

zebra

Premium **Cladding** Systems

Character is shaped
with every line

EV96
TECHNICAL
CATALOGUE

ETEM
EXPERTS IN ALUMINIUM SYSTEMS



EV96

ZEBRA CLADDING SYSTEM

GENERAL INFORMATION	page 9
BUILDING PHYSICS	page 15
FIXING BRACKETS & ACCESSORIES	page 21
TABLES	page 31
PROFILES	page 39
SECTIONS	page 55
MACHINING	page 85
CE MARKING	page 109

ETEM HISTORY

ETEM is a leading aluminium extrusion company. It was founded in 1971 as a part of the largest metal manufacturing holding on the Balkans. With over 50 years of experience ETEM is the first fully integrated designer and producer of architectural systems and aluminium profiles for industrial applications.

Our mission is to lead our industry through the pioneering creation of innovative aluminum solutions that enhance quality of life while embodying our unwavering commitment to social responsibility and sustainability.

We aim to redefine industrial standards, inspire boundless creativity, and contribute meaningfully to a world where our aluminum solutions positively impact both people and the planet.

ETEM focuses on sustainable development and has proven its concern about the protection of the natural environment by making considerable investments in anti-pollution measures and by optimizing production processes following the applicable standards of the European Union.

ETEM SUPPORTS YOU WITH THE FOLLOWING:

- design of conventional and bespoke architectural system solutions
- innovative engineering in the field of curtain walls, ventilated facades, doors, windows
- professional consultation and adequate technical advices ensured by our engineering team with wide experience in the field of profile extrusion as well as architectural systems' engineering
- reliable customer care constant support
- trainings, technical support and audits on site
- high quality engineering which guarantees offering the best solution according to the specific features of every single project
- managing the process of certification in accordance with the applicable European standards in Notified Bodies
- production of non-standard length profiles and non-standard processing; high quality powder coating

ETEM PRODUCTS AND SUSTAINABLE DEVELOPMENT

SUSTAINABLE DEVELOPMENT IS DEVELOPMENT THAT MEETS THE NEEDS OF THE PRESENT WITHOUT COMPROMISING THE ABILITY OF FUTURE GENERATIONS TO MEET THEIR OWN NEEDS *

For many, sustainable development is about environmental conservation. This is true but it also includes two other aspects: a social aspect and an economic aspect.

Sustainable development means striking the right balance between economic development, social equity and environmental protection.

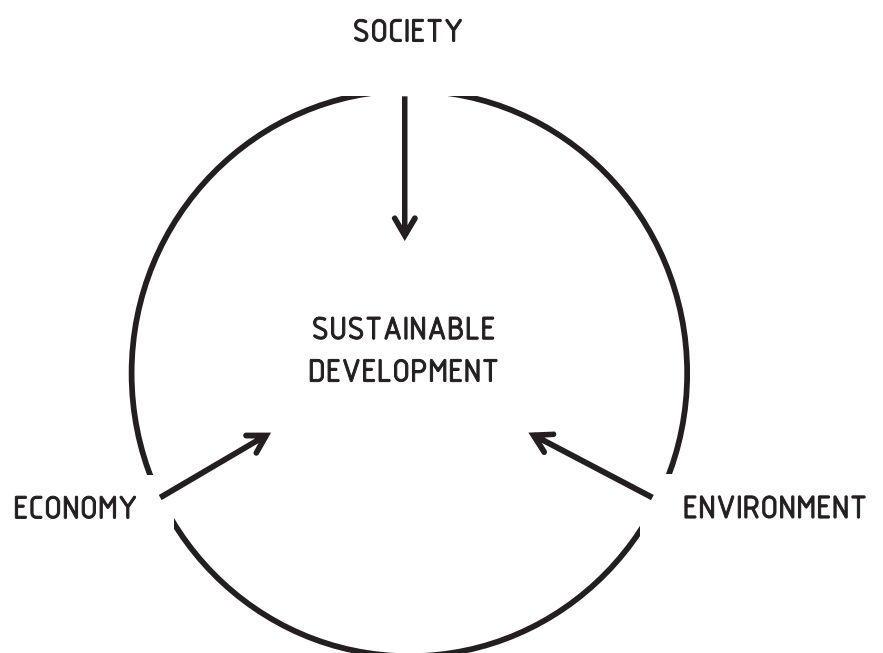
For us meeting this objective translates into the challenge of satisfying market demands at the lowest economic, social and environmental cost possible.

ETEM has always designed architectural systems which are in compliance with all requirements for achieving high energy efficiency.

In order to assure the comfort of the building inhabitants, ETEM systems adapt their functions to the changing environment.

As a moderator between outside and inside our systems provide:

- ▷ ENERGY EFFICIENCY
- ▷ DAYLIGHT
- ▷ SUN-SHADING
- ▷ VENTILATION AND GOOD AIR QUALITY
- ▷ SAFETY AND SECURITY



* Extract from Brundtland Report, from the United Nations World Commission on Environment and Development WCED

general information





EV96 SYSTEM CONCEPT

THE ZEBRA CLADDING SYSTEM BY ETEM IS A MODERN, INTEGRATED SOLUTION FOR APPLICATIONS THAT DEMAND HIGH AESTHETICS AND PERFORMANCE. DESIGNED FOR LARGE SURFACES, IT DELIVERS CLEAN LINES AND A SOLID ARCHITECTURAL IDENTITY FOR BOTH EXTERIOR AND INTERIOR USE.

ITS MINIMAL DESIGN, FEATURING HIDDEN FIXINGS AND PRECISE ALIGNMENT, CREATES A SEAMLESS AND REFINED APPEARANCE, WHILE THE VARIETY OF PROFILES AND FINISHES OFFERS FLEXIBILITY FOR ANY ARCHITECTURAL APPROACH. SUITABLE FOR COMMERCIAL BUILDINGS AND CONTEMPORARY RESIDENCES, ZEBRA IS FULLY COMPATIBLE WITH ETEM'S VENTILATED FAÇADE SYSTEMS (VFS), ENHANCING THE BUILDING'S OVERALL ENERGY PERFORMANCE.

Four Typologies. **Countless Compositions.**

HARMONY

Balanced, clean lines that create a calm and elegant surface.

EPIC

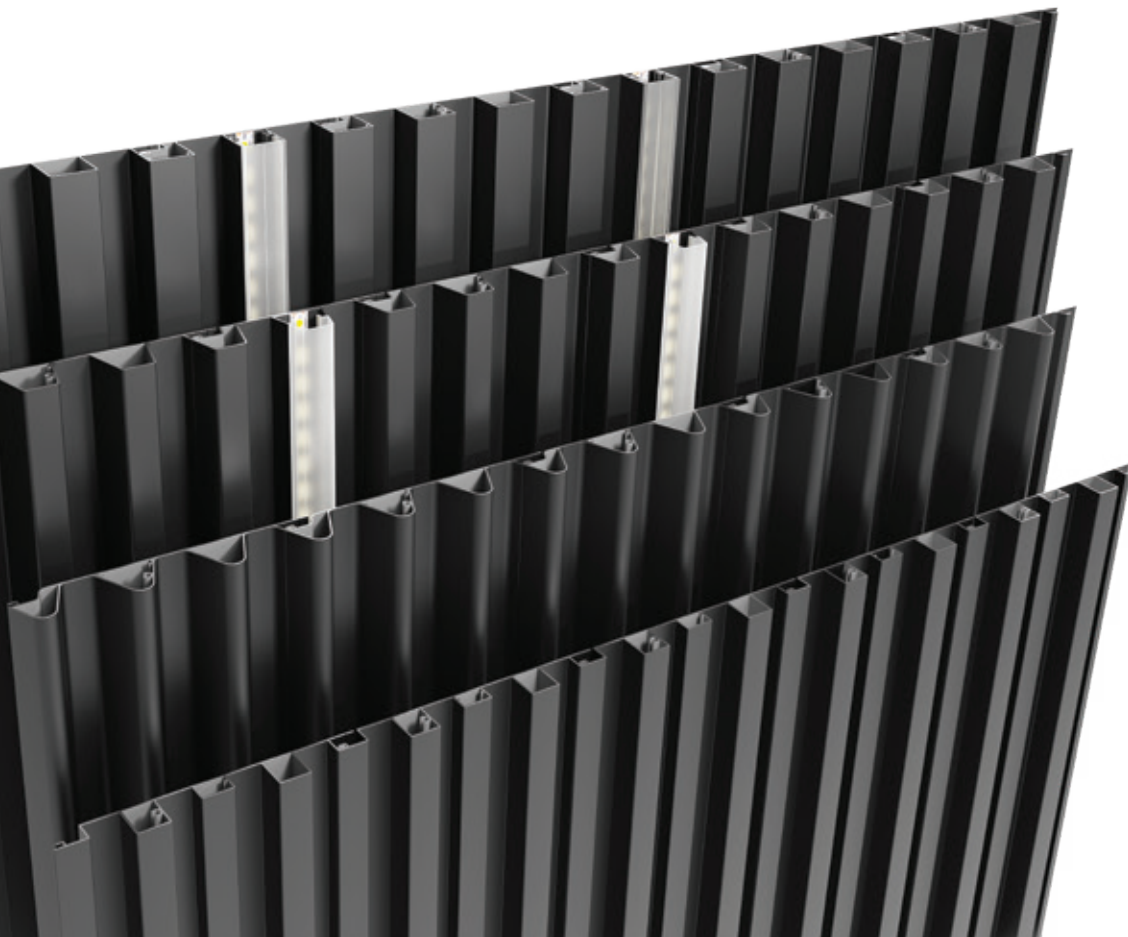
Stronger geometry and enhanced depth for a bold and expressive result.

WAVE

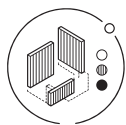
A fluid, undulating form that brings movement and a distinctive character to the structure.

TREND

Dense, rhythmic repetition for contemporary linear architectural compositions.



One System. **Multiple Applications**



Design Flexibility

Multiple Profiles and
Colour Options



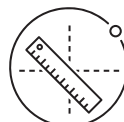
VFS Compatibility

Compatibility Full
Integration with
Ventilated Façade Systems



Concealed Fixings

A Clean and Minimal Aes-
thetic



Precision in Every Detail

Alignment Profiles for
Perfect Installation



Built to Last

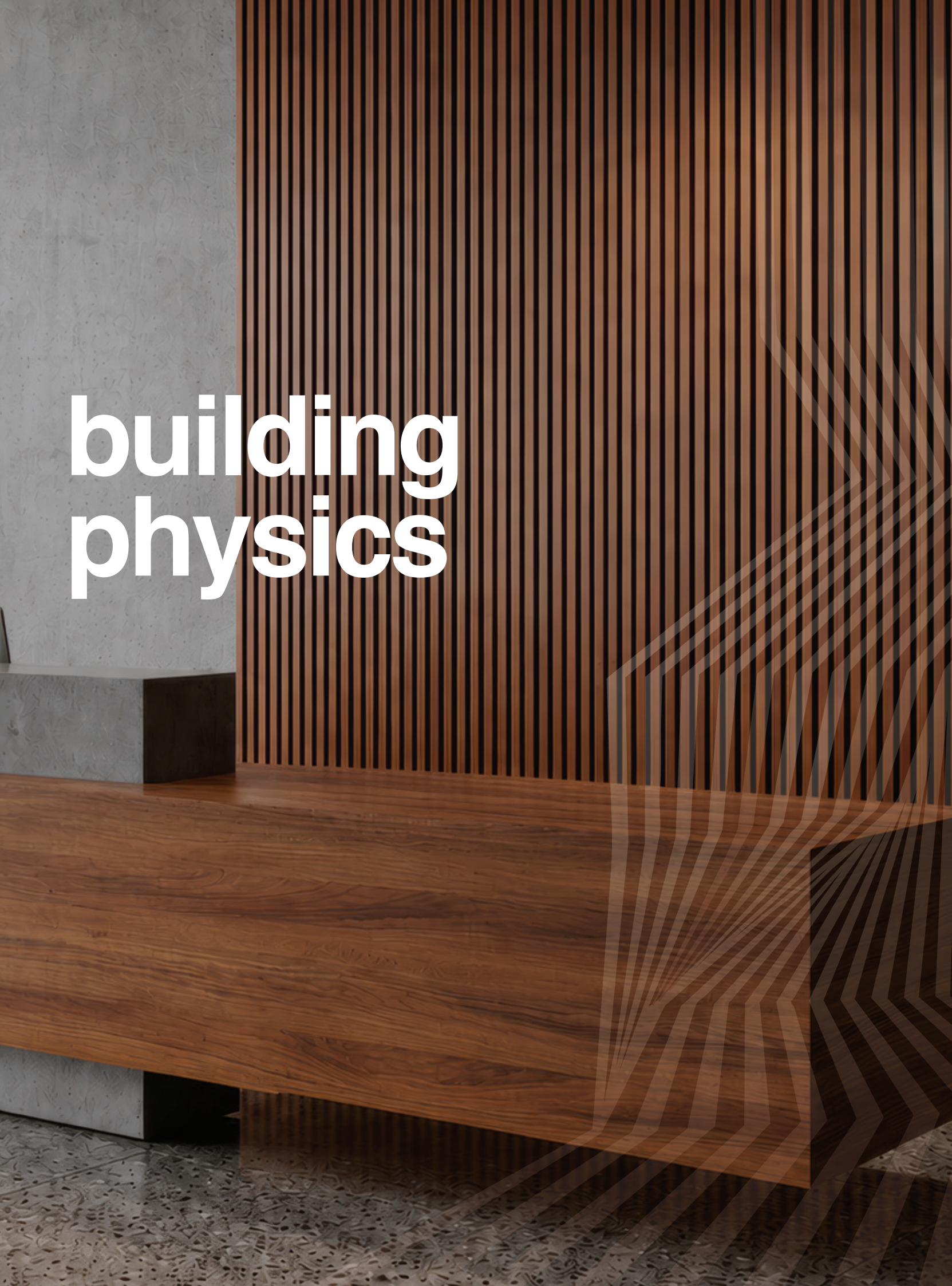
Weather and
Corrosion Resistance



Endless Possibilities

For Façades, Doors,
Fencing Systems &
Interior Decorations





building physics

ALUMINIUM AS MATERIAL

ALUMINIUM IS A VERY YOUNG METAL, EXTRACTED FOR THE FIRST TIME IN 1854. COMMERCIALY PRODUCED AS A PRECIOUS METAL FROM 1886, ITS INDUSTRIAL PRODUCTION FOR CIVIL APPLICATIONS ONLY ACHIEVED WIDE USE IN THE 1950'S.

NOW ALUMINIUM PLAYS A KEY ROLE FOR THE SUSTAINABILITY OF NEW BUILDINGS AND THE RENOVATION OF EXISTING ONES. THANKS TO ITS PERFORMANCE PROPERTIES ALUMINIUM CONTRIBUTES TO THE ENERGY PERFORMANCE, SAFETY AND COMFORT OF NEW BUILDINGS.

ADVANTAGES

DESIGN FLEXIBILITY

The extrusion process offers an almost infinite range of forms and sections, allowing designers to integrate numerous functions into one profile

LONG SERVICE LIFE

Aluminium building products are made from alloys that are weatherproof, corrosion-resistant and immune to the harmful effects of UV rays, ensuring optimal performance over a very long period of time

HIGH STRENGTH-TO-WEIGHT RATIO

Thanks to the metal's inherent strength and stiffness, aluminium window and curtain wall frames can be very narrow. Material's light weight makes it easier to transport and handle on-site, reducing the risk of work-related injury

HIGH-REFLECTIVITY

This characteristic feature makes aluminium a very efficient material for light management. Aluminium shading devices can be used to reduce the need for air conditioning in summer

FIRE SAFETY

Aluminium does not burn and therefore is classified as a non-combustible construction material (European Fire Class A1). Aluminium alloys will nevertheless melt at around 650°C but without releasing harmful gases

NO RELEASE OF DANGEROUS SUBSTANCES

Several studies have proved that aluminium building products do not present a hazard to occupants or the surrounding environment. Aluminium building products have no negative impact, either on indoor air quality or on soil, surface and groundwater

OPTIMAL SECURITY

Where high security is required, specially designed, strengthened aluminium frames can be used. While the glass for such applications may well be heavy, the overall weight of the structure remains manageable thanks to the light weight of the aluminium frames.

ALLOYS

Aluminium in its pure form is a very soft metal. Thanks to the addition of alloying elements such as copper, manganese, magnesium, zinc, etc. and thanks to suitable production processes, the physical and mechanical properties can be varied in a wide range to satisfy the requirements of many different applications.

ETEM profiles are extruded from the following alloys:

EN AW-6060 [Al Mg Si]
EN AW-6063 [Al Mg0.7 Si]
EN AW-6061 [Al Mg1 Si Cu]
EN AW-6082 [Al Si1 Mg Mn]

The most common aluminium alloy which is used by ETEM is EN AW 6063.
Here are the properties of this alloy:

MATERIAL PROPERTIES

Aluminium alloy	EN AW 6063 F22
Ultimate tensile strength	$R_m = 210 \text{ N/mm}^2$
Yield strength	$R_{p0.2} = 160 \text{ N/mm}^2$
Modulus of elasticity	$E_{al} = 70\,000 \text{ N/mm}^2 = 7 \cdot 10^9 \text{ kg/m}^2$
Coefficient of thermal expansion	$\alpha = 0.023 \text{ mm/m. K}$ (up to 1.2 mm/m for difference up to 50°C)

EXTRUSION PROCESS

ETEM profiles are obtained through extrusion process, which consists of pushing a hot cylindrical bullet of aluminium through a shaped die. The extrusion process offers almost infinite range of forms and sections, allowing our designers to integrate numerous functions into one single profile.

FINISHING

POWDER COATING

It is a type of paint that is applied as a dry powder. Coating is applied on ETEM profiles electrostatically and then is cured under heat to allow it to flow and form a "skin".

ETEM is authorized to use the quality sign QUALICOAT for powder coatings on aluminium for architectural applications. A wide range of colors and gloss levels can be achieved.

ETEM also offers timber imitations painting, in addition to all RAL colors. The technology EZY provides the following colors: Golden Oak, Acero, Betulla, Mogano, Verde Scuro, Wenge, Noce Fiammato, Noce Chiaro, Ciliegio Rosso, Acacia Scuro, Ciliegio Antico, Noce Reale, Ciliegio Reale.

ANODIZING

It is an electrochemical process whereby reinforcing the natural oxide film on the aluminium surface, increasing hardness, corrosion and abrasion resistance. Anodizing gives a very decorative silver matt surface finish, and colored can also be obtained by sealing metallic dyes into the anodized layer.

MAINTENANCE

Apart from routine cleaning for aesthetic reasons, ETEM aluminium profiles do not require any maintenance which translates into a major cost and ecological advantage over lifetime of the product.

RECYCLING

Aluminium scrap can be repeatedly recycled without any loss of value or properties.

In many instances, aluminium is combined with other materials such as steel or plastics, which are most frequently mechanically separated from aluminium before being molten.

** Part of the aforementioned information is an extract from report Sustainability of Aluminium in Buildings of the European Aluminium Association*

WIND LOAD

Wind action

The main influence over the facade is wind action, which depends mainly on the height of the curtain wall and location.

As a guideline, the wind pressure values with respect to the structure height are given in the table below:

Building Height	Wind Velocity	Wind Load		Wind Pressure		Wind Suction in a middle zone				Wind Suction in an edge zone	
h	v	$q = \frac{V^2}{16}$		$W_{p*} = 1.25 \times c_p \times q$ $c_p = 0.8$		$h/b \leq 0.25$ $W_s = c_p \times q$ $c_p = 0.5$		$h/b \geq 0.5$ $W_s = c_p \times q$ $c_p = 0.7$		$b/8 \leq 2 \text{ m}$ $W_s = c_p \times q$ $c_p = 2.0$	
m	m/s	kg/m ²	kN/m ²	kg/m ²	kN/m ²	kg/m ²	kN/m ²	kg/m ²	kN/m ²	kg/m ²	kN/m ²
0 – 8	28.3	50	0.5	50	0.5	25	0.25	35	0.35	100	1.0
8 – 20	35.8	80	0.8	80	0.8	40	0.40	56	0.56	160	1.6
20 – 100	42.0	110	1.1	110	1.1	55	0.55	77	0.77	220	2.2
> 100	45.6	130	1.3	130	1.3	65	0.65	91	0.91	260	2.6

where:

h – building height, m

b – building width, m

v – wind velocity, m/s

q – wind load, kg/m² and kN/m²

$w_{p/s}$ – wind pressure / suction, kN/m²

c_p – correction factor

*Note: When calculating wind pressure w_p the load is increased with 25%

UNITS CONVERTER

1 m = 100 cm = 1000 mm

1 kg = 10 N

1 kN = 100 kg = 1000 N

1 kg/m² = 0.01 kN/m²

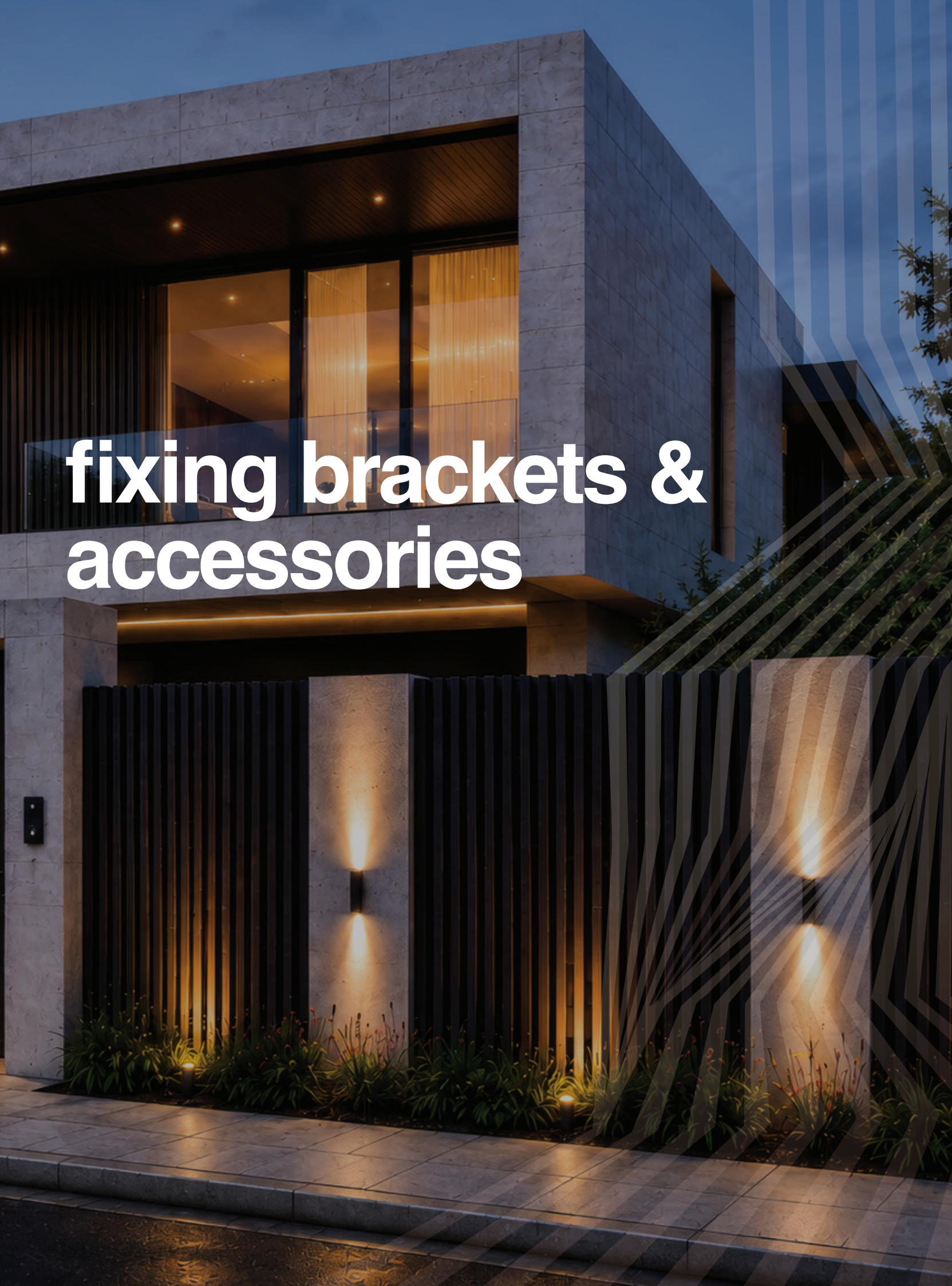
1 Pa = 1 N/m² = 0.1 kg/m²

1 kPa = 1000 Pa = 1 kN/m² = 100 kg/m²

1 MPa = 1000 kPa = 1 000 000 Pa

1 MPa = 1 N/mm² = 0.1 kN/cm² = 100 000 kg/m²

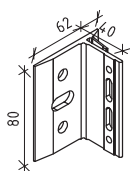




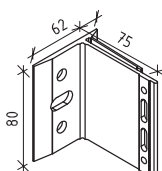
fixing brackets & accessories

ETEM FIXING BRACKETS

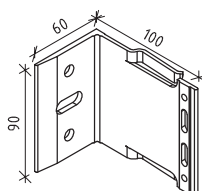
ET710008.00



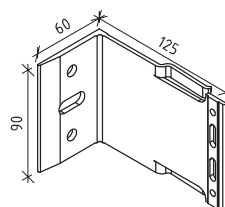
ET710010.00



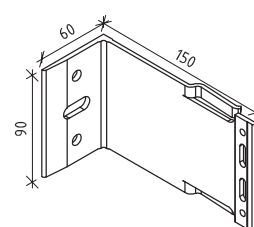
ET710011.00



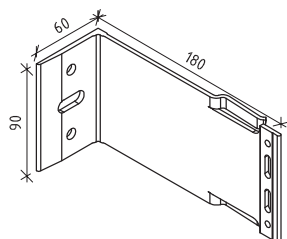
ET710013.00



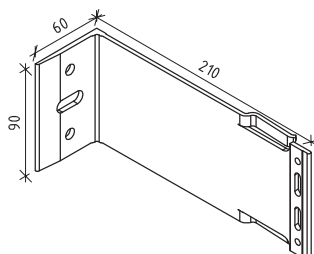
ET710012.00



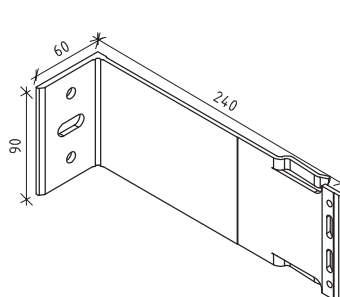
ET710014.00



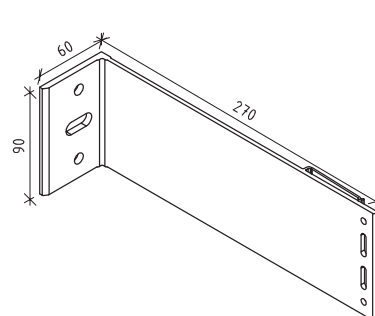
ET710015.00



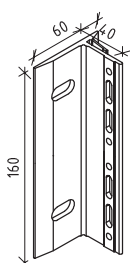
ET710016.00



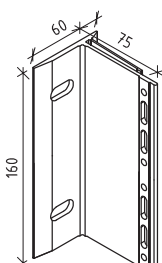
ET710038.00



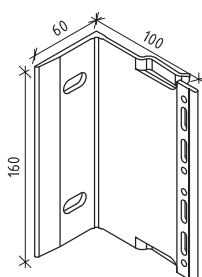
ET710001.00



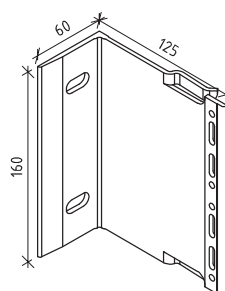
ET710002.00



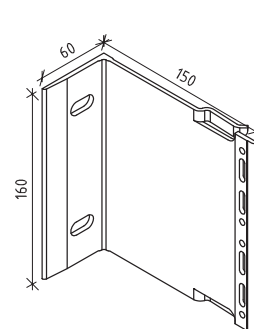
ET710003.00



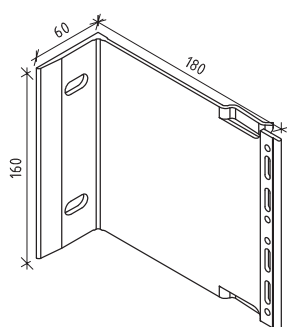
ET710004.00



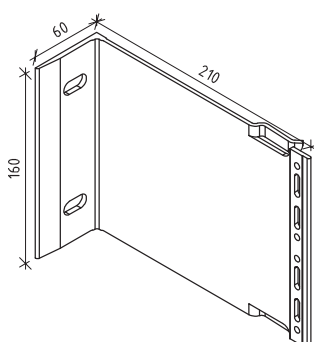
ET710005.00



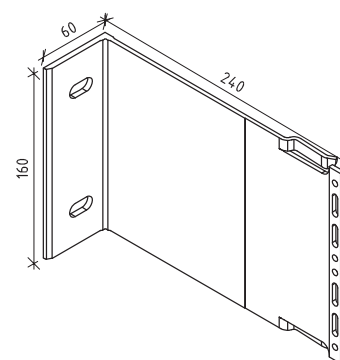
ET710006.00



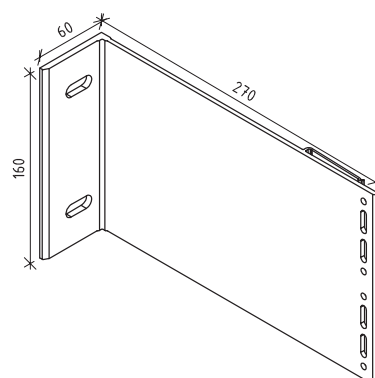
ET710007.00



ET710017.00



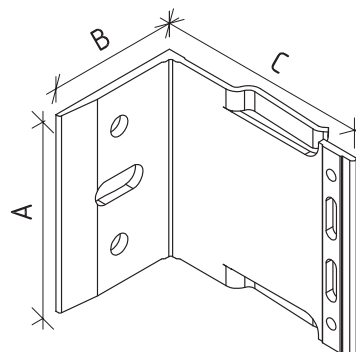
ET710039.00



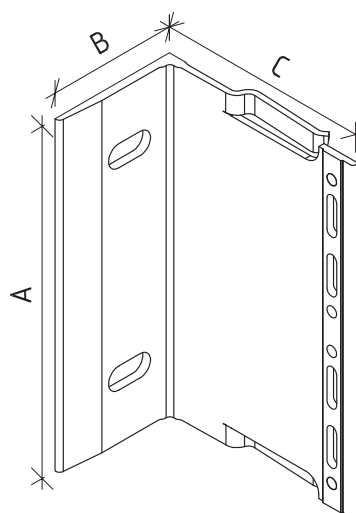
ETEM FIXING BRACKETS & THERMO INSULATION PADS

Fixing brackets					Suitable Thermo pads
Code	Type	A (mm)	B (mm)	C (mm)	Type
ET710008.00	single	80	62	40	ET730033.00 single
ET710010.00	single	80	62	75	
ET710011.00	single	90	60	100	
ET710013.00	single	90	60	125	
ET710012.00	single	90	60	150	
ET710014.00	single	90	60	180	
ET710015.00	single	90	60	210	
ET710016.00	single	90	60	240	
ET710038.00	single	90	60	270	

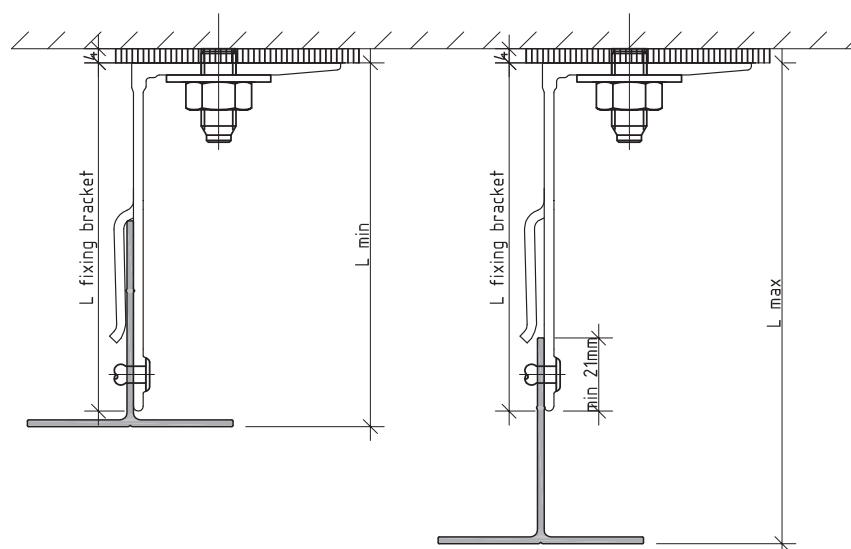
Single fixing bracket



Double fixing bracket



Fixing brackets					Suitable Thermo pads
Code	Type	A (mm)	B (mm)	C (mm)	Type
ET710001.00	double	160	62	40	ET730032.00 double
ET710002.00	double	160	62	75	
ET710003.00	double	160	60	100	ET730034.00 double
ET710004.00	double	160	60	125	
ET710005.00	double	160	60	150	
ET710006.00	double	160	60	180	
ET710007.00	double	160	60	210	
ET710017.00	double	160	60	240	
ET710039.00	double	160	60	270	



ETEM's fixing brackets allow to distance the cladding material from the backing wall from min 68mm up to max 312mm with 60mm T profile
It's possible to adjust the profile up to 33mm (Lmin to Lmax).

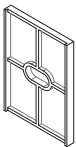
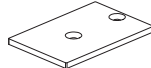
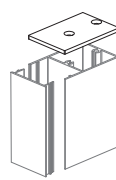
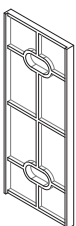
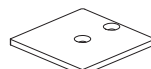
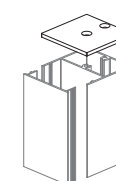
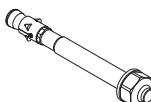
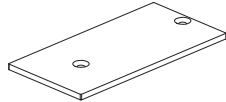
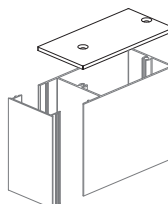
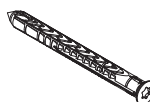
FIXING BRACKETS AND ACCESSORIES

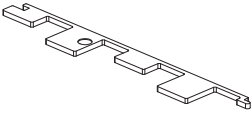
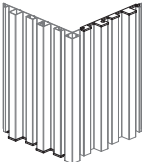
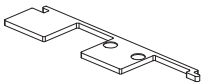
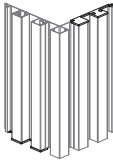
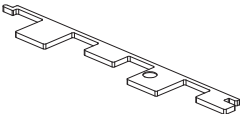
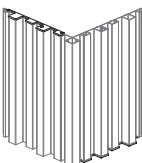
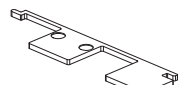
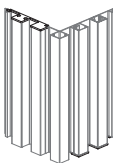
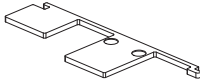
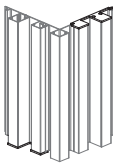
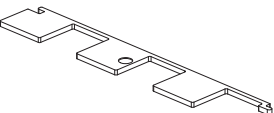
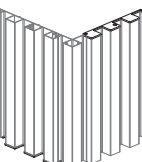
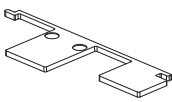
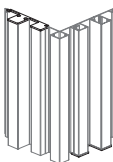
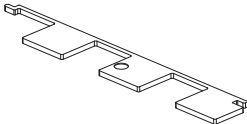
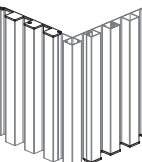
The performance characteristics of all ETEM fixing brackets is tested in laboratory conditions for the worst case scenario.

The aim of the test is to determine the load bearing capacity and wind resistance of the brackets and their fixings to the subframe under tension and shear loads.

