

INSIO®

Transparent Insulation

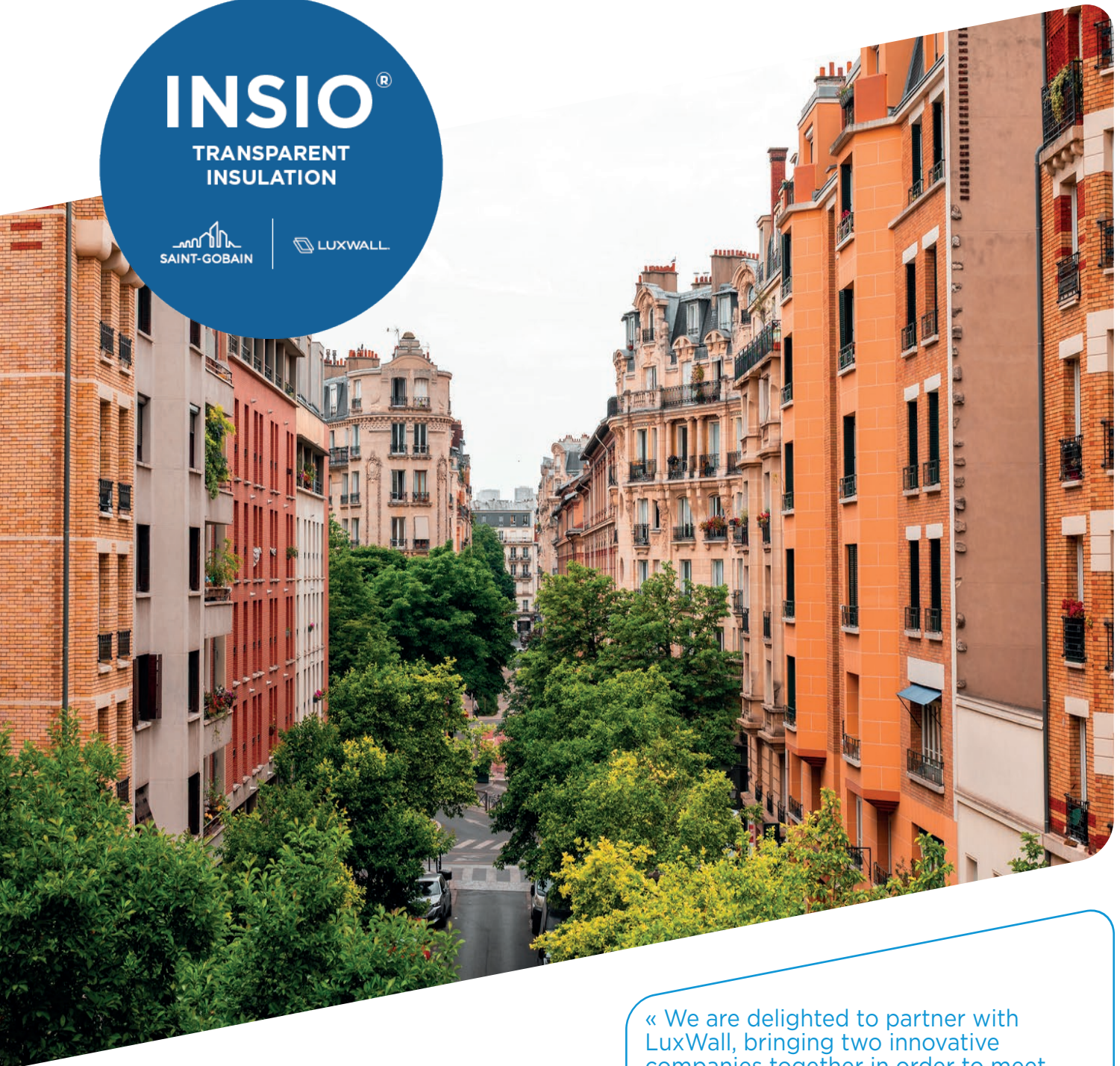
CLIMAPLUS® INSIO®

Ultra Insulating Glazing



INSIO®

TRANSPARENT
INSULATION



Saint-Gobain Glass and LuxWall have announced a strategic partnership to bring INSIO® next-generation vacuum glazing to the European market.

