

ELVIAL PRE-ANODIZING 2IN1

INNOVATIVE TECHNOLOGIES_
ELVIAL PRE-ANODIZING 2IN1_
ELVIAL I² INSULATION TECHNOLOGY_
BE DIFFERENT.



WELL BEING

THE CHOICE OF ALUMINIUM SYSTEMS TODAY PROVIDES SAFETY AND ENERGY EFFICIENCY, IMPROVING EVERYDAY LIVING.

THE RIGHT COLOR MAY UPLIFT THE AESTHETIC RESULT AND ADD VALUE TO THE BUILDING IMAGE. IT ALSO CONTRIBUTES TO INDOOR COMFORT.



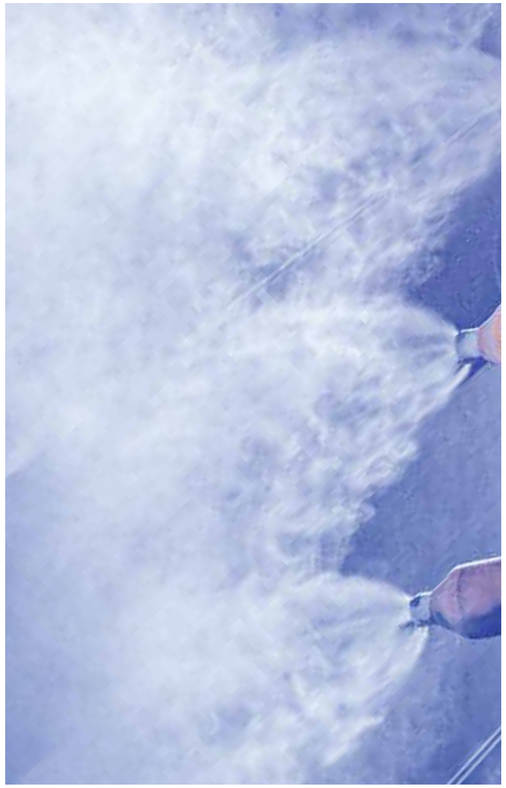
ALUMINIUM = COLOR

ALUMINIUM OFFERS ONE OF THE WIDEST RANGES OF COLOURS AND FINISHES AMONG ARCHITECTURAL BUILDING MATERIALS.

There are 2 basic technologies developed for surface treatment:

- **POWDER COATING**
- **ANODIZING**

AT A GLANCE
THE PROCEDURES



POWDER COATING

During powder coating, the aluminium surface is “passivated” through the application of a chemical pretreatment process with chrome free chemicals.

Coating with a layer of polyester powder then follows, giving the final color hue and texture to the aluminium.

Powder Coating allows for full creative freedom, offering wide colour palette in hue and texture.



ANODIZING

Anodizing is an electrochemical process during which, the aluminium surface transforms into a layer of inactive, cohesive and hard oxide.

As a result, the “passivated” surface of the aluminium functions as an impenetrable protective shield, over adverse environmental conditions. The anodic coating is transparent and its structure allows the incorporation of pigments for the coloring, however, in limited color hues.

Anodizing can safeguard the metal but it tempers the coloring options and is rather costly.



THE
ISSUE

Filiform corrosion is the corrosion appearing on the metal surface and under the coating [EP].

It is caused by the reaction of the aluminium material in acid environment conditions, such as:

- **Coastal areas**, up to 25 km from the shore.
- **Areas neighboring to highways**, which during the winter season “accept” quantities of sodium chlorides to prevent icing.
- **High humidity environment**, like spaces with a pool, sauna etc.



Filiform corrosion usually appears in the form of “bubbles” and starts most of the times from the frame corners.

IF APPEARING

IT DOES NOT STOP, AND IT GRADUALLY ATTACKS THE WHOLE METAL SURFACE.

THERE IS NO TREATMENT AND FULL FRAME REPLACEMENT IS NEEDED!



PRE-ANODIZING

THE SOLUTION TO THE FILIFORM CORROSION IS GIVEN BY THE PRE-ANODISING.

It is, actually, the creation of a firm 3-8 mm oxide coating, which is produced under controlled conditions, similar to those of a typical anodizing, but without the final finishing phase.

This coating penetrates the aluminium surface and works as an ideal foundation layer for the powder grid that will follow with the Powder Coating, offering high anti-corrosion protection.



Microscope picture with pre-anodizing on aluminium

This way, choosing Pre-anodizing over the classic preliminary work methods, we achieve the absolute combination of both 2 different surface treatment methods:

- Extensive choice of colours, finishes and textures
- **High Anti-corrosion Protection**





THEREFORE, THE TIME BETWEEN THE COMPLETION OF THE PRE-ANODIZING AND THE POWDER COATING APPLICATION, IS DETERMINING FOR THE ACHIEVEMENT OF MAXIMUM ANTI-CORROSIVE PROTECTION. HOWEVER, THE AVOIDANCE OF CONTACT WITH THE HUMAN SKIN AND THE ENVIRONMENT WHERE THE PRODUCTS ARE BEING PROCESSED UNTIL THE PAINTING ARE EVEN MORE VITAL.