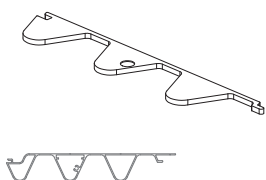
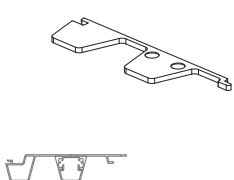
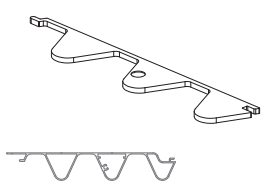
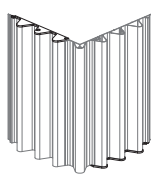
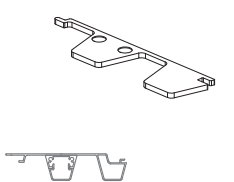
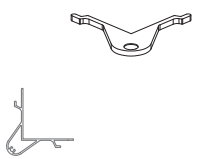
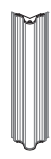
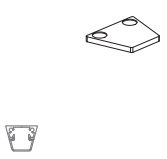
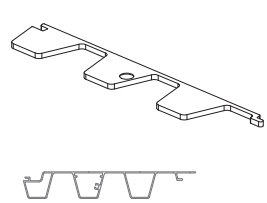
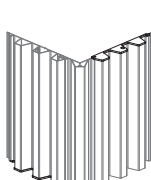
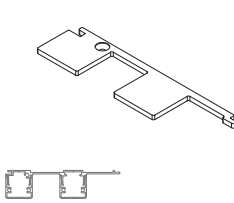
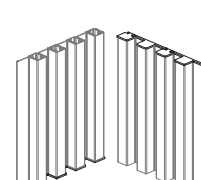
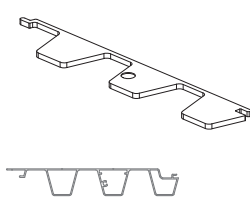
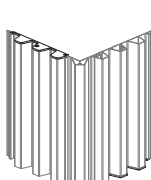
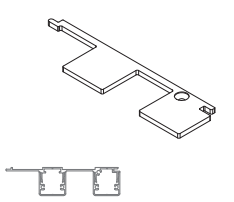
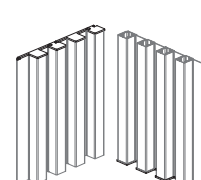
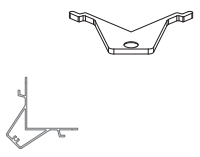
Test results summary for ETEM system brackets

Code	Type	Size(mm)	Support	Loading direction	Loadbearing capacity	
					At elastic behavior of material (without residual displacement)	At displacement 2 mm
ET710001.00	double	62/40/160	fixed	vertical	6,40 kN	14,45 kN
ET710002.00	double	62/75/160	fixed	horizontal	6,07 kN	10,86 kN
ET710002.00	double	62/75/160	movable	horizontal	5,04 kN	10,95 kN
ET710002.00	double	62/75/160	fixed	vertical	6,04 kN	10,33 kN
ET710003.00	double	60/100/160	fixed	vertical	4,65 kN	7,03 kN
ET710003.00	double	60/100/160	fixed	horizontal	1,45 kN	6,38 kN
ET710005.00	double	60/150/160	fixed	vertical	3,67 kN	5,03 kN
ET710004.00	double	60/125/160	fixed	vertical	3,42 kN	6,67 kN
ET710004.00	double	60/125/160	fixed	horizontal	5,17 kN	10,93 kN
ET710004.00	double	60/125/160	movable	horizontal	7,15 kN	10,15 kN
ET710014.00	single	60/180/90	fixed	vertical	0,38 kN	0,46 kN
ET710006.00	double	60/180/160	fixed	vertical	2,40 kN	3,32 kN
ET710015.00	single	60/210/90	fixed	vertical	0,36 kN	0,41 kN
ET710015.00	single	60/210/90	fixed	horizontal	1,37 kN	3,11 kN
ET710015.00	single	60/210/90	movable	horizontal	1,65 kN	3,04 kN
ET710007.00	double	60/210/160	fixed	vertical	2,15 kN	2,67 kN
ET710007.00	double	60/210/160	fixed	horizontal	7,23 kN	10,21 kN
ET710007.00	double	60/210/160	movable	horizontal	8,30 kN	11,45 kN

code description	Accessory	code description	Accessory
ET730031.00 bracket height 45-75mm		ET291010.00	 
ET730033.00 bracket height 100-270mm		Alum. flange (MF) for mullion 40x60 (E66003)	
thermo insulation pad single			
ET730032.00 bracket height 45-75mm		ET291011.00	 
ET730034.00 bracket height 100-270mm		Alum. flange (MF) for mullion 50x50 (E66005)	
thermo insulation pad double			
ET740002.00 ET740003.00		ET291012.00	 
anchor		Alum. flange (MF) for mullion 50x100 (E66006)	
ET740004.00 ET740005.00		ET080237.00	 For 4th pattern 
plug anchor		Plastic cap (3m) for E8096633	
ET740022.00 - 4,8x12 ET740023.00 - 5x12 ET740024.00 - 6x12		ET080245.00	 For 2nd & 5th pattern 
rivet DIN7337 A2		Plastic cap (3m) for E8096612	

code description	Accessory		code description	Accessory	
ET291014.00 Alum. end cap for E8096101 (upper-right bottom-left)	 		ET291020.00 Alum. end cap for E8096213-E8096612 (upper-right bottom-left)	 	
ET291015.00 Alum. end cap for E8096101 (bottom-right upper-left)	 		ET291021.00 Alum. end cap for E8096213-E8096612 (bottom-right upper-left)	 	
ET291016.00 Alum. end cap for E8096202 (upper & bottom)	 		ET291022.00 Alum. end cap for E8096213-E8096613 (upper-right bottom-left)	 	
ET291017.00 Alum. end cap for E8096111 (upper-right bottom-left)	 		ET291023.00 Alum. end cap for E8096213-E8096613 (bottom-right upper-left)	 	
ET291018.00 Alum. end cap for E8096111 (bottom-right upper-left)	 		ET291024.00 Alum. end cap for E8096612 (upper & bottom)	 	
ET291019.00 Alum. end cap for E8096212 (upper & bottom)	 		ET291025.00 Alum. end cap for E8096613 (upper & bottom)	 	

EV96_A2

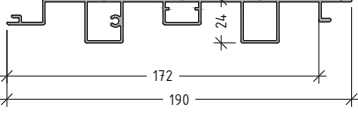
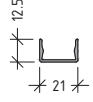
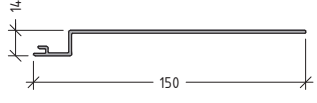
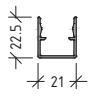
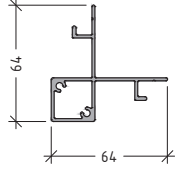
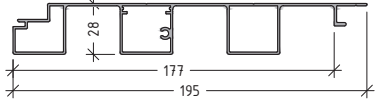
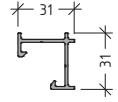
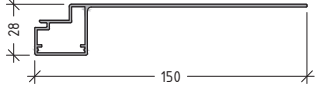
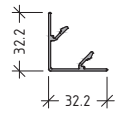
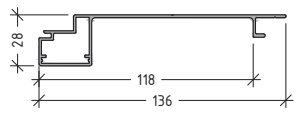
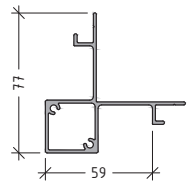
code description	Accessory		code description	Accessory	
ET291026.00 Alum. end cap for E8096121 (upper-right bottom-left)			ET291032.00 Alum. end cap for E8096233-E8096633 (upper-right bottom-left)		
ET291027.00 Alum. end cap for E8096121 (bottom-right upper-left)			ET291033.00 Alum. end cap for E8096233-E8096633 (bottom-right upper-left)		
ET291028.00 Alum. end cap for E8096222 (upper & bottom)			ET291034.00 Alum. end cap for E8096633 (upper & bottom)		
ET291029.00 Alum. end cap for E8096131 (upper-right bottom-left)			ET291035.00 Alum. end cap for E8096141 (upper-right bottom-left)		
ET291030.00 Alum. end cap for E8096131 (bottom-right upper-left)			ET291036.00 Alum. end cap for E8096141 (bottom-right upper-left)		
ET291031.00 Alum. end cap for E8096232 (upper & bottom)					



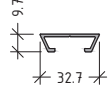
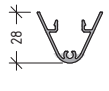
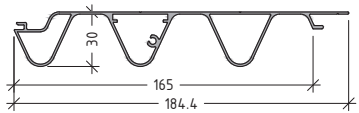
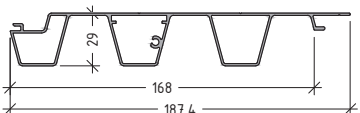
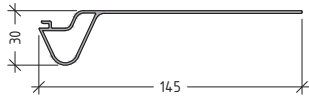
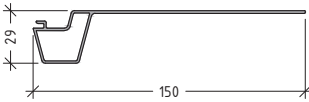
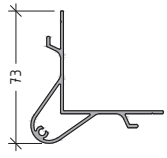
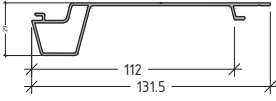
tables

LIST OF PROFILES / CHARACTERISTICS

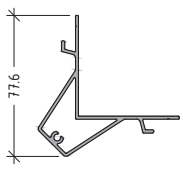
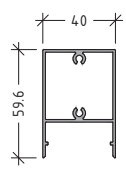
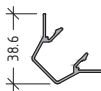
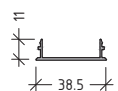
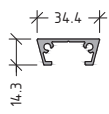
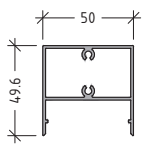
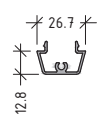
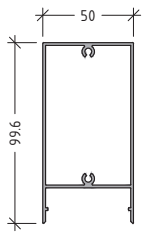
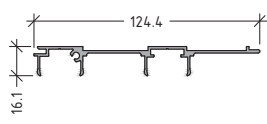
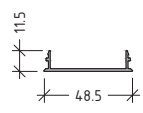
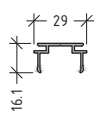
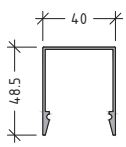


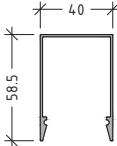
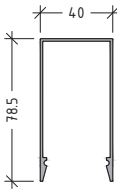
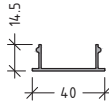
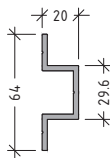
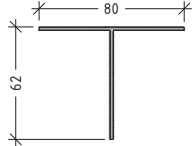
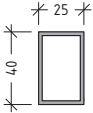
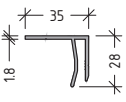
code	Profile	Weight Length Moment of inertia	code	Profile	Weight Length Moment of inertia
E8096101 Main cladding profile		1464 g/m L=6.01 m $J_x=3.3 \text{ cm}^4$ $J_y=140.2 \text{ cm}^4$	E8096602 Cover for Supplementary profile		154 g/m L=6.01 m
E8096201 Supplementary profile for corners		721 g/m L=6.01 m $J_x=0.3 \text{ cm}^4$ $J_y=53.6 \text{ cm}^4$	E8096603 Cover for Supplementary profile		235 g/m L=6.01 m
E8096202 External corner		975 g/m L=6.01 m $J_x=10.1 \text{ cm}^4$ $J_y=8.1 \text{ cm}^4$	E8096111 Main cladding profile		1571 g/m L=6.01 m $J_x=6.1 \text{ cm}^4$ $J_y=174.5 \text{ cm}^4$
E8096501 Internal corner		392 g/m L=6.01 m	E8096211 Supplementary profile for corners		907 g/m L=6.01 m $J_x=1.8 \text{ cm}^4$ $J_y=70.3 \text{ cm}^4$
E8096502 Internal corner cover		308 g/m L=6.01 m	E8096213 Main profile		915 g/m L=6.01 m $J_x=2.0 \text{ cm}^4$ $J_y=63.8 \text{ cm}^4$
E8096601 Supplementary pattern profile		138 g/m L=6.01 m	E8096212 External corner		1134 g/m L=6.01 m $J_x=17.4 \text{ cm}^4$ $J_y=14.0 \text{ cm}^4$

EV96.L-01

code	Profile	Weight Length Moment of inertia	code	Profile	Weight Length Moment of inertia
E8096611 Cover for Supplementary profile		176 g/m L=6.01 m	E8096522 Internal corner cover		340 g/m L=6.01 m
E8096612 Supplementary pattern profile		346 g/m L=6.01 m	E8096621 Supplementary pattern profile		213 g/m L=6.01 m
E8096613 Supplementary pattern profile		427 g/m L=6.01 m	E8096622 Cover for Supplementary profile		356 g/m L=6.01 m
E8096121 Main cladding profile		1453 g/m L=6.01 m $J_x=4.7 \text{ cm}^4$ $J_y=138.7 \text{ cm}^4$	E8096131 Main cladding profile		1485 g/m L=6.01 m $J_x=5.5 \text{ cm}^4$ $J_y=148.0 \text{ cm}^4$
E8096221 Supplementary profile for corners		824 g/m L=6.01 m $J_x=1.4 \text{ cm}^4$ $J_y=59.3 \text{ cm}^4$	E8096231 Supplementary profile for corners		867 g/m L=6.01 m $J_x=1.7 \text{ cm}^4$ $J_y=67.2 \text{ cm}^4$
E8096222 External corner		977 g/m L=6.01 m $J_x=14.4 \text{ cm}^4$ $J_y=10.0 \text{ cm}^4$	E8096233 Main profile		842 g/m L=6.01 m $J_x=1.7 \text{ cm}^4$ $J_y=53.0 \text{ cm}^4$

EV96.L-02

code	Profile	Weight Length Moment of inertia	code	Profile	Weight Length Moment of inertia
E8096232 External corner		1056 g/m L=6.01 m $J_x=11.5 \text{ cm}^4$ $J_y=15.9 \text{ cm}^4$	E66003 Mullion 40x60		861 g/m L=6.01 m $J_x=10.8 \text{ cm}^4$ $J_y=7.5 \text{ cm}^4$
E8096532 Internal corner cover		356 g/m L=6.01 m	E66103 End cap for mullion 40x60		208 g/m L=6.01 m
E8096633 Supplementary pattern profile		367 g/m L=6.01 m	E66005 Mullion 50x50		910 g/m L=6.01 m $J_x=7.3 \text{ cm}^4$ $J_y=11.5 \text{ cm}^4$
E8096632 Cover for Supplementary profile		254 g/m L=6.01 m	E66006 Mullion 50x100		1315g/m L=6.01 m $J_x=53.6 \text{ cm}^4$ $J_y=20.3 \text{ cm}^4$
E8096141 Main cladding profile		805 g/m L=6.01 m $J_x=0.39 \text{ cm}^4$ $J_y=37.8 \text{ cm}^4$	E66105 End cap for mullions 50x50 & 50x100		259g/m L=6.01 m
E8096241 Supplementary pattern profile		232 g/m L=6.01 m	E66007 Rectangular cover 48.5x40		559 g/m L=6.01 m $J_x=5.9 \text{ cm}^4$ $J_y=6.3 \text{ cm}^4$

code	Profile	Weight Length Moment of inertia	code	Profile	Weight Length Moment of inertia
E66008 Rectangular cover 58.5x40		629 g/m L=6.01 m $J_x=9.6 \text{ cm}^4$ $J_y=7.3 \text{ cm}^4$	RS-18X3 Rectangular bar		146 g/m L=6.0 m
E66009 Rectangular cover 78.5x40		813 g/m L=6.01 m $J_x=21.5 \text{ cm}^4$ $J_y=9.7 \text{ cm}^4$	RS-25X3 Rectangular bar		203 g/m L=6.0 m
E66104 End cap for rectangular covers		243 g/m L=6.01 m	RS-30X3 Rectangular bar		243 g/m L=6.0 m
E8096900 Supplementary support profile		740 g/m L=6.01 m $J_x=7.82 \text{ cm}^4$ $J_y=1.56 \text{ cm}^4$	E97004 T profile grooved		643 g/m L=6.01 m $J_x=8.67 \text{ cm}^4$ $J_y=7.26 \text{ cm}^4$
RH-40X25X2 Supplementary support profile	 (indicative dimension)	659 g/m L=6.0 m $J_x=5.17 \text{ cm}^4$ $J_y=2.43 \text{ cm}^4$	E97104 F profile		394 g/m L=6.01 m



A photograph of a modern, multi-story building with a concrete and wood facade, illuminated from within at dusk. The building features large windows and balconies with glass railings. The sky is a mix of orange and blue, with clouds. A series of white, wavy, vertical lines are overlaid on the right side of the image, creating a sense of movement and depth. The text 'profiles' is written in a large, white, sans-serif font on the left side of the image.

