VENTILATED FACADES
ANCHORS AND FIXINGS
**EPSILON O**
Aluminium fastenings and substructure system for attaching natural stone cladding on ventilated facades

**EPSILON U**
Aluminium fastenings and substructure system for attaching natural stone cladding with small breakup facade on ventilated façades

**LEST**
Aluminium fastenings and substructure system for attaching natural stone cladding with small breakup facade on ventilated façades

**APLOMADO II + FIX II**
Stainless Steel fastenings and substructure system for attaching natural stone cladding on ventilated facades

**EPSILON T40**
Epsilon T40 is a ventilated facade cladding system using narrow width ceramic panels and concealed or visible mechanical fixings

**EPSILON TS**
The Epsilon TS system is an aluminium profile system for attaching fine thickness ceramic cladding to ventilated facades

**EPSILON T10060**
Epsilon T10060 is a ventilated facade profile system for bonded or riveted cladding, or using special narrow thickness alfa fastenings

**EPSILON OMEGA T**
The Epsilon Omega T system is an aluminium profile system for attaching aluminium panels on ventilated facades

**ECO**
Direct point-supported fastenings for installing natural stone cladding on ventilated facades

**CLASIC**
The CLASIC system is based on individual anchors with vertical and depth adjustment for installing natural stone cladding on ventilated facades

**FIX**
Security clip fastenings system for stone facings made of stainless steel

**PERFIX Y ROOF**
Systems for the construction of walls of Ashlar masonry and masonry of double walls tied
Ventilated façades have a number of forerunners in traditional construction methods. These include the ventilated roofs known as Catalonian-style roofs, partition walls and the English cavity wall.

Ventilated façades are basically composed of two parts: an inner layer and an outer layer that provides protection against the elements. These two parts are separated by a gap that allows air to circulate and keep the inner temperature constant, eliminating any water that may have entered the gap by means of evaporation, and providing a space to install the movable connectors or separators between these two layers, known as anchors.

Modern developments have driven the need to separate building envelopes from the main structure, which must be uniformly insulated without any structural elements that act as a thermal bridge, protected from weather conditions and at the same time providing an attractive outer finish to the building using the wide range of stone panelling available on the market.

Building construction is a sector in constant technological change. New lighter and resistant materials that cost less and save energy call for innovative solutions. Fachadas del Norte, S.L. provides anchoring and fixing solutions aimed at meeting these new technological demands.

Ventilated façades are a high-performance construction solution used on walls.

The technique consists of:

1. Using the envelope not only as a decorative element, but also as a protective wall against aggressive environmental conditions.

2. A single and continuous ventilated air gap for the whole building.

3. A single wall (the cladding around the building, with the insulation material attached to the outside).

Fachadas del Norte S.L. is a company dedicated to the manufacture of anchoring and fixing systems for installing ventilated façades with stone or ceramic cladding.

Our factory is a solid industrial platform that is constantly being renewed and is capable of offering a wide range of innovative, guaranteed products of the very highest quality, a result of our constant technical development and our long experience in the market.

The quality of our products and the professionalism of our company have resulted in our systems being installed in more than 2,000,000 square metres of façades throughout Spain, Europe, Africa and South America.

Fachadas del Norte S.L. stands out for its close collaboration with its clients, allowing us to identify market needs and develop new products that respond to ever-changing situations in the modern world.

We offer the constant support of our technical department, with highly qualified personnel capable of effectively resolving any type of technical difficulty. Our policy of maintaining close contact with our clients, regardless of their size, guarantees the provision of constant support and the ability to manufacture any type of special element if required.

The Epsilon O vertical profile system is economic and easy to install. It has been scrupulously designed to resist all types of mechanical stresses and corrosion problems that can arise in construction work. As it is a profile system, it can be installed on solid, perforated or hollow supporting walls. The Epsilon O system can be adjusted vertically and horizontally.

The system can be loaded immediately, and can be assembled regardless of the weather conditions. Also, thanks to reducing the number of fixing points on the support, more continuous thermal insulation is achieved by eliminating a large number of thermal bridges.

Aluminium Fastening and Substructure System for attaching natural stone and prefabricated concrete claddings on ventilated façades

Please find attached the Regulation Scheme of placement. The Epsilon O system can be loaded immediately, and can be assembled regardless of the weather conditions. Also, thanks to reducing the number of fixing points on the support, more continuous thermal insulation is achieved by eliminating a large number of thermal bridges.

System Regulation

The Epsilon O vertical profile system is economic and easy to install. It has been scrupulously designed to resist all types of mechanical stresses and corrosion problems that can arise in construction work. As it is a profile system, it can be installed on solid, perforated or hollow supporting walls. The Epsilon O system can be adjusted vertically and horizontally.

