



**TETRA**  
BUILDING ENCLOSURES

13633 37th Avenue,  
Suite 8B,  
Flushing New York 11354  
info@tetraus.com  
718-460-6060



As a highly specialized fabricator in the world architectural glass market, Tetra Building Enclosures is more than a glass supplier for many eye-attractive projects, but also more than often played a practitioner part of the cooperators to realize the designs and dreams of architects. You can find the job references which showed part of what we have done before in North America market.

The projects designed by many architect firms as David Chipperfield, Zara Hadi, Sana helped Tetra Building Enclosures the foundation of the global pioneer in the glass deep fabrication industry.

The launch of the low-e coating line imported from VAAT, Germany will also help Tetra Building Enclosures be one of the main suppliers from high performance glass products.



# Fulton Street Transit Center

The Fulton Street Transit Center is the MTA's marketing name for a new headhouse and update to the transfer corridors at the four Fulton Street stations. This project involves different glass fabrication procedures including tempering, heat soak test, lamination, insulation. Low e and low iron is from PPG, which can achieve better performance.

**Glass Makeup:** FT 6 +  
PVB1.52 + HS6 Solarban 72  
+ 29A + FT + PVB1.52 +  
HS6 + PVB1.52 + FT 6

**Consultant:** ARUP  
**G. Contractor:** Plaza Construction  
**CW Contractor:** Enclos  
**Location:** New York  
**Glass Area:** 2,300 sqm



**Architect:** Centra Rubby  
**Consultant:** Front Inc.  
**G. Contractor:** Plaza Construction  
**Location:** New York  
**Glass Area:** 450 sqm



# Lincoln Square Synagogue

Representing the five books of the Torah, the undulating glass façade features five ribbons of faceted panels with pleated fabric laminated to give the appearance of parchment scrolls. Jumbo size fritted, laminated IGU with fabric for exterior wall application.



**Glass Makeup:** Low iron:  
HS4 + SGP + Fabric + SGP  
+ HS4 + 12A + HS6 low e +  
PVB + HS6 W / frit



# 50 West Street

**Owner:** 50 West Development LLC

**Consultant:** AJL & P Consulting / Surface Design Group

**G. Contractor:** Hunter Roberts Construction Group.

**CW Contractor:** Permasteelisa NA

**Location:** New York

**Floor Count:** 63

**Glass Area:** 3,150 sqm

**Glass Makeup:** (tempered curved)

HS8SN70 / 41 + 14A + HS5C + PVB1.52 + HS5C

FT8CW / Frit +16A + FT8CW / frit HS6/ 8C + PVB1.52 + HS6 / 8C



# Highline 23

**Architect:** Centra Rubby

**Consultant:** Front Inc.

**G. Contractor:** T. G. Nickel & Associates, LLC

**CW Contractor:** Sanxin Facade

**Location:** New York

**Glass Makeup:** (tempered curved)

HS8 W / Frit + PVB1.52 \_ HS6 low-e + 12A + HS10

## **Project Description:**

The frit patterns on the glass were customized to match the special shape and the structure of the building. All the IGU panes were pre-assembled into mega panels in China and shipped to the job site in New York to facilitate the installation.



**Owner:** West 12 Village Livin  
**Architect:** Flank  
**CW Contractor:** Front Inc.  
**Location:** New York



**Glass makeup:** Low e IGU, laminated low e IGU with anti-slip frit.

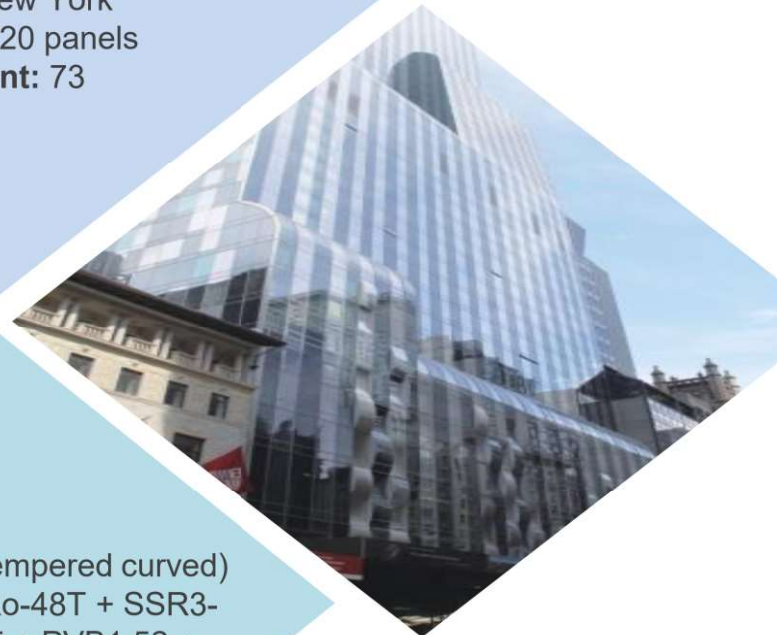
## 385 W 12<sup>th</sup> Street

### Project Description:

This project applied unitized compound copper panels with Saint-Gobain low e coating IGU.

## Carnegie 57<sup>th</sup> Street

**Developer:** Extel  
**CW Contractor:** Permasteelisa NA  
**Location:** New York  
**Glass Area:** 420 panels  
**Floor Count:** 73



**Glass makeup:** (tempered curved)  
Low iron: FT6 SSRo-48T + SSR3-48T + 9AR + HS5 + PVB1.52 + HS5

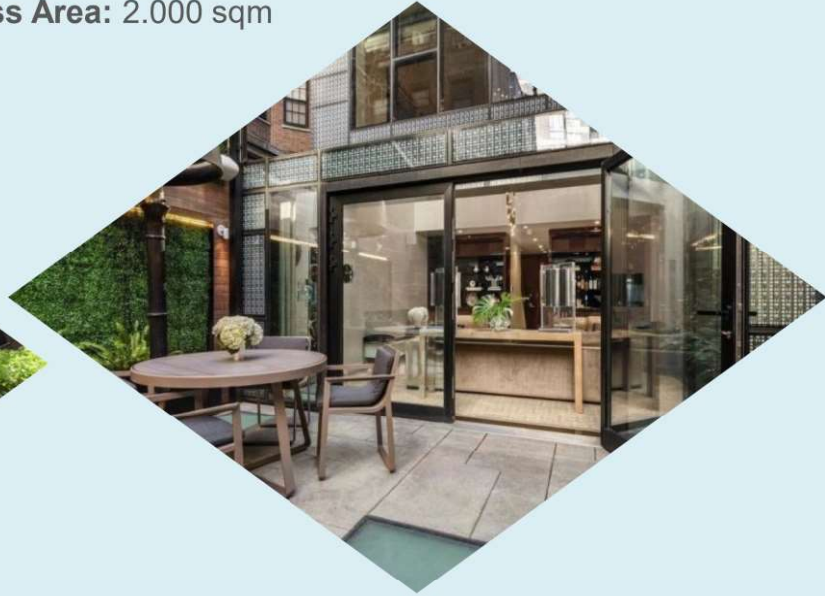
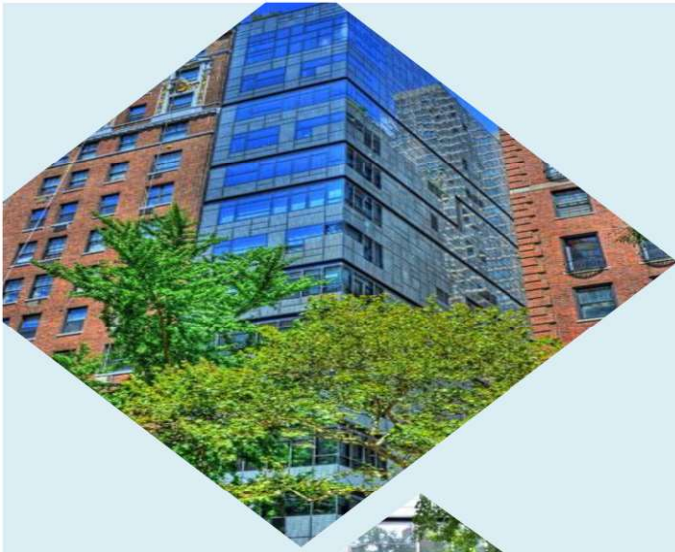
# 441 E57th Street

**Architect:** Flank Architect

**CW Contractor:** Sanxin Façade

**Location:** New York

**Glass Area:** 2.000 sqm



# Harrah's Casino

**CW Contractor:** Novum

**Location:** Atlantic City, New Jersey

**Glass makeup:**

FT10 low e + 15A + HS6 + PVB1.52 + HS6



# Sprint Arena

**Location:** Kansas City, Missouri

**G. Contractor:** Mortenson

**CW Contractor:** Architectural Wall Systems Co.

**Total glass area:** 12,000 sqm

**Architect:** DADT

**Glass makeup:** FT8 W / frit & low e (#2) + 12A + FT10

FT8 + PVB1.52 + FT8W / frit & low e (#4) + 12A + FT10

## **Project Description:**

Sprint Center is the cornerstone in the revitalization and renaissance of downtown Kansas City that in addition to the arena, will feature condominiums, restaurant, themed bars, movie and live entertainment theaters and mixed retail. Upon its 2007 completion, Sprint Center will be listed among the finest arenas in the country and will become Kansas City's home for basketball, hockey, concerts, family shows and special events.

