



ARCHITECTURAL &
STRUCTURAL GLASS SPECIALIST

norn BUILDING
MATERIALS
— 墨恩建材 —

Qingdao Morn Building Materials Co.,Ltd



ABOUT MORN

A fast growing firm of glass experts specializing in architectural glass products,we offer glass solutions,manufacture,supply,and deliver glass worldwide.

After noticing the difficulty most oversea envelopes & interior companies encountered during sourcing architectural glass from China,Morn BM was established aiming to be the single source of architectural glass.

Over 10 years glass industry experience was brought to Morn,our glass experts offer professional suggestions confirming the glass combination ,inspect glass fabricating process,deliver various tempered glass,laminated glass,insulated glass worldwide.

Over 50 China glass factories support Morn BM to be the most professional glass company.High quality engineering glass with CE/IGCC/SGCC/CSI/CEKAL certificates will be the ideal part of your great building .



BENEFIT WORKING WITH MORN

- Simplified Supply Chain
 - Ensured highest quality
 - Worry free procurement
- Stay on budget&schedule
 - Professional Service
 - Friendly Financial Policy

OUR PARTNERS



PRODUCTION EQUIPMENT



Low-e coating



Land tempering



Dust free laminating



Lisec insulating

HEAT TREATED GLASS

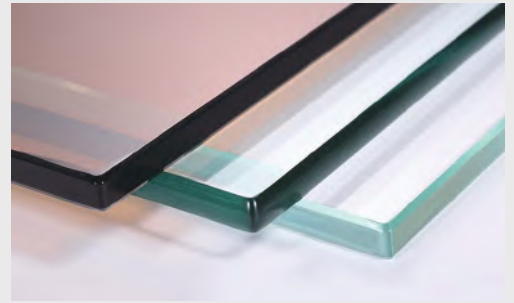
Heat treated glass, is glass that processed with tempering furnace. With the 670-720 °C and fast cooling process, the surface and interior compression changed and keep relatively balance.

- Toughened glass
- Heat Strengthened glass
- Heat Soaked glass
- Curved glass

Glass standards: EN12150、ANSI2208、ASTM C1048, BS EN14179
Processing capability: Flat glass: 13000*3300mm
Curved glass: 6000*2440

Available pre-processing:

- Edge work- Arrised, Ground, Polished, Pencil etc.
- Perforation -Direct, Countersunk
- Notch -Cutout for door & lock
- Corner -Safety corner, Round Corner
- Silk Screen /Ceramic Frit printing
- Digitally printing /UV printing
- Acid etched, sandblasting, anti slip patterns.



LAMINATED GLASS

Laminated Glass is combining two or multi glass panels with interlayer under high temperature and pressure. The interlayer can be EVA, PVB, SGP or more to bond glass permanently.

- PVB laminated glass
- EVA laminated glass
- SGP laminated glass
- Functional laminated glass

Glass standards: EN14449, ANSI2208, ASTM C1048, GB15763.3
Processing capability: Flat glass: 13000*3300mm
Warranty time: 5 years

Functional laminated glass types:

- Soundproof: Acoustic PVB laminated glass
- Safety: Bulletproof glass, Anti-intrusion glass, Hurricane proof glass
- Privacy protection: Gradient laminated glass, PDLC smart glass
- Decoration: Organic laminated glass, colorful laminated glass, Dichroic laminated glass



INSULATED GLASS

Insulated glass is a hermetically sealed multi-glass combination consisting two or more panes separated by a spacer filled with high efficient desiccant. The most important function is reducing thermal loss, achieve lower energy consumption.

- Solar reflective insulated glass
- Low-E coated insulated glass
- Triple glazed insulated glass
- Passive house insulated glass

Glass standards: EN1279, ANSI4666, IGCC, GB11944
Processing capability: 13000*3300mm
Warranty time: 10 years

Additional process on insulated glass

- Argon filling process
- Capillary tube
- Grill inserted insulated glass
- Aluminium U channels
- Perforation & Notches
- Stepped insulated glass



EXTERIOR APPLICATION

1.Sound Acoustic Glass *Create Silence With Morn Acoustic Glass Solution*

High sound transmission loss will decrease the noise significantly and create silent and quite environment.glass has been the weakest point of the building overall acoustic performance, MORN offer acoustic glass & soundproof glass solutions.

- Increase glass thickness
- Laminated glass with acoustic interlayer
- Insulated glass
- Combined glass configuration.



2.Structural Glass *Get More Security and Beauty With Morn Structural Glass Solution*

- **Stiff PVB laminated glass:** Saflex® DG structural interlayer is a tough, resilient PVB film. It is designed specifically for applications where increased interlayer rigidity and high glass adhesion are required.
- **SentryGlas Plus laminated glass:** 5 times tougher, up to 100 times stiffer Stronger and more rigid than PVB, SentryGlas® ionoplast interlayers help create safety glass that protects against bigger storms, larger impacts and more powerful blasts,as well as longterm weather resistance for structural glass system.



