الإمارات للزجاج
Emirates Glass

HYBRID GLASS

ENERGY SAVING GLASS

EMICOOL

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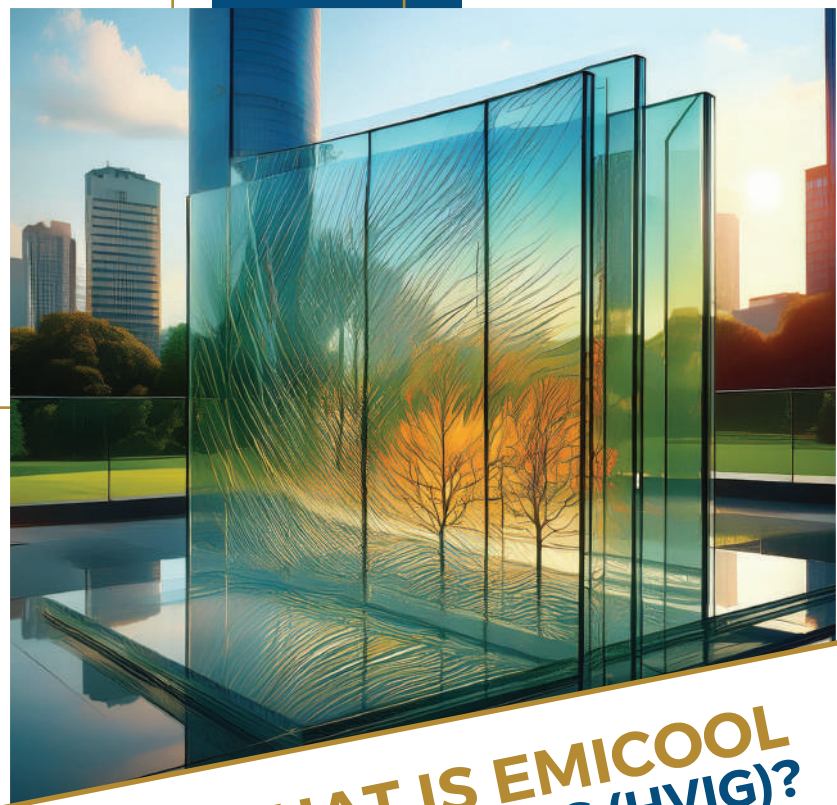
HYBRID GLASS

EmiCool Hybrid Glass by Emirates Glass is the latest innovation in architectural glazing, designed to meet the evolving needs of contemporary buildings. Combining advanced technology with unparalleled craftsmanship, EmiCool Hybrid Glass offers superior performance, energy efficiency, and aesthetic appeal.

WHAT IS EMICOOL HYBRID GLASS (HVIG)?



EmiCool Hybrid Glass is a cutting-edge glazing solution that integrates multiple glass technologies into a single, high-performance product. It merges EmiCool VIG with EmiCool high performance coating into HVIG unit to create a superior material that excels in multiple areas, including thermal efficiency, acoustic insulation, safety, and UV protection.

Emirates Glass HVIG unit – EmiCool VIG, consisting of two lites of glass, ranging from 4mm to 6mm, separated by a non-leaded proprietary metal edge seal and a vacuum space. The unit's slim construction and light weight allows it to be incorporated into virtually any traditional glazing system, window frame or curtainwall application. EmiCool VIG can also be used as a substitute for the interior lite in any double- or triple-glazed insulating glass unit (IGU), where it forms a second airspace and creates a EmiCool Hybrid Glass.

