**SHANGHAI YAOHUA PILKINGTON GLASS GROUP CO.,LTD.**
BUILDING 4-5, NO.1388 ZHANGDONG ROAD, PUDONG , SHANGHAI,CHINA
TEL: +86 21 61633599
POST CODE:201203

**SHANGHAI SYP ENGINEERING GLASS CO., LTD.**
NO.75 KANGLIU ROAD, PUDONG SHANGHAI ,CHINA
POST CODE: 201315
TEL:+86 21 38108108

**TIANJIN SYP ENGINEERING GLASS CO., LTD.**
NO.1 HUATAI ROAD, HI-TECH INDUSTRIAL PARK
BEICHEN, TIANJIN, CHINA POST CODE:300409
TEL:+86 22 86880202

**JIANGMEN SYP ENGINEERING GLASS CO., LTD.**
NO.10 YINYUAN ROAD, XINHUI ECONOMICAL ZONE,
JIANGMEN, GUANGDONG PROVINCE, CHINA
POST CODE:529141
TEL:+86 750 6398999

**CHONGQING SYP ENGINEERING GLASS CO.,LTD.**
NO.1 YAOPI ROAD,WANSHENG, CHONGQING, CHINA
POST CODE:400800
TEL:+86 23 65966666

2017/05 (印)

耀皮玻璃集团
Shanghai Yaohua Pilkington Glass Group Co.,Ltd.

SYP

# SYP ARCHITECTURAL GLASS

MAKE A DIFFERENCE

STRIVE FOR EXCELLENCE

SYP GLASS

# contents

# ABOUT SYP

Shanghai Yaohua Pilkington Glass Group Co.,Ltd. (Abbr: SYP) was founded in November 1983. It became one of the first public listed glass manufacturers in China with its IPO completed in 1993.

Currently SYP has three major Businesses , i.e., float glass, architectural processed glass and autoglass , with total assets over RMB 7.2 billion. SYP can produce 550,000 tons float glass, 50 million square meters architectural processed glass and 3 million sets of autoglass every year.

SYP has long been certified with ISO9001: 2000 quality management system and the ISO14001 international certificate of SGS in China. Moreover, SYP was awarded Shanghai Famous Trademark at the end of 2005. The float glass and IGU products were awarded the China Top Brand products. SYP architectural processed glass products have been awarded Shanghai Top 100 Brand Name products for sequential eight years.

Keeping its leading position in China' s glass industry, SYP is trying it' s best to build itself as a leading multi - national glass manufacturer.



## MAKE A DIFFERENCE
## STRIVE FOR EXCELLENCE

### SYP PRODUCT-HIGH QUALITY

- 1.8mm-25mm High Quality Clear Float Glass
- 2mm-12mm High Quality F Green(SYP-22), Blue(SYP-25), Eurogrey (SYP-58), PG (dark grey) , Low Iron Tinted Glass
- High Quality Low-E Coated Glass (Triple Low-E),Solar Reflective CoatedGlass, Insulated Glass Units, Laminated Glass, Tempered Glass, Enameled Glass Curved Glass, Curved Tempered Glass and Fireproof Glass
- Autoglass
- Low-iron Patterned Glass

### SYP PRODUCTION TECHNOLOGY AND EQUIPMENT -ADVANCED AND FIRST CLASS

Float Lines: 3 High Quality Float GlassProduction Lines Processing Glass Lines: We have the most advanced equipment introduced from famous international manufacturers.

- 6 Sputter Coating Lines
- 46 Insulating Glass Lines
- 10 Laminated Glass Lines
- 36 Tempered Glass Lines
- 4 Curved Tempered Glass Line
- 7 Enameled Glass Lines
- 1 Curved Glass Line
- 13 Heat Soak Test Lines
- 1 Digital Printing Line

### SYP PROCESSED GLASS ADVANTAGE

- Pilkington' s Technical Support
- A stable team, rich with experi-
- ence.
- First-class production equipment. Guaranteed high quality float
- glass,supplied from our own operations
- Strict quality controls on raw materials.
- One of the world largest Vertically Integrated Glass Manufacturer.

### SYP PHILOSOPHY

In pursuit of continuous improvement

# ARCHITECTURAL GLASS



# FLOAT GLASS

Modern Float glass technology was invented in 1952 by Pilkington UK .With technical support from Pilkington, SYP's float glass became the top quality in China, and having the highest reputation for 30 years.
Nowadays SYP has 4 high quality float lines, 3 of them are full set of Pilkington technology and equipment, the other is NSG technology, producing high quality float glass.

PROJECT : Jockey Club Innovation Tower
PRODUCT : 12mmYSD0120FT

## CLEAR FLOAT GLASS

The molten glass flows out of the furnace and floats on liquid tin surface.The glass floats on the molten tin, spreading out and forming a level surface. Thickness is controlled by the speed at which the solidifying glass is drawn off the tin bath. The glass travels through an annealing lehr where the cooling process continues under controlled conditions and emerges in one long continuous ribbon, where it is then cut to the customers' specification.

## PRODUCT STANDARDS

GB11614-1999 Float Glass
EN572-2 European Standard
BS952 UK Standard
ASTM C1036 American Society for Testing and Materials
JIS R3202 Japan Standard

## FEATURES

Stable glass quality, high rate of finished product,low rate of self breakage.
Stress is evenly controlled during production,easily to be cut; Fine optical performance.
Flat surface, even thickness, high transmittance rate.
Strong ability for continuous supply.

## JUMBO SIZE THICK GLASS

SYP supplies glass thickness between 12mm-25mm. Jumbo size glass possess the characteristic of high intensity and wide view, being the best choice for commercial architecture, lobby's and show windows.

## SPECIFICATIONS

Thickness:
1.8-25mm (1/14" ~1" )
Maximum size:
3300x12500mm (130" x492 $^{1}/_{8}$ ")

PROJECT: Tianjin Botanical Garden
PRODUCT: 15FT Point Supported Glass




PROJECT:
Botanical House of Shanghai People's Garden
PRODUCT:
6mm FT Low-E+1.52PVB +10mm FT Spider Glass

PROJECT:
Shanghai New International Expo Center
PRODUCT: 12mm FT

PROJECT : Shanghai Huaihai Building
PRODUCT : 19mm FT

## CLEAR FLOAT GLASS

| Thick -ness (mm) | Weight (kg/㎡) kg/m² | Visible Light (%) | | Solar Energy (%) | | | g Value ISO9050 AM=1.0 | Solar Heat Gain Coefficient (SHGC) NFRC 100-2010 | Shading Coefficient (S.C.) NFRC 100-2010 | NFRC U Value W/m².K NFRC 100-2010 | | European U- Value W/m².K (EN 673) | STC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Trans-mittance | Reflec-tance | Trans-mittance | Reflec-tance | Absor-ptance | | | | Summer | Winter | | |
| 4 | 10 | 90 | 8 | 85 | 8 | 7.00 | 0.85 | 0.87 | 1.00 | 5.30 | 5.88 | 5.8 | 29 |
| 5 | 12.5 | 90 | 8 | 83 | 8 | 9.00 | 0.84 | 0.86 | 0.99 | 5.27 | 5.84 | 5.7 | 30 |
| 6 | 15 | 89 | 8 | 80 | 7 | 13.00 | 0.83 | 0.84 | 0.97 | 5.24 | 5.81 | 5.7 | 31 |
| 8 | 20 | 88 | 8 | 77 | 7 | 16.00 | 0.81 | 0.82 | 0.94 | 5.19 | 5.74 | 5.7 | 33 |
| 10 | 25 | 87 | 8 | 74 | 7 | 19.00 | 0.79 | 0.80 | 0.92 | 5.13 | 5.67 | 5.6 | 34 |
| 12 | 30 | 86 | 8 | 72 | 7 | 21.00 | 0.77 | 0.78 | 0.90 | 5.07 | 5.61 | 5.5 | 36 |
| 15 | 37.5 | 85 | 8 | 69 | 7 | 24.00 | 0.74 | 0.76 | 0.88 | 4.99 | 5.51 | 5.4 | 38 |
| 19 | 47.5 | 83 | 8 | 62 | 6 | 32.00 | 0.70 | 0.71 | 0.82 | 4.89 | 5.39 | 5.3 | 40 |

※The glass performance data will be finalized by the performance data sheet which submitted by SYP. Above performance just for design reference.
※The above data are calculated by WINDOW6.3 developed at Lawrence Berkeley National Laboratory, except for having been given clear indication of standards.

PROJECT: Tamar Central Government Of–fices–HK
PRODUCT:
1) 8mm YBE0180J w/Frit HS+12G+ 8mm HS+1.52PVB+8mm HS
2) 8mm YNE0175 HS+12G+8mm HS+1.52PVB+8mm HS

PROJECT: One Central Park
PRODUCT:
6mm YNE0168HS
+12A+5mm+0.38PVB+5mm

PROJECT: Baccarat Hotel
PRODUCT:
10mm LOW IRON YRE0652
+12A+8mm LOW IRON

## LOW IRON FLOAT

Applying the unique formula to be good resistance stain. Low content of iron to make the color brighter and the solar energy transmittance higher. Good processible performance to avoid the rainbow effect after tempering.

## SPECIFICATIONS

Thickness: 3-19mm 1/8″ ~3/4″
Maximum Size: 3660 x12000mm
144″ ~472″

## COLOR

F Green , Blue , Euro Grey Crystal Grey

## FEATURES OF TINTED FLOAT

Absorbs solar energy;
Reduces solar radiation;
Can be a substrate for a more complex product.

## SPECIFICATIONS

Thickness: 2-12mm 3/38″ ~1/2″
Maximum Size: 3300 x6500mm 130″ ~256″

### LOW IRON FLOAT GLASS

| Product | Thick -ness mm | Visible Light(%) | | Solar Energy (%) | | g Value ISO9050 AM=1.0 | Solar Heat Gain Coefficient (SHGC) NFRC 100–2010 | Shading Coefficient ( S.C. ) NFRC 100–2010 | NFRC U Value W/m².K NFRC 100–2010 | | European U– Value W/m².K (EN 673) | STC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Transmi -ttance | Reflec -tance | Transmi -ttance | Reflec -tance | | | | Summer | Winter | | |
| Low Iron | 5 | 92 | 8 | 90 | 8 | 0.90 | 0.90 | 1.04 | 5.27 | 5.84 | 5.7 | 30 |
| | 6 | 91 | 8 | 89 | 8 | 0.90 | 0.90 | 1.04 | 5.24 | 5.81 | 5.7 | 31 |
| | 8 | 91 | 8 | 88 | 8 | 0.89 | 0.89 | 1.03 | 5.19 | 5.74 | 5.7 | 33 |
| | 10 | 91 | 8 | 88 | 8 | 0.88 | 0.89 | 1.02 | 5.13 | 5.67 | 5.6 | 34 |
| | 12 | 91 | 8 | 87 | 8 | 0.88 | 0.89 | 1.02 | 5.07 | 5.61 | 5.5 | 36 |
| | 15 | 90 | 8 | 86 | 8 | 0.87 | 0.88 | 1.01 | 4.99 | 5.51 | 5.4 | 38 |

### TINTED FLOAT GLASS

| Product | Thick -ness mm | Visible Light(%) | | Solar Energy(%) | | g Value ISO9050 AM=1.0 | Solar Heat Gain Coefficient (SHGC) NFRC 100–2010 | Shading Coefficient ( S.C. ) NFRC 100–2010 | NFRC U Value W/m².K NFRC 100–2010 | | European U– Value W/m².K (EN 673) | STC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Transmi -ttance | Reflec -tance | Transmi -ttance | Reflec -tance | | | | Summer | Winter | | |
| F Green | 5 | 77 | 7 | 47 | 6 | 0.60 | 0.62 | 0.71 | 5.27 | 5.84 | 5.7 | 30 |
| | 6 | 75 | 7 | 44 | 6 | 0.58 | 0.59 | 0.68 | 5.24 | 5.81 | 5.7 | 31 |
| | 8 | 69 | 7 | 36 | 5 | 0.52 | 0.54 | 0.62 | 5.19 | 5.74 | 5.7 | 33 |
| | 10 | 64 | 6 | 30 | 5 | 0.48 | 0.51 | 0.58 | 5.13 | 5.67 | 5.6 | 34 |
| | 12 | 60 | 6 | 26 | 5 | 0.45 | 0.48 | 0.55 | 5.07 | 5.61 | 5.5 | 36 |
| Blue | 6 | 55 | 6 | 45 | 5 | 0.58 | 0.61 | 0.70 | 5.24 | 5.81 | 5.7 | 31 |
| | 8 | 48 | 6 | 38 | 5 | 0.53 | 0.55 | 0.64 | 5.19 | 5.74 | 5.7 | 33 |
| Euro Grey | 6 | 44 | 5 | 43 | 5 | 0.57 | 0.59 | 0.68 | 5.24 | 5.81 | 5.7 | 31 |
| | 8 | 34 | 5 | 32 | 5 | 0.50 | 0.52 | 0.60 | 5.19 | 5.74 | 5.7 | 33 |
| Crystal Grey | 6 | 66 | 6 | 58 | 6 | 0.67 | 0.69 | 0.79 | 5.24 | 5.81 | 5.7 | 31 |
| | 8 | 56 | 6 | 47 | 6 | 0.60 | 0.62 | 0.71 | 5.19 | 5.74 | 5.7 | 33 |

※The glass performance data will be finalized by the performance data sheet which submitted by SYP. Above performance just for design reference.
※The above data are calculated by WINDOW6.3 developed at Lawrence Berkeley National Laboratory, except for having been given clear indication of standards.



