Weathering Performance of Lexan Sheet

- UV Cap Layer Protection
- Long term color stability -- <10 YI per Florida Outdoor and Accelerated Weathering
- Superior initial impact resistance
- Minimal loss of impact resistance after weathering
- Minimal loss of impact at cold temperatures

10 YR warranty for breakage and yellowing
Outdoor Weathering – UV protected PC versus non protected PC sheet

<table>
<thead>
<tr>
<th>OPTICAL PROPERTY</th>
<th>O/IUV HOURS</th>
<th>MONTHS - SOUTH MIAMI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>500</td>
</tr>
<tr>
<td>Coated LEXAN® Sheet*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Transmission</td>
<td>87.6</td>
<td>86.5</td>
</tr>
<tr>
<td>Yellowness Index</td>
<td>0.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Delta YI</td>
<td>1.9</td>
<td>2.1</td>
</tr>
<tr>
<td>% Haze</td>
<td>2.2</td>
<td>2.6</td>
</tr>
<tr>
<td>Uncasted LEXAN® Sheet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Transmission</td>
<td>87.6</td>
<td>85.2</td>
</tr>
<tr>
<td>Yellowness Index</td>
<td>0.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Delta YI</td>
<td>11.8</td>
<td>12.7</td>
</tr>
<tr>
<td>% Haze</td>
<td>2.2</td>
<td>3.1</td>
</tr>
</tbody>
</table>

*Lower light transmission values are attributable to .250" gauge sample used. Other samples were .125" gauge.

Lexan SGC100 sheet
- 2.4 delta YI after 5 YR Florida weathering
- Less than 5 delta YI not detectable by eye

YI = Yellowness Index as measured with a Gardner Colorimeter per ASTM 1925.
Delta YI = change in Yellowness Index
A Delta YI of <5 is typically not detectable by the human eye.

Source – Sabic data sheet

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Lexan XL102UV versus Acrylic

Source – Sabin data sheet

Xenon Arc Accelerated Weathering

Source – Rohm & Hass
Delta YI Samples

ΔYI 2
Equivalent to 5 YRS Florida Exposure

ΔYI 4
Equivalent to 10 YRS Florida Exposure

ΔYI 10

YI = Yellowness Index as measured with a Gardner Colorimeter per ASTM 1925.
Delta YI = change in Yellowness Index
Impact Resistance

- ¼" Lexan XL102UV
- ¼" Acrylic
- ¼" Tempered Glass
- ¼" Laminated Glass

Lexan SGC100 sheet
Superior impact resistance after aging and weathering

Affect of temperature on impact resistance

<table>
<thead>
<tr>
<th></th>
<th>Polycarbonate(3)</th>
<th>High Impact Acrylic(4)</th>
<th>Standard Acrylic(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notched Izod</td>
<td>16</td>
<td>1.2</td>
<td>0.4</td>
</tr>
<tr>
<td>Falling Dart</td>
<td>125</td>
<td>8.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Falling dart test is the most appropriate test if concern is focused on the likelihood of vandalism or the impact of an object. Temperature change can reduce material strength.

High impact acrylic shows straight line correlation between temperature and strength. The 8.0 ft/lb value at 60°F in the dart test decreases to 4 ft/lbs at 9°F. Polycarbonate also exhibits some loss of strength in low temperatures but over the same 0° - 60°F range, it loses only 15% as opposed to acrylic's 50% loss. Polycarbonate demonstrates exceptional low temperature tolerance.

Source: Hubble

Source – Rohn & Hass
Lexan SGC100 Ten (10) Year Limited Written Warranty

If Lexan SGC100 sheet breaks within ten (10) years from the date of sale due to manufacturing defect and subject to the conditions set forth herein, then the purchaser, or a fabricator designated by the purchaser, will receive free flat replacement Lexan SGC100 sheet, provided the failed sheet, original sales receipt and this warranty are returned to SABIC Innovative Plastics or the original dealer. If a replacement sheet cannot be provided within fourteen (14) days, SABIC Innovative Plastics may opt to refund the original sheet purchase price.