# Buffett Cancer Center

**Architect:** HDR, Inc.

**G. Contractor:** Kiewit Building Group

**CW Contractor:** Architectural Wall Systems Co.

**Location:** Omaha, NE

**Glass Area:** 12,000 sqm

## **Glass makeup:**

HS 6SDT1-74T#2 + 12A + HS 6C + PVB 1.52 + HS 6C

HS 6SDT1-74#2 W / frit #2 + 12A + H 6C





# Walker Art Center

**Location** Minnesota, MN  
**Architect:** Herzog & de Meuron  
**Consultant:** Front Inc  
**G. Contractor:** Mortenson  
**CW Contractor:** United Aluminum Doors Inc.

**Glass Makeup:** a. FT10 w /  
acid etching (#1) + A16 WES  
+ FT6 low-e + PVB1.52 + FT  
6

b. FT6 + PVB1.52 + FT6  
low-e + A16WES + FT6 low-  
e + PVB 1.52 + FT6 (max.  
size: 1697x5298mm)

**Project Description:** Walker Art Center  
is a private art museum formally  
established in 1927. The woven  
aluminum panel (like gently crumpled  
paper) and vest glass system create joint  
style between history and modern. It uses  
gray and black warm edge spacer, and  
gray and black sealant to harmonize the  
natural colors of old building.





**Architect:** Kazuyo Sejima + Ryue Nishizawa / SANAA  
**Consultant:** Front Inc  
**G. Contractor:** Rudolph / Libbe Inc  
**CW Contractor:** United Aluminum Doors Inc.



**Glass Area:** 4,500 sqm

**Glass Makeup:**

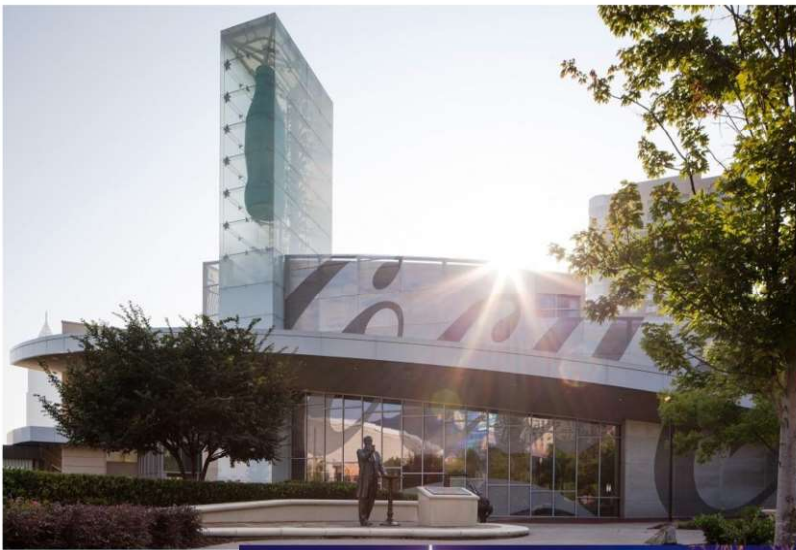
Type 1: Flat / annealed curve: FL10 + PVB 1.52 + FL10  
(max size: 2870 x 4500 mm)

Type 2: Flat / annealed curve FL12 + PBV 1.52 + FL12  
(max size: 2870 x4500 mm)

Type 3: Annealed curve: FL10 + PVB1.52 + FL6 + A12 +  
FL 10 + PVB1.52 + FL 6 (2936mm x 2936 mm)

**Project Description:** Toledo Museum of Art, abb. TMA, locates in Toledo, Ohio, USA. TMA glass pavilion is an exhibition place bringing forth the history and development of glass. The total area of TMA exterior façade is 7,060 sqm, using 4,500 sqm of flat and heat curved laminated glass. The challenge of glass for this project is heat curving and laminating of glass panels of jumbo sizes.





# Coca Cola Icon

**Architect:** Rosser International Inc.

**CW Contractor:** Novum

**Location:** Atlanta, GA

**Glass Makeup:**

Low iron: FT8W / Frit + PVB1.52 + FT8  
FT10 + color PVB1.52 + FT10



# Optima Chicago One

**Owner:** Optima

**CW Contractor:** Facade Tek

**Location:** Chicago, IL

**Glass Area:** 12,500sqm

**Glass Makeup:**

FT8 SRE1-38 +12A + PT6C

FT6 SDT1-60T + 12A + FT6C

**Project Description:**

This project is in Chicago Center, obtains shining effect with bluish tone, which it is high reflective coating and double coating low e coating glass.



# Kauffmann Center

**Architect:** Safdie Architects

**G. Contractor:** JE Dunn Construction Group

**CW Contractor:** Novum

**Location:** Kansas city, MO

**Glass Area:** 4,283 sqm

**Glass makeup:**

FT10 Energy NT + 20AR + FT/HST10 W / frit + PVB1.52 + FT/ HST12(low iron)

**Project Description:**

It has two independent buildings, one is , Muriel Kauffman Theatre, another is Helzberg Hall. It has many shows from all over the world, which can enrich people's , if leisure time.



# Salvator Dali Museum

**Architect:** Yann Weymouth of HOK

**CW Contractor:** Novum

**Location:** Tempa, FL

**Glass Area.** 2,200 sqm

**Glass makeup:**

FT10 SSN1-56T + 12A + H510 + PVB1.52 + H812

**Project Description:**

The original Dali Museum opened in St. Petersburg in 1982, after community leaders rallied to bring the Morses' superlative collection of Dali works to the area. The Dali's stunning new building opened on January 11, 2011. Designed by Architect Yann Weymouth of HOK, it combines the rational with the fantastical: a simple rectangle with 18-inch thick hurricane-proof walls out of which erupts a large free-form geodesic glass bubble known as the "enigma". The Enigma, which is made up of 1,062 triangle pieces glass, stands 75 feet at its tallest point, a twenty-first century homage to the dome that adorns Dali's museum in Spain.





