



Silk-Screened Glass

PREL-DESIGN



SPELER

PREL-DESIGN

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.

HEAT-TREATED GLASS: HEAT-STRENGTHENED OR FULLY TEMPERED

Silk-screened glass is 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.

GLASS MAKEUP*

MONOLITHIC GLASS

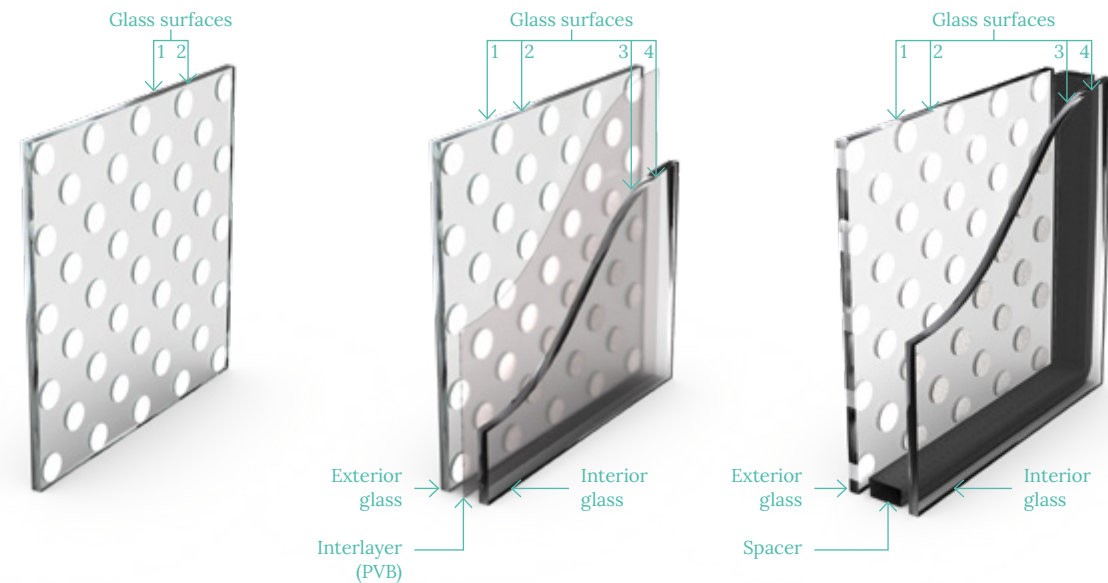
Ceramic frit coating is applied on surface 2 of the support glass*. The glass must be heat-strengthened or fully tempered. It is not recommended exposing ceramic coating to the elements. Use on surface 1 therefore is not recommended for exterior use.

LAMINATED GLASS

Ceramic frit coating can be applied on surface 2, 3 or 4 of a laminated glass*. Each glass ply must be heat-strengthened or fully tempered.

INSULATING GLASS

Ceramic frit coating is applied on surface 2 or 3 of an insulating glass unit*. Each glass lite must be heat-strengthened or fully tempered.



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

APPLICATIONS

SOLAR CONTROL AND GLARE REDUCTION

The application of an openwork pattern using a light or translucent color 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 UNIT ¹					
Interior 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-9918	64	19	0.47	0.60	1.06
Silk-Screened Pattern ² 40%, White PC-9918	58	20	0.47	0.56	1.02
Silk-Screened Pattern ² 50%, White PC-9918	52	22	0.47	0.52	0.99
Silk-Screened Pattern ² 60%, White PC-9918	46	23	0.47	0.48	0.95

¹ 1" (25 mm) thick insulating glass unit: Exterior glass ¼" (6 mm) clear/½" (12.7 mm) air space/interior glass ¼" (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.

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.).

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.

LIGHT POLLUTION REDUCTION

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

SIGNS AND LOGOS

Ceramic coating printed directly on glass is highly resistant to scratches and discoloration, 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.