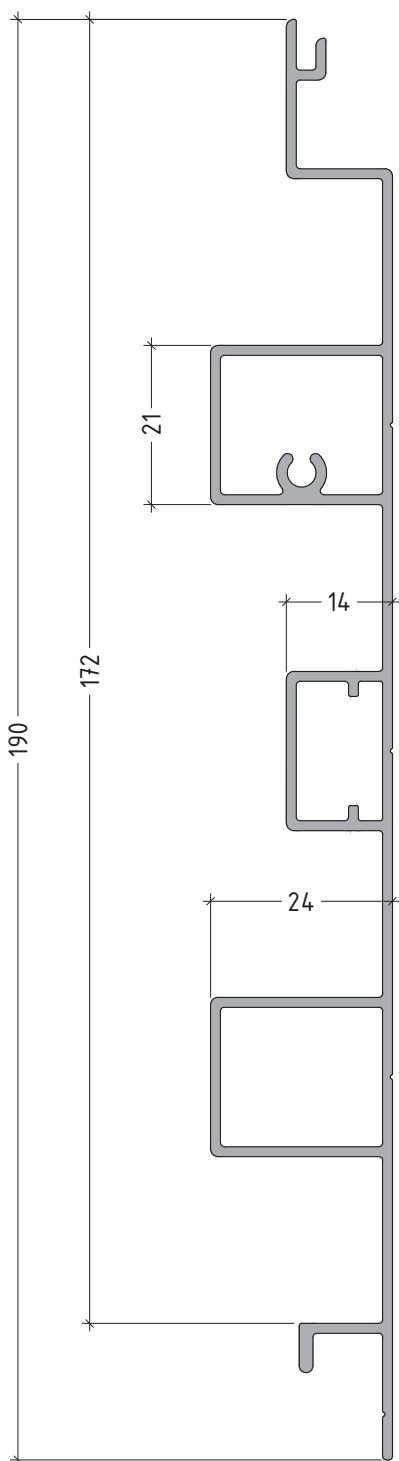
profiles

DRAWINGS / SCALE 1:1

E8096101

Main cladding
profile

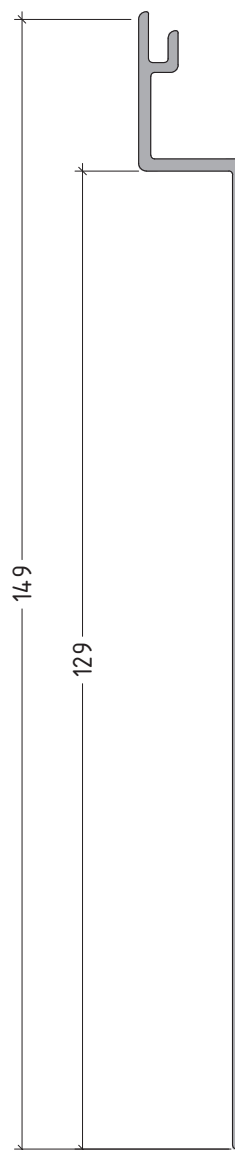
1464 g/m



E8096201

Supplementary profile
for corners

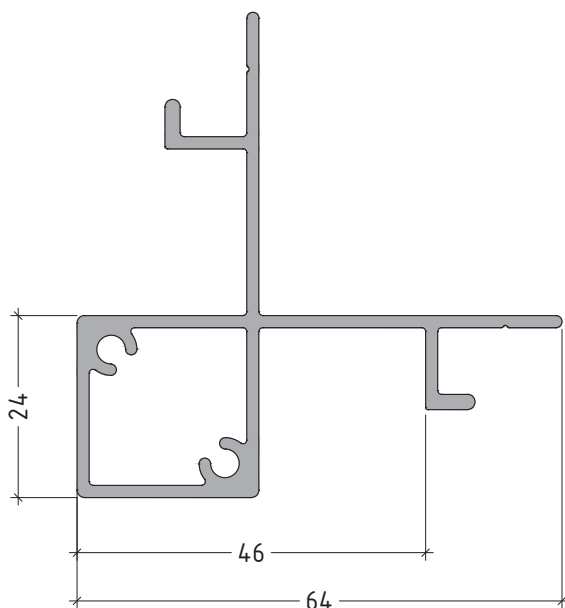
721 g/m



E8096202

External corner

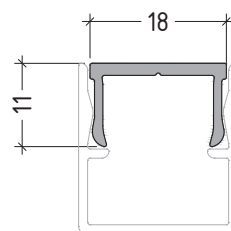
975 g/m



E8096601

Supplementary
pattern profile

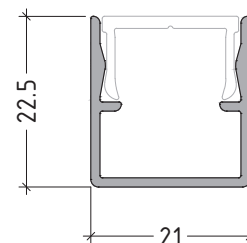
138 g/m



E8096603

Cover for
Supplementary
profile

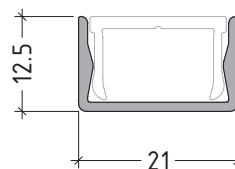
235 g/m



E8096602

Cover for
Supplementary
profile

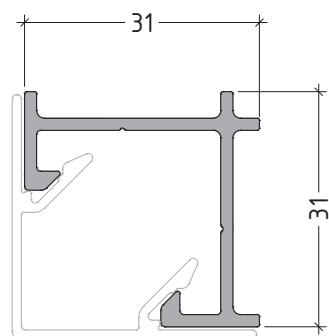
154 g/m



E8096501

Internal corner

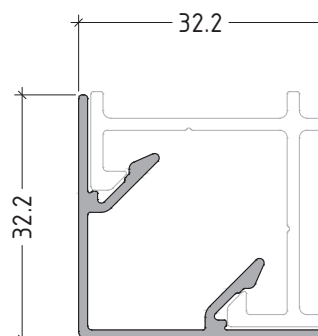
392 g/m



E8096502

Internal corner cover

308 g/m

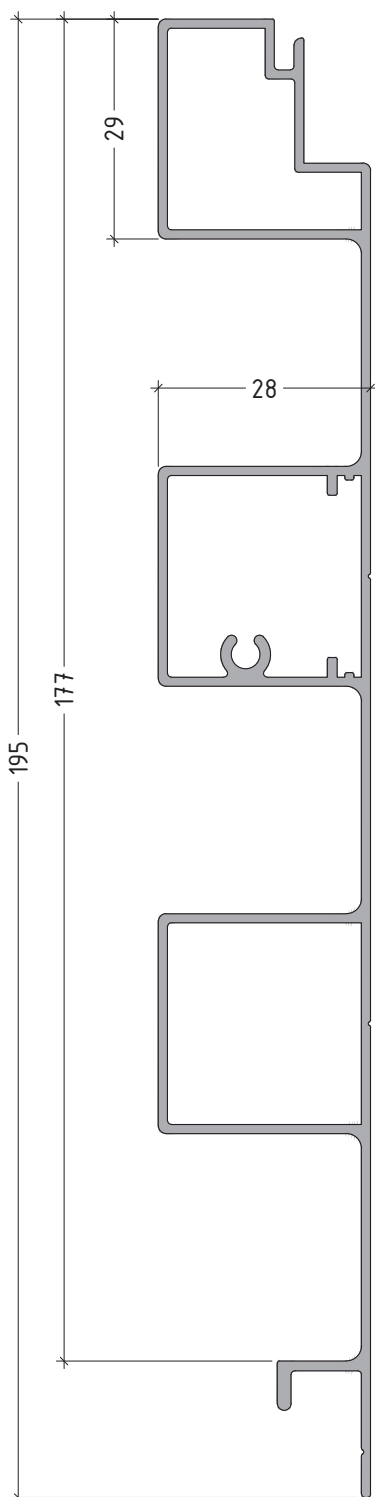


HARMONY

E8096111

Main cladding
profile

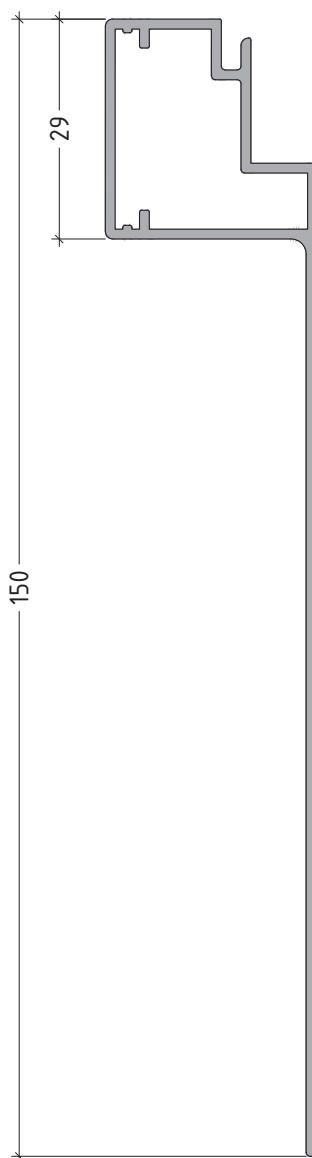
1571 g/m



E8096211

Supplementary profile
for corners

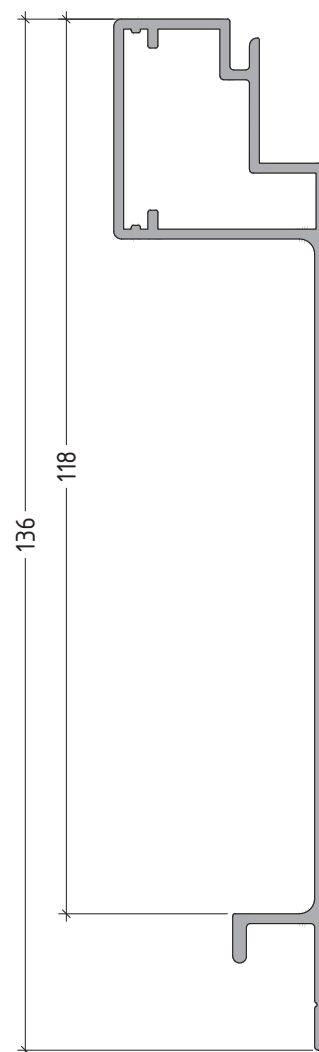
907 g/m



E8096213

Main profile

915 g/m

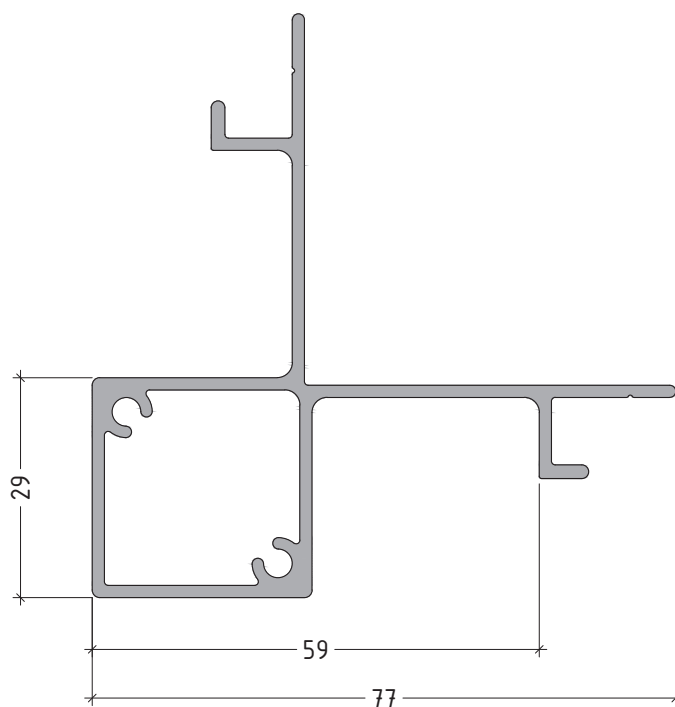


EV96.P-03

E8096212

External corner

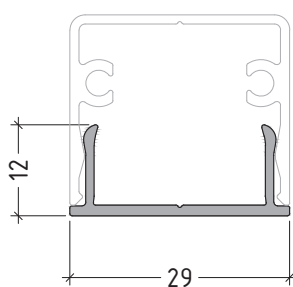
1134 g/m



E8096611

Cover for
Supplementary profile

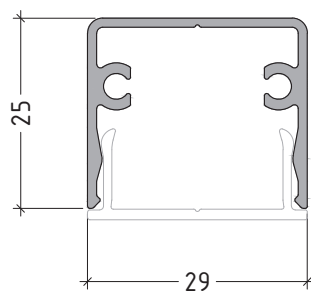
176 g/m



E8096612

Supplementary
pattern profile

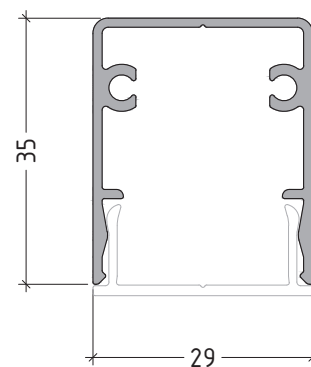
346 g/m



E8096613

Supplementary
pattern profile

427 g/m



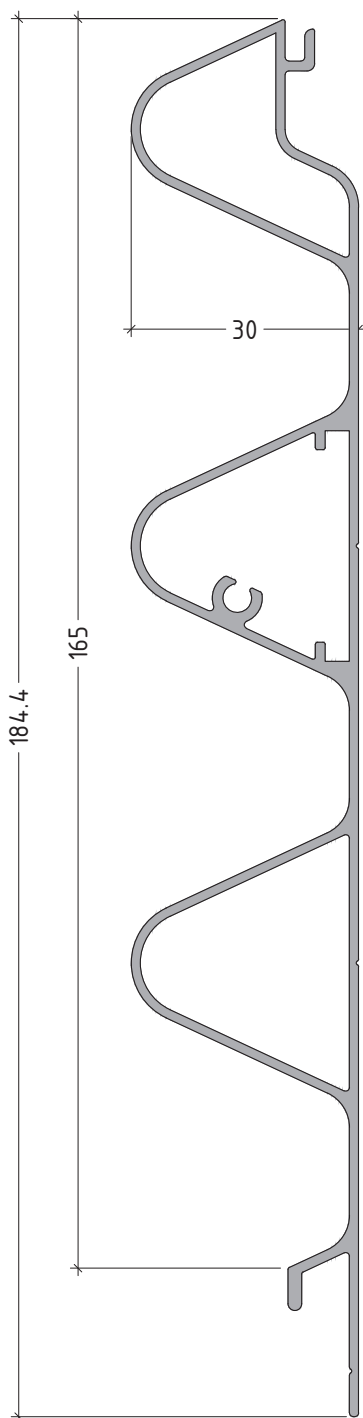
EV96.P-04

WAVE

E8096121

Main cladding profile

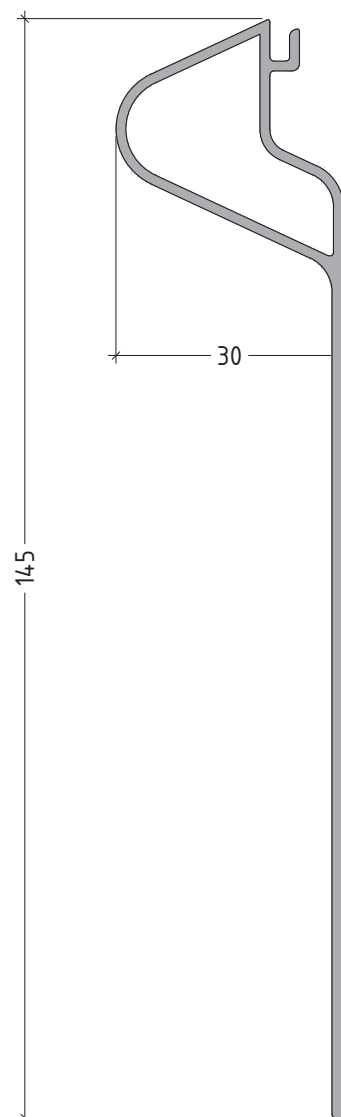
1453 g/m



E8096221

Supplementary profile
for corners

824 g/m

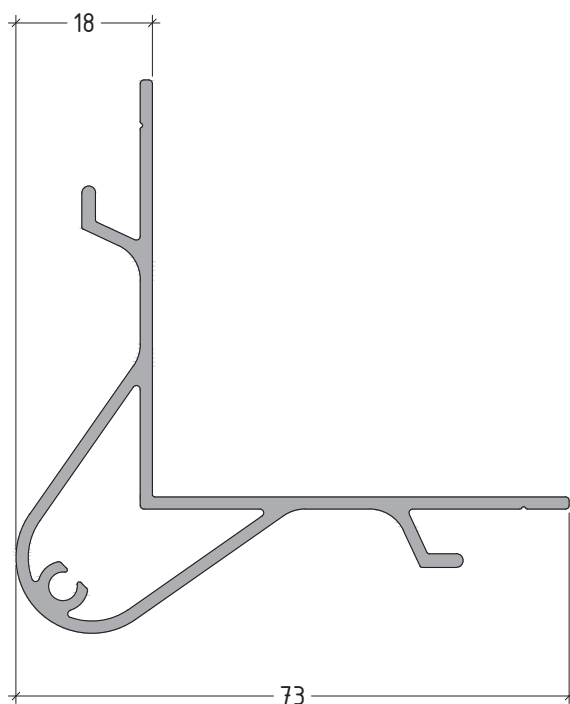


WAVE

E8096222

External corner

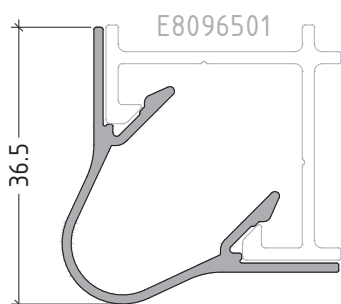
977 g/m



E8096522

Internal corner
cover

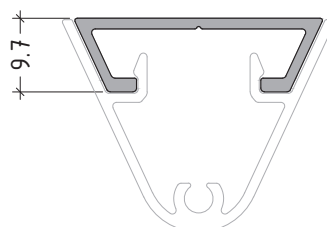
340 g/m



E8096621

Supplementary
pattern profile

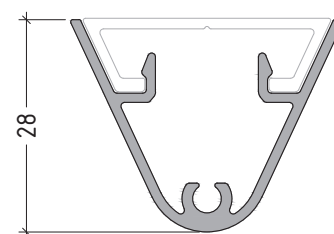
213 g/m



E8096622

Cover for
Supplementary profile

356 g/m

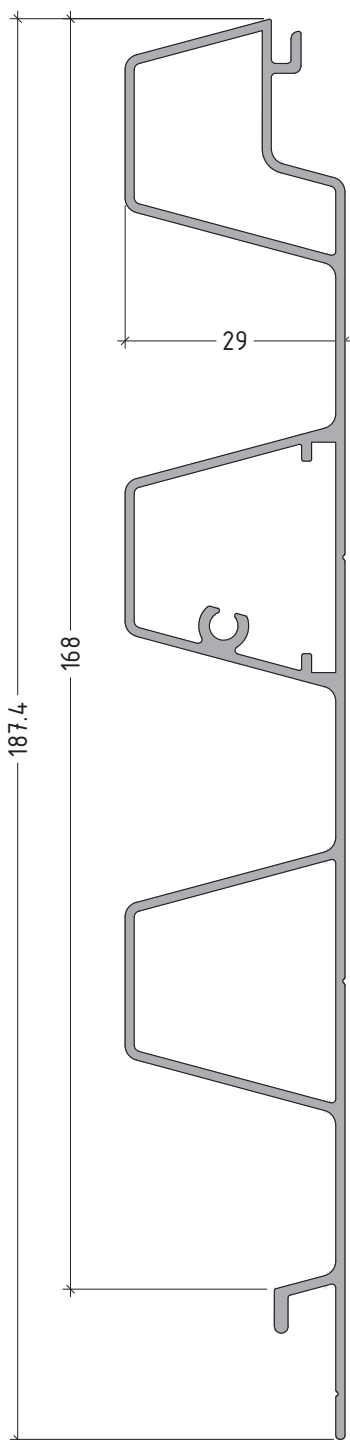


EPIC

E8096131

Main cladding
profile

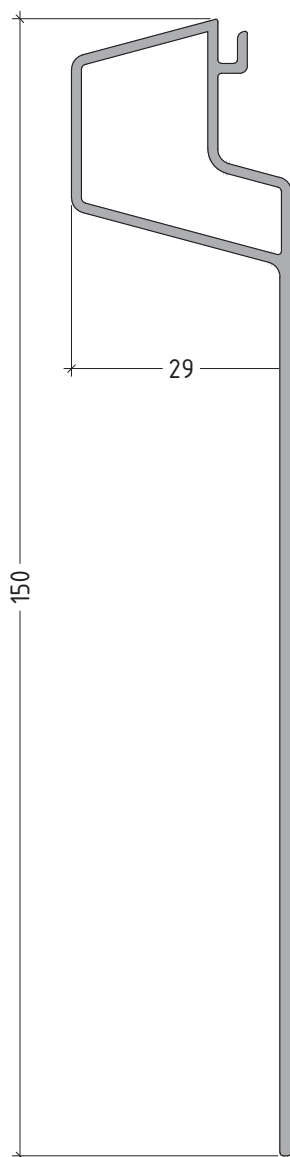
1485 g/m



E8096231

Supplementary profile
for corners

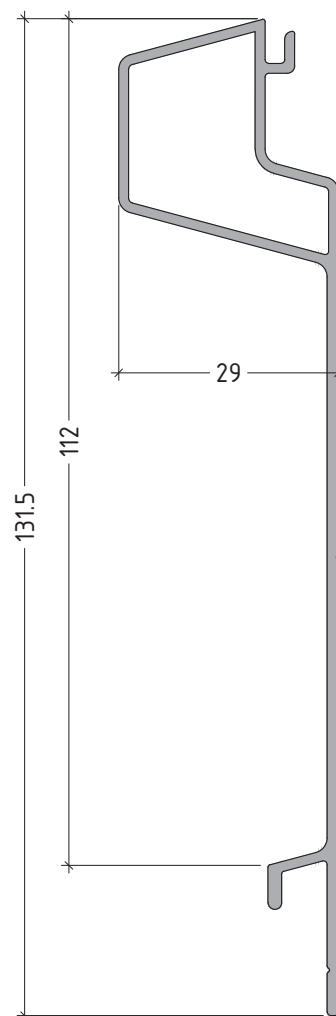
867 g/m



E8096233

Main profile

842 g/m

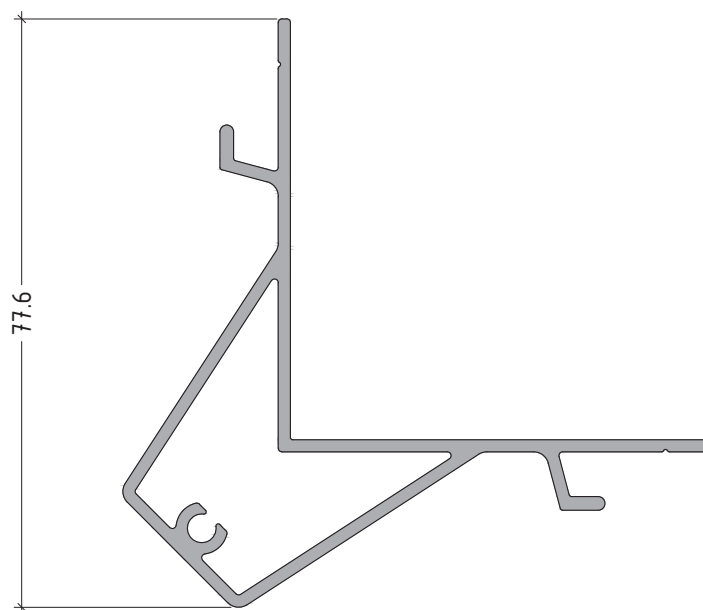


EV96.P-07

E8096232

External corner

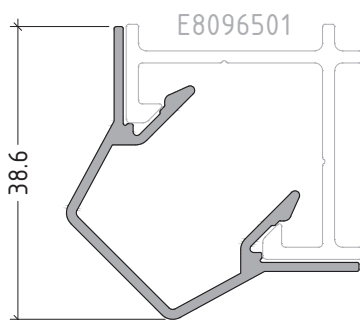
1056 g/m



E8096532

Internal corner
cover

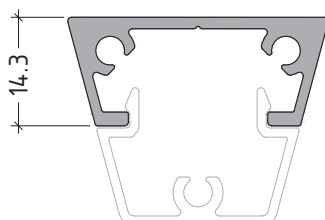
356 g/m



E8096633

Supplementary
pattern profile

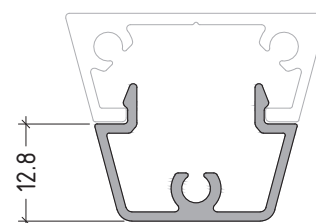
367 g/m



E8096632

Cover for
Supplementary profile

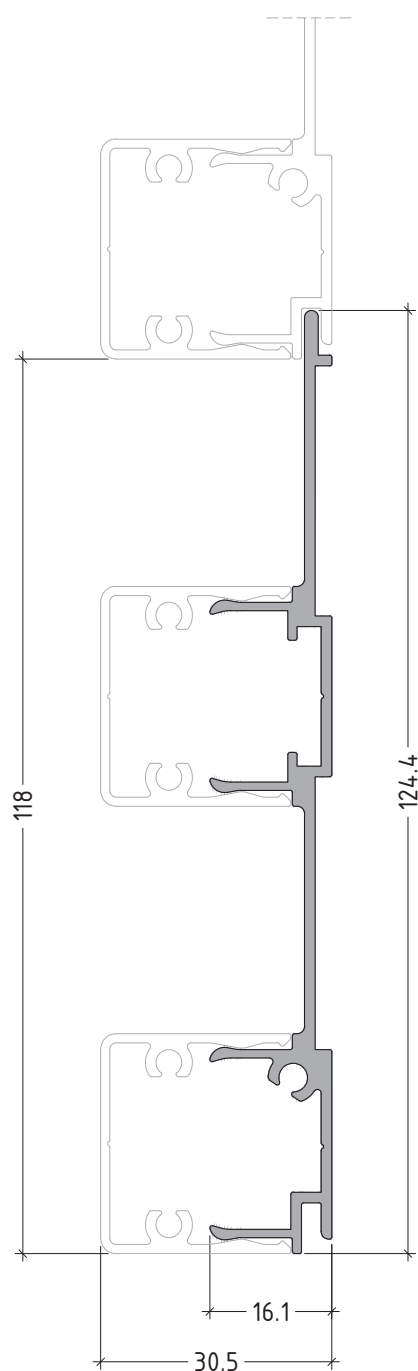
254 g/m



E8096141

Main cladding
profile

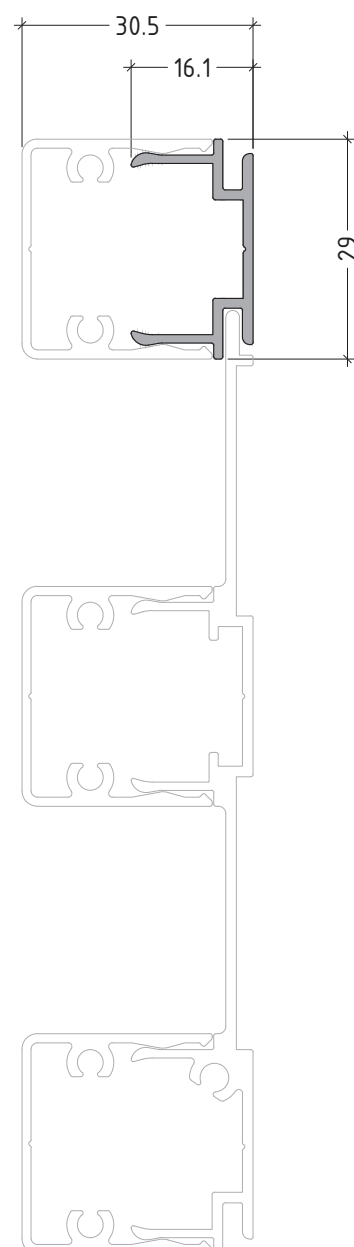
805 g/m



E8096241

Supplementary pattern
profile

232 g/m

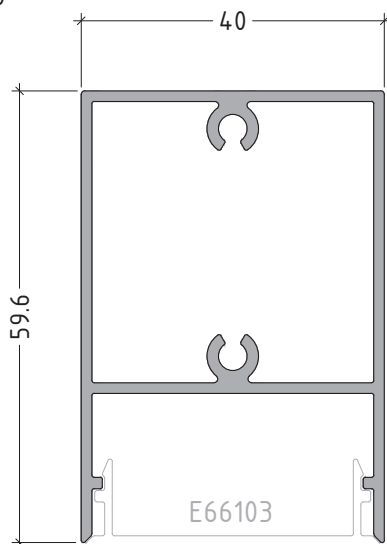


HARMONY dual
(for dual color finish)

E66003

Mullion 40x60

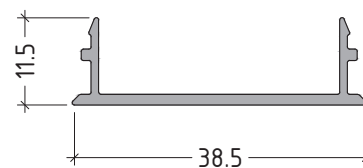
861 g/m



E66103

End cap for mullion 40x60

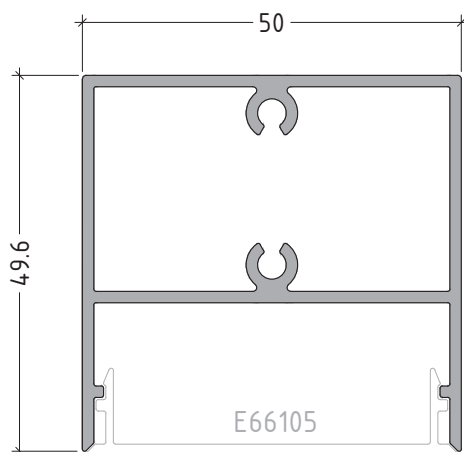
208 g/m



E66005

Mullion 50x50

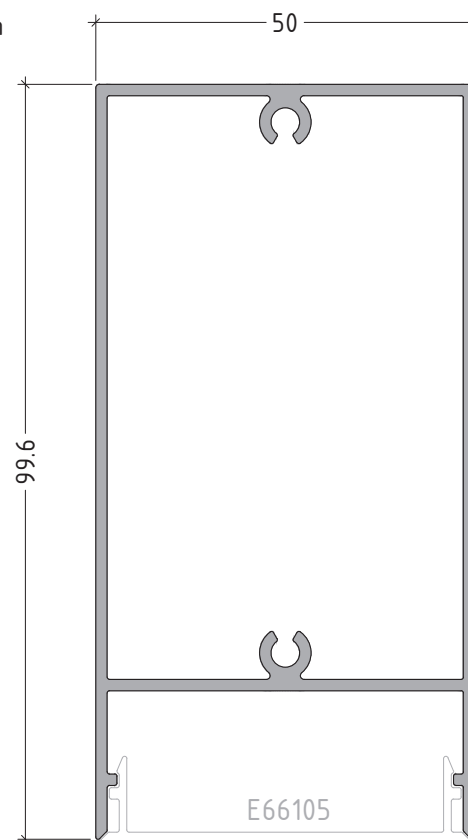
910 g/m



E66006

Mullion 50x100

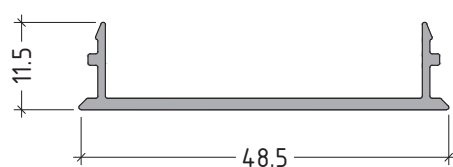
1315 g/m



E66105

End caps for mullions
50x50 & 50x100

259 g/m

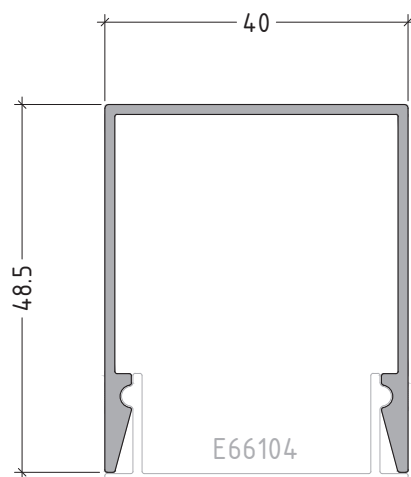


EV96.P-010

E66007

Rectangular
cover 48.5x40

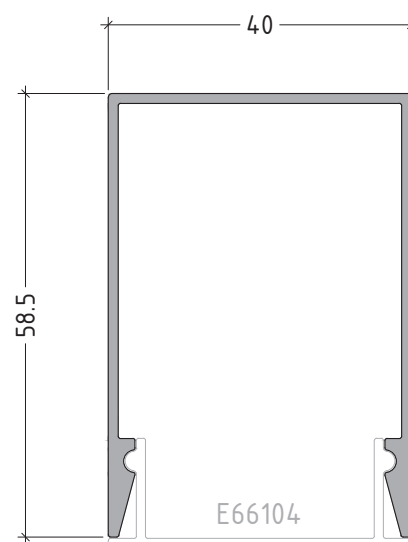
559 g/m



E66008

Rectangular
cover 58.5x40

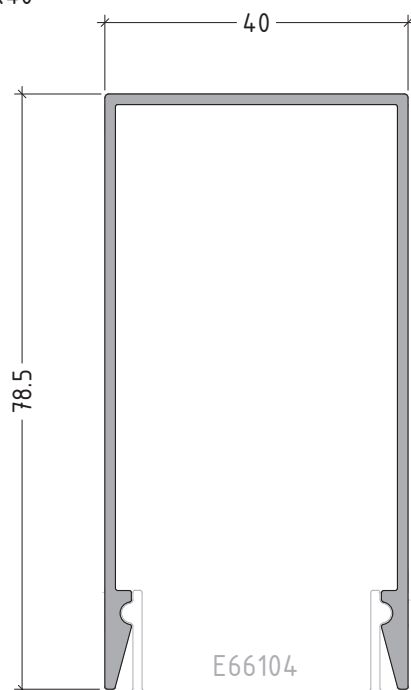
629 g/m



E66009

Rectangular
cover 78.5x40

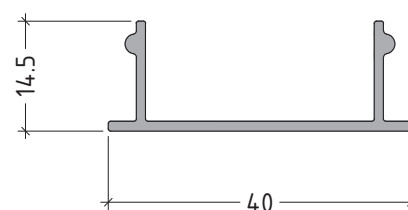
813 g/m



E66104

End cap for
rectangular covers

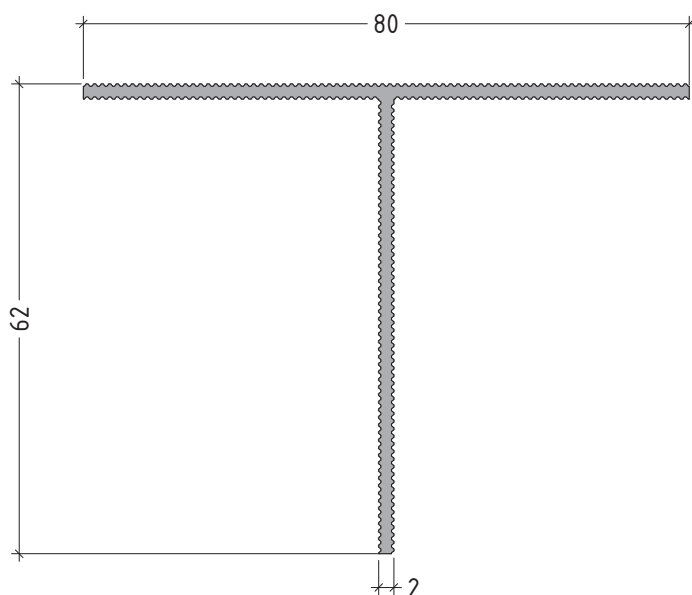
243 g/m



E97004

T profile
grooved

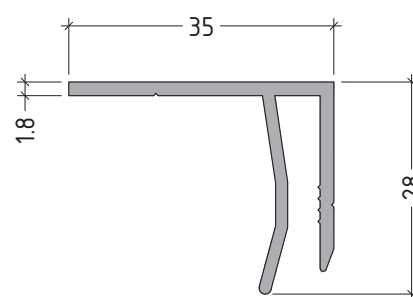
643 g/m



E97104

F profile

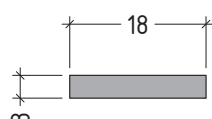
394 g/m



RS-18X3

Rectangular bar

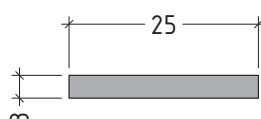
146 g/m



RS-25X3

Rectangular bar

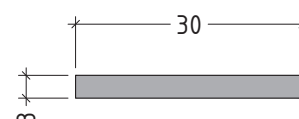
203 g/m



RS-30X3

Rectangular bar

243 g/m



Note:

Rectangular alumin. bars are applied to main cladding profiles to ensure vertical or horizontal alignment between them.

RS-18X3: for profiles E8096101 & E8096141 (TREND & HARMONY dual)

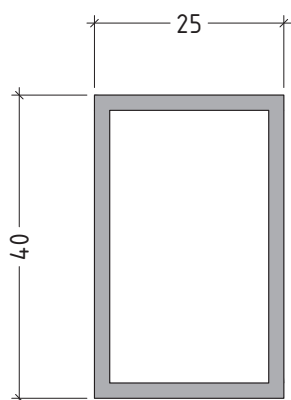
RS-25X3: for profiles E8096111 - E8096211 - E8096213 (HARMONY)

RS-30X3: for profiles E8096121 & E8096131 (WAVE & EPIC)

RH-40X25X2

Supplementary support
profile

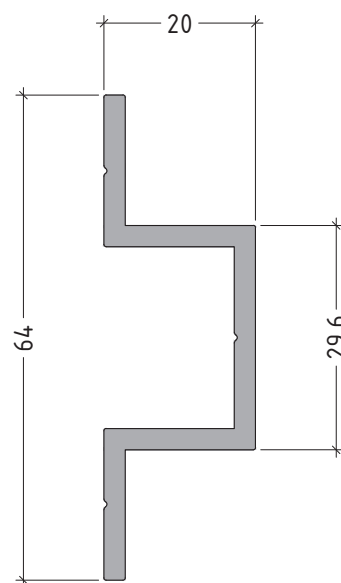
659 g/m



E8096900

Supplementary support
profile

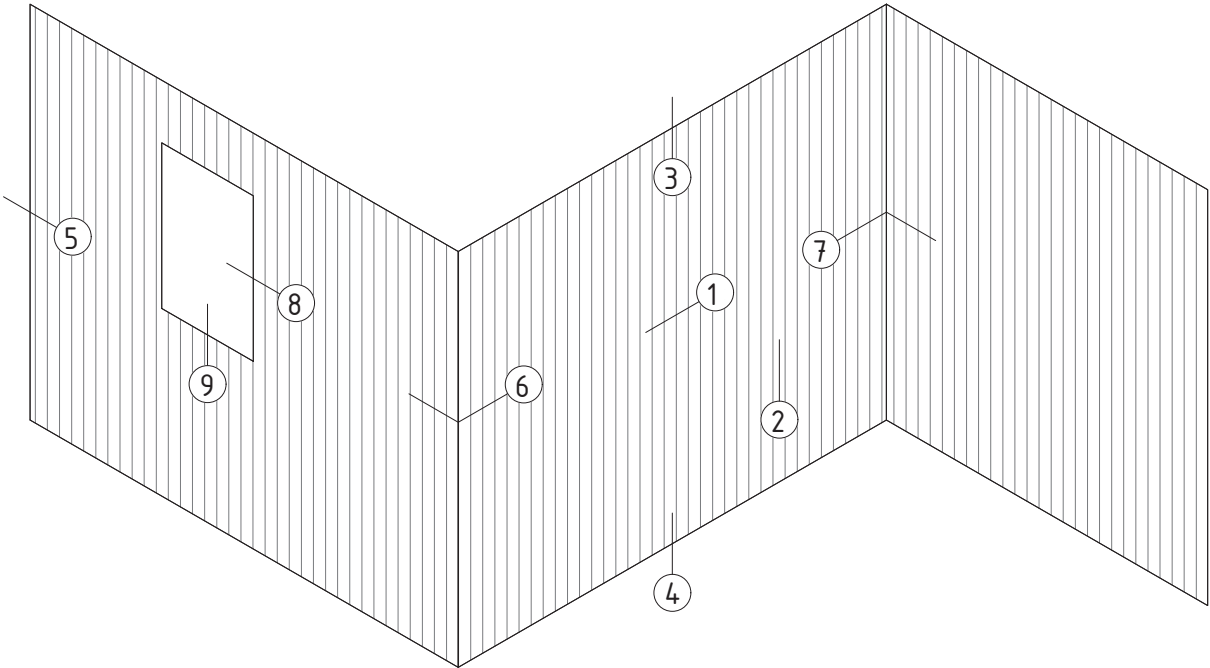
740 g/m



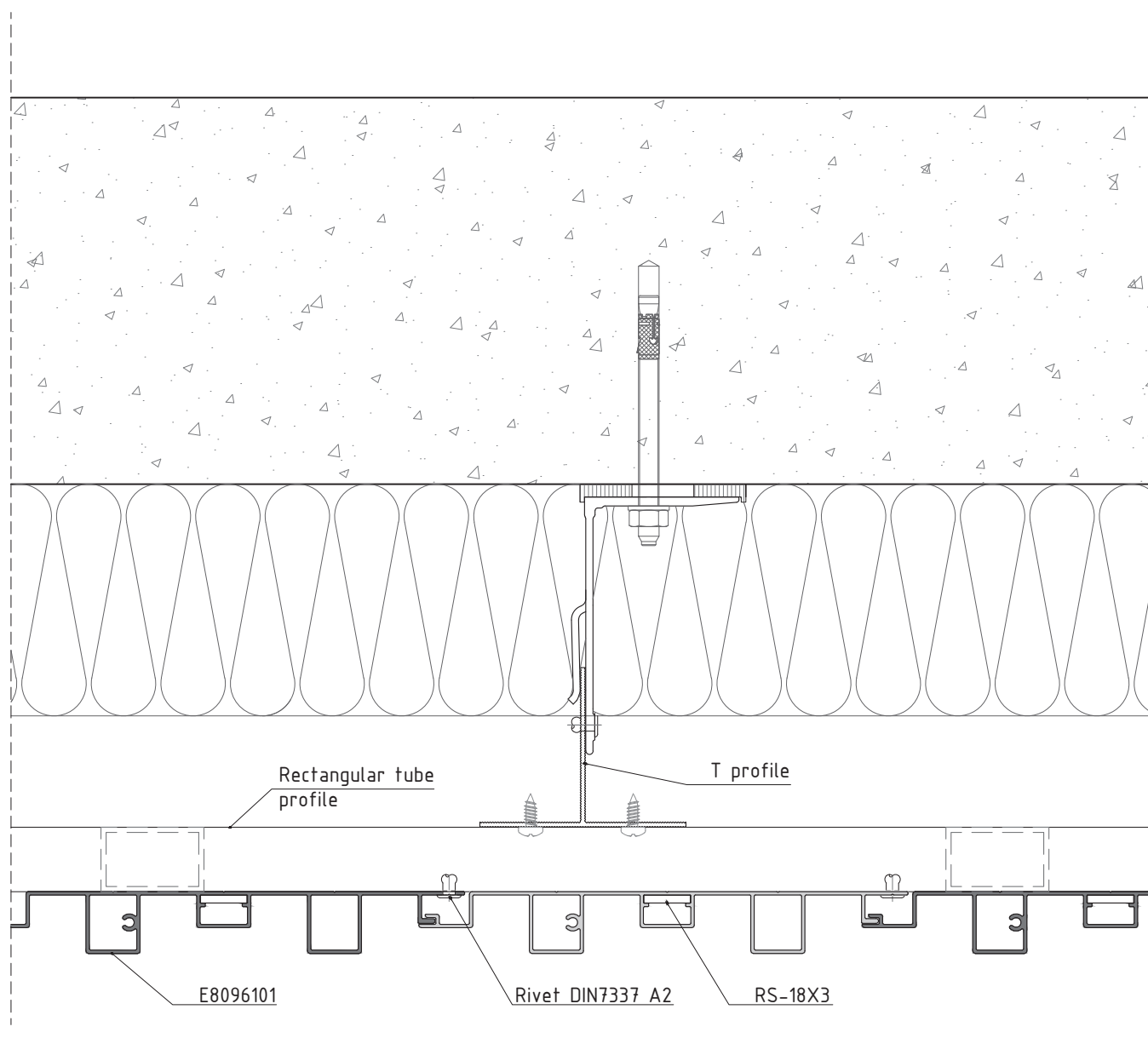
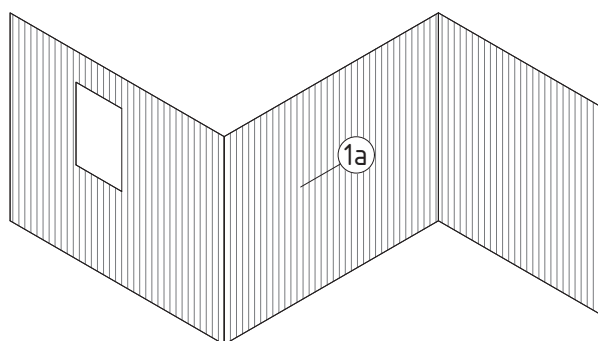


sections





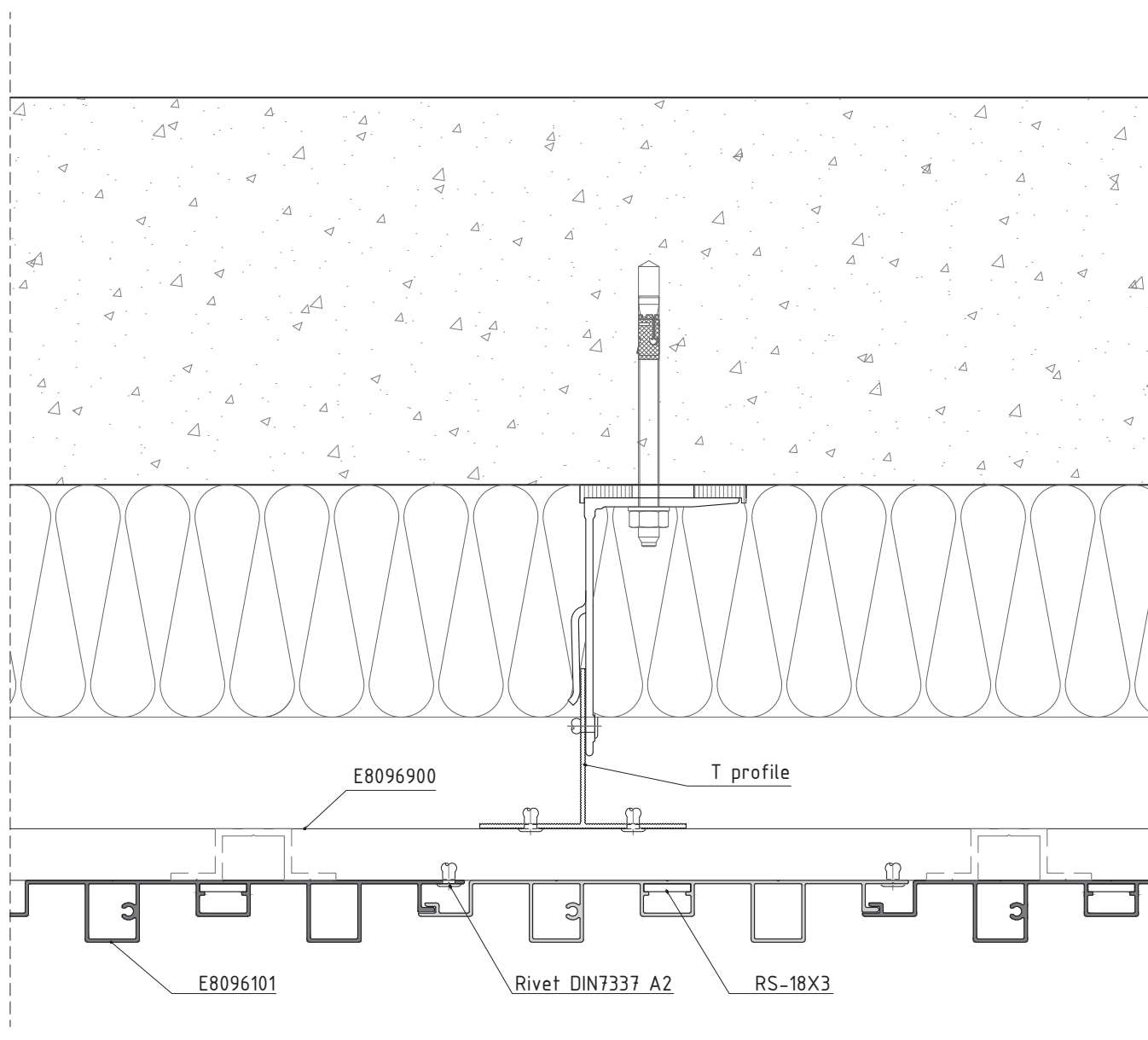
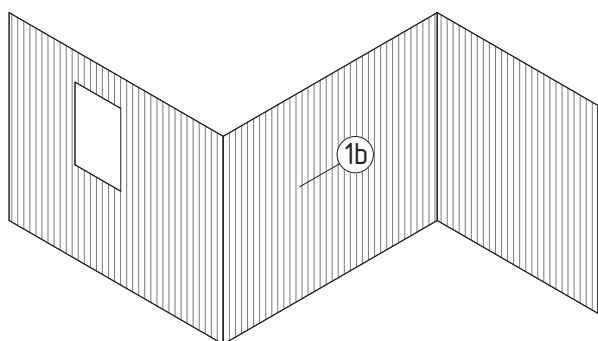
EV96.S-00



Profile RS-18X3 is applied to main profile E8096101 to ensure vertical alignment between them

scale : 1:2.5

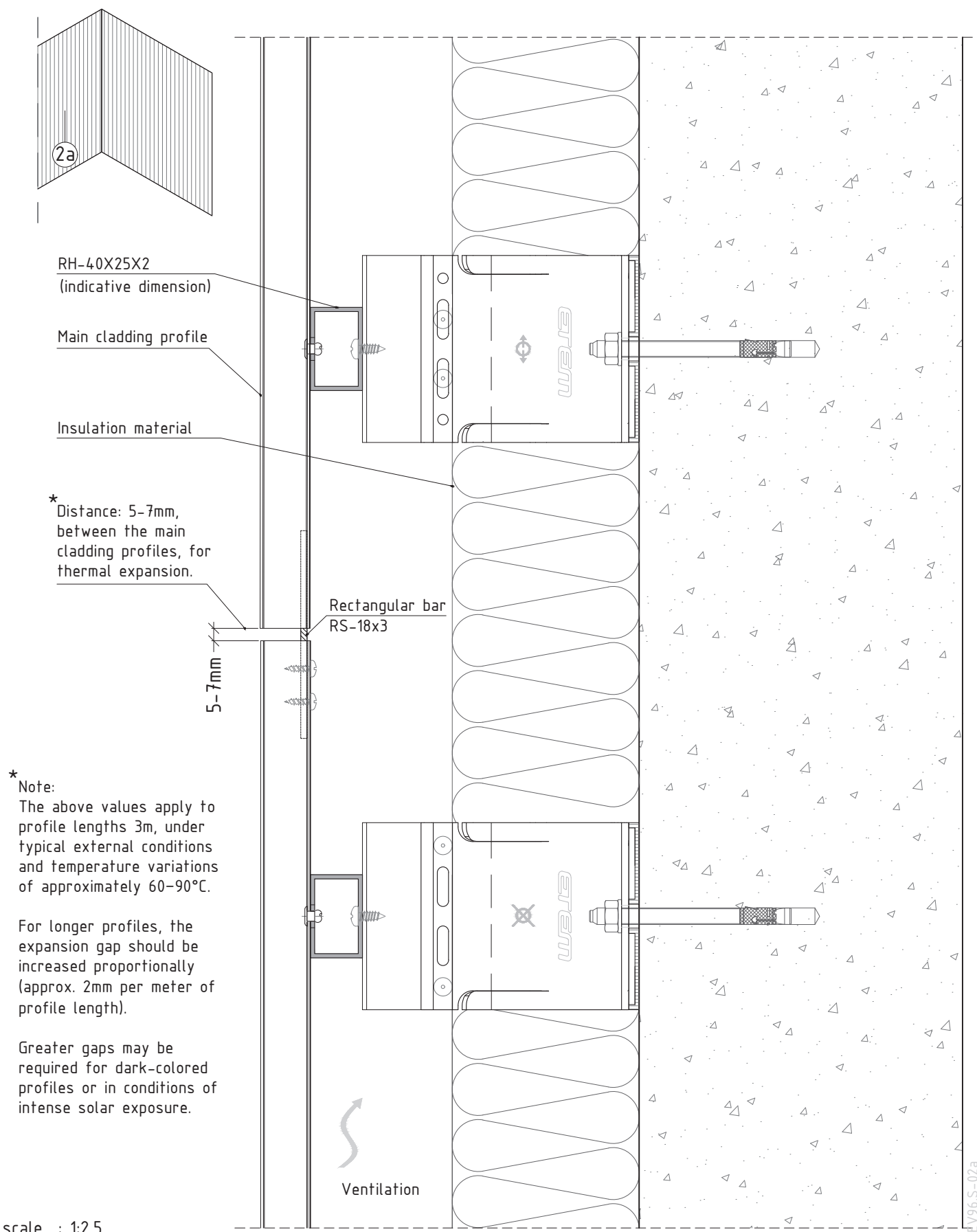
EV96 S-01a

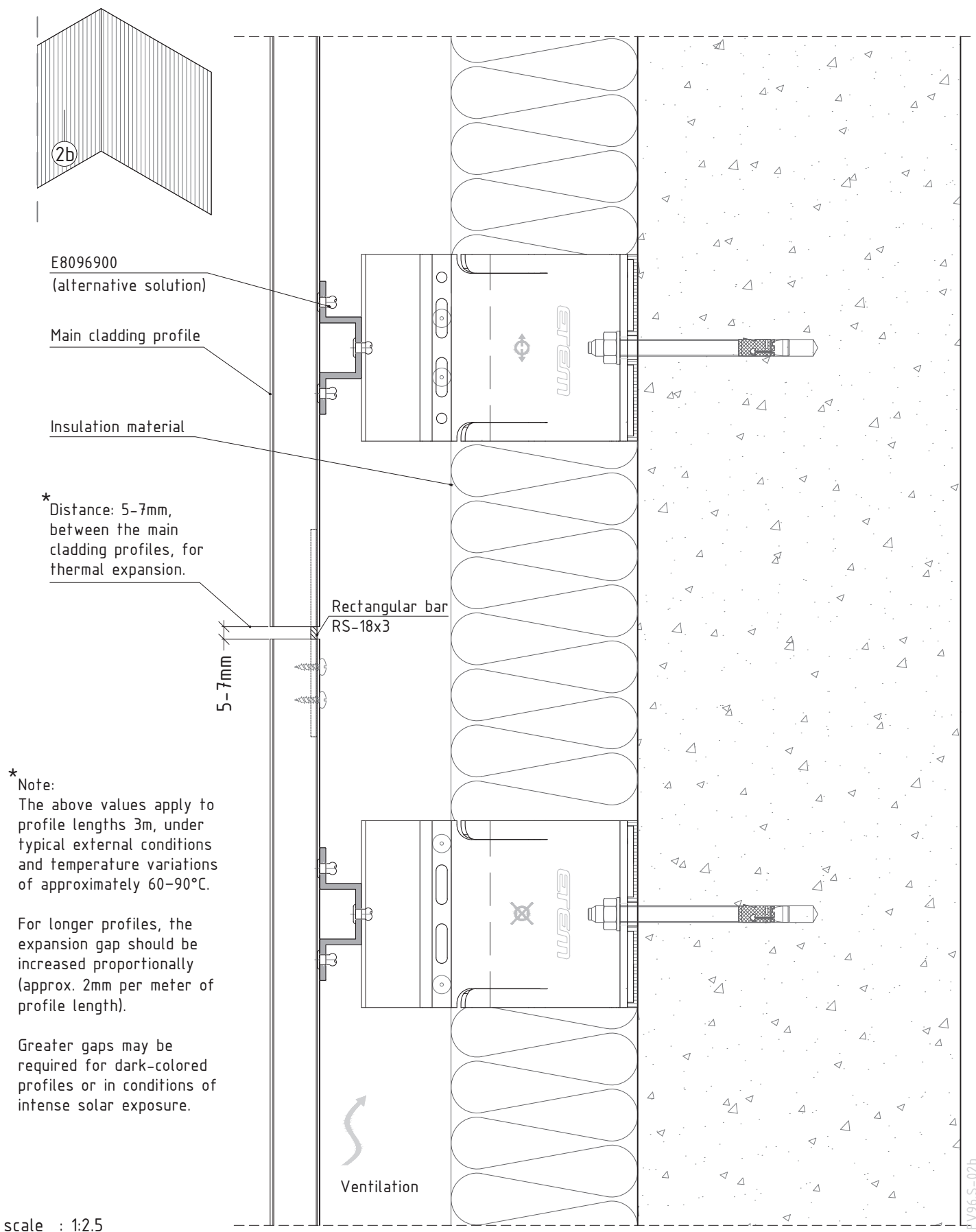


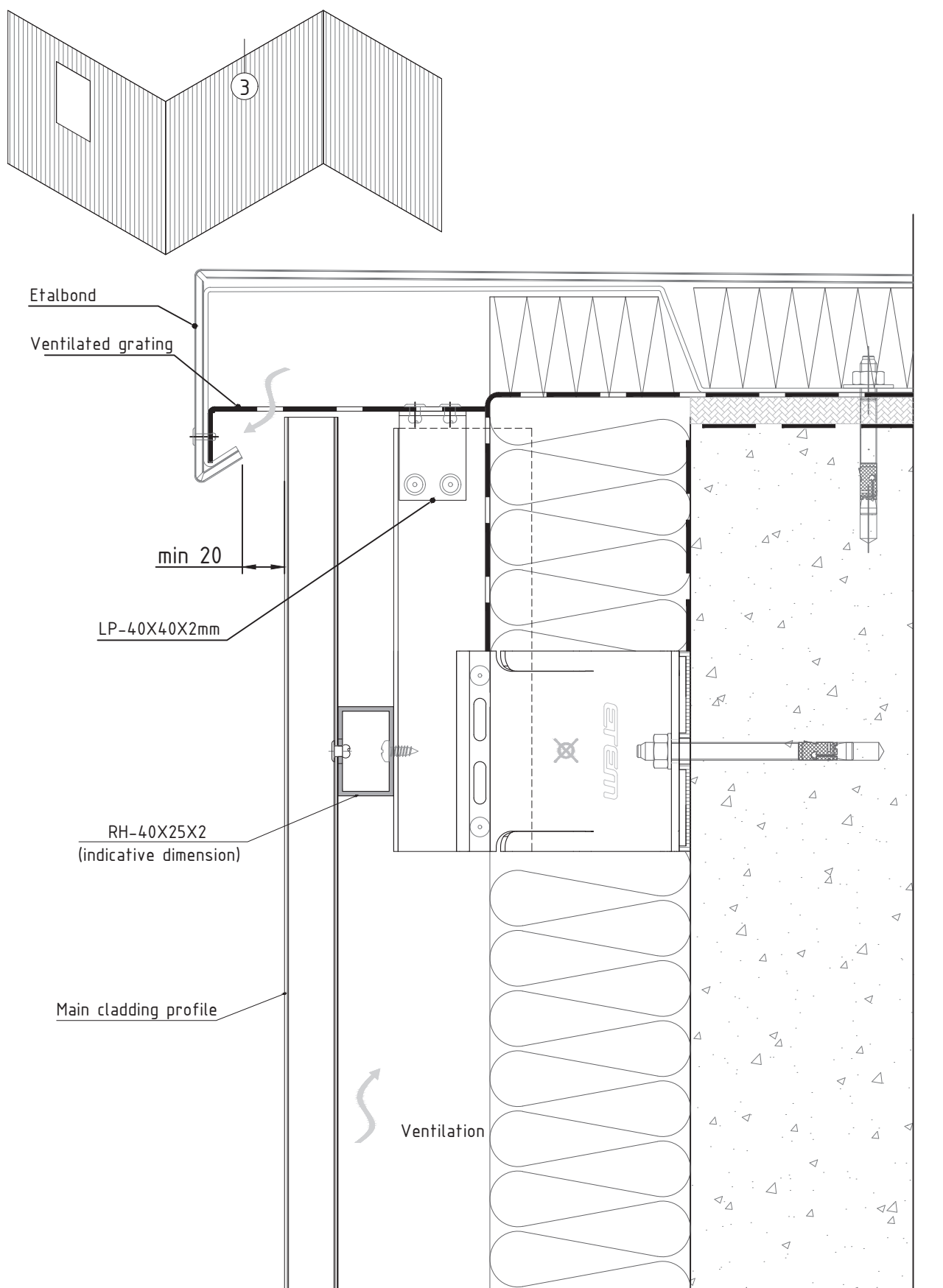
Profile RS-18X3 is applied to main profile E8096101 to ensure vertical alignment between them

