

## PRODUCT DESCRIPTION

Solarcool® Solarblue® coated glass by Vitro Architectural Glass is a sparkling, light sky-blue tinted float glass with a durable, light and heat reflective, metallic oxide coating applied during the float process. The reflective coating side of the glass can be glazed on either the first or second surface. On the first surface, it creates a bright metallic appearance and mutes the sky-blue tinted glass substrate color. On the second surface, it adds reflectivity and deepens the hue of the sky-blue tinted glass substrate.

## APPROXIMATE WEIGHTS

Per m <sup>2</sup>		Per ft <sup>2</sup>	
thickness	weight	thickness	weight
6.0 mm	14.2 kg	¼	2.9 lbs

## COLOR

	6.0mm
Transmitted Color: D65, 10° L*	66.7
a*	-2.7
b*	4.6
Hue Angle (°)	120.7
Dominant wavelength: C, 2°	564.4 nm

## CHEMICAL COMPOSITION

SiO <sub>2</sub>	73%
Na <sub>2</sub> O	14%
CaO	10%
MgO and Trace elements	3%

## MECHANICAL PROPERTIES

Knoop Hardness Number (indentation hardness) indenter load--500 gm	470 kgf/mm <sup>2</sup>	
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 <sup>3</sup>	157 lb/ft <sup>3</sup>

## THERMAL PROPERTIES

Hemispherical Emissivity at -18 to 66 °C (0 to 150°F) glass / coating	0.84 / 0.14	
Expansion Coefficient (linear) 20 to 300°C (68 to 572°F)	8.7*10 <sup>-6</sup> / °C	4.9*10 <sup>-6</sup> / °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	724°C	1334°F
Annealing Point	544°C	1011°F
Strain Point	507°C	945°F

## SUSTAINABILITY

To provide architects with the assurance and documentation they need to meet and verify their sustainability goals, Vitro Architectural Glass participates in a range of programs and initiatives. Resources available include, but are not limited to:

Type III Environmental Product Declarations

Cradle to Cradle Certified™ Bronze with associated Gold Material Health Certificate

LEED® and Living Building Challenge documentation

Material Ingredient Disclosure and Safety Data Sheets

Annual Corporate Sustainability Report

Further information is available through VitroGlazings.com or by calling 855-887-6457 (VTRO GLS)



## HEAT TREATMENT GUIDELINES

The coating on Solarcool® Solarblue® glass is permanent, allowing the glass to be heat treated to satisfy increased strength or safety glazing requirements. While heat treating Solarcool® Solarblue® 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 uncoated glass. The coating on Solarcool® Solarblue® does not appreciably reflect furnace heat since the coating emissivity is essentially the same as uncoated glass. Glass heat-up time will remain nearly identical as for the same uncoated Solarblue® tinted glass. **Turn off SO<sub>2</sub> in the furnace.** SO<sub>2</sub> may cause an appreciable loss in durability of the Solarcool® coating. Degradation is the result of the SO<sub>2</sub> reducing the atmosphere causing potential damage to the coating.

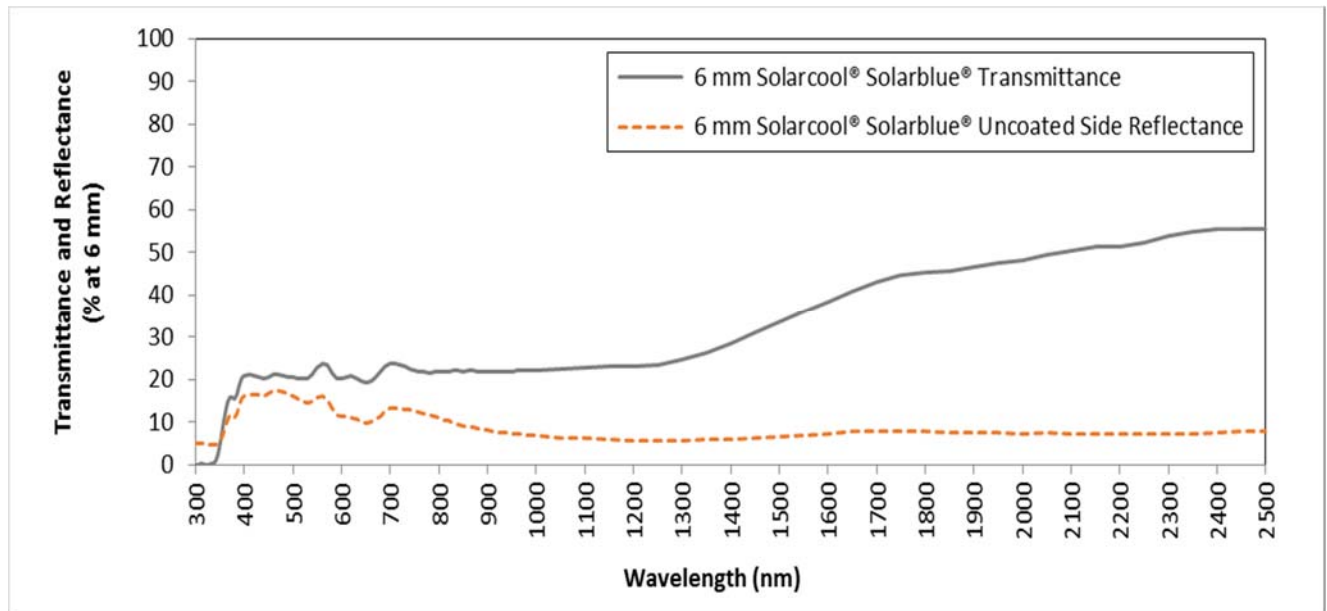
## SOLAR PERFORMANCE VALUES COATED SURFACE [1]

Glass Thickness		Transmittance				Reflectance	
inches	mm	Ultra-violet (%)	Visible (%)	Infrared (%)	Total Solar (%)	Visible (%)	Total Solar (%)
¼	6.0	9	21	27	24	36	30

[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.