COLOURS SELECTION

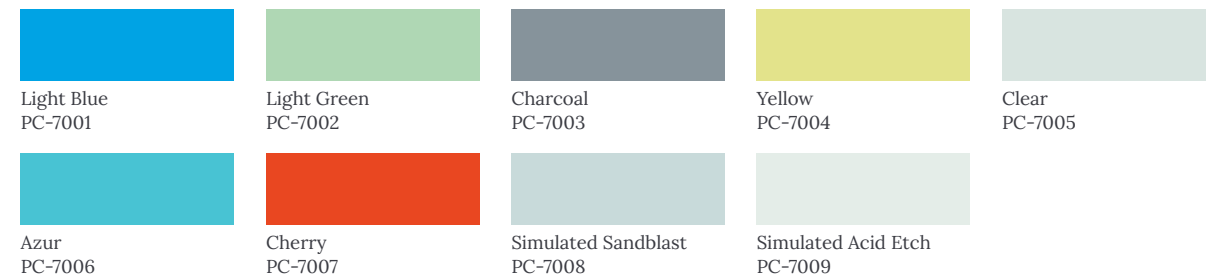
Prelco offers a choice of 14 standard opaque and 9 translucent colours. We also offer a complete selection of custom-made colours. Custom colours are matched up with samples provided by the building designer.

Light colors may require two applications of coating to obtain the desired level of opacity. Exact colours can vary from those shown below. Always proceed to the evaluation of a sample in its final environment. Contact us to receive exact colour samples.

STANDARD OPAQUE COLOURS



STANDARD TRANSLUCENT 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.

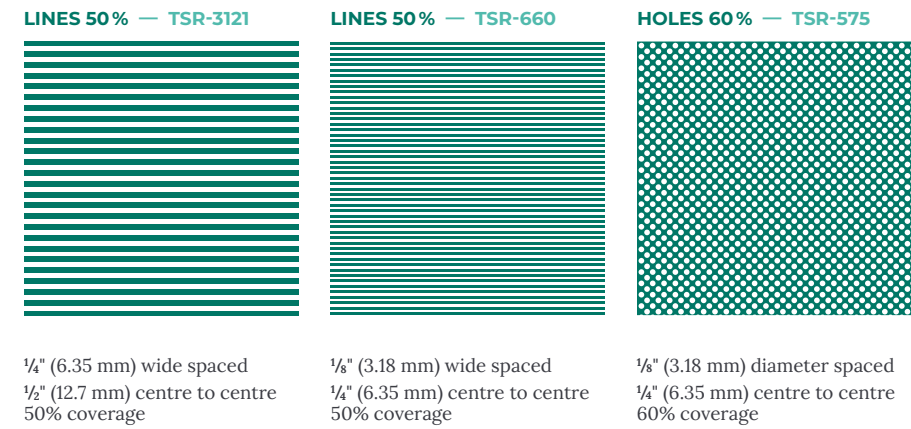
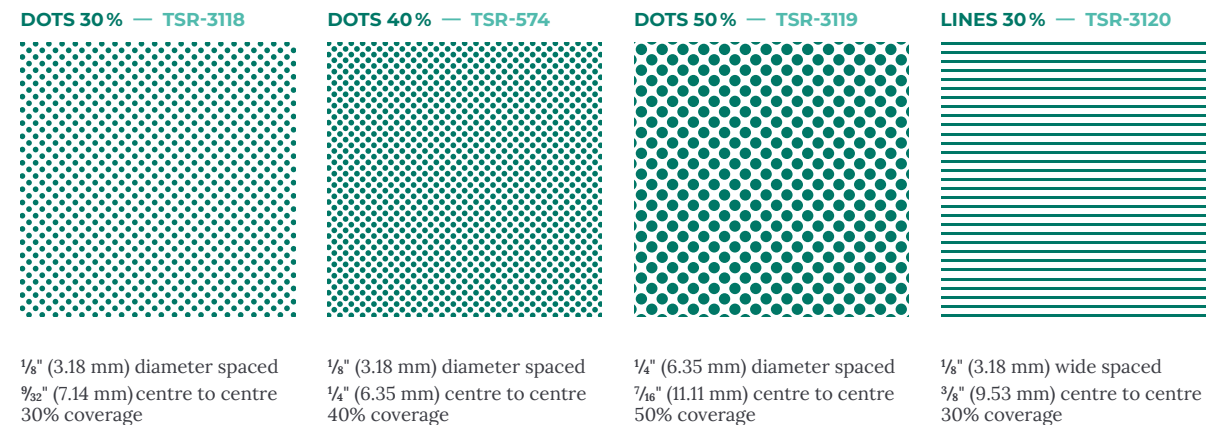
STANDARD PREL-DESIGN PATTERNS