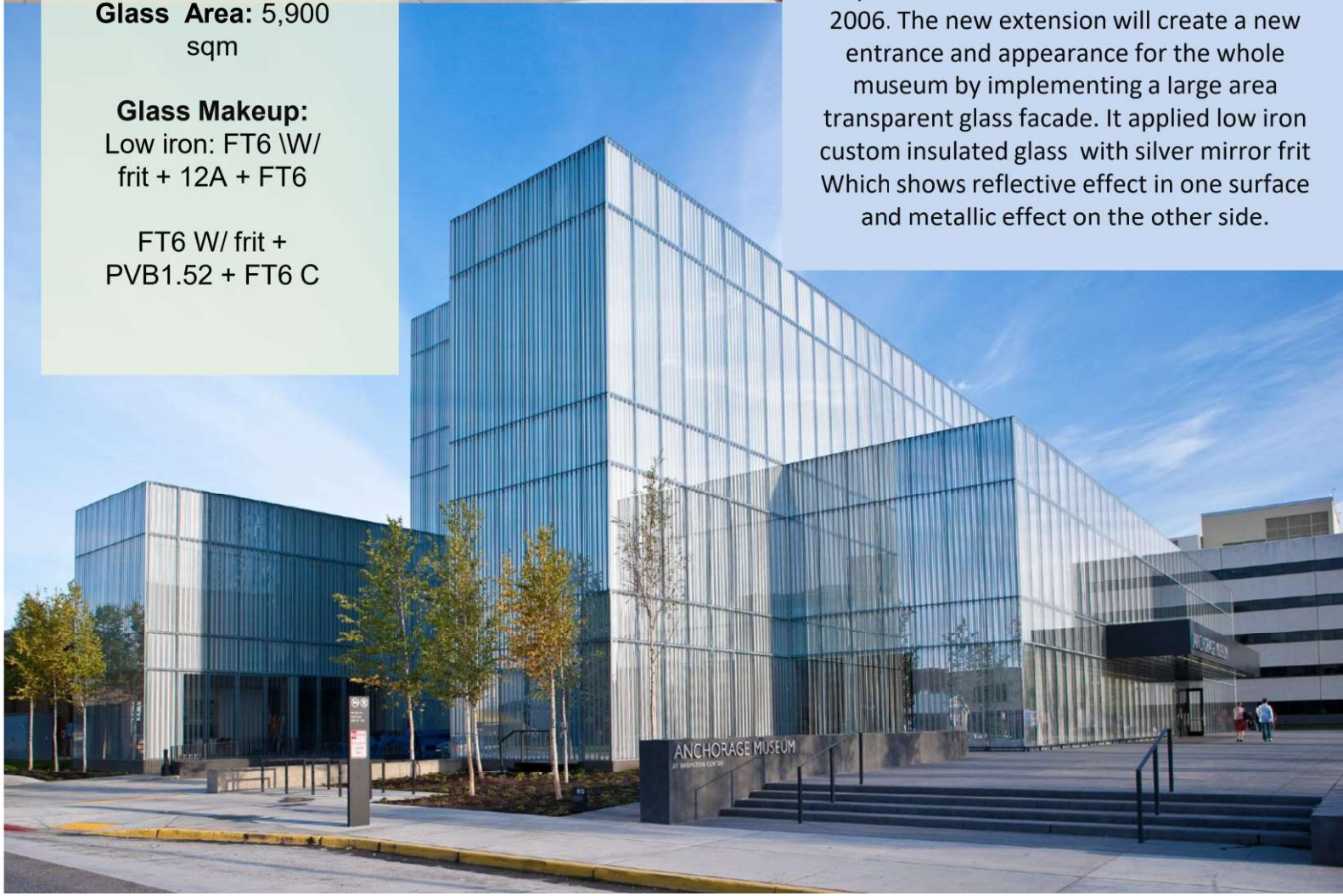
**Architect:**  
David Chipperfield Architects, London  
**Consultant:** Front Inc  
**G. Contractor:**  
Alcan General Inc.  
**CW Contractor:**  
Architectural Wall Systems Co.  
**Location:** Anchorage, AK

**Glass Area:** 5,900  
sqm

**Glass Makeup:**  
Low iron: FT6 W/  
frit + 12A + FT6

FT6 W/ frit +  
PVB1.52 + FT6 C

**Project Description:** Anchorage Museum of History and Art was built in 1968 and expanded several times later with latest in 2006. The new extension will create a new entrance and appearance for the whole museum by implementing a large area transparent glass facade. It applied low iron custom insulated glass with silver mirror frit which shows reflective effect in one surface and metallic effect on the other side.



# Fifth & Folsom Street

**Owner:** Avant Housing  
**Architect:** Architectural International  
**CW contractor:** Zetian Project System Inc.  
**Location:** San Francisco, CA



**Glass Area:** 8,000 sqm

**Glass makeup:**  
FT6SDT2-74T + 12AS + FT6  
FTGSDT3-70T + 12AS + FT6



**Owner:** City of Blue Ash  
**Architect:** MSA Architects  
**G. Contractor.** Turner Construction Company  
**CW Contractor:** Novum  
**Location:** Blue Ash, OH

**Glass Area:** 1,2005qm  
**Glass makeup:**  
FT10C + Vanceva PVB1.52 + FTIOC

# Blue Ash



# Rush Hospital Medical Center



**Architect:** Perkins + Will  
**Consultant:** Heitmann and Associates  
**G. Contractor:** Power/ Jacobs  
**CW Contractor:** Facade Tek  
**Location:** Chicago, IL

## Glass makeup:

Annealed curve: FL8 + SGP1.52 + FL8 + 12A + FL6 + SGP1.52 + FL6  
 W'/frit (low iron)

## Project Description:

The project was designed as conical round, leaning to one side. The bottom was oval while the top was close to round, whereby all the glass panels were processed with unique shape.



# St. Louis Art Museum

**Owner:** St. Louis Art Museum  
**Architect:** HOK, David Chipperfield  
**Consultant:** Front Inc.  
**G. Contractor:** Tarlton Pepper KAI (TPK)  
**CW Contractor:** Architectural Wall Systems Co.  
**Location:** St. Louis, MO  
**Glass Area:** 1,121 sqm.

## Glass makeup: (low iron):

H510 + color PVB3.04 + H510  
 H56 5EEO-83T + 12A + H56 W/ frit  
 H810 + SGP2.28 + H510 SEEO-83T + 12A + H510 + SGP2.28+ HS10

## Project Description:

Saint Louis Art Museum is one of the principal U.S. art museums with paintings, sculptures, cultural objects, and ancient masterpieces from all corners of the world. The museum was founded in 1881 and, expanded in 2009, and the expanded facility opened in summer of 2013. It applied low iron, high performance data coating low e and ceramic frit glass, which provides natural light to the entrance and lobby.





## Transbay Block 6

**Architect:**

Solomon Cordwell Buenz(SCB),  
Santos Prescott Associates

**G. Contractor:** Balfour Beatty & Cahill  
Contractors **Location:** San Francisco, CA

**Glass Area:** 11, 250 sqm

**Glass makeup: (low iron):**

HS6 Guardian SNX62/27+ 12A + FT6

HS6 Guardian SNX62/27 + 24A + H56 +  
PVB1.52 + HS6

HS6 W/frit + 12A + FT6 Guardian 5NX62/27

HS6 + 24A + H56 Guardian SNX62/27 +  
PVB1.52 + HS6

HS/FT6 W/frit + 12A + FT6



## E&J Gallo Winery

**Architect:** Gensler

**G. Contractor:** Hathaway Dinwiddie

**CW Contractor:** Novum

**Location:** Modesto, CA

**Glass Area:** 1,300 sqm

**Glass makeup: (low iron):**

HS10 SDTO-SOT +12A+ H510 + PVB1.52  
+ H512

FT8 5DTO-74T + 18A + FT/H5T6 +  
PVB1.52 + FT/HST8

FT/HST: 39.56mm triple lami with 5GP  
(Max H7.6m)

FT/HST: 31.56mm triple lami with SGP



# Fairbanks International Airport in Alaska



# Jam Juneau Library Archive Museum in Alaska



**Glass Makeup:**  
FT10 = SGP1.52 + Copper  
mesh0.8 + SGP1.52 + FT6  
+ 6A + HS6 W / frit

# Eighth Avenue Place & Holt Renfrew



**Glass makeup:** 1" bent laminated glass

**Glass makeup:**  
FT10 Energy NT + 12A + HS10C +  
PVB1.52 + HS10C  
FT15C + PVB2.28 + FT15C +  
PVB2.28 + FT15C

**Architect:** Gibbs Gage Architect  
**Location:** Vancouver, BC, Canada  
**G. Contractor:** Ellis Don Corporation  
**Location:** Calgary, AL, Canada



# Alberni & Audi Exclusive Shop

**Glass Area:** 1,0505qm

**Glass makeup:** FT10AGC low 6 + 20AR +  
FT10C

**Location:**  
Vancouver, BC, Canada  
& Laval, QC, Canada

# Tempered & HS Glass

Tetra Building Enclosures has 6 tempered glass furnaces, including double-chamber furnace, extra long furnace (18m), flat-curved furnace, as well as the convection furnace for the high performance low-e.

As for the world widely concerned nickel sulfide spontaneous breakage, Tetra Building Enclosures introduced 5 heat soak furnaces with max size as 3200\*12000mm. This equipment was certified by the independent laboratories from Germany and Hong Kong in accordance with EN14179 and DIN standards.



Oversize tempering



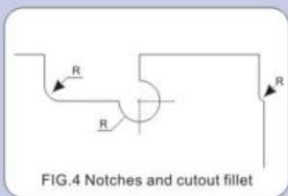
Oversize tempering



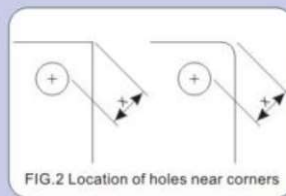
Oversize tempering



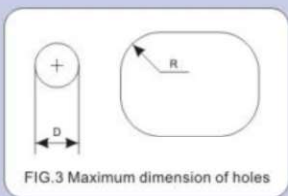
Heat soak furnace



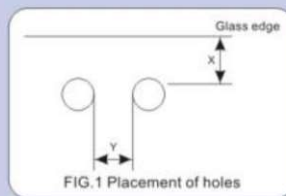
$R \geq t$   
 R = Radius  
 t = Thickness



$X \geq 6.5t$   
 X = Min space between corner and rim  
 t = Thickness



$D \geq t$   
 D = Min hole diameter  
 R = Radius  
 t = Thickness



$X \geq 2t$   
 $Y \geq 2t$   
 X = Min space between edge and hole rim  
 Y = Min space between rims of nearest holes  
 t = Thickness

# Laminated Glass

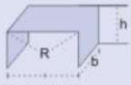
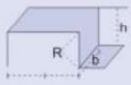






Laminated glass consists of a tough protective interlayer made of polyvinyl butyral (PVB) bonded between two or more glass panes under heat and pressure. Laminated glass might crack upon impact, but the glass fragments tend to adhere to pvb instead of falling free and potentially causing injury. Tetra reaches high level in fabrication of various laminated glass including global curved, 2D or 3D irregular curved laminated glass in standard and jumbo sizes.