# PILKINGTON ENERGY ADVANTAGE™

Pilkington Energy Advantage TM (abbreviated as EA) glass is a kind of hard coating low emissivity one with high performance and energy efficiency. Its invisible outer layer can prevent from heat. The product is developed by Pilkington company who has more than one hundred year's experiences of glass manufactur-ing in the industry, aiming to make a better life.

## FEATURES

World leading technology for online Low–E coating glass; Online coating is done before glass cooled then coating layer becomes a part of glass after cooling.
It can be used as monolithic or in IGU or laminated glass.
The coating layer can be exposed in the air for long time. Same as ordinary glass, it can be treated and processed easily –– heat bent tempered, or heat–strengthened.

### PILKINGTON ENERGY ADVANTAGE™ PERFORMANCE DATA

| Monolithic | Thick–ness (mm) | Visible Light(%) | | | Solar Energy (%) | | | U Value | E Value | SHGC | SC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Trans–mittance | Re–fle–cance (out) | Reflec–tance(in) | Transmit–tance | Refle–cance (out) | Tuv | | | | |
| Pilkington Energy Advantage™ | 3 | 82 | 11 | 12 | 69 | 11 | 57 | 3.7 | 0.16 | 0.72 | 0.83 |
| | 4 | 82 | 10 | 11 | 68 | 10 | 55 | 3.7 | 0.16 | 0.71 | 0.82 |
| | 5 | 83 | 11 | 12 | 68 | 10 | 53 | 3.7 | 0.16 | 0.71 | 0.82 |
| | 6 | 82 | 10 | 11 | 66 | 10 | 49 | 3.6 | 0.16 | 0.70 | 0.81 |
| | 8 | 81 | 10 | 11 | 62 | 9 | 45 | 3.6 | 0.16 | 0.67 | 0.77 |
| | 10 | 80 | 10 | 11 | 59 | 9 | 42 | 3.6 | 0.16 | 0.65 | 0.75 |
| | 12 | 80 | 10 | 11 | 57 | 8 | 43 | 3.6 | 0.17 | 0.63 | 0.73 |
| Pilkington Energy Advantage™ (The insulating unit is composed by two same thickness panles with 12mm width air spacer.Outer lite:EA glass#2,inner lite: Clear Float Glass) | 3 | 75 | 17 | 18 | 59 | 15 | 45 | 1.9 | – | 0.65 | 0.75 |
| | 4 | 74 | 16 | 17 | 56 | 14 | 42 | 1.9 | – | 0.63 | 0.73 |
| | 5 | 74 | 17 | 17 | 55 | 14 | 41 | 1.9 | – | 0.63 | 0.73 |
| | 6 | 73 | 16 | 17 | 52 | 13 | 37 | 1.8 | – | 0.62 | 0.71 |
| | 8 | 71 | 15 | 16 | 47 | 12 | 32 | 1.8 | – | 0.58 | 0.67 |
| | 10 | 69 | 15 | 16 | 43 | 12 | 29 | 1.8 | – | 0.56 | 0.64 |
| | 12 | 68 | 15 | 16 | 39 | 10 | 28 | 1.9 | – | 0.54 | 0.62 |

### PIKINGTON GOLD ECLIPSE™ PERFORMANCE DATA

| Monolithic | Thick–ness (mm) | Visible Light(%) | | | Solar Energy (%) | | | U Value | E Value | SHGC | SC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Trans–mi–ttance | Re–fle–cance (out) | Reflec–tance(in) | Trans–mi–ttance | Refle–cance (out) | Tuv | | | | |
| Eclipse Advantage Gold | 6 | 41 | 34 | 44 | 44 | 25 | 9 | 5.7 | 0.84 | 0.54 | 0.63 |
| | 8 | 39 | 34 | 44 | 42 | 23 | 8 | 5.7 | 0.84 | 0.52 | 0.61 |

Remarks:monolithic dimension range covers 2130–5180x3300mm.
Special specification on thickness and dimension depengs on client' s requirements.

# LOW EMISSIVITY COATED GLASS

Low-E glass is produced by Vacuum Sputtering layers for coatings, including one or two layers of silver on glass. Silver is the material with lowest emissivity which is a measure of a material's ability to radiate energy. Ordinary clear glass has a surface emissivity level of 0.84, meaning 90% of the absorbed heat is emitted from the surface. When Low-E coatings are applied to glass, the surface emissivity is reduced to less than 0.1. Double Silver Low-E is a product with high light transmittance which dramatically reduces infrared transmission and solar heat gain. It is an excellent product choice for both warm and cold climates.

### FEATURES

Low–E coatings reflect infrared energy, reducing heat gain or loss in abuilding by redirecting the heat.
Low–E products have the best balance between visible light transmission and solar energy control. Compared to normal solar reflective coatings, Low–E has the character–istic of higher
visible light transmission. Low–E products ensures warmth in the winter and coolness in the summer at the same en–ergy consumption levels.
SYP' s Low–E coatings have excellent energy–saving performance and will increase your buildings' value by decreasing energy consumption. Today' s investment will bring tomorrow' s return.

### LOW–E GLASS USAGE WITH OTHER GLASS

By using Low–E glass together with tinted glass, solar reflective glass or silkscreen glass, will achieve special de–sign effects thru colors and patterns, and at the same time further increasing the solar control performance.

### SPECIFICATIONS

Glass Thickness: 3–19mm (1/8" ~3/4" )
Maximum Size:
2540x4200mm (100" ~165 1/2 " )
Minimum Size: 300x800mm (11 4/5 " ~31 1/3 " )

### COLORS

Various shades of neutral, grey, blue, green, blue green, and gold.
*The appearance of a glass facade is a combination of re–flection of the colors of the glass + sky and the background +transmission of light and colors from the indoors".
Therefore, the glass color will change with the environment. SYP suggests that customers should evaluate glass color outdoors, in the natural sunlight.

### STANDARDS

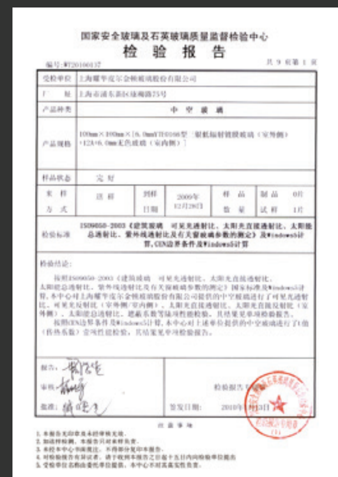
GB/T 18915.2《Coating Glass Part2: Low Emissivity Coated Glass》
GB Standard
EN 1096 European Standard
ASTM C–1376 American Society for Testing and Materials

25 Targets Coating Line(Applied Films)



# ULTRA HIGH PERFORMANCE LOW EMISSIVITY COATED GLASS


Ultra high performance Low-E coated glass (YTE series) which was latestly developed by SYP is a new breakthrough on sunshading technology of Low-E coating glass. It is an ener-gy-saving glass with high energy efficiency and high performance, achieving the best matching between visible light's penetrating and solar en-ergy's controlling. Its neutral color brings design-ers artistic inspiration for their creation.


国家安全玻璃及石英玻璃质量监督检验中心
检 验 报 告

# SOLAR CONTROL LOW-E GLASS

SYP Solar Control Low-E glass combines the advantage of both low S.C. and low U Value which can be used in different climates.

SYP Solar Control Low-E can be divided into YRE, YCE, YNE, YBE series. Depending on the application, we will suggest #2 surfaces for a Low-E IGU Product.

PROJECT: Frankfurt Airrail Center
PRODUCT: 8mmHS+1.14PVB
+8mmYNE0145+20AR+4mm HS+1.14PVB+4mm HS

PROJECT: Shanghai One Corporate Avenue
ARCHITECT: KPF
PRODUCT: 8mm FT
YCE0173+12A+8mm FT

PROJECT: Beijing CEC Building
ARCHITECT: IPPR Engineering International
PRODUCT: 6mm FT YCE0160+12A+6mm FT

PROJECT: Shanghai Hongyi Tower
ARCHITECT: CALLISON
PRODUCT: 8mm FT YCE0261+12A+8mm FT
8mm FT YSD0250+1.52PVB+8mm FT



PROJECT: Beijing Xinmao Building
ARCHITECT: SOM
PRODUCT: 6mm FT YCE0156+12A+6mm
6mm FT SCSC0132

PROJECT: Shanghai Huaihai Plaza
ARCHITECT: ECADI
PRODUCT: 6mm+0.76PVB+6mm YSE0160+12A+6mm FT

PROJECT: Shanghai
Park Place
ARCHITECT: KUME SEKKEI
PRODUCT:
10 mm FT YCE0161+12A+8mm
10mm FT SCLET0168+12A
+8mm FT

PROJECT: Shanghai Wheelock Square
PRODUCT:8mmFT YBE0148+12A+8mm
8mmFT YDE0160+12A+8mmFT

PROJECT:
Kunming Changshui International Airport
PRODUCT:
8mmFT+1.52PVB
+8mmYBE0170FT+16G+10mm
with frit

# HIGH LIGHT TRANSMITTANCE LOW-E GLASS

6mm monolithic high light transmittance Low-E glass can transmit 80% of sunlight. The colors of this type of glass can be light blue, light grey and neutral.
SYP High Light Transmission Low-E GlassYME0185, YBE0180 etc.

PROJECT: Guangzhou New TV Tower
ARCHITECT: GUANGZHOU DESIGN INSTITUTE
PRODUCT: 8mm HS+1.52SGP+8mm HS YCE0173+12A+8mm HS+1.52SGP+8mm HS

PROJECT: AL-Hamra Tower Kuwait
ARCHITECT: SOM
PRODUCT: 8mm HS Silver20+ 1.52PVB+6mm HS+16A+6mm HS YLE0178

PROJECT: Shanghai IFC
ARCHITECT: ECADI
PRODUCT: 8mm FT YCE0156 with frit+12A+8mm FT with heat-soafed

PROJECT: Shanghai Mirae Asset Tower
ARCHITECT: KPF
PRODUCT: 8mm FT F Green+12A+6mm FT YME0I84



