ELVIAL

I²

THE WORLDWIDE INNOVATION **ELVIAL I² TECHNOLOGY** THAT CHANGED THE RULES IN THERMAL INSULATION

ADVANCED ALUMINIUM SOLUTIONS

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

AN **ELVIAL** INNOVATION RECOGNIZEDWORLDWIDE THAT REDEFINED THERMAL INSULATION PERFORMANCE

THE SYSTEM'S ENERGY PERFORMANCE (Uf) IS IMPROVED UP TO 38%

38%

THE VISION THAT BECAME A MILESTONE IN THERMAL INSULATION TECHNOLOGY

WE DIDN'T JUST WANT TO CREATE ANOTHER MATERIAL. WE WANTED TO REALIZE OUR VISION: TO BUILD A THERMAL INSULATION SHIELD WALL THAT WOULD OFFER CERTIFIED ENERGY PERFORMANCE - FOR A WIDE RANGE OF PROJECTS.

TO DELIVER SOLUTIONS THAT ENHANCE INDOOR COMFORT.

TO REDUCE THERMAL LOSSES AND, ALONG WITH THEM, ANNUAL ENERGY COSTS.

THAT'S WHY WE CREATED **ELVIAL I^2 TECHNOLOGY.**

01



WHEN VISION CALLS FOR PROOF, WE RESPOND WITH ACTIONS

To make ELVIAL I^2 technology a reality, we took the big step.

We invested over €50 million in cutting-edge technology, automation, and advanced robotic systems to achieve fully vertical production and absolute control at every stage.

> “For us, innovation isn’t just an idea. It’s a commitment. And we prove it in every millimeter of our product”

Years of research came before the result. ELVIAL’s R&D team worked closely with specialized technicians and partners, analyzing materials, performance, parameters, and use scenarios.

And we didn’t stop there: to certify what we had achieved, we invested even further in testing, research, and independent evaluations.

01

CERTIFICATION OF THE INSTALLATION OF THE INJECTION PROCESS

02

CERTIFICATION OF THE SPECIALLY DESIGNED **THERMAL INSULATING MATERIAL** AND ITS LONG-TERM PERFORMANCE (AGING)

03

CE CERTIFICATION ACCORDING TO EN 13165:2012: QUALITY GUARANTEE & COMPLIANCE WITH EUROPEAN MARKET REQUIREMENTS AND THE CONSTRUCTION PRODUCTS REGULATION

04

CERTIFICATION OF THERMAL PERFORMANCE BY INDEPENDENT ACCREDITED LABORATORIES

02



WHAT HAVE WE CREATED? A NEW DIMENSION IN THERMAL INSULATION

ELVIAL I^2 technology isn't just an upgrade. It's an entirely new thermal protection zone, designed and integrated by ELVIAL, significantly improving the system's performance.

The uniform, complete, and linear filling of the thermal break chamber is achieved along the entire length of the profiles with a level of precision achieved through ELVIAL's proprietary production process - **something never achieved before in the industry.**

The result?
Aluminium systems with exceptional thermal insulation properties, stable production quality, and certified long-term durability.

01

WE ADDED AN **EXTRA THERMAL INSULATION** ZONE IN THE CENTRAL CHAMBER OF THE PROFILES

02

WE IMPROVED THE SYSTEM'S ENERGY PERFORMANCE [Uf] UP TO **38%**

03

WE APPLIED THE TECHNOLOGY IN-HOUSE TO ENSURE ABSOLUTE **CONTROL** AND **CONSISTENCY** IN EVERY PROFILE

04

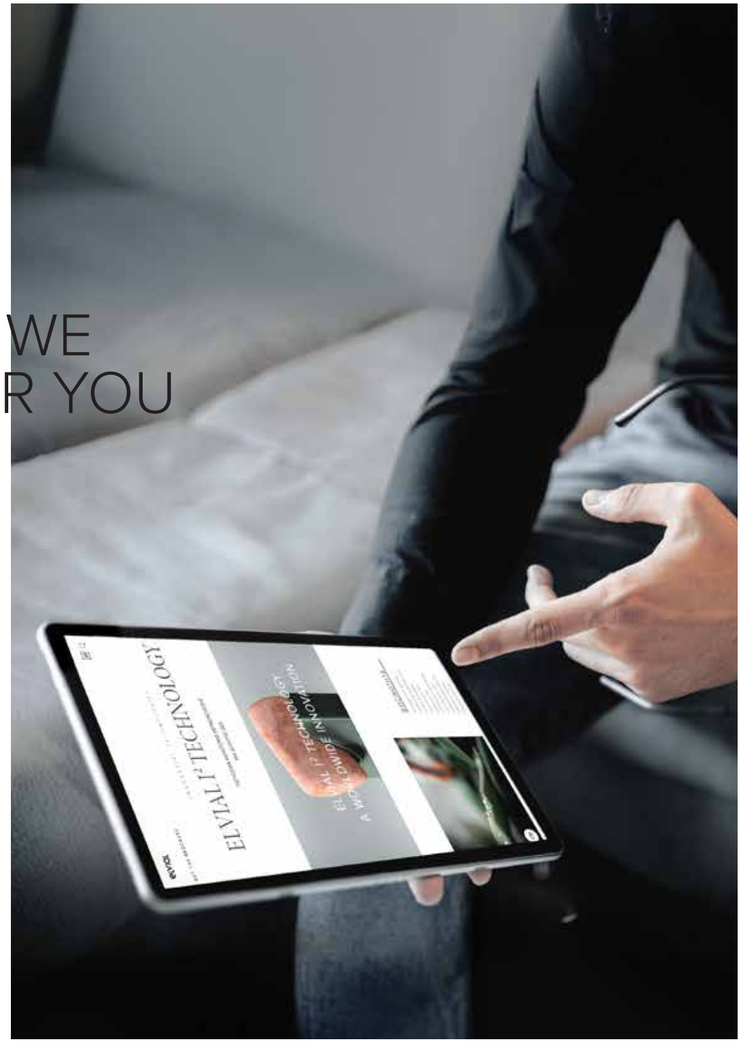
WE DEVELOPED IN-HOUSE A **SPECIALLY DESIGNED INSULATING MATERIAL** WITH A THERMAL CONDUCTIVITY COEFFICIENT OF λ = 0.027 W/M·K, ACCORDING TO LABORATORY TESTS (EN 12667), AND A DENSITY SUITABLE FOR FILLING APPLICATIONS.

**"The λ (lambda) coefficient is the coefficient of thermal conductivity of a material. The lower it is, the better the insulation — meaning less heat «escapes» through it."*

03

THE BENEFITS WE DELIVERED FOR YOU

ELVIAL I² technology not only brings innovation to products but also offers significant advantages for our partners.



01 EASY TO APPLY:

ELVIAL I² technology is applied exclusively by ELVIAL.
No extra labour hours for you, no special equipment, and no unwanted added costs!

02 RELIABILITY AND DURABILITY:

You guarantee long-lasting performance with zero alterations and maintenance-free quality preservation.
Compliant with the strict EN 13165 standard, the durability of the material in various conditions ensures that it is ideal for thermal insulation applications, which demand long-lasting and effective performance.

03 MARKET DIFFERENTIATION:

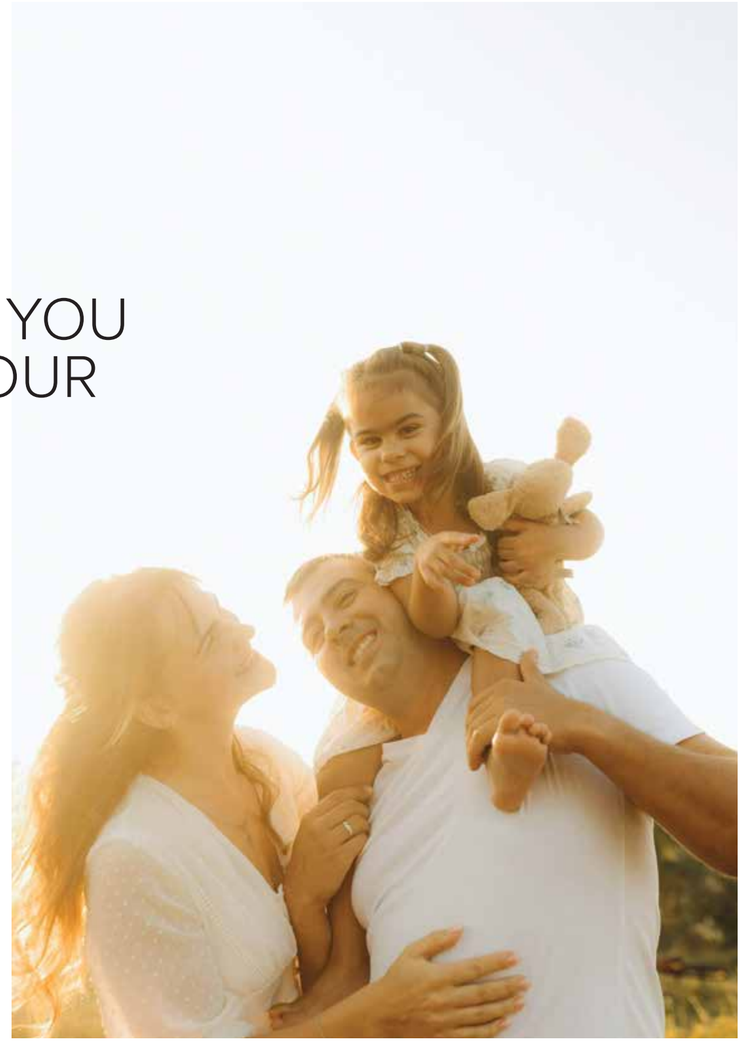
You offer high-quality, aesthetically refined products with an innovative thermal insulation technology.

04 ECONOMIC SUSTAINABILITY:

ELVIAL I² technology offers certified performance without increasing the end product cost - allowing you to offer an advanced product with excellent value to your customer.

04

THE BENEFITS YOU DELIVER TO YOUR CUSTOMERS



REDUCED ENERGY CONSUMPTION AND BILLS. 01

STABLE INDOOR TEMPERATURE,
WITHOUT HEAT LOSS. 02

ARCHITECTURAL SYSTEMS THAT THE USER WILL
ENJOY FOR MANY YEARS, WITHOUT ENERGY LOSS,
WITH EXCELLENT FUNCTIONALITY AND SAFETY. 03

A MORE ENERGY-EFFICIENT HOME THAT CAN CONTRIBUTE
TO LOWER OPERATIONAL ENERGY DEMAND -
A HIGH-PERFORMANCE HOME. A HOME DESIGNED WITH
ENERGY EFFICIENCY IN MIND. 04

COMPATIBLE WITH ALL ELVIAL'S TOP THERMAL INSULATION
ARCHITECTURAL SYSTEMS, FOR OUTSTANDING THERMAL
PERFORMANCE AS WELL AS AESTHETICS! 05

05

EXTRA ADVANTAGES WITH **ELVIAL I² TECHNOLOGY**



ELVIAL I² Technology goes beyond insulation. It protects the systems and the interior space from moisture build-up and the liquidation effect — known as “sweating.”

In this way, it helps maintain a healthy, dry environment, preventing dampness and mold growth.

> “Reduce the liquidation effect on the systems by choosing ELVIAL I² Technology.”

Why does liquidation happen?

Especially in winter, liquidation is caused by the difference in temperature between indoor spaces and the outdoor environment.

Let’s check it with an example:

In a home with an indoor temperature of 22°C and relative humidity of 60%, the **liquidation effect** will appear on any surface of the room where the **temperature is ≤ 14°C!**

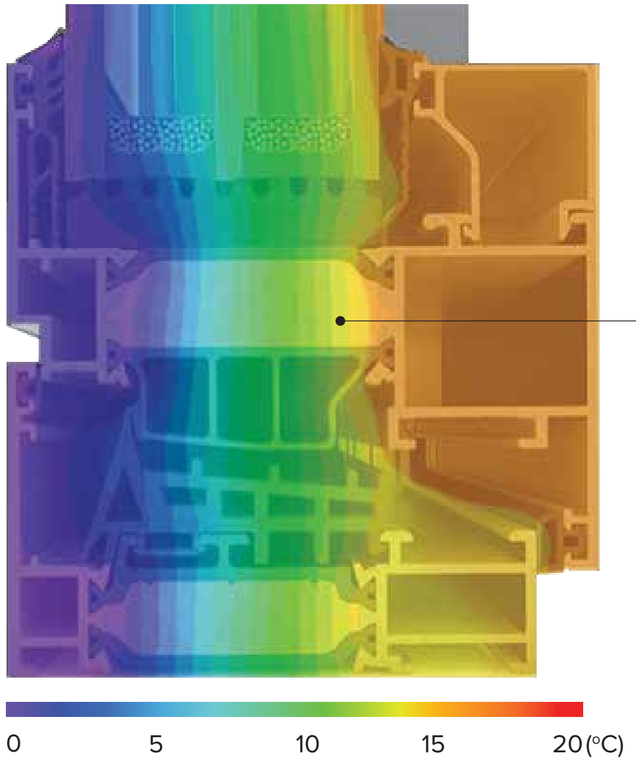
PARAMETER	WITH ELVIAL I² TECHNOLOGY	WITHOUT ELVIAL I² TECHNOLOGY
EXTERNAL TEMPERATURE	0°C	0°C
INDOOR TEMPERATURE	22°C	22°C
INDOOR RELATIVE HUMIDITY	60%	60%
DEW POINT	≤14°C	≤14°C
SYSTEM’S INNER SIDE TEMPERATURE	15°C with ELVIAL I²	13°C without ELVIAL I²
LIQUIDATION EFFECT OBSERVED		

05

WITHOUT **ELVIAL I² TECHNOLOGY**

When outdoor temperature is 0°C, the system's inner side temperature is 13°C and **the liquidation effect appears.**

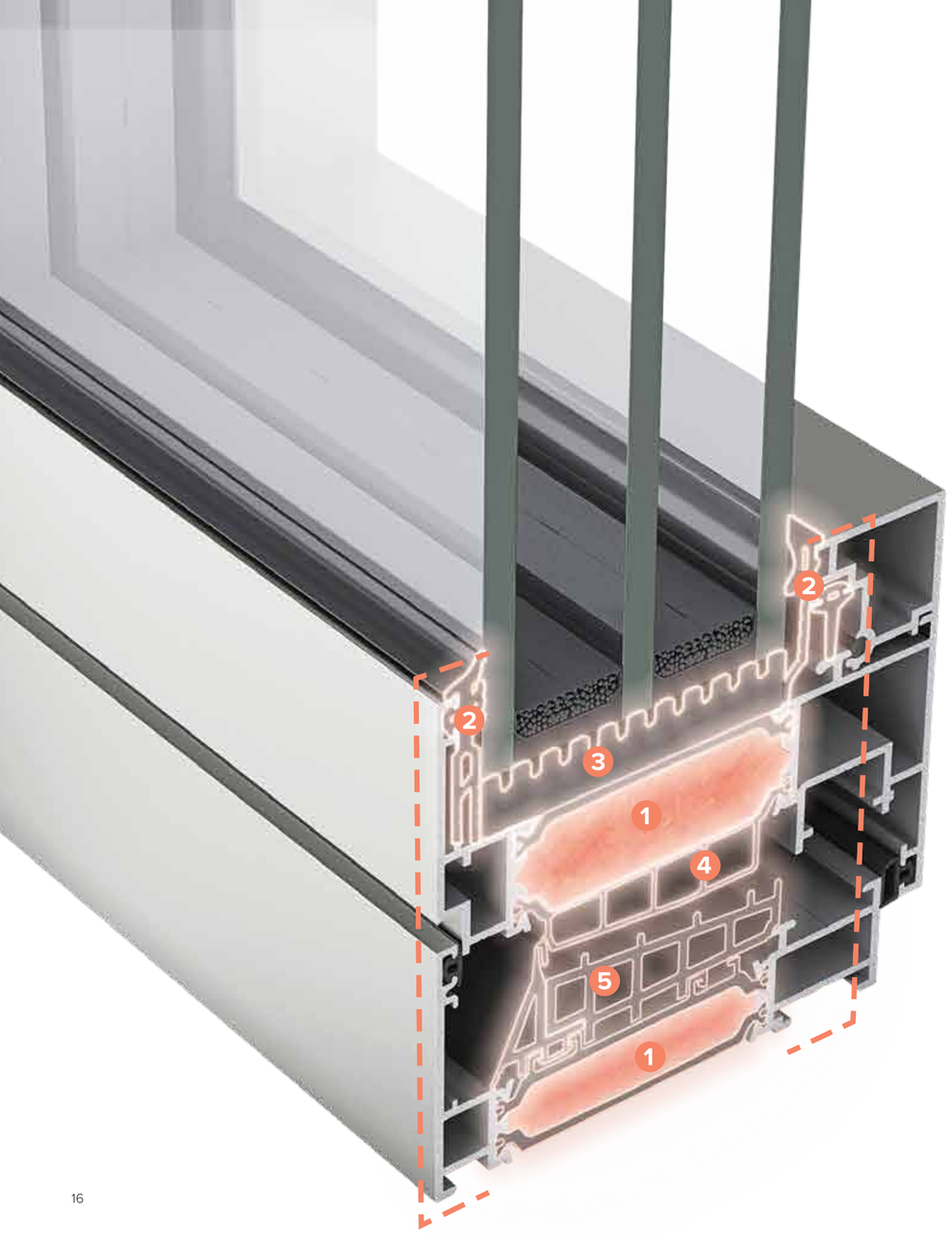




WITH **ELVIAL I² TECHNOLOGY**

When outdoor temperature is 0°C, the system's inner side temperature is 15°C and **the liquidation effect does not appear.**

Look for the
ELVIAL I² TECHNOLOGY
Authenticity Film



THERMAL INSULATION WALL WITH **ELVIAL I² TECHNOLOGY**

1. **ELVIAL I² TECHNOLOGY**
2. **GASKET WITH FINS**
3. **INSULATING PROFILE**
4. **INSULATING BARS**
5. **CO-EXTRUDED GASKETS**

WATCH THE VIDEO!

ELVIAL I² TECHNOLOGY
IS NOT JUST AN INNOVATION!

It is the proof that when vision meets expertise, something truly groundbreaking is created.

With reliability, consistency, and performance, it delivers real solutions for today — and tomorrow.

For you. For your customers.
For every project that deserves the best.
Together, we help improve building energy performance.

ELVIAL I² TECHNOLOGY
BREAKING BOUNDARIES DEFINING PROGRESS BUILDING THE FUTURE

ELVIAL

I^2 TECHNOLOGY!

elvial.com

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