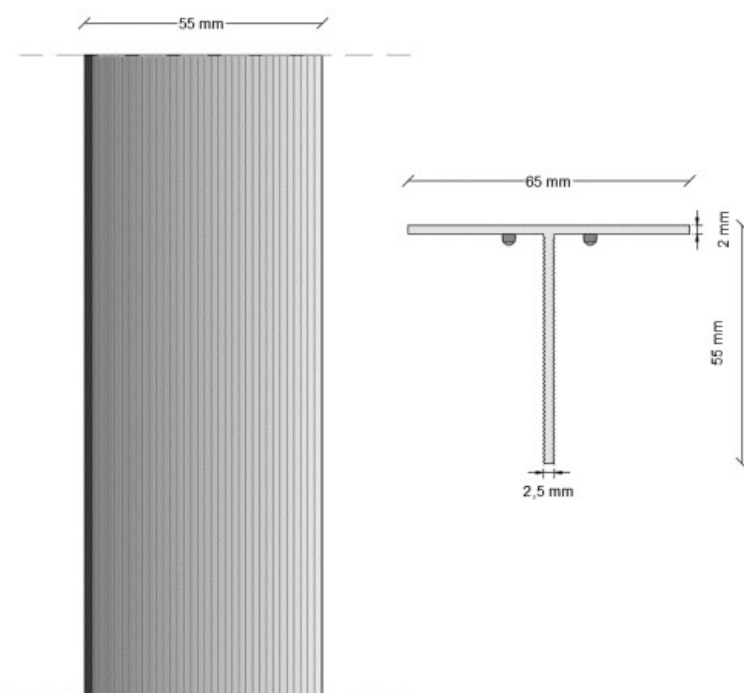




## A.5 Vertical profiles

Characteristics	Reference	Value
Material	EN 1999-1-1 EN 755-2	Powder coated EN AW 6060 T6 aluminium alloy
Durability class		B
Specific gravity (kg/m <sup>3</sup> )		2.700
Modulus of elasticity (MPa)		69.000
Poisson coefficient		0,33
Thermal expansion coefficient (T 100°C) (10 <sup>-6</sup> /K)		23,4
Elongation 50 (%)		6
Tensile strength (MPa)		190

**Table A.5** Vertical profiles characteristics

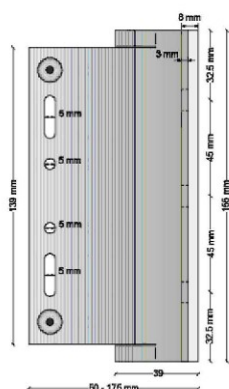


**Figure A.5** Vertical profile

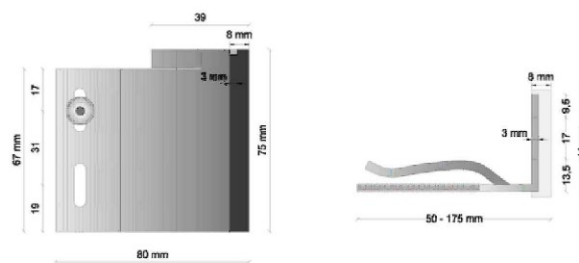
## A.6 Brackets with thermo-stop pads

Characteristics	Value	Reference
Material	Powder coated EN AW 6060 T6 aluminium alloy	EN 1999-1-1 EN 755-2
Durability class	B	
Modulus of elasticity (MPa)	69.000	
Poisson coefficient	0,33	
Coefficient of thermal expansion (T≤100°C) (10 <sup>-6</sup> /K)	23,4	
Elongation 50 (%)	6	
Tensile strength (MPa)	190	
Characteristics	Value	
Form	Figure A.6.1 / Figure A.6.2	
Dimensions (mm) <sup>1</sup>	Main Bracket 155 x 40 x L Secondary Bracket 155 x 40 x L 50 ≤ L ≤ 175 (mm) H/B/L thickness = 3 mm	

**Table A.6.1** Brackets characteristics



**Figure A.6.1** Main bracket

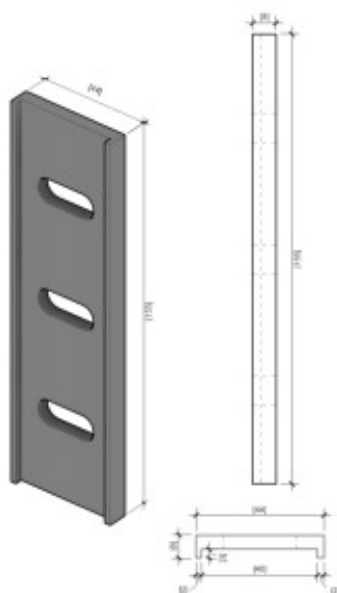


**Figure A.6.2** Secondary bracket

<sup>1</sup> Dimensions (H x B x L) where H: height; B: width; L: span length

Characteristics	Value	Reference
Material	Moplen HP 648 T – Polypropylene, homopolymer	EN ISO 1183 EN ISO 527-2
Density of insulation material (23°C) (g/cm³)	0,9	
Tensile stress (Yield) (MPa)	35	
Tensile modulus (MPa)	1.600	
Characteristics	Value	
Form	Figure A.6.3	
Dimensions (mm) <sup>2</sup>	155 x 44 x 5	

**Table A.6.2** Thermo-stop pad characteristics



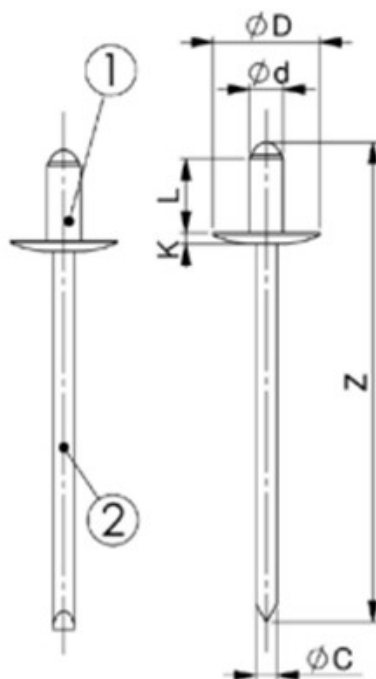
**Figure A.6.3** Thermo-stop pad

<sup>2</sup> Dimensions (H x B x L) where H: height; B: width; T: thick

## A.7 Rivets

Characteristics		Value	Reference
Trade name		509481243	-
Form		Fig A.8	-
Generic type		Large head aluminium rivet	-
Dimensions (mm)	ØC	2,6	-
	ØD	14	-
	Ød	4,8	-
	L	12	-
	K	1,8	-
	Z	50	-
Material	1	EN AW 5154A – AlMg 3,5 aluminium alloy	EN 755-2
	2	AISI 304 stainless steel	EN 3506