## LOW-EMISSIVITY INSULATING GLASS

| Series | Product | Color | Visible Light(%) | | | Solar Energy (%) | | Solar Heat Gain Co-efficient (SHGC) NFRC 100-2010 | Shading Coef-ficient ( S.C. ) NFRC 100-2010 | NFRC U Val-ue W/m².K NFRC 100-200\4 | | European U- Value W/m².K (EN 673) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Transmi-ttance | Reflec-tance (Out) | Reflec-tance (In) | Transmi-ttance | Reflec-tance (Out) | | | Sum-mer | Winter | |
| High Transmi-ttance | 6YME0185+12A+6 | Neutral | 76 | 11 | 11 | 48 | 23 | 0.54 | 0.62 | 1.72 | 1.75 | 1.7 |
| | 6YME0185T+12A+6 | Neutral | 76 | 11 | 11 | 48 | 23 | 0.54 | 0.62 | 1.67 | 1.71 | 1.7 |
| | 6YME0685+12A+6 | Neutral | 77 | 12 | 11 | 50 | 29 | 0.56 | 0.64 | 1.72 | 1.75 | 1.7 |
| | 6YME0685T+12A+6 | Neutral | 78 | 11 | 11 | 50 | 25 | 0.56 | 0.64 | 1.67 | 1.71 | 1.7 |
| | 6YME2285+12A+6 | Green | 62 | 9 | 10 | 29 | 8 | 0.37 | 0.43 | 1.72 | 1.75 | 1.7 |
| | 6YME2585+12A+6 | Blue | 46 | 7 | 10 | 28 | 10 | 0.36 | 0.42 | 1.72 | 1.75 | 1.7 |
| | 6YME5885+12A+6 | Dark Grey | 37 | 6 | 9 | 25 | 10 | 0.34 | 0.39 | 1.72 | 1.75 | 1.7 |
| | | | | | | | | | | | | |
| Solar Reflec-tive Low-E RE Series | 6YRE0159+12A+6 | Silver Grey | 54 | 30 | 21 | 31 | 39 | 0.36 | 0.41 | 1.64 | 1.68 | 1.6 |
| | 6YRE0159T+12A+6 | Silver Grey | 54 | 30 | 21 | 30 | 38 | 0.36 | 0.41 | 1.64 | 1.68 | 1.6 |
| | 6YRE0159J+12A+6 | Silver Grey | 51 | 30 | 20 | 30 | 40 | 0.35 | 0.40 | 1.63 | 1.67 | 1.6 |
| | 6YRE0659+12A+6 | Silver Grey | 55 | 30 | 21 | 32 | 42 | 0.38 | 0.43 | 1.64 | 1.68 | 1.6 |
| | 6YRE0659T+12A+6 | Silver Grey | 55 | 30 | 21 | 32 | 43 | 0.38 | 0.43 | 1.64 | 1.68 | 1.6 |
| | 6YRE0659J+12A+6 | Silver Grey | 52 | 30 | 18 | 34 | 46 | 0.37 | 0.42 | 1.63 | 1.67 | 1.6 |
| | 6YRE2259+12A+6 | Green | 46 | 21 | 18 | 20 | 13 | 0.27 | 0.31 | 1.64 | 1.68 | 1.6 |
| | 6YRE2559+12A+6 | Blue | 34 | 16 | 19 | 18 | 12 | 0.25 | 0.29 | 1.64 | 1.68 | 1.6 |
| | 6YRE5859+12A+6 | Dark Grey | 26 | 12 | 19 | 15 | 12 | 0.24 | 0.28 | 1.64 | 1.68 | 1.6 |
| | | | | | | | | | | | | |
| | 6YRE0152+12A+6 | Silver Grey | 47 | 30 | 15 | 27 | 36 | 0.32 | 0.37 | 1.67 | 1.71 | 1.7 |
| | 6YRE0652+12A+6 | Silver Grey | 48 | 30 | 15 | 29 | 41 | 0.34 | 0.39 | 1.67 | 1.71 | 1.7 |
| | 6YRE2252+12A+6 | Green | 39 | 23 | 15 | 17 | 14 | 0.24 | 0.28 | 1.67 | 1.71 | 1.7 |
| | 6YRE2552+12A+6 | Blue | 29 | 15 | 15 | 16 | 14 | 0.24 | 0.28 | 1.67 | 1.71 | 1.7 |
| | 6YRE5852+12A+6 | Dark Grey | 23 | 11 | 14 | 14 | 12 | 0.23 | 0.26 | 1.67 | 1.71 | 1.7 |
| | | | | | | | | | | | | |
| | 6YRE0146+12A+6 | Silver Grey | 42 | 33 | 14 | 23 | 38 | 0.29 | 0.33 | 1.67 | 1.71 | 1.7 |
| | 6YRE0146J+12A+6 | Silver Grey | 42 | 30 | 12 | 26 | 36 | 0.31 | 0.36 | 1.69 | 1.72 | 1.7 |
| | 6YRE0646+12A+6 | Silver Grey | 43 | 35 | 15 | 25 | 44 | 0.30 | 0.35 | 1.67 | 1.71 | 1.7 |
| | 6YRE0646J+12A+6 | Silver Grey | 43 | 30 | 12 | 27 | 44 | 0.32 | 0.37 | 1.69 | 1.72 | 1.7 |
| | 6YRE2246+12A+6 | Green | 34 | 24 | 14 | 15 | 15 | 0.22 | 0.26 | 1.67 | 1.71 | 1.7 |
| | 6YRE2546+12A+6 | Blue | 26 | 17 | 14 | 14 | 17 | 0.22 | 0.25 | 1.67 | 1.71 | 1.7 |
| | 6YRE5846+12A+6 | Dark Grey | 20 | 12 | 13 | 12 | 14 | 0.20 | 0.23 | 1.67 | 1.71 | 1.7 |

※The glass performance data will be finalized by the performance data sheet which submitted by SYP. Above performance just for design reference.
※The above data are calculated by WINDOW6.3 developed at Lawrence Berkeley National Laboratory, except for having been given clear indication of standards.

# HIGH PERFORMANCE LOW-E GLASS

High performance Low-E is the most sophisticated type of Low-E. It has two layers of silver and several layers of optical coatings which help to reflect more long wave infrared energy, increase visible light transmittance and decrease its reflection, achieving the best energy savings effect.
Compared to the common Low-E, High performance Low-E's performance can be a 30% improvement on heat load at the same light transmittance level. It is the best choice for high light transmittance and low heat gain.
SYP High performance Low-E series:YNE Series, YKE Series, YDE Series.

PROJECT: One Island East
ARCHITECT: Wong & Ouyang (HK)
PRODUCT: 10HS YSD0136+12A+10HS YNE0175
10FT+1.52SGP+10FT YSD0136+12A+10HS YNE0175

PROJECT: Shanghai Tower
ARCHITECT: GENSLER
PRODUCT: Outer(A) curtain wall product:
12mm HS YSD0680 with frit+1.52SGP+12mm HS Low-iron
12mm HS YSD0680+1.52SGP+12mm HS Low-iron

Inner(B) curtain wall product:
6mm HS Low-iron+0.89SGP+6mm HS YNE0659
with frit+12A (black spacer)+8mm Low-iron fire-resistance
8mm FT YNE0659+12A (black spacer)+ 8mmFT Low-iron



PROJECT:
CTF Finance Centre
PRODUCT:8mm Low-iron
+1.52PVB+8mmYNE0655FT
+12A+8mmLow-iron FT

PROJECT:
Dalian Hang Lung Plaza
PRODUCT:8mm YNE0675Low-iron
+12A+8mm Low-iron

PROJECT:
Gardens by the Bay
PRODUCT:10mmYNE0175HS
(#2)+12A(Black)+6mmHS+1.52PV
B+6mmHS

## HIGH PERFORMANCE LOW-E INSULATING GLASS-1

| Series | Product | Color | Visible Light(%) | | | Solar Energy (%) | | Solar Heat Gain Coefficient (SHGC) NFRC 100-2010 | Shading Coefficient ( S.C. ) NFRC 100-2010 | NFRC U Value W/m².K NFRC 100-2010 | | European U- Value W/m².K (EN 673) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Transmi-ttance | Reflec-tance (Out) | Reflec-tance (In) | Transmi-ttance | Reflec-tance (Out) | | | Summer | Winter | |
| High Perfor-mance NE Series | 6YNE0175+12A+6 | Neutral | 66 | 11 | 12 | 34 | 30 | 0.40 | 0.46 | 1.64 | 1.68 | 1.6 |
| | 6YNE0175T+12A+6 | Neutral | 67 | 11 | 12 | 34 | 30 | 0.40 | 0.46 | 1.64 | 1.69 | 1.6 |
| | 6YNE0175J+12A+6 | Neutral | 66 | 10 | 13 | 33 | 31 | 0.38 | 0.44 | 1.60 | 1.66 | 1.6 |
| | 6YNE0675+12A+6 | Neutral | 68 | 11 | 12 | 36 | 37 | 0.41 | 0.47 | 1.64 | 1.68 | 1.6 |
| | 6YNE0675T+12A+6 | Neutral | 68 | 11 | 12 | 36 | 37 | 0.41 | 0.47 | 1.64 | 1.69 | 1.6 |
| | 6YNE0675J+12A+6 | Neutral | 67 | 11 | 13 | 35 | 39 | 0.40 | 0.46 | 1.60 | 1.66 | 1.6 |
| | 6YNE2275+12A+6 | Green | 56 | 9 | 11 | 24 | 9 | 0.31 | 0.36 | 1.64 | 1.68 | 1.6 |
| | 6YNE2575+12A+6 | Blue | 42 | 7 | 11 | 22 | 12 | 0.29 | 0.33 | 1.64 | 1.68 | 1.6 |
| | 6YNE5875+12A+6 | Dark Grey | 33 | 6 | 10 | 19 | 14 | 0.26 | 0.30 | 1.64 | 1.68 | 1.6 |
| | 6YNE6875+12A+6 | Light Grey | 48 | 8 | 12 | 24 | 15 | 0.31 | 0.35 | 1.64 | 1.68 | 1.6 |

※The glass performance data will be finalized by the performance data sheet which submitted by SYP. Above performance just for design reference.
※The above data are calculated by WINDOW6.3 developed at Lawrence Berkeley National Laboratory, except for having been given clear indication of standards.

## HIGH PERFORMANCE LOW-E INSULATING GLASS-2

| Series | Product | Color | Visible Light(%) | | | Solar Energy (%) | | Solar Heat Gain Coefficient (SHGC) NFRC 100-2010 | Shading Coefficient ( S.C. ) NFRC 100-2010 | NFRC U Value W/m².K NFRC 100-2010 | | European U- Value W/m².K (EN 673) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Transmittance | Reflectance (Out) | Reflectance (In) | Transmittance | Reflectance (Out) | | | Summer | Winter | |
| High Performance NE Series | 6YNE0168+12A+6 | Neutral | 60 | 13 | 15 | 28 | 33 | 0.34 | 0.39 | 1.60 | 1.66 | 1.6 |
| | 6YNE0168J+12A+6 | Neutral | 59 | 14 | 16 | 31 | 32 | 0.36 | 0.41 | 1.59 | 1.65 | 1.6 |
| | 6YNE0668+12A+6 | Neutral | 61 | 14 | 15 | 31 | 38 | 0.35 | 0.40 | 1.60 | 1.66 | 1.6 |
| | 6YNE0668J+12A+6 | Neutral | 61 | 13 | 15 | 32 | 40 | 0.36 | 0.41 | 1.59 | 1.65 | 1.6 |
| | 6YNE2268+12A+6 | Green | 50 | 9 | 14 | 21 | 10 | 0.28 | 0.32 | 1.60 | 1.66 | 1.6 |
| | 6YNE2568+12A+6 | Blue | 38 | 8 | 14 | 18 | 13 | 0.26 | 0.30 | 1.60 | 1.66 | 1.6 |
| | 6YNE5868+12A+6 | Dark Grey | 31 | 6 | 13 | 15 | 14 | 0.23 | 0.26 | 1.60 | 1.66 | 1.6 |
| | 6YNE6868+12A+6 | Light Grey | 43 | 9 | 14 | 20 | 15 | 0.27 | 0.30 | 1.60 | 1.66 | 1.6 |
| | 6YNE0159+12A+6 | Neutral | 53 | 14 | 17 | 26 | 31 | 0.31 | 0.36 | 1.61 | 1.66 | 1.6 |
| | 6YNE0159J+12A+6 | Neutral | 53 | 14 | 18 | 25 | 33 | 0.30 | 0.35 | 1.59 | 1.65 | 1.6 |
| | 6YNE0659+12A+6 | Neutral | 54 | 15 | 17 | 27 | 38 | 0.32 | 0.37 | 1.61 | 1.66 | 1.6 |
| | 6YNE0659J+12A+6 | Neutral | 54 | 15 | 18 | 26 | 42 | 0.31 | 0.36 | 1.59 | 1.65 | 1.6 |
| | 6YNE2259+12A+6 | Green | 45 | 11 | 16 | 18 | 10 | 0.25 | 0.29 | 1.61 | 1.66 | 1.6 |
| | 6YNE2559+12A+6 | Blue | 33 | 8 | 16 | 17 | 11 | 0.23 | 0.26 | 1.61 | 1.66 | 1.6 |
| | 6YNE5859+12A+6 | Dark Grey | 27 | 7 | 15 | 14 | 14 | 0.21 | 0.24 | 1.61 | 1.66 | 1.6 |
| | 6YNE6859+12A+6 | Light Grey | 40 | 9 | 15 | 20 | 15 | 0.26 | 0.30 | 1.61 | 1.66 | 1.6 |
| | 6YNE0155J+12A+6 | Light Blue | 50 | 18 | 19 | 23 | 34 | 0.28 | 0.33 | 1.60 | 1.65 | 1.6 |
| | 6YNE0655J+12A+6 | Light Blue | 51 | 19 | 19 | 25 | 44 | 0.29 | 0.33 | 1.60 | 1.65 | 1.6 |
| | 6YNE0152+12A+6 | Light Blue | 46 | 15 | 17 | 21 | 31 | 0.26 | 0.30 | 1.60 | 1.65 | 1.6 |
| | 6YNE0652+12A+6 | Light Blue | 48 | 16 | 18 | 23 | 38 | 0.29 | 0.33 | 1.60 | 1.65 | 1.6 |
| | 6YNE2252+12A+6 | Green | 40 | 11 | 16 | 16 | 10 | 0.24 | 0.27 | 1.60 | 1.65 | 1.6 |
| | 6YNE2552+12A+6 | Blue | 30 | 9 | 16 | 14 | 12 | 0.22 | 0.25 | 1.60 | 1.65 | 1.6 |
| | 6YNE5852+12A+6 | Dark Grey | 24 | 7 | 16 | 12 | 14 | 0.19 | 0.22 | 1.60 | 1.65 | 1.6 |
| | 6YNE6852+12A+6 | Light Grey | 35 | 9 | 16 | 17 | 15 | 0.24 | 0.27 | 1.60 | 1.65 | 1.6 |
| | 6YNE0148J+12A+6 | Blue Grey | 45 | 20 | 19 | 22 | 38 | 0.27 | 0.31 | 1.61 | 1.66 | 1.6 |
| | 6YNE0648J+12A+6 | Blue Grey | 46 | 21 | 19 | 23 | 45 | 0.28 | 0.32 | 1.61 | 1.66 | 1.6 |
| | 6YNE0145+12A+6 | Light Blue | 41 | 17 | 19 | 19 | 33 | 0.24 | 0.28 | 1.59 | 1.65 | 1.6 |
| | 6YNE0145J+12A+6 | Light Blue | 42 | 17 | 19 | 20 | 34 | 0.25 | 0.29 | 1.58 | 1.64 | 1.6 |
| | 6YNE0645+12A+6 | Light Blue | 42 | 18 | 20 | 21 | 40 | 0.26 | 0.30 | 1.59 | 1.65 | 1.6 |
| | 6YNE0645J+12A+6 | Light Blue | 43 | 17 | 19 | 21 | 41 | 0.25 | 0.29 | 1.58 | 1.64 | 1.6 |
| | 6YNE2245+12A+6 | Green | 35 | 13 | 18 | 14 | 10 | 0.21 | 0.24 | 1.59 | 1.65 | 1.6 |
| | 6YNE2545+12A+6 | Blue | 26 | 10 | 18 | 14 | 13 | 0.20 | 0.23 | 1.59 | 1.65 | 1.6 |
| | 6YNE5845+12A+6 | Blue Grey | 21 | 8 | 18 | 10 | 14 | 0.18 | 0.21 | 1.59 | 1.65 | 1.6 |
| | 6YNE6845+12A+6 | Light Grey | 32 | 11 | 18 | 15 | 15 | 0.22 | 0.25 | 1.59 | 1.65 | 1.6 |
| High Performance KE Series | 6YKE0166+12A+6 | Neutral | 62 | 11 | 12 | 31 | 27 | 0.37 | 0.42 | 1.63 | 1.67 | 1.6 |
| | 6YKE0666+12A+6 | Neutral | 63 | 12 | 13 | 33 | 37 | 0.39 | 0.45 | 1.63 | 1.67 | 1.6 |
| | 6YKE0166T+12A+6 | Neutral | 59 | 9 | 10 | 30 | 30 | 0.35 | 0.40 | 1.61 | 1.66 | 1.6 |
| | 6YKE0666T+12A+6 | Neutral | 60 | 9 | 10 | 31 | 35 | 0.36 | 0.41 | 1.61 | 1.66 | 1.6 |