Through this collaboration, Saint-Gobain Glass integrates LuxWall's transparent insulation technology into its groundbreaking INSIO® solution, marking a major milestone in the transition to energy-efficient building envelopes.

« We are delighted to partner with LuxWall, bringing two innovative companies together in order to meet the growing demand for energy-efficient buildings and retrofit solutions.

INSIO® will allow us to support our customers to address building decarbonization challenge while enhancing window conception possibilities without compromising on tenant comfort. »

Nicolas Mondy
Vice President of Glass
Performance Segment
Saint-Gobain

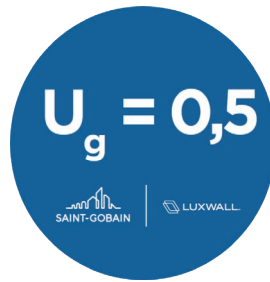


INSIO®

Transparent Insulation

INSIO® Transparent Insulation is an innovative vacuum glazing solution designed to deliver exceptional thermal and acoustic insulation. At its core lies a 0.3 mm vacuum layer between two panes of glass - substantially reducing heat transfer compared to conventional double or triple glazing.

Thanks to the use of tempered safety glass, INSIO® requires fewer internal support pillars, allowing for a cleaner design and enabling a remarkably low U_g -value, lower than best triple-glazed units. Combined with a low-emissivity coating, INSIO® offers premium energy performance and elegant aesthetics, making it the ideal choice for windows application in sustainable buildings, renovations, and high-end architectural projects.



CLIMAPLUS® INSIO®

Ultra Insulating Glazing

CLIMAPLUS® INSIO® combines the breakthrough insulation of INSIO® *Transparent Insulation* with the practicality of a double-glazing unit. By integrating INSIO® into a conventional glazing unit using a standard spacer and a counter glass, CLIMAPLUS® INSIO® achieves standard glazing thickness, making it easy to install in existing window systems without design constraints.

CLIMAPLUS® INSIO® integrates a carefully selected complementary glass from Saint-Gobain Glass's extensive portfolio, tailored to meet specific performance goals - be it thermal insulation, acoustic comfort, solar control, or visual appeal. This modular approach ensures high-end vacuum insulation while offering the flexibility to meet a wide range of architectural and technical specifications.

BENEFITS



Outstanding thermal insulation

- INSIO® and CLIMAPLUS® INSIO® have better thermal insulation performance than the best triple glazing units
- Ug between 0,5 and 0,3 W/m²K depending on INSIO® version and selected counter-glass in the hybrid vacuum insulating glazing CLIMAPLUS® INSIO®



Slim profile

- INSIO® is much thinner and lighter than traditional triple glazing, making it suitable for retrofits and heritage buildings where frame depth is limited.



Durability

- INSIO® combines outstanding long-term durability with one of the industry's leading warranties: 20 years of limited coverage.



Easiness of integration

- Thanks to its ultra-thin profile, INSIO® can be seamlessly integrated into double glazing systems without compromising design or aesthetics
- CLIMAPLUS® INSIO® can be installed in any current window frame



Energy efficiency

- INSIO® and CLIMAPLUS® INSIO® reduce heating and cooling loads, contributing to lower energy bills and improved building sustainability.



Acoustic performance

- Superior acoustic performance compared to double or triple glazing, due to its very specific structure.
- Certified acoustic measurements of INSIO® 10 mm is 35(-2;-2) dB.

APPLICATION

The transition to more energy-efficient buildings brings new challenges for windows and their glazing. INSIO® and CLIMAPLUS® INSIO® provide an innovative approach to thermal insulation, combining high performance with lightweight design and reduced material usage.