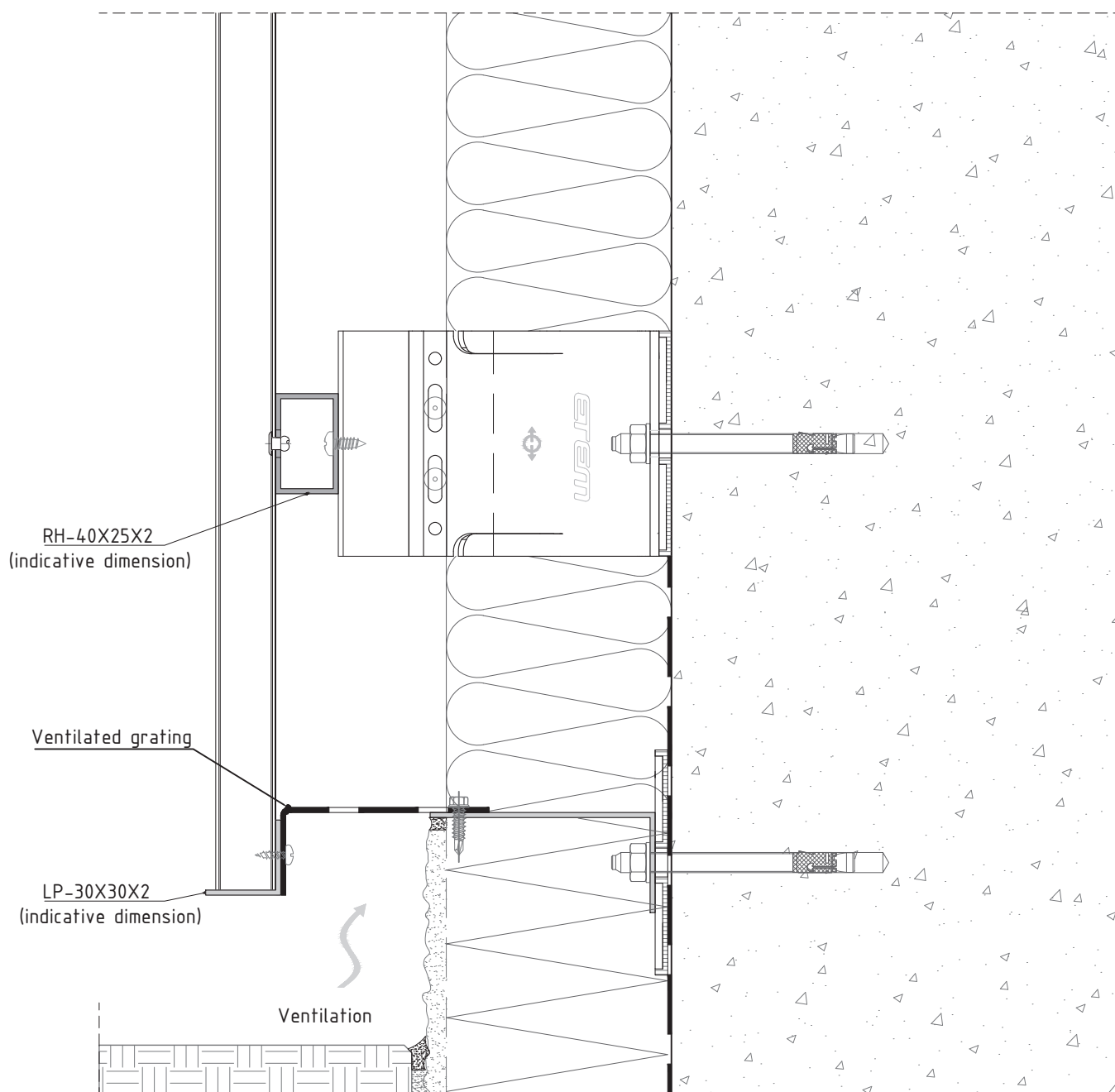
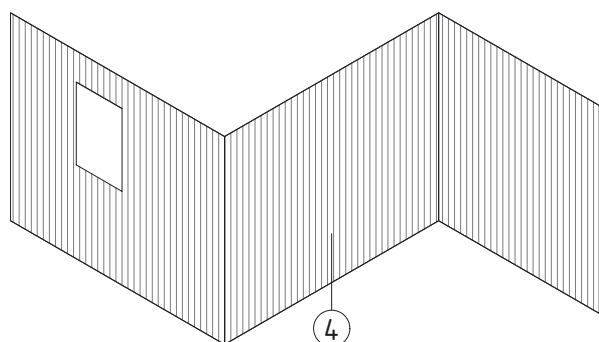
scale : 1:2.5

EV96 S-01b



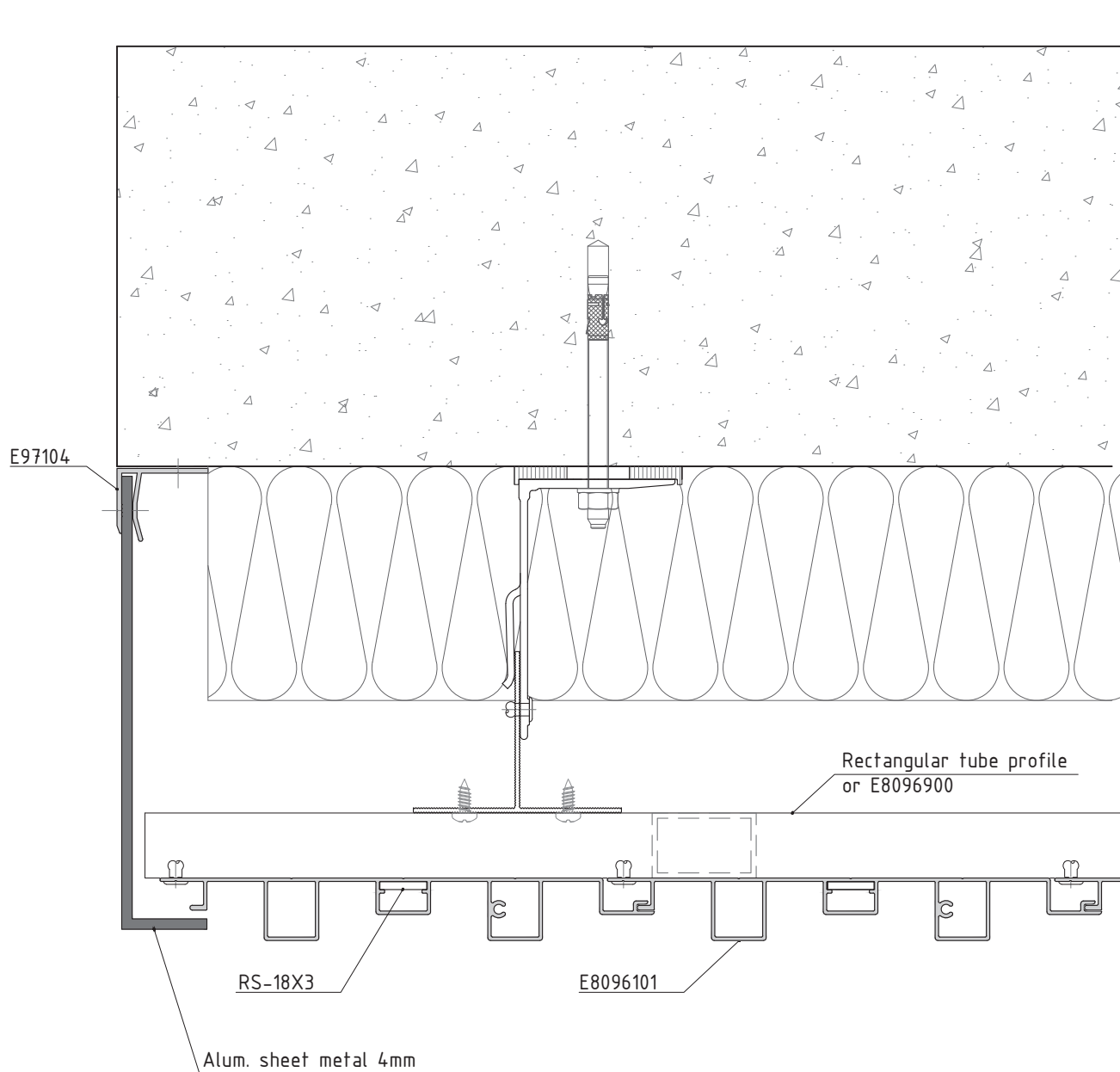
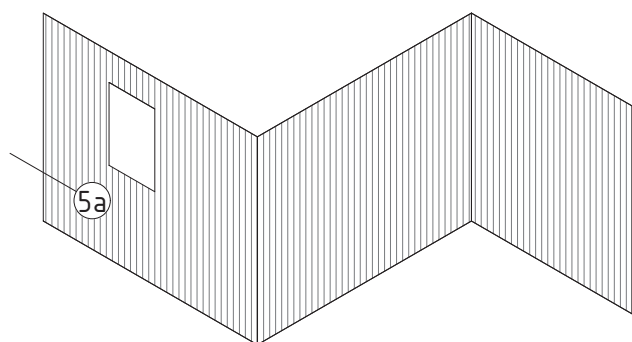






scale : 1:2.5

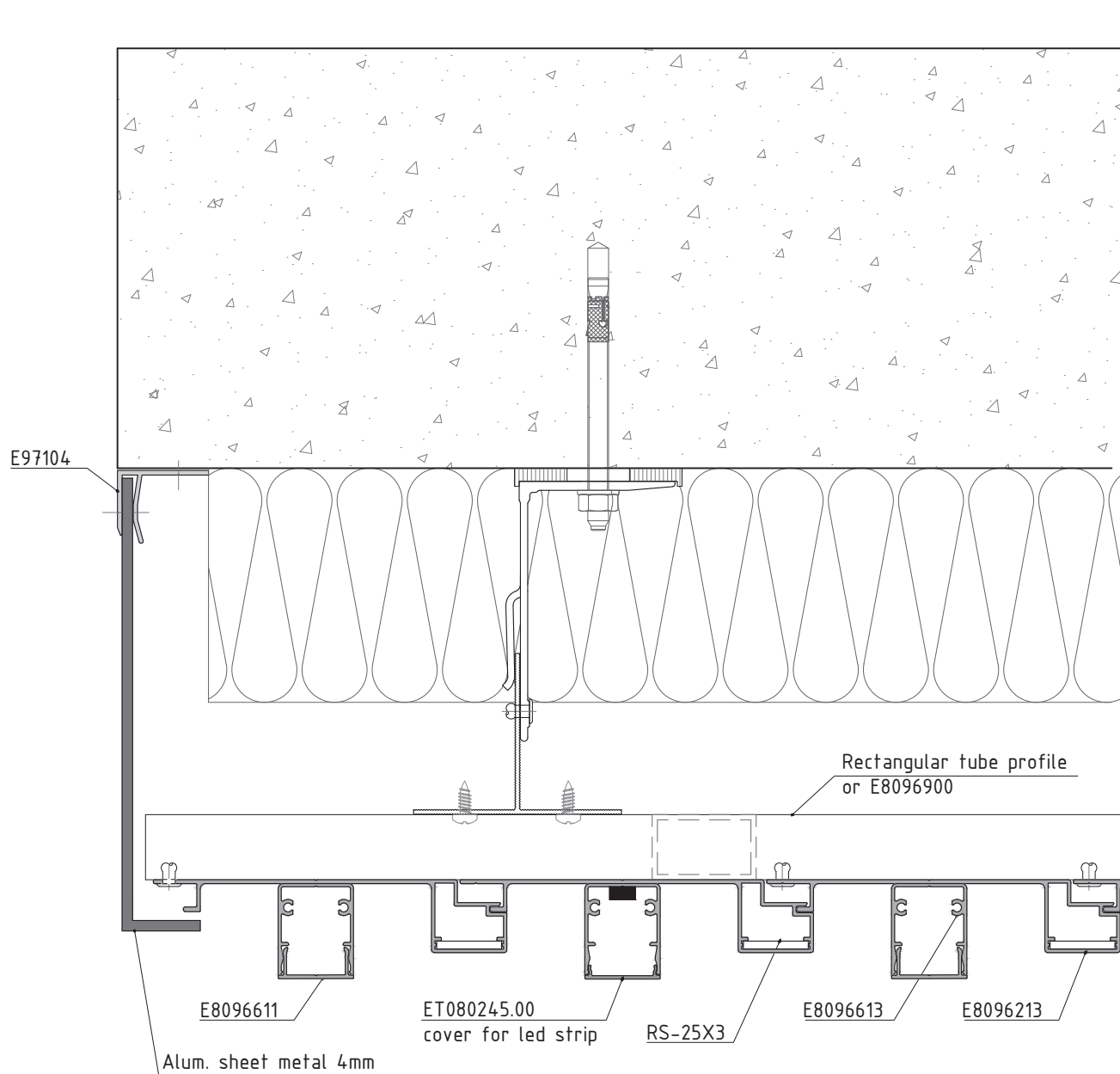
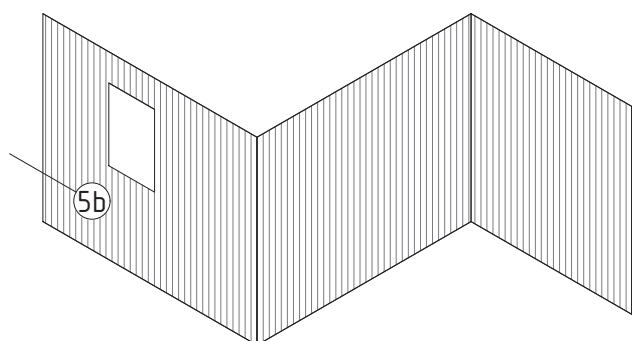
EV96.S-04



Profile RS-18X3 is applied to main profile E8096101 to ensure vertical alignment between them

scale : 1:2.5

EV96.S-05a

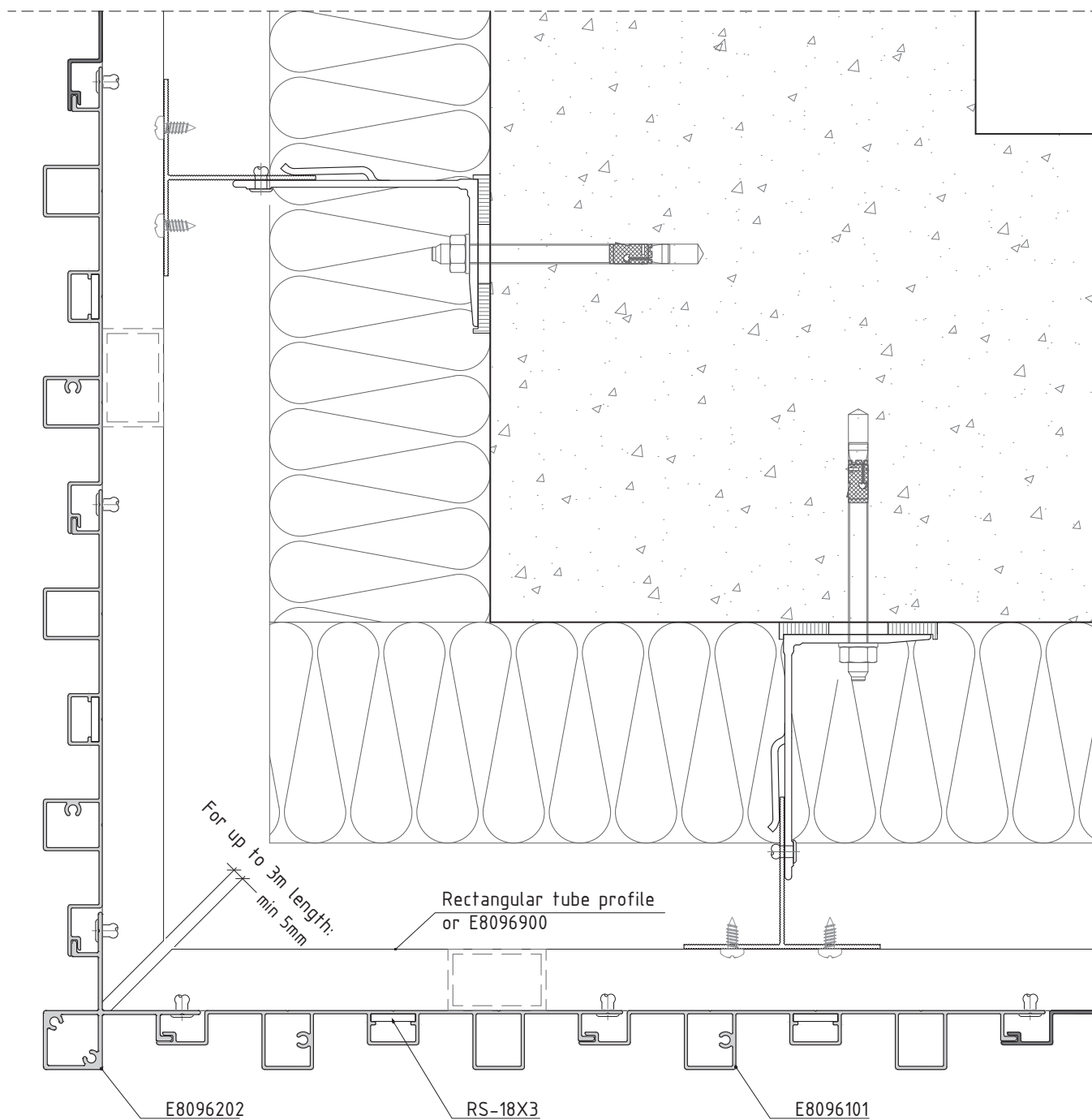
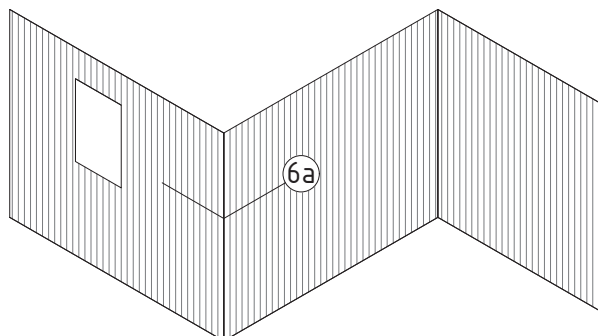


Profile RS-25X3 is applied to main profile E8096213 to ensure vertical alignment between them

scale : 1:2.5

EV96.S-05b

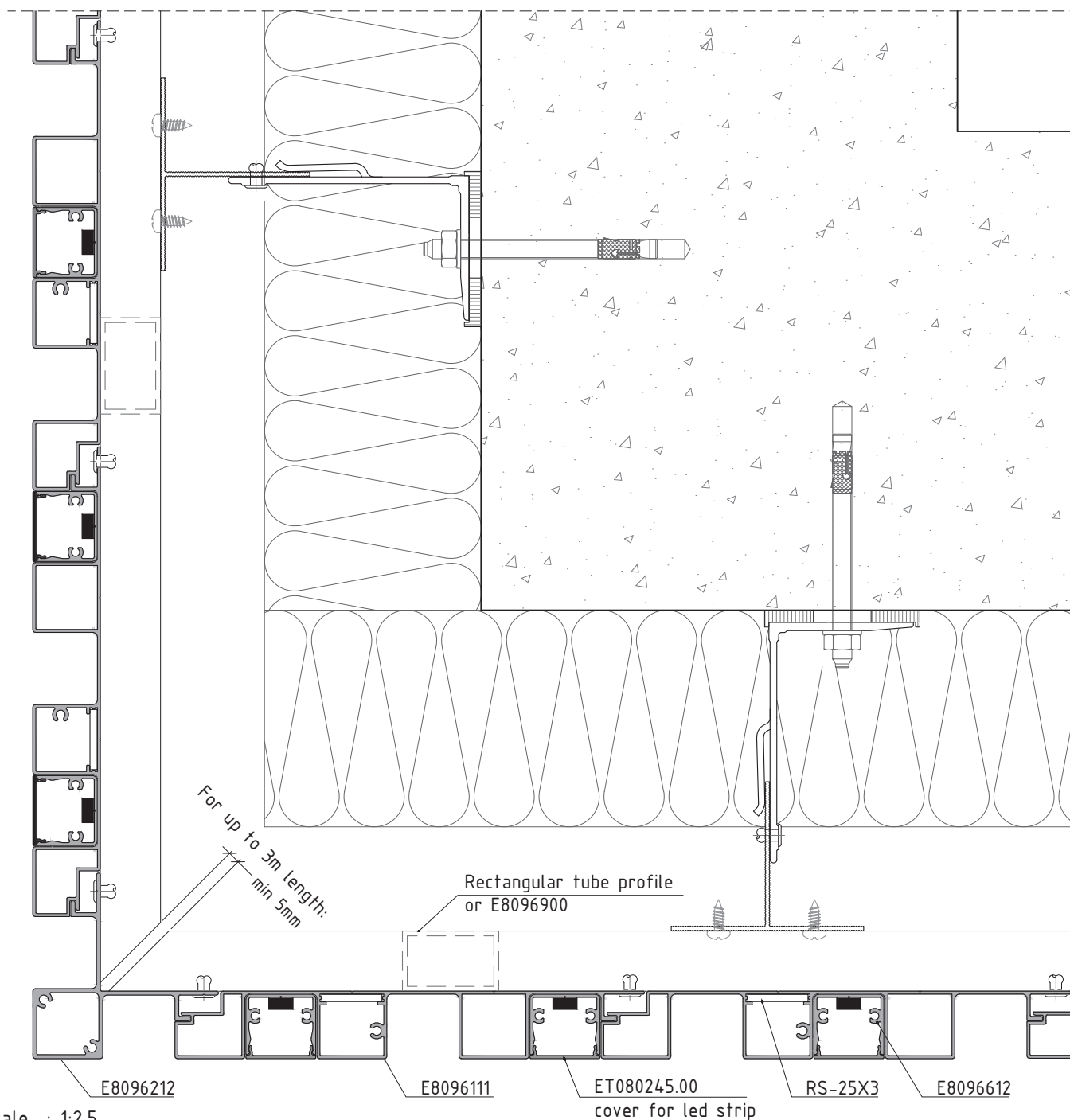
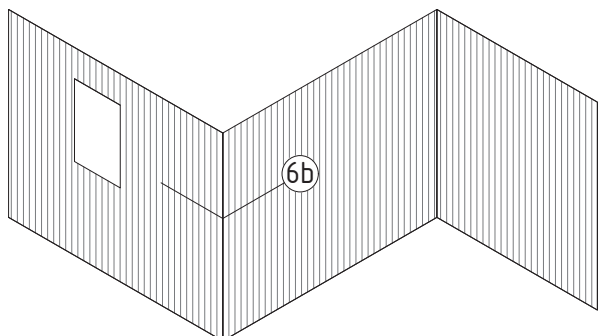
TREND



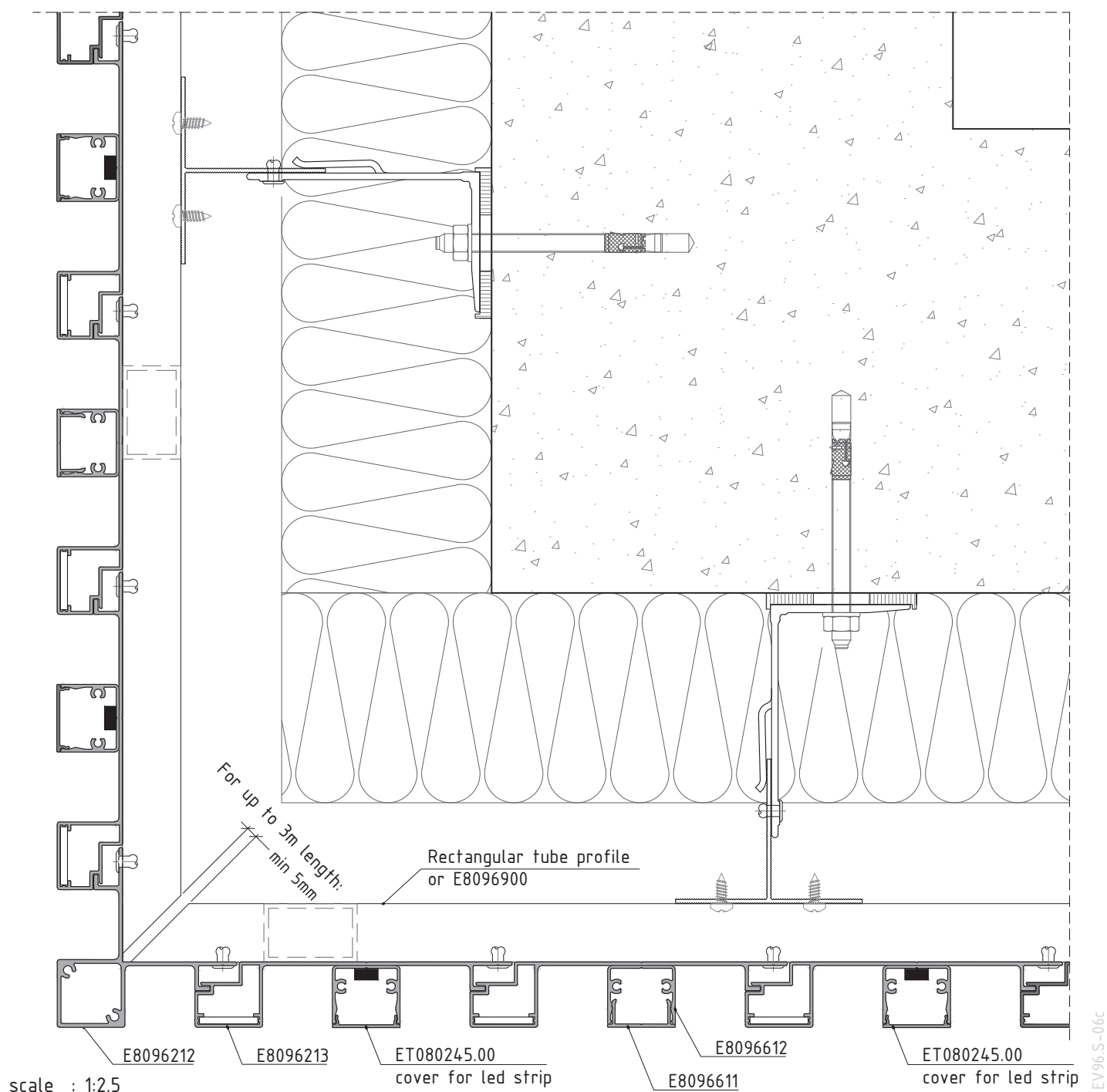
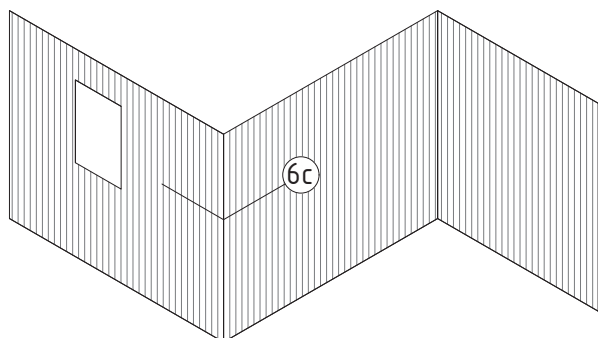
scale : 1:2.5

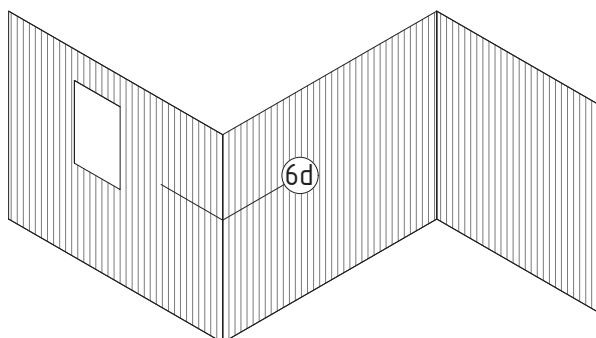
EV96.S-06a

HARMONY



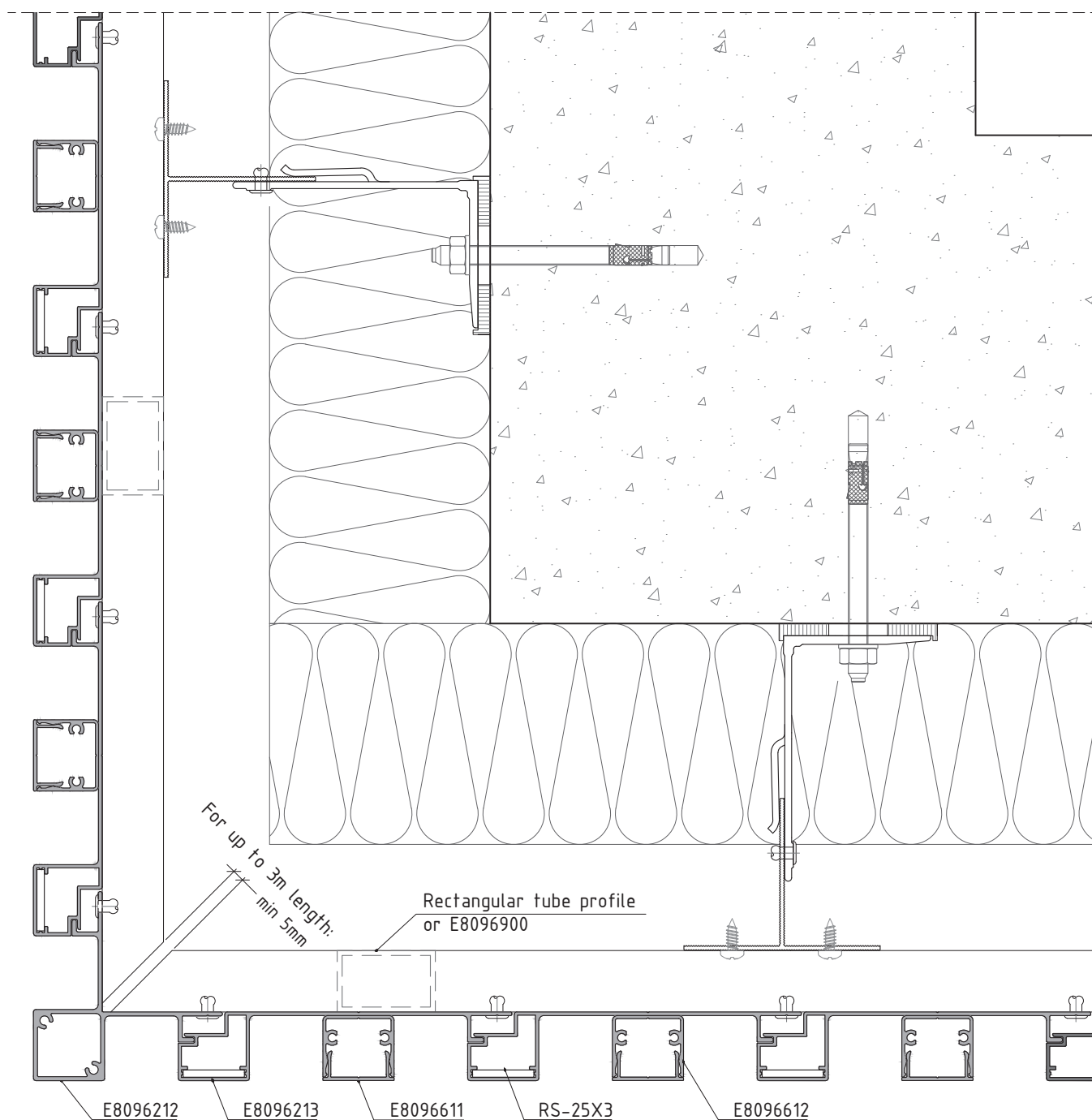
HARMONY





HARMONY

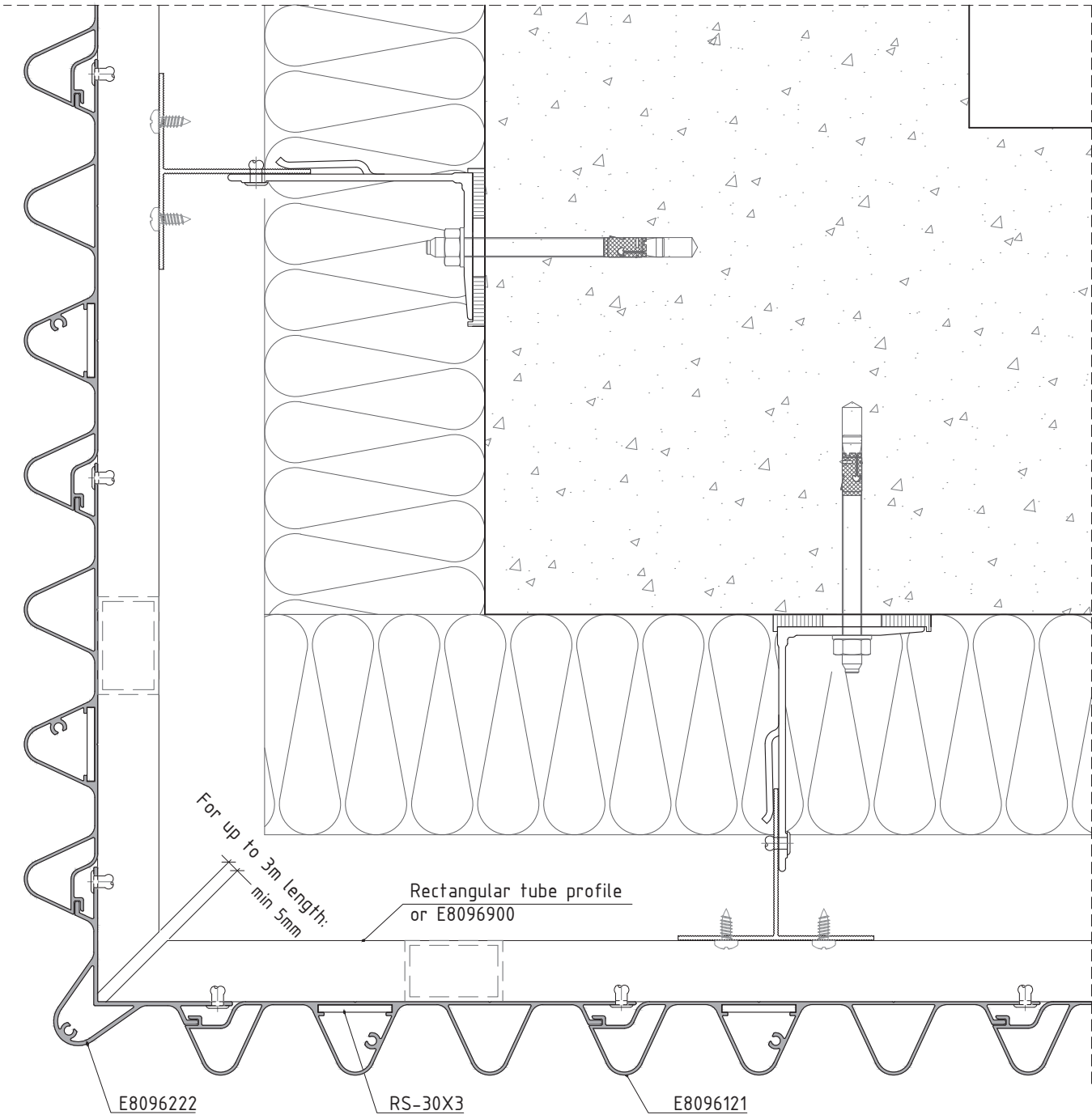
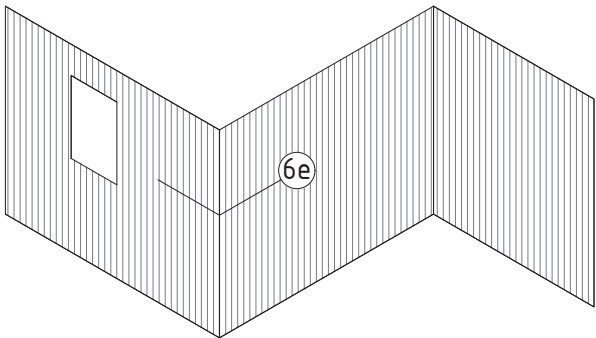
Cladding profiles for single or dual color finish



