



PreLCOTM



EXPERTISE IN GLASS SOLUTIONS

Prel-Design
Silk-Screened Glass



Prel-Design

Silk-screened glass

DESCRIPTION

Prel-Design is a glazing on which a geometric pattern has been applied using opaque or translucent ceramic paint. Before printing process, a mesh screen is placed directly on the glass. The screen meshes are masked off in some areas and unmasked in some others. As the ceramic paint is pushed across the screen, it flows through the unmasked areas to form the desired pattern. Glass panels are then heated in an oven at 1150 °F (621 °C) to fuse the ceramic coating to the surface, rendering it highly resistant to cracks, scratches, discoloration or damage caused by chemical products.

Building designers can choose from Prelco's wide selection of options, including seven standard patterns and sixteen standard colours. Custom-made patterns and colours are also available and are easy to prepare. This silk-screen technique can be used on various glass substrates, including clear, low-iron or tinted glass. Depending on which pattern, colour of ceramic frit and glass substrate you select, glass panels will either be transparent, translucent or opaque. With such a wide range of options available, silk-screened glass is considered one of the best glass products in terms of creative possibilities.

HEAT-TREATED GLASS: HEAT-STRENGTHENED OR FULLY TEMPERED

Silk-screened glass can be heat-strengthened or fully tempered.

Silk-screened insulating glass units are generally heat-strengthened to make them more resistant to the wind loads and high temperatures. In case of breakage, heat-strengthened glass breaks in large fragments, similar to annealed glass. While heat-strengthened glass is twice as impact-resistant as annealed glass of the same thickness, it should not be considered or used as safety glass.

Fully tempered glass is recommended for unsafe or hazardous areas. It can withstand wind loads and high temperatures. It is also four times more impact-resistant than annealed glass of the same thickness. For greater safety, tempered glass breaks in small, dull fragments. Tempered glass meets safety glazing standards.

STANDARDS

ASTM C1036 – Flat Glass

ASTM C1048 – Heat-Treated Flat Glass

CAN/CGSB 12.1 – Laminated or Tempered Safety Glass

GLASS MAKEUP

MONOLITHIC GLASS

Ceramic frit coating is applied on number two surface of the support glass*. The glass must be heat-strengthened or fully tempered. It is not recommended exposing ceramic coating to the elements. Use on number one surface therefore is not recommended for exterior use.

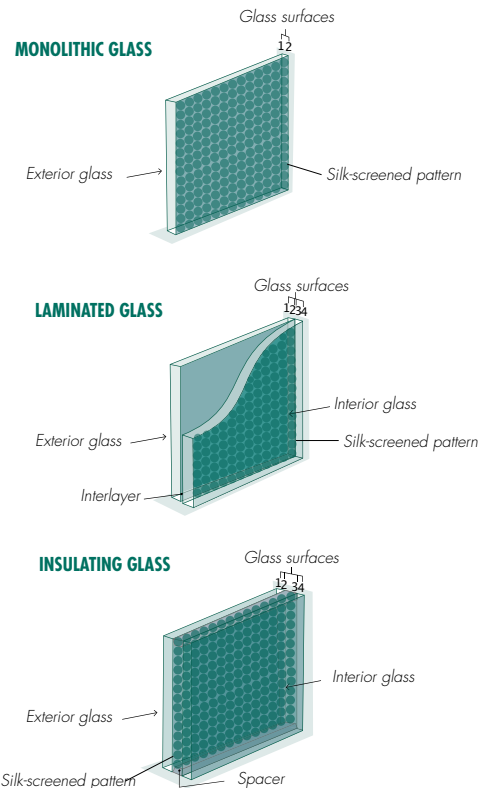
LAMINATED GLASS

Ceramic frit coating can be applied on number two, three or four surface of a laminated glass*. Each glass ply must be heat-strengthened or fully tempered.

