

IPLUS

Energy saving begins
with the right glazing

FOCUS ON THERMAL INSULATION FOR RESIDENTIAL BUILDINGS AND HOMES

AGC *INTERPANE*



Your Dreams, Our Challenge

AGC Interpane presents...



...the most comprehensive range of products for thermal insulation



— IPLUS —

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Innovative coatings for more energy efficiency

— IPLUS —

Under the brand name iplus AGC Interpane offers a comprehensive range of low-emissivity products ("Low-E"), dedicated to improved thermal insulation, providing a more comfortable living space. Our low-emissivity coatings rank amongst the highest performing coatings on the market today, and have also been certified by the rigorous Cradle to Cradle programme. Whatever your needs may be – protection from the cold, achieving both thermal insulation and solar control, or additional safety functions – there's a product engineered to meet each specific requirement.

More light, more sunshine, more warmth

— IPLUS 1.1 —

Balancing the quantity and quality of light greatly impacts the comfort level of any living space. iplus 1.1 ensures that as much light and energy from the sun enters the building, while delivering a good level of thermal insulation.

iplus 1.1T is the toughenable variant of our "classic product". It is used when toughened safety glass is required by the building owner or for regulatory reasons.

What's so special about it?	What does this mean for you?
Very high solar factor	— Free solar heat gain reduces heating costs
High light transmission	— Generously distributes healthy natural light in the home
State-of-the art thermal insulation	— Enhances living comfort even near the windows
Neutral colour	— Meets the trends of the residential market
The toughened and non-toughened variants have exactly the same appearance.	— These two coatings can be used on the same glazed surface

Performance*

	Coating position	U _g -value EN 673 W/(m²K)	Nominal values for the luminous and solar characteristics of glazing according EN 410		
			Light transmission T _v (%)	Solar factor (%)	Light reflection outdoors (%)
Double glazing 4-16-4 (Argon 90%)					
iplus 1.1	3	1.1	82	64	12
iplus 1.1T	3	1.1	82	66	12

* For more information, please consult our technical overview at the end of the brochure.



Light, economical and with even better insulating properties

— IPLUS 1.0 —

Just as the name 1.0 suggests, with a U_g -value of $1.0 \text{ W/(m}^2\text{K)}$, these insulating glass products offer advanced protection against the cold to ensure optimum comfort. These products are particularly suitable in meeting the stringent requirements of the German Energy Saving Regulation (EnEV) in the field of window construction with standard profiles with comparatively light double glazed designs. The use of expensive krypton gas fillings is not necessary.

iplus 1.0T has a U_g -value of $1.0 \text{ W/(m}^2\text{K)}$ and is the variant of iplus 1.0 that requires toughening.

What's so special about it?	What does this mean for you?
Enhanced thermal insulation	— Increased living comfort
High light transmission	— Natural light in the home
iplus 1.0T: toughenable glass with a U_g -value of 1.0	— Benefit from this innovative glass product's optimal U_g -value, even after toughening
The toughened and non-toughened variants have exactly the same appearance	— These products can be used on the same glazed surface

Performance*

	Coating position	U _g -value EN 673 W/(m²K)	Nominal values for the luminous and solar characteristics of glazing according EN 410		
			Light transmission T _v (%)	Solar factor (%)	Light reflection outdoors (%)
Double glazing 4-16-4 (Argon 90%)					
iplus 1.0	3	1.0	77	57	15
iplus 1.0T	3	1.0	81	62	13

* For more information, please consult our technical overview at the end of the brochure.



The new standard in energy efficiency

IPLUS 3 - IPLUS 3C

Still the exception until just a few years ago, triple glazing is now frequently a standard item for demanding renovations and new constructions. iplus 3 improves the thermal insulation of window elements enormously - iplus 3C with valuable krypton gas filling achieves an U_g -value up to $0.5 \text{ W/(m}^2\text{K)}$.

What's so special about it?

What does this mean for you?

