

Vacuum Glass

Innovative Vacuum Glass Technology

Build a low carbon world



HaanGlass is international pioneer in vacuum glazing industry.

We research, develop vacuum insulated glass technology, manufacture and supply VIG worldwide.

With SGCC / IGCC certified long durable safety vacuum insulating

glass, our mission is to make vacuum insulating glass more

reliable, more affordable and more popular.



What's Vacuum Insulating Glass?

Different from insulated glass, the vacuum glass panels are sealed and separated by 0.3mm vacuum space at 10^{-4} Pa.

The vacuum space eliminates the transmittance medium of thermal and sound, making vacuum glass the ever best energy-efficient glass.



More Comfort



Low carbon emission



Thin and light



Sustainable development



HaanGlas VIG Basic

HaanGlas Basic is our Basic VIG solutions.

The solution offers both annealed & Tempered version, with best $0.45 \text{ W/m}^2 \cdot \text{K}$ thermal conductivity while keeping up to 80% high light transmittance.

Flexible production schedule, variety shape options, quick delivery makes it perfect for windows restoration and replacement.

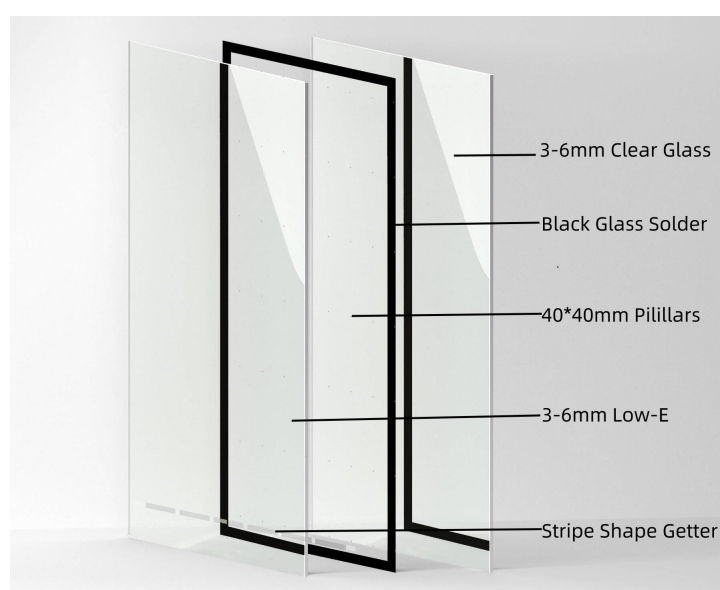
Beside single VIG glazing, laminated VIG and hybrid insulated VIG are available to have better safety and thermal performance.

Learn more about us ,and our vacuum glazed windows:

www.vacuum-glass.com

www.vigwindows.com

Vacuum Glass Basic Structure



Vacuum Glass Features

● Thermal Insulation	U value <0.5W/m2.k Not affected by installation angles
● Acoustic Performance	Weighted sound reduction =36Dbs
● Thickness	6.15 8.15mm-Annealed , 10.15mm 12.15mm Tempered
● Weight	Minimum 15kgs/M2
● Condensation	No condensation under -60℃
● Flatness	No expansion& contraction
● Lifetime	Lifetime >25 years, warranty = 15 years

Why HaanGlas is different?

- 90 Fully tempered glass -High glass strength >90Mpa
- 180 No evacuation holes design,180° flat appearance
- 8.15 Minimum thickness 3+0.15+3mm,perfect for renovation
- 350 <350℃ low temperature metal edge sealing technology
- 2500 Max available size 1600*3000mm,More available applications
- 3000 Over 100 different glass combination -substrate,coating,thickness
- 24000 Monthly output over 24,000 square meters,high production capability

Learn more about us ,and our vacuum glazed windows:
www.vacuum-glass.com www.vigwindows.com

Vacuum Glass Performance

Glass	Thickness	LT %	LR-Out	LR-In	U value	SHGC
4 MS1.1+0.15V+4	8.3MM	78	16	15	0.5	0.51
4 MS1.16+0.15V+4	8.3MM	80	13	13	0.55	0.57
4 MD80+0.15V+4	8.3MM	70	12	13	0.45	0.38

Remark: Above data are calculated by LBNL Windows 7.5 based on NFRC 100-2010/EN673 ,actual performance may slightly vary.