## HIGH PERFORMANCE LOW-E INSULATING GLASS-3

| Series | Product | Color | Visible Light(%) | | | Solar Energy (%) | | Solar Heat Gain Coefficient (SHGC) NFRC 100-2010 | Shading Coefficient ( S.C. ) NFRC 100-2010 | NFRC U Value W/m².K NFRC 100-2010 | | European U- Value W/m².K (EN 673) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Transmittance | Reflectance (Out) | Reflectance (In) | Transmittance | Reflectance (Out) | | | Summer | Winter | |
| High Performance KE Series | 6YKE0166J+12A+6 | Neutral | 60 | 11 | 12 | 30 | 30 | 0.35 | 0.41 | 1.61 | 1.66 | 1.6 |
| | 6YKE0666J+12A+6 | Neutral | 61 | 12 | 12 | 32 | 40 | 0.36 | 0.42 | 1.61 | 1.66 | 1.6 |
| | 6YKE0160+12A+6 | Light Blue | 52 | 15 | 12 | 25 | 34 | 0.30 | 0.35 | 1.63 | 1.67 | 1.6 |
| | 6YKE0660+12A+6 | Light Blue | 53 | 16 | 12 | 27 | 40 | 0.32 | 0.37 | 1.63 | 1.67 | 1.6 |
| | 6YKEJ0159+12A+6 | Blue Grey | 53 | 11 | 11 | 27 | 31 | 0.34 | 0.38 | 1.64 | 1.68 | 1.6 |
| | 6YKEJ0659+12A+6 | Blue Grey | 54 | 12 | 11 | 28 | 36 | 0.35 | 0.39 | 1.64 | 1.68 | 1.6 |
| | 6YKE0157+12A+6 | Light Grey | 51 | 11 | 14 | 26 | 28 | 0.33 | 0.37 | 1.63 | 1.68 | 1.6 |
| | 6YKE0657+12A+6 | Light Grey | 52 | 12 | 14 | 27 | 33 | 0.34 | 0.38 | 1.63 | 1.68 | 1.6 |
| | 6YKE0157T+12A+6 | Neutral | 51 | 16 | 15 | 25 | 30 | 0.30 | 0.35 | 1.60 | 1.66 | 1.6 |
| | 6YKE0657T+12A+6 | Neutral | 52 | 17 | 16 | 26 | 35 | 0.31 | 0.36 | 1.60 | 1.66 | 1.6 |
| | 6YKE0156J+12A+6 | Blue Grey | 50 | 16 | 15 | 23 | 36 | 0.28 | 0.33 | 1.60 | 1.66 | 1.6 |
| | 6YKE0656J+12A+6 | Blue Grey | 51 | 17 | 15 | 25 | 48 | 0.29 | 0.34 | 1.60 | 1.66 | 1.6 |
| | 6YKE0153T+12A+6 | Silver Grey | 45 | 30 | 26 | 24 | 24 | 0.30 | 0.34 | 1.60 | 1.65 | 1.6 |
| | 6YKE0653T+12A+6 | Silver Grey | 46 | 30 | 26 | 25 | 30 | 0.31 | 0.35 | 1.60 | 1.65 | 1.6 |
| | 6YKE0152+12A+6 | Blue | 45 | 19 | 10 | 21 | 33 | 0.26 | 0.30 | 1.61 | 1.66 | 1.6 |
| | 6YKE0652+12A+6 | Blue | 46 | 20 | 10 | 23 | 40 | 0.28 | 0.32 | 1.61 | 1.66 | 1.6 |
| | 6YKE0147J+12A+6 | Blue | 43 | 20 | 14 | 19 | 37 | 0.25 | 0.28 | 1.60 | 1.66 | 1.6 |
| | 6YKE0647J+12A+6 | Blue | 44 | 21 | 14 | 21 | 48 | 0.25 | 0.28 | 1.60 | 1.66 | 1.6 |
| | 6YKE0151J+12A+6 | Light Grey | 45 | 17 | 11 | 21 | 36 | 0.26 | 0.30 | 1.60 | 1.65 | 1.6 |
| | 6YKE0651J+12A+6 | Light Grey | 47 | 18 | 11 | 22 | 49 | 0.26 | 0.30 | 1.60 | 1.65 | 1.6 |
| | 6YKE0150+12A+6 | Blue Grey | 45 | 14 | 13 | 22 | 31 | 0.27 | 0.32 | 1.64 | 1.68 | 1.6 |
| | 6YKE0650+12A+6 | Blue Grey | 46 | 15 | 13 | 22 | 38 | 0.29 | 0.34 | 1.64 | 1.68 | 1.6 |
| | 6YKE0148+12A+6 | Blue | 43 | 23 | 12 | 18 | 39 | 0.23 | 0.26 | 1.59 | 1.65 | 1.6 |
| | 6YKE0648+12A+6 | Blue | 44 | 24 | 12 | 20 | 46 | 0.25 | 0.28 | 1.59 | 1.65 | 1.6 |
| | 6YKE0148J+12A+6 | Blue Grey | 43 | 23 | 12 | 18 | 41 | 0.23 | 0.26 | 1.58 | 1.64 | 1.6 |
| | 6YKE0648J+12A+6 | Blue Grey | 43 | 24 | 12 | 19 | 54 | 0.23 | 0.26 | 1.58 | 1.64 | 1.6 |
| | 6YKE0145+12A+6 | Blue | 42 | 28 | 16 | 19 | 42 | 0.24 | 0.28 | 1.62 | 1.67 | 1.6 |
| | 6YKE0645+12A+6 | Blue | 43 | 29 | 16 | 21 | 49 | 0.26 | 0.30 | 1.62 | 1.67 | 1.6 |
| | 6YKE0145J+12A+6 | Blue Grey | 40 | 17 | 14 | 19 | 34 | 0.24 | 0.28 | 1.60 | 1.66 | 1.6 |
| | 6YKE0645J+12A+6 | Blue Grey | 41 | 18 | 14 | 20 | 44 | 0.25 | 0.28 | 1.60 | 1.66 | 1.6 |
| | 6YKE0140J+12A+6 | Silver Grey | 36 | 30 | 16 | 17 | 43 | 0.22 | 0.24 | 1.58 | 1.64 | 1.6 |

## HIGH PERFORMANCE LOW-E INSULATING GLASS-4

| Series | Product | Color | Visible Light(%) | | | Solar Energy (%) | | Solar Heat Gain Coefficient (SHGC) NFRC 100-2010 | Shading Coefficient (S.C.) NFRC 100-2010 | NFRC U Value W/m².K NFRC 100-2010 | | European U-Value W/m².K (EN 673) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Transmittance | Reflectance (Out) | Reflectance (In) | Transmittance | Reflectance (Out) | | | Summer | Winter | |
| High Performance KE Series | 6YKE0640J+12A+6 | Silver Grey | 37 | 32 | 17 | 18 | 56 | 0.22 | 0.24 | 1.58 | 1.64 | 1.6 |
| | 6YKE0135J+12A+6 | Grey | 32 | 19 | 16 | 15 | 35 | 0.20 | 0.23 | 1.62 | 1.67 | 1.6 |
| | 6YKE0635J+12A+6 | Grey | 33 | 20 | 16 | 16 | 45 | 0.20 | 0.23 | 1.62 | 1.67 | 1.6 |
| High Performance GE Series | 6YGE0157+12A+6 | Grey | 50 | 15 | 13 | 25 | 34 | 0.30 | 0.35 | 1.63 | 1.68 | 1.6 |
| | 6YGE0657+12A+6 | Grey | 51 | 16 | 13 | 27 | 41 | 0.32 | 0.37 | 1.63 | 1.68 | 1.6 |
| | 6YGE0151+12A+6 | Grey | 45 | 15 | 13 | 21 | 35 | 0.26 | 0.30 | 1.63 | 1.68 | 1.6 |
| | 6YGE0651+12A+6 | Grey | 46 | 16 | 13 | 23 | 42 | 0.28 | 0.32 | 1.63 | 1.68 | 1.6 |
| | 6YGE0149+12A+6 | Grey | 42 | 20 | 12 | 20 | 37 | 0.25 | 0.29 | 1.62 | 1.67 | 1.6 |
| | 6YGE0649+12A+6 | Grey | 43 | 21 | 12 | 22 | 44 | 0.27 | 0.31 | 1.62 | 1.67 | 1.6 |
| High Performance DE Series | 6YDE0146C+12A+6 | Silver Blue | 43 | 30 | 15 | 17 | 45 | 0.21 | 0.24 | 1.56 | 1.63 | 1.6 |
| | 6YDE0149C+12A+6 | Blue Grey | 47 | 23 | 13 | 19 | 42 | 0.24 | 0.27 | 1.58 | 1.64 | 1.6 |
| | 6YDE0151C+12A+6 | Blue Grey | 40 | 29 | 13 | 16 | 44 | 0.20 | 0.23 | 1.55 | 1.62 | 1.5 |
| | 6YDE0162C+12A+6 | Light Blue | 58 | 15 | 13 | 25 | 33 | 0.30 | 0.35 | 1.59 | 1.64 | 1.6 |
| | 6YDE0159T+12A+6 | Blue Grey | 54 | 16 | 15 | 28 | 27 | 0.34 | 0.39 | 1.62 | 1.67 | 1.6 |
| | 6YDE0659T+12A+6 | Blue Grey | 56 | 16 | 15 | 30 | 34 | 0.36 | 0.41 | 1.62 | 1.67 | 1.6 |
| | 6YDE0157T+12A+6 | Blue Grey | 52 | 20 | 14 | 25 | 30 | 0.30 | 0.35 | 1.60 | 1.65 | 1.6 |
| | 6YDE0657T+12A+6 | Blue Grey | 53 | 20 | 14 | 26 | 36 | 0.31 | 0.36 | 1.60 | 1.65 | 1.6 |
| | 6YDE0150T+12A+6 | Grey | 45 | 24 | 26 | 23 | 35 | 0.28 | 0.33 | 1.58 | 1.64 | 1.6 |
| | 6YDE0650T+12A+6 | Grey | 47 | 24 | 26 | 25 | 41 | 0.29 | 0.34 | 1.58 | 1.64 | 1.6 |
| High Performance XE Series | 6YXE0160J+12A+6 | Silver Grey | 58 | 24 | 22 | 25 | 46 | 0.29 | 0.33 | 1.58 | 1.64 | 1.6 |
| | 6YXE0660J+12A+6 | Silver Grey | 59 | 25 | 22 | 26 | 60 | 0.29 | 0.33 | 1.58 | 1.64 | 1.6 |
| | 6YXE0150J+12A+6 | Silver Grey | 50 | 29 | 23 | 22 | 48 | 0.25 | 0.28 | 1.59 | 1.65 | 1.6 |
| | 6YXE0650J+12A+6 | Silver Grey | 51 | 29 | 23 | 23 | 62 | 0.25 | 0.29 | 1.59 | 1.65 | 1.6 |
| Triple Silver 2# | 6YTE0170T+12A+6 | Neutral | 64 | 11 | 11 | 27 | 35 | 0.31 | 0.36 | 1.58 | 1.64 | 1.6 |
| | 6YTE0670T+12A+6 | Neutral | 65 | 11 | 13 | 27 | 49 | 0.31 | 0.36 | 1.58 | 1.64 | 1.6 |
| | 6YTE0153T+12A+6 | Blue Grey | 49 | 14 | 14 | 19 | 38 | 0.23 | 0.27 | 1.59 | 1.65 | 1.6 |
| | 6YTE0653T+12A+6 | Blue Grey | 51 | 15 | 14 | 20 | 48 | 0.23 | 0.27 | 1.59 | 1.65 | 1.6 |
| | 6YTE0152T+12A+6 | Silver Grey | 48 | 26 | 21 | 19 | 45 | 0.23 | 0.27 | 1.60 | 1.65 | 1.6 |
| | 6YTE0652T+12A+6 | Silver Grey | 50 | 27 | 21 | 20 | 60 | 0.23 | 0.27 | 1.60 | 1.65 | 1.6 |
| | 6YTE0149T+12A+6 | Neutral | 46 | 19 | 19 | 18 | 41 | 0.22 | 0.25 | 1.59 | 1.65 | 1.6 |
| | 6YTE0649T+12A+6 | Neutral | 47 | 20 | 19 | 18 | 54 | 0.22 | 0.25 | 1.59 | 1.65 | 1.6 |

※ The above data are calculated by WINDOW 6.3 developed at Lawrence Berkeley National Laboratory, except for having been given clear indication of standards.
※ The glass performance data will be finalized by the performance data sheet which submitted by SYP. Above performance just for design reference.