scale : 1:2.5

EV96.S-06d

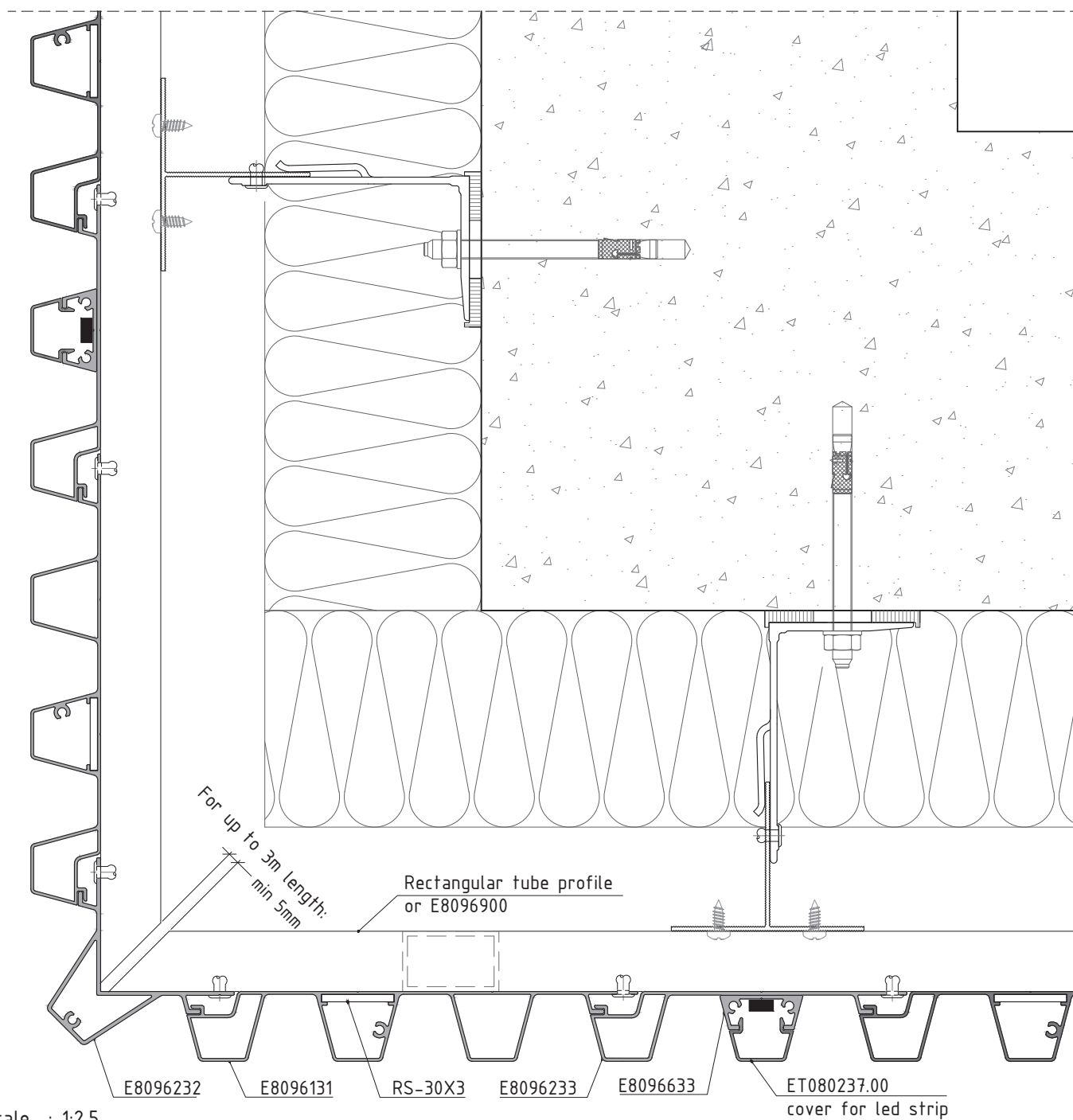
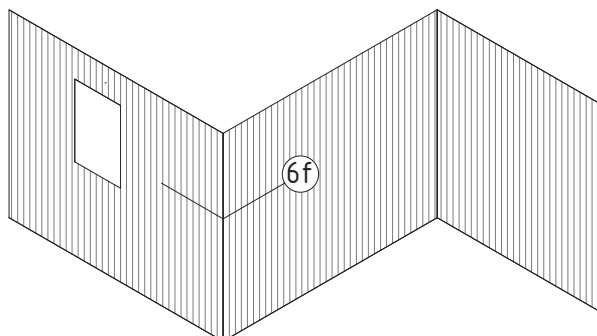
WAVE



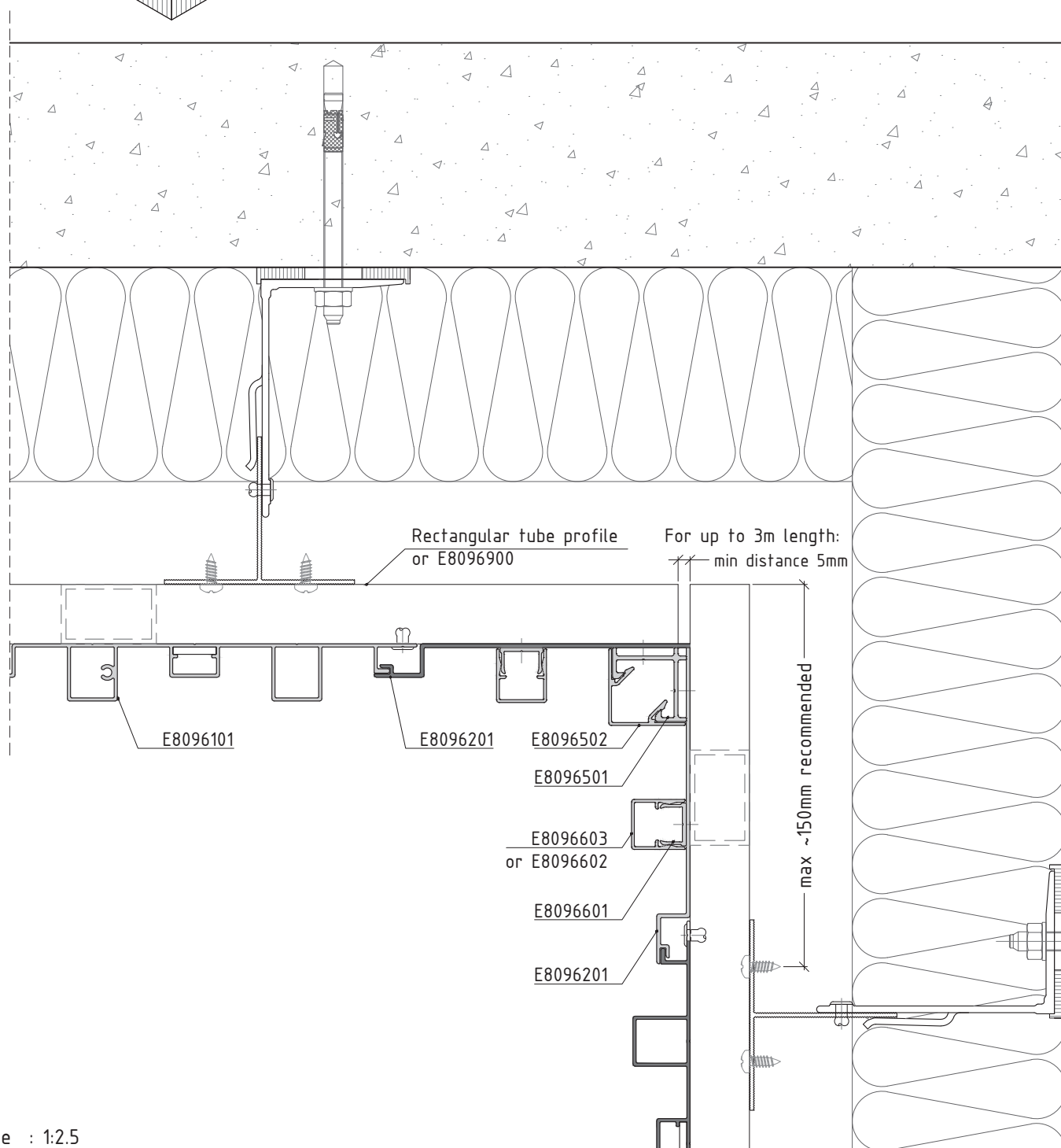
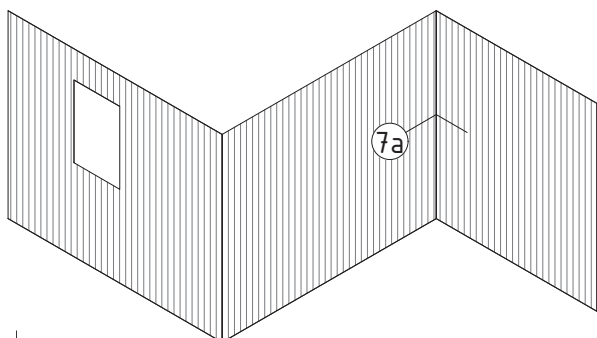
scale : 1:2.5

EV96.S-06e

EPIC

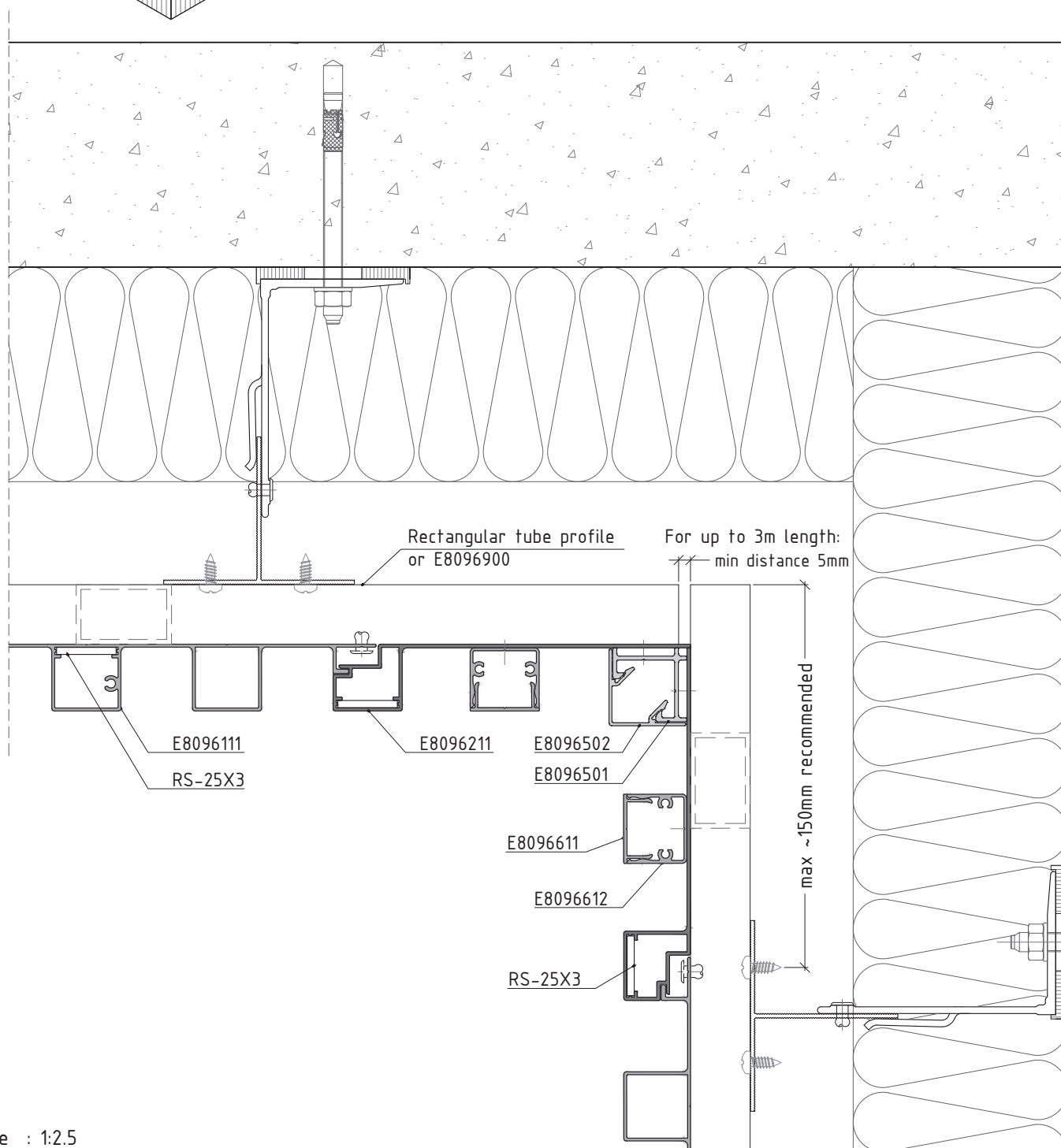
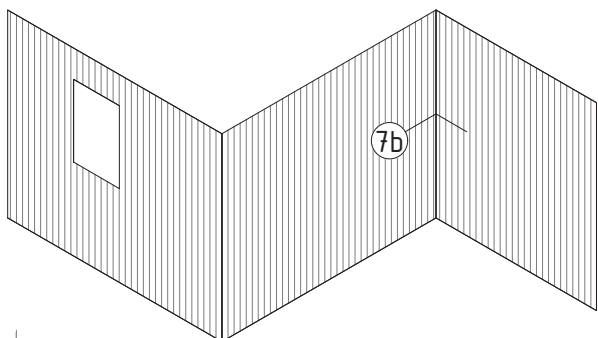


TREND



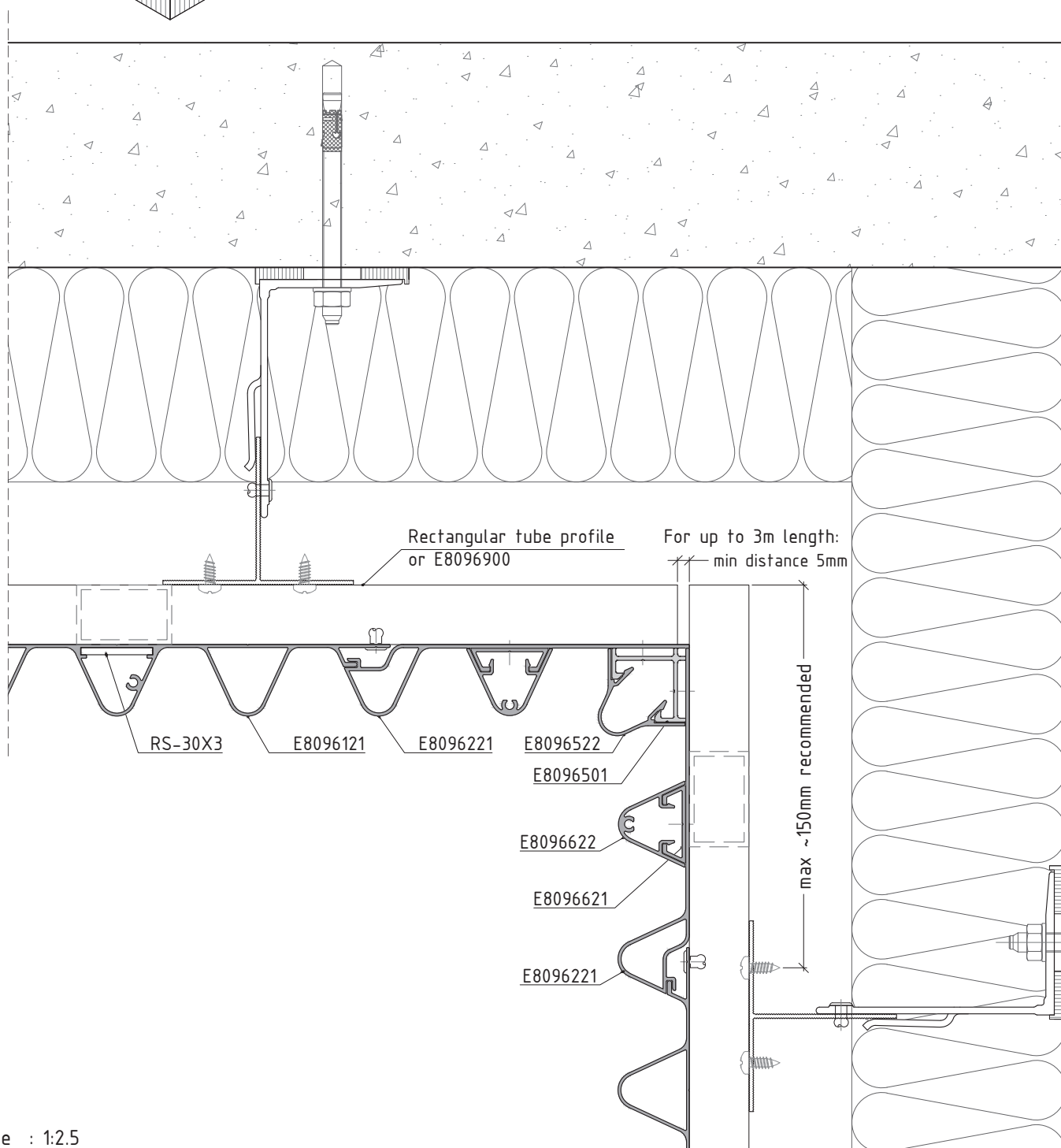
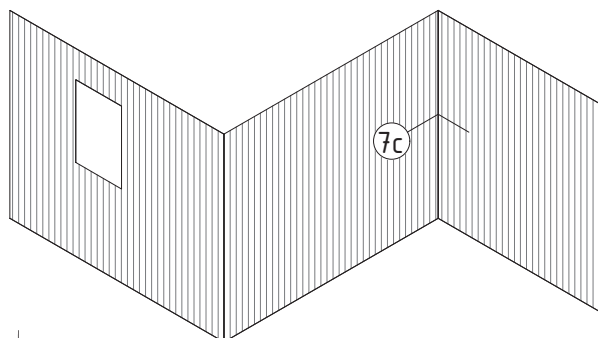
scale : 1:2.5

HARMONY



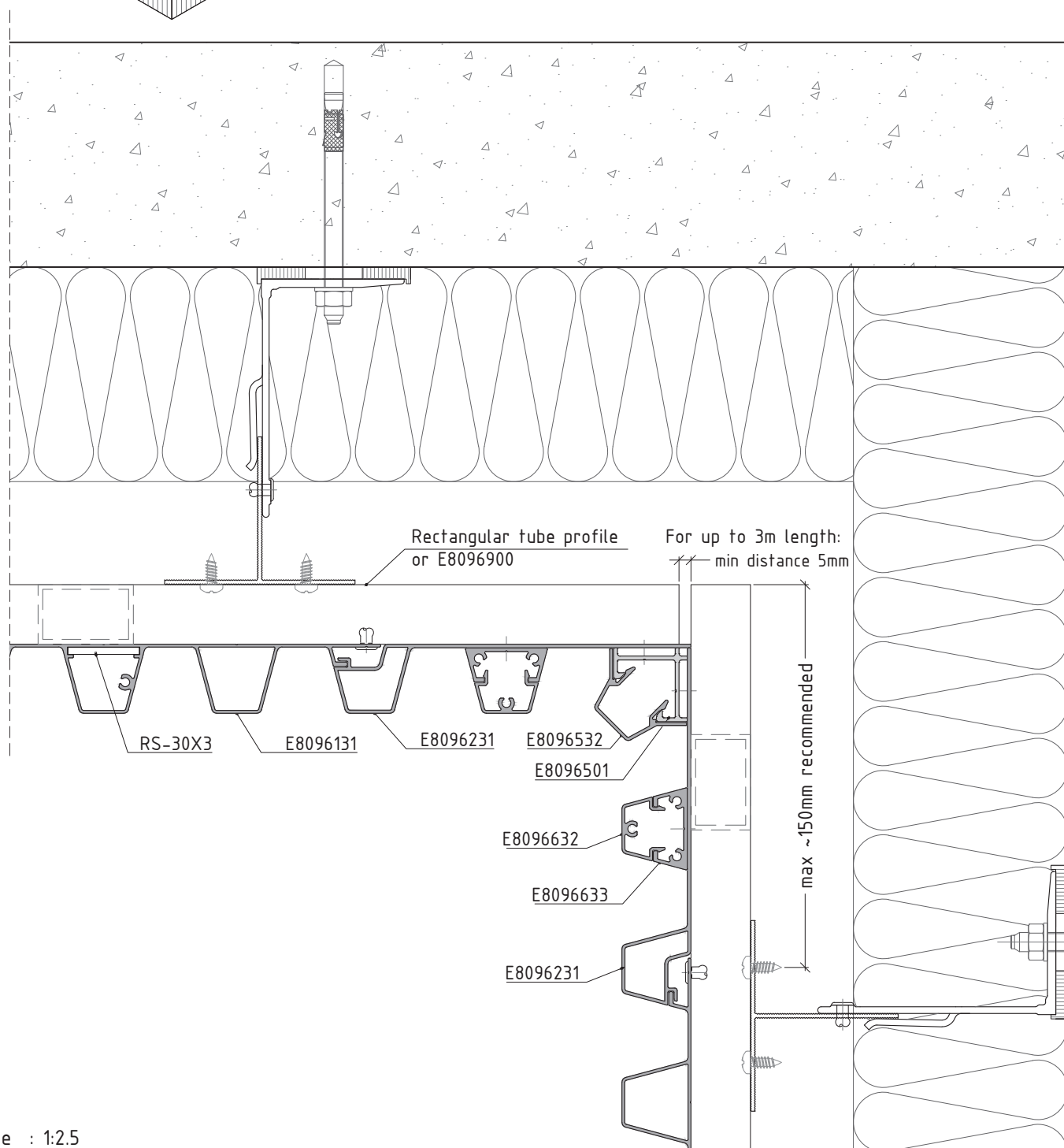
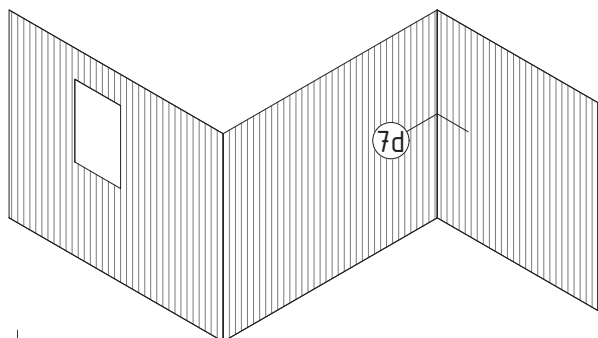
scale : 1:2.5

WAVE

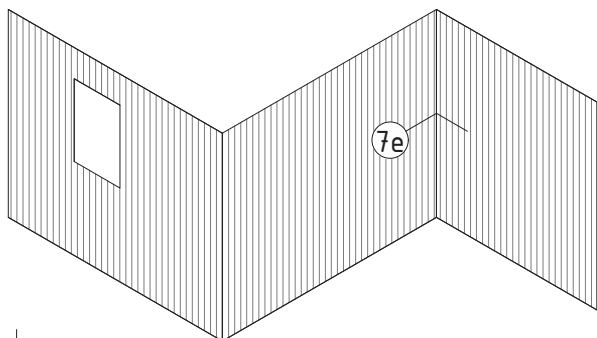


scale : 1:2.5

EPIC

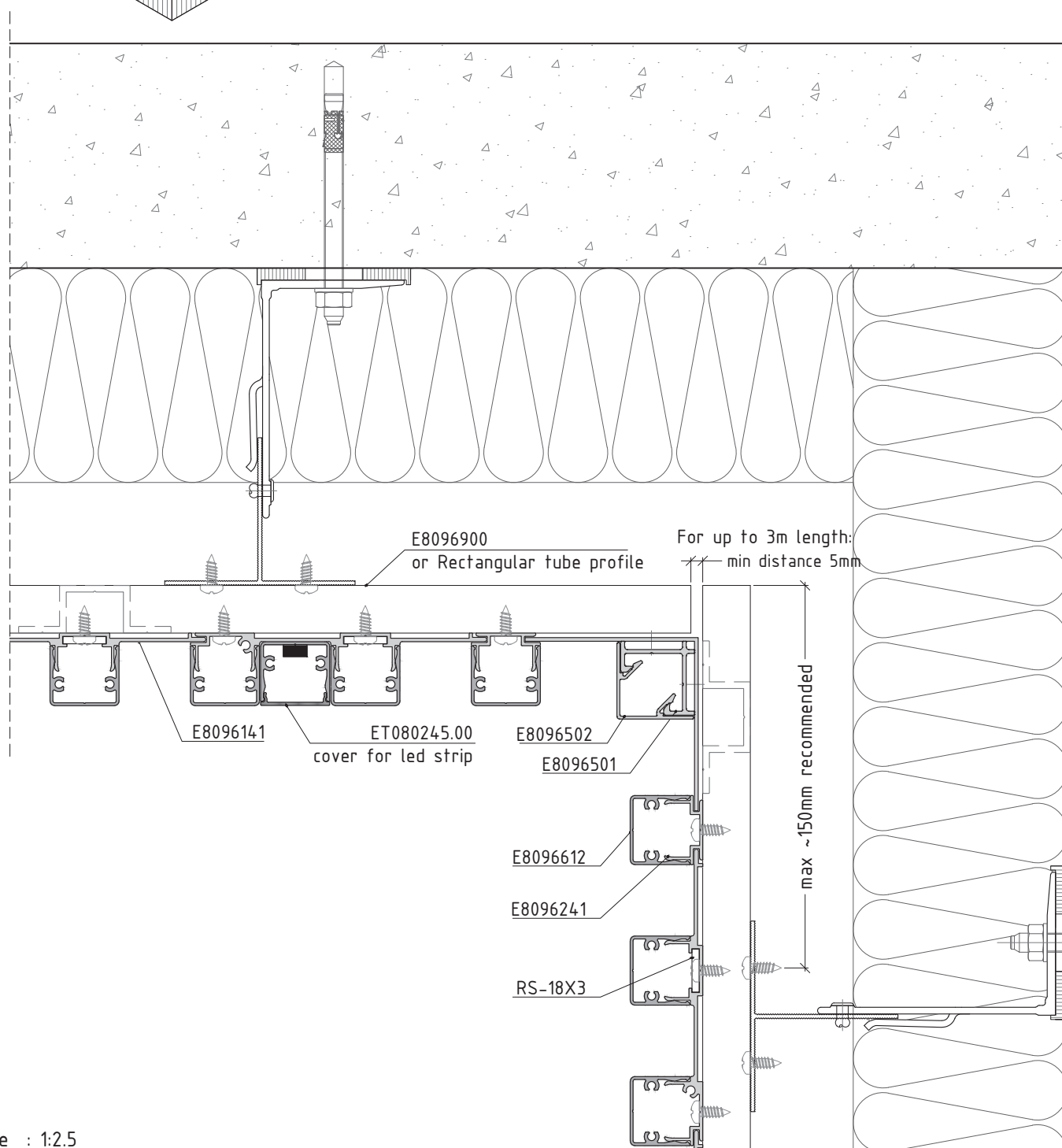


scale : 1:2.5

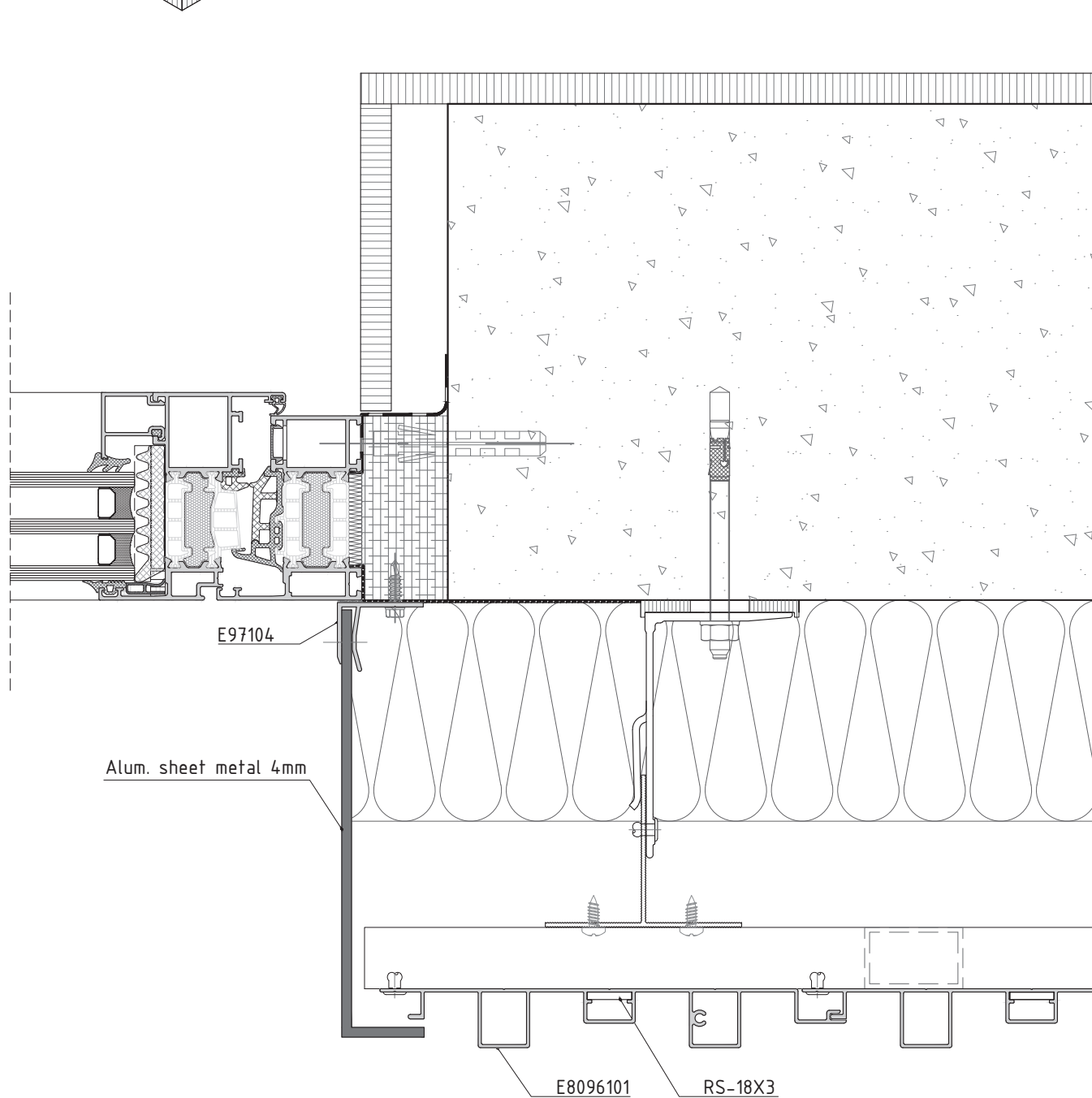
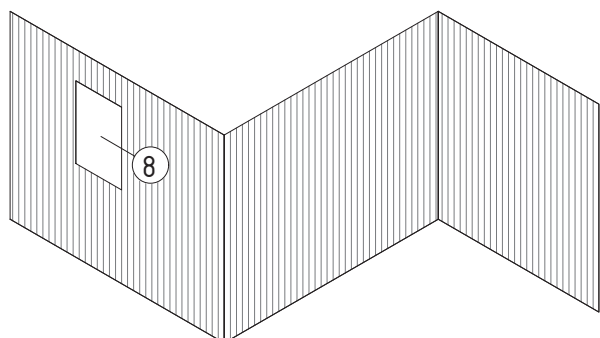