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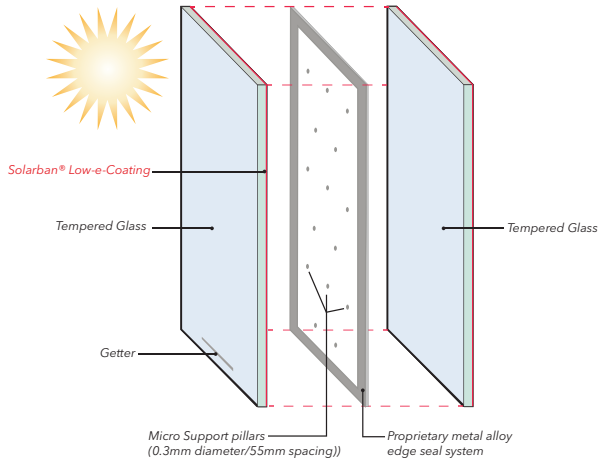
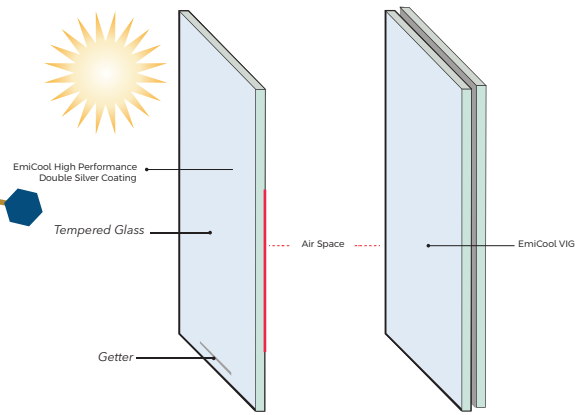
EmiCool Hybrid Glass enhances the performance of any glass configuration by effectively blocking thermal transmission, delivering thermal insulation performance that is 3-5x better than conventional insulating glass and up to 20x better than monolithic glass. It also offers extraordinary R-values and delivers energy savings and reduced carbon emissions.

VACUUM INSULATED GLASS (VIG) UNIT)





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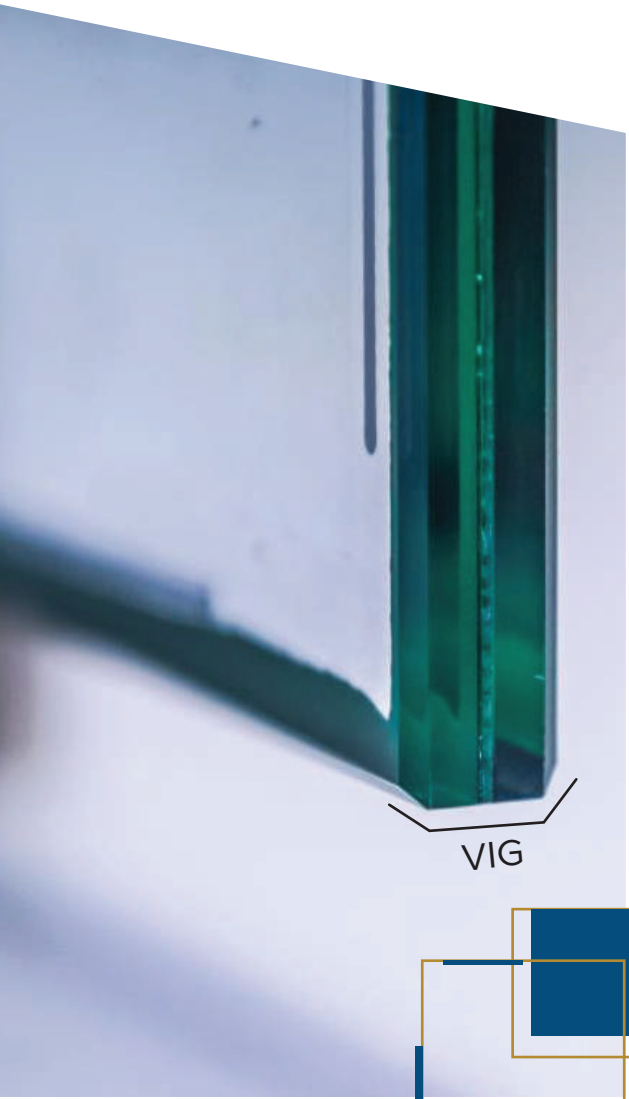
KEY FEATURES AND BENEFITS



1. Exceptional Thermal Performance:
EmiCool Hybrid Glass provides outstanding thermal insulation, reducing heat gain and loss. This results in significant energy savings and a more comfortable indoor environment year-round.