Laminated glass is increasingly applied in architectural glass thanks for its outstanding performance on security. To enrich the function and decoration, Tetra Building Enclosures has introduced various new types of laminated product as below.

Glass Composition	Interlayer Suppliers	Size W*H (mm)	Product Features
Glass + PVB + Glass	Solutia, DuPont, Sekisui, Trosifol	3300*12000	Solutia (Saflex), DuPont (Butacite), Sekisui
Glass + Decorative PVB + Glass	Solutia(Vanceva)	2440*12000	Rich in colour, and can combine for mixed colour
Glass + EVA + Glass	Sekisui	2100*12000	EVA can combine with lots of decorative materials.
Glass + SGP + Glass	DuPont (SGP)	2500*6000	High bond strength and good water resistance
Glass + Soundproof PVB + Glass	Sekisui, Solutia	2440*12000	Better acoustic performance than ordinary PVB
Glass + PVB + XIR + PVB + Glass	Southwall California series	2000*12000	High-performance, and good protection to coats.
Glass + SGX + Glass	DuPont (SGX)	2000*12000	Arbitrary design pattern can be realized
Glass + EVA + LED + EVA + Glass	Polytron (Polymagic)	1500*3000	The combination of electronic and glass

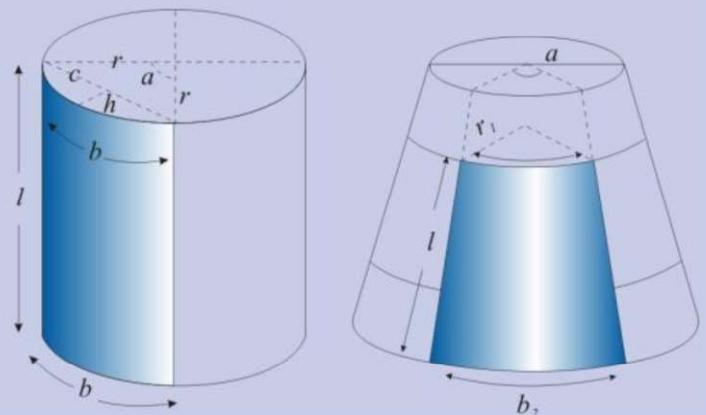
# Curved Glass

Curved glass is manufactured by heating the glass to softening point, forming into required curves in special auto-adjustable global models and then cooling and tempering. Curved glass becomes more and more popular for interior and exterior of building facade, corner Windows, skylights, display windows and interior decorations. With models adjusted by computer automatically, Tetra can run heat curving and tempering of jumbo sizes for superior quality Glass can be processed as high standard compound products such as laminated glass of curved tempered, insulated glass of curved tempered, ceramic glass of curved tempered and so on, which are used Widely in external decoration of skylight, sightseeing elevator and running restaurant etc. Curved Glass

Series No.	Name	Pattern
1	U-shaped	
2	Z-shaped	
3	Semicircle	
4	Single Curved Surface	
5	Reversed Curved Surface	
6	Double Curved Surface	
7	Spherical Surface	
8	Omega Curved Surface	



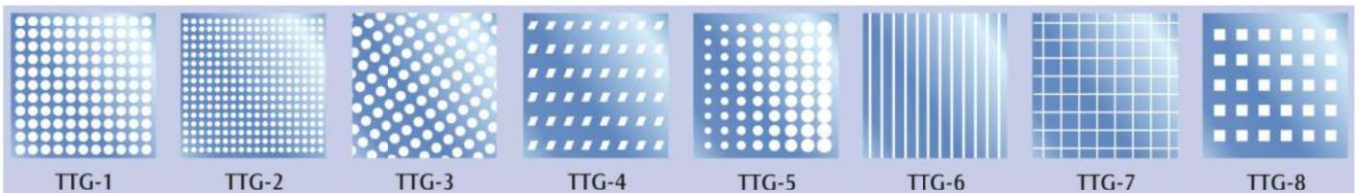
The heat curved pane is annealed, that is, cooled under controlled conditions, in order to meet the high technical demands made by subsequent processing into laminated or insulated glass.



# Ceramic Frit Glass

Ceramic frit glass is tempered or HS glass with 1 surface fully or partially covered by mineral pigments. Frit glass is processed by depositing special mineral pigments on the glass surface which vitrify at the annealing or tempering temperatures. This is a stable, non—biodegradable deposit, and can be made in single or multiple colors, and in different patterns (dots, lines, grids). In addition to its decorative function frit glass has function of solar ray control. It is widely used for glazing and cladding in facades and roofs, and can be fabricated into laminated glass or IGU.

1. The color and pattern have variable choices. It bears strong resistance against color fading, against the acid and alkali.
  2. The colors and patterns can be customized.
  3. The ceramic surface is energy - saving of reflecting part of solar heat.
  4. Interior decoration is important for shading the background with less good appearance.
- Low—temperature ceramic frit glass, made with organic ink at 250°C, is characterized with smooth surface fine shading effects and good anti—aging performance.



# Insulated Glass

Insulated glass is a multi-glass combination consisting of two or more panes enclosing a hermetically-sealed air space. The most important function of insulation glass can reduce thermal loss, achieves lower energy consumption and good transparency.

## Features:

1. Saves on heating and reduces the heat conductivity coefficient U, or improve it by filling gas.
2. Energy conservation.
3. Sound insulation.
4. Dual - seal: insulated glass is dually-seal with butyl as primary sealant and polysulfide or silicone as the secondary sealant.
5. Dew-avoidance. Dew usually occurs where there appears the condensation due to difference in temperature inside and outside of ICU. Dew happens at  $-40^{\circ}\text{C}$  for IGU, and at  $-80^{\circ}\text{C}$  if IGU filled with argon.

Insulating glass plays an important role in energy-saving building materials, Tetra introduced different materials to meet people's demands on thermal aesthetics.

Material	Brands	Specifications	Color	Feature
Primary Sealant	Kommerling	Gd115	Black, gray	Famous foreign brand with high quality.
2nd Sealant	Dow Corning	983, 993, 3362	Black, gray	2-parts glazing sealant
	GE	4400	Black, gray	2-parts glazing sealant
	SIKA	SIKA	Black, gray	2-parts glazing sealant
Air Spacer	LISEC	6A, 9A, 12A, 15A, etc	Silver, black	Full specifications for supply.
	TGI	9A, 12A, 15A	Black, grey, dark bronze, white	Warm edge spacer
	Superspacer	6-12A	Black, gray	Warm edge spacer, matching odd shapes

# Fabrication Size Limit

## Tempered/HS Glass

Equipment	Max. (Mm)	Min. (Mm)	Thickness (mm)	Min. Radius (mm)	Standards
Tempered Glass I	3200 X 7800 (D)	250×200	5-25	/	GB/T 9963 GB 17841 BS 6206 AS/NZS 2208 ANSI Z 97.1 ASTM C 1048 EN 12150 EN 1863 JIS R 3206 JIS R 3222
Tempered Glass II	2400 X 12000 (D)	250×200	5-25	/	
Tempered Glass III	3300 X 18000 (D)	250×200	5-25	/	
Tempered Glass IV	2400 X 12000 (S)	250×200	5-25	/	
Tempered Glass V	3500 X 7000 (S)	250×200	4-25	/	
Tempered Glass VI	2440 X 4000 (S)	250×200	5-25	/	
Curved Tempered Glass	2500 X 3450(S) 3300 X 12000(D)	600×300	5-25	6-8≥1200 10-12≥2000 15-25≥2900	
Heat Soak Furnace	3200×12000	250×200	5-25	/	