Thermal insulation that
is on a par with thick walls

— Saves huge amounts of heating energy

Appropriate levels of light transmission

— Delivers a large amount of natural light

Additional functions possible

— Available on request as a sound proofing
version or can be combined with
laminated safety glass or tempered glass

Performance*

	Coating position	U _g -value EN 673 W/(m²K)	Nominal values for the luminous and solar characteristics of glazing according EN 410		
			Light transmission T _v (%)	Solar factor (%)	Light reflection outdoors (%)
Triple glazing 4-14-4-14-4 (Argon 90%)					
iplus 3	2 and 5	0.6	74	53	16
Triple glazing 4-12-4-12-4 (Krypton 90%)					
iplus 3C	2 and 5	0.5	74	53	16

* For more information, please consult our technical overview at the end of the brochure.



Let the sunshine in, even with triple glazing!

— IPLUS 3LS —

Triple pane structures provide high insulation properties but generally compromise on the amount of light and free solar energy that the glazing lets through due to their design. Specially developed for use in triple glazing, iplus 3LS maximises solar energy gains, while simultaneously offering good thermal insulation. This makes iplus 3LS the first choice for passive houses or lowest energy houses. But energy-conscious developers also profit from this concept.

What's so special about it?	What does this mean for you?
Specially designed to guarantee a high solar factor in triple glazing	— Incoming solar energy helps to reduce heating requirements
High light transmission	— Delivers maximum amount of natural light
Good thermal insulation	— Controls energy costs
Specially developed for triple glazing	— Delivers additional design, safety and acoustic functions when combined with other AGC glass products
iplus 3CLS is the product variant that is filled with krypton	— Their similar appearance means they can be used on the same glazed surface

Performance*

	Coating position	U _g -value EN 673 W/(m²K)	Nominal values for the luminous and solar characteristics of glazing according EN 410		
			Light transmission T _v (%)	Solar factor (%)	Light reflection outdoors (%)
Triple glazing 4-14-4-14-4 (Argon 90%)					
iplus 3LS	3 and 5	0.7	74	62	17
Triple glazing 4-12-4-12-4 (Krypton 90%)					
iplus 3CLS	3 and 5	0.6	74	62	17

* For more information, please consult our technical overview at the end of the brochure.



Protection from energy losses and overheating

— ENERGY N - ENERGY NT —

In homes with large south-oriented glazing or in commercial buildings with glass-based façades, solar energy input often needs to be controlled to avoid overheating. These coated products bring together the best of solar control and thermal insulation, keeping the sun's excessive energy out so occupants can comfortably enjoy sunny days while providing excellent thermal insulation.

What's so special about it?	What does this mean for you?
High level of protection from the sun	— Prevents overheating while maintaining a pleasant temperature
Enhanced thermal insulation	— Optimal comfort
A neutral appearance	— Meets the trends of the residential market
Is also toughenable as Energy NT	— Short delivery times for finished products
The toughened and non-toughened variants have exactly the same appearance.	— Together, they can be combined as desired in the same glazed façade
Ideal for large bay windows and commercial buildings	— Also perfect in commercial, school and industrial buildings

Performance*

	Coating position	U _g -value EN 673 W/(m²K)	Nominal values for the luminous and solar characteristics of glazing according EN 410		
			Light transmission T _v (%)	Solar factor (%)	Light reflection outdoors (%)
Double glazing 4-16-4 (Argon 90%)					
Energy N	2	1.0	74	41	12
Enerav NT	2	1.0	74	42	12

* For more information, please consult our technical overview at the end of the brochure.



Say 'no' to condensation!

— IPLUS AF - IPLUS 1.1 AF —

Top quality thermal insulation in the window provides high living comfort and lowers the heating costs. However, this high level of thermal insulation also ensures that the temperature differential between the outer wall and the glazing is scarcely still perceptible. This can under certain climatic conditions lead to condensation forming on the outer surface. Capitalising on their years of know-how in coating technologies, AGC Interpane has succeeded in combining a special pyrolytic anti-condensation coating and an attached magnetron thermal insulation coating on a single pane of glass – the first time this has been done. This two-in-one solution provides good insulation and prevents condensation from forming. It also makes your living space more comfortable free of charge.