HARMONY DUAL

Cladding profiles for dual color finish



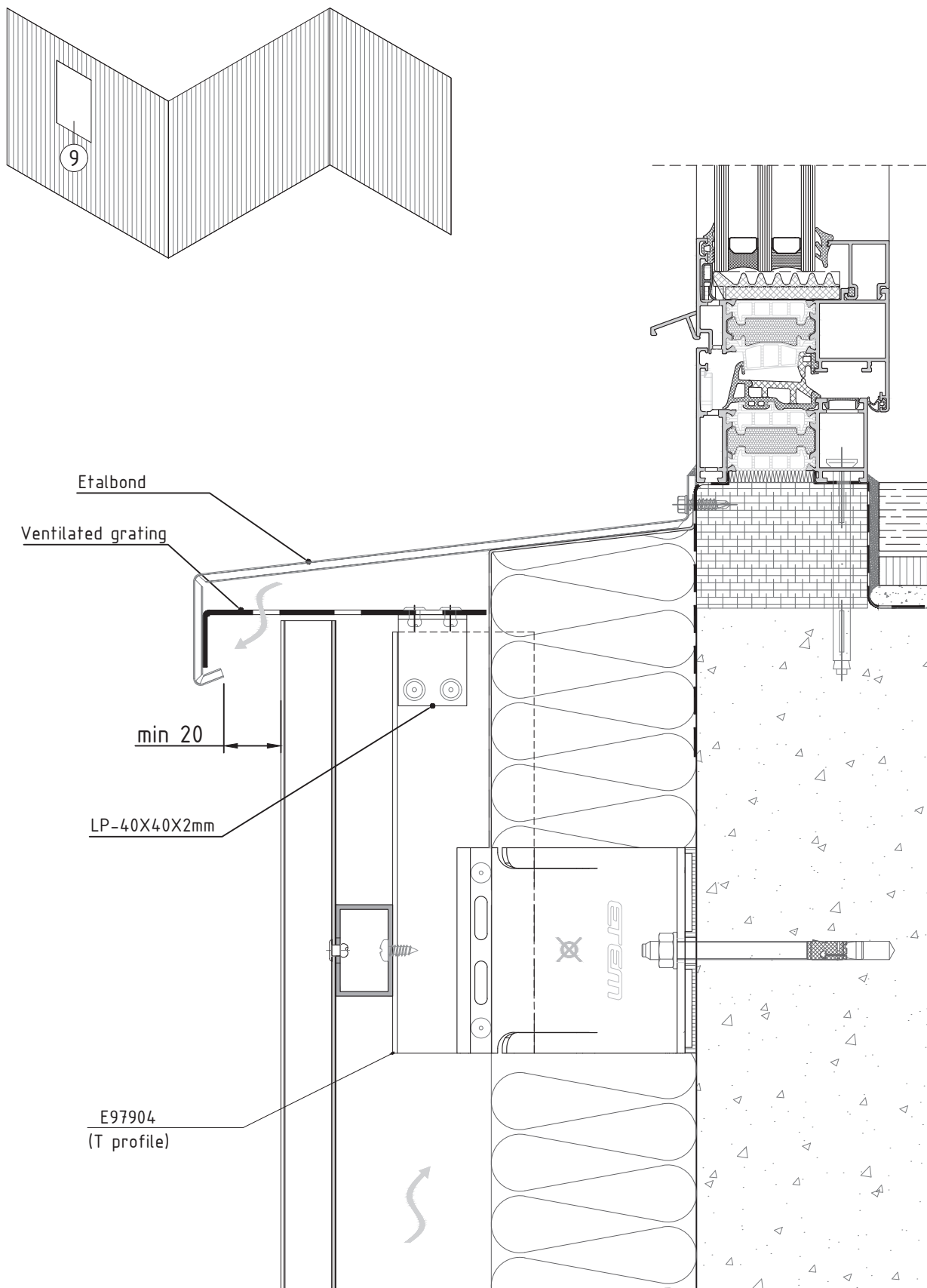
scale : 1:2.5



scale : 1:2.5

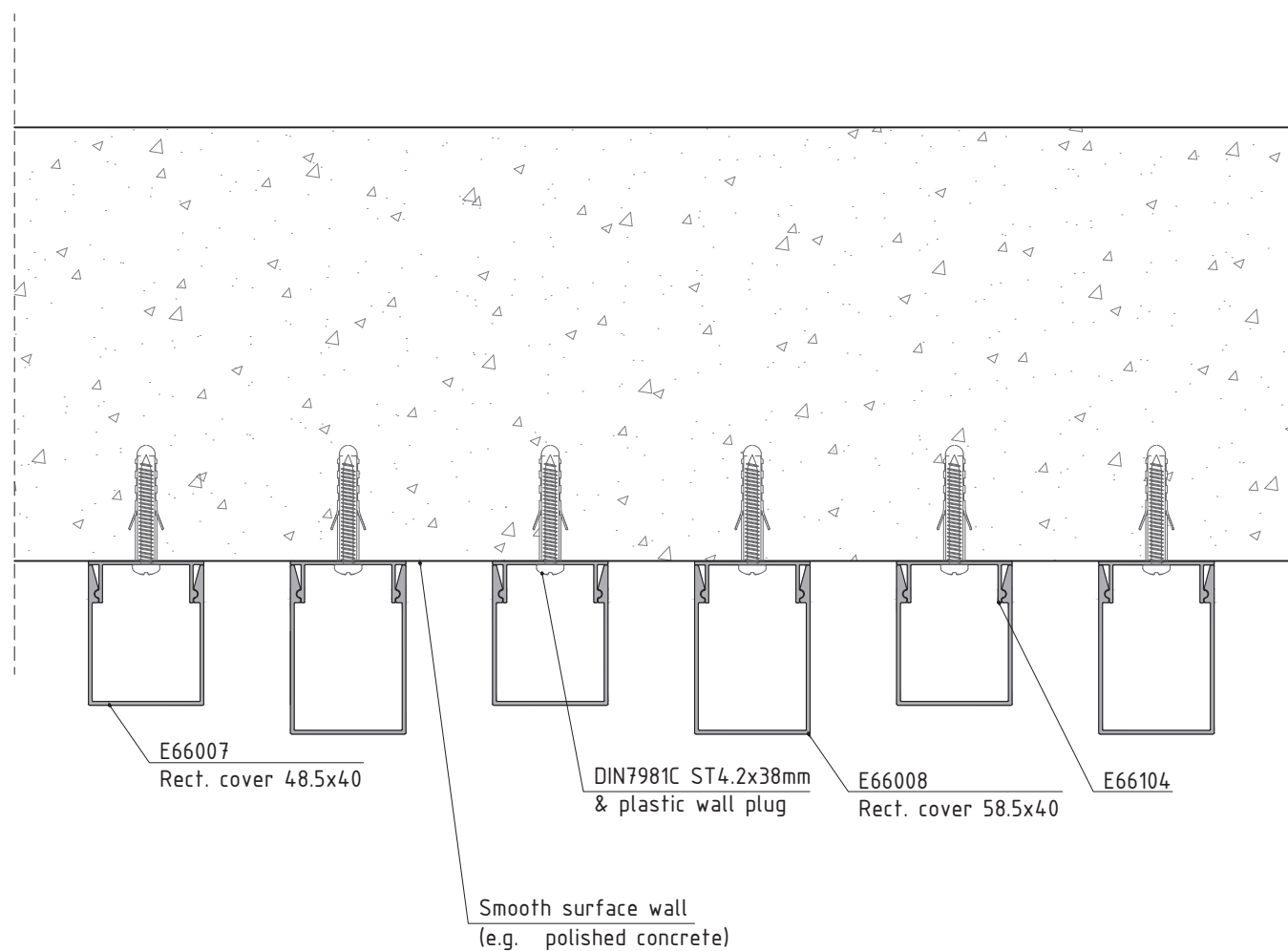
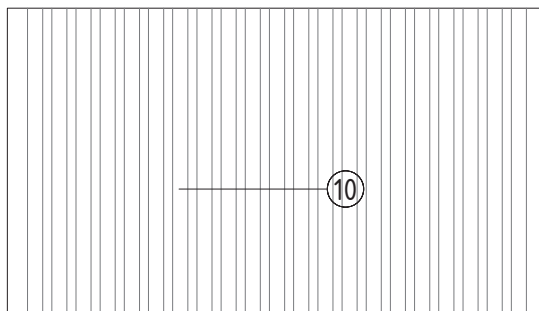
Profile RS-18X3 is applied to main profile E8096101 to ensure vertical alignment between them

EV96.S-08

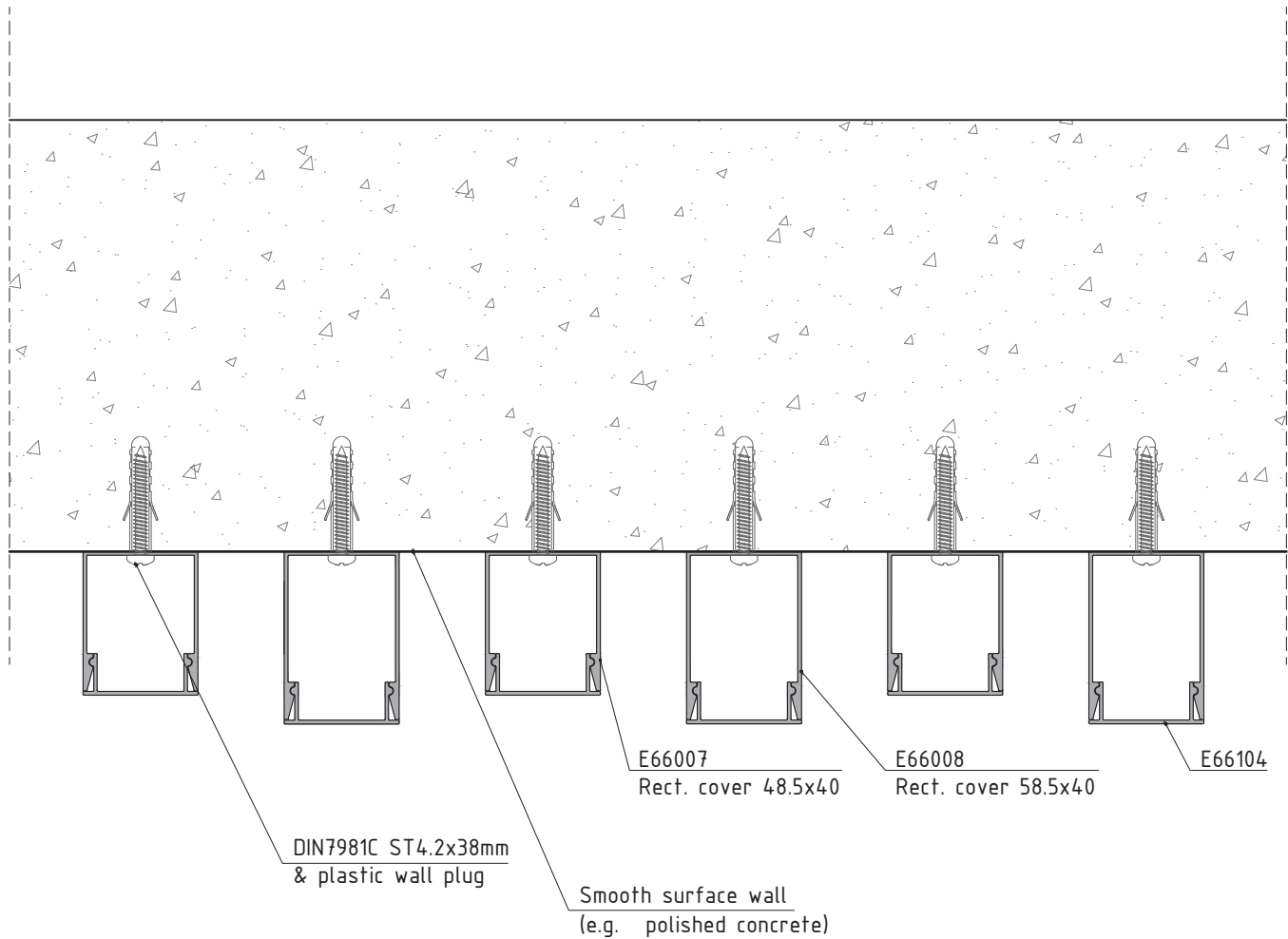
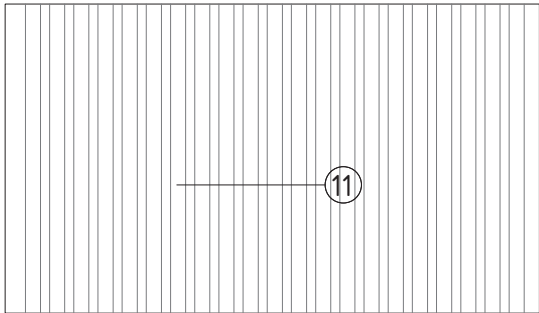


scale : 1:2.5

EV96 S-09

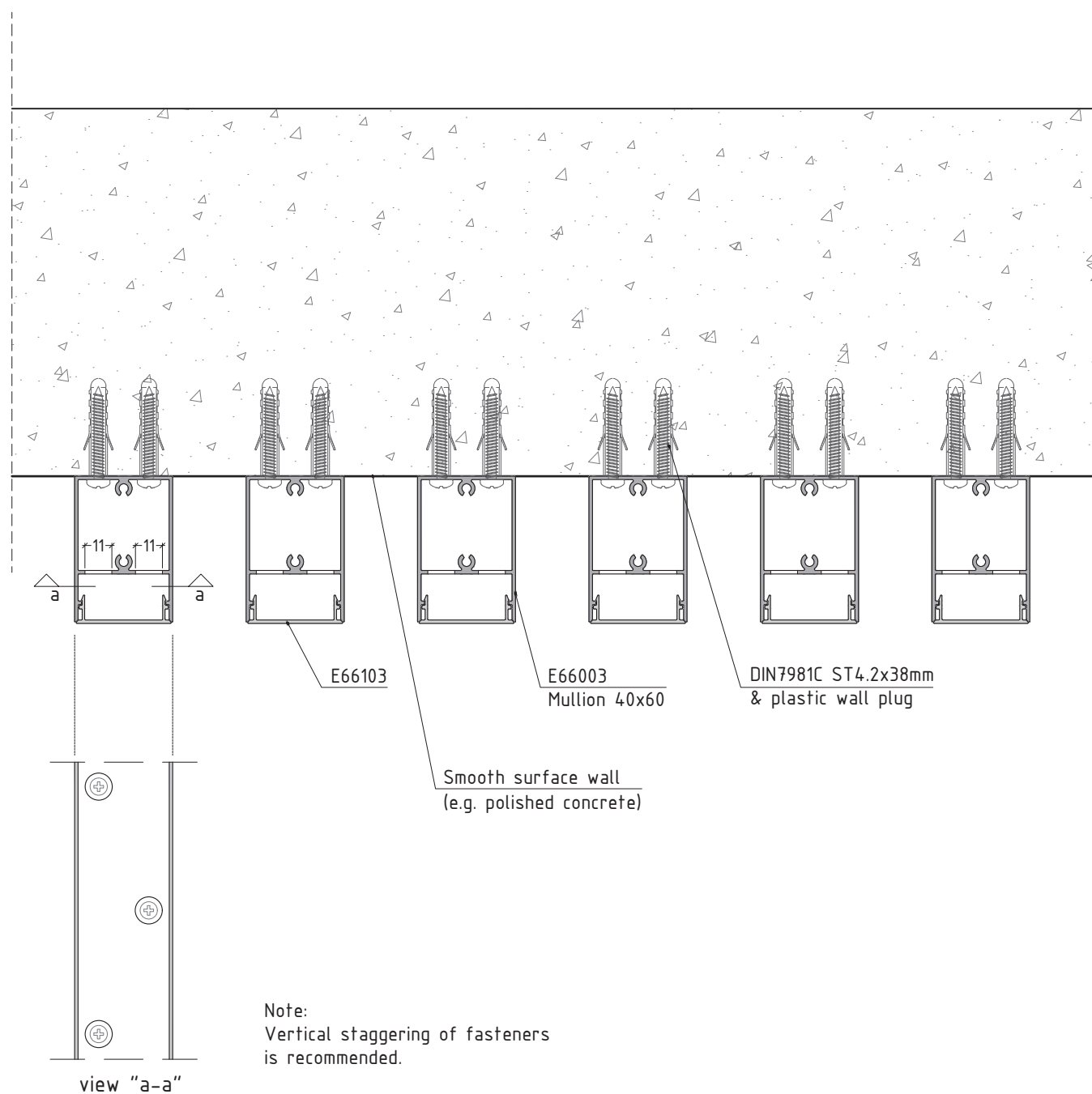
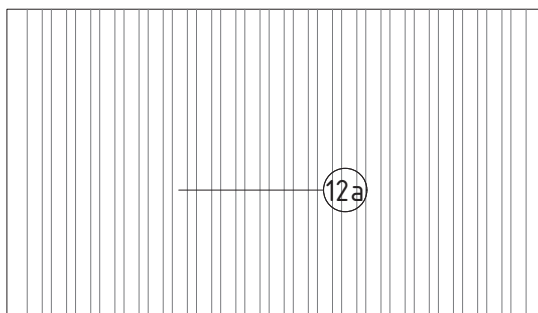


scale : 1:2.5



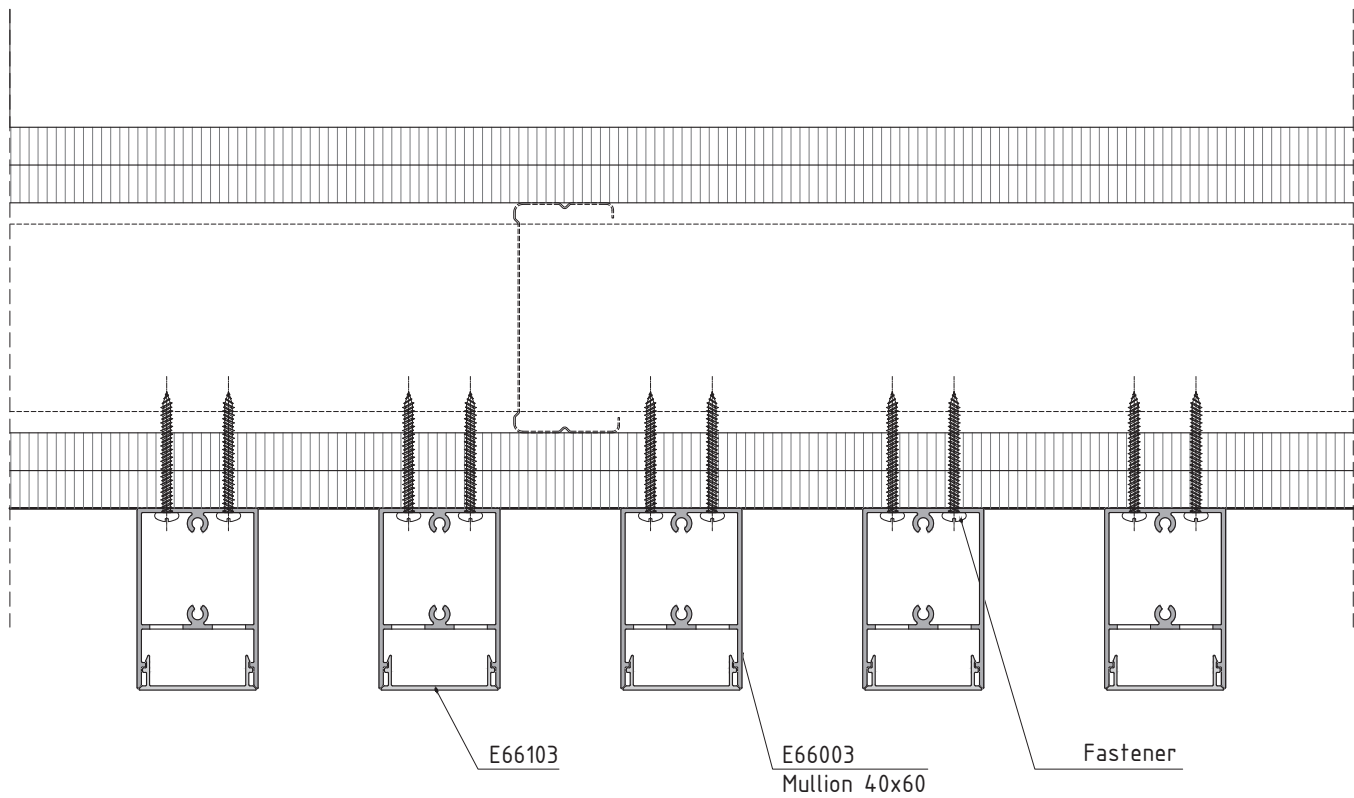
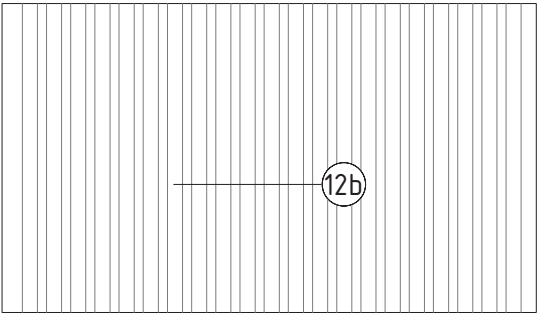
scale : 1:2.5

EV96.S-011



scale : 1:2.5

EV96 S-012a



scale : 1:2.5

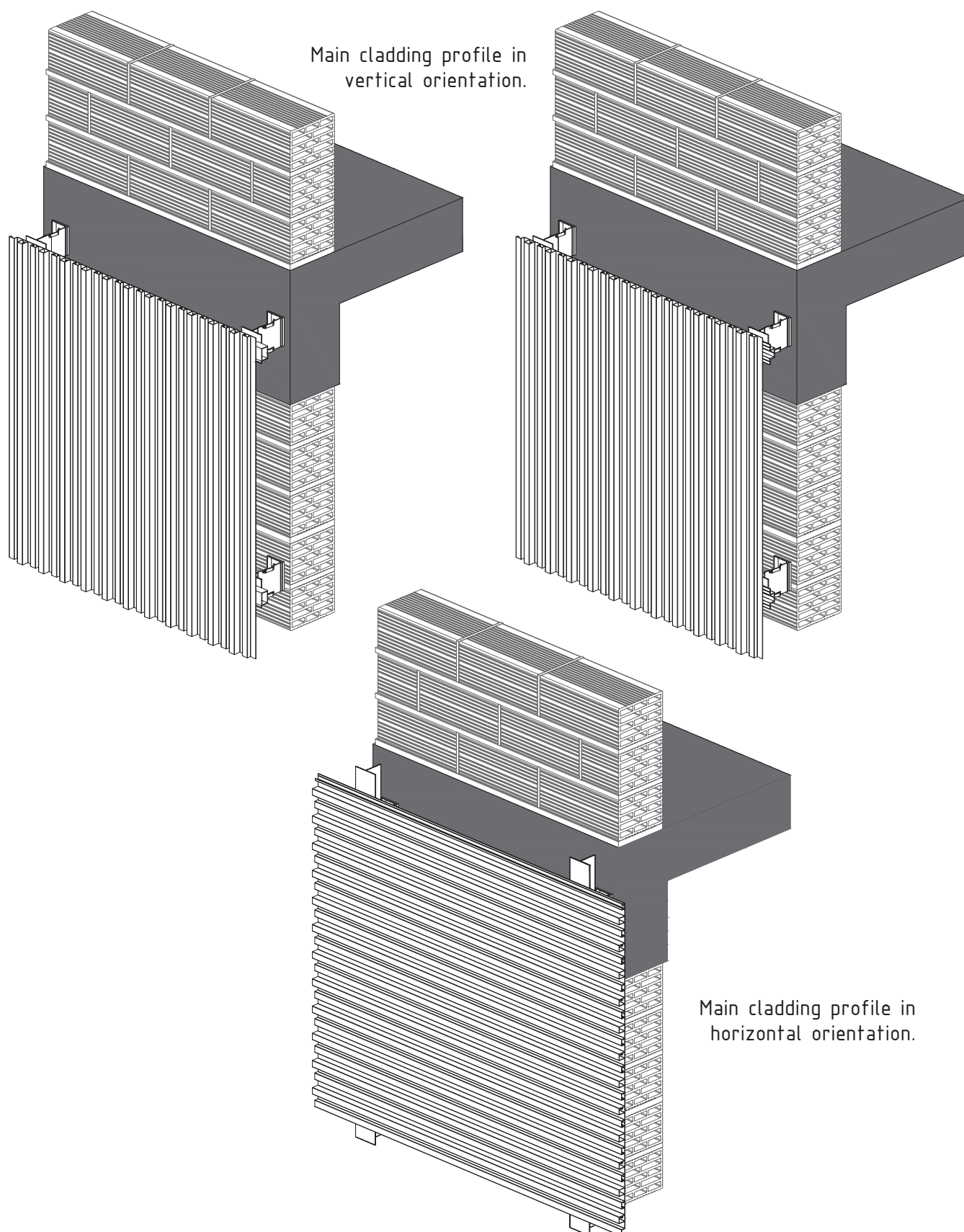
EV96.S-012b





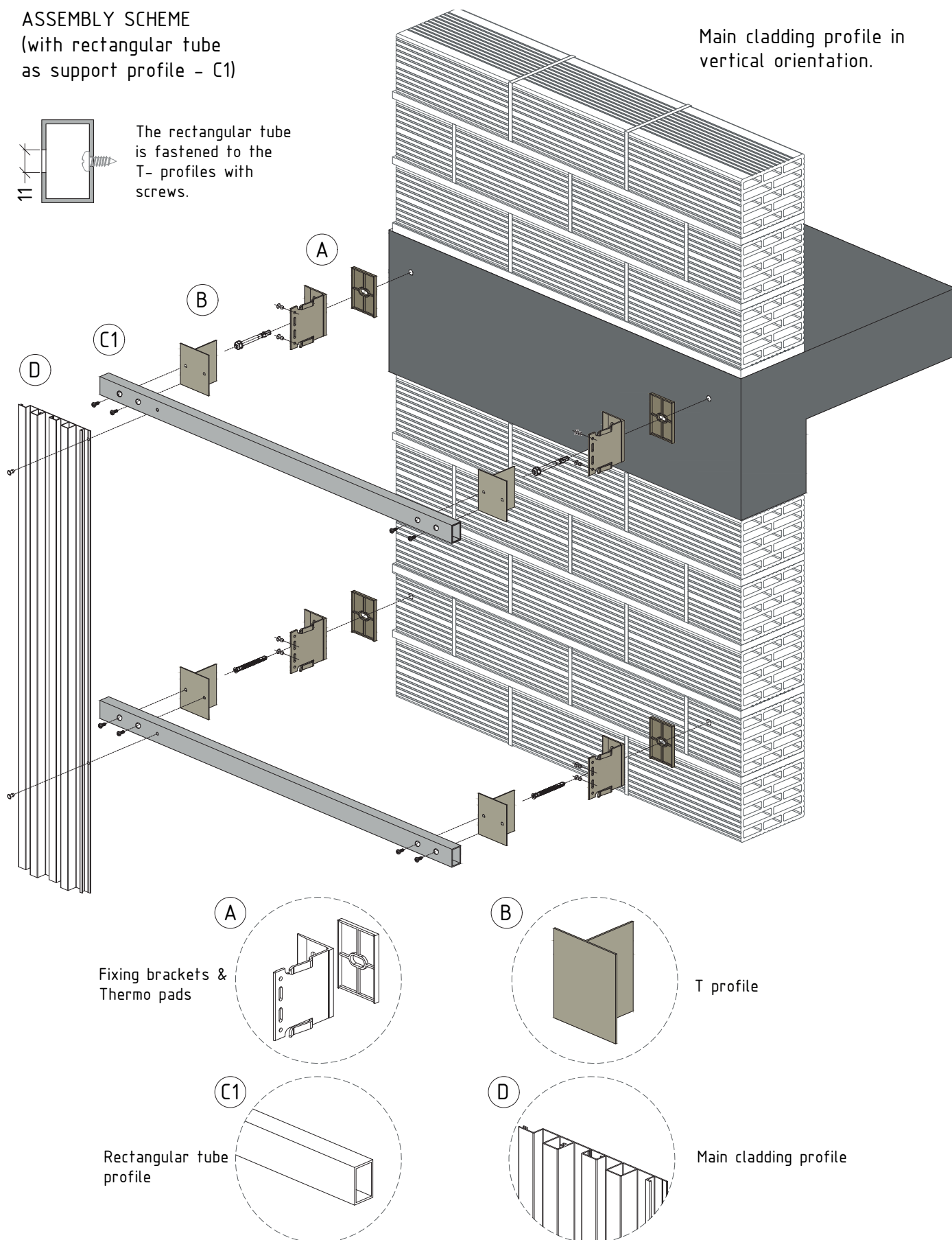
machining

ASSEMBLY SCHEMES



ASSEMBLY SCHEME (with rectangular tube as support profile - C1)

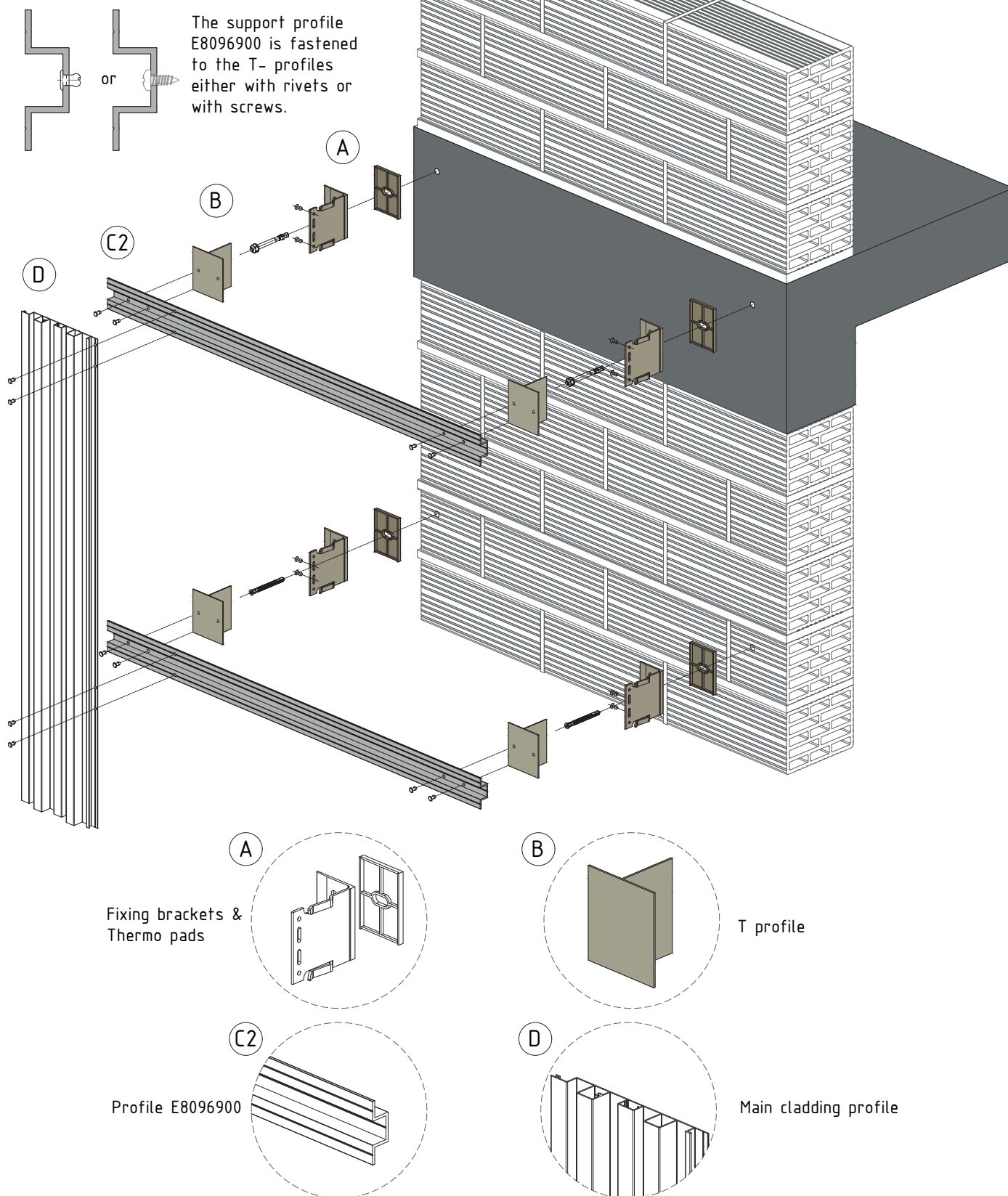
Main cladding profile in
vertical orientation.



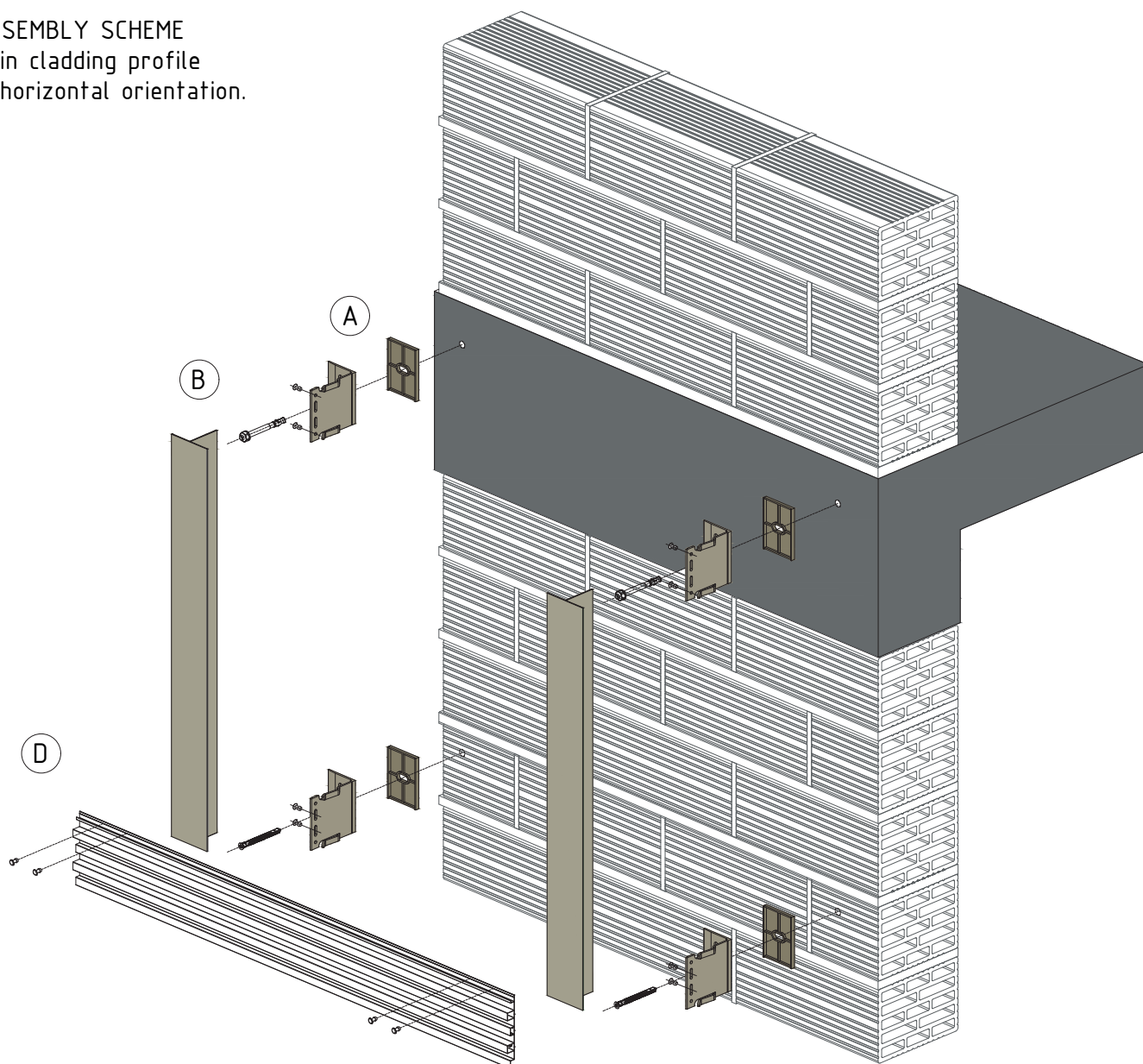
ASSEMBLY SCHEME

(with profile E8096900
as support profile - C2)

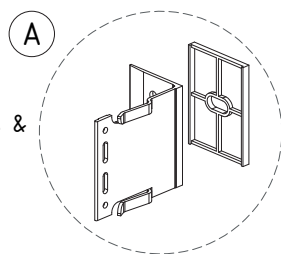
Main cladding profile in
vertical orientation.



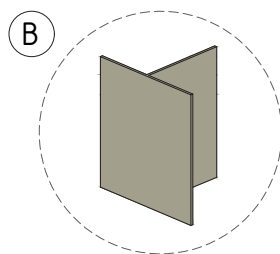
ASSEMBLY SCHEME Main cladding profile in horizontal orientation.



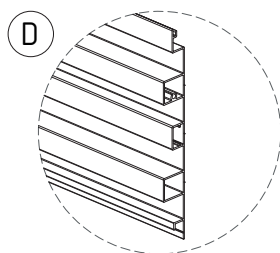
Fixing brackets &
Thermo pads



T profile



Main cladding profile



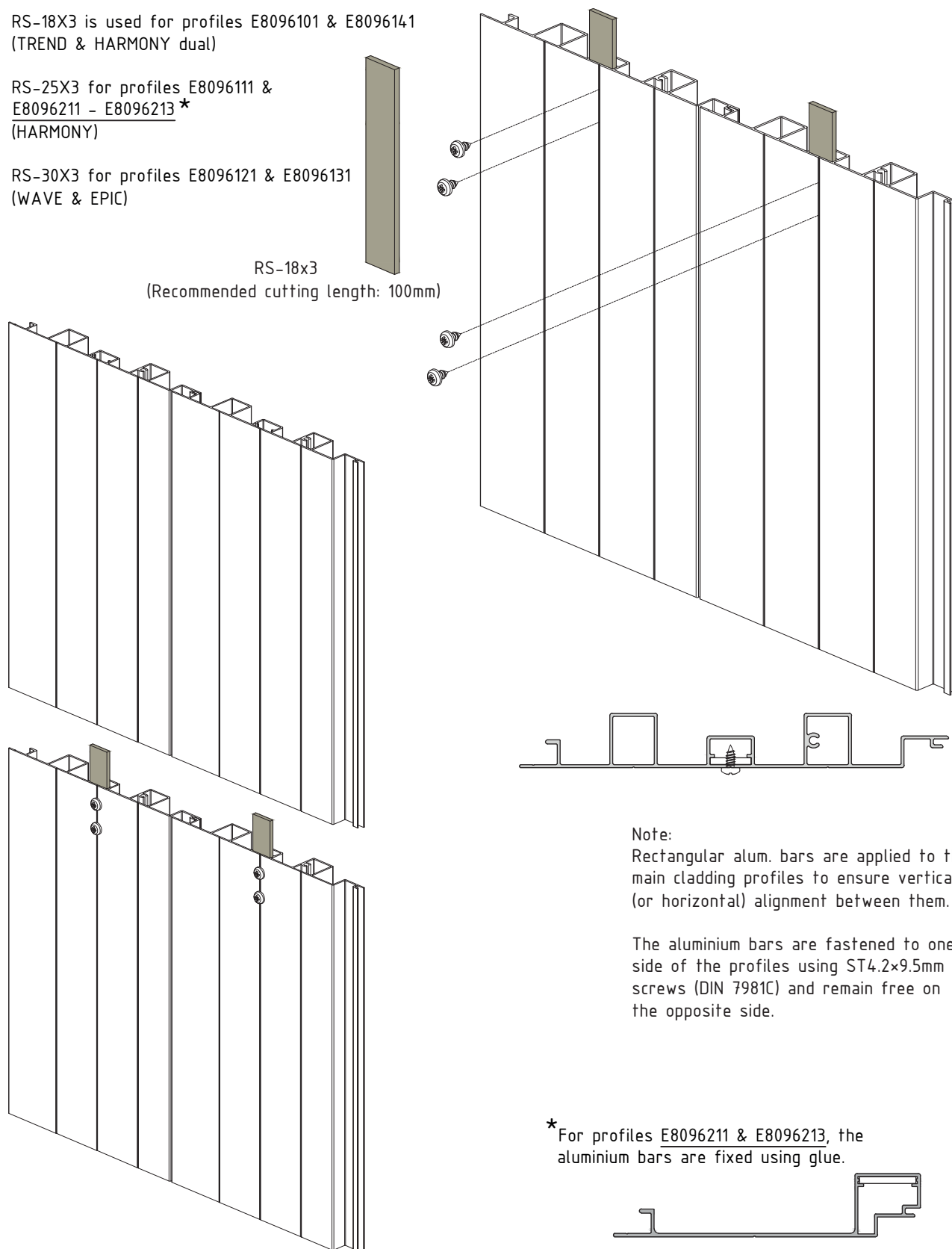
RECTANGULAR ALUMINUM BARS FOR CLADDING PROFILES ALIGNMENT

RS-18X3 is used for profiles E8096101 & E8096141
(TREND & HARMONY dual)

RS-25X3 for profiles E8096111 &
E8096211 - E8096213 *

RS-30X3 for profiles E8096121 & E8096131
(WAVE & EPIC)

RS-18x3
(Recommended cutting length: 100mm)



Note:
Rectangular alum. bars are applied to the
main cladding profiles to ensure vertical
(or horizontal) alignment between them.

