

PRODUCT DESCRIPTION

Solarbronze® tinted glass by Vitro Architectural Glass is a soda-lime float glass product with a medium bronze color that deepens as thickness increases. In a 6mm thickness, Solarbronze® glass provides 53% visible light transmittance, with a solar heat gain coefficient of 0.60 for improved solar control. Solarbronze® glass mechanical and physical properties are similar to other soda-lime float glass products.

APPROXIMATE WEIGHTS

Per m ²		Per ft ²	
thickness	weight	thickness	weight
3.0 mm	8.2 kg	1/8	1.5 lbs
4.0 mm	9.9 kg	5/32	2.0 lbs
5.0 mm	11.9 kg	3/16	2.4 lbs
6.0 mm	14.2 kg	1/4	2.9 lbs
8.0 mm	19.8 kg	5/16	4.0 lbs
10.0 mm	23.8 kg	3/8	4.9 lbs
12.0 mm	31.8 kg	1/2	6.4 lbs

COLOR

	6.0mm
Transmitted Color: D65, 10° L*	77.7
a*	3.1
b*	5.2
Hue Angle (°)	59
Dominant wavelength: C, 2°	581 nm

CHEMICAL COMPOSITION

SiO ₂	73%
Na ₂ O	14%
CaO	9%
MgO and Trace elements	4%

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

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)	8.6*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	724°C	1335°F
Annealing Point	546°C	1015°F
Strain Point	505°C	941°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)



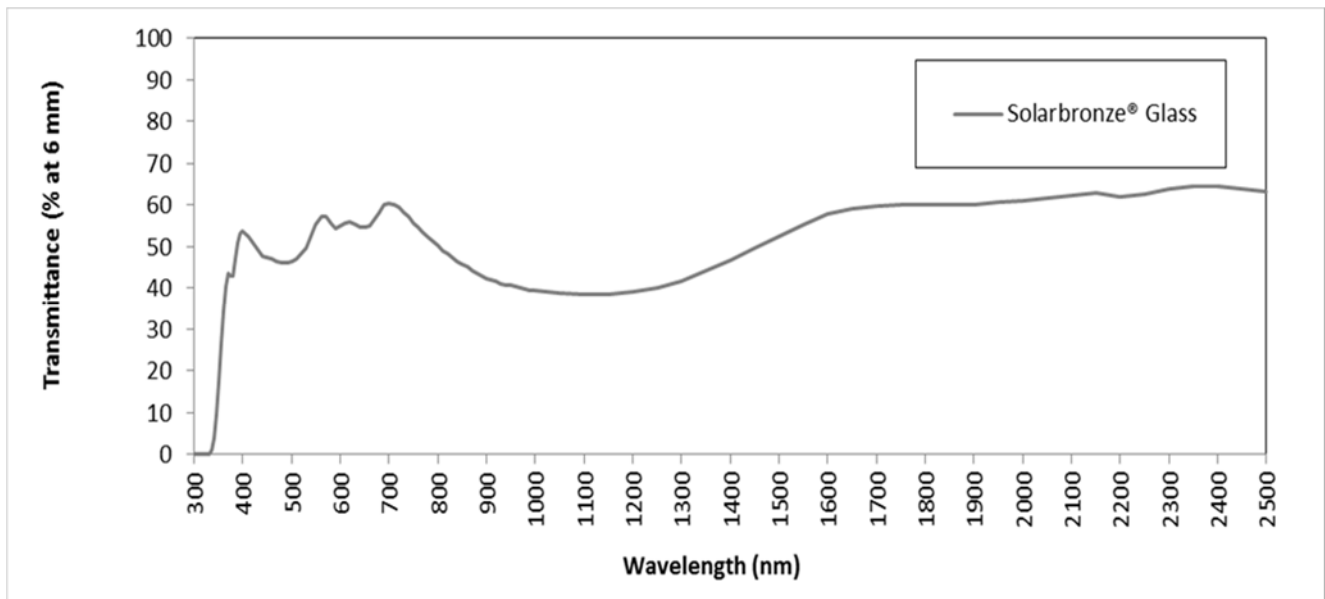
SOLAR PERFORMANCE VALUES ^[1]

Glass Thickness		Transmittance				Reflectance	
inches	mm	Ultra-violet (%)	Visible (%)	Infrared (%)	Total Solar (%)	Visible (%)	Total Solar (%)
1/8	3.0	39	67	62	64	7	6
5/32	4.0	35	63	57	60	7	6
3/16	5.0	30	59	52	55	6	6
1/4	6.0	26	53	46	50	6	6
5/16	8.0	18	43	36	39	6	5
3/8	10.0	14	37	29	34	5	5
1/2	12.0	9	27	21	24	5	5

^[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.

Transmittance (% at 6 mm/0.223")

Wavelength (nm)	Solarbronze® Glass %T	Wavelength (nm)	Solarbronze® Glass %T	Wavelength (nm)	Solarbronze® Glass %T	Wavelength (nm)	Solarbronze® Glass %T	Wavelength (nm)	Solarbronze® Glass %T
300	0.0	430	49.3	660	55.1	890	43.0	1600	57.8
305	0.0	440	47.8	670	56.6	900	42.5	1650	59.3
310	0.0	450	47.3	680	58.4	910	42.0	1700	60.0
315	0.0	460	47.1	690	60.0	920	41.6	1750	60.1
320	0.0	470	46.6	700	60.6	930	41.2	1800	60.2
325	0.0	480	46.1	710	60.3	940	40.9	1850	60.1
330	0.2	490	46.0	720	59.4	950	40.6	1900	60.2
335	1.1	500	46.5	730	58.4	960	40.4	1950	60.7
340	4.1	510	47.2	740	57.1	970	40.1	2000	61.2
345	9.8	520	48.2	750	55.8	980	39.9	2050	61.8
350	17.8	530	49.8	760	54.7	990	39.7	2100	62.5
355	26.5	540	52.4	770	53.4	1000	39.5	2150	62.9
360	34.5	550	55.5	780	52.3	1050	38.9	2200	62.0
365	40.4	560	57.4	790	51.1	1100	38.6	2250	62.8
370	43.7	570	57.3	800	50.3	1150	38.7	2300	63.9
375	42.9	580	55.7	810	49.2	1200	39.1	2350	64.6
380	43.1	590	54.4	820	48.3	1250	40.1	2400	64.6
385	47.1	600	55.1	830	47.4	1300	41.9	2450	63.9
390	51.0	610	55.8	840	46.6	1350	44.2	2500	63.3
395	53.2	620	56.1	850	45.8	1400	46.7		
400	53.9	630	55.5	860	45.1	1450	49.6		
410	52.6	640	54.8	870	44.2	1500	52.6		
420	50.9	650	54.6	880	43.6	1550	55.5		



ADDITIONAL INFORMATION/DOCUMENTS

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

Solarbronze® Performance Data, Vitro Float Glass Warranty, Vitro Float Glass SDS, C2C Material Health Certificate, Vitro Float Glass EPD