MEMBER OF BASQUE RESEARCH
& TECHNOLOGY ALLIANCE

Área Anardi 5,
E-20730 Azpeitia
Gipuzkoa-Spain
Tel: +34 946 430 850
Lab_services@tecnalia.com
www.tecnalia.com

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Member of EOTA
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European Technical Assessment ETA 24/0087 of 10/10/2024

General part

Technical assessment Body issuing The ETA	**TECNALIA RESEARCH & INNOVATION**
Trade name of construction product	**Aluminium Integrate Profile®**
Product family to which the construction product belongs	Kits for external wall claddings mechanically fixed
Manufacturer	AICO IRUÑA, S.L C/ San Agustín 21-23 E-31013 Berriozar-Navarra (Spain)
Manufacturing plant	AICO IRUÑA, S.L C/ San Agustín 21-23 E-31013 Berriozar-Navarra (Spain)
This European Technical assessment contains	23 pages including 2 annexes which form an integral part of this assessment.
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of	EAD 090062-01-0404 Kits for external wall claddings mechanically fixed.

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

Índex

SPECIFIC PARTS

1. Technical description of the product

The subject of this European Technical Assessment (ETA) is a kit for ventilated external wall claddings (façade system **Aluminium Integrate Profile®**) according to the EAD 090062-01-0404 “Kits for external wall claddings mechanically fixed” edition October 2021.

The **Aluminium Integrate Profile®** facade system is supplied as a kit comprised of extruded ceramic cladding panels and aluminium alloy profile in form of "T" with integrated clips for the hanging of the cladding panels. Elements detailed in table 1. Technical information on the components is given in the annexes to this ETA.

The **Aluminium Integrate Profile®** corresponds to a type C fastening system according to EAD 090062-01-0404.

Components		**Aluminium Integrate Profile®**	**Technical description ANNEX A**
Cladding elements		Extruded ceramic cladding FAVEMANC XB PRO Extruded ceramic claddings TEMPIO® FK 16 / TEMPIO ®FK 20	A.1
Subframe components	**Vertical profiles**	Aluminium alloy profile in form of "T" with integrated clips	A.2
	Brackets	Aluminium alloy brackets	A.3
	Fixings between brackets and vertical profiles	Stainless steel self-drilling screws ref. S-AD 01 SS 5,5xL	A.4

Table 1: Aluminium Integrate Profile® façade components.

Fixings of the brackets to the substrate or possible auxiliary components are not part of the kit and are the responsibility of the manufacturer.

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

2.1 Intended use

The façade system Aluminium Integrate Profile ® is a kit intended to be used for ventilated external wall cladding, which can be fixed to the external walls of new or existing buildings. The supporting walls are 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 loa d-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 the façade system Aluminium Integrate Profile ® 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 the façade system Aluminium Integrate Profile® includes inspections on site, taking into account the following aspects:

- Regarding the panels: Appearance of any damage such as cracking or folding 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 identification tests and the assessment for the intended use of this façade system Aluminium Integrate Profile® according to the Basic Work Requirements (BWR) were carried out in compliance with 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		
			Extruded ceramic cladding		
			FAVEMAN C XB PRO	TEMPIO FK-16	TEMPIO FK-20
BWR 2 Safety in case of fire	Reaction to fire	3.1	A1		
	Façade fire performance	-	Not assessed		
	Propensity to undergo continuous smouldering	-	Not relevant		
BWR 3 Hygiene, health and the environment	Watertightness of joints (protection against driving rain)	3.2	Not watertight (open joints)		
	Water absorption	-	Not assessed		
	Water vapour permeability	-	Not relevant		
	Drainability	3.3	See § 3.3 y figures B.1 to B.7		
	Content and/or release of dangerous substances	-	Not assessed		
BWR 4 Safety and accessibility in use	Wind load resistance	3.4	See § 3.4		
	Resistance to horizontal loads	-	Not assessed		
	Impact resistance	3.5	See § 3.5 (Table 3)		
	Bending strength	3.6	See § 3.6 (Table 4)		
	Resistance of grooved cladding element	3.7	See § 3.7 (Table 5)		
	Creep test	-	Not assessed		