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Aluminium Fastening and Substructure System for attaching natural stone and prefabricated concrete claddings on ventilated façades

Please find attached the Regulation Scheme of placement. The Epsilon O system can be loaded immediately, and can be assembled regardless of the weather conditions. Also, thanks to reducing the number of fixing points on the support, more continuous thermal insulation is achieved by eliminating a large number of thermal bridges.
**Heading:**
1. Profile Epsilon “O”.
2. Angular Load Anchors.
3. Stainless steel A2 through bolt anchor.
5. Angular Support Anchors.
8. Self-drilling Screw DIN 7976 (5.5x22 mm).

10. Double Fastener Continuation.
11. Double Fastener Start-End.

**System’s Parts**

**System Components**

- Angular Load Anchors 65 - 200 mm
- Angular Support Anchors 65 - 200 mm
- Sigma Hidden Clip Fasteners S.32
- Sigma Visible Clip Fasteners S.46
- Sigma Pivot Fasteners S.32
- Sigma Taking Out and Backfill
The *Epsilon U* system is a very simple, economic and easy-to-install vertical profile system. The *Epsilon U* system can be adjusted vertically and horizontally.

The system is fabricated with the same materials than the Epsilon O. For this reason we are talking about a system with allo the guarantees, excellent raw materials and more economical where, due to the required mechanical performance, it is not necessary to support a large resistance loads.

**System Regulation**

- **A. Fixation Detail of Epsilon U Profile with Security Socket-Pan.**
- **B. Long Angular Anchors.**
- **C. Short Angular Anchors.**

\[ L_{\text{max}} = 120 \text{ mm} \]

**Scheme of placement**

- Aluminium AW 6063 T5 lacqued “Seaside” Black
- Aluminium AW 6063 T5 y 6060 T6 Natural Silver Anodized 15 µm
- Stainless Steel AISI-304 y AISI-304 L

**EPSILON “U”**

Aluminium fastening and substructure system for attaching natural stone and prefabricated concrete claddings with small breakup façade on ventilated façades.
1: Profile Epsilon “O”.
2: Angular Load Anchors.
3: Stainless steel A2 through bolt anchor.
4: Security Socket-Pan.
5: Self-drilling Screw DIN 7976 (5,5x22 mm).
6: Nylon Plug.
7: Angular Support Anchors.
8: Lag Screw Stainless Steel A2.
9: Double Fastener Start-End.
10: Double Fastener Continuation.
11: Self-drilling Screw DIN 7976 (5,5x22 mm).

System’s Parts

System Components

Angular Load Anchors 65 - 200 mm
Angular Support Anchors 65 - 200 mm
Sigma Hidden Clip Fasteners S.32
Sigma Visible Clip Fasteners S.46
Sigma Pivot Fasteners S.32
Sigma Taking Out and Backfill
This is a subsystem that can be used in conjunction with the *Epsilon O*, *Epsilon U* or other special systems. The horizontal Lest profile is made of EN AW 6063 T5 aluminium alloy, and is very light and strong thanks to its tubular cross-section. It has a flat ribbed flap used to attach it to the vertical profile, using a self-drilling screw and locking washer, and has a specially designed groove to use the Lest fastenings with a clip system, making it very easy to install.

The horizontal profile is ideal for attaching stone sections of any shape, both for continuous and staggered joints.

This system with horizontal profile can be used with con visible clip fasteners, hidden clip fasteners or pivot fasteners (21 or 32 mm.)

### LEST

Aluminium Fastening and Horizontal Substructure System for attaching natural stone cladding on ventilated façades

- **Aluminum AW 6063 T5 con Lacado “Seaside” Negro**
- **Aluminio AW 6063 T5 y 6060 T6 Plata Natural anodizado 15 µm**
- **Acero Inoxidable AISI-304 y AISI-304 L**
Leyenda:
1: Self-drilling Screw DIN 7976 (5,5x22 mm).
2: Security Socket-Pan.
3: Lest Hidden Clip Fasteners.
4: Lest Pivot Fasteners.
5: Lest Visible Clip Fasteners

LEST with EPSILON “O” + Lest Hidden Clip Fastener detail

LEST with EPSILON “U” + Lest Hidden Clip Fastener detail
The **Aplomado** System is an adjustable anchor for stone. The vertical profiles are a metal substructure to receive the solidarity union of fastenings that engage the stone cladding. The profiles are connected to the floor slabs of the building to which they transmit the stresses affecting the panelling by using slab anchors. Los anclajes de forjado ofrecen una gran capacidad de carga y un amplio rango de regulación.