Shown in reduced scale

PATTERN SELECTION

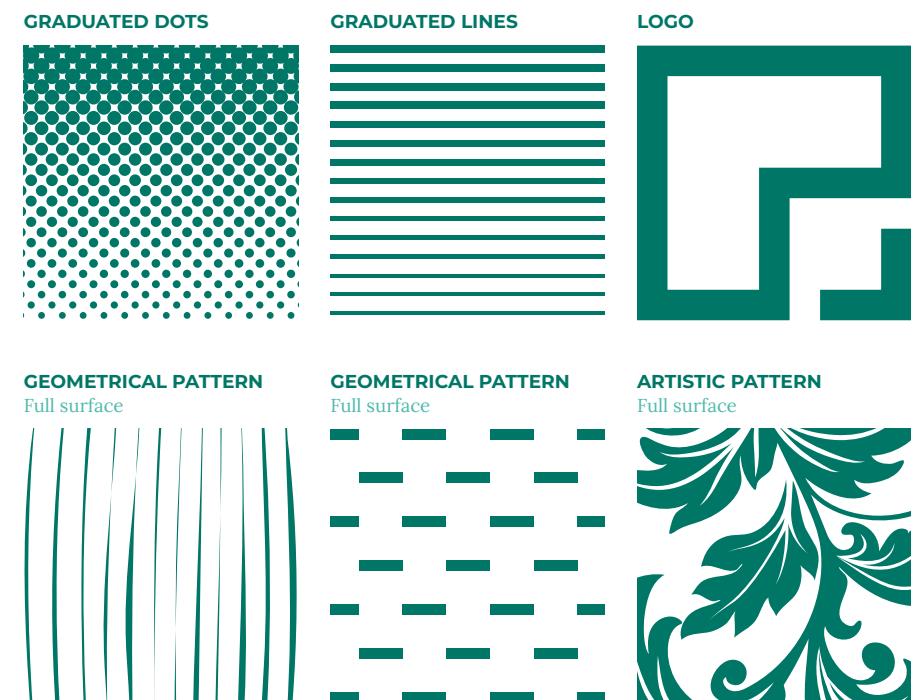
Prelco offers seven standard patterns. Custom-made patterns can be created from the specifications of the building designer.

When developing or customizing patterns, a 12 x 12 in (305 x 305 mm) sample must be approved by the designer prior to making the glass.



CUSTOM-MADE PATTERNS

Shown in reduced scale



CUSTOM PATTERNS SPECIFICATIONS

Here are 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
- AutoCAD®: DWG, DXF

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: 1/16" (2 mm)

ENVIRONMENTAL PROTECTION

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

PROJECT

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 preliminary 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 prelco.ca for more details or a list of compatible products.