INSULATING GLASS

Ceramic frit coating is applied on number two or three surface an insulating glass unit*. Each glass lite must be heat-strengthened or fully tempered.

*Certain conditions apply. Please contact us for more details.



Standard Opaque Colours

Solar Bronze PC-9904

Evergreen PC-9902

Solar Gray PC-9901

Lava Bronze PC-9905

White PC-9912

Charcoal PC-9903

Black PC-9907

Large selection of custom-made colours

Exact colours can vary from the ones illustrated above. Always proceed to the evaluation of a sample placed in its final environment. Please contact us to receive exact colour samples.

APPLICATIONS

SOLAR CONTROL AND GLARE REDUCTION

The application of an openwork pattern using a light or translucent colour on insulating glass is an effective way to control heat gain and protect against glare. The level of protection against sunlight will depend on the density of the pattern and the colour of the ceramic frit you select.

INSULATING GLASS UNIT¹

INTERIOR CLEAR GLASS	VISIBLE LIGHT TRANSMITTANCE %	VISIBLE LIGHT OUTDOORS REFLECTANCE %	WINTER U-VALUE	SOLAR HEAT GAIN COEFFICIENT	LIGHT TO SOLAR GAIN
No Silk-screened Pattern ²	78	15	0.47	0.71	1.11
Silk-screened pattern ² 30% white PC-9912	64	19	0.47	0.60	1.06
Silk-screened pattern ² 40% white PC-9912	58	20	0.47	0.56	1.02
Silk-screened pattern ² 50% white PC-9912	52	22	0.47	0.52	0.99
Silk-screened pattern ² 60% white PC-9912	46	23	0.47	0.48	0.95

1. 1" (25 mm) thick insulating glass unit: Exterior glass 6 mm clear / 12.7 mm air space / interior glass 6 mm clear. Values above are provided as indicators and may be increased if argon gas and/or low-e coating are used.

2. Silk-screened pattern applied to surface number two of the insulating glass unit.

Please consult our Thermaspec calculating tool at www.preko.ca for complete details on the thermal and optical properties of Prel-Design Silk-Screened Glass.

PRIVACY

By adjusting the opacity of the pattern and its placement on the surface of the glass, you can better protect the privacy of the occupants while still offering them the benefits of glass partitions (greater luminosity, a feeling of open space, etc.).

LIGHT POLLUTION REDUCTION

By controlling light trespass from the building site, Prel-Design Silk-Screened Glass contributes to reduce light pollution.

DESIGN

Prel-Design Silk-Screened Glass is available in a wide variety of opaque or translucent colours and standard or custom-made patterns. With its endless creative possibilities, silk-screened glass is ideal for any type of interior or exterior design.

SIGNS AND LOGOS

Ceramic coating printed directly on glass is highly resistant to scratches and discolouration, making Prel-Design Silk-Screened Glass ideal for printing logos, text or any other geometric form that needs to be printed directly and permanently on glass.

Standard Translucent Colours

Light Blue PC-7001



Light Green PC-7002



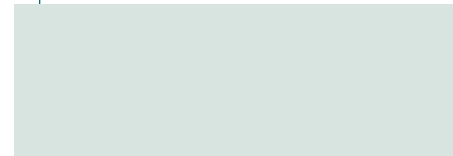
Charcoal PC-7003



Yellow PC-7004



Clear PC-7005



Azur PC-7006



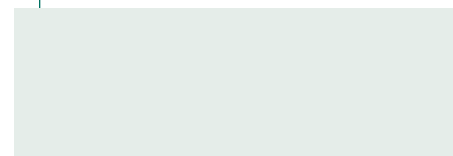
Cherry PC-7007



Simulated Sandblast PC-7008



Simulated Acid Etch PC-7009



Exact colours can vary from the ones illustrated above. Always proceed to the evaluation of a sample placed in its final environment. Please contact us to receive exact colour samples.