## Laminated Glass

Equipment	Processing Range		Max. Thickness (mm)	Film Types	Standards
	Max. (mm)	Min. (mm)			
Laminating Autoclave I	2600×6000	50×50	200	Clear pvb Colored pvb Anti-explosion EN/EVA Sound Reduction Low-e film XIR film	GB 9962 JIS R 3205 BS 6206 ASTM C 1172 AS/NZS 2208 EN 12543 ANSI Z 97.1
Laminating Autoclave II	2950×7500	50×50			
Laminating Autoclave III	3300×8500	50×50			
Laminating Autoclave IV	2650×12000	50×50			
Laminating Autoclave V	3300×18000	50×50			

## Insulated Glass

Equipment	Max. Size (mm)	Min. Size (mm)	Spacers (mm)	Gas Available	Standards
Glazing I	2440 × 4200	50×50	6、9、12、15/16、 19、25 Aluminum, stainless, warm edge spacers etc.	Air, Argon, Krypton	GB 11944 JIS R 3209 ASTM E 774/773 AS/NZS 4666 EN 1279
Glazing II	2700 × 5100				
Manual Glazing	3300 X 18000				

## Heat Curved Glass

Max. Size (mm)	Min. Size (mm)	Thickness (mm)	Arc (mm)	Max. Curve Degree	Standards
3000 X 5300	300×300	3-25	According to client's requirement	—	ASTM C 1464

## Enamel Glass

Equipment	Max. Size (mm)	Min. Size (mm)	Frit Colors	Frit Patterns	Standards
Silkscreen Line I	2440×6000	300×200	According to client's requirement	According to client's requirement	ASTM C 1048
Silkscreen Line II	3000×7800	300×200			

## Low-e Coating Line

Max. Size (mm)	Min. Size (mm)	Max. Thickness (mm)	Coating Types (mm)	Standards
2540×7000	300×610	3-19	Temperable low-e Solar control low-e Double-silver low-e	GB 18915 EN 1096 ASTM C 1376



# High Performance Low-e

Types	Glazing Makeups	Substrate Color	Reflective Color	Visible Light			Solar Energy EN410		Solar Heat Gain Coefficient	Shading Coefficient (NFRC)	U-value (BTU/sq.ft"degF)	
				Transmission %	Reflectance		Transmission %	Reflection %			Air	
					External%	Internal%						
Double Low-e	SDT/SDKN/SNED	6SDT1-40T(II)+12A+6C	Clear	Grey	36	19	11	17	28	0.23	0.26	0.31
		6SDT1-44T(II)+12A+6C	Clear	Light blue	40	19	13	17	31	0.23	0.27	0.30
		6SDT1-50T(II)+12A+6C	Clear	Grey	44	19	11	21	35	0.26	0.30	0.30
		6SDT1-54T(II)+12A+6C	Clear	Light blue	50	19	16	20	30	0.25	0.29	0.30
		6SDT1-60T(II)+12A+6C	Clear	Blue	55	16	14	24	26	0.29	0.33	0.30
		6SDT1-70T+12A+6C	Clear	Neutral	62	13	13	28	31	0.33	0.38	0.30
		6SDT1-74T+12A+6C	Clear	Neutral	66	12	12	32	25	0.38	0.44	0.31
		6SDT1-78T+12A+6C	Clear	Neutral	68	13	15	32	30	0.37	0.43	0.30
		6SDT1-80T+12A+6C	Clear	Neutral	71	12	13	38	27	0.39	0.45	0.30
		6SNDE1-48T+12A+6C	Clear	Silver grey	44	28	25	17	32	0.22	0.26	0.31
		6SNDE1-55T+12A+6C	Clear	Bright grey	51	25	24	20	40	0.24	0.28	0.31
		6SDT0-40T(II)+12A+6low iron	Low iron	Grey	38	20	11	19	36	0.23	0.27	0.31
		6SDT0-44T(II)+12A+6low iron	Low iron	Light blue	43	20	14	20	40	0.24	0.27	0.30
		6SDT0-50T(II)+12A+6low iron	Low iron	Grey	47	20	11	24	45	0.27	0.31	0.30
		6SDN0-54T+12A+6low iron	Low iron	Light blue	52	20	17	22	38	0.26	0.30	0.30
		6SDT0-60T(II)+12A+6low iron	Low iron	Blue	58	16	15	27	48	0.30	0.34	0.30
		6SDT0-70T+12A+6low iron	Low iron	Neutral	66	14	13	31	41	0.34	0.39	0.30
		6SDT0-74T+12A+6low iron	Low iron	Neutral	70	12	16	37	34	0.40	0.46	0.31
		6SDT0-78T+12A+6low iron	Low iron	Neutral	72	14	16	36	40	0.38	0.45	0.30
		6SDT0-80T+12A+6low iron	Low iron	Neutral	73	12	13	38	36	0.41	0.47	0.30
		6SNDE0-48T+12A+6low iron	Low iron	Silver grey	46	29	27	18	40	0.23	0.26	0.31
		6SNDE0-55T+12A+6low iron	Low iron	Bright grey	54	26	25	23	52	0.25	0.29	0.31
		6SDT2-40T(II)+12A+6C	F Green	Grey Green	31	15	11	12	11	0.20	0.23	0.31
		6SDT2-44T(II)+12A+6C	F Green	Grey Green	34	15	13	13	11	0.20	0.23	0.30
		6SDT2-50T(II)+12A+6C	F Green	Grey Green	38	15	11	15	12	0.22	0.26	0.30
		6SDT2-54T+12A+6C	F Green	Grey Green	42	15	16	15	11	0.23	0.26	0.30
		6SDT2-60T(II)+12A+6C	F Green	Blue Green	47	13	14	18	11	0.25	0.29	0.30
		6SDT2-70T+12A+6C	F Green	Light Green	54	11	12	22	10	0.28	0.32	0.30
		6SDT2-74T+12A+6C	F Green	Light Green	56	10	11	23	9	0.30	0.35	0.31
		6SDT2-78T+12A+6C	F Green	Light Green	58	11	15	24	10	0.30	0.35	0.30
		6SDT2-80T+12A+6C	F Green	Light Green	59	10	12	24	9	0.31	0.36	0.30
		6SNDE2-48T+12A+6C	F Green	Green	37	22	26	13	13	0.20	0.24	0.31
		6SNDE2-55T+12A+6C	F Green	Green	43	19	23	16	14	0.23	0.26	0.31
		6SDT3-40T(II)+12A+6C	Crystal Grey	Grey	26	12	10	12	16	0.20	0.22	0.31
		6SDT3-44T(II)+12A+6C	Crystal Grey	Grey	29	12	13	13	17	0.20	0.23	0.30
		6SDT3-50T(II)+12A+6C	Crystal Grey	Grey	32	12	11	15	19	0.22	0.25	0.30
		6SDN3-54T+12A+6C	Crystal Grey	Blue grey	36	12	15	15	17	0.21	0.24	0.30
		6SDT3-60T(II)+12A+6C	Crystal Grey	Blue grey	40	10	14	19	17	0.24	0.27	0.30
		6SDT3-70T+12A+6C	Crystal Grey	Light Grey	45	9	12	23	17	0.28	0.32	0.29
		6SDT3-74T+12A+6C	Crystal Grey	Light Grey	48	8	11	23	14	0.30	0.35	0.31
6SDT3-80T+12A+6C	Crystal Grey	Light Grey	50	8	12	24	15	0.31	0.36	0.30		
6SNDE3-48T+12A+6C	Crystal Grey	Bright grey	31	15	25	12	18	0.19	0.22	0.31		
6SNDE3-55T+12A+6C	Crystal Grey	Bright grey	36	17	24	15	22	0.22	0.25	0.31		