Basic Works Requirement	Essential characteristic	ETA clause	Performance		
			Extruded ceramic cladding		
			FAVEMAN C XB PRO	TEMPIO FK-16	TEMPIO FK-20
BWR 5 Protection against noise	Resistance to vertical load	-	Not assessed		
	Pull through resistance of fixings from profile	-	Not assessed		
	Resistance of punctual cladding fixings	3.8	See § 3.8 (Table 6)		
	Resistance of profiles	3.9	See § 3.9 (Table A.2)		
	Tension/ pull-out resistance of subframe fixings	-	Not assessed		
	Shear load resistance of subframe fixings	-	Not assessed		
	Bracket resistance (horizontal and vertical load)	-	Not assessed		
	Resistance to seismic loads	-	Not assessed		
	Airborne sound insulation	-	Not assessed		
BWR 6 Energy economy and heat retention	Thermal resistance	-	Not relevant		
Durability aspects	Hygrothermal behaviour	-	Not assessed		
	Behaviour after pulsating load	-	Not assessed		
	Freeze-thaw resistance	-	Not assessed		
	Behaviour after immersion in water	-	Not assessed		
	Dimensional stability	-	Not assessed		

Basic Works Requirement	Essential characteristic	ETA clause	Performance		
			Extruded ceramic cladding		
			FAVEMAN C XB PRO	TEMPIO FK-16	TEMPIO FK-20
	Chemical and biological resistance	-	Not relevant		
	UV radiation resistance	-	Not relevant		
	Corrosion	3.10	See § 3.10		

Table 2: Aluminium Integrate Profile® 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 Aluminium Integrate Profile® kit is Class A1 according to Commission Delegated Regulation (EU) 2016/364 and EN 13501-1.

If an 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).

In other cases, performance not assessed.

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 Aluminium Integrate Profile® kit is not watertight.

3.3 Drainability

On the basis of the construction details (see figures from B.1 to B.7), 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.

FAVEMANC XB PRO

Tested sample:
Cladding elements: 9 panels (1.200 x 400 x 17) mm
Subframe: 8 brackets (120 x 60 x 3) mm and 4 profiles.
Distance between vertical profiles: 1.200 mm
Distance between brackets: 750 mm

Maximum pressure load, $Q \geq 3.0$ kN/m^2
Maximum suction load, $Q \geq -3.0$ kN/m^2

TEMPIO FK-16/ TEMPIO FK-20

Tested sample:
Cladding elements: 9 panels: (1.200 x 400 x 16) mm
Subframe: 8 brackets (120 x 60 x 3) mm and 4 profiles.
Distance between vertical profiles: 1.200 mm
Distance between brackets: 750 mm

Maximum pressure load, $Q = 3.0$ kN/m^2
Maximum suction load, $Q = -2.8$ kN/m^2

3.5 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 (*)
Trade name	Length (mm)	Width (mm)		
FAVEMANC XB PRO e= 17 mm	≤ 1.200	≤ 400	Hard body (0,5 kg) 3 Impacts of 1 J Soft body (3 kg) 3 impacts of 10 J	CATEGORY IV
Tempio® FK-16 (e= 16 mm) **Tempio® FK-20** (e= 20 mm)	≤ 1.200	≤ 400	Hard body (0,5 kg) 3 impacts of 3 J Soft body (3 kg) 3 impacts of 10J	CATEGORY IV

(*) Category I: This category means that the degree of exposure in use should be a zone at ground level readily accessible to the public and vulnerable to hard body impacts but not subjected to abnormally rough use.
Category II: This category means that the degree of exposure in use should be a zone liable to impacts from thrown objects, but in public locations where the height of the kit will limit the size of the impact; or at lower levels where access to the building is primarily to those with some incentive to exercise care.
Category III: This category means that the degree of exposure in use should be a zone not likely to be damaged by normal impacts caused by people or by thrown or kicked objects.
Category IV: This category means that the degree of exposure in use should be a zone out of reach from ground level.

Tested samples:
Cladding elements: 9 panels: (1.200 x 400 x 17) mm /9 panels: (1.200 x 400 x 16) mm/ 9 panels: (1.200 x 400 x 20) mm
Subframe: 8 brackets (120 x 60 x 3) mm and 4 profiles.
Distance between vertical profiles: 1.200 mm.
Distance between brackets: 750 mm.

Table 3: Impact resistance.

3.6 Mechanical resistance of cladding element. Bending strength

Bending strength has been assessed according to §2.2.12.1 of EAD 090062-01-0404 and the standard EN 10545-4. The bending strength values are given in table 4.

Cladding element	Bending strength	
	R_m (1) (N/mm²)	R_c (2) (N/mm²)
Tempio® FK-16	26.7	23.9
Tempio® FK-20	21.5	18.2
FAVEMANC XB PRO	15.43	14.38

(1) Arithmetic mean value.

(2) Characteristics values giving 75% confidence that the 95% of test results will be higher than this value.

Table 4: Bending strength of the cladding element.