3.Thermal Insulation Glass *Reduce your costs in A/C ,enjoy the convenient interior temperature.*

The energy consumption used by heating and A/C increased significantly.Thanks to technology development, Morn thermal insulation solutions,project owners will decrease energy costs and help reducing carbon dioxide exhaustion.

- Hard coated Low-E:

Glass Type	Glass Substrate	LT	U Summer	U-Winter	SC
AGG Planbel G	Clear	80	3.06	3.87	0.78
AGG Sunergy	Blue	69	3.42	4.17	0.68
SGE 60	Crystal Grey	56	2.86	3.71	0.61
SGC 60	Euro Grey	42	2.87	3.72	0.55

- Soft coated Low-E:Single silver,double silver ,triple silver low-E coatings.

Glass Configuration	Substrate	LT	U Summer	U-Winter	SC
Clear 6-12-6	Clear	79	2.70	2.84	0.81
Single PLE88A 6-12-6	Clear	75	1.81	1.81	0.66
Double PDE80A 6-12-6	Clear	71	1.58	1.64	0.48
Triple MTE70 6-12-6	Clear	66	1.58	1.64	0.35

- Vacuum Glass:

Glass Configuration	Coating Type	LT	U VALUE	SC	STC
5TLE+0.3V+5T	Single Silver	80	0.53	0.71	36
5TLE+0.3V+5T	Double silver	70	0.48	0.56	36

4.Safety Glass: *Prevent possible injury with safety glass*

Safety Glass now is the most basic requirement when designing and constructing a new building. Avoid possible injury , keep glass security under complex and indeterminate nature condition &people ,selecting the right safety glass to ensure healthy life is quite necessary.

- Laminated Glass
- Hurricane Proof Glass
- Bulletproof Glass
- Anti Intrusion Glass



INTERIOR APPLICATION

1. Shower Door Glass

Shower enclosure is standard and most frequent used household ,whether it's framed or frameless shower rooms,the component include tempered glass or laminated glass,hardware,and can be square,curved ,round shape glass.

- Toughened Glass:Clear ,low iron ,body tinted glass etc.
- Toughened Patterned Glass:Moru,Masterlite,Aqualite,Rain II,Nashiji etc.
- Gradient Effect Glass: Gradient laminated glass,Silk screen gradient glass.
- Silk Screen Glass:Lines,Dots,any patterns you want.
- Digitally Printed Glass:Print any images on glass surface.
- Acid Etched Glass; Frosted glass,anti fingerprint acid etching process.

Additional service:

- Self-Cleaning coating-10 years warranty
- Individual carton packing
- Shower door Hardware:Clamps,Handles,Hinges,etc.



2.Privacy Protection

Privacy,whether in commercial or residential ,is the one of the most important function of glass.Protect your secret and personal privacy with privacy protective glass.

- Frosted Glass
- Laminated translucent glass
- PDLC smart switchable glass
- One-way mirror
- Gradient Glass
- Silk screen | Digitally printed Glass



3.Decorative Glass

Glass can be colorful, and new creative dichroic glass even have different colors viewing from different angles,digitally printed glass can also print creative and unique exterior appearance.

- Colorful laminated glass
- Back painted glass
- Dichroic glass
- Organic laminated glass



4.Mirror products

Mirror,from China ancient mirror made with Bronze, to nowadays clear and healthy copper free mirror, combination with new technology,blue-tooth, heating,touch switch,videos and more to make our life better and better.

- Standard Mirror panels
- Processed mirror
- Safety mirror
- LED smart mirror



SPECIAL APPLICATION SOLUTIONS

1.Greenhouse Glass

Greenhouses provide the ideal, controlled environment to grow all kinds of vegetables and plants all year round. The main function of a greenhouse is to secure the ideal levels of humidity and heat, which can be generated from either sunlight or an alternative source.

- Clear toughened glass
- Low iron toughened glass
- Diffused toughened glass
- Anti-reflective coated glass
- Insulated glass



2.Fireproof Glass

Compared with traditional architectural glass, fireproof glass (or fire rated glass) is relatively new, some glass processors are not really understand the fireproof glass very well, Morn supply fireproof glass and protect you if any fire happens.

- High Borosilicate Glass
- High Compression Stress Glass
- Cesium-Potassium Glass
- Laminated Fireproof Glass
- Composite Crystal Silicon Glass



3.Anti-Reflective Glass

Different from the anti reflective glass used in greenhouse industry, commercial buildings and special buildings, for example shopfront, museum, diamond showcase, need to the lowest reflectance to show products better, Morn works with anti reflective glass manufacturers and supply anti reflective products for special application.

Glass Configuration	LT%	LR(out)%	LR(in)%	SC	SHGC
10C+1.52PVB+10C	83	8	8	0.78	0.68
10 Low Iron+1.52PVB+10 Low Iron	89	8	8	0.94	0.82
10 AR+1.52PVB+10 Low Iron	90	6	6	0.92	0.8
10 AR+1.52PVB+10 AR	98	1	1	0.93	0.81
5 AR-single side	94.83	4.8			
5 AR-double side	99	0.67			



4.Aluminium Solutions

For glass facade projects, Whether it's stick curtain wall, hidden frame curtain wall, unitized curtain wall, the best partner of architectural glass is Aluminium. Beside architectural glass products, Morn aluminium solutions include extruded aluminium profiles, aluminium solid panels, aluminium windows & doors, system windows.