# Typical Low-e

Types	Glazing Makeups	Substrate Color	Reflective Color	Visible Light			Solar Energy EN410		Solar Heat Gain Coefficient	Shading Coefficient (NFRC)	U-value	
				Transmission %	Reflectance		Transmission %	Reflection %			(BTU/sq.ft*h*degF)	
					External%	Internal%					Air	
Single Low-e	SSN/SSP/SSF/SEE/SGA	6SSN1-40T+12A+6C	Clear	Bright Grey	35	25	11	23	25	0.29	0.34	0.32
		6SSN1-50T+12A+6C	Clear	Grey	45	21	10	28	23	0.35	0.41	0.33
		6SSN1-56T+12A+6C	Clear	Blue Grey	48	17	11	30	18	0.38	0.43	0.33
		6SSN1-60T+12A+6C	Clear	Blue Grey	52	18	10	33	21	0.40	0.46	0.34
		6SSN1-70T+12A+6C	Clear	Neutral	62	14	11	38	20	0.45	0.52	0.33
		6SSP1-40T+12A+6C	Clear	Grey	39	20	12	23	26	0.30	0.34	0.33
		6SSP1-50T+12A+6C	Clear	Grey	44	16	12	25	21	0.33	0.37	0.35
		6SSP1-60T+12A+6C	Clear	Grey	53	16	13	29	21	0.36	0.42	0.33
		6SSP1-70T+12A+6C	Clear	Neutral	62	13	11	37	18	0.44	0.51	0.34
		6SEE1-83T+12A+6C	Clear	Neutral	78	12	12	57	24	0.59	0.68	0.32
		6SSF1-50T+12A+6C	Clear	Silver grey	44	33	18	25	33	0.31	0.36	0.31
		6SGA1-44T+12A+6C	Clear	Brown	39	19	20	23	27	0.30	0.34	0.32
		6SGA1-60T+12A+6C	Clear	Gold	55	20	22	30	32	0.35	0.41	0.31
		6SSN0-40T+12A+6low iron	Low iron	Bright Grey	37	26	12	27	31	0.32	0.36	0.32
		6SSN0-50T+12A+6low iron	Low iron	Grey	48	22	11	34	27	0.38	0.44	0.33
		6SSN0-60T+12A+6low iron	Low iron	Blue Grey	55	19	11	39	25	0.43	0.50	0.34
		6SSN0-70T+12A+6low iron	Low iron	Neutral	65	14	11	46	25	0.50	0.57	0.33
		6SSN0-83T+12A+6low iron	Low iron	Neutral	74	12	12	47	19	0.54	0.62	0.32
		6SSN2-40T+12A+6C	F Green	Gray Green	30	19	11	14	12	0.22	0.26	0.32
		6SSN2-50T+12A+6C	F Green	Gray Green	39	16	10	18	11	0.26	0.30	0.33
		6SSN2-60T+12A+6C	F Green	Blue Green	44	14	10	21	10	0.29	0.33	0.34
		6SSN2-70T+12A+6C	F Green	Lighth Green	53	11	10	25	9	0.32	0.37	0.33
		6SSF2-50T+12A+6C	F Green	Bright Green	38	25	18	17	15	0.24	0.28	0.31
		6SSN3-40T+12A+6C	Euro grey	Grey	25	15	11	16	15	0.24	0.27	0.32
		6SSN3-50T+12A+6C	Euro grey	Light Grey	33	13	10	20	14	0.28	0.33	0.33
		6SSN3-60T+12A+6C	Euro grey	Light Grey	38	11	10	23	13	0.31	0.36	0.34
		6SSN3-70T+12A+6C	Euro grey	Dark Grey	44	9	10	27	12	0.35	0.40	0.33
		6SSP3-50T+12A+6C	Euro grey	Light Grey	31	10	11	18	12	0.26	0.30	0.35
		6SSP3-60T+12A+6C	Euro grey	Light Grey	38	10	13	21	13	0.29	0.33	0.33
		Solar Control	SSC/STN	6SSC1-30T	Clear	Silver Grey	29	28	16	23	20	0.37
6SSC1-40T	Clear			Bright Grey	38	24	11	31	18	0.43	0.49	0.80
6SSC1-50T	Clear			Blue Grey	49	19	13	42	13	0.54	0.62	0.90
6SSC1-60T	Clear			Light blue	60	15	15	54	10	0.64	0.73	0.97
6SSC1-63T	Clear			Bright Grey	61	20	22	55	14	0.64	0.73	0.99
6SSC1-70T	Clear			Light blue	68	16	17	63	11	0.70	0.81	1.01
6SSC1-80T	Clear			Neutral	78	16	17	70	11	0.75	0.86	1.02

## Notes to Performance Data

- The above data is based on the measurement of glass products of Avic Glass. There might be slight variation upon actual processing;
- The above data is based on the condition that low-e is used on 2<sup>nd</sup> surface of IGU.
- Different calculation standards will lead to different results.
- Identification of substrate:  
 0 - Low iron    1 - Clear  
 2 - Green        3 - Gray

## Terminology

- Reflectance color:** The visible light color that is reflected from the glass outdoor surface.
- Solar Spectrum:** The solar spectrum, commonly referred to as sunlight, consists of ultraviolet light (UV), visible light and infrared (IR). The energy distribution is about 2% UV, 47% visible light and 51% IR.
- Visible Light Transmittance:** The percentage of visible light (380 – 780 nm) that is transmitted through the glass.
- Visible Light Reflectance:** The percentage of visible light (380 – 780 nm) that is reflected from the glass surface(s).
- Solar Transmittance:** The percentage of solar energy (300 – 2500nm) that is transmitted through the glass.
- Solar Reflectance:** The percentage of solar energy (300 – 2500nm) that is reflected from the glass surface(s).
- Solar Factor g:** The portion of heat (300 – 2500nm) that is of directly transmitted and absorbed solar energy that enters into the building's interior.
- Shading Coefficient:** Shading coefficient is the ratio of solar heat gain through a specific type of glass that is relative to the solar heat gain through a 1/8" (3 mm) ply of clear glass conditions.
- U-Value:** A measure of heat gain or heat loss through glass due to the differences between indoor and outdoor temperatures. These are center pane values based on EN673 standard (equivalent of ISO 10292) conditions.

# Reference Glass Performance

## Monolithic glass usage:

Glass assemble	Light factor			UV factor	Energy factors					Thermal value Uvalue W/m².K	LSG	Appearance
	LT	LRE	LRI	TUV	TE	RE	A	g	SC			
6mm low iron	91	8	8	84	89	8	3	0.9	1.03	5.8	1.01	Super clear
6mm clear	89	8	8	65	79	8	13	0.84	0.97	5.8	1.06	Neutral
6mm F green	73	7	7	22	42	5	53	0.58	0.67	5.8	1.26	Green
6mm blue	73	6	6	30	54	6	40	0.65	0.75	5.8	1.12	Blue
6mm bronze	51	5	5	19	52	5	43	0.65	0.75	5.8	0.78	Bronze
6mm grey	44	5	5	22	47	5	48	0.62	0.71	5.8	0.71	Grey
6mm Sungate 500#2	81	11	11	54	66	10	24	0.7	0.81	3.8	1.16	Neutral
6mm clear Planibel G#2	81	11	11	48	66	11	23	0.71	0.81	3.6	1.14	Neutral
6mm Energy Advantage#2	82	10	11	49	66	10	24	0.7	0.81	3.7	1.17	Neutral
6mm clear Sugergy#2	68	9	10	46	51	9	40	0.6	0.69	4.1	1.13	Neutral
6mm SYA#2	71	9	10	--	52	9	39	0.6	0.69	3.9	1.03	Neutral
6mm SY48#2	51	7	--	--	53	--	--	0.49	0.56	4.3	1.04	Neutral
6mm Sunergy green#2	56	7	9	16	28	6	56	0.42	0.49	4.1	1.33	Green
6mm Azur Sunergy#2	56	7	9	25	31	6	53	0.45	0.51	4.1	1.24	Blue
6mm grey Sunergy#2	34	5	8	--	27	6	67	0.39	0.46	4.1	0.87	Grey
6mm clear Supersilver#2	62	34	34	36	65	23	12	0.69	0.79	5.7	0.90	Slightly bluish silver
6mm green Supersilver#2	52	25	34	10	33	14	53	0.47	0.54	5.7	1.10	Brilliant green
6mm grey Supersilver#2	29	11	34	9	34	10	56	0.48	0.56	5.7	0.60	Metallic steel
6mm Solar E#2	60	8	9	44	44	7	49	0.53	0.61	3.7	1.13	Light bluish
6mm Eclipse#2	66	25	28	30	58	19	23	0.62	0.72	3.87	1.06	Neutral
6mm Blue green Eclipse#2	56	19	27	16	35	11	54	0.46	0.53	3.87	1.21	Blue-green
6mm Evergreen Eclipse#2	48	15	27	7	23	8	69	0.37	0.43	3.87	1.30	Green
6mm Arctic Eclipse#2	39	12	27	10	23	8	69	0.37	0.43	3.87	1.05	Blue
6mm bronze Eclipse#2	38	11	27	11	35	10	55	0.46	0.53	3.87	0.83	Bronze
6mm grey Eclipse#2	32	10	27	10	29	8	63	0.42	0.48	3.87	0.76	Grey