2. Enhanced Acoustic of Insulation:
Engineered to minimize external noise, EmiCool Hybrid Glass ensures a peaceful and quiet indoor space, making it ideal for urban environments and commercial applications.

3. Superior Safety and Security:
Our EmiCool Hybrid Glass is manufactured to meet the highest safety standards. It is designed to withstand impact and resist breakage, providing enhanced protection for your property and occupants.

4. Sustainable and Eco-Friendly:
Committed to sustainability, Emirates Glass utilizes eco-friendly materials and processes in the production of EmiCool Hybrid Glass. Our products contribute to LEED certification and other green building standards.

5. Versatile Design Options:
EmiCool Hybrid Glass is available in a wide range of colors, finishes, and sizes, allowing for limitless design possibilities. Whether for a sleek modern office building or a luxurious residential property, EmiCool Hybrid Glass enhances the visual appeal of any project.

6. UV Protection:
Hybrid vacuum glazing can include UV-blocking coatings that help protect against ultraviolet rays, reducing fading and damage to interior furnishings and materials

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THE ULTIMATE SOLUTION OF ENERGY SAVING GLASS
THE NEW STANDARD FOR QUALITY LIFE

Parameters	Single Glass	Double Insulated Glass	Triple Glass	EmiCool Hybrid
U- Value (W/m².K)	5.8	1.1	0.8	0.28
Thickness	4 mm	32 mm	36 mm	36.3 mm
Visible Light Transmittance	90%	Up to 80%	Up to 71%	Up to 80%

LIGHT AND ENERGY PERFORMANCE

Dimension	Maximum	1.5m x 2.5m
	Minimum	0.3m x0.3m
Shape	Standard	Square or rectangle
	Special Shape	Negotiated
Laminated Glass	Available	
	Option: As per requirements	

Note: The above data is for reference only. The specific product parameters need to be calculated separately. For parameters related to a specific product, please refer to the data provided by Emirates Glass.

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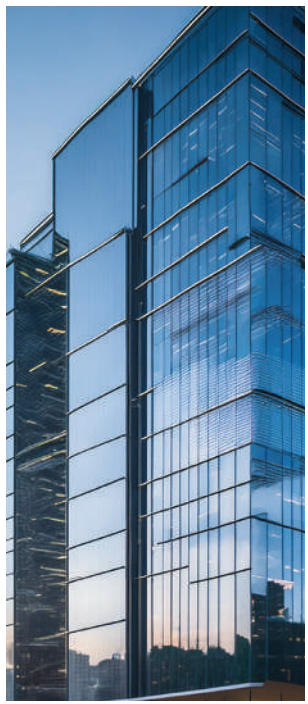
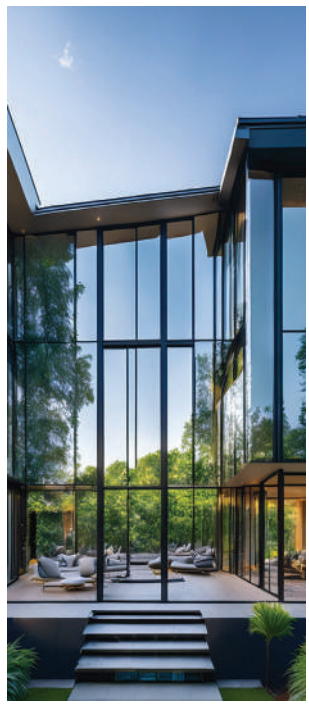
EMICOOL HYBRID GLASS APPLICATIONS

