

Product Data Sheet

SUNGATE® 400 Low-E Glass

Sungate® 400 is a passive low-e glass from Vitro Architectural Glass (formerly PPG glass) designed specifically for heating-dominated climates. Manufactured with a magnetron sputtered vacuum deposition (MSVD) “soft coat,” *Sungate*® 400 glass aids commercial buildings in retaining solar and furnace heat to help reduce winter heating costs. The MSVD soft coat enables *Sungate*® 400 glass to deliver a winter U-value that is nine percent better than passive low-e glasses manufactured with a “hard” pyrolytic coating.

Aesthetic and Performance Options

In addition to offering excellent insulating performance, *Sungate*® 400 glass has an exceptionally clear aesthetic. When coated on a standard clear glass substrate, *Sungate*® 400 glass has a Visible Light Transmittance (VLT) of 76 percent. On *Starphire Ultra Clear*® glass, VLT climbs to more than 80 percent.

Sungate® 400 glass performs best as a passive low-e product when specified as a third-surface coating on *Starphire*® glass. In a one-inch insulating glass unit (IGU) with *Starphire*® glass, this configuration generates a winter U-value of 0.32 and a Solar Heat Gain Coefficient (SHGC) of 0.73, which is 15 percent better than the 0.63 SHGC attained with a similar *Sungate*® 400 unit with conventional clear glass in a third-surface configuration. *Sungate*® 400 glass also has been engineered to work with *Solarban*® 60 and 70XL glasses to optimize performance in triple-pane IGUs.



Cherry Street Plaza

Location: Olympia, WA | Architect: Glenn Wells Architect | Glass Fabricator: Hartung Glass | Glazing Contractor: DK Boos Glass Inc. *Sungate*® 400 glass is a highly transparent, low-e glass designed specifically for heating-dominated, northern climates.

For an even greater range of aesthetic and performance options, *Sungate*® 400 glass can be combined with nearly any of Vitro’s wide range of tinted glasses to generate Light to Solar Gain (LSG) ratios of up to 1.73. *Sungate*® 400 glass also can be paired with subtly reflective, color-enriched *Vistacool*® and traditional *Solarcool*® reflective coatings.

Supporting Sustainable Design

Vitro Architectural Glass provides abundant opportunities for architects and building owners to realize their sustainability objectives.

Energy Use & Operating Cost Reduction: High-performance glasses by Vitro are engineered to facilitate downsized mechanical equipment costs, leading to reduced long-term energy costs. Visit tools.vitroglazings.com for glass comparison and configuration tools for analyzing glass products.

Sustainability Documentation: Vitro Architectural Glass is the first U.S. float glass manufacturer to have its entire selection of products recognized by the *Cradle to Cradle Certified*™ program, and the first in North America to publish third-party verified EPDs for its Flat Glass and Processed Glass products.

For additional credit opportunities and supporting documentation, visit vitroglazings.com/LEED

LEED Credit Opportunities			
Possible Points	LEED Credit	<i>Sungate</i> ® 400 Feature	Path/Option Satisfied
18	Energy & Atmosphere (EA) Optimize Energy Performance	Excellent SHGC, U-value and Tvis performance for passive solar applications	Whole Building Energy Simulation (Option 1) or Prescriptive Compliance: ASHRAE Advanced Energy Design Guide (Option 2)
5	Innovation (IN) Innovation in Design	May exceed minimum performance mandated by local energy codes	Innovation (Option 1), Pilot (Option 2) and Exemplary Performance (Option 3)
3	Indoor Environmental Quality (EQ) Daylight	Exhibits exceptional visible light transmittance	Simulation: Spatial Daylight Autonomy and Annual Sunlight Exposure (Option 1), Simulation: Illuminance Calculations (Option 2) or Measurement (Option 3)

Sungate® 400 glass

Fabrication and Availability

Sungate® 400 passive low-e glass provides maximum processing flexibility and can be easily laminated, tempered or heat-strengthened to satisfy increased strength or safety glazing requirements. It is sold through more than 65 locations of the Vitro Certified™ Network. Vitro Certified™ Fabricators can meet tight construction deadlines and accelerate the delivery of replacement glass before, during and after construction. Sungate® 400 glass must be heat-treated.

Additional Resources

To obtain samples of any Vitro Glass product, call 1-855-VTRO-GLS (877-6457) or visit samples.vitroglazings.com. For videos, design insights and technical education, visit the Vitro Glass Education Center at glasses.vitroglazings.com. For glass comparison and configuration tools, visit tools.vitroglazings.com.

Insulating Glass Unit Performance Comparisons 1-inch (25mm) units with 1/2-inch (13mm) airspace and two 1/4-inch (6mm) lites							
Glass Type	Visible Light Transmittance (VLT)	Visible Light Reflectance		(BTU/hr ² ft ²⁰ F) NFRC U-Value		Solar Heat Gain Coefficient (SHGC)	Light to Solar Gain (LSG)
		Exterior %	Interior %	Winter Nighttime	Winter Argon		
Sungate® 400 Passive Low-E Glass							
Sungate® 400 (2) Clear + Clear	76	14	14	0.32	0.28	0.60	1.27
Sungate® 400 (2) Starphire® + Starphire®	80	14	14	0.32	0.28	0.68	1.18
Clear + Sungate® 400 (3) Clear	76	14	14	0.32	0.28	0.63	1.21
Starphire® + Sungate® 400 (3) Starphire®	80	14	14	0.32	0.28	0.73	1.10
Solexia® + Sungate® 400 (3) Clear	66	11	13	0.32	0.28	0.44	1.50
Atlantica® + Sungate® 400 (3) Clear	58	10	12	0.32	0.28	0.35	1.66
Azuria® + Sungate® 400 (3) Clear	59	10	12	0.32	0.28	0.34	1.74
Solarblue® + Sungate® 400 (3) Clear	48	8	12	0.32	0.28	0.42	1.14
Pacifica® + Sungate® 400 (3) Clear	37	7	11	0.32	0.28	0.30	1.23
Solarbronze® + Sungate® 400 (3) Clear	46	8	12	0.32	0.28	0.44	1.05
Optigray® + Sungate® 400 (3) Clear	54	9	12	0.32	0.28	0.46	1.17
Solargray® + Sungate® 400 (3) Clear	38	7	12	0.32	0.28	0.39	0.97
Graylite® II + Sungate® 400 (3) Clear	8	4	11	0.32	0.28	0.15	0.53

All performance data calculated using LBNL Window 7.3 software and represents center of glass performance data. For detailed information on the methodologies used to calculate the aesthetic and performance values in this table, please visit vitroglazings.com or request our Architectural Glass Catalog.

For more information about Sungate® passive low-e glass and other Cradle to Cradle Certified™ architectural glasses by Vitro Glass, visit vitroglazings.com, or call **1-855-VTRO-GLS (887-6457)**.

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