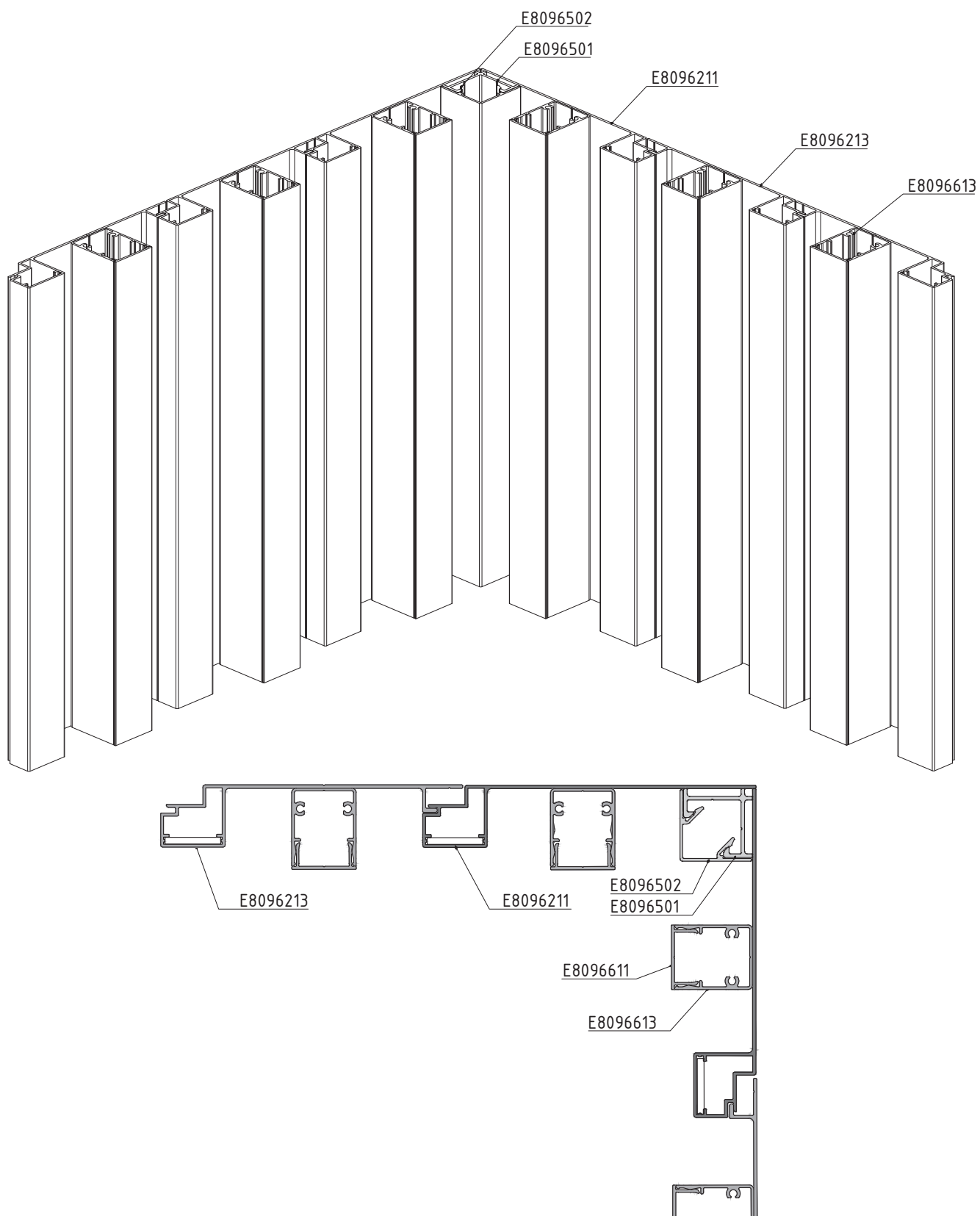
The aluminium bars are fastened to one
side of the profiles using ST4.2x9.5mm
screws (DIN 7981C) and remain free on
the opposite side.

* For profiles E8096211 & E8096213, the
aluminium bars are fixed using glue.

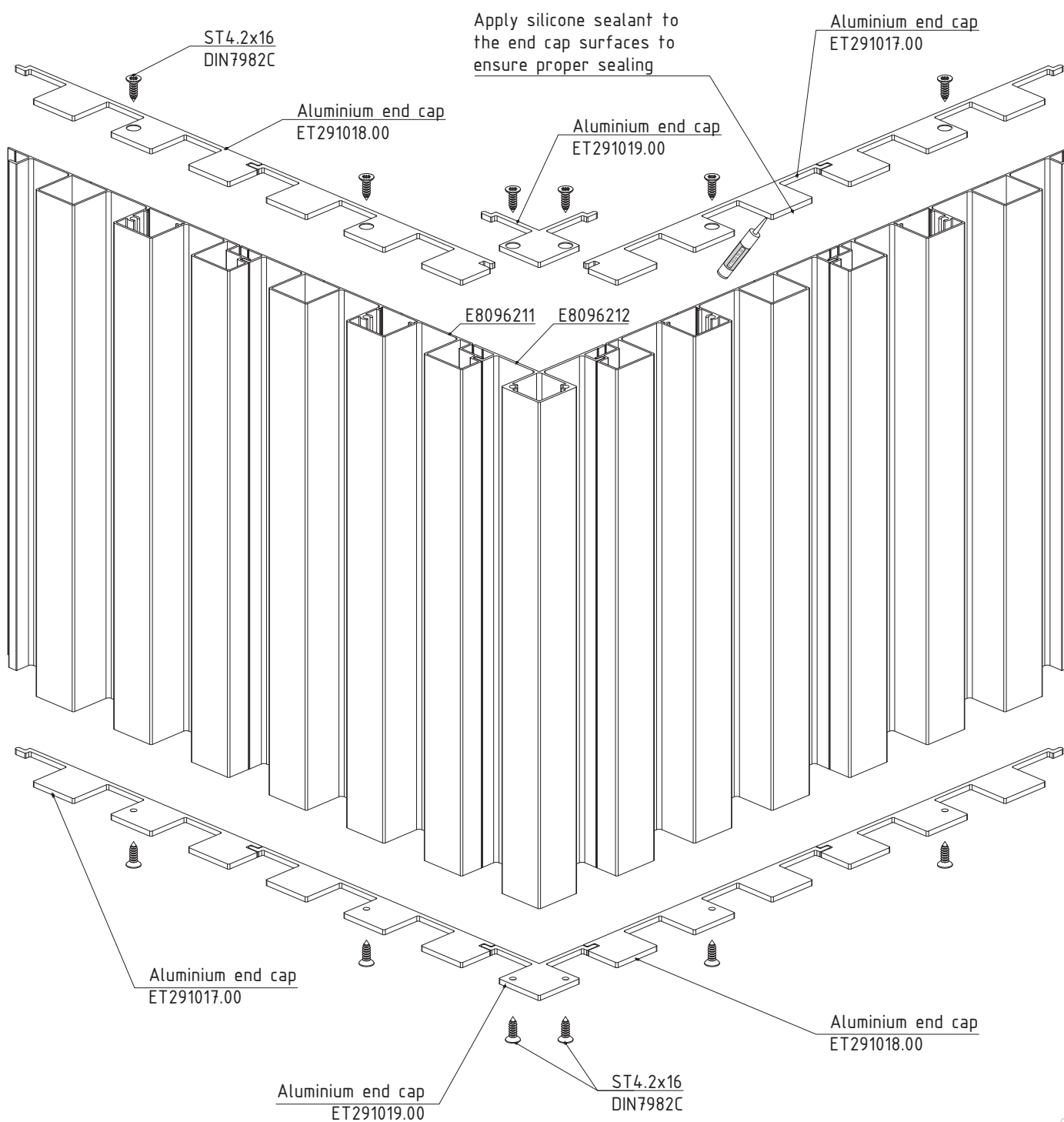


EV96.M-01

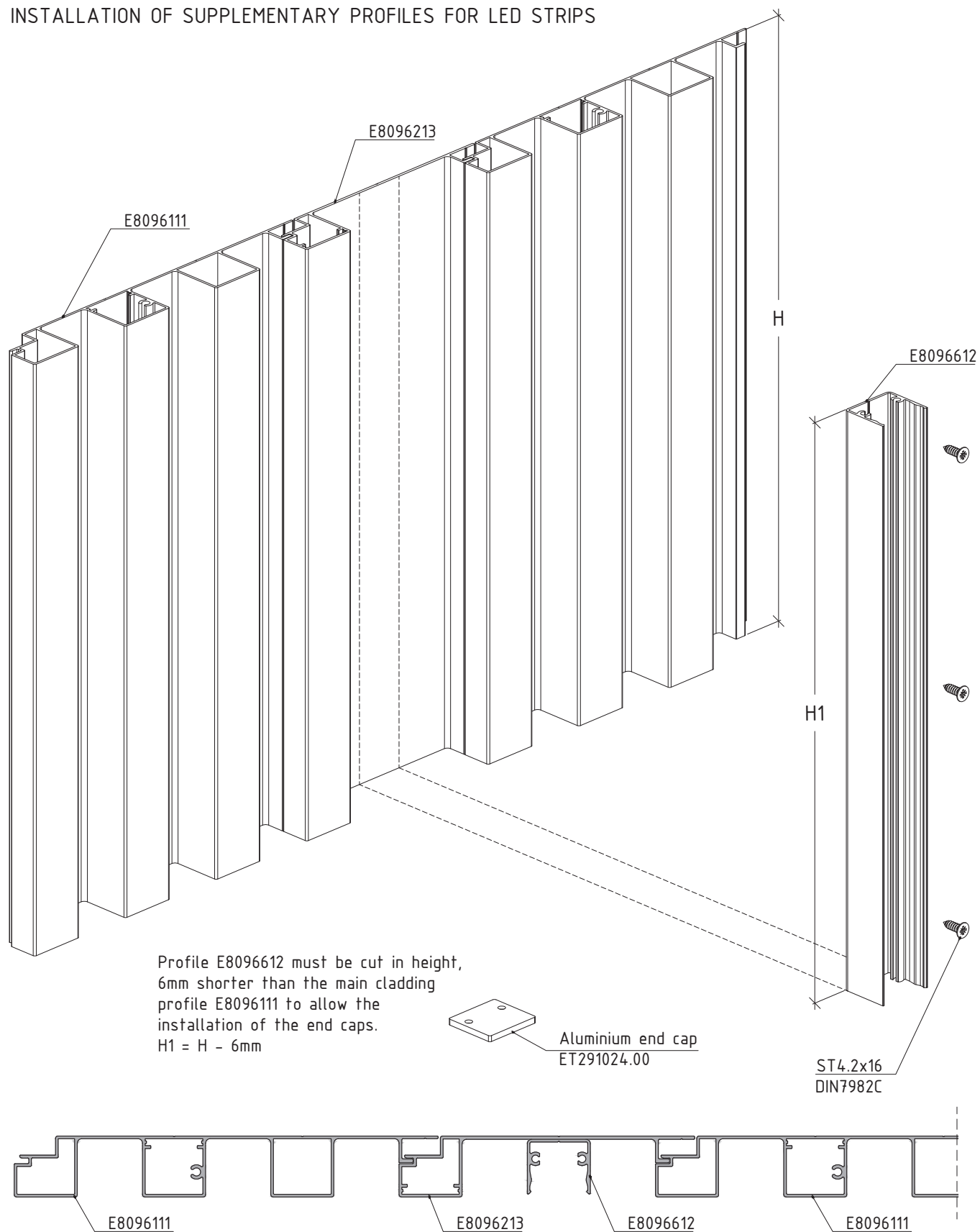
INTERNAL CORNER FOR HARMONY



INSTALLATION OF END CAPS FOR CLADDING PROFILES ENDS



INSTALLATION OF SUPPLEMENTARY PROFILES FOR LED STRIPS

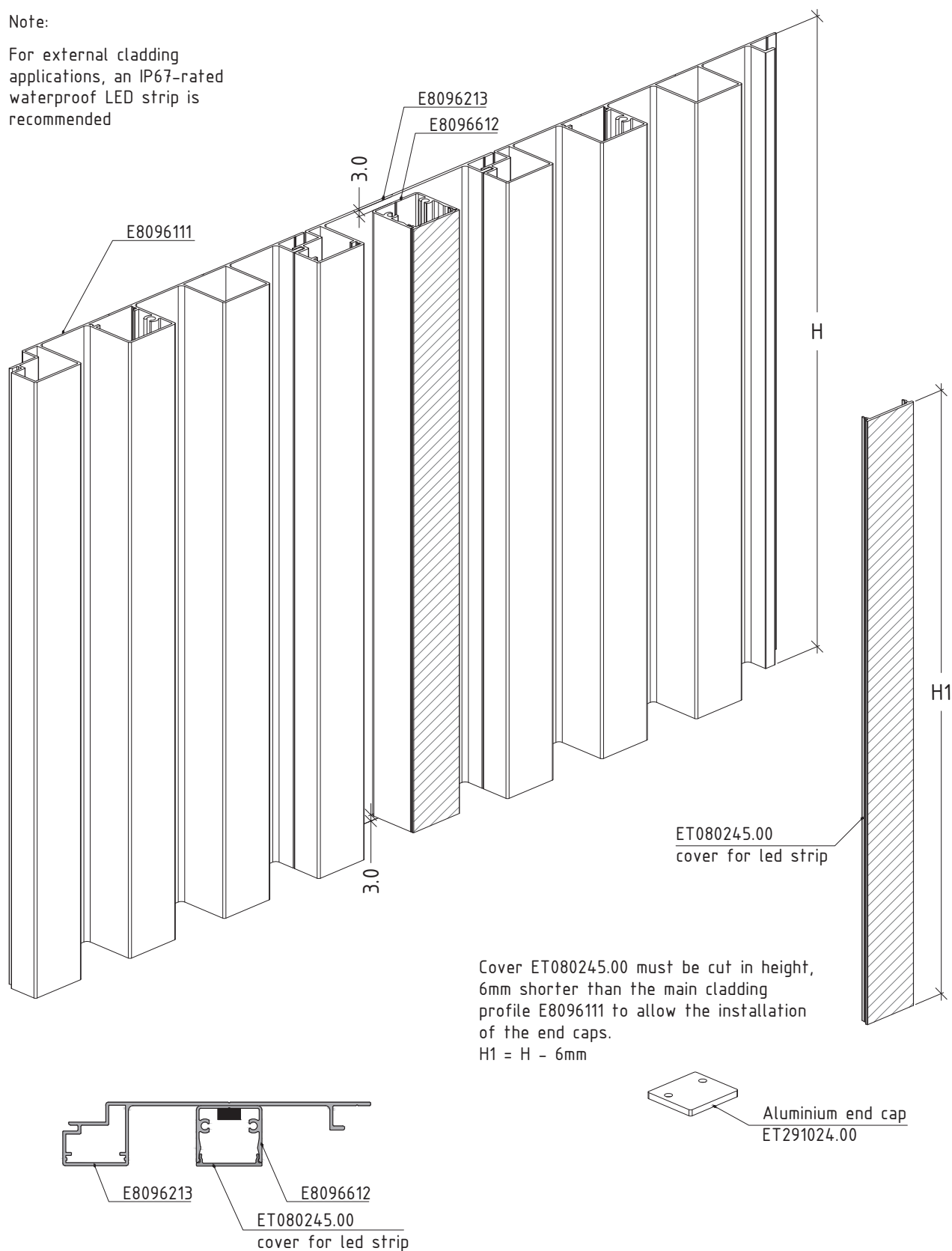


EV96.M-04

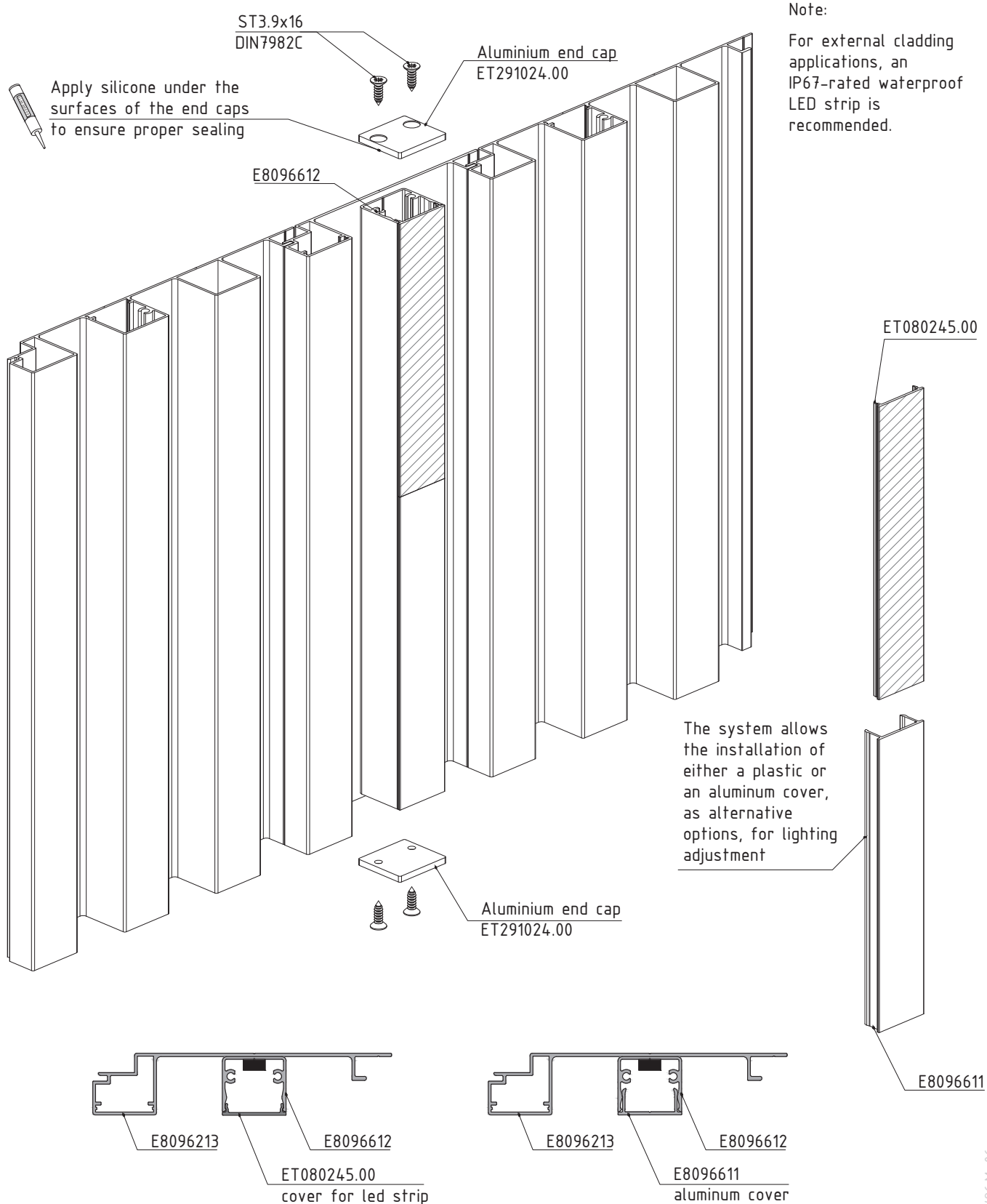
INSTALLATION OF SUPPLEMENTARY PROFILES FOR LED STRIPS

Note:

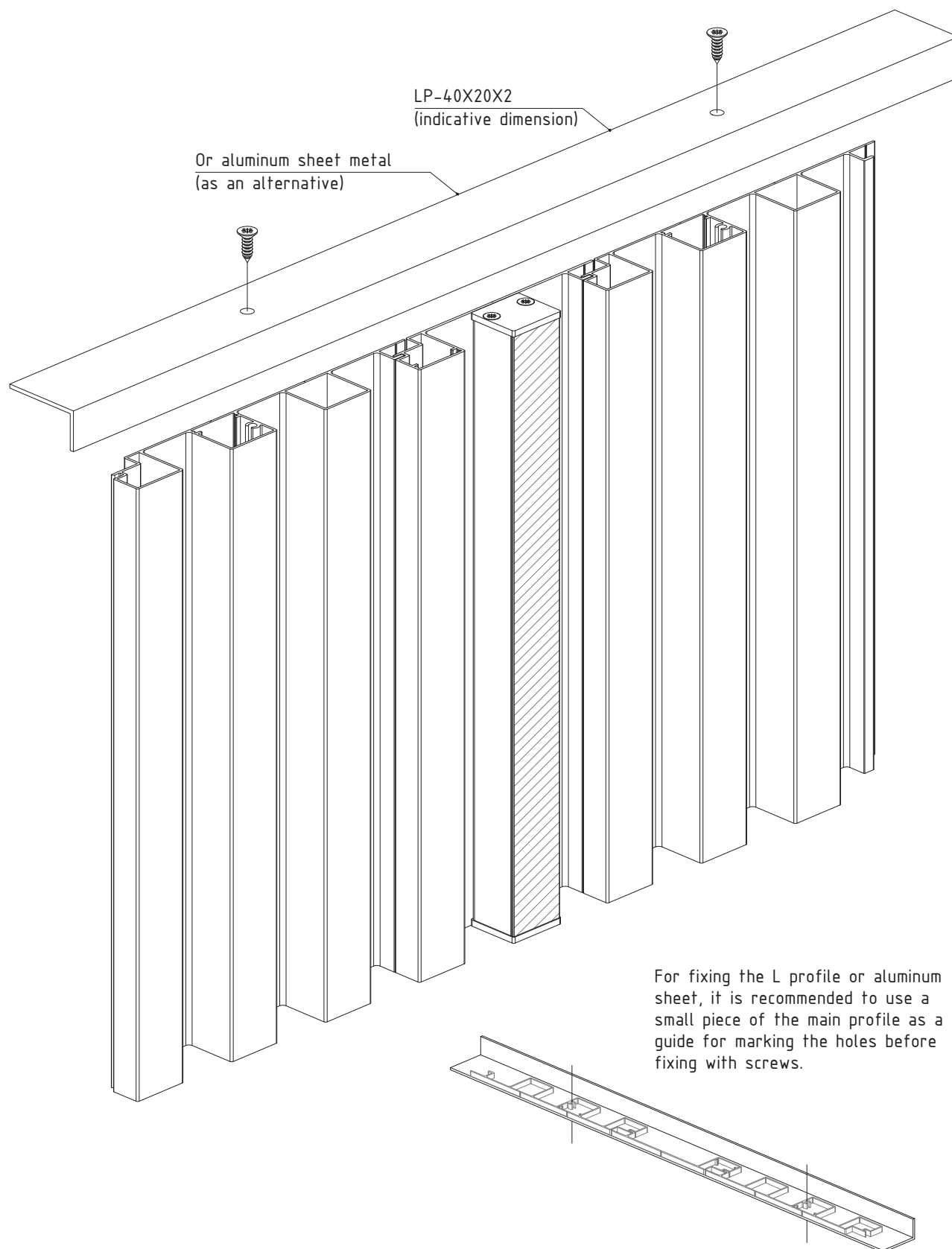
For external cladding applications, an IP67-rated waterproof LED strip is recommended



INSTALLATION OF END CAPS FOR CLADDING PROFILE E8096612

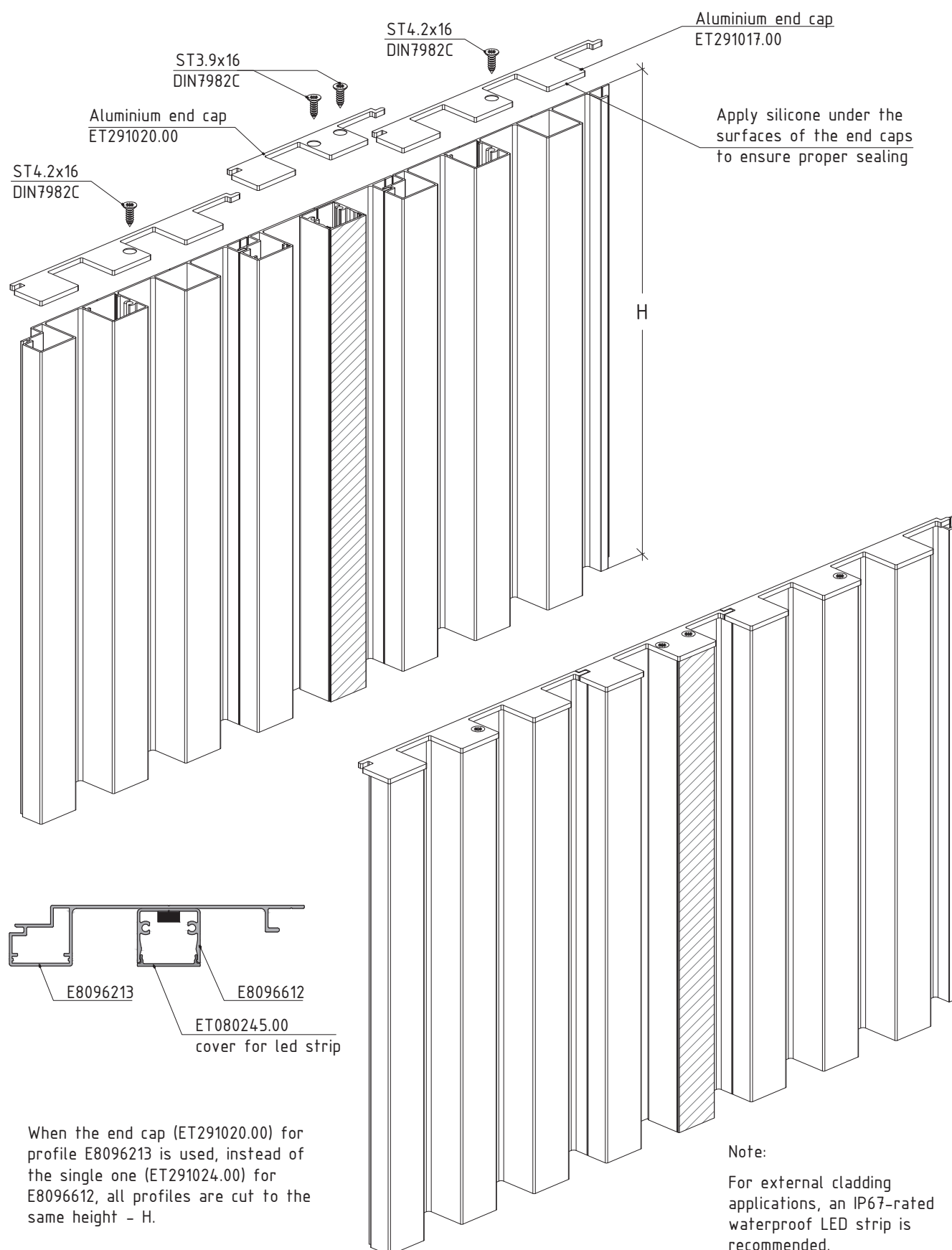


INSTALLATION OF STANDARD 'L' PROFILE OR ALUMINUM SHEET METAL FOR CLADDING PROFILES ENDS



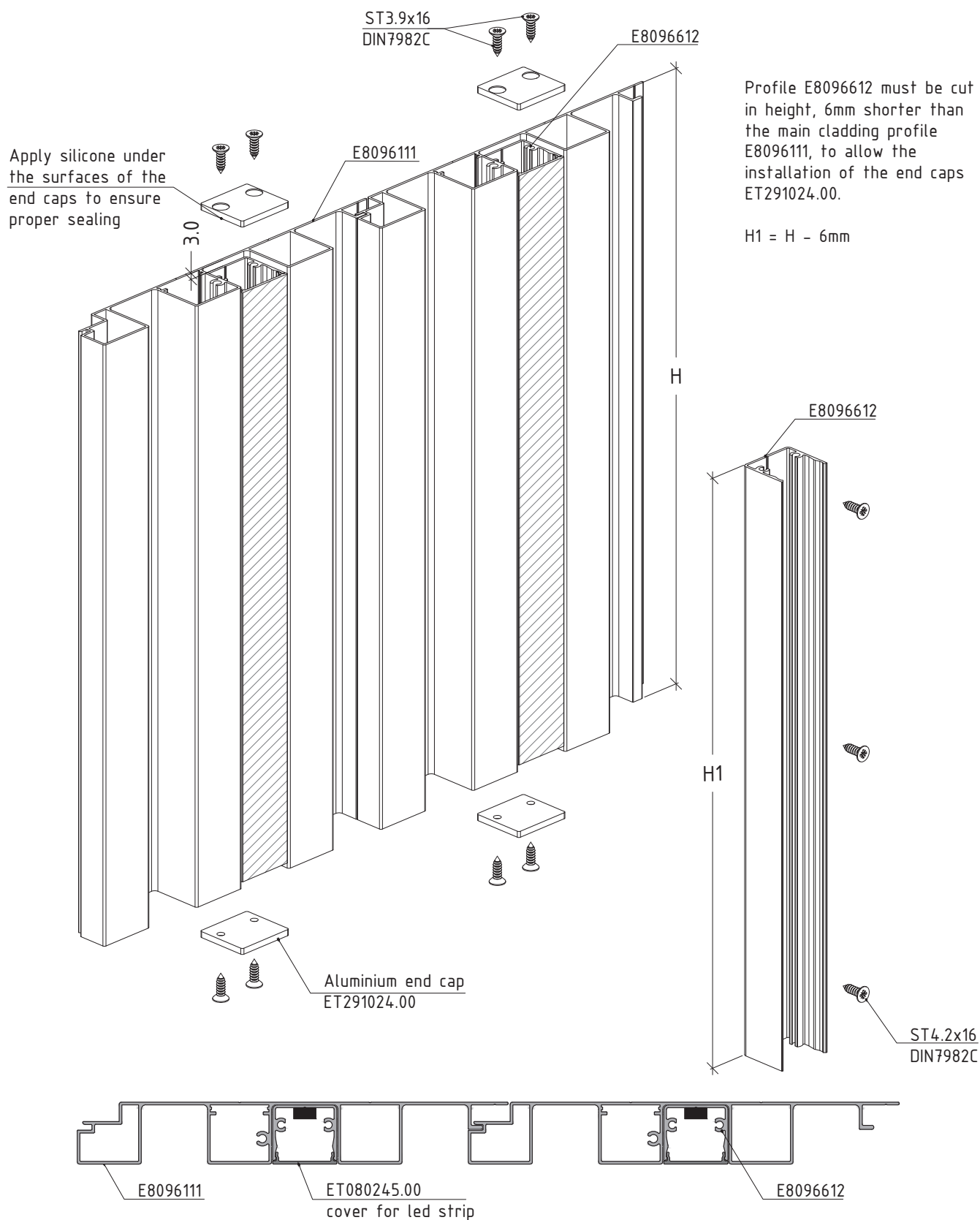
EV96.M-07

INSTALLATION OF END CAPS FOR CLADDING PROFILES ENDS

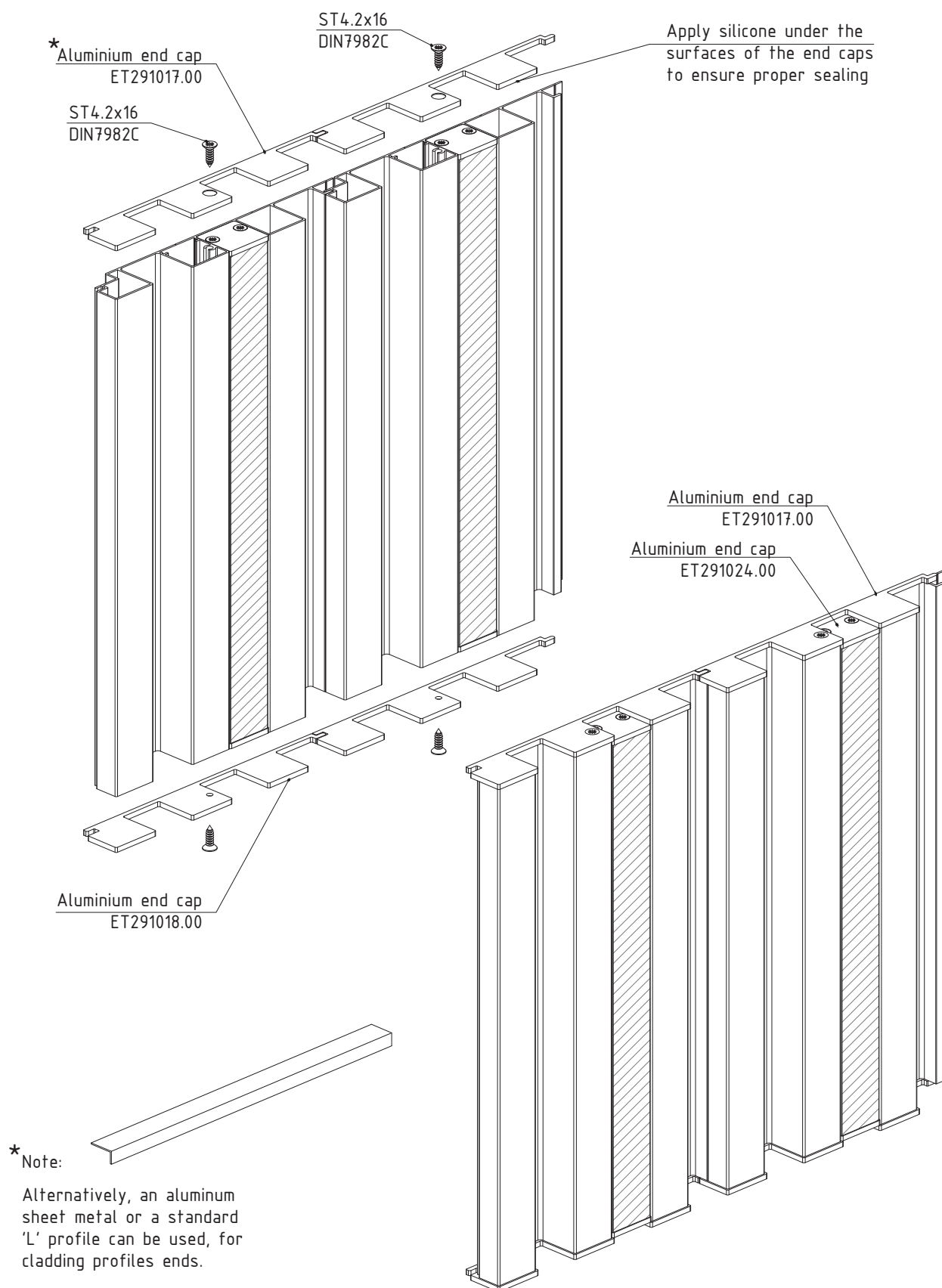


When the end cap (ET291020.00) for profile E8096213 is used, instead of the single one (ET291024.00) for E8096612, all profiles are cut to the same height - H.