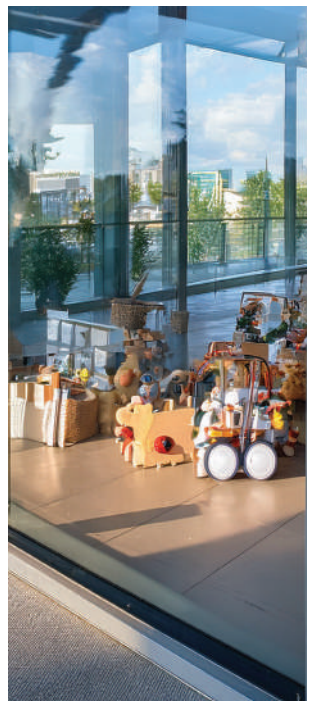
EmiCool Hybrid Glass by Emirates Glass is perfect for:



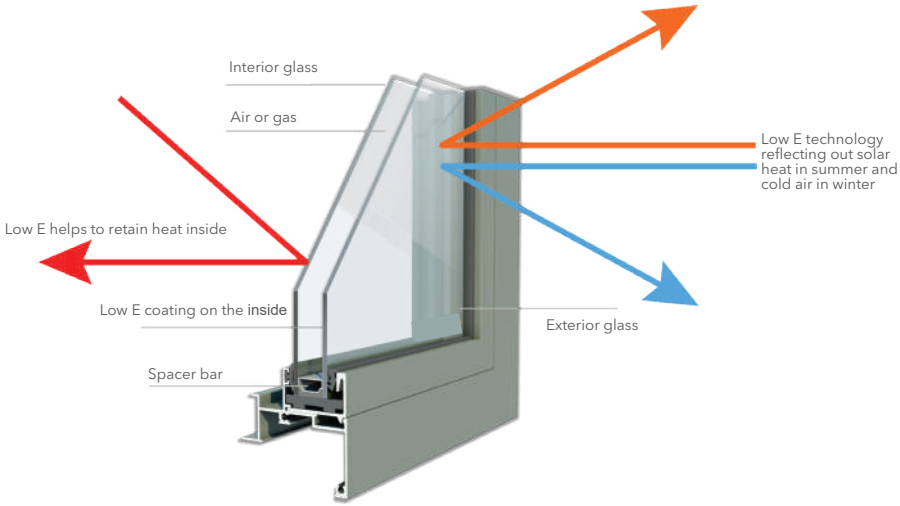
COMMERCIAL BUILDINGS



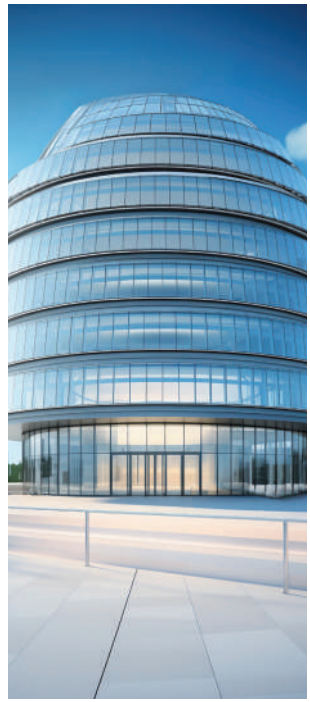
RESIDENTIAL PROJECTS



RETAIL SPACES



RETRO FIT



INSTITUTIONAL FACILITIES

EMICOOL HYBRID GLASS APPLICATIONS

EmiCool Hybrid Glass by
Emirates Glass is perfect for:

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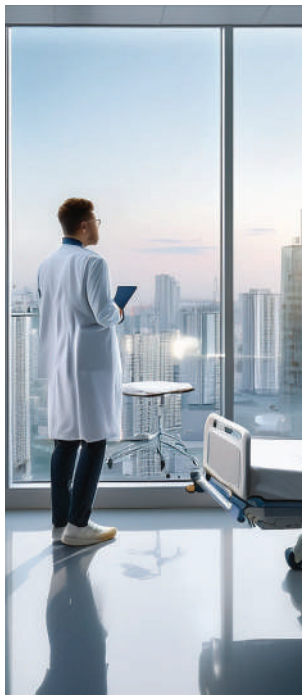
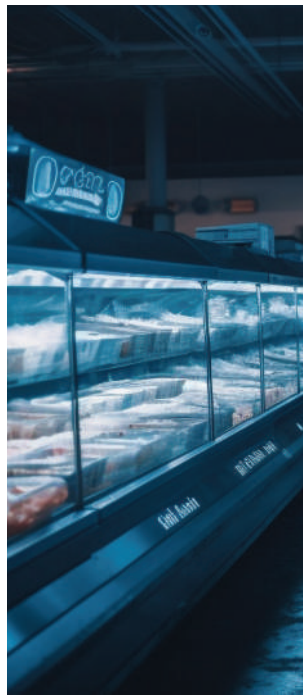