**Table A.7** Rivets characteristics



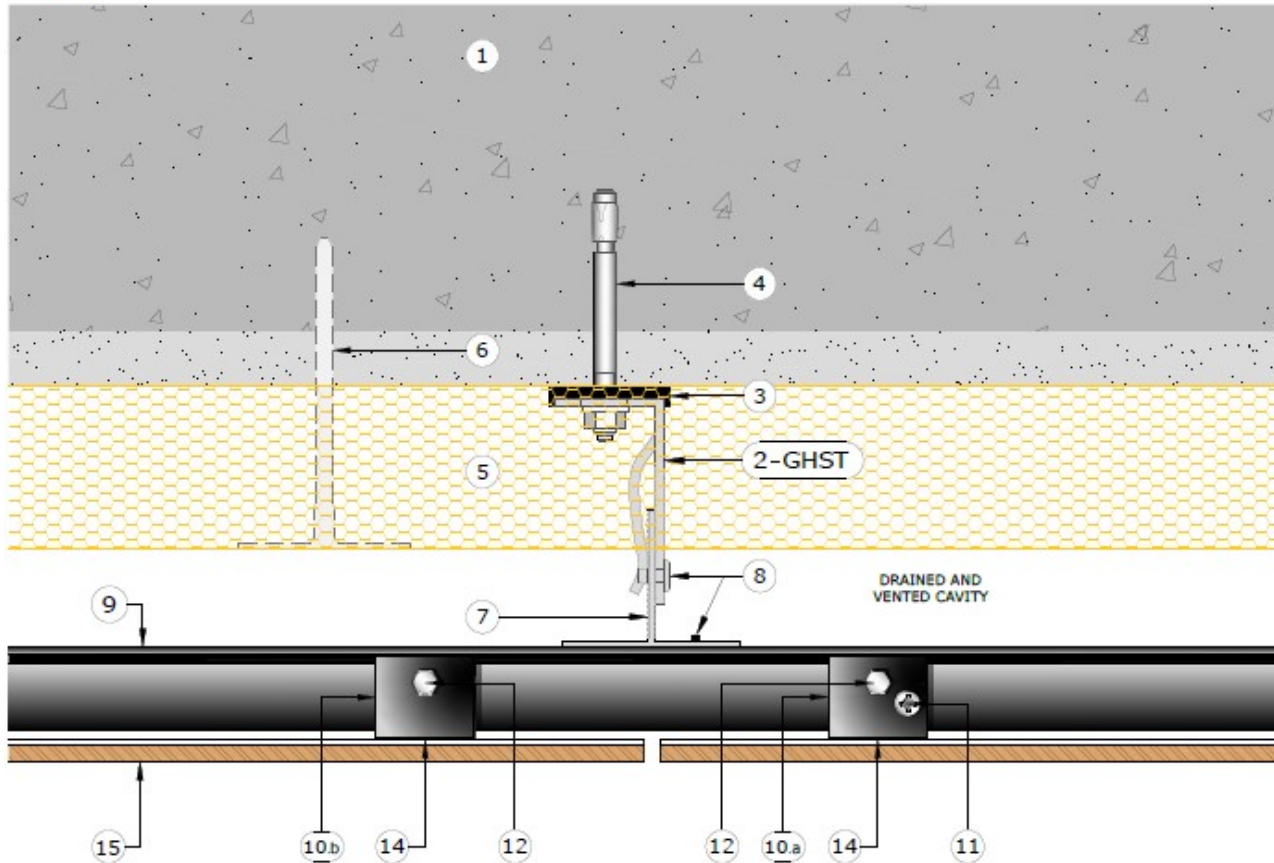
**Figure A.7** Rivet



## ANNEX B: CONSTRUCTION DETAILS

### PLAN DETAIL

N.T.S.



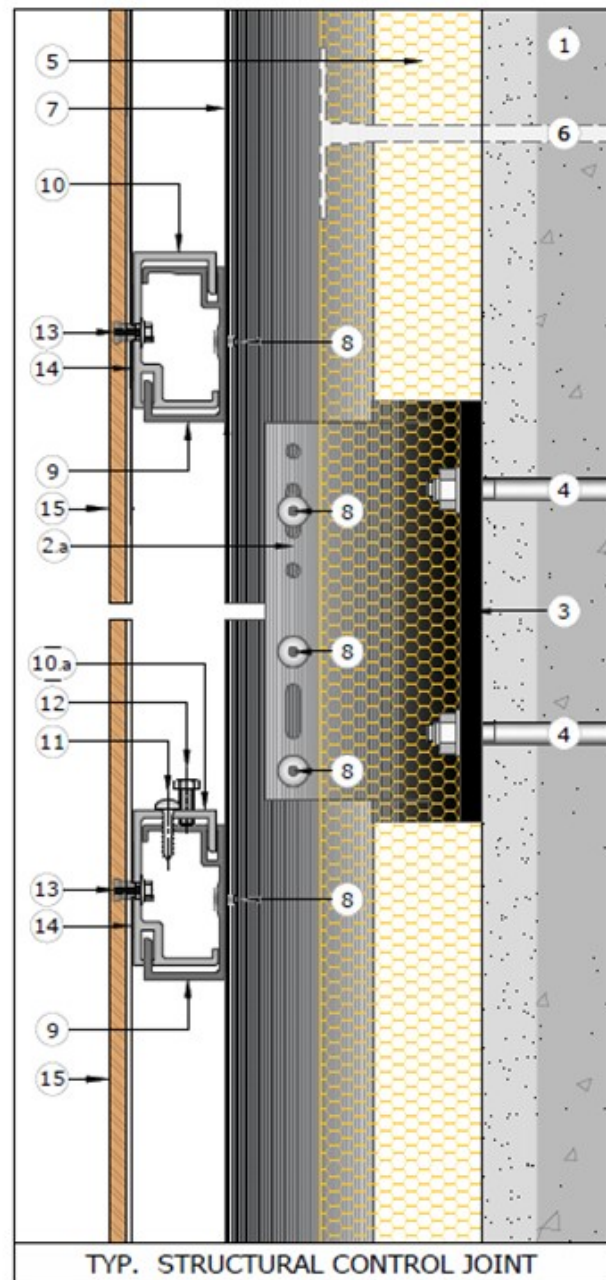
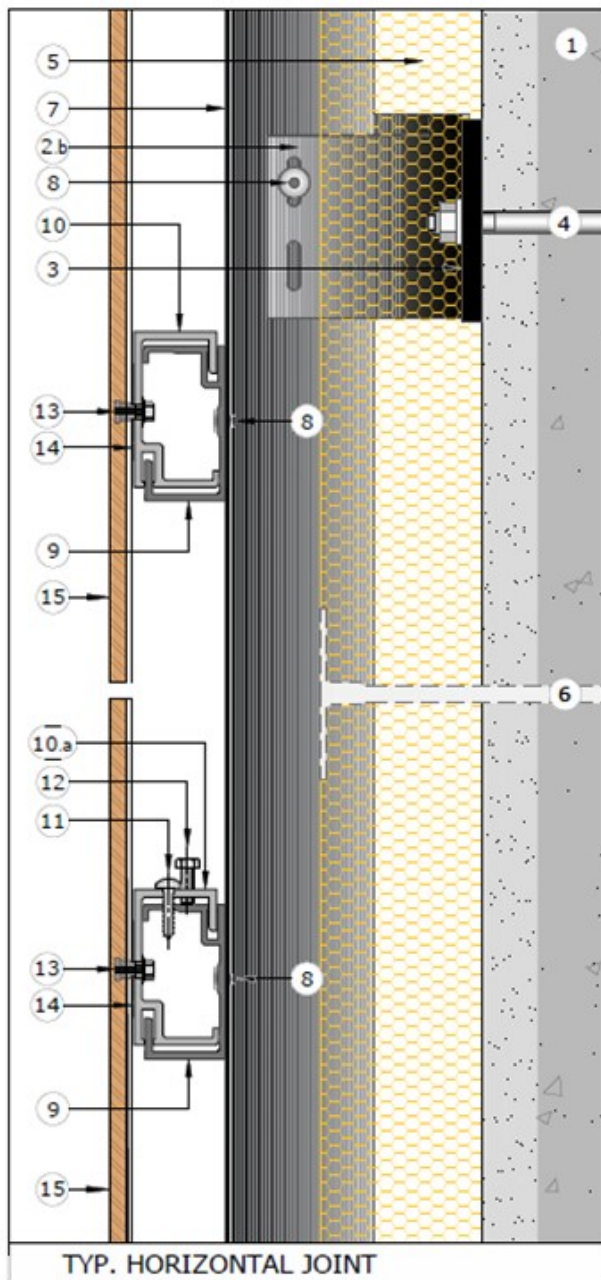
#### LEGEND:

1.	Backup wall	14.	Compressible gasket
2.	L-bracket - Powder coated (black) Al 6060-T6	15.	XSLAB
3.	Thermal brake spacer	16.	
4.	Wall anchors	17.	Brake metal jamb
5.	Thermal insulation	18.	Brake metal sill
6.	Plastic anchor - to fasten thermal insulation to wall	19.	Brake metal head
7.	Vertical T-profile - Powder coated (black) Al 6060-T6	20.	Porcelain jamb
8.	Stainless steel or aluminum rivet	21.	Porcelain sill
9.	Horizontal rail C-profile - Powder coated (black) Al 6060-T6	22.	Porcelain head
10.	Concealed Clamp - Powder coated (black) Al 6060-T6	23.	Water proofing
11.	Self tapping/fixing screw	24.	Micro-perforated aluminum grille
12.	Leveling bolt	25.	Metal coping
13.	"KEIL" concealed anchor		



## SECTION DETAIL

N.T.S.



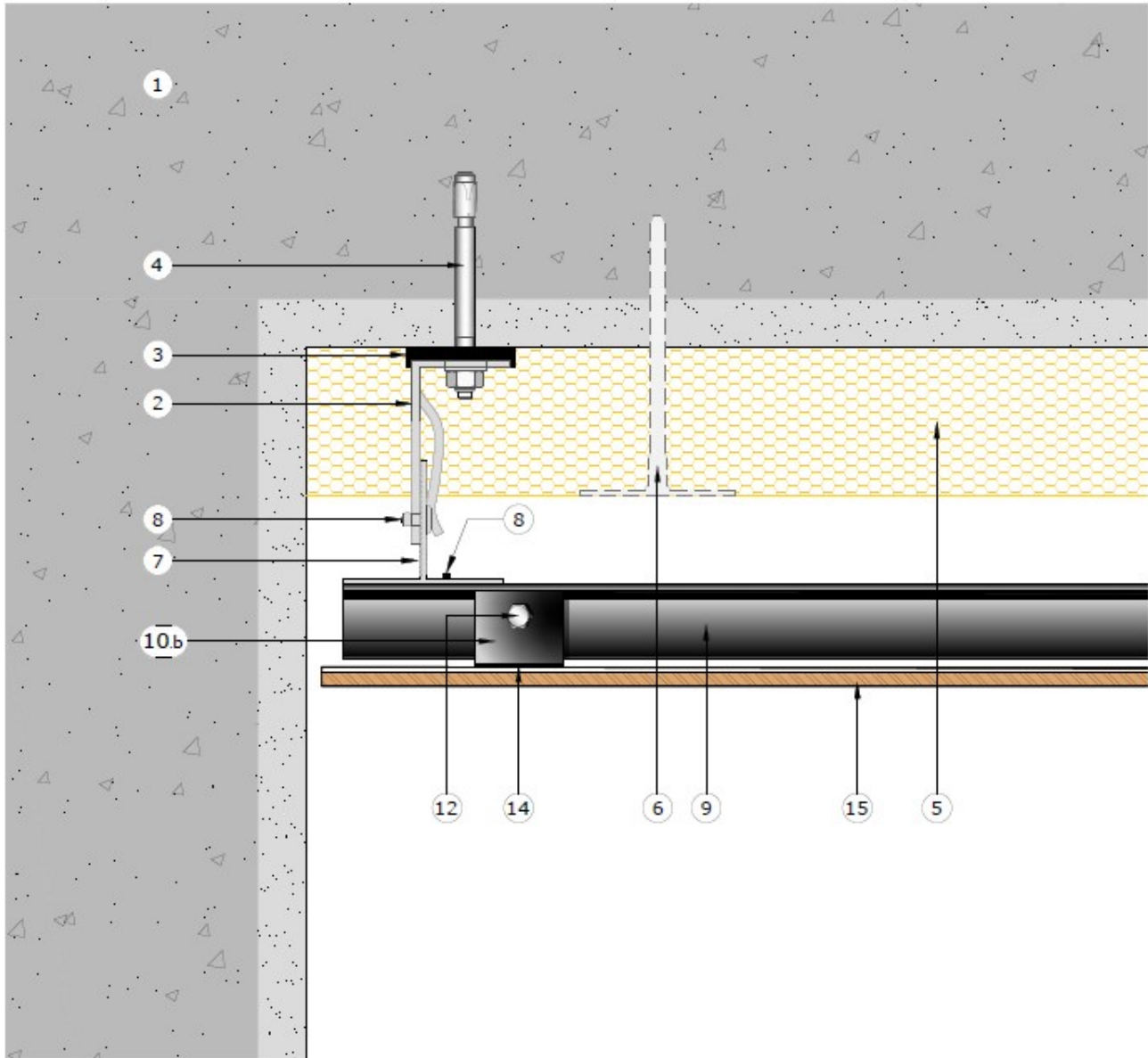
### LEGEND:

1.	Backup wall	14.	Compressible gasket
2.	L-bracket - Powder coated (black) Al 6060-T6	15.	XSLAB
3.	Thermal brake spacer	16.	
4.	Wall anchors	17.	Brake metal jamb
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7.	Vertical T-profile - Powder coated (black) Al 6060-T6	20.	Porcelain jamb
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11.	Self tapping/fixing screw	24.	Micro-perforated aluminum grille
12.	Leveling bolt	25.	Metal coping
13.	"KEIL" concealed anchor		



## PLAN DETAIL

N.T.S.