## Solar control low-e:

Glass assemble	Light factor			UV factor	Energy factors					Thermal value Uvalue W/m².K	LSG	Appearance
	LT	LRE	LRI	TUV	TE	RE	A	g	SC			
6mm Sunergy clear #2 + 12A + 6mm clear	61	12	16	27	46	13	41	0.52	0.6	2.1	1.17	Neutral
6mm Sunergy green #2 + 12A + 6mm clear	50	10	15	9	26	7	67	0.33	0.38	2.1	1.51	Green
6mm Sunergy grey #2 + 12A + 6mm clear	50	10	16	17	29	8	63	0.36	0.41	2.1	1.38	Grey
6mm Light Blue 63#2 + 12A + 6mm clear	62	15	12	39	43	15	42	0.51	0.59	2.0	1.20	Light blue
6mm Neutral 61#2 + 12A + 6mm clear	61	20	15	27	34	31	35	0.4	0.45	1.7	1.53	Neutral
6mm Neutral 50#2 + 12A + 6mm clear	50	16	11	30	31	19	50	0.39	0.45	1.8	1.28	Neutral
6mm Neutral 40#2 + 12A + 6mm clear	40	20	12	26	25	22	53	0.32	0.37	1.9	1.25	Neutral
6mm clear AG50#2 + 12A + 6mm clear	50	28	18	26	28	36	36	0.33	0.38	1.6	1.51	Silver
6mm clear AG43#2 + 12A + 6mm clear	41	30	15	23	24	33	43	0.29	0.33	1.7	1.39	Silver
6mm green Light Blue 63#2 + 12A + 6mm clear	52	12	12	18	26	8	66	0.35	0.39	2.0	1.51	Light blue
6mm green Neutral 61#2 + 12A + 6mm clear	51	15	14	13	23	11	66	0.3	0.34	1.7	1.74	Green
6mm green Neutral 50#2 + 12A + 6mm clear	42	13	10	14	20	9	71	0.28	0.32	1.8	1.49	Green
6mm green Neutral 40#2 + 12A + 6mm clear	34	16	12	12	16	10	74	0.24	0.27	1.9	1.39	Green
6mm green AG50#2 + 12A + 6mm clear	43	21	18	12	19	14	67	0.25	0.29	1.6	1.67	Green
6mm green AG43#2 + 12A + 6mm clear	35	25	14	11	15	14	71	0.23	0.26	1.7	1.52	Green
6mm clear Elipse#2 + 12A + 6mm clear	60	26	30	22	45	20	35	0.54	0.62	1.9	1.11	Neutral
6mm grey Elipse#2 + 12A + 6mm clear	29	9	28	8	23	9	68	0.33	0.39	1.9	0.87	Grey
6mm bronze Elipse#2 + 12A + 6mm clear	36	12	29	9	28	10	62	0.38	0.44	1.9	0.94	Bronze
6mm blue-green Elipse#2 + 12A + 6mm clear	51	20	29	13	29	11	60	0.38	0.44	1.9	0.81	Blue-green
6mm Ever green Elipse#2 + 12A + 6mm clear	44	16	29	6	20	9	71	0.29	0.34	1.9	1.51	Green
6mm Arctic Elipse#2 + 12A + 6mm clear	37	13	29	9	20	8	72	0.3	0.34	1.9	1.23	Blue
6mm Solar E#2 + 12A + 6mm clear	53	10	15	31	33	9	58	0.43	0.49	1.8	1.23	Neutral

# Reference Glass Performance

## High Transmittance low-e usage:

Glass assemble	Light factor			UV factor	Energy factors					Thermal value	LSG	Appearance
	LT	LRE	LRI	TUV	TE	RE	A	g	SC	Uvalue W/m².K		
6mm Planibel G#2 + 12A + 6mm clear	72	16	18	32	54	13	33	0.6	0.7	1.8	1.20	Neutral
6mm Sungate 500#2 + 12A + 6mm clear	74	17	17	42	52	14	34	0.61	0.71	1.9	1.21	Neutral
6mm Planitherm#2 + 12A + 6mm clear	75	11	11	37	47	19	34	0.56	0.64	1.8	1.33	Neutral
6mm Top NT#2 + 12A + 6mm clear	77	12	13	30	52	51	37	0.59	0.68	1.7	1.30	Neutral
6mm clear + 12A + 6mm Top NT#3	78	13	12	30	52	22	36	0.62	0.71	1.7	1.25	Neutral
6mm green + 12A + 6mm Top NT#3	64	10	11	12	30	8	62	0.41	0.47	1.7	1.56	Green
6mm bronze + 12A + 6mm Top NT#3	44	7	10	10	32	13	55	0.44	0.51	1.7	1.00	Bronze
6mm Azur + 12A + 6mm Top NT#3	64	10	11	19	33	9	58	0.44	0.5	1.7	1.45	Blue
6mm grey + 12A + 6mm Top NT#3	38	6	10	12	29	12	59	0.41	0.48	1.7	0.92	Grey
6mm clear + 12A + 6mm Climaguard#3	72	13	13	****	54	19	27	0.68	0.76	1.9	1.05	Neutral

## High performance coating low-e usage:

Glass assemble	Light factor			UV factor	Energy factors					Thermal value		LSG
	LT	LRE	LRI	TUV	TE	RE	A	g	SC	Uvalue W/m².K	Uvalue W/m².K	
6mm Energy NT#2 + 12A + 6mm clear	73	12	13	16	37	32	31	0.41	0.47	1.63	1.52	1.78
6mm Vision 60T#2 + 12A + 6mm clear	60	14	20	--	34	28	38	0.37	0.43	1.6	--	1.62
6mm Vision 50T#2 + 12A + 6mm clear	50	20	22	--	28	35	37	0.31	0.36	1.6	--	1.61
6mm Solarban 60#2 starphire + 12A + 6mm clear	72	11	12	18	35	43	22	0.39	0.45	1.65	1.55	1.85
6mm Solarban 60#2 + 12A + 6mm clear	70	11	12	19	33	29	38	0.38	0.44	1.65	1.55	1.84
6mm clear + 12A + 6mm Solarban 60#3	70	12	11	19	33	31	36	0.45	0.52	1.65	1.55	1.56
6mm Solarban 60#2 Solexia + 12A + 6mm clear	61	10	12	10	25	11	64	0.32	0.37	1.65	1.55	1.91
6mm Solexia + 12A + 6mm Solarban 60#3	61	11	11	10	25	11	64	0.36	0.42	1.65	1.55	1.69
6mm Solarban 60#2 Atlantica + 12A + 6mm clear	54	8	11	6	20	8	72	0.27	0.31	1.65	1.55	2.00
6mm Solarban 60#2 Caribia + 12A + 6mm clear	54	8	11	8	20	7	73	0.27	0.31	1.65	1.55	2.00
6mm Solarban 60#2 Azuria + 12A + 6mm clear	54	8	11	13	21	7	72	0.28	0.32	1.65	1.55	1.93
6mm Solarban 60#2 Solargray + 12A + 6mm clear	35	6	11	8	17	12	71	0.25	0.28	1.65	1.55	1.40
6mm Solarban 70#2 clear + 12A + 6mm clear	64	12	13	5	25	53	22	0.28	0.32	1.62	1.56	1.40
6mm Solarban 72#2 starphire + 12A + 6mm clear												
6mm Solarban Z50#2 clear + 12A + 6mm clear	51	8	11	14	26	23	51	0.32	0.37	1.66	1.60	1.59
6mm SN68#2 clear + 12A + 6mm clear	68	11	12	--	33	32	35	0.38	0.43	1.65	--	1.80
6mm SN70/37#2 clear + 12A + 6mm clear	69	11	12	--	34	38	29	0.31	0.36	1.65	--	2.19
6mm SN62#2 clear + 12A + 6mm clear	62	14	17	--	27	42	31	0.31	0.36	1.65	--	2.00
6mm SN51/23#2 clear + 12A + 6mm clear	51	14	13	--	19	35	46	0.23	0.27	1.65	--	2.18
6mm SN62/27#2 clear + 12A + 6mm clear	62	11	12	--	23	39	38	0.27	0.31	1.65	--	2.30