HOSPITALITY INDUSTRY

DATA CENTER WAREHOUSE

OFF GRID HOUSES



COLD STORAGE

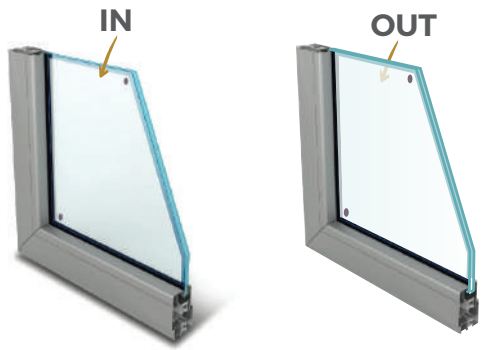
TRADITIONAL GLASS

Single Laminated Glass

Double Insulated Glass Unit

Triple Insulated Glass Unit

EMICOOL HYBRID GLASS



EmiCool Hybrid

BENEFITS OF EMICOOL
HYBRID GLASS UNIT

1. Enhanced Structural Performance:
Improved strength and stability.

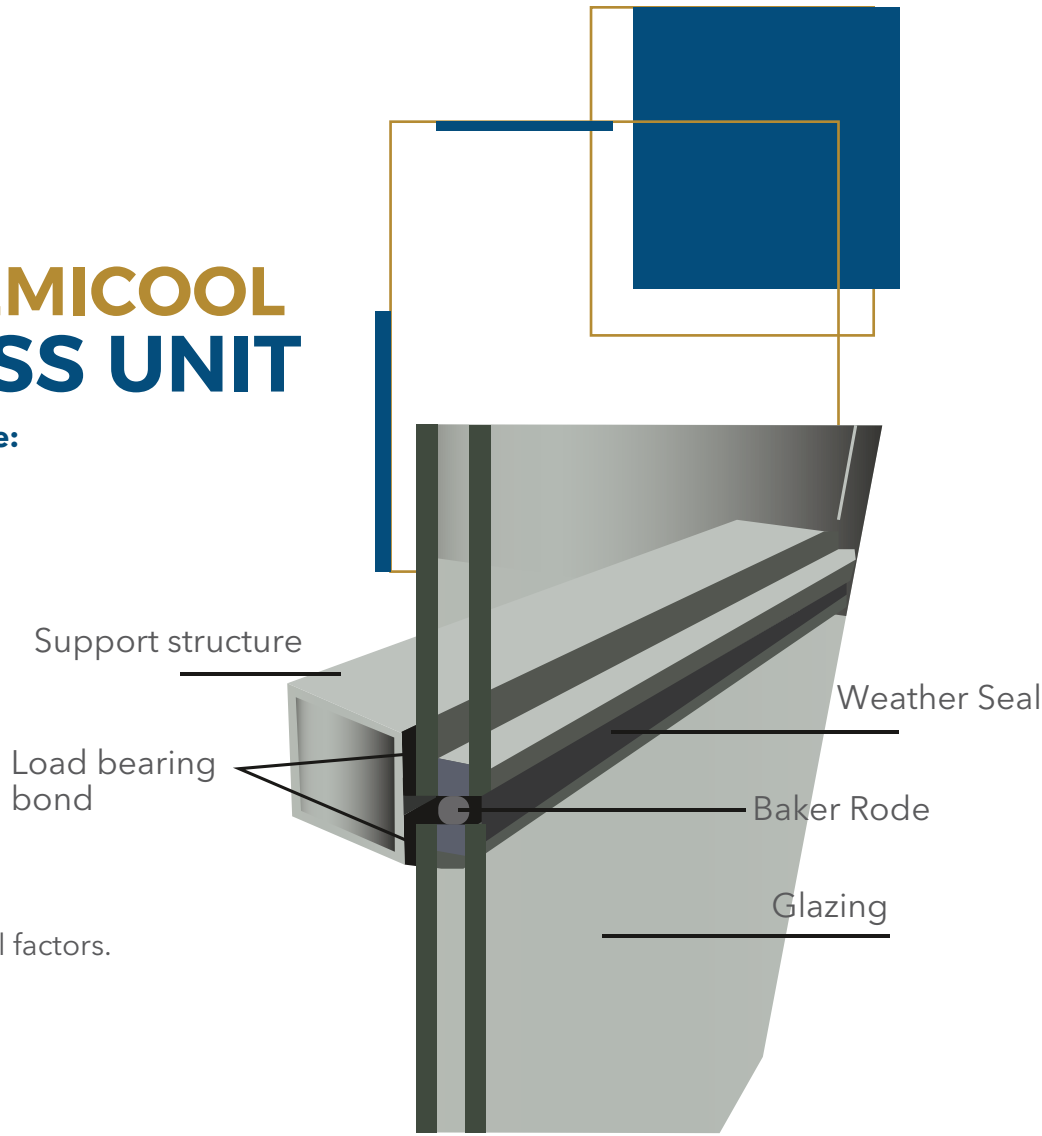
2. Material Efficiency:
Optimized use of materials.