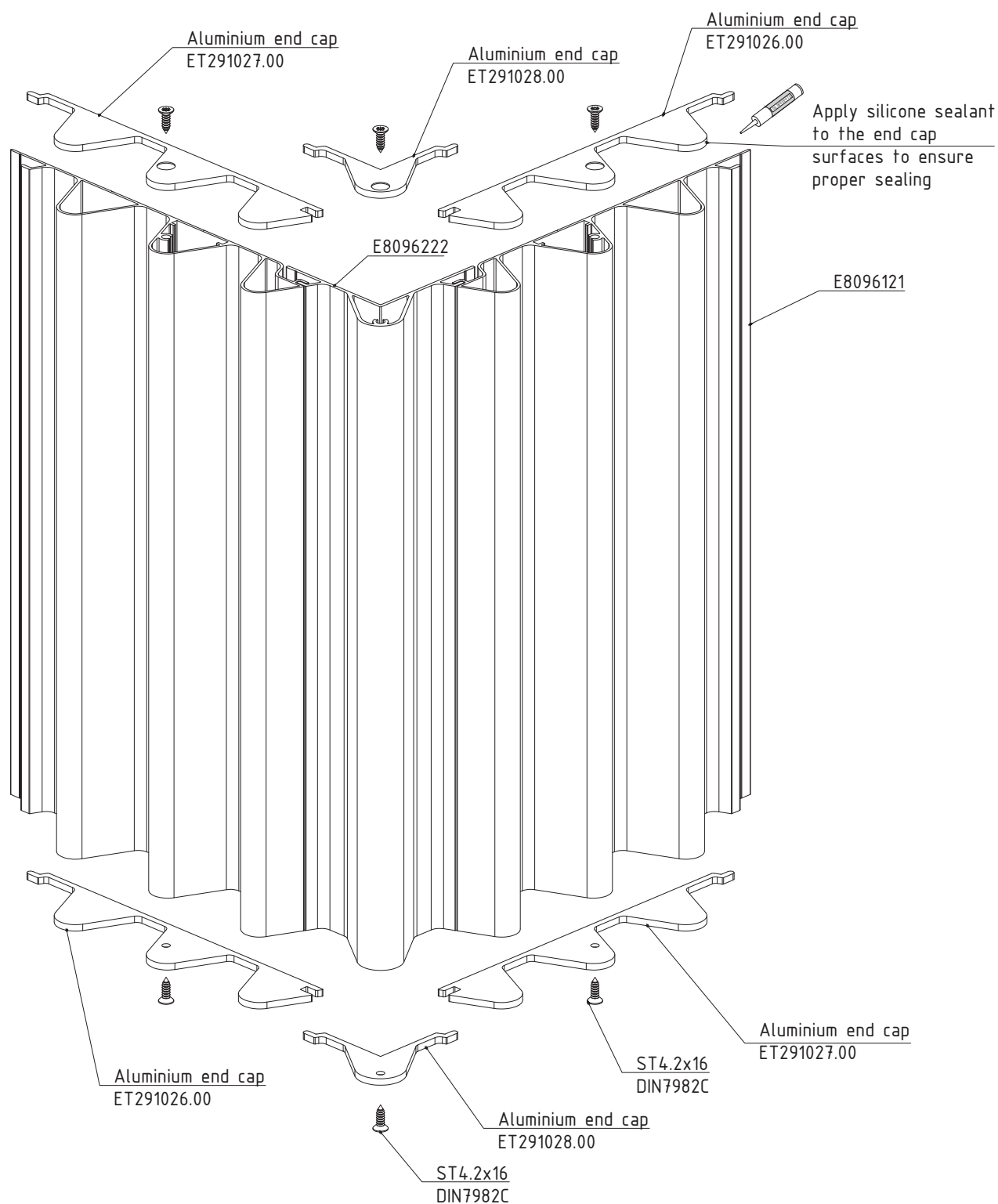
INSTALLATION OF SUPPLEMENTARY PROFILES FOR LED STRIPS WITHIN THE MAIN CLADDING PROFILE E8096111



INSTALLATION OF END CAPS FOR CLADDING PROFILES ENDS



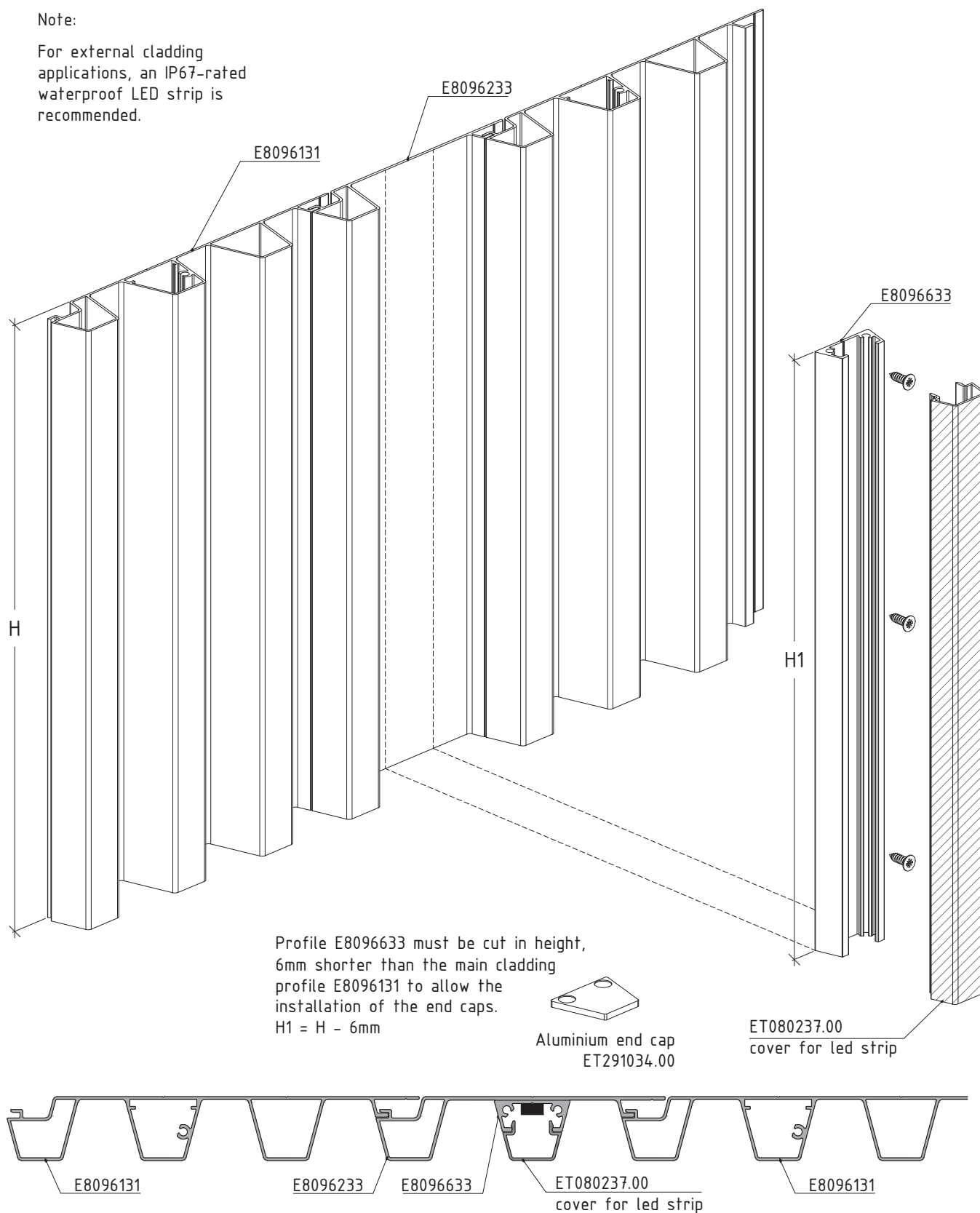
INSTALLATION OF END CAPS FOR CLADDING PROFILES ENDS



INSTALLATION OF SUPPLEMENTARY PROFILES FOR LED STRIPS

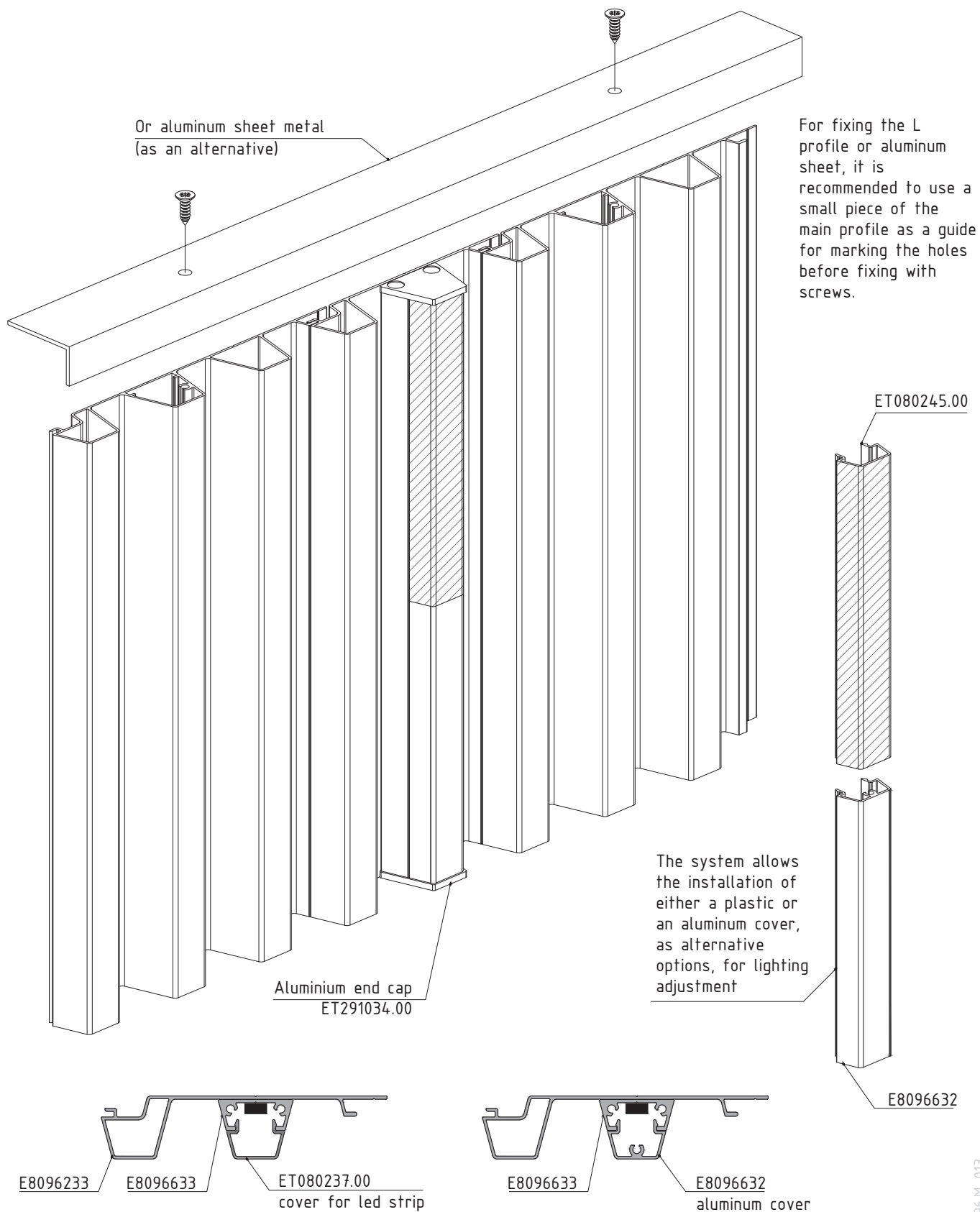
Note:

For external cladding applications, an IP67-rated waterproof LED strip is recommended.

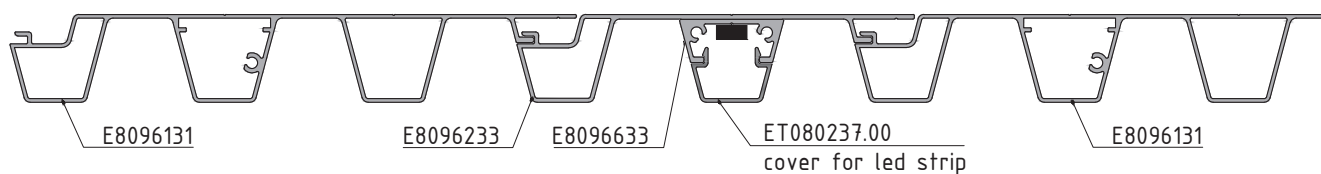
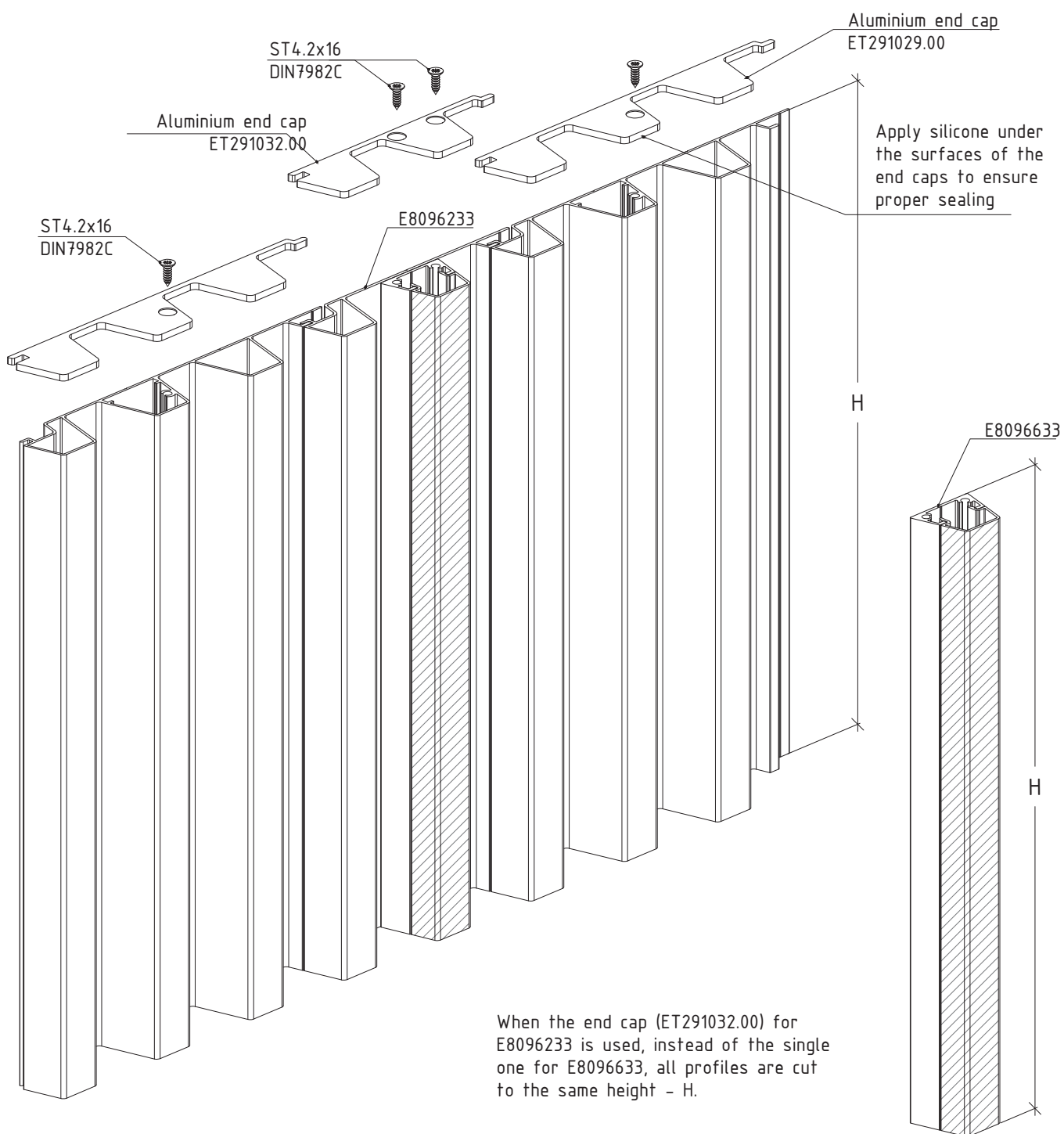


EV96.M-012

INSTALLATION OF STANDARD 'L' PROFILE OR ALUMINUM SHEET METAL FOR CLADDING PROFILES ENDS

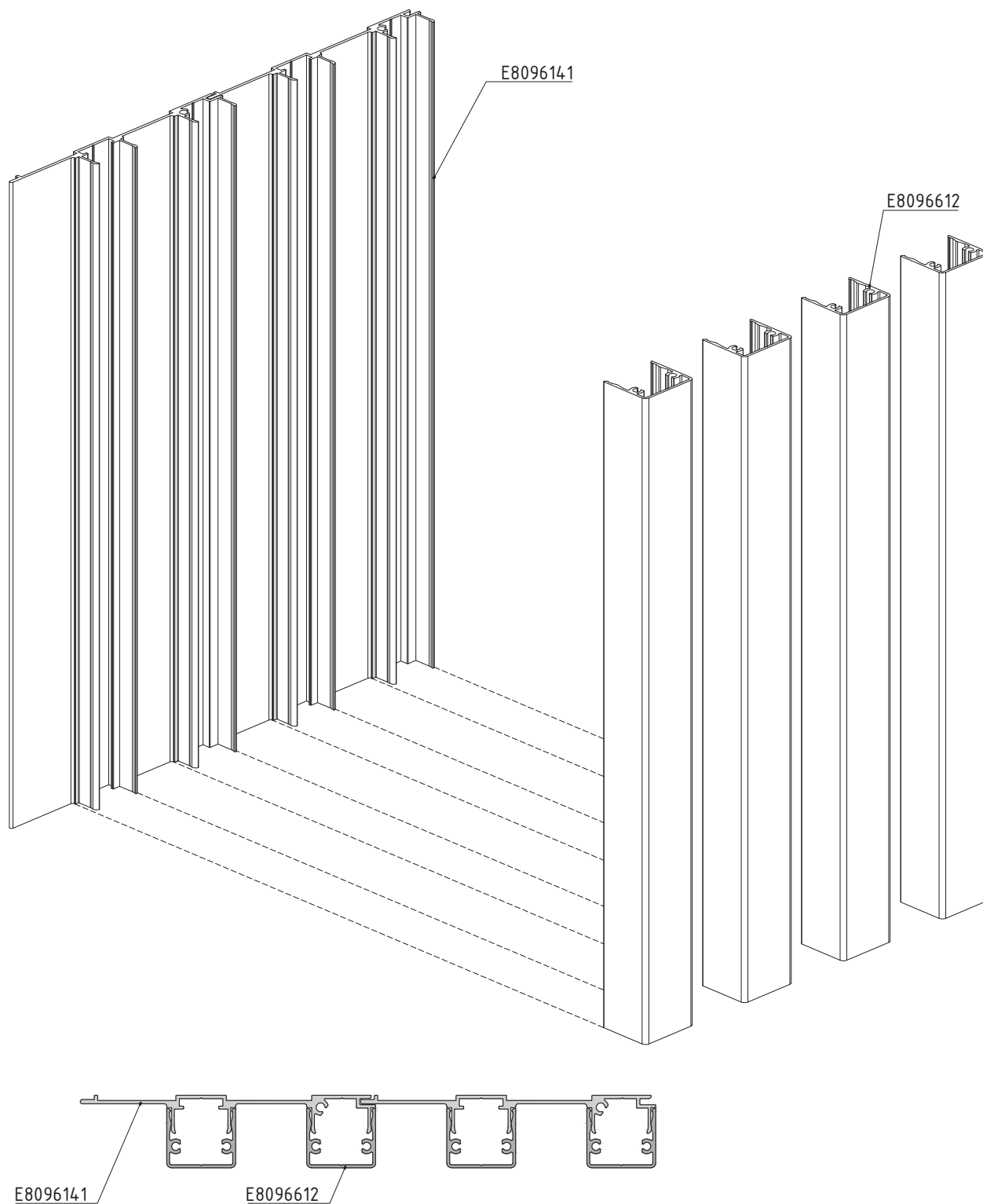


INSTALLATION OF END CAPS FOR CLADDING PROFILES ENDS



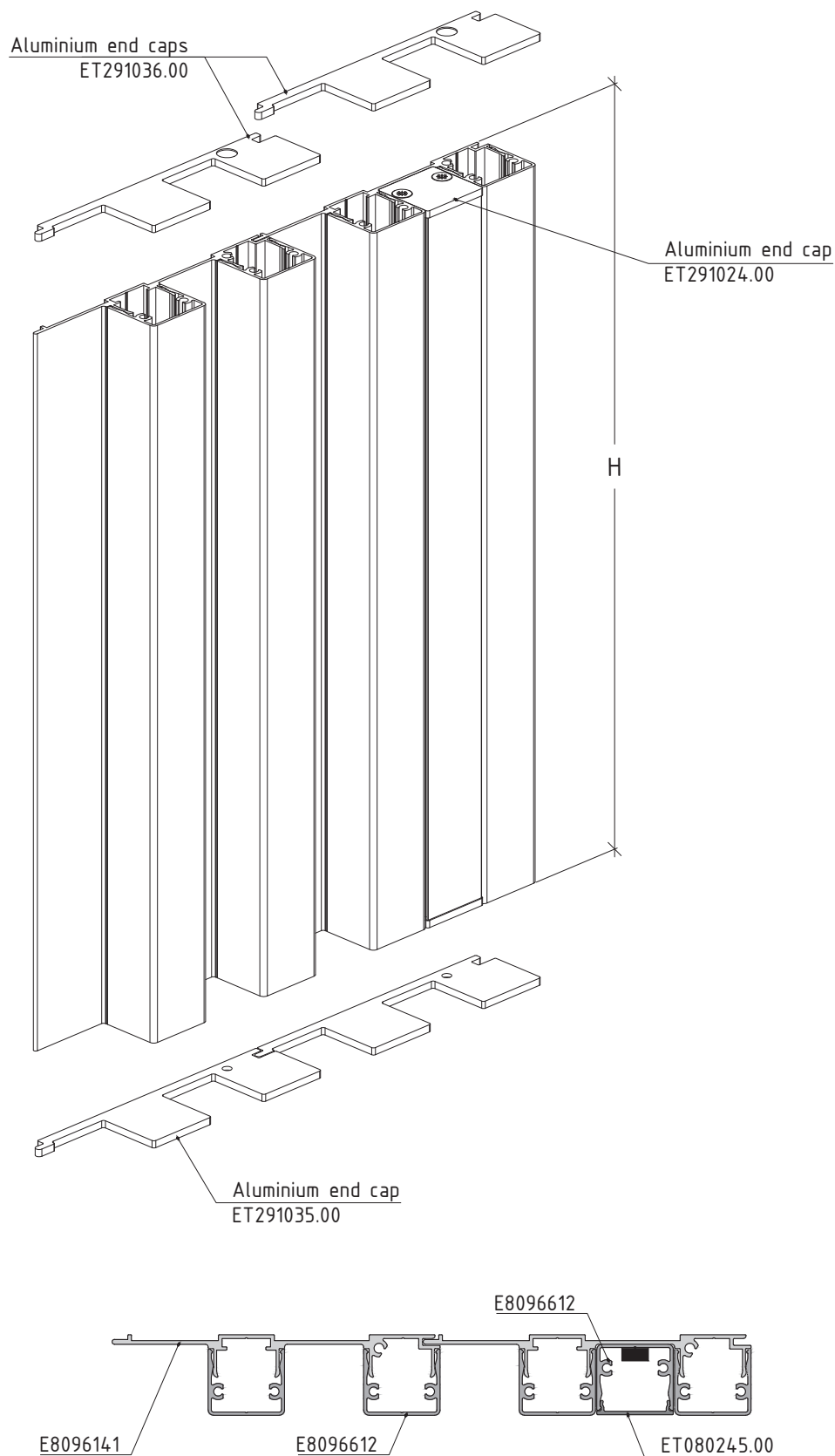
EV96.M-014

CLADDING PROFILES FOR DUAL COLOR FINISH



EV96.M-015

INSTALLATION OF SUPPLEMENTARY PROFILES FOR LED STRIPS

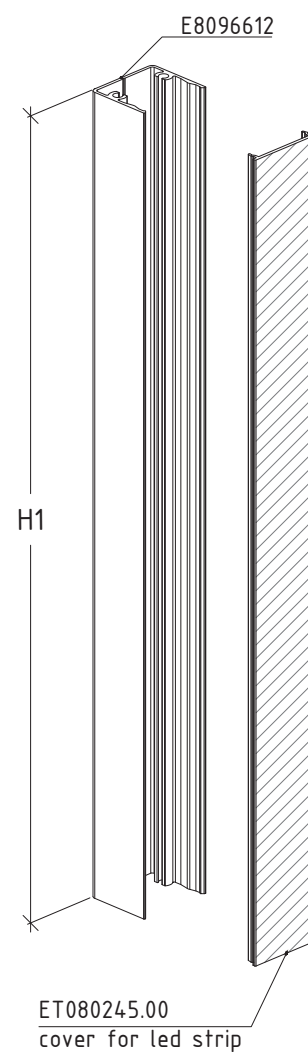


Note:

For external cladding applications, an IP67-rated waterproof LED strip is recommended.

Profile E8096612 must be cut in height, 6mm shorter than the main cladding profile E8096141, to allow the installation of the end caps (ET291024.00).

$$H1 = H - 6\text{mm}$$



EV96.M-016

CE marking

STANDARDS / REQUIREMENTS



CE MARKING

WHAT DOES THE SIGN CE MEAN?

It is an abbreviation of the French "Conformite Europeene"- i.e. European Conformity. By placing the CE marking the manufacturer declares that the product complies with the general safety requirements set out in the Construction Product Regulation 305/2011.

WHAT IS THE PURPOSE OF CE MARKING?

The CE marking represents "the European passport" of the product, its main objectives are:

CE is a declaration by the manufacturer that the product meets the essential requirements of relevant European legislation relating to health, safety and environmental protection;

CE indicates to officials in relevant ministries and departments that the product can be put on the market lawfully in the country;

CE ensures free movement of goods within the EU and the European Free Trade Association (EFTA);

CE permits the withdrawal of products that do not meet the standards by monitoring and custom authorities;
marking with the CE mark is necessary in cases where the product is distributed within the internal market.

WHAT ARE THE REQUIREMENTS FOR THE CE MARKING?

Doors, windows and gates (except those intended to be used for internal communication only, for fire/smoke compartmentation and on escape routes) are covered by System 3 of assessment and verification of constancy of performance.

According to the Construction Product Regulation 305/2011, this system sets the following duties:

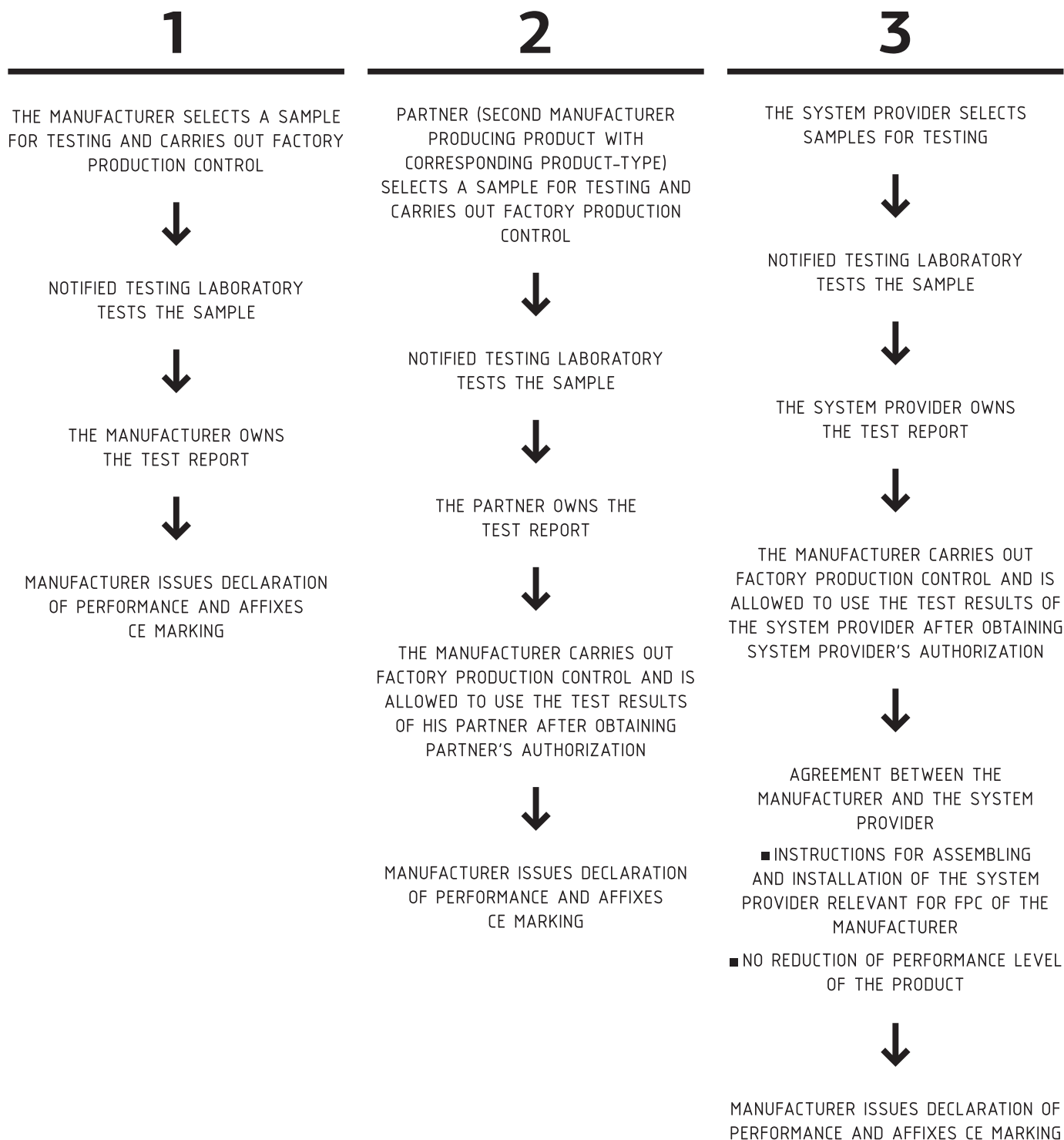
Tasks to be performed by the manufacturer	Tasks to be performed by Notified testing laboratory	Conformity assessment (the basis for CE marking, which is set by the final producer)
factory production control - FPC	Determination of the product type on the basis of type testing, type calculation, tabulated values, etc.	Declaration of performance issued by the manufacturer or his authorized representative based on test results.

LEGAL ACTS

- Construction Products Regulation (305/2011/EU - CPR) - replacing the Construction Products Directive (89/106/EEC - CPD)
- EN 14351-1:2006+A1:2010 - Windows and doors - Product standard, performance characteristics - Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics

MAIN METHODS FOR OBTAINING TEST RESULTS BY THE MANUFACTURER

According to the Construction Product Regulation 305/2011 there are three main options for the manufacturers of windows and doors to obtain test results.



STANDARDS

GENERAL

- EN 12020 (1÷2) - ALUMINIUM AND ALUMINIUM ALLOYS - EXTRUDED PRECISION PROFILES IN ALLOYS EN AW-6060 AND EN AW-6063
- EN 755 (1÷9) - ALUMINIUM AND ALUMINIUM ALLOYS - EXTRUDED ROD/BAR, TUBE AND PROFILES
- EN 573 (1÷3) - ALUMINIUM AND ALUMINIUM ALLOYS - CHEMICAL COMPOSITION AND FORM OF WROUGHT PRODUCTS
- EN 1990 EUROCODE - BASIS OF STRUCTURAL DESIGN
- EN 1991 EUROCODE 1 - ACTIONS ON STRUCTURES
- EN 1998 EUROCODE 8 - DESIGN OF STRUCTURES FOR EARTHQUAKE RESISTANCE
- EN 1999 EUROCODE 9 - DESIGN OF ALUMINIUM STRUCTURES

WINDOWS AND DOORS

1. EN 14351 - WINDOWS AND DOORS - PRODUCT STANDARD, PERFORMANCE CHARACTERISTICS
2. EN 12519 - WINDOWS AND PEDESTRIAN DOORS - TERMINOLOGY
3. EN 12207 - WINDOWS AND DOORS - AIR PERMEABILITY - CLASSIFICATION
4. EN 1026 - WINDOWS AND DOORS - AIR PERMEABILITY - TEST METHOD
5. EN 12208 - WINDOWS AND DOORS - WATERTIGHTNESS - CLASSIFICATION
6. EN 1027 - WINDOWS AND DOORS - WATERTIGHTNESS - TEST METHOD
7. EN 12210 - WINDOWS AND DOORS - RESISTANCE TO WIND LOAD - CLASSIFICATION
8. EN 12211 - WINDOWS AND DOORS - RESISTANCE TO WIND LOAD - TEST METHOD
9. EN 1191 - WINDOWS AND DOORS - RESISTANCE TO REPEATED OPENING AND CLOSING - TEST METHOD
10. EN ISO 10077 (1÷2) - THERMAL PERFORMANCE OF WINDOWS, DOORS AND SHUTTERS - CALCULATION OF THERMAL TRANSMITTANCE
11. EN 12412-2 - THERMAL PERFORMANCE OF WINDOWS, DOORS AND SHUTTERS - DETERMINATION OF THERMAL TRANSMITTANCE BY HOT BOX METHOD - PART 2: FRAMES
12. EN 13115 - WINDOWS - CLASSIFICATION OF MECHANICAL PROPERTIES - RACKING, TORSION AND OPERATING FORCES
13. EN 1627 - WINDOWS, DOORS, SHUTTERS - BURGLAR RESISTANCE - REQUIREMENTS AND CLASSIFICATION
14. EN 1628 - WINDOWS, DOORS, SHUTTERS - BURGLAR RESISTANCE - TEST METHOD FOR THE DETERMINATION OF RESISTANCE UNDER STATIC LOADING
15. EN 1629 - WINDOWS, DOORS, SHUTTERS - BURGLAR RESISTANCE - TEST METHOD FOR THE DETERMINATION OF RESISTANCE UNDER DYNAMIC LOADING
16. EN 1630 - WINDOWS, DOORS, SHUTTERS - BURGLAR RESISTANCE - TEST METHOD FOR THE DETERMINATION OF RESISTANCE TO MANUAL BURGLARY ATTEMPTS
17. EN ISO 717-1 - ACOUSTICS - RATING OF SOUND INSULATION IN BUILDINGS AND OF BUILDING ELEMENTS - PART 1: AIRBORNE SOUND INSULATION
18. EN ISO 10140 - ACOUSTICS - LABORATORY MEASUREMENT OF SOUND INSULATION OF BUILDING ELEMENTS

HATCHES

Hatches for different materials



EPDM



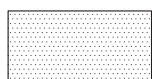
butyl seal



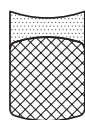
PVC



membrane



gypsum board



silicone seal

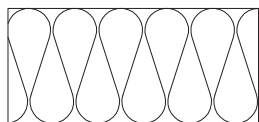
backer rod



silicone seal



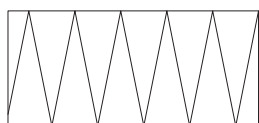
PVC spacer



Insulation soft



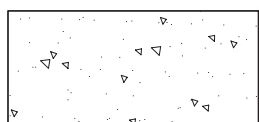
etalbond



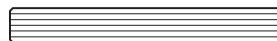
Insulation hard



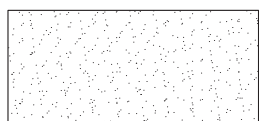
sheet aluminium



concrete wall



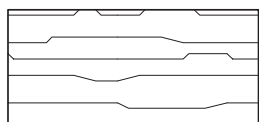
glass



plaster



aluminium profile



wood



steel

LIABILITY

The stated data and calculating methods are provided by ETEM as a guideline only.

The information given in this catalogue does not substitute of all applicable regulations – Eurocodes, harmonized European standards, national or regional building codes.

The specific conditions and technical details of every particular project have to be taken into consideration.

The right choice of all elements as well as any special requirements regarding stability of the structure must always be considered by the structural/façade engineer, responsible for the project.

The solutions presented in these pages are indicative and can not cover all possible project cases. Because of that every single project has to be evaluated by the structural/facade engineer in charge taking into consideration the specific features, such as climate conditions, location, orientation, etc.

ETEM is not liable for any calculations and conclusions made on the basis of the stated information. All calculations and specifications must be estimated, endorsed and guaranteed by architect, engineer, professional or legal entity authorized by law for such activities.

COPYRIGHT

Copyright© 1 edition, 2026 ETEM

The design, structure and content of this catalogue are subject of copyright and the exclusive rights belong to ETEM. Modifying, copying, publishing, selling or licensing any part or the whole content of this catalogue are strongly prohibited without the permission of ETEM.

Any unauthorized use of content may violate copyright or other laws.

DISCLAIMER

ETEM is not responsible for any typographical errors, technical inaccuracies and following changes of the content of this catalogue.

Before starting manufacturing process, it is highly recommended to contact ETEM R&D department in order to provide you with updated information.

Discover more:

