



ISOCLIMA

YOUR INNOVATIVE TRANSPARENT SOLUTIONS



Automotive

Marine

Military

Railway

Aerospace

Architectural

Automotive

2019
PC coating and special applications on
Automotive and Aerospace.

2015
Bending furnace plant.

2010
Manufacture of ultra-light glazings
using Gorilla Glass.

2002
Acquisition of the manufacturing plant
Lipik Glas in Croatia.

2000
Installation of a
"magnetron sputtering" system
for the deposit of thin metal layers.

1996
Manufacture of glazings
for High-speed trains.

1994
Installation of a chemical
strengthening plant,
the largest in Europe.

1986
Manufacture of micro-wire
heated glazings.

1981
Manufacture of windows
with polished and un-sealed edges.

1979
Registered license to manufacture
glass with polycarbonate.

2017
Aerospace development with
transparent helicopter application.

2013
Development of Iposcope products.

2005
Manufacture of "CromaLite" glazings
with SPD technology.

2001
Manufacture of "PrivaLite" glazings
with laminated liquid crystal film
manufacture of glazing for the marine
market (curved laminated glazings
chemically strengthened).

1997
Acquisition of a manufacturing plant
in Mexicali and foundation
of **ISOCLIMA** de Mexico.

1995
Manufacture of composite glazings
(PC or methacrylate) for the
racing car market.

1988
Manufacture of products
for the aerospace market.

1984
Purchasing of a furnace for the
thermal tempering process, enabling
the curvature of large glazings
(2.2x4m).

1980
1st in Europe to manufacture
bullet-resistant glazings using
glass+PC.

1977
Year of **ISOCLIMA**'s foundation,
production of double-glazing windows.



The Company

The World leader in the market of high-performance glass, thanks to the technologies applied and developed over time, **ISOCLIMA** is committed to the constant pursuit of perfection, quality, and a product developed for the personal safety and protection of its customers on Land, Air and by Sea.

ISOCLIMA finds solutions based on the customer's needs aiming for longterm results.

Always ready to accept new challenges and to invest in R&D, **ISOCLIMA** represents the point of reference as the leader in the markets in which it operates.



ISOCLIMA's World

Today **ISOCLIMA** stands out thanks to the reputation acquired over the years as well as the co-engineering processes that allow **ISOCLIMA** to be the supplier of the main automotive groups in the world (FCA Group, Daimler Group, BMW Group, VW-Audi Group,...).

The large range of the products that **ISOCLIMA** can offer is highly appreciated in various markets and sectors, especially for the ever increasing demand of products with high quality standards.

A special feature of the company is the ability to respond to every need and to succeed in tailoring the product to the customer's requirements, specifically with reference to resistance, protection, solar and energy control.

ISOCLIMA's History

ISOCLIMA was founded in 1977 as a glass processing company for architectural products. Within a short period its emphasis was directed to the research and development of new technologies to achieve high ballistic performance transparent composite panels, particularly using glass and polycarbonate.

The combination of these two materials laminated together has allowed the company to offer bullet-resistant glazings, with the advantage of being "No-Spall", allowing an equivalent performance to then existing products but being far thinner and lighter.

ISOCLIMA has expanded over time with the acquisition of other important Italian and foreign glass companies, such as **ISOCLIMA** de Mexico S.A. de C.V. in Mexico and Lipik Glas d.o.o. in Croatia.

Automotive

The strategic policy of **ISOCLIMA** has always been focused on market diversification and has been favored by its ability to transfer and adapt successfully the innovative processes and products to the specific needs of individual markets.

Especially in the automotive industry, for which the development of products with high technological content outlined in three main areas: **Armored** (for armored vehicles), **Special** (for exclusive cars) and **Racing** (for racing cars).

● Armored

ISOCLIMA has developed innovative composite windows, even with the use of integrated ballistic steel. The verification of the security level and all the ballistic tests are carried out at the shooting range within the company. Options for integration within the bullet resistant glass include anti-fog and heating systems, embedded antennas for radio frequency, GPS or radio stations, and different coatings for solar control: options that allow a wide range of customization of the armored car and ensure the highest level of comfort.

● Special

With production volumes over 10,000 vehicle sets per year, **ISOCLIMA** can offer high quality products, both to automotive manufacturers that require small productions runs for the development and testing of new vehicles and to those that operate in small volume market niches or representing prestigious brands.

● Racing

The technology used in the production of lightweight windows in transparent PC for racing vehicles, comes from **ISOCLIMA**'s experience in the manufacture of the composites windshields for military aircraft. This has allowed the creation of complex shapes while maintaining excellent optical quality, which is essential for high speed endurance racing.





Know-how

- **Anti-IR coating**

ISOCLIMA guarantees efficient performance, in terms of comfort and energy saving with its Anti-IR coating, a selective filter which works as a solar protection element.

- **Polycarbonate Glazing**

Years of experience in the production of aerospace windshields for helicopters, military jets as well as windscreens for race cars enable **ISOCLIMA** to provide the exceptional potential of the material also for automotive applications if significant weight saving, complex shapes and durability is required. **ISOCLIMA** is able to apply functional coating on curved PC glazing parts in Magnetron Sputtering process.

- **Magnetron Sputtering**

The process of magnetron sputtering consists in the generation and confinement of argon gas plasma through an electric field. The process deposits thin conducting or semiconducting layers on the glass panels and covers large size curved surfaces, reaching absolutely outstanding performance in terms of light transmission and electrical resistivity.

- **Thermal toughening**

During the thermal toughening process the residual stress level is obtained via transitory thermal gradients that are determined in the stage of rapid cooling from temperatures above the glass transition temperature.

- **Chemical strengthening**

The chemical strengthening process is a surface treatment which takes place at temperatures below the glass transition temperature. The residual stress level is characterized by compressive tensions on the surface offset by the traction tensions within the glass.

- **Ultralight glazing**

In long-term partnership with Corning Inc., **ISOCLIMA** has worked on the objective of the integration of GORILLA Glass (from 0,5mm thin aluminosilicate glass (ALG)) into automotive solutions. The result is a remarkable light glass laminated of multiple ALG layers or a hybrid out of ALG and Sodalime glass (SG). This technology enables potential weight savings over 50% compared to conventional glass laminates.

Products

- **CromaLite®**

Is a laminated panel that incorporates an electro-optical film based on the SPD (Suspended Particles Device) technology. The SPD Cromalite system is activated by the presence of an electromagnetic field capable of orienting the suspended particles within the film. In this way it is possible to control the solar radiation and therefore light transmission.

- **IsoLite®**

Is a panel containing an internal liquid crystal film that allows, by the flip of a switch, to change instantly from transparent to opaque. ISOLITE® panels are designed to create a bright and welcoming environment, which may, depending on the necessity, become private and confidential.

- **OmniArmor®**

A transparent bullet-resistant high-tech panel of Glass + Polycarbonate for the protection of civilian and military armored vehicles, as well as public, residential and commercial buildings. It has been designed and developed to withstand high-energy ballistic impact and prolonged physical attacks, or a combination of the two.

- **OmniGard®**

A glass with high anti-penetration and anti-physical attack features specifically developed for the automotive industry. OMNIGARD® is created by adding one or more layers of plastic material (polyethylene, polycarbonate or other depending on the level of protection required) to the original toughened or laminated glass of the car, in order to increase its resistance to impact.

- **PcSecur®**

The technology used in the production of lightweight windows in transparent PC for racing vehicles, comes from **ISOCLIMA's** experience in the manufacture of the composites windshields for military aircraft. This has allowed the creation of complex shapes while maintaining excellent optical quality, which is essential high speed endurance racing.

- **Secur®**

A transparent Glass only bullet-resistant high-tech panel for the protection of civilian and military armored vehicles, as well as public, residential and commercial buildings.

It has been designed and developed to withstand high-energy ballistic impact and prolonged physical attacks, or a combination of the two.

Case Histories



Pope Armored Car



Mercedes Maybach



Audi A8 D5



Karma Revero

BMW 1 Series Btcc



Mercedes Maybach



Porsche



ISOCLIMA S.p.A.

Via Alessandro Volta, 14
35042 - Este (PD) - Italy

T. +39 0429 55788

F. +39 0429 602331

www.isoclimagroup.com



ISOCLIMA
YOUR INNOVATIVE TRANSPARENT SOLUTIONS