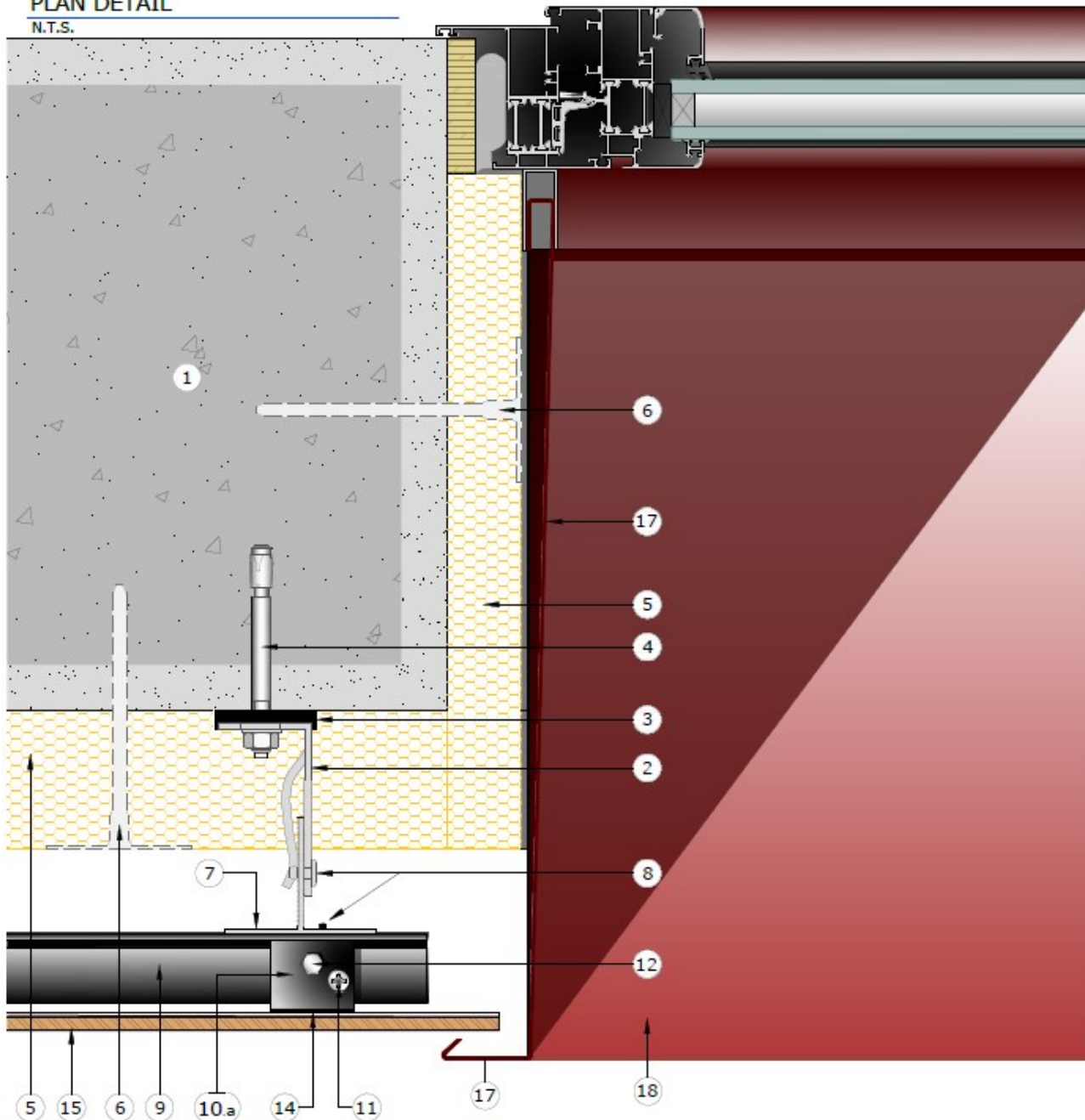


### LEGEND:

1.	Backup wall	14.	Compressible gasket
2.	L-bracket - Powder coated (black) Al 6060-T6	15.	XSLAB
3.	Thermal brake spacer	16.	
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9.	Horizontal rail C-profile - Powder coated (black) Al 6060-T6	22.	Porcelain head
10.	Concealed Clamp - Powder coated (black) Al 6060-T6	23.	Water proofing
11.	Self tapping/fixing screw	24.	Micro-perforated aluminum grille
12.	Leveling bolt	25.	Metal coping
13.	"KEIL" concealed anchor		

**PLAN DETAIL**

N.T.S.

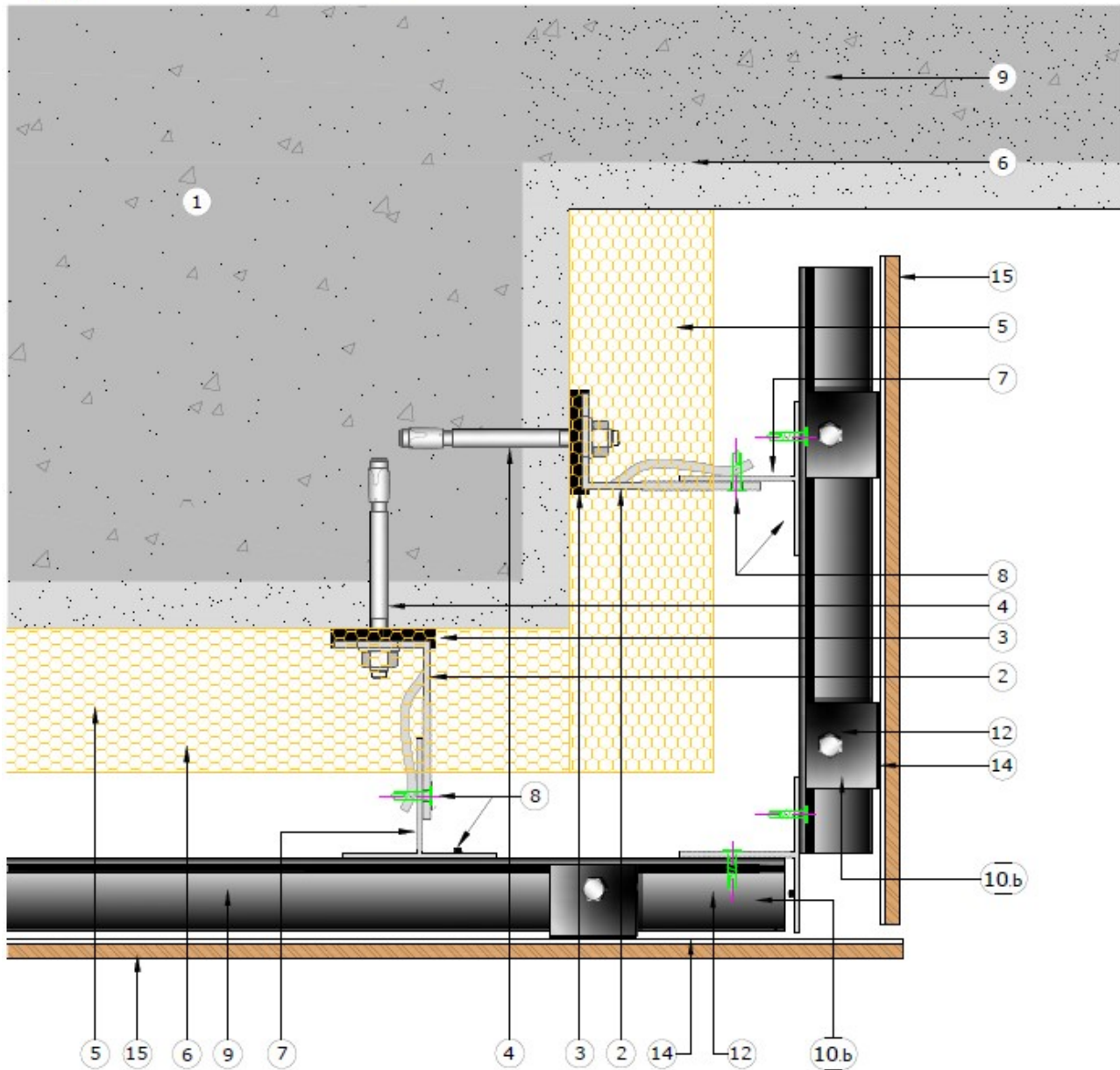


**LEGEND:**

1.	Backup wall	14.	Compressible gasket
2.	L-bracket - Powder coated (black) Al 6060-T6	15.	XSLAB
3.	Thermal brake spacer	16.	
4.	Wall anchors	17.	Brake metal jamb
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12.	Leveling bolt	25.	Metal coping
13.	"KEIL" concealed anchor		

## PLAN DETAIL

N.T.S.