What's so special about it?	What does this mean for you?
<p>The use of a pyrolytic coating on the outer glass increases the temperature of it there, and prevents the formation of condensation</p>	<p>— Ensures a lasting clear view of the outside world - even when the weather conditions are unfavourable</p>
<p>Three products with anti-condensation properties:</p>	<p>— Choose from multiple options so you find the right solution for your needs</p>
<p>- iplus AF: glass with anti-condensation pyrolytic coating on one surface</p>	
<p>- iplus 1.1 AF: double-coated glass (iplus AF on the outer surface, iplus 1.1 to the space between the panes)</p>	
<p>Also available as laminated safety glass</p>	<p>— Provides protection from injury and burglary, as well as a certain level of acoustic comfort</p>

For more information, please consult our technical overview at the end of the brochure as well as our special "iplus Anti-Fog" brochure.

Product summary

	iplus 1.1 iplus 1.1T	iplus 1.0 iplus 1.0T	iplus 3 iplus 3C iplus 3LS iplus 3CLS	Energy N Energy NT	iplus AF & iplus 1.1 iplus 1.1 AF iplus 3 AF iplus 3LS AF
Application	Double glazing	Double glazing	Triple glazing	Double and triple glazing	Double and triple glazing

Performance

High light transmission	••••	•••	•••	••	••(•)
Best thermal insulation	••	•••	••••	•••(•)	••(••)
Protection from overheating	••	•••	•••	••••	•••
Free solar gain	••••	•••	•••	••	••(•)

Processing options

Laminated safety glass	iplus 1.1	iplus 1.0	iplus 3 iplus 3C iplus 3LS iplus 3CLS	Energy N	iplus AF & iplus 1.1 iplus 1.1 AF iplus 3 AF iplus 3LS AF
Toughened glass	iplus 1.1T	iplus 1.0T		Energy NT	
Digital print/ silkscreen printing	*	*	*	*	*
Coating position(s) in double/triple glazing	3	3	2 and 5 in 3LS/CLS: 3 and 5	Double glazing: 2 Triple glazing: 2 and 5	iplus AF & iplus 1.1: 1 und 3 iplus 1.1 AF: 1 und 2 iplus 3 AF: 1, 2 und 5 iplus 3LS AF: 1, 3 und 5

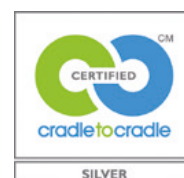
* available upon request



Certifications

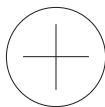
The basic panes of glass coated with iplus have been issued with a silver certificate in accordance with Cradle to Cradle Certified^{CM}. We have also been awarded a bronze certificate for our insulating glass constructions.

AGC Glass Europe is the first European glassmaker to be Cradle to Cradle certified^{CM} Silver for its float glass as well as its soft-coated, laminated and decorative glass products. Cradle to Cradle certified^{CM} is a certification mark licensed by the Cradle to Cradle Products Innovation Institute. This rigorous programme evaluates the sustainable nature of a product as a whole, i.e. over its entire lifecycle.



Certain iplus coated products carry the PassivHaus label when assembled in triple glazing. By using them in insulating glazing, you can offer clients an additional benefit for obtaining certification during the construction of a passive house. See www.passiv.de for more information.





AGC Interpane

Based in Lauenförde, AGC Interpane is a strategic alliance partner of AGC Glass Europe, the European branch of the world's leading flat glass manufacturer AGC. AGC Interpane produces Float and white glass, high-quality coated insulating glass, sound insulation and sun protection Insulating glass, safety glass, solar glass and glass for decorative applications. The industrial network comprises eleven plants in Europe. For more information, visit www.interpane.com. or www.agc-yourglass.com.

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