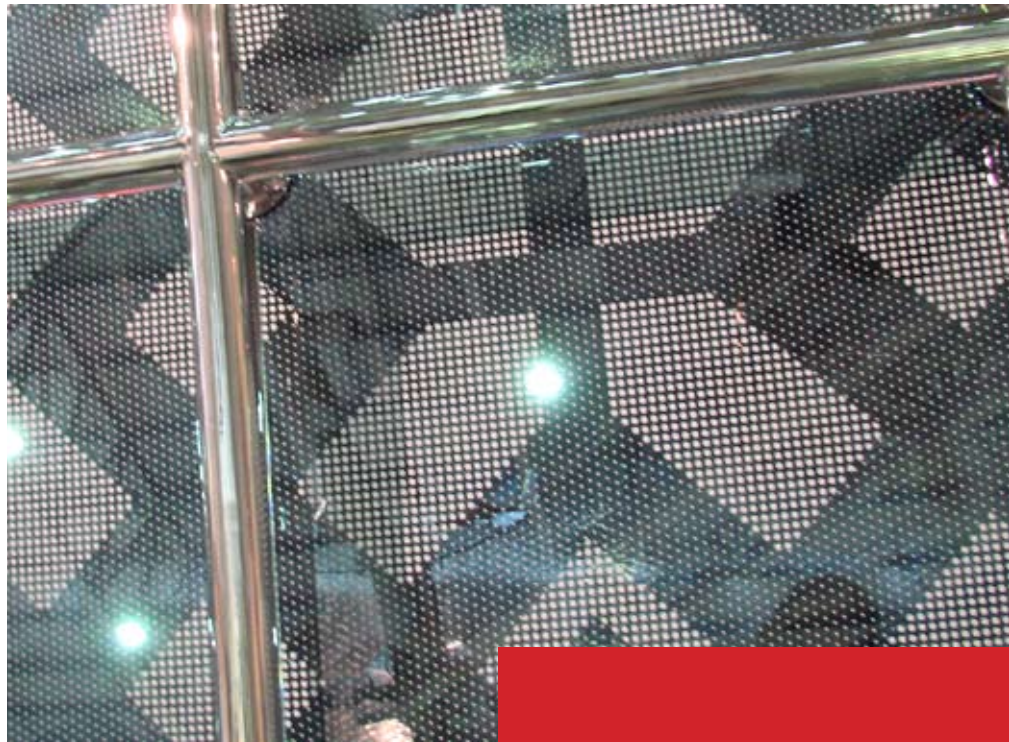


AAG-screen



silk-screened glass

AAG-screen is an architectural flat or curved glass product with a decorative design or standard pattern created through the application of a ceramic frit (enamel) to the glass surface using a silk-screen printing process.

After drying of the frit through a pre-heating oven, the enamelled glass continues its process with a final heat treatment in a conventional furnace, giving the silk-screened glass a high degree of mechanical and thermal resistance and stability.



Dubai International Airport Concourse 2 with AAG-screen

Characteristics

AAG-screen heat-strengthened or fully tempered glass is respectively 2~3 times and 4~5 times as strong as annealed glass of the same thickness

Heat-strengthened glass is not recognised as a safety glazing; however, it satisfies the strength requirements for resistance to most thermal stresses and wind-load conditions. It does not constitute an alternative to toughened glass in situations where safety problems may arise. It is tested according to EN1863 and conforms to major international standards.

Fully Tempered glass is recognized as a safety glazing material and is tested to EN12150, conforming to other major international standards.

For other considerations regarding the choice for fully tempered or heat strengthened glass, we refer to our documents AAG-safe & AAG-dur.

Applications

Apart from a function for privacy partitioning, balustrading, wall embellishment or interior and exterior decoration, the silk-screened glass is vastly used in the building envelope by effectively reducing solar heat gain, visible transmission and reduction of glare through vision or spandrel areas and skylights or atriums. An endless range of design possibilities, from basic geometric to intricate decorative patterns can be created.

Availability

AAG-screen is available in standard patterns in black, grey or white durable colour, which are most commonly used, but a vast range of solid colours and opacity or etch effects are available.

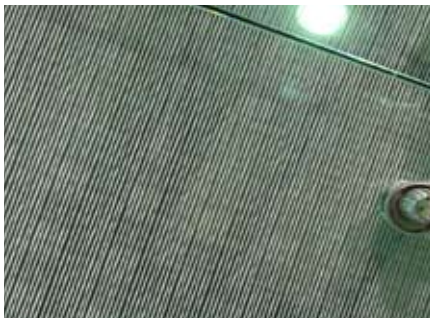
The amount of paint coverage for all silk-screened glass based on production limitations, is guide lined as follows :

- Maximum 60% coverage for coloured colours
- Maximum 80% coverage for standard white

Imaging and spacing has restrictions as follows :

- line pattern : minimum 2mm
- dot pattern : minimum 2mm (dot radius)
- hole pattern : minimum 3mm (hole radius)

The silk-screened glass can be incorporated into insulated glass units and laminated glass.