# BENDABLE AND POST-TEMPERABLE LOW-E GLASS

SYP Bendable and Post- Temperable Low-E Glass can be tempered or curved after Low-E coated, and processed in other place if needed. The colors of this type of glass can be neutral or light blue.

SYP Bendable and Post- Temperable Low-E Glass: YBEN Series, YHE Series,YREN Series, YDT Series etc.

PROJECT:Shenyang Media Square
ARCHITECT: Liaoning Provincial Institute Of Architectural Design
PRODUCT: 8mm FT YSS0116+12A+8mm FT YLE0178

PROJECT: Tianjin JunYi Plaza
ARCHITECT: TJADI
PRODUCT: 6mm FT YBE0152+9A+6mm FT

PROJECT: Shanghai Unilever Research & Development Center
ARCHITECT: Tongji Architectural Design & Research Institute
PRODUCT:8mm FT YBE0180 Curved+12A+8mm FT Curved

PROJECT:Shanghai HanTang Jumeirah
ARCHCTECT: KPF
PRODUCT:8mm FT YBE0145+12A+10mm FT

## BENDABLE AND POST-TEMPERABLE LOW-E INSULATING GLASS

| Series | Product | Color | Visible Light(%) Transmittance | Visible Light(%) Reflectance (Out) | Visible Light(%) Reflectance (In) | Solar Energy (%) Transmittance | Solar Energy (%) Reflectance (Out) | Solar Heat Gain Coefficient (SHGC) NFRC 100-2010 | Shading Coefficient (S.C.) NFRC 100-2010 | NFRC U Value W/m².K NFRC 100-2010 Summer | NFRC U Value W/m².K NFRC 100-2010 Winter | European U- Value W/m².K (EN 673) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| YBE-N | 6YBE0180N+12A+6 | Neutral | 66 | 15 | 12 | 42 | 18 | 0.50 | 0.57 | 1.84 | 1.84 | 1.8 |
| | 6YBE0680N+12A+6 | Neutral | 68 | 15 | 11 | 46 | 21 | 0.53 | 0.61 | 1.84 | 1.84 | 1.8 |
| | 6YBE2280N+12A+6 | Green | 52 | 10 | 11 | 24 | 10 | 0.33 | 0.38 | 1.84 | 1.84 | 1.8 |
| | 6YBE2580N+12A+6 | Blue | 38 | 8 | 10 | 23 | 9 | 0.32 | 0.37 | 1.84 | 1.84 | 1.8 |
| | 6YBE5880N+12A+6 | Dark Grey | 31 | 6 | 10 | 21 | 9 | 0.30 | 0.35 | 1.84 | 1.84 | 1.8 |
| | | | | | | | | | | | | |
| | 6YBE0160N+12A+6 | Light Blue | 53 | 15 | 10 | 37 | 19 | 0.44 | 0.50 | 1.85 | 1.84 | 1.8 |
| | 6YBE0660N+12A+6 | Light Blue | 55 | 15 | 11 | 39 | 22 | 0.46 | 0.53 | 1.85 | 1.84 | 1.8 |
| | 6YBE2260N+12A+6 | Green | 44 | 11 | 11 | 23 | 10 | 0.31 | 0.36 | 1.85 | 1.84 | 1.8 |
| | 6YBE2560N+12A+6 | Blue | 33 | 8 | 10 | 21 | 10 | 0.30 | 0.35 | 1.85 | 1.84 | 1.8 |
| | 6YBE5860N+12A+6 | Dark Grey | 27 | 7 | 10 | 17 | 10 | 0.27 | 0.31 | 1.85 | 1.84 | 1.8 |
| | | | | | | | | | | | | |
| | 6YBE0157NJ+12A+6 | Blue Grey | 52 | 21 | 11 | 33 | 24 | 0.40 | 0.46 | 1.81 | 1.82 | 1.8 |
| | | | | | | | | | | | | |
| | 6YBE0152N+12A+6 | Blue Grey | 46 | 21 | 10 | 30 | 24 | 0.37 | 0.43 | 1.78 | 1.79 | 1.8 |
| | 6YBE0652N+12A+6 | Blue Grey | 47 | 22 | 10 | 32 | 29 | 0.39 | 0.45 | 1.78 | 1.79 | 1.8 |
| | 6YBE2252N+12A+6 | Green | 38 | 15 | 10 | 18 | 11 | 0.26 | 0.30 | 1.78 | 1.79 | 1.8 |
| | 6YBE2552N+12A+6 | Blue | 28 | 11 | 10 | 17 | 11 | 0.25 | 0.29 | 1.78 | 1.79 | 1.8 |
| | 6YBE5852N+12A+6 | Dark Grey | 23 | 8 | 9 | 15 | 11 | 0.24 | 0.28 | 1.78 | 1.79 | 1.8 |
| | | | | | | | | | | | | |
| | 6YBE0147NJ+12A+6 | Blue Grey | 45 | 22 | 14 | 28 | 23 | 0.35 | 0.40 | 1.84 | 1.84 | 1.8 |
| | | | | | | | | | | | | |
| | 6YBE0142N+12A+6 | Silver Grey | 38 | 29 | 10 | 26 | 31 | 0.31 | 0.35 | 1.72 | 1.75 | 1.7 |
| | 6YBE0642N+12A+6 | Silver Grey | 40 | 30 | 10 | 28 | 36 | 0.33 | 0.38 | 1.72 | 1.75 | 1.7 |
| | 6YBE2242N+12A+6 | Green | 34 | 20 | 10 | 16 | 13 | 0.24 | 0.27 | 1.72 | 1.75 | 1.7 |
| | 6YBE2542N+12A+6 | Blue | 25 | 13 | 10 | 14 | 13 | 0.23 | 0.26 | 1.72 | 1.75 | 1.7 |
| | 6YBE5842N+12A+6 | Dark Grey | 20 | 10 | 10 | 13 | 12 | 0.22 | 0.25 | 1.72 | 1.75 | 1.7 |
| | | | | | | | | | | | | |
| | 6YBE0140N+12A+6 | Silver Grey | 36 | 33 | 12 | 22 | 35 | 0.27 | 0.31 | 1.67 | 1.71 | 1.7 |
| | 6YBE0640N+12A+6 | Silver Grey | 37 | 34 | 12 | 24 | 40 | 0.29 | 0.33 | 1.67 | 1.71 | 1.7 |
| | 6YBE2240N+12A+6 | Green | 30 | 23 | 11 | 14 | 13 | 0.22 | 0.25 | 1.67 | 1.71 | 1.7 |
| | 6YBE2540N+12A+6 | Blue | 22 | 15 | 11 | 13 | 12 | 0.21 | 0.24 | 1.67 | 1.71 | 1.7 |
| | 6YBE5840N+12A+6 | Dark Grey | 19 | 11 | 11 | 11 | 13 | 0.20 | 0.23 | 1.67 | 1.71 | 1.7 |
| | | | | | | | | | | | | |
| YRE-N | 6YRE0159N+12A+6 | Silver Grey | 52 | 28 | 15 | 32 | 32 | 0.37 | 0.43 | 1.73 | 1.75 | 1.7 |
| | 6YRE0659N+12A+6 | Silver Grey | 54 | 29 | 15 | 35 | 38 | 0.40 | 0.46 | 1.73 | 1.75 | 1.7 |
| | 6YRE2259N+12A+6 | Green | 43 | 20 | 14 | 19 | 13 | 0.27 | 0.31 | 1.73 | 1.75 | 1.7 |
| | 6YRE2559N+12A+6 | Blue | 32 | 13 | 14 | 18 | 13 | 0.26 | 0.30 | 1.73 | 1.75 | 1.7 |
| | 6YRE5859N+12A+6 | Dark Grey | 26 | 10 | 14 | 16 | 12 | 0.24 | 0.28 | 1.73 | 1.75 | 1.7 |
| | | | | | | | | | | | | |
| | 6YRE0152N+12A+6 | Silver Grey | 46 | 29 | 13 | 28 | 32 | 0.34 | 0.40 | 1.78 | 1.79 | 1.8 |
| | 6YRE0652N+12A+6 | Silver Grey | 47 | 29 | 10 | 31 | 37 | 0.37 | 0.43 | 1.78 | 1.79 | 1.8 |
| | 6YRE2252N+12A+6 | Green | 39 | 21 | 12 | 17 | 14 | 0.25 | 0.29 | 1.78 | 1.79 | 1.8 |
| | 6YRE2552N+12A+6 | Blue | 29 | 14 | 12 | 16 | 13 | 0.25 | 0.28 | 1.78 | 1.79 | 1.8 |
| | 6YRE5852N+12A+6 | Dark Grey | 23 | 10 | 12 | 14 | 12 | 0.23 | 0.27 | 1.78 | 1.79 | 1.8 |
| | | | | | | | | | | | | |
| | 6YRE0150NJ+12A+6 | Silver Grey | 40 | 30 | 13 | 26 | 32 | 0.31 | 0.36 | 1.80 | 1.80 | 1.8 |



## BENDABLE AND POST-TEMPERABLE HIGH PERFORMANCE LOW-E INSULATING GLASS

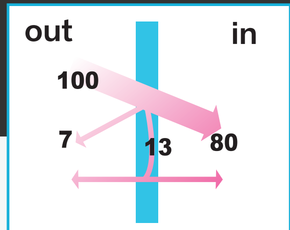
| Series | Product | Color | Visible Light(%) Transmittance | Visible Light(%) Reflectance (Out) | Visible Light(%) Reflectance (In) | Solar Energy (%) Transmittance | Solar Energy (%) Reflectance (Out) | Solar Heat Gain Coefficient (SHGC) NFRC 100-2010 | Shading Coefficient (S.C.) NFRC 100-2010 | NFRC U Value W/m².K NFRC 100-2010 Summer | NFRC U Value W/m².K NFRC 100-2010 Winter | European U- Value W/m².K (EN 673) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Post-Temperable High performance Series 2# | 6YNE0173+12A+6 | Neutral | 65 | 13 | 16 | 30 | 36 | 0.35 | 0.40 | 1.59 | 1.65 | 1.6 |
| | 6YNE2273+12A+6 | Green | 55 | 10 | 14 | 23 | 9 | 0.29 | 0.33 | 1.59 | 1.65 | 1.6 |
| | 6YNE2573+12A+6 | Blue | 41 | 7 | 14 | 20 | 10 | 0.27 | 0.31 | 1.59 | 1.65 | 1.6 |
| | | | | | | | | | | | | |
| | 6YNE0156+12A+6 | Light Blue | 50 | 15 | 18 | 23 | 31 | 0.29 | 0.33 | 1.59 | 1.65 | 1.6 |
| | 6YNE2256+12A+6 | Green | 43 | 11 | 18 | 18 | 9 | 0.26 | 0.30 | 1.59 | 1.65 | 1.6 |
| | 6YNE2556+12A+6 | Green | 32 | 8 | 17 | 16 | 10 | 0.24 | 0.28 | 1.59 | 1.65 | 1.6 |
| | | | | | | | | | | | | |
| | 6YNE0150+12A+6 | Blue | 46 | 17 | 20 | 21 | 34 | 0.26 | 0.30 | 1.59 | 1.65 | 1.6 |
| | 6YNE2250+12A+6 | Green | 38 | 13 | 20 | 17 | 10 | 0.23 | 0.27 | 1.59 | 1.65 | 1.6 |
| | 6YNE2550+12A+6 | Blue | 29 | 9 | 19 | 16 | 10 | 0.22 | 0.26 | 1.59 | 1.65 | 1.6 |
| | | | | | | | | | | | | |
| | 6YDT0170T+12A+6 | Neutral | 66 | 11 | 14 | 32 | 30 | 0.37 | 0.42 | 1.58 | 1.64 | 1.6 |
| | 6YDT0167C+12A+6 | Light Blue | 59 | 11 | 12 | 28 | 26 | 0.33 | 0.38 | 1.63 | 1.68 | 1.6 |
| | 6YDT0156T+12A+6 | Silver Grey | 52 | 22 | 23 | 25 | 30 | 0.30 | 0.34 | 1.57 | 1.64 | 1.6 |
| Post-Temperable Triple Silver | 6YTE0178T+12A+6 | Neutral | 69 | 13 | 13 | 28 | 39 | 0.31 | 0.36 | 1.55 | 1.62 | 1.6 |
| | 6YTE0678T+12A+6 | Neutral | 70 | 13 | 13 | 29 | 55 | 0.31 | 0.36 | 1.55 | 1.62 | 1.6 |

※ The above data are calculated by WINDOW 6.3 developed at Lawrence Berkeley National Laboratory, except for having been given clear indication of standards.
※ The glass performance data will be finalized by the performance data sheet which submitted by SYP. Above performance just for design reference.