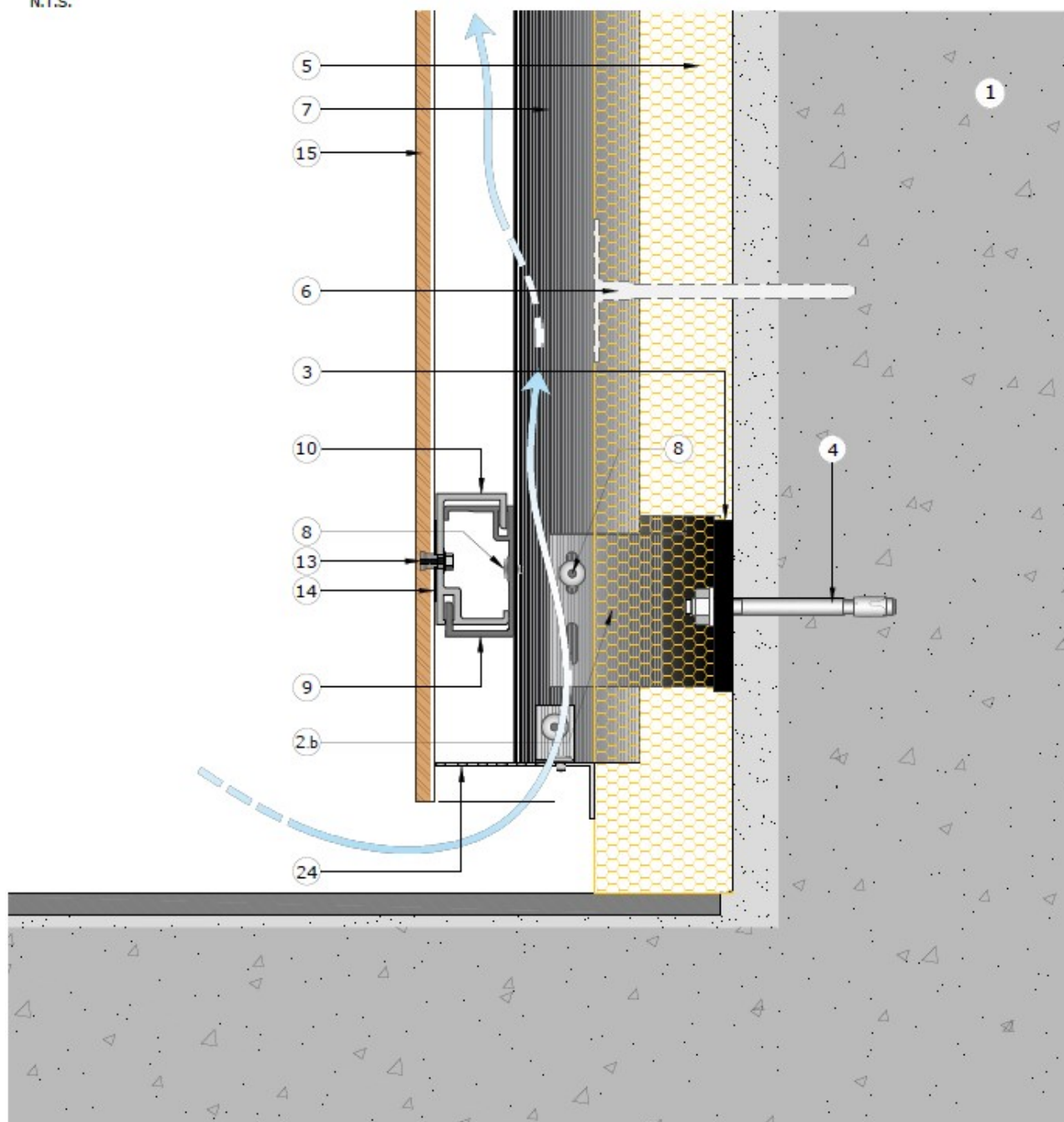
### LEGEND:

1.	Backup wall	14.	Compressible gasket
2.	L-bracket - Powder coated (black) Al 6060-T6	15.	XSLAB
3.	Thermal brake spacer	16.	
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11.	Self tapping/fixing screw	24.	Micro-perforated aluminum grille
12.	Leveling bolt	25.	Metal coping
13.	"KEIL" concealed anchor		



## SECTION DETAIL

N.T.S.

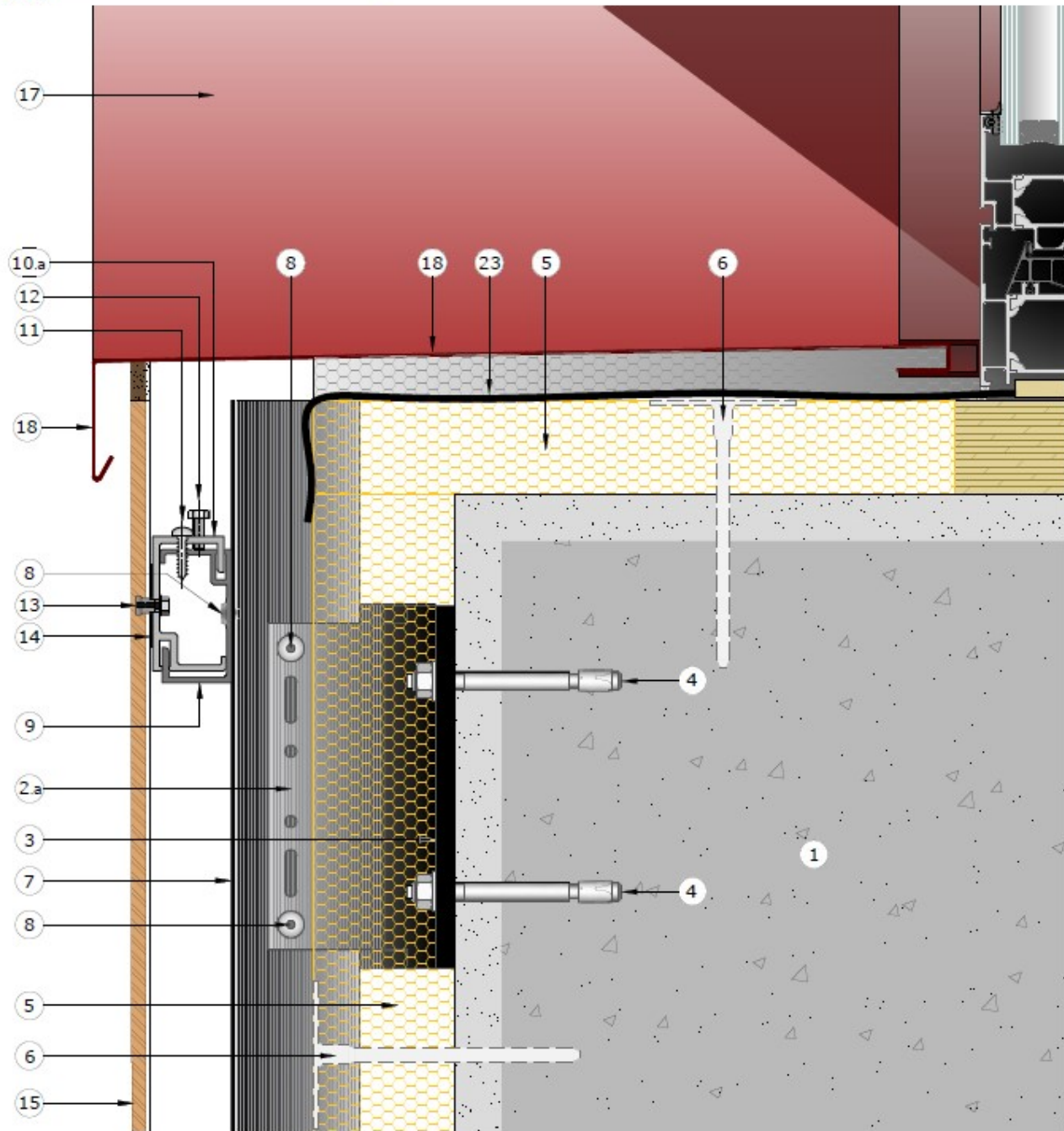


### LEGEND:

1.	Backup wall	14.	Compressible gasket
2.	L-bracket - Powder coated (black) Al 6060-T6	15.	XSLAB
3.	Thermal brake spacer	16.	
4.	Wall anchors	17.	Brake metal jamb
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11.	Self tapping/fixing screw	24.	Micro-perforated aluminum grille
12.	Leveling bolt	25.	Metal coping
13.	"KEIL" concealed anchor		

## SECTION DETAIL

N.T.S.

