

PRODUCT DESCRIPTION

Sungate ThermL™ on Acuity® coated glass by Vitro Architectural Glass is a low-e coating engineered for use on the interior surface of a typical insulated glass unit (IGU) that dramatically improves U-values when paired with a Solarban® solar control low-e glass. Its colorless and non-reflective aesthetic gives it the same look and feel as clear glass.

APPROXIMATE WEIGHTS

Per m ²		Per ft ²	
thickness	weight	thickness	weight
6.0 mm	14.2 kg	1/4"	2.9 lbs.

MECHANICAL PROPERTIES

Knoop Hardness Number (indentation hardness) indenter load--500 gm	470 kgf/mm ²	
Poisson's Ratio	0.22	
Modulus of Elasticity (Young's)	73.1 GPa	10,600,000 psi
Tensile Strength (Determined as Modulus of Rupture, ultimate)	41.4 MPa	6,000 psi
Density at 21°C (70°F)	2.51 g/cm ³	157 lb/ft ³

COLOR

	6.0mm
Transmitted Color: D65, 10° L*	95.2
a*	-0.8
b*	0.2
Hue Angle (°)	169
Dominant wavelength: C, 2°	499 nm

THERMAL PROPERTIES

Hemispherical Emissivity at -18 to 66 °C (0 to 150°F)) glass / coating	0.84	
Expansion Coefficient (linear) 20 to 300°C (68 to 572°F)	8.7*10 ⁻⁶ / °C	4.8*10 ⁻⁶ / °F
Specific heat at 0 to 100°C (32 to 212°F)	858 J/kg-K	0.205 BTU/lb-°F
Thermal Conductivity (k) at 50°C (122°F)	0.937 W/m-K	0.542 Btu/hr-ft-°F
Softening Point	723°C	1333°F
Annealing Point	54°C	1011°F
Strain Point	504°C	939°F

CHEMICAL COMPOSITION

SiO ₂	73%
Na ₂ O	14%
CaO	9%
MgO and Trace elements	3%

HEAT TREATMENT GUIDELINES

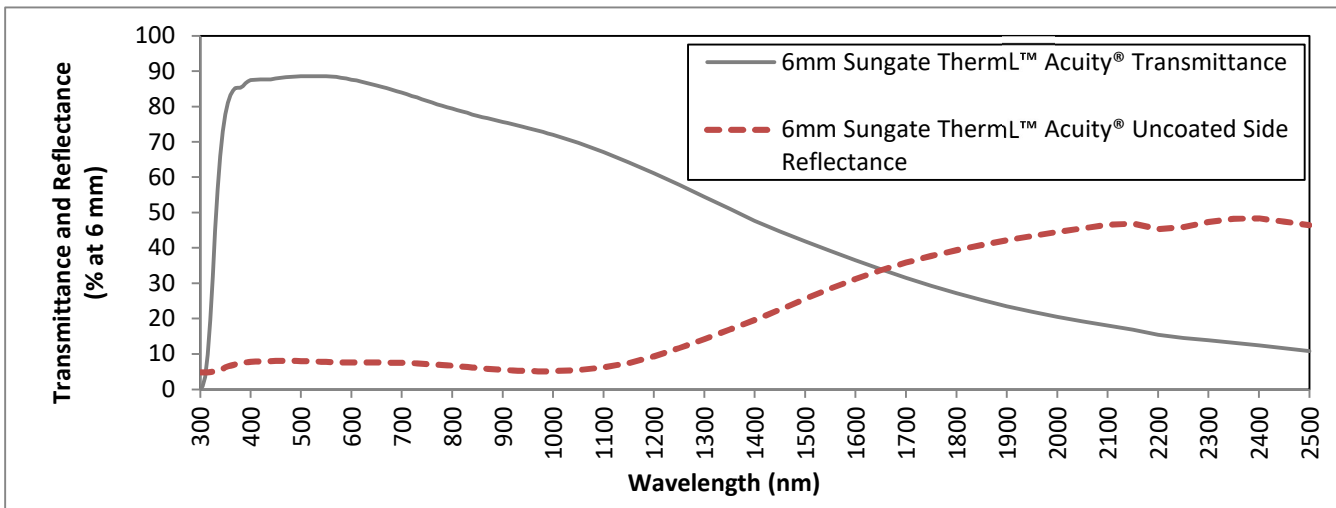
The coating on Sungate ThermL™ glass is permanent, allowing the glass to be heat treated to satisfy increased strength or safety glazing requirements. While heat treating Sungate ThermL™ coated glass, face the coating away from the furnace rolls to reduce the risk of introducing scratches to the coated surface. Process the glass the same as Solarban® coated glass. Glass heat cycle time will be reduced as compared to Solarban® solar control low-e glass. **Turn off SO₂ in the furnace.** SO₂ may cause an appreciable loss in durability of the Sungate® ThermL™ coating. Degradation is the result of the SO₂ reducing the atmosphere causing potential damage to the coating.