**APLOMADO II + FIX II**

Stainless Steel Fastenings and Substructure System for attaching natural stone and prefabricated concrete claddings on ventilated façades

**FIX II** is the fixing system for stone claddings. It concerns five different kind of fastenings that works with the Aplomado’s II vertical profile.

The main feature of these systems is their ability to slide horizontally along the profile, which helps to connect panelling that is displaced in relation to the profile (such as panels above and below windows).
### System’s Parts

1. Nut + Washer  
2. Load Anchors “U”  
3. Profile 30x30x1  
4. Abarcón  
5. Load Anchors “U”  
6. Stainless steel A2 through bolt anchor M10x90  
7. Nylon Plug  
8. Rod Screw

<table>
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### Heading:
1. Nut + Washer  
2. Load Anchors “U”  
3. Profile 30x30x1  
4. Abarcón  
5. Load Anchors “U”  
6. Stainless steel A2 through bolt anchor M10x90  
7. Nylon Plug  
8. Rod Screw  
9. Nut + Washer  
10. FIX II Hidden Fastenings  
11. Support Anchors  
12. Double Support Anchors

### Hidden Clip Fasteners Detail

### Visible Clip Fasteners Detail

### Pivot Fasteners Detail
The Epsilon T40 vertical profile system is economic and easy to install. It has been scrupulously designed to resist all types of mechanical stresses and corrosion problems that can arise in construction work. As it is a profile system, it can be installed on solid, perforated or hollow supporting walls.

Epsilon T40 System has two channels where to put Delta Fastenings, assuring the position. Besides the ceramic supports and secured with a MS putty and nail view, a fluffy profile is incorporated for proper reception.

The system can be loaded immediately, and can be assembled regardless of the weather conditions. Also, thanks to reducing the number of fixing points on the support, more continuous thermal insulation is achieved by eliminating a large number of thermal bridges.

- Aluminium AW 6063 T5 lacqued “Seaside” Black
- Aluminium AW 6063 T5 y 6060 T6 Natural Silver Anodized 15 µm
- Stainless Steel AISI-304 y AISI-304 L
System's Parts

1: Profile Epsilon "T".
2: Profile Epsilon "L".
3: Angular Load Anchors.
4: Stainless steel A2 through bolt anchor.
5: Self-drilling Screw DIN 7976 (5.5 x 22 mm).
6: Nylon Plug.
7: Angular Support Anchors.
8: Fastenings Delta Start-End.

System Components

Angular Load Anchors 60 - 160 mm
Angular Support Anchors 60 - 160 mm
Delta Hidden Clip Fasteners 17 mm
Delta Visible Clip Fasteners 22 mm
Delta Replacement Fasteners

Hidden Clip Fasteners Detail
Visible Clip Fasteners Detail

Heading:
1: Profile Epsilon "T".
2: Profile Epsilon "L".
3: Angular Load Anchors.
4: Stainless steel A2 through bolt anchor.
5: Self-drilling Screw DIN 7976 (5.5 x 22 mm).
6: Nylon Plug.
7: Angular Support Anchors.
8: Fastenings Delta Start-End.
9: Self-drilling Screw DIN 7976 (4.8 x 19 mm).
10: Lag Screw
11: Delta Fastenings.
The Epsilon TS system is a cutting-edge, high-performance vertical profile system that is easy to install. It has been scrupulously designed to resist all types of mechanical stresses and corrosion problems that can arise in construction work. As it is a profiling system, it can be installed on solid, perforated or hollow supporting walls.

The Epsilon TS is thinking for narrow thickness ceramic tiles, in such a way that adapts the system to one resistance less than the T40, to have a more balanced, specific, cost-effective product.

This system works in conjunction with ALFA Fastenings made in stainless steel. These Fastenings, simple, reduced thickness, work perfectly with this system, constituting a perfect match for the placement of low cost light facades.
Heading:
1: Self-drilling Screw DIN 7976 (5.5 x 22 mm).
2: Angular Load Anchors.
3: Profile Epsilon “TS”.
4: Stainless steel A2 through bolt anchor.
5: Profile Epsilon “LS”.
6: Fastening ALFA Simple Continuation.
7: Nylon Plug.
8: Angular Support Anchors.
9: Fastenings ALFA Simple Start-End.
10: Lag Screw.
11: Fastening ALFA Double Continuation.
12: Fastenings ALFA Double Start-End.
13: Self-drilling Screw DIN 7976 (4.8 x 14 mm).
The Epsilon T10060 system is a cutting-edge, high-performance vertical profile system that is easy to install. It has been scrupulously designed to resist all types of mechanical stresses and corrosion problems that can arise in construction work. As it is a profiling system, it can be installed on solid, perforated or hollow supporting walls.