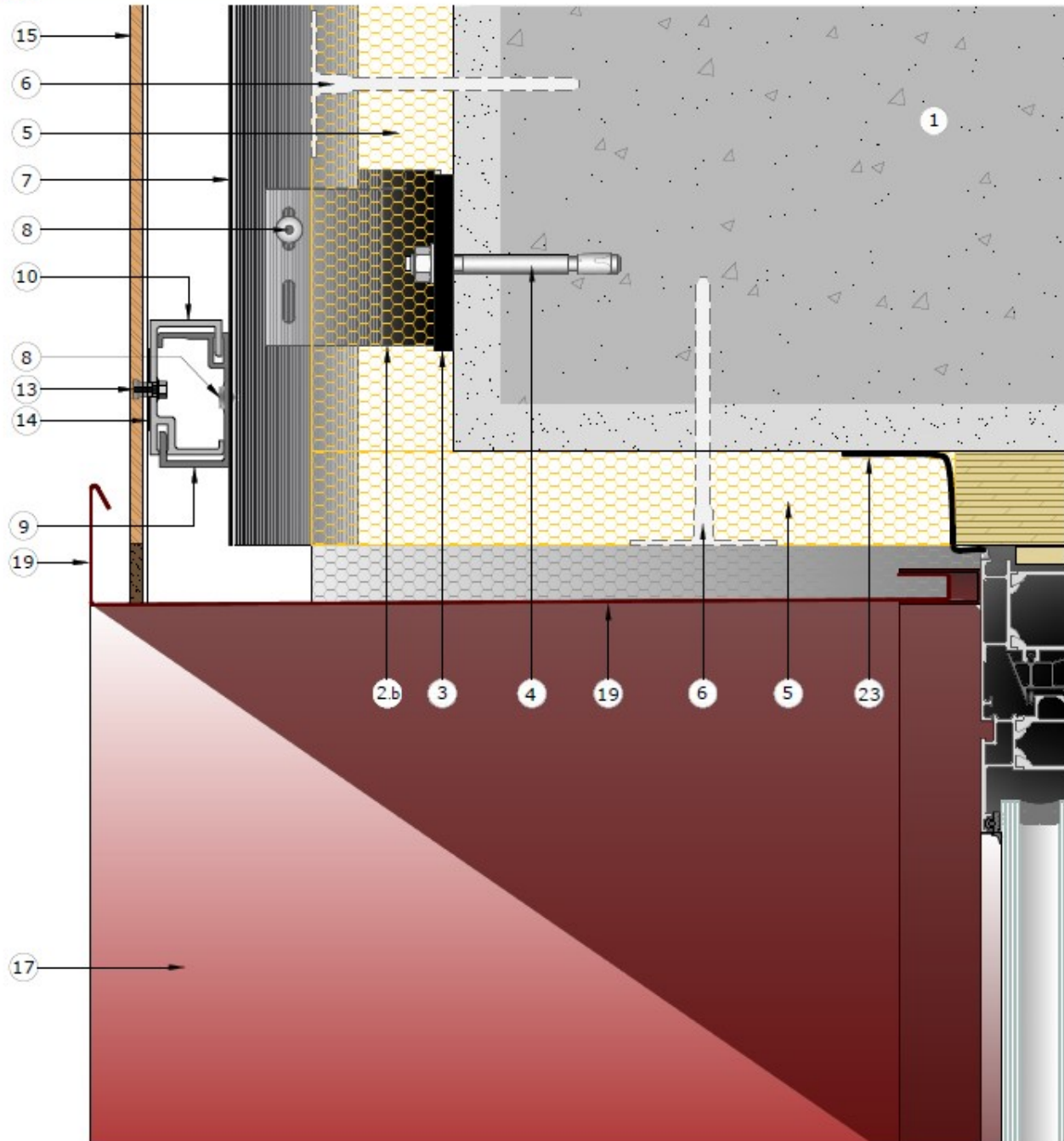


### LEGEND:

1.	Backup wall	14.	Compressible gasket
2.	L-bracket - Powder coated (black) Al 6060-T6	15.	XSLAB
3.	Thermal brake spacer	16.	
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9.	Horizontal rail C-profile - Powder coated (black) Al 6060-T6	22.	Porcelain head
10.	Concealed Clamp - Powder coated (black) Al 6060-T6	23.	Water proofing
11.	Self tapping/fixing screw	24.	Micro-perforated aluminum grille
12.	Leveling bolt	25.	Metal coping
13.	"KEIL" concealed anchor		

## SECTION DETAIL

N.T.S.



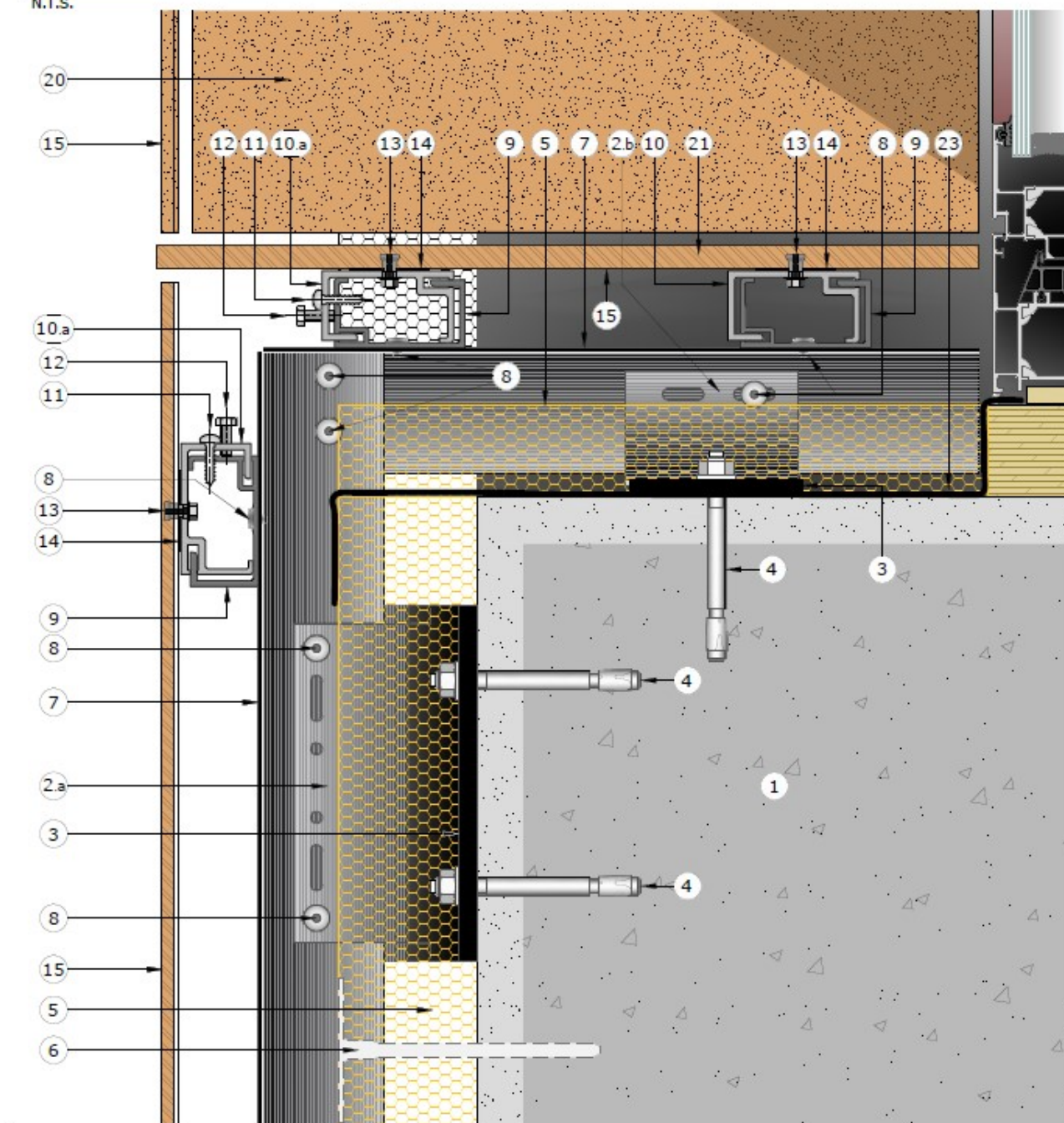
### LEGEND:

1.	Backup wall	14.	Compressible gasket
2.	L-bracket - Powder coated (black) Al 6060-T6	15.	XSLAB
3.	Thermal brake spacer	16.	Brake metal jamb
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11.	Self tapping/fixing screw	24.	Metal coping
12.	Leveling bolt		
13.	"KEIL" concealed anchor		



## SECTION DETAIL

N.T.S.

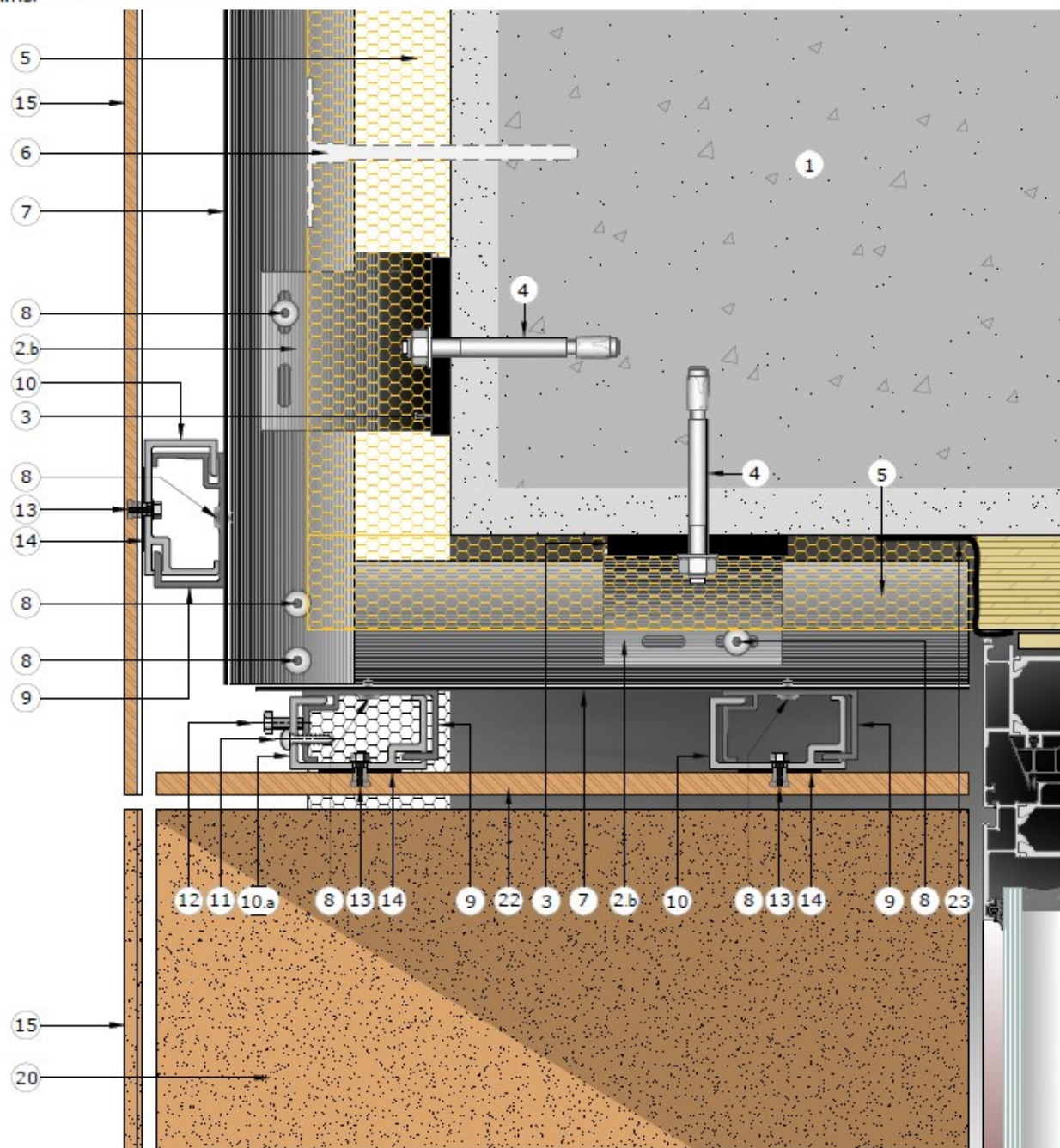


### LEGEND:

1.	Backup wall	14.	Compressible gasket
2.	L-bracket - Powder coated (black) Al 6060-T6	15.	XSLAB
3.	Thermal brake spacer	16.	
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## SECTION DETAIL

N.T.S.