SOLAR PERFORMANCE VALUES COATED SURFACE [4]

Glass Thickness		Transmittance				Reflectance	
inches	mm	Ultra-violet (%)	Visible (%)	Infrared (%)	Total Solar (%)	Visible (%)	Total Solar (%)
1/4	6.0	63	88	0	70	6	9

[1] Figures may vary due to manufacturing tolerances. All tabulated solar performance data are based on the methodology prescribed in ISO 9050, 2003 except Infrared, which is based on the solar irradiance data prescribed by ISO 9050, 2003 from 780 to 2500 nm. Slight changes in transmitted optical properties may occur on exposure to sunlight.

Wave-length (nm)	%T	%R	Wave-length (nm)	%T	%R	Wave-length (nm)	%T	%R	Wave-length (nm)	%T	%R	Wave-length (nm)	%T	%R
300	0.1	4.8	420	87.6	7.9	640	86.3	7.6	860	77.0	6.0	1400	47.6	19.7
305	0.8	4.8	430	87.6	8.0	650	85.9	7.6	870	76.7	5.9	1450	44.7	22.6
310	3.5	4.8	440	87.7	8.0	660	85.6	7.6	880	76.3	5.7	1500	41.9	25.6
315	9.8	4.8	450	87.9	8.1	670	85.2	7.6	890	76.0	5.6	1550	39.1	28.5
320	19.6	4.9	460	88.1	8.1	680	84.8	7.6	900	75.7	5.5	1600	36.5	31.3
325	32.0	5.0	470	88.3	8.1	690	84.3	7.6	910	75.3	5.5	1650	33.9	33.7
330	44.9	5.1	480	88.4	8.1	700	83.9	7.5	920	75.0	5.4	1700	31.5	35.9
335	56.5	5.3	490	88.5	8.0	710	83.5	7.5	930	74.6	5.3	1750	29.3	37.8
340	65.9	5.6	500	88.6	8.0	720	82.9	7.4	940	74.3	5.2	1800	27.2	39.4
345	72.9	5.9	510	88.6	8.0	730	82.5	7.4	950	73.9	5.2	1850	25.2	40.9
350	77.8	6.3	520	88.6	7.9	740	82.1	7.3	960	73.5	5.1	1900	23.5	42.2
355	81.1	6.5	530	88.6	7.9	750	81.6	7.2	970	73.1	5.1	1950	21.9	43.4
360	83.2	6.7	540	88.6	7.8	760	81.1	7.1	980	72.8	5.1	2000	20.5	44.5
365	84.5	6.9	550	88.5	7.8	770	80.6	7.0	990	72.4	5.1	2050	19.2	45.6
370	85.2	7.1	560	88.5	7.7	780	80.2	6.9	1000	72.0	5.1	2100	18.0	46.6
375	85.3	7.3	570	88.4	7.7	790	79.8	6.8	1050	69.7	5.5	2150	16.8	47.0
380	85.3	7.4	580	88.1	7.7	800	79.4	6.7	1100	67.1	6.3	2200	15.4	45.4
385	85.7	7.5	590	87.9	7.7	810	79.0	6.6	1150	64.2	7.5	2250	14.5	45.9
390	86.5	7.6	600	87.6	7.6	820	78.6	6.4	1200	61.1	9.4	2300	13.9	47.4
395	87.1	7.7	610	87.4	7.6	830	78.2	6.3	1250	57.9	11.7	2350	13.2	48.2
400	87.4	7.8	620	87.0	7.6	840	77.7	6.2	1300	54.5	14.2	2400	12.5	48.4
410	87.6	7.9	630	86.6	7.6	850	77.4	6.1	1350	51.1	16.9	2450	11.7	47.4
												2500	10.8	46.4



ADDITIONAL INFORMATION/DOCUMENTS

The following documents can be referenced for additional information regarding Sungate ThermL™ glass.

Sungate ThermL™ Performance Data, Vitro Sungate ThermL™ Coated Glass Warranty, Vitro MSVD Coated Glass SDS, TD-150

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