Production capability

- **Minimum Size:** 270*270mm
- **Vacuum laminated glass:** EVA
- **Monthly output:** 24,000 sqm
- **Colors:** Clear, Blue, Grey etc
- **Maximum size:** 1600*3000mm
- **Shape:** Rectangle shape, flat glass
- **Product warranty:** 15 years.
- **Optional Further Processing:** LVIG | HVIG

Vacuum Glass Test Reports

Performance	Standard	Test Item	Glass	Result
● Thermal Insulation	ASTM C518	Stable - state U value	5S1.16+0.3V+5	0.5w/m2.k
	ISO8301 / EN12667:2001	Stable - state U value	5S1.16+0.3V+5	0.54w/m2.k
● Soundproof	GB/T19889.3-2005	Weighted Sound Reduction	5S1.16+0.3V+5	36(-1,-3) Dbs
● Safety Performance	EN12600:2002	Pendulum Impact test	5S1.16+0.3V+5	1C3
	ANSI Z97.1:2005	Pendulum Impact test	5S1.16+0.3V+5	Pass
	EN12150-1:2005+A1:2019	Particle Count	5S1.16+0.3V+5	>90Mpa
	EN356:1999	Hard body impact test	8.15+0.76+4C	P1A
			10.15+0.76+4C	P1A
● Weathering Performance	ASTM E546/E2188/E2189	Weather Acceleration	5S1.16+0.3V+5	Pass

Why VIG is Amazing?

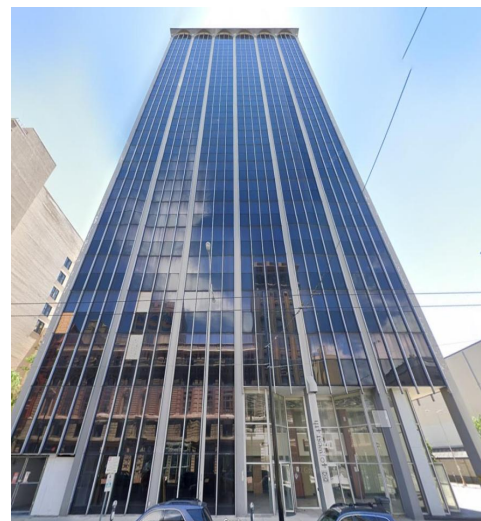
Glass Type	6 Clear	6LE +12A+6	6LE+12Ar+6+12Ar+6	4 LE+0.3V+4
Thickness -mm	6mm	24mm	42mm	8 mm
Weight- Kgs/m2	15	30	45	20
LT %	88	68	52	80
U value-W/m2.k	5.82	1.65	0.71	0.5
SHGC	0.82	0.38	0.30	0.57
STC/OITC -dBs	30/28	34/29	37/29	36/33

Criteria	HaanGlas Basic	HaanGlas PRO
Innovative Vacuum Insulating Glass	 HaanGlas VIG Basic	 HaanGlas VIG Pro
Glass Sealing Material	Low Temperature Glass Solder	Low Temperature Metal
Min Thickness	6.15mm annealed	6.15mm Tempered
Pillar Materials	Translucent Ceramic pillars	Black/translucent ceramic pillars
Pillar Distance	40*40mm	25*25/30*30/40*40mm
Getter Type	Stripe Shape	Round Getter/ Needle Shape
Evacuation Holes	No	No
Edge Width	8-12mm	10mm
Best U value-W/m2.k	0.45W/m2.k	0.45W/m2.k
Toughen Status	6.15 8.15 Heat Strengthened 10.15 12.15 Toughened	All Toughened
Supplying Capability	300,000sqm / Year	50,000sqm / Year

Project Reference



Shenzhen Heping Primary School 5C+12Ar+5LE+0.3V+5, 1,000SQM



USA Grant Deneau Tower (2023)



Shandong HaanGlas Co.,Ltd

Add: NO.2 Dongyue Ave,Taian,Shandong,PRC

Web: www.vacuum-glass.com

Email: info@vacuum-glass.com

VIG Windows (Shandong) Co.,Ltd

Web: www.vigwindows.com

Qingdao Morn Building Materials Co.,Ltd

Web: www.mornglasss.com

Learn more about us ,and our vacuum glazed windows:

www.vacuum-glass.com

www.vigwindows.com