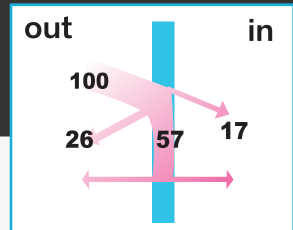
## GLASS SUBSTRATE

- 01=Clear Float
- 22=F Green Tinted Float
- 58=Eurogrey Tinted Float
- 06=Low-iron Float
- 25=Blue Tinted Float
- 68=Crystal Gray Tinted Float

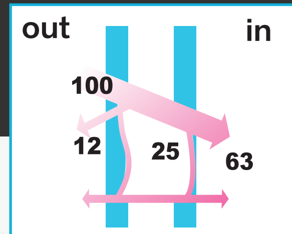
## SUNLIGHT ENERGY CHART



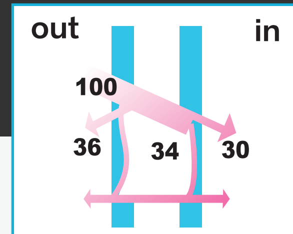
Sunlight Energy Chart
6mm Clear float



Sunlight Energy Chart
6mmYSD0120 Coating glass



Sunlight Energy Chart
6mm Clear float+12A+6mm



Sunlight Energy Chart
6mmYNE0173+12A+6mm

# SOLAR REFLECTIVE GLASS

Solar Reflective Glass is produced by applying a metallic layer onto the glass surface. The process is the so-called magnetically enhanced sputtering under vacuum.
With a mirror-like appearance, the Solar Reflective coating reduces solar heat gain by Reflecting and absorbing solar energy. Solar Reflective coatings can be further processed as laminating or double glazing. Some types of Solar Reflective coatings can be heat treated afterwards, such as tempering or curving, etc.

PROJECT:
Shanghai World Financial Center
ARCHITECT: KPF
PRODUCT:
6mm HS YSS0116+0.76PVB+6mm HS
6mm HS YSS0116+0.76PVB+6mm HS
+12A+6mm HS



## FEATURES

Indoor Comfort: Effectively reflects solar radiation
Economic: Saves Energy and lowers air – conditioning system costs.
Aesthetic : Various colors are available to match modern design concepts.
Privacy: Blocks sight from outside into a building.

## SPECIFICATIONS

Thickness: 3~19mm (1/8" ~ 3/4" )
Maximum size:
2440~3660mm(96" ~ 144" )
Minimum size:300~800mm (12" ~ 36" )

## COLOR

Various shades of blue,
green, blue green,
silver grey and gold.

## STANDARDS

GB/T 18915.1 for Coating Glass Standard
EN 1096 European Standard
JIS R3221 Japan Standard
ASTM 1376 American Society of
Testing and Materials

PROJECT: Harrsh' s
PRODUCT: 6mm HS YSD0115 6mm HS YSD2515

PROJECT: Shanghai Hang Lung Plaza
ARCHITECT: KPF
PRODUCT: 8mm FT SGAC2221+12A+8mm FT
YLE0181

PROJECT:
Shenzhen Great China International
Exchange Plaza
ARCHITECT: ARCHURBAN DESIGNS
PRODUCT: 6mm FT DGBD3312+9A+6mm
8mm FT DGBD3312+1.14PVB+8mm FT

## MONOLITHIC BENDABLE AND POST-TEMPERABLE SOLAR REFLECTIVE COATING

| Product | Color | Visible Light(%) | | | Solar Direct (%) | | Solar Heat Gain Co-efficient (SHGC) NFRC 100-2010 | Shading Coef-ficient ( S.C. ) NFRC 100-2010 | NFRC U Val-ue W/m².K NFRC 100-2010 | | European U- Value W/m².K (EN 673) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Transmi-ttance | Reflec-tance (Out) | Reflec-tance (In) | Transmi-ttance | Reflec-tance (Out) | | | Summer | Winter | |
| 6YSD0160 | Grey | 57 | 14 | 18 | 56 | 11 | 0.66 | 0.76 | 5.17 | 5.74 | 5.7 |
| 6YSD0160J | Grey | 61 | 10 | 16 | 56 | 8 | 0.67 | 0.77 | 5.10 | 5.67 | 5.6 |
| 6YSD0150 | Grey | 51 | 19 | 20 | 50 | 14 | 0.61 | 0.70 | 5.15 | 5.72 | 5.7 |
| 6YSD0150T | Grey | 53 | 19 | 18 | 51 | 14 | 0.61 | 0.71 | 5.17 | 5.74 | 5.7 |
| 6YSD0150J | Grey | 50 | 21 | 21 | 50 | 15 | 0.60 | 0.70 | 5.22 | 5.78 | 5.7 |
| 6YSD2250 | Green | 43 | 15 | 19 | 27 | 9 | 0.47 | 0.54 | 5.15 | 5.72 | 5.7 |
| 6YSD2550 | Dark Blue | 31 | 11 | 19 | 27 | 8 | 0.47 | 0.54 | 5.15 | 5.72 | 5.7 |
| 6YSD5850 | Dark Grey | 24 | 8 | 19 | 27 | 7 | 0.47 | 0.54 | 5.15 | 5.72 | 5.7 |
| 6YSD6850 | Ligh Grey | 37 | 12 | 19 | 32 | 9 | 0.51 | 0.59 | 5.15 | 5.72 | 5.7 |
| 6YSD0140 | Grey | 41 | 13 | 20 | 37 | 10 | 0.51 | 0.60 | 4.80 | 5.39 | 5.4 |
| 6YSD0140J | Grey | 42 | 14 | 18 | 38 | 11 | 0.53 | 0.61 | 4.78 | 5.37 | 5.4 |
| 6YSD2240 | Green | 34 | 11 | 20 | 20 | 7 | 0.40 | 0.47 | 4.80 | 5.39 | 5.4 |
| 6YSD2540 | Dark Blue | 26 | 8 | 20 | 21 | 7 | 0.41 | 0.48 | 4.80 | 5.39 | 5.4 |
| 6YSD5840 | Dark Grey | 20 | 7 | 20 | 21 | 6 | 0.42 | 0.48 | 4.80 | 5.39 | 5.4 |
| 6YSD6840 | Ligh Grey | 30 | 9 | 20 | 24 | 7 | 0.45 | 0.52 | 4.80 | 5.39 | 5.4 |
| 6YSD0136 | Grey | 36 | 29 | 10 | 31 | 21 | 0.45 | 0.52 | 4.66 | 5.26 | 5.3 |
| 6YSD0136T | Grey | 35 | 29 | 10 | 29 | 20 | 0.43 | 0.49 | 4.56 | 5.17 | 5.2 |
| 6YSD2236 | Green | 30 | 21 | 10 | 17 | 11 | 0.37 | 0.43 | 4.66 | 5.26 | 5.3 |
| 6YSD2536 | Dark Blue | 23 | 14 | 10 | 18 | 10 | 0.38 | 0.44 | 4.66 | 5.26 | 5.3 |
| 6YSD5836 | Dark Grey | 18 | 10 | 9 | 17 | 9 | 0.38 | 0.44 | 4.66 | 5.26 | 5.3 |
| 6YSD6836 | Ligh Grey | 26 | 16 | 9 | 20 | 11 | 0.40 | 0.46 | 4.66 | 5.26 | 5.3 |
| 6YSD0130 | Grey | 31 | 24 | 19 | 26 | 18 | 0.41 | 0.47 | 4.41 | 5.03 | 5.0 |
| 6YSD0130T | Grey | 31 | 24 | 19 | 26 | 18 | 0.41 | 0.47 | 4.41 | 5.03 | 5.0 |
| 6YSD0130J | Grey | 34 | 22 | 17 | 30 | 17 | 0.45 | 0.52 | 4.71 | 5.30 | 5.3 |
| 6YSD2230 | Green | 27 | 17 | 18 | 16 | 9 | 0.36 | 0.42 | 4.41 | 5.03 | 5.0 |
| 6YSD2530 | Dark Blue | 20 | 12 | 17 | 16 | 9 | 0.37 | 0.42 | 4.41 | 5.03 | 5.0 |
| 6YSD5830 | Dark Grey | 17 | 9 | 16 | 16 | 8 | 0.37 | 0.42 | 4.41 | 5.03 | 5.0 |
| 6YSD6830 | Ligh Grey | 24 | 15 | 19 | 18 | 10 | 0.38 | 0.44 | 4.41 | 5.03 | 5.0 |
| 6YSD0120 | Grey | 20 | 33 | 24 | 17 | 26 | 0.31 | 0.36 | 4.13 | 4.78 | 4.8 |
| 6YSD0120T | Grey | 20 | 29 | 31 | 18 | 23 | 0.33 | 0.38 | 4.28 | 4.92 | 4.9 |
| 6YSD0120J | Grey | 21 | 30 | 29 | 19 | 24 | 0.35 | 0.40 | 4.45 | 5.07 | 5.0 |
| 6YSD2220 | Green | 18 | 24 | 22 | 10 | 13 | 0.30 | 0.35 | 4.13 | 4.78 | 4.8 |
| 6YSD2520 | Dark Blue | 13 | 16 | 22 | 10 | 12 | 0.30 | 0.35 | 4.13 | 4.78 | 4.8 |
| 6YSD5820 | Dark Grey | 11 | 9 | 24 | 10 | 9 | 0.31 | 0.36 | 4.13 | 4.78 | 4.8 |
| 6YSD6820 | Ligh Grey | 15 | 19 | 24 | 12 | 14 | 0.32 | 0.37 | 4.13 | 4.78 | 4.8 |
| 6YSD0115 | Ligh Blue | 16 | 27 | 34 | 14 | 22 | 0.30 | 0.35 | 4.00 | 4.67 | 4.7 |
| 6YSD2215 | Blue Green | 14 | 20 | 33 | 8 | 11 | 0.27 | 0.32 | 4.00 | 4.67 | 4.7 |
| 6YSD2515 | Dark Blue | 11 | 14 | 33 | 8 | 11 | 0.28 | 0.33 | 4.00 | 4.67 | 4.7 |
| 6YSD5815 | Dark Grey | 8 | 10 | 33 | 8 | 10 | 0.29 | 0.33 | 4.00 | 4.67 | 4.7 |
| 6YSD6815 | Blue Grey | 13 | 16 | 34 | 10 | 12 | 0.30 | 0.35 | 4.00 | 4.67 | 4.7 |

※ The above data are calculated by WINDOW 6.3 developed at Lawrence Berkeley National Laboratory, except for having been given clear indication of standards.
※ The glass performance data will be finalized by the performance data sheet which submitted by SYP. Above performance just for design reference.



# TEMPERED GLASS

Tempered Glass is produced by heating annealed glass in a furnace to approximate 700℃ and rapidly blowing cool air onto its surface. This rapid cooling process is the key element in the physical changes in annealed glass; it creates additional stresses within the glass. Therefore, it is more resistant to thermal breakage and is capable of withstanding higher wind loads.

2-Stage Temp ered Furnace Sp ecified b y Pil kington, Manufactu red by Tamglass

### FEATURES

Small Harmless Fragments
High Strength
Thermal Stability

### SPECIFICATIONS

Maximum size: 3000 x 6000mm (118¹/₉″ x 236 ²/₉″)
Minimum size: 250x250mm (9 ⁵/₆″ x 9 ⁵/₆″)
Thickness: 3 – 19mm (1/8″ ~3/4″ )

### SYP HIGH QUALITY TEMPERED GLASS

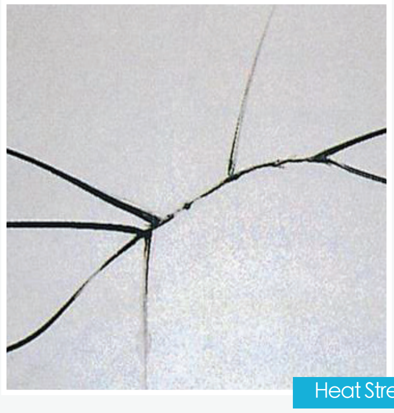
The flatness of tempered glass influences the appearance of a building. SYP adopted a state-of-the-art two-stage heating furnace, specified by Pilkington UK and manufactured by Tamglass of Finland. The flatness of its products is outstanding, ensuring the aesthetic of a curtain wall.

### CERTIFICATION

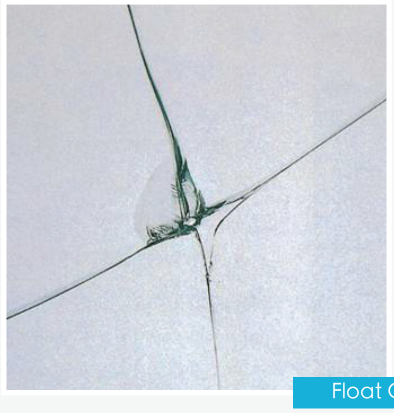
GB15763.2 Safety glazing materials in building – part 2: Tempered Glass
China CCC Safety Glass Certification
SGCC (ANSI Z97.1, CPSC16 CFR1201, ASTM 1048) US Safety Glass Certification
Global AS/NZS2208 Australia and New Zealand Safety Glass Certification
BSI BS 6206, BS EN1215 UK safety Glass Kitemark Certification

# HEAT STRENGTHENED GLASS

Tempered Glass Fragments



Heat Strengthened Fragments



Float Glass Fragments

### SPECIFICATIONS

Maximum size: 3000 x 6000mm (118 1/9″ x 236 2/9″)
Minimum size: 250x250mm (9 5/6″~9 5/6″)
Thickness: 4−12mm (1/6″ ~ 1/2″ )

### STANDARDS

GB 17841 Tempered and heat−strengthened glass used in curtain walls
BS EN1863−1 Glass in Building heat− strengthened soda lime silicate
Glass−part1: Definition and description ASTM C 1048−04 Heat Treated Flat Glass

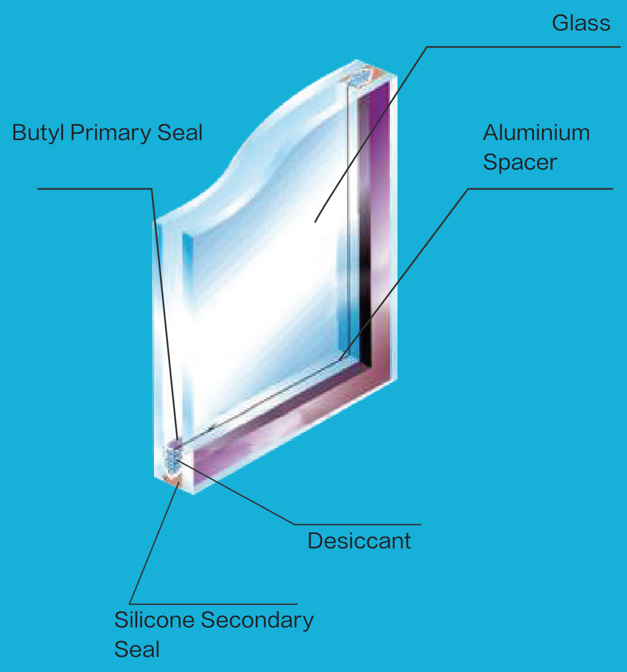


# INSULATED GLASS UNIT

An IGU consists of two or more panels of glass separated by an air space with a spacer around the perimeter. The spacer contains a desiccant which eliminates moisture in the cavity. The combination of the two panels of glass and trapped air is what makes the IGU a superior energy efficient method of glazing. The whole unit is hermetically assembled by a double barrier sealant.

Fully Automated IGU Production Line Manufactured by Germany&Austria

## Insulating Glass Unit




### FEATURES

Energy Savings
Comfortable indoor environment
Water condensation prevention

### SPECIFICATIONS

Maximum Size: 2700x5000mm (106 2/7″ ~196 6/7″)
Minimum Size: 180x300mm (7″~ 11 4/5″)
Spacer Width: 6mm (1/4″ ), 9mm (1/3″ ), 12mm (1/2″), 16mm (5/8″ ), 20mm (4/5″ )

### CERTIFICATIONS

GB/T 11944 Sealed insulating glass Unit China Insulating Glass Unit Certification
IGCC (ASTM E2188, ASTM E 2189, ASTM E 2190, ASTM E 546) US Insulating Glass Unit Certification
BSI BS EN 1279&BS 5713 UK Insulating Glass Unit Kitemark Certificate



## INSULATING GLASS UNIT

| Series | Product | Visible Light(%) | | | Solar Energy (%) | | Solar Heat Gain Co-efficient (SHGC) NFRC 100-2010 | Shading Coef-ficient ( S.C. ) NFRC 100-2010 | NFRC U Val-ue W/m².K NFRC 100-2010 | | European U- Value W/m².K (EN 673) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Transmi-ttance | Reflec-tance (Out) | Reflec-tance (In) | Transmi-ttance | Reflec-tance (Out) | | | Summer | Winter | |
| Float IGU | 6 + 6A + 6 | 80 | 15 | 15 | 66 | 12 | 0.73 | 0.84 | 3.18 | 3.11 | 3.2 |
| | 6 +12A+ 6 | 80 | 15 | 15 | 66 | 12 | 0.73 | 0.84 | 2.84 | 2.70 | 2.8 |
| | 6 +16A+ 6 | 80 | 15 | 15 | 66 | 12 | 0.73 | 0.84 | 2.73 | 2.69 | 2.7 |
| | 8 +12A+8 | 78 | 14 | 14 | 61 | 12 | 0.70 | 0.80 | 2.81 | 2.67 | 2.8 |
| | 10+12A+10 | 77 | 14 | 14 | 57 | 11 | 0.68 | 0.78 | 2.77 | 2.64 | 2.8 |
| | 6Green+12A+6 | 67 | 12 | 14 | 37 | 7 | 0.48 | 0.55 | 2.84 | 2.70 | 2.8 |
| | 6Blue+12A+6 | 58 | 10 | 13 | 42 | 8 | 0.53 | 0.61 | 2.84 | 2.70 | 2.8 |
| Coat IGU (Sliver Grey --Blue Grey Series) | 6YSD0120+12A+6 | 18 | 33 | 27 | 14 | 27 | 0.23 | 0.27 | 2.48 | 2.37 | 2.5 |
| | 6YSD0130+12A+6 | 28 | 25 | 24 | 22 | 19 | 0.32 | 0.37 | 2.58 | 2.46 | 2.6 |
| | 6YSD0136+12A+6 | 33 | 29 | 17 | 26 | 21 | 0.36 | 0.41 | 2.65 | 2.52 | 2.6 |
| | 6YSD0140+12A+6 | 37 | 15 | 24 | 30 | 11 | 0.41 | 0.48 | 2.70 | 2.57 | 2.7 |
| Coat IGU(Light Blue Series) | 6YSD0115+12A+6 | 15 | 27 | 36 | 12 | 21 | 0.22 | 0.25 | 2.44 | 2.33 | 2.4 |
| Coat IGU (Green-- Blue Green Series) | 6YSD2250+12A+6 | 39 | 16 | 24 | 23 | 9 | 0.35 | 0.40 | 2.81 | 2.67 | 2.8 |
| | 6YSD2236+12A+6 | 27 | 22 | 16 | 14 | 11 | 0.26 | 0.30 | 2.66 | 2.53 | 2.7 |
| Float IGU (with inert gases) | 6+9A(argon)+6 | 80 | 15 | 15 | 66 | 12 | 0.73 | 0.84 | 2.80 | 2.62 | 2.8 |
| | 6+12A(argon)+6 | 80 | 15 | 15 | 66 | 12 | 0.73 | 0.84 | 2.70 | 2.53 | 2.7 |
| | 6+12A(ar-gon)+6YLE0178 | 67 | 13 | 10 | 46 | 21 | 0.61 | 0.70 | 1.57 | 1.58 | 1.6 |
| | 6YNE0175+ 16A(argon)+6 | 66 | 11 | 12 | 34 | 30 | 0.39 | 0.45 | 1.13 | 1.47 | 1.2 |

※ The above data are calculated by WINDOW 6.3 developed at Lawrence Berkeley National Laboratory, except for having been given clear indication of standards.
※ The glass performance data will be finalized by the performance data sheet which submitted by SYP. Above performance just for design reference.

# LAMINATED GLASS

Laminated glass is a safety glass made by laminating two or more sheets of glass with a flexible plastic interlayer or PVB. The glass and interlayer are bonded together by heat and pressure.

### FEATURES

Safety : prevent the glass from disintegrating if broken.
Sound Reduction: absorb sound wave, reducing noise.
UV Elimination: eliminates 99% UV while allowing visible light to pass through, thereby protecting furniture,
carpet and indoor decorations from color fading.
Shielding and glare control: weakens sunlight radiation and glare.

### CERTIFICATIONS

GB9962 Laminated Glass
China CCC Safety Glass Certificate
SGCC (ANSI Z97.1, CPSC16 CFR1201)USA Safety Glass
SAI Global AS/NZS 2208 Australian and New Zealand Safety Glass
BSI BS 6206, BS EN 12600, BS EN ISO 12543 Safety Glass
KiteMark Certificate
ASTM 1172 American Society for Testing and Materials
SGCC Safety Glass Certificate Council

### SPECIFICATIONS

Maximum Size : 2440 x 6000mm (96″x 236″)
Minimum Size: 300 x300mm (12″x 12″)
Substrate: 3–19mm (1/8″ ~3/4″ )
Interlayer: PVB, EVA, SGP
Maximum Thickness of Laminated Glass: 60mm 2 3/8″

### SOUND INSULATION PERFORMANCE

| Product | | Sound Transmission Class |
|---|---|---|
| Laminated Glass | 3+0.76PVB+3 | 35 |
| | 5+0.76PVB+5 | 36 |
| | 6+0.76PVB +6 | 37 |
| | 6+1.52PVB+6 | 37 |
| | 12+1.52PVB+12 | 41 |
| Laminated IGU | 3+0.38PVB+3+12A+6 | 38 |
| | 5+0.38PVB+5+12A+8 | 39 |
| | 5+0.76PVB+5+12A+8 | 40 |
| IGU | 6+9A+6 | 34 |
| | 6+12A+6 | 35 |
| | 6+16A+6 | 36 |
| Monolithic Glass | 6 | 31 |
| | 12 | 36 |

### LAMINATED GLASS

| Product | Visible Light(%) | | | Solar Energy (%) | | Solar Heat Gain Coefficient (SHGC) NFRC 100–2010 | Shading Coefficient ( S.C. ) NFRC 100–2010 | NFRC U Value W/m².K NFRC 100–2010 | | European U– Value W/m².K (EN 673) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Transmi–ttance | Reflec–tance (Out) | Reflec–tance (In) | Transmi–ttance | Reflec–tance (Out) | | | Summer | Winter | |
| 3C+0.38PVB+3C | 89 | 8 | 8 | 79 | 7 | 0.83 | 0.96 | 5.19 | 5.75 | 5.70 |
| 3Green +0.38PVB+3C | 81 | 7 | 7 | 55 | 6 | 0.67 | 0.77 | 5.19 | 5.75 | 5.70 |
| 6C+0.76PVB+6C | 86 | 8 | 8 | 67 | 7 | 0.75 | 0.87 | 4.98 | 5.50 | 5.40 |
| 6Green+0.76PVB+6C | 72 | 7 | 7 | 38 | 5 | 0.56 | 0.65 | 4.98 | 5.50 | 5.40 |
| 6 Blue+0.76PVB+6C | 63 | 6 | 6 | 43 | 5 | 0.6 | 0.69 | 4.98 | 5.50 | 5.40 |
| 6YSD0150+0.76PVB+6C | 52 | 16 | 11 | 44 | 12 | 0.57 | 0.66 | 4.98 | 5.50 | 5.40 |
| 6YSD0130+0.76PVB+6C | 33 | 22 | 13 | 26 | 18 | 0.44 | 0.51 | 4.98 | 5.50 | 5.40 |
| 6YSD0120+0.76PVB+6C | 21 | 27 | 20 | 16 | 24 | 0.35 | 0.41 | 4.98 | 5.50 | 5.40 |

※ The above data are calculated by WINDOW 6.3 developed at Lawrence Berkeley National Laboratory, except for having been given clear indication of standards.
※ The glass performance data will be finalized by the performance data sheet which submitted by SYP. Above performance just for design reference.

PROJECT: Shanghai Oriental Art Center
ARCHITECT: Paul Andreu
PRODUCT: 12mm FT+1.52SGP+0.5mm Metal+1.52SGP+15mm FT

PROJECT: Tokyo Gunma Museum
ARCHITECT: Tadao Ando Architect & Associates
PRODUCT: 12mm FT+1.6EVA+6mm FT
POINT SUPPORTED GLASS

PROJECT: Nanjing Huawei Building
PRODUCT: 6mm 24K Golden Low–E +0.38PVB+6mm

PROJECT: Chendu Shuangliu International Airport
ARCHITECT: China Southwest Architectural Design & Research Institute
PRODUCT: 8mm FT YAC0170+1.14PVB+8mm

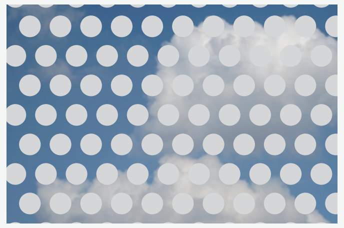
# ENAMELED TEMPERED GLASS

Enameled Glass is produced by silk-screening a selected color and pattern onto the surface of the glass, then either tempering or heat strengthening, enabling the enamel to firmly adhere to the glass surface. Modern designs need opaque, translucent, and special patterned glass for decorative use. Enameled Glass has gained more and more popular in architecture, creating unique styles.


PROJECT:
New Zealand Telephone booth
PRODUCT: 6mm FT with frit




PROJECT: Chongqing Library
ARCHITECT: Perkins Eastman Architects
PRODUCT: 8mm FT YCE0180+12A+ 8mm FT
8mm FT YCE0164 with frit+12A+8mm FT



DOTS

LINES

WHOLE COVER

### FEATURES

Indestructible enamel bonding, non – porous surface with excellent scratch resistance, easy for cleaning;
Variety of colors and patterns that can be customized on request ;
Sun Shielding;
Spandrel Blocking.

### SPECIFICATIONS

Maximum Size: 2440 x4500mm(96″x177 1/6″)
Minimum Size: 250x250mm(9 5/6″ x 9 5/6″ )
Thickness: 3 ~ 19mm(1/8″ ~ 3/4″ )

### STANDARDS

GB15763.2 Safety glazing materials in building–part2: Tempered Glass
China Compulsory Certificate (CCC) Safety Glass Certification
ASTM C–1048 American Society for Testing and Materials

PROJECT:
Shanghai Banknote Printing Plant Factory
PRODUCT: 6mm FT SCSC0132 with frit+12A+6 FT

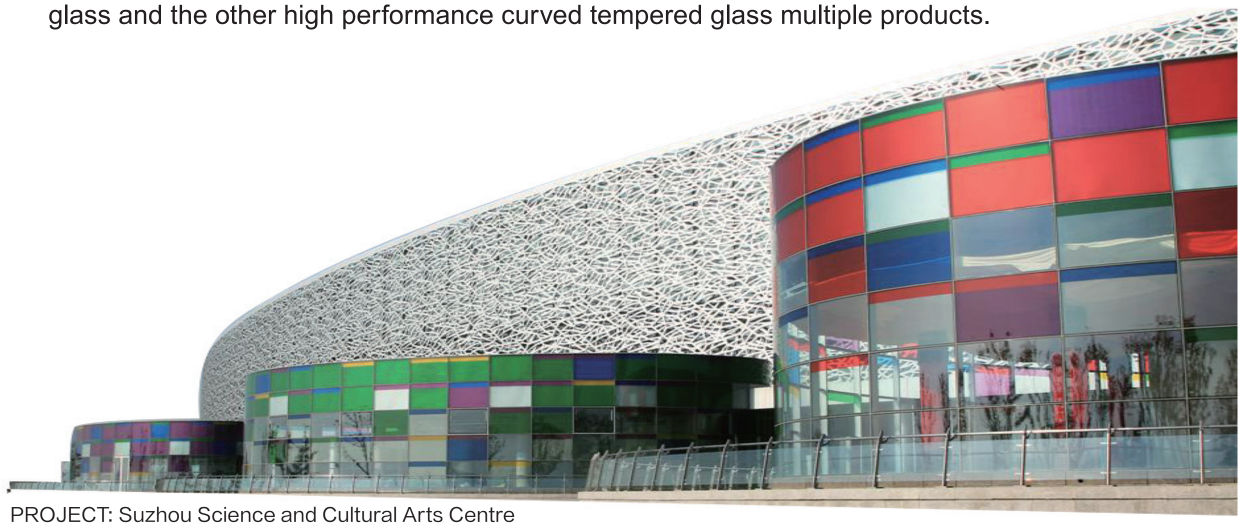
PROJECT: Sino-Ocean Taikoo Li Chengdu,
The Temple House Hotel
PRODUCT: 6mm with frit
YBE0152+12A+6mm FT+1.52PVB+6mm FT

PROJECT: Shanghai You You International Plaza
ARCHITECT: B+H
PRODUCT: 6mm FT SCLET0181 with frit+12A+6mm FT
6mm FT SCLET0181+12A+5mm+0.38PVB+5mm
8mm FT SCLET0181+12A+6mm FT
6mm FT with frit+12A+6mm FT with frit



# CURVED GLASS AND CURVED TEMPERED GLASS

Curved glass is made by heating annealed glass to its softening temperature, then bending to the shape by weight and outside force in special molds, and finally cooling down by nature.
Curved tempered glass or curved heat strengthened glass is made of annealed glass heated to its softening temperature, then bended to the shape by weight and outside force, and finally cooled down rapidly by clean compressed air.
SYP can supply curved tempered laminated glass, curved tempered IGU, curved tempered coated glass and the other high performance curved tempered glass multiple products.



PROJECT: Suzhou Science and Cultural Arts Centre
ARCHITECT: ECADI
PRODUCT: 6mm FT+9A+5mm+1.90PVB+5mm FT

### SPECIFICATIONS OF CURVED GLASS

Maximum Size: 2500 x 4500mm (98 3/7″ x 177 1/6″ )
Thickness : 3~22 mm (1/8″ ~6/7″ )

### CERTIFICATION

GB15763.2 Safety glazing materials in buiiding-part 2: Tempered Glass
China CCC Safety Glass Certification

### SPECIFICATIONS OF CURVED TEMPERED GLASS

Maximum Size: 2440 x 4200mm (96″x 165 1/3″ )
Minimum Size: 400 x 600mm (15 3/4″ x 23 5/8″ )

Minimum Curve Radius:
1200mm (5mm,6mm)
1500mm(8mm,10mm,12mm)
2000mm(15mm,19mm)

Maximum Arch Height:
570mm (5mm,6mm)
470mm(8mm,10mm,12mm)
361mm(15mm,19mm)

Thickness:5 ~ 19mm

# FIRE RESISTANCE GLASS

SYP Fire Resistance Glass is monolithic glass. It adequately meets fire and impact resistance requirements. Fire Resistance Glass can be used for containment of flames and inflammable gas in case of fire, thus saving precious time for escaping.
Monolithic fire resistance glass can be divided into following levels according to Chinese Fire Resistance Integrity Standards: Level I (≥90min),Level II (≥60min),Level III (≥45min),Level IV (≥30min).
SYP Monolithic fire resistance glass can reach C class, Level I.

PROJECT:Addington Street HOTEL London, UK

### SYP MONOLITHIC FIRE RESISTANCE GLASS ADVANTAGE

Reaches the best fire resistance performance for monolithic Safe small breakage fragments High mechanical strength.
Monolithic fire resistance glass can be further processed into coated glass, double glazing , laminated glass etc.

### SPECIFICATIONS

Maximum Size: 2000 x 2500mm(78 3/4″x 98 3/7″)
Minimum Size: 250 x 250mm(9 5/6″x 9 5/6″)

### STANDARD

China GB 15763.1《Architecture Safety Glass Fire Resistance Glass》



# GLASS TERMS AND DEFINITIONS

### SOLAR SPECTRUM

The solar spectrum, referred to sunlight, consists of ultraviolet light(UV),visible light and infrared(IR)
The energy distribution within solar spectrum:UV (300–380nm) 2%
Visible Light (380–780nm) 47%
Infrared (780–2500nm) 51%

### HEAT TRANSFERS METHODS

Heat transfers from one place to another via radia–tion, convection or conduction.
Radiation is capable of traveling to a distant object where is can be reflected , absorbed or transmitted.
Convection is the circulatory motion which occurs with air.
Conduction occurs when energy passes from one object to another.

### SOLAR DIRECT TRANSMITTANCE

The percentage of ultraviolet, visible and near infrared energy (300 –2500nm) that is transmitted through the glass.

### SOLAR DIRECT REFLECTANCE

The percentage of solar energy that is reflected directly from the glass surface.

### RAT EQUATION

The RAT equation accounts for 100 percent of solar energy, which is equal to the sum of solar reflec–tance(R), absorption(A) and transmittance(T).

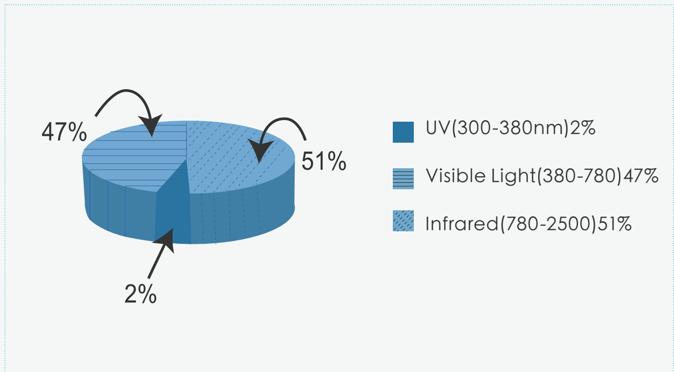
### VISIBLE LIGHT TRANSMITTANCE

The percentage of visible light (380–780nm) that is transmitted through the glass.

### VISIBLE LIGHT REFLECTANCE

The percentage of visible light (380–780nm) that is reflected from the glass surface.

Above terms and definitions as per ISO9050

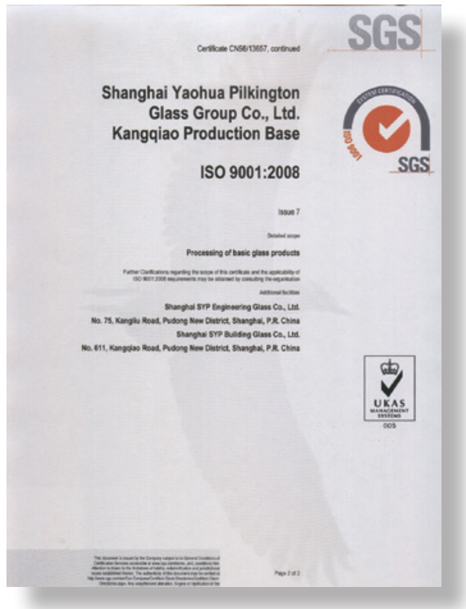


# RELEVANT CERTIFICATES


Certificate CN98/13457

Shanghai Yaohua Pilkington Glass Group Co., Ltd. Kangqiao Production Base

ISO 9001:2008


Shanghai Yaohua Pilkington Glass Group Co., Ltd. Kangqiao Production Base

ISO 9001:2008

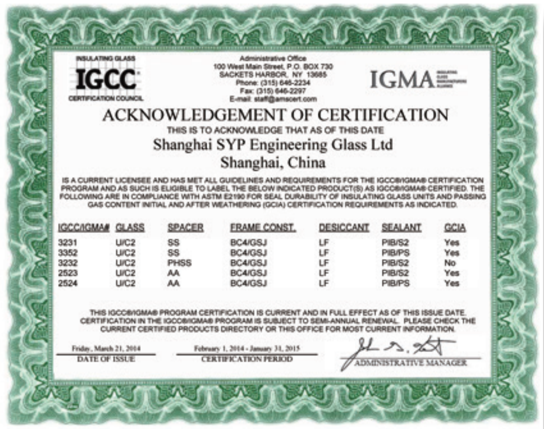
Processing of basic glass products


Kitemark® Licence

No. KM 542086

BS EN 1279-2

Insulating Glass Units


IGCC

IGMA

ACKNOWLEDGEMENT OF CERTIFICATION

THIS IS TO ACKNOWLEDGE THAT AS OF THIS DATE

Shanghai SYP Engineering Glass Ltd

Shanghai, China




STANDARDSMARK LICENCE

SAI Global hereby grants:

Shanghai SYP Building Glass Co., Ltd

AS/NZS 2208:1996 - Safety glazing materials in buildings

SAI GLOBAL


Kitemark® Licence

No. KM 84245

Safety glass for use in buildings


SGCC

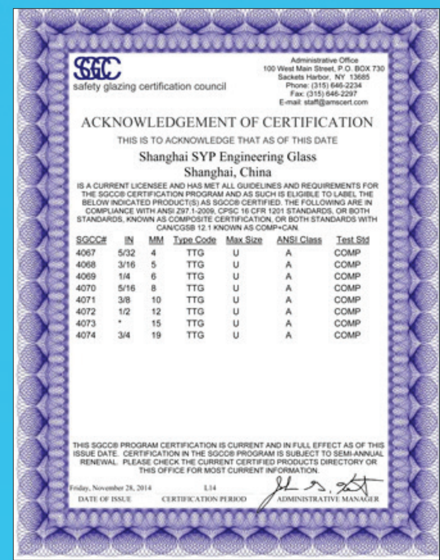
safety glazing certification council

ACKNOWLEDGEMENT OF CERTIFICATION

THIS IS TO ACKNOWLEDGE THAT AS OF THIS DATE

Shanghai SYP Building Glass

Shanghai, China


SGCC

safety glazing certification council

ACKNOWLEDGEMENT OF CERTIFICATION

THIS IS TO ACKNOWLEDGE THAT AS OF THIS DATE

Shanghai SYP Engineering Glass

Shanghai, China

# CONTACT US


## OPERATION MANAGEMENT DEPARTMENT

ADD: Building 4-5, No.1388 Zhangdong Road,

Pudong , Shanghai, China.

TEL: +86 21 61633599

POSTCODE: 201203

E-MAIL: marketing@sypglass.com

WEBSITE: http://www.sypglass.com