- Aluminium profiles
- Aluminium Windows&doors
- Aluminium Solid panel



GLASS PERFORMANCE DATA

NO.	Glass Makeup	Visible Light(%)			Solar Energy(%)		U-value(W/m2.K)		SC	SHGC
		Trans	Reflect		Trans	Reflect	Winter	Summer		
			Outdoor	Indoor						
1	6mm Clear	90	8	8	84	8	5.81	5.25	0.99	0.86
2	6mm Low iron	91	8	8	90	8	5.81	5.25	1.04	0.90
3	6mm Fgreen	75	7	7	44	5	5.81	5.25	0.69	0.60
4	6mm Crystal grey	64	6	7	56	6	5.81	5.25	0.77	0.67
5	6mm Euro Grey	44	5	5	43	5	5.82	5.25	0.68	0.59
6	6mm Dark grey	19	6	6	28	6	5.81	5.25	0.51	0.44
7	6mm Light blue	75	7	7	55	6	5.80	5.23	0.77	0.67
8	6mm Ocean blue	55	6	6	45	6	5.80	5.23	0.69	0.60
9	6mm Ford blue	57	6	5	47	6	5.80	5.23	0.71	0.62
10	6mm Euro bronze	49	7	7	49	6	5.84	5.27	0.72	0.62
11	6mm Planibel -G #2	80	9	9	62	8	3.87	3.06	0.78	0.67
12	6mm Sunergy #2	69	9	10	51	9	4.17	3.42	0.68	0.59
13	6mm Energy Advantage #2	82	11	11	66	10	3.64	2.78	0.80	0.70
14	6mm SGE 60 Low-E #2	56	8	9			3.71	2.86	0.61	0.53
15	6mm SGC 60 Low-E #2	42	6	8			3.72	2.87	0.55	0.48
16	6 Crystal grey reflective	42	16	30	43	12	5.79	5.25	0.68	0.78
17	6 Euro grey reflective	19	17	54	30	13	5.81	5.24	0.46	0.40
18	6 Euro Bronze Reflective	22	13	44	32	10	5.81	5.24	0.57	0.49
19	6 Ford Blue Reflective	23	22	52	28	15	5.81	5.24	0.53	0.45
20	6 TMNSE39-T+12A+6C	35	29	11	21	27	1.8	1.79	0.32	0.28
21	6 TMNSE50-T+12A+6C	42	31	15	25	31	1.71	1.68	0.36	0.31
22	6 TMNSE52-T+12A+6C	46	21	10	28	21	1.81	1.81	0.4	0.35
23	6 TMNSE57-T+12A+6C	51	19	10	32	20	1.87	1.89	0.45	0.39
24	6 TMNSE60-T+12A+6C	53	21	11	34	21	1.8	1.8	0.48	0.42
25	6 TMNSE66-T+12A+6C	58	18	11	37	20	1.8	1.79	0.51	0.44
26	6 TMNSE70-T+12A+6C	60	12	11	39	15	1.83	1.84	0.53	0.46
27	6 TMNSE88-T+12A+6C	75	12	12	49	17	1.81	1.81	0.66	0.57
28	6 TMNDE48-T+12A+6C	44	16	17	27	22	1.62	1.55	0.32	0.28
29	6 TMNDE50-T+12A+6C	46	27	32	34	21	1.63	1.57	0.3	0.26
30	6 TMNDE60-T+12A+6C	58	17	19	27	29	1.62	1.56	0.4	0.35
31	6 TMNDE70-T+12A+6C	64	10	12	27	31	1.64	1.57	0.42	0.37
32	6 TMNDE80-T+12A+6C	71	10	11	27	36	1.64	1.58	0.48	0.42
33	6 TMTE60-T+12A+6C	52	11	13	21	35	1.64	1.56	0.29	0.25
34	6 TMTE70-T+12A+6C	67	15	16	26	40	1.62	1.55	0.34	0.30
35	6 TMTE72-T+12A+6UC	72	15	15	29	54	1.62	1.56	0.36	0.31
36	6TMSUE1.16+12A+6C	80	13	13	50	24	1.72	1.69	0.65	0.57
37	6TMSUE1.16+12A+6UC	83	14	14	60	30	1.73	1.70	0.71	0.61

1.The data is based on calculation by Window 7.0 under NFRC 100-2001 standard condition.

2.The actual performance data may slightly differ from the data listed.



Single source China Architectural Glass

Qingdao Morn Building Materials Co.,Ltd

Address:A304,Shengxifu,NO.209 Weihai Road,Shibei,Qingdao,China

Tel:+86 17705464660 +86 18206375495

Email:marketing@morglass.com bella@morglass.com

Website:www.morglass.com



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wechat