The System Epsilon T10060 is intended as a profile for different solutions. It is a system with many possibilities, glued, riveted or working with ALFA Fastenings, where the TS could not be placed by its lower carrying capacity or dimensional requirements. It is a system capable of working with most of the material claddings that need a similar system, but with all the solutions, technical support and certification of facades of the Norte, S.L.

The System Epsilon T10060 is intended as a profile for different solutions. It is a system with many possibilities, glued, riveted or working with ALFA Fastenings, where the TS could not be placed by its lower carrying capacity or dimensional requirements. It is a system capable of working with most of the material claddings that need a similar system, but with all the solutions, technical support and certification of facades of the Norte, S.L.

Aluminium AW 6063 T5 lacqued “Seaside” Black
Aluminium AW 6063 T5 y 6060 T6 Natural Silver Anodized 15 µm
Stainless Steel AISI-304 y AISI-304 L

Three options, bonded, riveted, fastenings

Scheme of placement
1: Profile Epsilon T10060.
2: Profile Epsilon L5060.
3: Glueline.
4: Double-Sided Tape.
5: Cladding Narrow Thickness.

Bonded Detail Section

Riveted Detail Section

ALFA Fastenings Detail Section

System Components

Angular Load Anchors 60 - 160 mm
Angular Support Anchors 60 - 160 mm
ALFA Fastenings

Detail Bonding System

Detail Riveted System

Detail with ALFA Fastenings
The Epsilon Omega T system is a cutting-edge, high-performance vertical profile system that is easy to install. It has been scrupulously designed to resist all types of mechanical stresses and corrosion problems that can arise in construction work. As it is a profiling system, it can be installed on solid, perforated or hollow supporting walls.

Epsilon Omega T system works with a section on Omega where a clamp, boot hang, with a rubber protection, which are hung made trays to the machining of composite is placed. It's perfect for this type of materials system, entirely made of lacquered and anodised aluminium alloys.
System's Parts

1. Stainless steel A2 through bolt anchor.
2. Self-drilling Screw DIN 7976 (5.5 x 22 mm).
3. Angular Load Anchors.
4. Profile Epsilon Omega "T".
5. Nylon Plug.
6. Fastening, boot hang.
7. Rubber Coating.

System Components

Angular Load Anchors 60 - 160 mm

Angular Support Anchors 60 - 160 mm

Fastening, Hang Boot

Heading:
1. Stainless steel A2 through bolt anchor.
2. Self-drilling Screw DIN 7976 (5.5 x 22 mm).
3. Angular Load Anchors.
4. Profile Epsilon Omega "T".
5. Nylon Plug.
6. Fastening, boot hang.
7. Rubber Coating.
8. Self-drilling Screw DIN 7976 (4.8 x 19 mm).
9. Lag Screw.
10. Angular Support Anchors.

Detail Horizontal Section Detail

Horizontal Section Detail
The ECO system is based on point-supported individual anchors that do not require vertical profiles for their alignment.

This system is relatively economic and frequently used for covering concrete walls made of prefabricated elements or built on site. It can be used on walls made of solid or semi-hollow bricks. It is not recommended for hollow cement blocks with side walls less than 40 mm thick. Standard UNE 41957.

The ECO system is made of A2 stainless steel (AISI-304). This type of steel has the ideal resistance to mechanical stress and atmospheric corrosion.

Consists of a threaded weldless bolt attached to the supporting wall or building on one side, with its other flat side equipped with a device which supports and retain the cladding. This device could be hidden fastenings, with pivot and visible fastenings, for which we have two options, ECO Strow with retention spring, for claddings with irregular thickness and ECO Basic, a new system for claddings with regular thickness, but cheaper and simpler than ECO Strow.
System's Parts

A) Solid walls: Epoxy Acrylate resin.
B) Hollow walls: Nylon mesh + Polyester resin.

1: Pivot | Retention Spring | Hidden Fastening
2: Nylon Caps or Putty | Visible Fastening | Threaded Weldless Bolt
3: Threaded Weldless Bolt | Threaded Weldless Bolt | Nylon Sieve
4: Nylon Sieve | Nylon Sieve | Face Coating
5: Face Coating | Face Coating

V: Chamber
E: Embedment (Embedment as at least 1.2 times chamber’s length)
L: Anchor’s length
Q: Load
P: Panel
The **CLASIC** system is based on individual anchors with vertical and depth adjustment. The system consists of a weldless frame, one side of which is attached to a supporting structure or directly onto the building, while the other side is equipped with a fastening in the same material. We made three different models, the first one is classic normal, the second (Classic Freno) with a security lock washer serving as a possible slippage of the anchor and fixing brake, and the third, It includes also the brake but in addition is built with greater thickness and a rear nut giving it much more resistance. This system is frequently used for covering concrete walls made of prefabricated elements or built on site, or in solid and semi-solid brick walls. It is not recommended for walls made of hollow or semi-hollow brick, or hollow cement blocks with side walls less than 40 mm thick.