## Low-e & film usage in laminated glass:

Glass assemble	Light factor			UV factor	Energy factors					Thermal value	Appearance
	LT	LRE	LRI	TUV	TE	RE	A	g	SC	Uvalue W/m².K	
6mm Energy Advantage#2 + 1.52mm clear PVB + 6mm clear	81	9	9	<1	55	10	35	0.66	0.76	5.4	Neutral
6mm clear + 1.52mm clear PVB + 6mm Energy Advantage#4	79	10	11	<1	54	7	39	0.61	0.71	3.5	Neutral
6mm clear + 1.52mm clear PVB + 6mm Sungate 500#4	79	10	11	<1	54	7	39	0.61	0.71	3.5	Neutral
6mm clear + 1.52mm clear PVB + 6mm Planibel G#4	79	10	11	<1	54	7	39	0.61	0.71	3.5	Neutral
6mm clear + 1.52mm clear PVB + 6mm Solar E#4	58	6	9	<1	40	6	54	0.48	0.57	3.4	Neutral
6mm clear + 1.52mm clear PVB + 6mm Elipse Advantage#4	64	21	27	<1	54	16	30	0.58	0.68	3.6	Neutral
6mm clear + 1.52mm clear PVB + 6mm Sunlite#4	46	9	6	<1	30	15	55	0.41	0.47	3.6	Light grey
6mm clear + 1.52mm clear PVB + 6mm Sunergy clear#4	65	8	10	<1	47	8	45	0.56	0.64	4.0	Neutral
6mm clear + 1.52mm clear PVB + 6mm Sunergy green#4	53	7	9	<1	28	6	66	0.40	0.46	4.0	Green
6mm clear + 1.52mm clear PVB + 6mm Sunergy Azur#4	54	7	9	<1	30	6	64	0.42	0.48	4.0	Blue
6mm green + 1.52mm clear PVB + 6mm Sunergy clear#4	53	7	9	<1	28	6	66	0.40	0.46	4.0	Green
6mm Azur + 1.52mm clear PVB + 6mm Sunergy clear#4	54	7	9	<1	30	6	64	0.42	0.48	4.0	Blue
6mm clear + 1.57mm 72/41 XIR film + 6mm clear	70	9	9	<1	30	29	30	0.41	0.47	5.74	Neutral
6mm clear + 1.57mm 72/47 XIR film + 6mm clear	68	8	8	<1	33	33	34	0.45	0.53	5.74	Neutral
6mm low iron + 1.57mm 72/41 XIR film + 6mm low iron	74	8	9	<1	34	38	28	0.41	0.47	5.74	Neutral
6mm low iron + 1.57mm 72/47 XIR film + 6mm low iron	75	8	8	<1	40	27	33	0.48	0.56	5.74	Neutral

# Main Job Reference

Project Names	State	Glass types
Projects in USA		
Anchorage Museum	Alaska, AK	IGU with mirror reflective frit
San Joaquin Admin Bldg	California, CA	Tempered laminated glass with low e
Zara	California, CA	HS laminated
Transbay Block 6	California, CA	Low-e IGU, laminated glass with frit
900 Folsom Street	California, CA	Low-e IGU
260 5th Street	California, CA	Low-e IGU
Rosebowl (Cupertino)	California, CA	Low-e IGU
13-0045 537 Hamilton Avenue	Oakland, CA	Low-e insulated glass
12-0247 Florida Women's Hospital	Orlando, FL	Tempered laminated glass
The World Coke Cola (Atlanta)	Georgia, GA	Tempered laminated glass
13-0118 Northwestern Mutual Campus	Chicago, IL	Low-e laminated IGU with frit
26-0292 General Mitchell International Airport	Chicago, IL	Tempered and laminated glass with frit
Rush Hospital Medical Center(Chicago)	Illinois, IL	Heat curved SGP double laminated IGU with frit
Optima Chicago	Illinois, IL	Low-e IGU
Indianapolis International Airport	Indianapolis, IN	Low-e laminated insulated
Indianapolis Zoo Park	Indianapolis, IN	Low iron laminated IGU with low-e and anti-reflective
#33848 Christ Hospital	Indianapolis, IN	HS laminated with frit
#33881 NSU Nursing Building	Indianapolis, IN	Tempered laminated with SGP
Iowa State University Research Park Corporation	Iowa, IA	Low-e IGU with frit
Employers Mutual Casualty Company (Des Moines)	Iowa, IA	Low-e IGU with frit
Sprint Areana	Kansas, KS	Low-e with frit laminated IGU
Westin Crown Center	Kansas, KS	Tempered laminated
13-0196 DeBruce Center	Kansas, KS	Low-e insulated
13-0064 Wichita Mid-Continent Airport	Kansas, KS	Tempered laminated with frit
707 Wilshire Boulevard	Los Angeles, LA	Low iron tempered laminated with XIR film
Walker Art Center	Minnesota, MN	Laminated and IGU
St. Louis Art Museum	Missouri, MO	Laminated with color film/Copper mesh; laminated IGU with low-e
13-0008 New Science Center	Charlotte, NC	Tempered laminated with frit
Harrah's Casino	New Jersey, NJ	Low-e tempered laminated IGU
MGM City Center(Las Vegas)	Nevada, NV	Low-e laminated IGU
Marriot Marquis Hotel, Times Square	New York, NY	Curved laminated
119 Court Street	New York, NY	Low-e laminated IGU with frit
Lincoln Square Synagogue	New York, NY	Low iron HS double laminated with SGP, fabric, low e and frit IGU
Carnegie 57th Street	New York, NY	Low iron and low e tempering curved laminated insulated
50 West Street	New York, NY	Low e and extra clear tempering curved laminated IGU
Fulton Street Transit Center	New York, NY	Low e and starphire tempering laminated IGU
Harrah's Resort	New York, NY	Low e tempering laminated IGU
Highline 23, New York	New York, NY	Laminated IGU
441 E57th Street	New York, NY	IGU with frit
635 6th Ave	New York, NY	IGU / laminated IGU
Maple project	New York, NY	Low-e IGU
York Canopy	New York, NY	Tempered laminated with SGP
Flagship Retail	New York, NY	Low-e tempered IGU
Fashion Outlets of Niagra Falls	New York, NY	Low-e tempered IGU
Th!nk Rose wall	New York, NY	Low-e IGU, laminated and tempered
Buffett Cancer Center	New York, NY	Low-e IGU with frit
#33742 Cincinnati Street Car	Indianapolis, IN	Tempered laminated with frit
Toledo Art Museum	Toledo, OH	Heat curved laminated and laminated IGU
11-0232 Connor Group Corporate HQ	Cincinnati, OH	Tinted Low-e laminated and IGU with frit
Knights of Columbus	Ohio, OH	Laminated IGU with low-e
Ohio Sate University	Ohio, OH	Laminated IGU with frit
13-0345 GENERAL ELECTRIC - OGTC	Oklahoma, OK	Tempered and laminated &IGU glass
12-0270 The Mall of San Juan	SAN JUAN, P.R.	Low-e laminated and IGU with frit
The mall of San Juan	SAN JUAN, P.R.	Low-e laminated IGU
University of S. Carolina School of Health	South Carolina, SC	Tempered and laminated
Municipal Children Hospital	Tennessee, TN	Tempered laminated with frit
13-0013 Phillips 66 - New Corp Headquarter	HOUSTON, TX	Tinted Low-e laminated and IGU with frit
14-0117 George R. Brown Convention Center	HOUSTON, TX	Low iron and low e tempering curved laminated IGU
13-0140 Block 256	HOUSTON, TX	Low-e laminated and IGU
Menay Art Museum	Texas, TX	Triple low iron laminated glass with 3 layers frit
10-0004 Norfolk Consolidated Courts	Norfolk, VA	Tempered and laminated with frit
Salt Lake City Airport	Utah, UT	Tempered and laminated
Projects in Canada		
Arriva Calgary	Calgary, AB	Laminated with color PVB
Eighth Avenue Place	Calgary, AB	Low-e limited IGU
Edmonton international airport	Edmonton, ED	
Commonwealth Stadium	Edmonton, ED	Laminated with jumbo size
12-0034 Global Innovation Exchange - WLU	Toronto, ON	Low-e laminated and IGU
Audi exclusive shop	Laval, QC	Low-e tempered IGU
Projects in other countries		
Trafigura	Montevideo, Uruguay	Laminated glass with low-e and frit
13-0121 Baha Mar Podium Entrance Canopy	NASSAU, Bahamas	Tempered laminated with frit

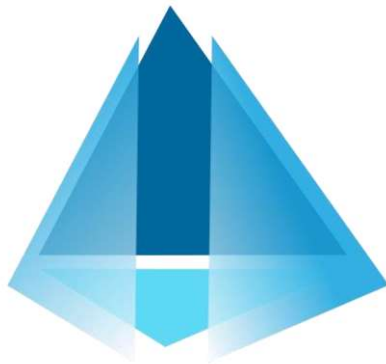
# Cooperation & Development

Technical renovation is the soul of Tetra Building Enclosures, who is a devoted partner of architects and a trustworthy friend of customers.

Tetra established a long - term cooperation relationship with the main suppliers of glass and subsidiary material. Thanks to their products and technical support Tetra has developed into one of the best glass fabricators in China.

The mother company of Tetra also built 6 float glass lines in Hainan and Bengbu, China for solar glass units. The float glass products include patterned low iron glass, low iron TCO, low iron with hard coat low-e etc.





**TETRA**  
BUILDING ENCLOSURES

13633 37th Avenue,  
Suite 8B,  
Flushing New York 11354  
info@tetraus.com  
718-460-6060