If excessive yellowing or loss of light transmission as defined herein occurs during a seven (7) year period from the date of sale due to manufacturing defect and subject to the conditions set forth herein, SABIC Innovative Plastics Company will provide flat replacement Lexan SGC100 sheet to the purchaser or a fabricator designated by the purchaser according to the following schedule. If excessive yellowing or light transmission as defined herein occurs after seven (7) and before ten (10) years from the date of sale due to a manufacturing defect and subject to the conditions set forth herein, SABIC Innovative Plastics Company will replace the material at a cost to the purchaser of 1/120th of the original cost for each month from the date of sale. The failed sheet, original sales receipt and this warranty must be returned to SABIC Innovative Plastics or the original dealer. If a replacement sheet cannot be provided within fourteen days, SABIC Innovative Plastics may opt to refund the prorated cost of the original sheet.

This limited written warranty is subject to the following conditions:

This warranty applies only to sheet fabricated, installed, and cleaned according to SABIC Innovative Plastics recommendations. It is important to note that Lexan SGC100 sheet is designed for weathering resistance and does NOT provide abrasion resistance; no warranties are extended on the abrasion resistance characteristics of this product. The warranty does not cover (re)installation or fabrication expenses or any other direct or indirect loss(es) which may result from the sheet failure.

Breakage: This warranty against breakage applies only to sheet fabricated, installed, and cleaned according to SABIC Innovative Plastics recommendations. Lexan SGC100 sheet has 30 times the impact strength of acrylic. However, no material can be described as unbreakable, for it is impossible to account for all types of usage.

Yellowing and Light Transmission: The warranty against yellowing and light transmission applies only to Clear Transparent (112) Lexan SGC100 sheet. The Yellowness Index (YI) of Lexan SGC100 sheet, cleaned according to the recommendations of SABIC Innovative Plastics Company, shall be less than 5 during a five-year period from the date of sale, and shall be less than 10 during a ten-year period from the date of sale, as determined according to ASTM D1925, as measured with a Gardner Colorimeter (Instrument Conditions: Illuminant C, 2° Observer). The light transmission characteristics of LEXAN SGC100 sheet, cleaned according to the recommendations of SABIC Innovative Plastics Company, shall not decrease by more than 5% during a five-year period from the date of sale, and shall not decrease by more than 7% during a ten-year period from the date of sale, when tested by the procedure specified in ASTM D1003, as measured by a Gardner Colorimeter (Instrument Conditions: Illuminant C, 2° Observer). This warranty is limited to excessive yellowing and loss of light transmission due to the degradation of Lexan SGC100 sheet and does not cover yellowing or light transmission losses due to dirt, atmospheric deposits, or abrasion. You should be aware that all outdoor materials are subject to irreversible depositions of atmospheric elements and can be expected to show signs of hazing eventually. Regular, proper cleaning will significantly reduce, but not eliminate, that process. (See reverse side for cleaning and maintenance instructions.) This warranty does not cover abrasion or scratching.

THE WARRANTIES STATED IN THIS PUBLICATION ARE THE ONLY WARRANTIES MADE BY SABIC INNOVATIVE PLASTICS WITH RESPECT TO LEXAN SGC100 SHEET AND ARE IN LIEU OF ALL WARRANTIES, WRITTEN OR ORAL, STATUTORY, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE. SABIC INNOVATIVE PLASTICS SHALL NOT BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES ARISING OUT OF THE USE OR APPLICATION OF LEXAN SGC100 SHEET WHETHER A CLAIM FOR DAMAGES IS BASED UPON WARRANTY, CONTRACT, TORT OR ANY OTHER LEGAL THEORY. UNDER NO CIRCUMSTANCE SHALL SABIC INNOVATIVE PLASTICS BE LIABLE FOR ANY AMOUNT GREATER THAN THE ORIGINAL PRICE PURCHASER PAID FOR THE LEXAN SGC100 SHEET.

THE REMEDIES PROVIDED HEREIN ARE PURCHASER'S SOLE AND EXCLUSIVE REMEDIES.

Notice: This dealer is authorized to fulfill the above obligations of this warranty to the purchaser at the expense of: SABIC Innovative Plastics Company,
One Plastics Avenue, Pittsfield, Massachusetts 01201 (1-800-451-3147).
This limited warranty must be completed by the dealer at the time of sale.

SABIC Innovative Plastics

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