For further information on each application, refer to the relevant leaflets on the subject:

- AAG-lam: Lamination
- AAG-dur & AAG-safe: Heat Treatments
- AAG-therm: Insulating Glass Units
- AAG-cur: Curved & Tempered Glass
- TECHTalk SK001: Moiré Effect
- TECHTalk SK002: Silk-Screen Surface Location

Auxillary Manufacturing

Each component must be cut, drilled, notched, edge-worked and shaped prior to heat treatment and silk-screening. Information on each auxiliary manufacturing (positioning, limitations, tolerances) is clearly identified in the relevant and corresponding EN standard.

To Order

The following information is imperative:

When AAg-screen is required for rectangular panes, the first dimension shall always be the WIDTH (W), followed by the LENGTH (L). It shall be made clear which dimension is the width and which is the length when related to the installed position.

For patterned glass, or glass with decorative design (silk-screened, sand-blasted or acid etched), the direction of the pattern should be specified relative to one of the dimensions.

The customers are recommended to consult AAG for the intended application.

Aesthetics

The following effects are inherent to the product and cannot be considered as product faults:

DISTORTION

Because of the glass contact with the rollers during the horizontal heat treatment process, surface deformations in the glass take place which leads to a reduction of surface smoothness, creating 'bows' and 'roller waves'. Heat-treated glass therefore, is not as flat as annealed glass and the degree of distortion is inherent to the process and the limitations are shown in the referenced standards.

Distortion is mainly visible in reflection. The viewer-distance to the reflective glass, the distance of the reflected image from the reflective glass and the viewing angle directly affect the degree of deformation seen of the reflected image.

Distortion in transmission is mainly visible when viewed at a non-perpendicular angle and is more apparent with thicker (over 8mm) glass

Due to its selective cooling process, AAG-dur has a less distorted surface flatness and a better optical quality than AAG-safe, making it the preferred choice for the heat-treatment of highly reflective glass-types and further processing such as lamination.

ANISOTROPY

A physical effect with all heat treated glass, resulting from the distribution of internal stress leading to double refraction. Perception of dark-colored rings, spots or stripes with polarized light and/or when observed through polarizing lenses is visible depending on the viewing angle. Since natural daylight, depending on the weather and the time of the day shows different proportions of concentration of polarized light, this phenomenon will be observed with different intensity. This effect is further amplified in heat treated IGU or laminated assemblies or any situation entailing superimposed heat treated glass.

IMPRINT

Small spots (roller pick-ups), may be visible on thicker glass from 10mm and over.

PRODUCT PROFILE



MOIRÉ EFFECT

When using silkscreen patterns in architectural building applications (skylights, modesty bands, doors, partitions, etc.), there may be a potential to see a Moiré pattern develop in the glass when viewed under certain light conditions and at specific viewing or solar angles. Moiré is an optical phenomenon that presents itself as a "wavy" rippled or circular pattern under specific conditions. The Moiré image is a pattern formed when two regularly spaced patterns "overlap", but are not aligned. AAG recommends that a full size mock-up is evaluated on all projects considering the use of silkscreen patterns. The mock-up should be installed at the building site and viewed under a variety of lighting, and if feasible, temperature conditions.



Equipment Review

JUMBO SEMI-AUTO SCREEN PRINTING MACHINE

Max Print Size: 2500 x 3500mm*

Min Print Size: 300 x 300mm

Max Screen Frame: 2600 x 3700

* Contact AAG to verify available screen size



FLEISCHLE LP-HA 20/30

Max Print Size: 2000 x 3000mm

Min. Print Size: 300 x 300mm

Max Screen Frame: 2600 x 3700

Thickness Acceptance: 2-19mm

Note that the maximum dimensions as indicated above is machine related and to be considered for load efficiency purpose rather than a dimensional limitation for the glass pane.

The dimensional limitation for the glass-pane must be checked in relation to the wind-load and the thickness of the glass.

Conformances - Applicable Standards

- heat strengthened glass: EN1863 - ASTN CL098
- fully tempered glass: EN12150 - ASTN CL098
- heat soak tested glass: EN14179



P.O. Box 1626, Dubai, UAE

Tel: +971 4 333 1362

Fax: + 971 4 333 1283

Videocall: + 971 4 320 3865

Email: info@aagonline.ae

www.aagonline.ae