**Available Lengths in CLASIC “normal”, “freno” and “reforzado”**

- **L-80**
- **L-50**
- **L-35**
- **L-20**

**Scheme of placement**

**Placement in the horizontal joint**

**Placement in the vertical joint**

- **Stainless Steel**
  - AISI-304 and AISI-304 L
**System's Parts**

CLASIC normal with pivot
1: Stainless Steel Body (AISI 304)
2: Nod
3: Rod Screw M10
4: Cap or elastic PuTTY
5: Pivot

CLASIC freno with pivot
1: Stainless Steel Body (AISI 304)
2: Security Lock Washer
3: Rod Screw M10
4: Cap or elastic PuTTY
5: Pivot
6: Nod

CLASIC reforzado con pivote
1: Stainless Steel Body (AISI 304)
2: Security Lock Washer
3: Rod Screw M12
4: Cap or elastic PuTTY
5: Pivot
6: Two Nods

**System Components**

CLASIC “normal”, “freno” and “reforzado” Pivot

CLASIC “normal”, “freno” and “reforzado” Start and End

CLASIC “normal”, “freno” and “reforzado” Hidden Fastenings

CLASIC “normal”, “freno” and “reforzado” Hidden Fastenings Start-End

CLASIC “normal”, “freno” and “reforzado” Hidden Fastenings Backface

CLASIC “normal”, “freno” and “reforzado” Visible Fastenings

CLASIC “normal”, “freno” and “reforzado” Visible Fastenings Start-End

**Detail CLASIC Hidden Fastening**

**Detail CLASIC Visible Fastening**

**Detail CLASIC Pivot**
It is a mounting system for stone facings. *FIX* system is based on individual and specific anchors which are placed as a security of stone facings.

*FIX* system consists of 7 types of security clip fastenings for new works. They are made of stainless steel A-2 (AISI-304) offering you appropriate values of mechanical strength and atmospheric corrosion.

These Staples, seamless, they will be fixed to a particular support or the building itself and on the other hand stone plate.

We also offer for the cladding reparations, two security fastenings, *FIX ECO* and *FIX ECO CLAVO*, which are used in those cases where there is a risk of cladding detachment.
Section Detail with different fastenings

1. FIX “Ángulo”
2. FIX “L Pivot”
3. Security Solution with Lag Screw + Nylon Plug
4. “Recta” Fastening
5. “Trasdós” Fastening

System Components

1. FIX ECO
2. FIX ECO “Clavo”
3. FIX “Trasdós, Ángulo y rectas”
4. FIX “L Pivot, Z Simple and Z Doble”

1. FIX “Ángulo”
2. FIX “L Pivot”
3. Security Solution with Lag Screw + Nylon Plug
4. “Recta” Fastening
5. “Trasdós” Fastening
For load-bearing walls made with stone, as walls of Ashlar blocks, you can use the system of bracing by **PERFIX** stainless steel fastenings.

This system is composed of 4 fastenings that are placed for braced walls either among its parts, or to the bearing structure of the building, floor slabs, beams...

In addition there is a fifth element, which can be used to load directly on this piece the stone wall, anchoring to a slab or reinforced concrete support.

Finally, for fastener double walls, the **ROOF**, a system composed by a stainless steel shaft, and pieces of plastic at the ends. These pieces are placed one in the horizontal joint of the outer foil and the other in the horizontal joints of the inner blade, which in turn presents a fastening that allows you to hold the insulation on the inner layer without having to mount it on the outer side to complete the wall, which presents a great advantage over the traditional system.

**PERFIX Y ROOF**

System of fastenings for blocks and tied of masonry walls made of stainless steel
1. Perfix “U”  
2. Perfix “S”  
3. Angular Perfix  
4. Reinforced Angular Perfix

1. ROOF fastenings with anchor bolt for double stone walls facades.  
2. Load PERFIX.  
3. ROOF fastenings for double bricks walls facades.

Details with Load PERFIX
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Company Certification

Productos’ Certification

Documento de idoneidad técnica
N. 577/11

European Technical Approval
ETA-13/0628

DAU 10/062 A
Documento de adhesión al uso