3.7 Mechanical strength of the grooved cladding element.

Groove resistance has been assessed according to § 2.2.12.2 Annex H of EAD 090062-01-0404. Mean and characteristics values are listed in Table 5.

Cladding elements		Ultimate resistance			
		Suction		Pressure	
		$F_{m,u}$ (1) (N)	$F_{c,u}$ (2) (N)	$F_{m,u}$ (1)	$F_{c,u}$ (2)
FAVEMANC XB PRO	Top groove	620 N	570 N	(3)	(3)
	Lower groove	790 N	690 N	740 N	690 N
Tempio® FK-16	Top groove	1,134 N	353 N	(3)	(3)
	Lower groove	1,452 N	1,073 N	1,090 N	805 N
Tempio® FK-20	Top groove	1,432 N	588 N	(3)	(3)
	Lower groove	1,572 N	612 N	2,034 N	3,528 N

(1) Arithmetic mean value.

(2) Characteristics values giving 75% confidence that the 95% of test results will be higher than this value.

(3) Test not relevant by geometry.

Table 5: Resistance of the grooved cladding element.

3.8 Resistance of punctual cladding fixing.

The resistance of the clips has been evaluated according to § 2.2.12.13 and the method specified in Annex J of EAD 090062-01-0404.

The mean values and characteristic values obtained are given in table 6.

	Resistance (N) at 1 mm of permanent deflection		Ultimate resistance (N)		Failure
	$F_{1,m}$ (1)	$F_{1,c}$ (2)	$F_{u,m}$ (1)	$F_{u,c}$ (2)	
Vertical load resistance	1732.1	1554.4	1823.6	1586.0	Plastic deformation of the clip
Horizontal load resistance	485.0	351.2	632.1	311.0	Plastic deformation of the clip

(1) Arithmetic mean value.

(2) Characteristics values giving 75% confidence that the 95% of test results will be higher than this value.

Table 6: Resistance of punctual cladding fixings.

3.9 Resistance of profiles

The following characteristics of the vertical profiles are given in Annex A.2

- Form and dimensions of profiles cross- sections.
- Inertia of profiles cross-sections.
- Minimum elastic limit of profiles material.

3.10 Corrosion of metal components

The material and corrosion protection of the kit components are defined in the relevant tables in Annex A2.

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	A1	4

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 10/10/2024

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Fecha y hora: 10.10.2024 10:33:11

Miguel Mateos
Innovation and Conformity Assessment Point
Tecnalia Research & Innovation

ANNEX A: TECHNICAL DESCRIPTION

A.1 Cladding elements:

Characteristic	Value			Reference
Trade name	**Tempio FK-16®**	**Tempio FK-20®**	**FAVEMANC XB PRO**	---
Form	Figure A1.1	Figure A1.2	Figure A1.3	
Nominal length (mm)	≤ 1,200		≤ 1,200	EN ISO 10545-2
Nominal width (mm)	200 - 400		300 - 400	
Thickness (mm)	16 ± 1.6	20 ± 2,0	17 ± 2.0	
Rectangularity	± 1.0 %		± 0.5 %	
Straightness of the sides	± 0.5 %		± 0.3 %	
Central curvature	± 0.5 %		± 0.3 %	
Lateral curvature				
Surface appearance	≥ 95%		100 %	
Water absorption (% weight)	2.33% ± 0,3 %		-	EN ISO 10545-3
Apparent density (kg/m^3)	1,950 ± 19		2,300	
Apparent porosity (%)	14 ± 1		-	
Weight (kg/m^2)	28.5	33	-	---
Breaking strength (N)	4,117		-	EN ISO 10545-4
Modulus of fracture (MPa)	> 3000		-	
Thermal shock resistance	No defects			EN ISO 10545-9
Frost resistance	No defects			EN ISO 10545-12

Table A.1. Description of the cladding panels.

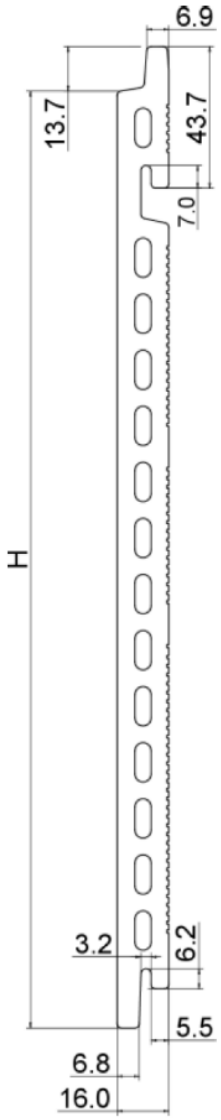

Figure A1.1:
Tempio® FK-16

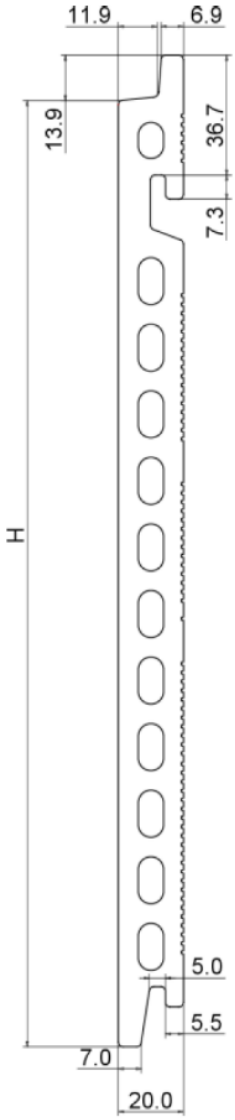

Figure A1.2:
Tempio® FK-20

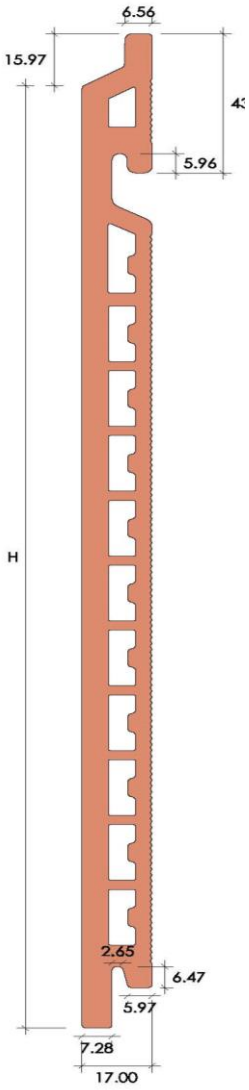

Figure A1.3:
FAVEMANC XB PRO

A.2 Aluminium alloy profiles with integrated clips

Geometric characteristics			
Characteristics		**Value**	
Name		**Profile with joint**	**Plain profile**
Form		Fig. A2.1/ Fig. A2.2/ Fig. A2.3/ Fig. A2.4	Fig. A2.5/ Fig. A2.6/ Fig. A2.7
Material		EN AW 6063 T5 lacquered aluminium	
Elastic limit (MPa)		130	
Modulus of elasticity (MPa)		70,000	
Poisson coefficient		0.3	
Weight per linear metre (kg/m)		1.112	0.880
Cross-section (mm^2)		412	326
Moment of inertia (cm^4)	I_{xx}	14.76	12.32
	I_{yy}	29.21	16.65

Table A.2. Geometric characteristics of profiles.

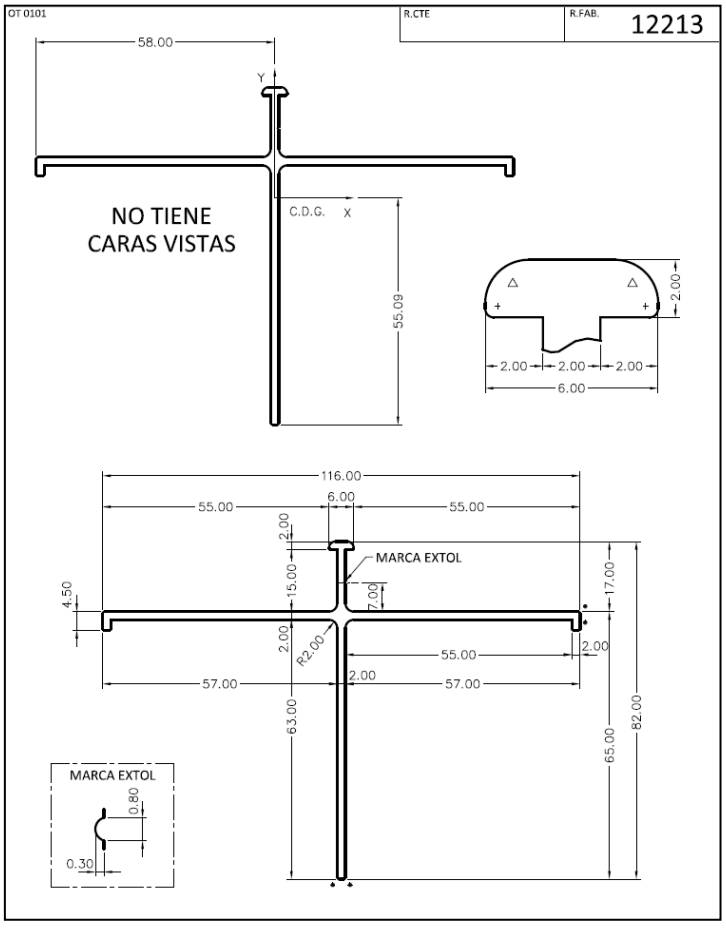

Figure A2.1: Profile with joint

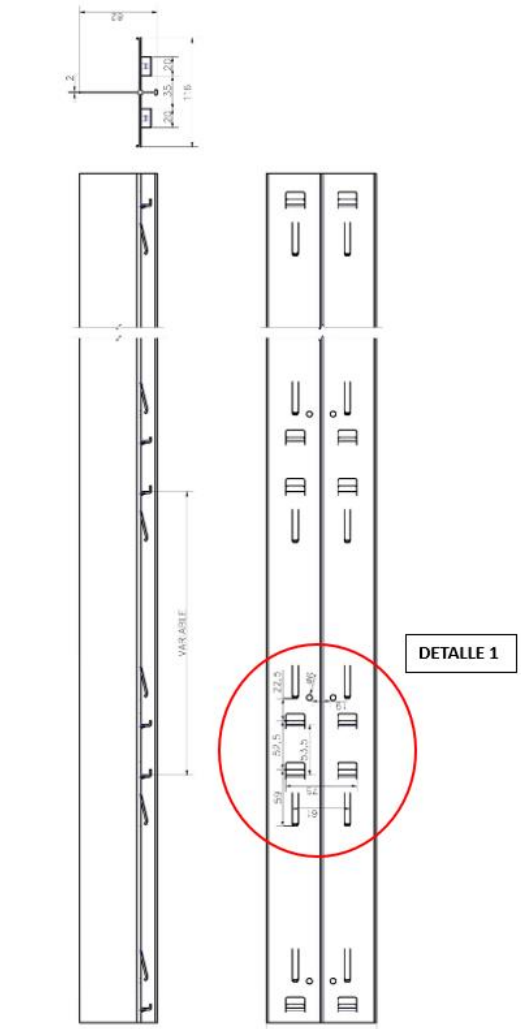

Figure A2.2: Profile with joint

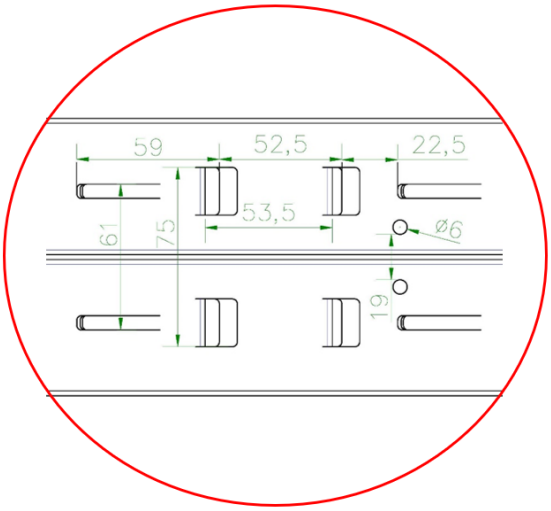

Figure A2.3: Profile with joint

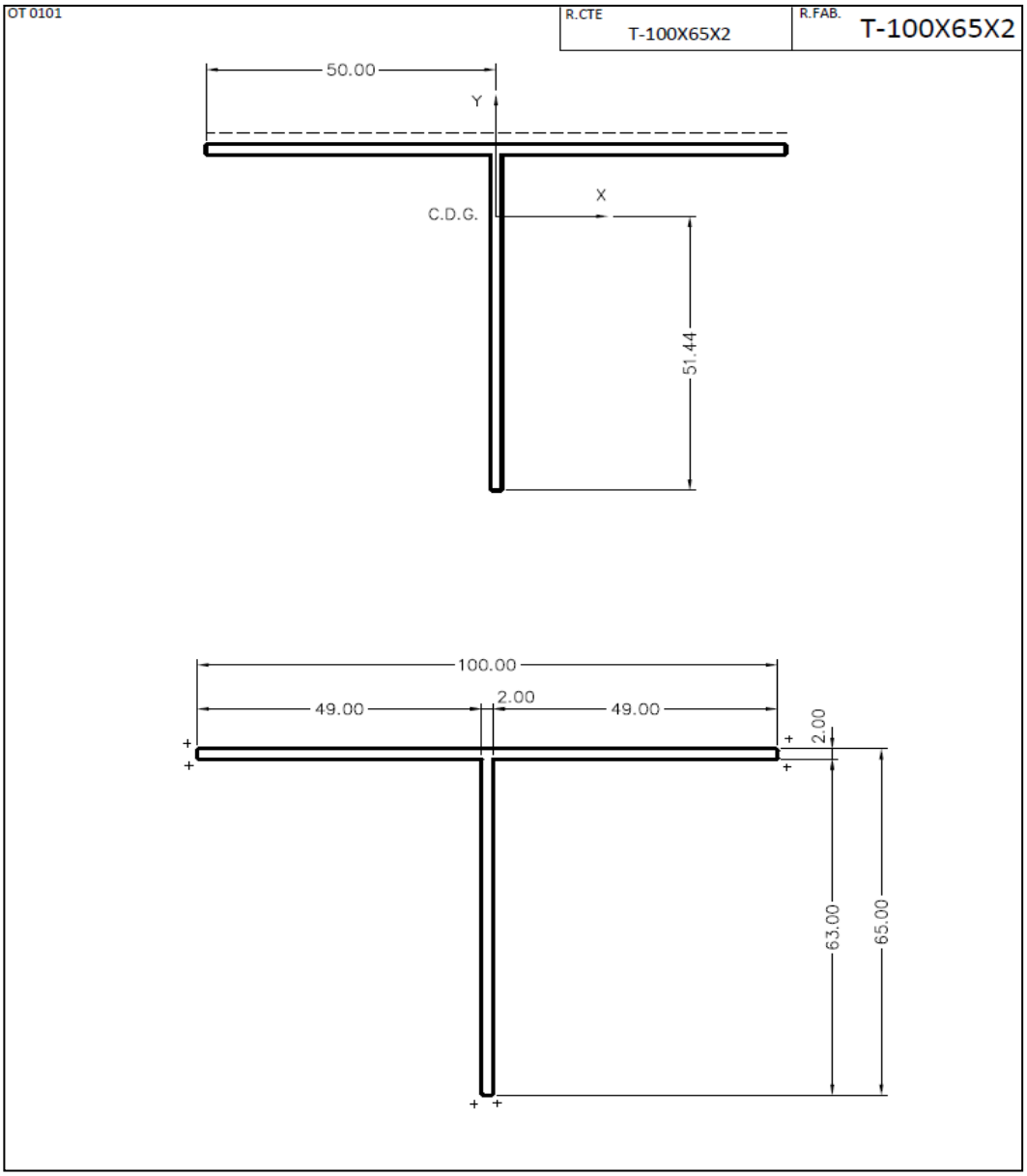

Figure A2.4: Plain profile

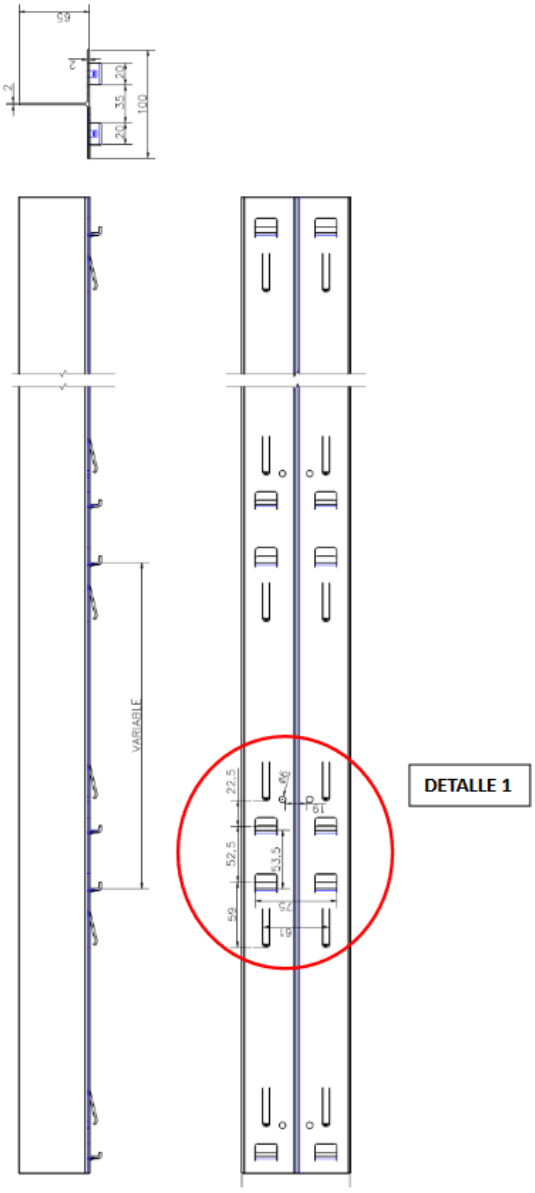

Figure A2.5: Plain profile

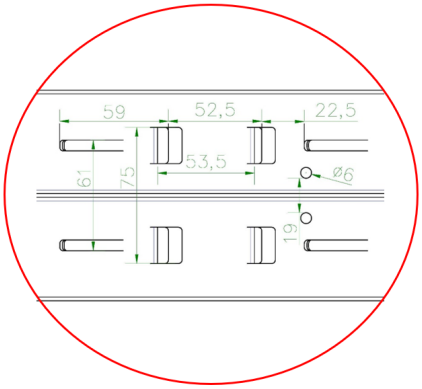

Figure A2.6: Plain profile

A.3 Brackets

Material properties		
Characteristics	**Value**	**Reference**
Material type	AW-6063T66	UNE EN 1999-1-1 UNE EN 755-2
Durability class	B	
Weight	0.12 (kg)	
Modulus of elasticity	70,000 (MPa)	
Poisson coefficient	0.30	
Coefficient of thermal expansion (T≤100°C)	23.2 µm/m°C	
Elongation 80 (%)	≥ 8	
Elongation 50 (%)	≥ 6	
Tensile strength	≥130 (MPa)	
Insulation material	Nylon 68x55x3	
Geometrical properties		
Characteristics	**Value**	
Trade name	**MFT- FOX VI 120 M 6.5/11**	
Form	Figure A.3.1	
Dimensions (mm)[1]	80 x 53 x L 40 ≤ L ≤ 300 (mm)	

Table A.3. Description of brackets.

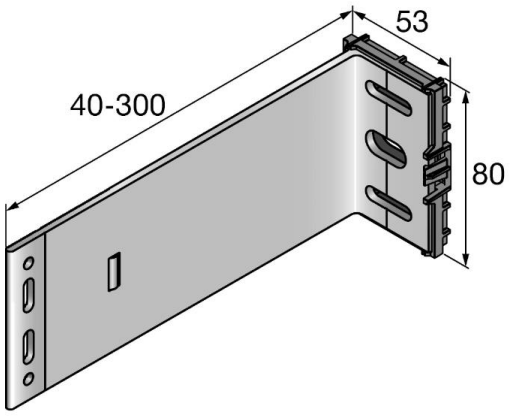

Figure A3.1: Bracket MFT-FOX VI