THE RESTRICTIONS

Pre-anodizing, as a preprocessing procedure, shows excellent results ONLY if:

- The **Powder Coating is IMMEDIATELY** applied after the preliminary process of pre-anodizing
- **WITHOUT human intervention**, as pre-anodizing DOES NOT block porous materials and
- We ensure in a **STERILE ENVIRONMENT**, free of suspended or other particles that diminish the result..

Traditionally, until today, the Pre-anodizing process - wherever applied - takes place in Anodizing facilities and, then, the products have to move to Powder Coating facilities...

..however, this process demands thorough movements' coordination while unpredictable factors may arise, burdening the waiting time until the POWDER COATING application:

- **Delay on the products' removal** from the Anodizing facilities.
- **Long products' standby (queue)** at the Powder Coating.
- **Exposure of the Pre-anodized products** to dust and humidity during the transfer.
- **Increased risk of corruption of the pre-anodizing advantages** due to contact with trimmings and human skin.

ELVIAL PRE-ANODIZING 2IN1

THIS IS WHAT ELVIAL PRE-ANODIZING 2IN1 IS ALL ABOUT.

- **Zero Waiting Time**
- **Controlled production environment**
- **Robotic Handling**

ELVIAL owns the first in Greece and one out of seven worldwide, fully automated serial pre-anodizing and powder coating lines according to Qualicoat standards and has been received the SEASIDE (PRE-OX) label, following successful laboratory testing and inspections.

ELVIAL Pre-Anodizing 2in1 facility is robotic. No human hand meddles with the materials; the production environment is free of dust and other aggravating factors.

The profiles are subdued to an electrochemical procedure identical to that of anodizing. The aluminium profiles are placed in an underground tunnel and submerged in a sulfuric acid solution.

Pre-anodizing produces an anodic substrate on the surface of the aluminium profile that protects it from corrosion. Then the profiles are serially painted, eliminating waiting time, whilst the pores on the aluminium surface of the profile are completely sealed.



THANKS TO THE ROBOTIC HANDLING OF THE PRODUCTS AND THE ELIMINATED WAITING TIMES, WITH THE 2IN1 ELVIAL PRE-ANODIZING, YOU ARE NOW SURE.



IN BRIEF, ELVIAL PRE-ANODIZING 2IN1:

- Designed to provide a high level of protection against filiform corrosion
- Offers a wide range of color choices, texture, polishing and effects.
- Is factory quality assured.

Pre-anodizing 2IN1 from ELVIAL is uniquely combined with Class 2 [Super Durable] powder coatings.

WATCH THE VIDEO HERE!

THE
ADVANTAGES

ELVIAL PRE - ANODIZING 2IN1	OTHER PRE - ANODIZING UNITS
✓ **Robotic** profile handling	✕ **Manual** profile transfer
✓ **Integraded** in-house pre-anodizing unit	✕ Transport **to external pre-anodizing units**
✓ **Clean**, controlled environment	✕ **Exposure** to various **environmental conditions**
✓ **Zero waiting** times	✕ **Delays** between pre-anodizing stages
✓ **Optimal timing** between pre-anodizing and powder coating	✕ **Delays** between pre-anodizing and final coating

OUR
COLOR COLLECTION

The world is not black and white. It's full of shades, textures and combinations that evoke emotion, build character, and express the unique identity of every space. Color is much more than a simple choice. It's a statement. It's the detail that makes the difference.

With this vision in mind, we created the new **ELVIAL OUR COLOR COLLECTION.**

A collection that doesn't just follow trends - it shapes them.

C

CLASS 2 SUPER DURABLE
DO THE RIGHT CHOICE.

Combine pre-anodizing with Class 2 powder coating colors. Achieve maximum anti-corosion and radiance resistance, even under extreme sun light.

The super durable powder coatings are 3 times more resistant to sun radiation and render the profiles practically indestructible.

ELVIAL SOLUTION
SOLUTION FOR YOU

LOOK FOR THE BEST ELVIAL SOLUTION TODAY.

#ELVIAL PRE-ANODIZING 2IN1
#ELVIAL I² INSULATION TECHNOLOGY
#ELVIAL WINDOW.ID

**AT ELVIAL, WE WORK FOR YOU.
BECAUSE WE KNOW THAT THE CHOICE
OF YOUR FRAMES IS A LIFE CHOICE.**

- That is why we constantly invest. Always in innovative production technologies.
- That is why we carefully choose our raw materials and we cooperate with the best around the world.
- Our people are professionals with high technical know-how and, above all, they work with dedication and love for what they do. They are here to ensure the best quality for you.



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