

# DURAGLAS

## Tempered Glass



DURAGLAS Tempered Glass uses the thermal process to enhance the basic strength of float glass. It is float glass (annealed glass) heated to near its softening point and then rapidly quenched by directing jets of cold air onto its surface. As the surfaces cool

quicker than the core, the surfaces are placed in compression. This tempering process produces highly desirable conditions of induced stress, which results in additional strength, resistance to thermal stress and impact resistance. This process, however, does not alter the visible light and solar radiant heat properties of the glass. Wind pressure, foreign object impact and thermal stresses on other applied loads must first overcome this compression before there is a possibility of breakage.

### Characteristics

#### STRENGTH

DURAGLAS is four to five times mechanically stronger than annealed glass of the same type and thickness. This is due to stresses in the surface layer. Compressive surface stresses close microscopic cracks and make the glass much stronger.

#### HIGH THERMAL - SHOCK STRENGTH

DURAGLAS is approximately three times as resistant to rapid temperature changes (thermal shocks) as annealed glass. Annealed glass is a brittle material. It breaks under the lowest tensile stress. A sudden change in temperature of about 40°C – 50°C is enough to break annealed glass. Tempered glass can withstand temperature changes of 150°C without breaking. This is extremely important for architectural glass used in facades, especially in the spandrel areas.

#### SAFETY

When ordinary annealed glass is broken, it forms sharp, knife-like fragments. DURAGLAS tempered glass however, breaks into small, comparatively harmless pieces, unlikely to cause serious injuries. Its break pattern enables tempered glass to be classified as safety glass.

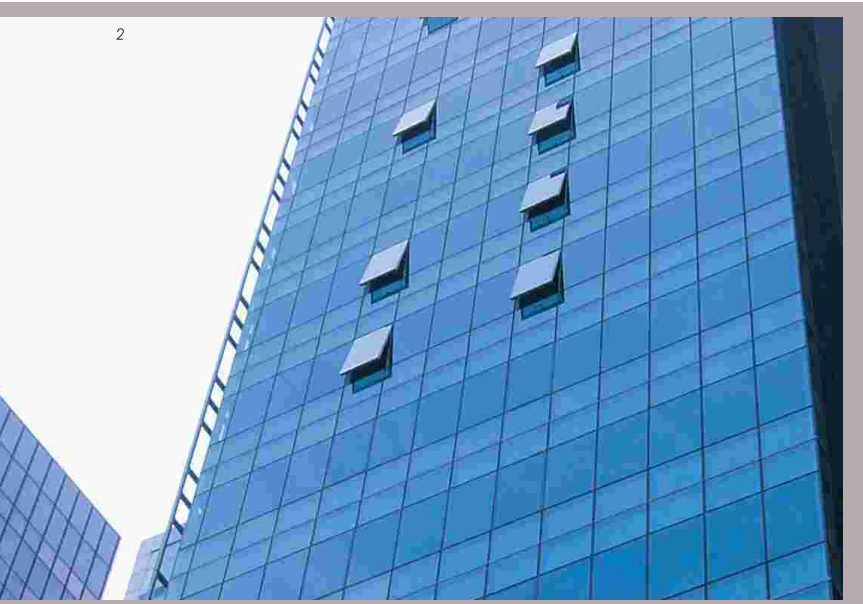
#### TEMPERATURE RESISTANCE

DURAGLAS can withstand temperatures of up to 295°C.

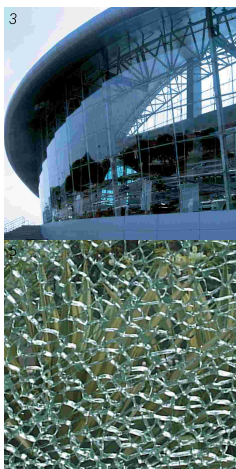
### Area Of Usage

- Windows
- Glass facades
- Shop fronts
- Structural glass
- Shower screens
- Bathtub enclosures
- Escalator side panels
- Sliding or swing doors
- Furniture and interior decoration
- Showcases
- Partitions
- Squash court walls
- Balustrades
- Glass tables
- Floors
- Wall claddings

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- 1 Office Building.
- 2 33 Robinson Road, Singapore.
- 3 Proton COE, Malaysia.
- 4 Volvo Showroom, Sri Lanka.
- 5 Break pattern of tempered glass.
- 6 Break pattern of annealed glass.



## Comparison

DURAGLAS	DURAGLAS-Q	DURAGLAS-HS	DURAGLAS-C
4-5 times stronger than annealed glass	4-5 times stronger than annealed glass	2 times as strong as annealed glass	5-6 times stronger than annealed glass
Tend to fracture into small fragments	Tend to fracture into small fragments	Tend to fracture into large fragments	Tend to fracture into large fragments
Can withstand up to 295°C	Can withstand up to 295°C	Can withstand up to 295°C	Can withstand up to 160°C
Safety Glass	Safety Glass	Non-Safety Glass	Non-Safety Glass
Risk of spontaneous breakage	Negligible risk of spontaneous breakage	Negligible risk of spontaneous breakage	No risk of spontaneous breakage

## Product Specifications

	DURAGLAS DURAGLAS-Q	DURAGLAS-HS	DURAGLAS-C
GLASS THICKNESS (MM)	MAXIMUM SIZE (MM)		
1 to 2	–	–	400 x 700
3	–	2500 x 4000	400 x 700
4	2500 x 4000	2500 x 4000	400 x 700
5	2500 x 5100	2500 x 5100	400 x 700
6 to 12	2500 x 5700	2500 x 5700	400 x 700
15 to 19	2500 x 5700	–	400 x 700
22	1800 x 5700	–	400 x 700
25	1600 x 5700	–	400 x 700
Minimum Size (mm)	300 x 300	300 x 300	30 x 30