[1] Dimensions (H x B x L) where H: height; B: width; L: span length.

A.4 Fixings between brackets and vertical profiles

Characteristics	Value
Trade name	S-AD 01 SS 5,5xL
Form	Figure A.4.a
Generic type	Self-drilling screw
Diameter	Ø5.4 mm
Screw head	Ø13mm
Material	A2 Stainless steel

Table A.4. Description of fixings between brackets and vertical profiles.

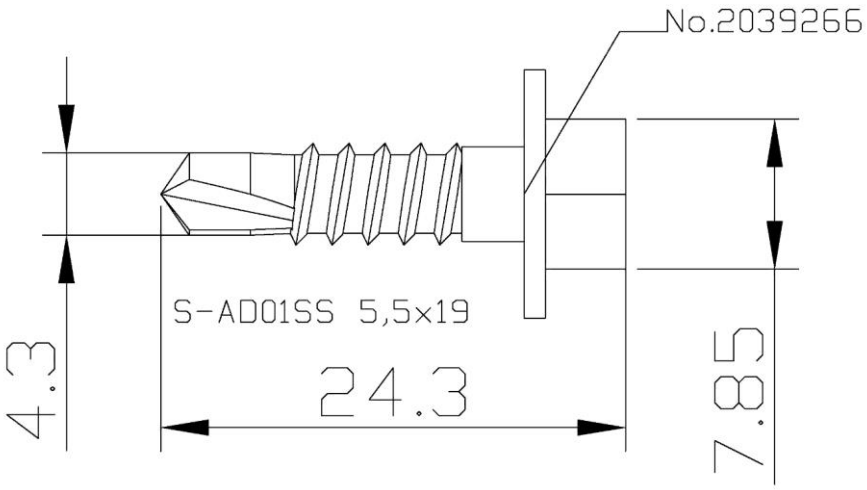

Figure A.4.a: Self-drilling screw S-AD 01 SS 5,5x L

ANNEX B: CONSTRUCTION DETAILS

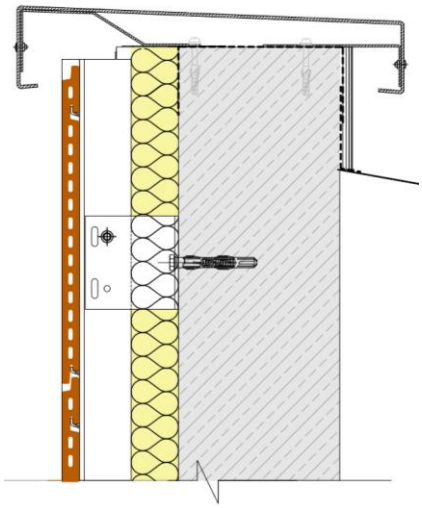

Figure B.1: Top detail (Roof edge)

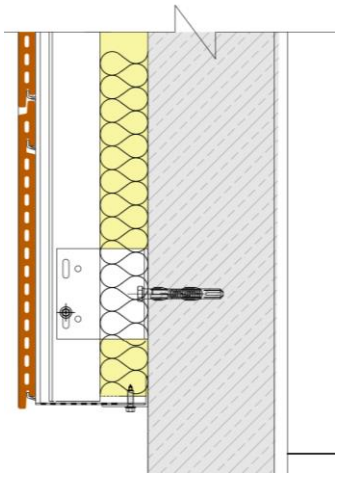

Figure B.2: bottom detail (Base edge)

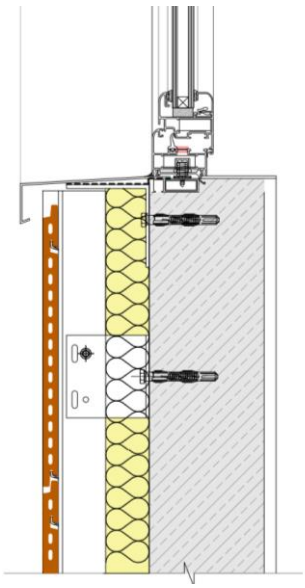

Figure B.3: Windows detail (Sill)

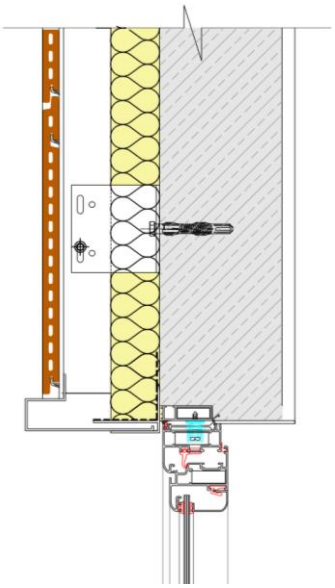

Figure B.4: Windows detail (lintel)

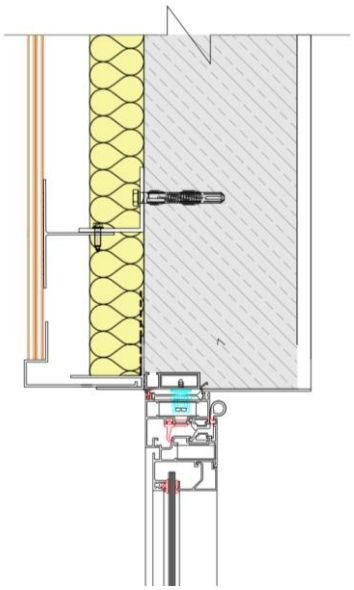

Figure B.5: Horizontal detail.

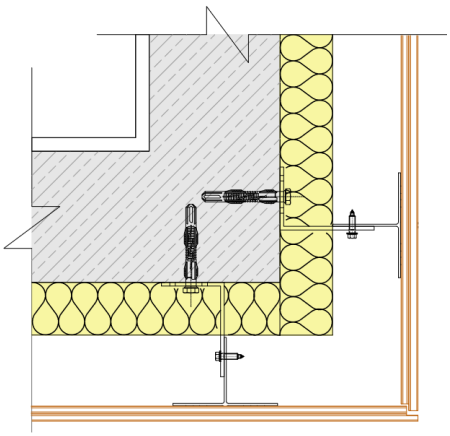

Figure B.6: Horizontal detail outside corner.

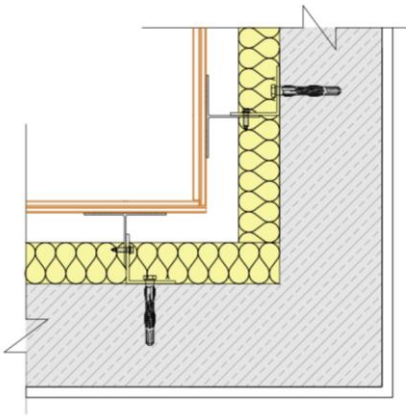

Figure B.7: Horizontal detail inside corner.