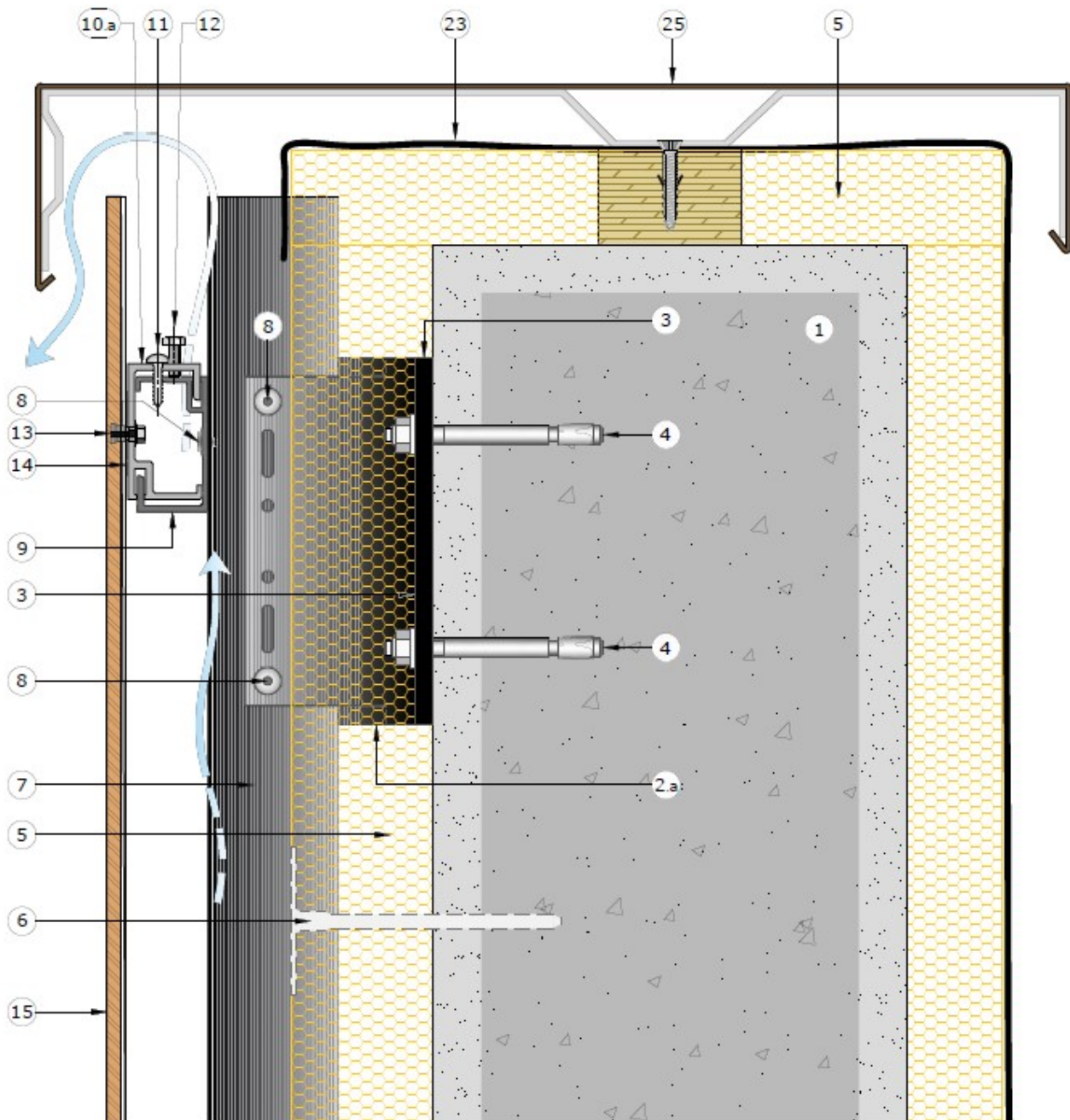
### LEGEND:

1.	Backup wall	14.	Compressible gasket
2.	L-bracket - Powder coated (black) Al 6060-T6	15.	XSLAB
3.	Thermal brake spacer	16.	
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## SECTION DETAIL

N.T.S.

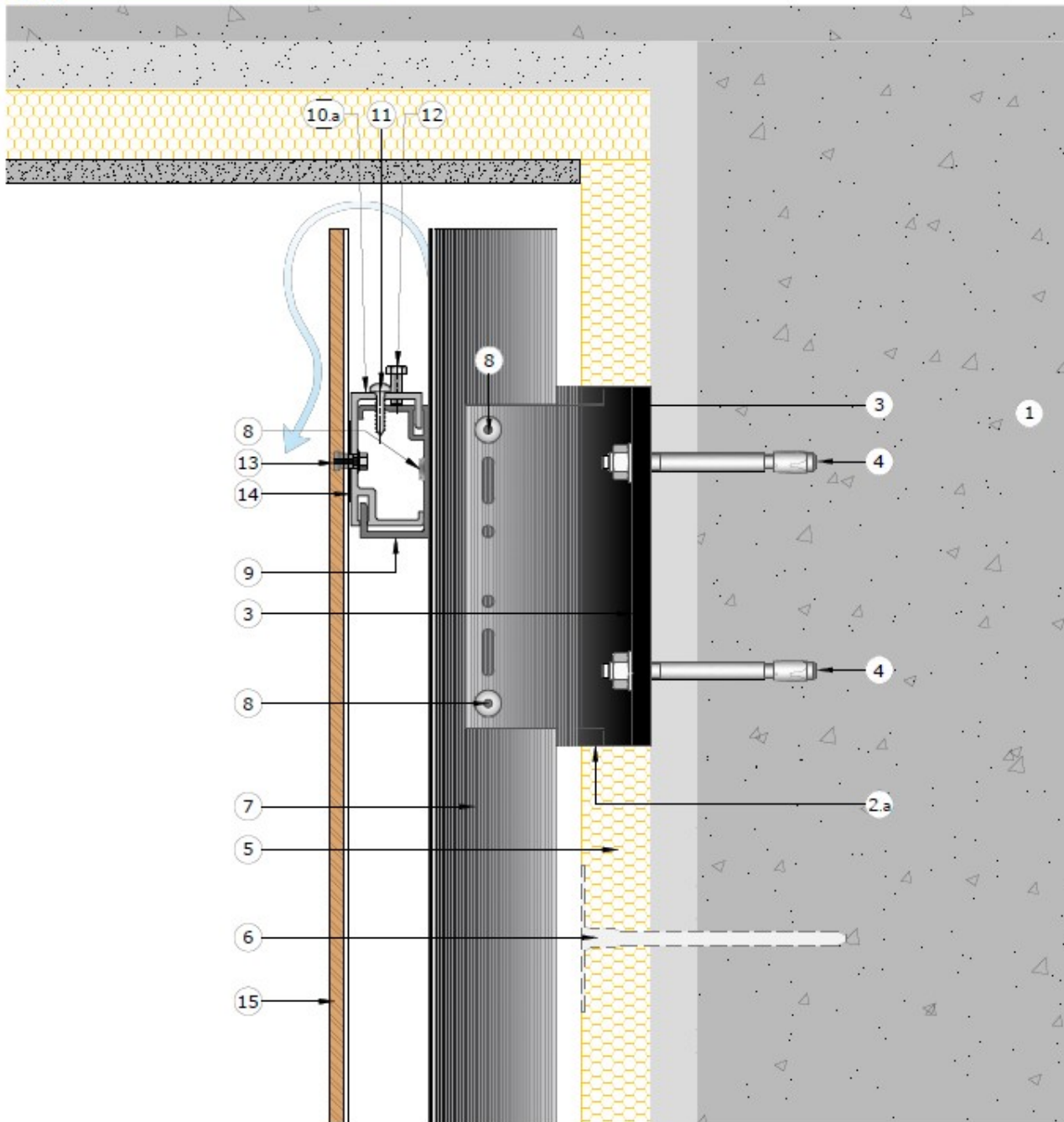


### LEGEND:

1.	Backup wall	14.	Compressible gasket
2.	L-bracket - Powder coated (black) Al 6060-T6	15.	XSLAB
3.	Thermal brake spacer	16.	
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## SECTION DETAIL

N.T.S.



### LEGEND:

1.	Backup wall	14.	Compressible gasket
2*	L-bracket - Powder coated (black) Al 6060-T6	15.	XSLAB
3.	Thermal brake spacer	16.	
4.	Wall anchors	17.	Brake metal jamb
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