This makes them an ideal solution for **window applications in both residential and non-residential buildings**, offering flexibility and efficiency without compromising on sustainability or ease of installation:

- With its 8 to 12 mm thickness, **INSIO®** is well adapted to replace old glazing while keeping the existing window frame — for example, in retrofit projects or restoration of historical buildings.
- Thanks to its standard glazing thickness (24mm or more depending on the spacer and counter-glass), **CLIMAPLUS® INSIO®** can be used as any traditional glazing system in window renovation or in new construction, in high-demanding window projects and energy-efficient buildings.



AVAILABILITY

Maximum dimensions of INSIO®

INSIO® can be produced in standard sizes up to 1524 mm x 2438 mm

Minimum dimensions of INSIO®

INSIO® can be produced in standard sizes starting from 305 mm x 457 mm

Available thicknesses of INSIO®

INSIO® is available as standard in 10 mm thickness. Thicknesses of 8 and 12 mm are possible on request. No limitation of configuration for CLIMAPLUS® INSIO® (from 24 mm)

Lead time for INSIO®

INSIO® is available within 4 to 10 weeks, depending on the specificity of the request + 2 weeks for CLIMAPLUS® INSIO®.



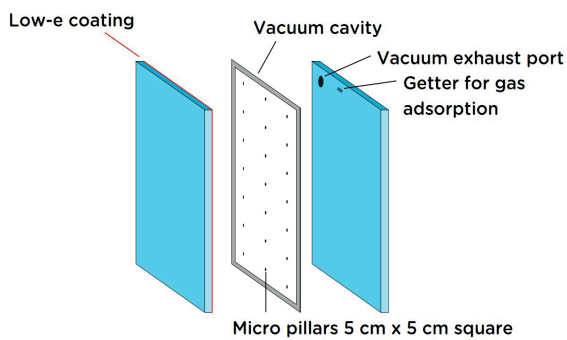
PERFORMANCES

INSIO® PERFORMANCES

Measured performance data

	Coating Face	Total Thickness	Ug-Value ¹	Light Transmission (LT) ²	Solar Factor (g-value) ²	Outside reflection (LRe) ²	Inside reflection (LRI) ²	Rw [C,Ctr] ³
		[mm]	[W/m ² °K]	[%]	[%]	[%]	[%]	[dB]
INSIO® is made of two tempered glass panes with low emissivity coating								
INSIO® 10-C1	2	10	0,5	77	63	15	14	35(-2,-2)
INSIO® is available upon request with Solar Control function, leading to lower Ug-value.								
INSIO® 10-C2	2	10	0,3	69	39	14	14	35(-2,-2)
INSIO® 10-C3	2	10	0,3	63	30	13	13	35(-2,-2)

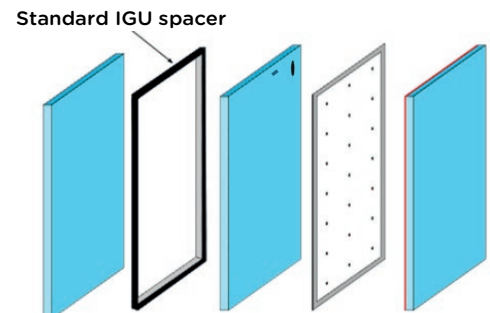
¹ according to ISO 19916-1; ² according to ISO 19916-1 + EN 410; ³ Evaluation based on laboratory measurement on 908 mm x 2127 mm sample, according to ISO 10140-2 : 2021 and ISO 717-1 : 2020



INSIO® is CE-marked following the EOTA route for Vacuum Insulating Glass Units (EAD 300021-00-0404 / ETA 25/0363).