3. Reduced Construction Time:
Faster installation.

4. Energy Efficiency:
Better insulation properties.

5. Noise Reduction:
Superior acoustic insulation.

6. Durability:
Increased resistance to environmental factors.



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Double Glass	Double Wall Glass with HVIG
Structure	
Two panes of glass separated by a layer of air or gas (like argon).	Features two panes of glass with inner glass made with two pieces joint with a vacuum a vacuum between them, significantly reducing heat transfer.
Thermal Insulation	
Provides good thermal insulation, reducing heat transfer and improving energy efficiency.	Superior thermal insulation compared to double glass, making it highly energy efficient. Also, can provide better insulation even once compared with solid wall.
Sound Insulation	
Offers decent sound insulation, but not as effective as more advanced options.	Excellent sound insulation due to the vacuum layer, which blocks more noise.
Applications	
Commonly used in residential and commercial buildings for windows and doors.	Ideal for high-performance buildings, including commercial and residential projects where energy efficiency and noise reduction are critical.
Value Comparison	
Long-term Savings:	Double wall glass with HVIG offers better long-term savings on energy bills.
Insulation:	Double wall glass with HVIG offers better thermal and sound insulation
Durability:	Typically, more durable and resistant to environmental factors.
Performance:	Double wall glass with HVIG is more suitable for high-performance applications requiring superior insulation
Comfort:	Improved indoor comfort due to better temperature regulation.
Sustainability:	Contributes to sustainable building practices by reducing energy consumption.
Expect to pay back the money through savings within 35 years	

