Interior Exposed *SUNGATE ThermL™* Coated Glasses Improved Energy Efficiency Applications

SUNGATE ThermL™ coated glasses are Low-E glasses manufactured using a MSVD ITO deposition process, a standard technology from Vitro which has been successfully used within the glass and glazing industry for more than 30 years. For improved thermal performance in both residential and commercial applications, ***SUNGATE ThermL™*** coated glass can be used in the Interior-exposed position in an insulated glass unit (IGU) configuration. In these exposed interior positions, use the cleaning recommendations in this document for optimum visual results.

Because ***SUNGATE ThermL™*** coated glasses have a low visible light reflectance and minimal inherent color, the aesthetic appearance of the finished IGU remains true to the specified glass substrate. As with any combination of glass and coated glass IGU construction, Vitro recommends a visual mock-up to determine overall acceptability of the final configuration.

Recent legislation by the federal government and code/program revisions by key organizations emphasize improved energy efficiency for glazing applications. These energy codes will most likely become more stringent in the future. Therefore, it is recommended window glass fabricators evaluate more energy efficient sash and frame technologies, as well as multiple air spaces, and energy efficient glass coatings. ***SUNGATE ThermL™*** coated glass, used in combination with other key components of an IGU and window system, can help achieve these new requirements.

In a standard 1-inch double-pane IGU with the coating on the No. 4 surface, ***SUNGATE ThermL™*** lowers the U-value by approximately 20%, when compared to an identical IGU without the coating on the No. 4 surface. In addition, these coatings also provide some solar control enhancement.

In order to help its fabricator and window/door customers make informed decisions concerning the use of ***SUNGATE ThermL™*** coated glass and ensure a more positive experience for the homeowner, Vitro offers the following guidelines.

Glass Cleaning Recommendations

SUNGATE ThermL™ coated glass, when used with the coating in an interior-exposed application (No. 4 surface for double-pane IGU), is extremely durable and resistant to mechanical and chemical damage. Due to the smooth nature of the coating, when cleaning the coated glass surface, homeowners should follow these recommendations:

- Always use a mild soap or glass-cleaning solution. Do not use abrasive cleansers.
- Adequately wet the glass surface; it will allow for more thorough cleaning and help prevent streaking when drying.
- Use a clean, soft, lint-free cloth. (A microfiber cloth can be a good choice.)
- If a squeegee is used, it should not have metal components that can contact the coated glass surface and potentially scratch it or leave a residual deposit.

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Scratch Resistance

As stated previously, ***SUNGATE ThermL™*** coatings are extremely durable and resistant to mechanical abrasion after the heat treatment process. However, the coatings are not more resistant to scratches than the glass surface itself. Therefore, what scratches the glass will also scratch the coating. Razor blades and other sharp objects should not be placed in contact with the coated glass surface.

Energy Efficient Interior-Exposed Coating

In a double-pane IGU, the *Winter Indoor Glass Temperature* is about 8 - 11% lower with an interior exposed Low-E coating on the No. 4 surface when compared to clear glass. This occurs because the low emissivity coating reflects interior radiation back into the room. This lower *Winter Indoor Glass Temperature* increases the probability of room-side glass surface condensation. Whether or not condensation actually occurs depends on the outside ambient temperature, inside room temperature and relative humidity.

Heat Treatment Guidelines

SUNGATE ThermL™ coated glass must be either heat strengthened or fully tempered Fully tempered or laminated heat strengthened configurations may be required for safety glazing applications.

a. Turn off the SO_2 in the furnace to avoid damaging the coating.

b. Do not rely on radiant temperature sensing instruments to provide an accurate indication of the temperature of the coated glass surface. The coating has a drastically different emissivity than that of uncoated glass. Utilize temperature sensing equipment capable of incorporating a temperature correction for low-e glass coatings or measure the temperature from the uncoated glass surface.

c. Heating the coated glass above normal heat treatment exit temperatures of approximately 625 - 640°C should be avoided. Overheating the coated glass can lead to objectionable aesthetic quality such as excessive reflective distortion, surface imperfections, and burned coating appearance.

Warranty

SUNGATE ThermL™ coated glass is sold subject to Vitro's written limited 10-year warranty that is extended to Vitro direct customers. Copies are available upon request. At the time of this publication ***SUNGATE ThermL™*** coated glass is not approved for bending and therefore no warranty would be extended for bent glass.

Structural Silicone Glazed Applications

Use of ***SUNGATE ThermL™*** coated glass in Structural Silicone Glazed (SSG) applications is only possible with the approval of the relevant SSG project principals and evaluations are required on an individual project basis.

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HISTORY TABLE		
ITEM	DATE	DESCRIPTION
Original Publication	8/12/2010	TD-150
Revision #1	12/1/2011	Updated to include Sungate 600 and expanded Guidelines.
Revision #2	10/4/2016	Updated to Vitro Logo and format
Revision #3	1/29/2019	Updated the Vitro Logo and format
Revision #4		Updated to include Sungate 700
Revision #5	11/14/2023	Removed references to Sungate 500, 600 and 700. Updated/Modified for *SUNGATE ThermL™*
Revision #6	11/05/2024	Added SSG comments