CLIMAPLUS® INSIO® PERFORMANCES

Calculated performance data



	Total thickness	Ug-Value ¹	Light Transmission (LT) ²	Solar Factor (g-value) ²	Outside reflection (LRe) ²	Inside reflection (LRI) ²
	[mm]	[W/m ² °K]	[%]	[%]	[%]	[%]
Double Glazing Unit with INSIO® 10 as internal pane with low emissivity coating on face 5: CG/10-14 Ar/INSIO® 10-C1 with CG : Counter Glass with eventually a coating on face 2						
CLIMAPLUS® INSIO® - 4 mm Clear as CG	28	0,5	71	62	20	20
CLIMAPLUS® INSIO® - STADIP® PROTECT 44.2 as CG	28	0,5	70	56	19	20
CLIMAPLUS® INSIO® - 4 mm ECLAZ® LUMI as CG	28	0,4	71	57	16	17
CLIMAPLUS® INSIO® - 4 mm ECLAZ® ZEN as CG	28	0,4	68	46	20	20
CLIMAPLUS® INSIO® - 4 mm ECLAZ® SUN as CG	28	0,4	62	34	18	20
CLIMAPLUS® INSIO® - 4 mm ECLAZ® SUN PLUS as CG	28	0,4	60	33	17	20
CG/14 Ar/INSIO® 10-C2 with CG : Counter Glass with coating on face 2						
CLIMAPLUS® INSIO® - 4 mm ECLAZ® LUMI as CG	28	0,3	64	46	16	16
CG/14 Ar/INSIO® 10-C3 with CG : Counter Glass with coating on face 2						
CLIMAPLUS® INSIO® - 4 mm ECLAZ® ZEN as CG	28	0,2	55	38	20	16

¹ according to ISO 19916-1 + EN 673; ² according to ISO 19916-1 + EN 410

CLIMAPLUS® INSIO® is CE-marked.

AESTHETICS

INSIO® and CLIMAPLUS® INSIO® are transparent insulation solutions, able to replace glazing in window applications.

The use of tempered glass allows INSIO® to have one of the lowest micro-pillar densities on the market (50 mm grid), optimizing both aesthetics and thermal performance. Micro-pillars are an essential component of vacuum glazing, preserving the optimal spacing between panes without contact.



ADDITIONAL INFORMATION



Product warranty

INSIO® is backed by a 20-year limited warranty. Warranty details can be found in the INSIO® Terms and Conditions. However, the inorganic sealing of the vacuum glazing allows for a significantly longer service life.

CLIMAPLUS® INSIO® has the same guarantee as any other insulating glazing.

Is INSIO® CE-marked?

Yes, INSIO® has obtained voluntary CE marking, becoming the first tempered vacuum insulating solution in the world with thermal insulation values (U_g) ranging from 0.3 to 0.5 W/m^2K , to carry this marking.

It was obtained following the EOTA route for Vacuum Insulating Glass Units (EAD 300021-00-0404 / ETA 25/0363).

This proactive step underlines Saint-Gobain Glass's commitment to innovation, quality, and energy savings in the building industry. By meeting European requirements for product performance and durability, INSIO® provides customers with the assurance they need to confidently include it in their specifications.

Does INSIO® contain any hazardous substances

INSIO® complies with key regulations and industry standards, including REACH, the Toxic Substances Control Act (TSCA), Classification, Labeling, and Packaging (CLP) regulations, the conflict minerals reporting requirements for Tin, Tantalum, Tungsten, and Gold (3TG), and the Building Red List.

Can INSIO® generate condensation?

The high thermal insulation of INSIO® can generate external condensation in cold weather in clear sky conditions. For CLIMAPLUS® INSIO®, it is better to consider INSIO® as internal pane.

To avoid internal condensation at the periphery of INSIO®, a minimum depth of 25 mm in the frame is recommended. CLIMAPLUS® INSIO® is not subject to the phenomenon of peripheral condensation when assembled with a warm edge spacer.

Can INSIO® spontaneously bow?

Given its high insulation capacity, a vacuum glazing can, in case of a high temperature difference between inside and outside, bend (bi-lame effect). INSIO® is designed to resist to this constraint without degradation. This effect is even minimized by positioning INSIO® in the inner fold of CLIMAPLUS® INSIO®. Window frame/gaskets must be designed to be compatible with this bending behavior.



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