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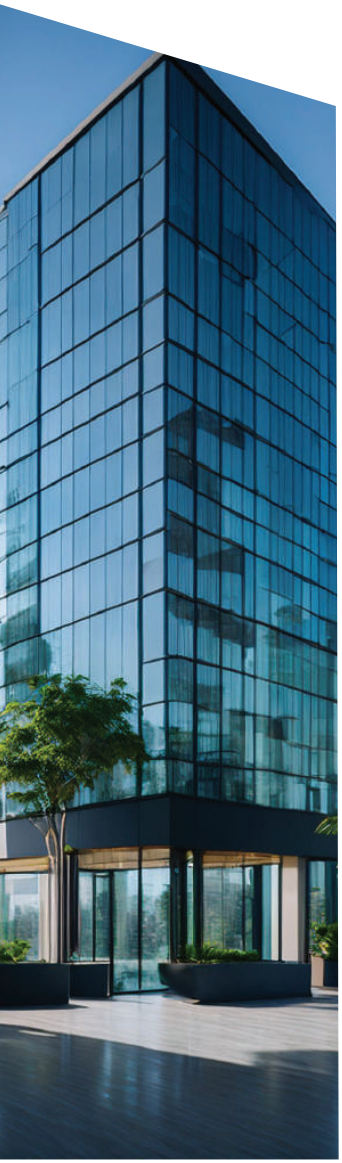
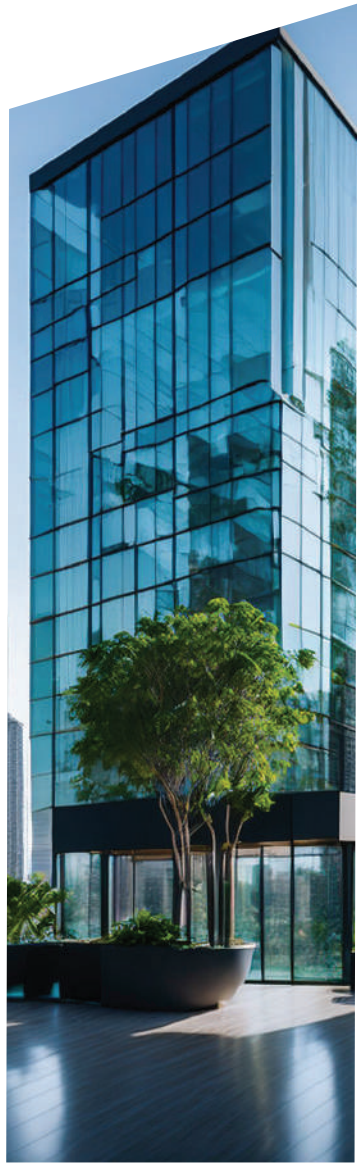


DOUBLE GLAZED VS SINGLE GLAZED

Double Glazed

Single Glazed



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THERMAL EMICOOL
HYBRID GLASS UNIT

With the increasing financial and environmental cost of the energy, designers are focusing their efforts on improving thermal performance of building envelopes. Another increasingly important parameter to consider in the design is the shading coefficient as reducing cooling demands is a high priority of envelopes comprising of high ratio between transparent and opaque areas. A shading device may be integrated into the structural system and recently dynamic shading components or switchable glass was researched by many teams with new exciting products emerging on the market.

* The reported U value is calculated according to the equation given in EN 674:2011 § 4.

Test result(s)

Sample: VIG glass- 4T+0.3V+4TL(Double Silver coating #4)+22AS+4TL/6 TL (Double Silver Coating # 5)

Corrected emissivity of the surface used for calculations: 0.837

Thermal resistance

Temperature (T)		Temperature difference (ΔT)	Thermal resistance (R) in $m^2 \cdot K/W$
R_{10}	10 °C	10 K	3.390
R_{20}	20 °C	10 K	2.366
R_{25}	25 °C	10 K	2.034
R_{40}	30 °C	10 K	1.812

Thermal conductivity

Temperature (T)		Temperature difference (ΔT)	Thermal conductivity (λ) in mW/m·K
λ_{10}	10 °C	10 K	11.09
λ_{20}	20 °C	10 K	15.89
λ_{25}	25 °C	10 K	18.49
λ_{30}	30 °C	10 K	20.75

Thermal transmittance

Temperature (T)		Temperature difference (ΔT)	Thermal transmittance (U) in $W/(m^2 \cdot K)$
U_{10}	10 °C	10 K	0.291
U_{20}	20 °C	10 K	0.505
U_{25}	25 °C	10 K	
U_{30}	30 °C	10 K	0.28

Thermal transmittance at 10°C (U) in $W/(m^2 \cdot K)$

P	☐
F	☐
N/A	■
N/T	☐

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