CUTTING AND HOLE DRILLING

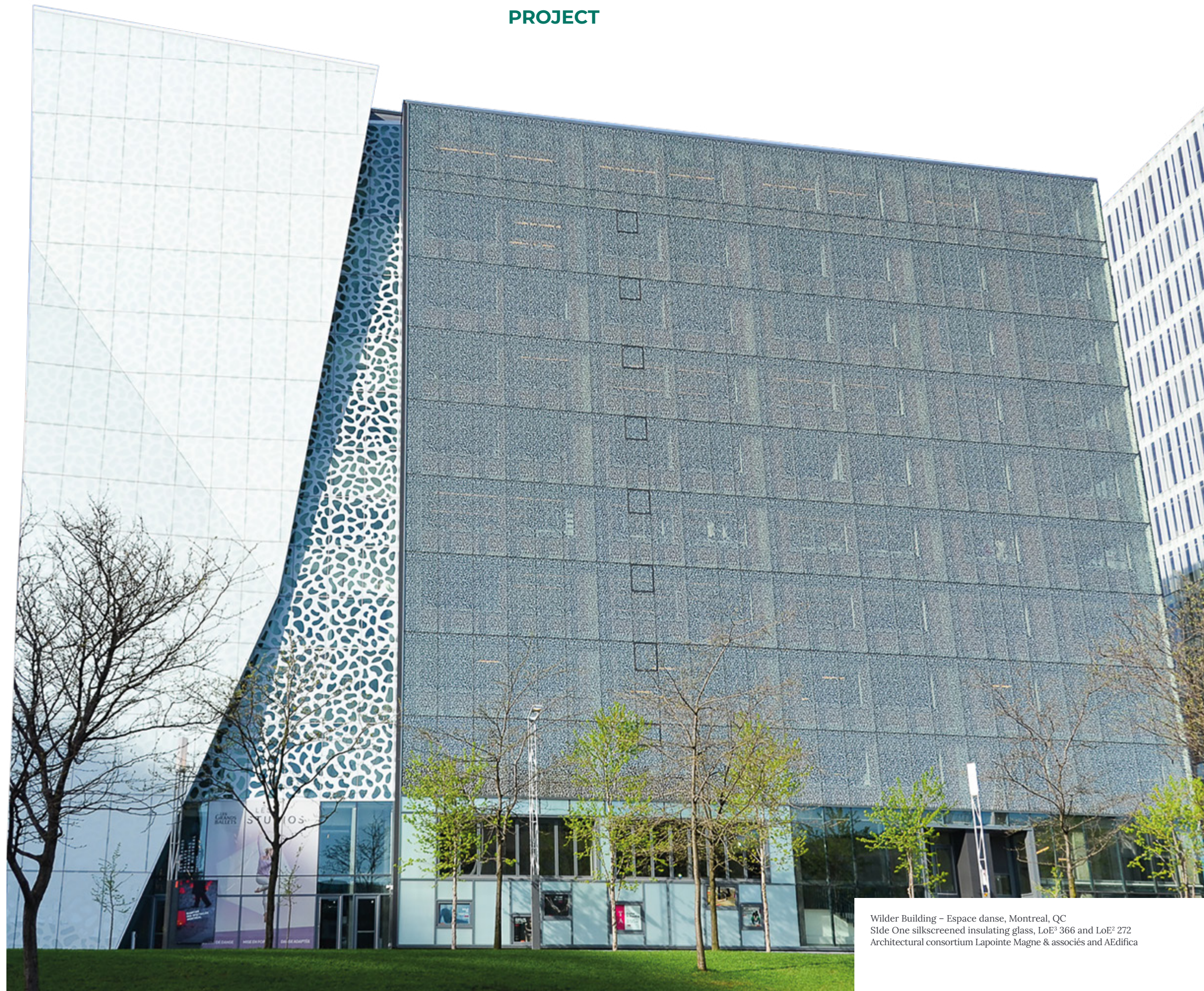
Cutting and hole drilling Prel-Design Silk-Screened Glass must be done prior to the application of the ceramic coating and the heat-treating process. Cutting and hole drilling heat-treated glass panels must be performed under certain conditions. The main requirements are specified in the ASTM C1048 Standard.

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.

Consult our architectural glass care guide for more information.



Wilder Building – Espace danse, Montreal, QC
Side One silkscreened insulating glass, LoE³ 366 and LoE² 272
Architectural consortium Lapointe Magne & associés and AEdifica

PROJECT



CHU Ste-Justine, Montreal, QC
Silkscreened Glass and LoE³ 366
Provencher Roy et Menkès, Shoener, Dagenais,
LeTourneux in consortium

Cover picture
Idea Exchange, Cambridge, ON
Silkscreened glass
Kongats Architects



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