DESCRIPTION

COLOURS SELECTION

Prelco offers a choice of seven standard opaque and nine translucent colours. We also offer a complete selection of custom-made colours. Custom colours are matched up with samples provided by the building designer.

Only one colour per glass surface can be applied using the silk-screening technique, but you can create two-colour designs using laminated glass. One colour is applied to surface number two and another to surface number four.

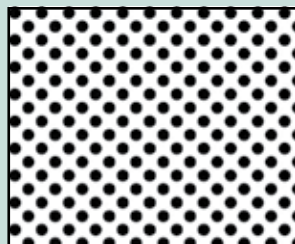
PATTERN SELECTION

Prelco offers seven standard patterns. Custom-made patterns can be created from the specifications of the building designer.

STANDARD PREL-DESIGN PATTERNS

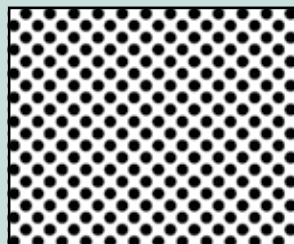
Shown in reduced scale

Dots 30 %



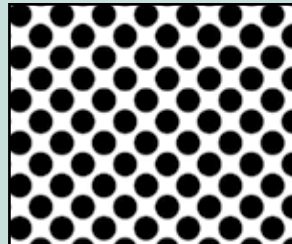
1/8" (3 mm) diameter spaced 9/32" (7 mm) apart centre to centre
30 % of coverage

Dots 40 %



1/8" (3 mm) diameter spaced 1/4" (6 mm) apart centre to centre
40 % of coverage

Dots 50 %



1/4" (6 mm) diameter spaced 7/16" (11 mm) apart centre to centre
50 % of coverage

Lines 30 %



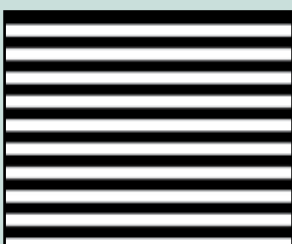
1/8" (3 mm) wide spaced 3/8" (10 mm) apart centre to centre
30 % of coverage

Lines 50 %



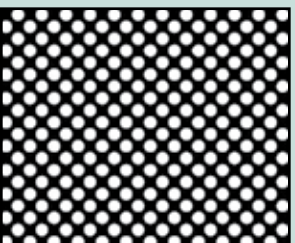
1/4" (6 mm) wide spaced 1/2" (12 mm) apart centre to centre
50 % of coverage

Lines 50 %



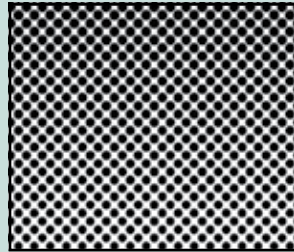
1/8" (3 mm) wide spaced 1/4" (6 mm) apart centre to centre
50 % of coverage

Holes 60 %

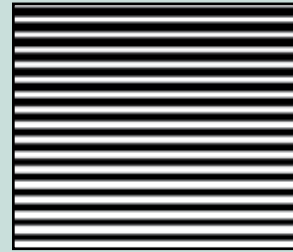


1/8" (3 mm) diameter spaced 1/4" (6 mm) apart centre to centre
60 % of coverage

EXAMPLES OF CUSTOM-MADE PATTERNS



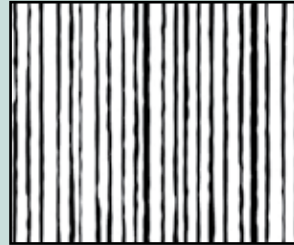
Graduated dots



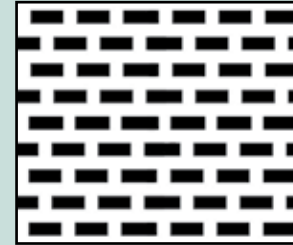
Graduated lines



Logo



Geometrical pattern
full surface



Geometrical pattern
full surface



Geometrical pattern
full surface

Custom patterns specifications

Here is the information required for the production of a custom-made silk-screen:

- Description of pattern: placement and dimensions of each element of the artwork* (e.g. dots, lines, etc.)*, space between elements, percentage of glass covered by the elements
- Recommended software to send numerical files:
Illustrator[®]: AI, EPS
Photoshop[®]: PSD, EPS, TIFF
QuarkXpress[®]: QXD, EPS
- Direction of the pattern: vertical, horizontal, diagonal
- Area to be silk-screened: part or entire glass surface

- Starting location of the pattern: centered on the glass, starting from the bottom, top, left or right edges of the glass
- Borders around the silk-screened area: partial elements allowed or not allowed, clear or solid borders required or not required

*Minimum dimensions and/or space between elements: 2 mm (1/16 in).

During the preparation phase of custom-made colours or patterns, a 12" x 12" (305 x 305 mm) sample must be approved by the building designer prior the production of any glass lite.

PREL-DESIGN¹ PRODUCTION CAPACITY

SILK SCREEN	MINIMUM SIZES		MAXIMUM SIZES	
	IN	MM	IN	MM
Without joints	7 7/8 X 15 3/4	200 X 400	58 3/4 X 150	1492 X 3810
With joints ²	7 7/8 X 15 3/4	200 X 400	96 X 156	2438 X 3962

1. Certain conditions apply. Please contact us for more details.

2. We minimize the appearance of joints, but they may still be visible once the glass has been silk-screened. Joints will be more (or less) noticeable depending on the complexity and coverage of the pattern. The size of the glass panel may need to be reduced to obtain the desired effect. Please contact us for more details.

ENVIRONMENTAL PROTECTION

Prelco uses lead-free ceramics respectful of people and the environment.

INSTALLATION

SELECTING A TYPE OF SILK-SCREENED GLASS

Various criteria should be considered before making the final decision on the type of silk-screened glass better suited for a specific project, most notably colour, overall look, thermal and acoustic isolation requirements, structural performance of glass as well as current safety code requirements.

Prelco provides technical support to help building professionals with their glazing projects. This support includes calculations of the thermal or acoustical glazing performance as well as wind and snow loads analysis.

FRAMING COMPONENTS

Framing components must:

- Support and hold glass panels according to design load requirements
- Avoid prolonged edge exposure to water, humidity or condensation
- Avoid charge or pressure points in the glass plane
- Minimize the risks of glass breakage caused by thermal or mechanical loads
- Avoid direct contact between glass and metal

MATERIAL COMPATIBILITY

Certain types of glass, especially insulating glass units and laminated glass, need particular attention when it comes to the sealants and other accessories which are used to install them. Sealants must be compatible with the glass and other materials used for the installation of the glass lites. Using incompatible products can cause seal failure of the sealed units and edge delamination of the laminated glass. Please contact us or visit our website at www.prelco.ca for more details or a list of compatible products.

CUTTING AND HOLE DRILLING

Cutting and hole drilling Prel-Design Silk-Screened Glass must be done prior to the application of the ceramic coating and the heat-treating process. Cutting and hole drilling heat-treated glass panels must be performed under certain conditions. The main requirements are specified in the ASTM C1048 Standard.

PROTECTION AND GLASS MAINTENANCE

Wash, rinse and dry the glass panels at frequent and regular intervals, especially during the construction phase. Use a clean cloth and a solution of water and non-harsh soap or detergent. A solution of water and acetic acid (vinegar) can also be used. After washing the glass panels, immediately rinse the glass with clear water and promptly remove any excess rinsing water with a squeegee.

Non-industrial strength glass cleaners or dish washing detergents mixed with water will generally not affect the ceramic coating or sealants of insulating glass units. If you are unsure, please contact us before using any harsh chemicals or abrasive cleaning products to verify their compatibility with the glass and the proper application techniques to use.





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