6 mm Solarcool® Solarblue® Transmittance and Uncoated Side Reflectance (% at 6 mm/0.223")

Wavelength (nm)	%T	%R	Wavelength (nm)	%T	%R	Wavelength (nm)	%T	%R	Wavelength (nm)	%T	%R	Wavelength (nm)	%T	%R
300	0.0	4.9	430	20.5	16.2	660	19.4	9.9	890	21.8	8.3	1600	38.2	7.2
305	0.0	4.8	440	20.3	16.1	670	20.4	10.5	900	21.8	8.0	1650	40.9	7.8
310	0.0	4.8	450	20.6	16.7	680	21.7	11.4	910	21.8	7.8	1700	43.1	7.9
315	0.0	4.8	460	21.0	17.3	690	23.0	12.4	920	21.8	7.6	1750	44.5	7.9
320	0.0	4.8	470	21.1	17.3	700	23.7	13.1	930	21.8	7.4	1800	45.3	7.6
325	0.0	4.7	480	20.9	16.9	710	23.8	13.3	940	21.9	7.4	1850	45.6	7.5
330	0.0	4.7	490	20.6	16.5	720	23.4	13.2	950	21.9	7.2	1900	46.4	7.3
335	0.2	4.7	500	20.5	16.0	730	22.9	13.0	960	22.0	7.1	1950	47.3	7.3
340	0.9	4.7	510	20.3	15.4	740	22.5	12.7	970	22.0	7.0	2000	48.2	7.3
345	2.5	4.9	520	20.2	14.8	750	22.0	12.4	980	22.0	7.0	2050	49.3	7.3
350	5.3	5.6	530	20.3	14.5	760	21.8	12.1	990	22.1	6.9	2100	50.4	7.1
355	8.6	6.9	540	21.2	14.9	770	21.6	11.9	1000	22.1	6.8	2150	51.4	7.1
360	11.9	8.7	550	22.8	15.9	780	21.5	11.5	1050	22.5	6.4	2200	51.2	7.1
365	14.4	10.5	560	23.8	16.2	790	21.7	11.2	1100	22.8	6.1	2250	52.3	7.2
370	15.9	11.5	570	23.2	15.0	800	21.7	10.9	1150	22.9	5.8	2300	54.0	7.3
375	15.7	11.3	580	21.6	13.0	810	21.8	10.5	1200	23.1	5.6	2350	54.8	7.1
380	15.3	10.9	590	20.1	11.5	820	21.9	10.2	1250	23.4	5.5	2400	55.5	7.5
385	16.5	11.9	600	20.2	11.2	830	22.0	9.8	1300	24.7	5.6	2450	55.4	7.7
390	18.6	13.7	610	20.6	11.2	840	21.9	9.4	1350	26.3	5.7	2500	55.3	7.6
395	20.1	15.3	620	20.7	11.0	850	21.8	9.1	1400	28.4	5.9			
400	20.9	16.1	630	20.2	10.5	860	22.1	8.9	1450	30.9	6.2			
410	21.0	16.4	640	19.5	10.0	870	21.9	8.7	1500	33.5	6.5			
420	20.7	16.2	650	19.2	9.8	880	21.9	8.5	1550	35.9	6.8			



## CLEANING AND COATING CARE RECOMMENDATIONS

1. Solarcool® coated glass can be cleaned following normal commercial glass cleaning practices. It should be washed periodically using soft, grit-free cloths and mild soap or detergents; **acidic cleaning solutions, fluoride salts, hydrogen producing compounds, and abrasive cleaners should not be used.**
2. Immediately after washing, the entire surface should be rinsed with clean water, and a soft smooth squeegee used to remove excess rinse water. If it is necessary to use commercial solvents, such as xylene, toluene, mineral spirits, or naphtha, to remove grease or glazing compounds, the glass should be washed and rinsed afterward. Care should be taken to protect glazing sealants and other materials when using these commercial solvents.
3. If an installation positions the Solarcool® coated glass near or below weather exposed concrete or masonry surfaces, it should be washed more frequently to remove deposits that may reside on the glass. Some glazing sealants may exude, bleed, or leach onto the glass surface. If sealant-type contaminants are not removed in a timely manner, it could lead to a residue that is very difficult to remove or a permanent stain.
4. The Solarcool® coating is a durable metallic oxide coating that requires no different cleaning care than standard accepted practices for normal float glass. However, because the coated surface is more reflective than ordinary uncoated glass, fingerprints, grease stains, smears, dirt, scum and scratches/abrasions (on either surface) may be more noticeable. Cleaning schedules may need to be altered to accommodate this condition.
5. Solarcool® coated glass that is glazed with the coating exposed to the outdoors should be cleaned more frequently (a minimum of 3 to 4 times per year). Materials, such as rundown from metals and masonry, such as concrete, stucco, etc. should be cleaned from the glass as soon as they occur so that they are not permitted a long residence time on the coated glass surface. If such rundown is not quickly removed, permanent staining and/or glass damage may occur.

For more information related to cleaning instructions, please see Vitro Technical Documents, TD-107 *Residue on Glass* and TD-142 *Glass Cleaning Recommendations* available on the Vitro website at <http://www.vitroglazings.com>.

## ADDITIONAL INFORMATION/DOCUMENTS

The following documents can be referenced for additional information regarding Solarcool® Solarblue® glass;

Solarcool® Solarblue® Performance Data, Vitro Solarcool® Coated Glass Warranty, Vitro Pyrolytic Coated Glass SDS, C2C Material Health Certificate, Vitro Processed Glass EPD