

# Sungate® 500 Low-E Glass



*Suvarnabhumi Airport-Bangkok Airport*  
**Location:** Bangkok, Thailand  
**Products:** Sungate® 500 Glass  
**Architect:** Murphy Jahn  
**Glass Fabricator:** PMK Central Glass Co., Ltd.

## Sungate® 500 Low-E Glass Reliability

With more than 200 million square feet shipped in the last 10 years, **Sungate** 500 Low-E Glass is one of the industry's most trusted and reliable products. And, with the increased emphasis on energy efficiency and green building, the value of this proven technology continues to grow with age.

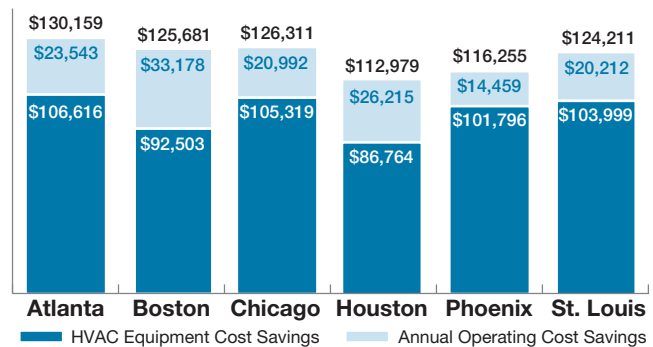
## Aesthetic Options

**Sungate** 500 coated glass yields the color neutrality of clear uncoated glass, together with dramatically improved performance. When compared with regular clear glass in a one-inch insulating glass unit, **Sungate** 500 glass produces impressive U-Value improvements of 27% and 36% (winter and summer respectively) while transmitting as much as 94% of visible light.

## Sungate® 500 Low-E Glass Versatility

The key advantage of **Sungate** 500 glass is its versatility. In situations that would benefit from passive solar energy, the ability of **Sungate** 500 glass to transmit the warming rays of the sun (as measured by its higher solar heat gain coefficient) can lower heating requirements. It can also be paired in a one-inch insulating unit with any of PPG's tinted glasses to improve solar performance or provide additional aesthetic options (see table on back).

**Eight-Story Office Building, Window Wall:** First year savings  
 Total Glass Area: 56,640 ft<sup>2</sup>



### Lower HVAC Equipment Costs. Lifetime Energy Savings.

PPG commissioned an energy modeling study to compare the relative energy-savings and environmental performance of eight commonly specified architectural glazings. Using the U.S. Department of Energy's 2.2 Building Analysis Tool, an independent energy and environmental research firm calculated hour-by-hour energy consumption in two prototype buildings with multiple glazing types in 12 North American cities.

A total of 288 energy modeling simulations were produced, generating precise calculations for building load, cooling equipment size, natural gas and electric consumption and HVAC cooling expenses. This chart summarizes the first year savings of **Sungate** 500 low-e glass with light-green tinted **Solexia**™ glass compared with a similar dual-pane tinted glass without a low-e coating. The complete study is available from PPG and includes complete data on energy consumption, building load and other parameters.

### Sungate® 500 supports green building in these LEED categories:

LEED / Green Design Category	Feature	Benefit
Optimizing Energy Performance	Excellent SHGC, U-value, and Tvis performance	Enhance energy performance of building design
Daylight & Views	Tvis comments	Connectivity to natural lighting and the outdoors
Innovation in Design	MBDC Cradle-to-Cradle Certification	Selection of environmentally focused product evaluation

# Sungate® 500 Low-E Glass

## Fabrication

**Sungate** 500 Low-E Glass provides maximum processing flexibility and can be easily laminated, tempered or heat-strengthened to satisfy increased strength or safety glazing requirements. As a pyrolytic or “hard coat,”

**Sungate** 500 glass is durable and readily available from nearly 100 glass fabrication locations throughout the U.S. and Canada.

## Additional Resources

**Sungate** 500 Low-E Glass is just one of the **EcoLogical Building Solutions** from PPG. For more information, or to obtain samples of **Sungate** 500 glass, call 1-888-PPG-IDEA (774-4332), or visit [www.ppgideasces.com](http://www.ppgideasces.com). All PPG architectural glass is Cradle to Cradle Certified.™



*Orthopedic Center at Lancaster General Hospital*  
**Location:** Lancaster, PA  
**Products:** Sungate® 500 Glass  
**Architect:** IKM Incorporated  
**Glazing Contractor:** National Glass & Metal Company, Inc.  
**Glass Fabricator:** JE Berkowitz

**PPG IdeaScapes.™ Integrated products, people and services to inspire your design and color vision.**

## Sungate® 500 Glass Performance

Glass Type	Transmittance			Reflectance		U-Value (Imperial)		European U-Value	Shading Coefficient	Solar Heat Gain Coefficient	Light to Solar Gain (LSG)
	Ultra-violet %	Visible %	Total Solar Energy %	Visible Light %	Total Solar Energy %	Winter Night-time	Summer Day-time				
<b>Insulating Vision Unit Performance Comparisons</b>											
<b>1-inch (25mm) units with 1/2-inch (13mm) airspace and two 1/4-inch (6mm) lites; interior lite clear</b>											
<b>SUNGATE® 500 Low-E</b>											
SUNGATE 500 (2) + Clear	42	74	52	17	14	0.35	0.35	1.96	0.71	0.62	1.19
SOLEXIA + SUNGATE 500 (3) Clear	21	64	33	14	9	0.35	0.35	1.96	0.51	0.44	1.45
ATLANTICA + SUNGATE 500 (3) Clear	11	56	25	12	7	0.35	0.35	1.96	0.41	0.35	1.60
CARIBIA + SUNGATE 500 (3) Clear	17	56	24	12	7	0.35	0.35	1.96	0.40	0.34	1.65
AZURIA + SUNGATE 500 (3) Clear	29	57	24	12	7	0.35	0.35	1.96	0.40	0.34	1.66
PACIFICA + SUNGATE 500 (3) Clear	10	35	19	7	6	0.35	0.35	1.96	0.35	0.30	1.16
SOLARBLUE + SUNGATE 500 (3) Clear	21	46	32	10	9	0.35	0.35	1.96	0.51	0.44	1.06
SOLARBRONZE + SUNGATE 500 (3) Clear	18	44	33	9	9	0.35	0.35	1.96	0.53	0.46	0.96
SOLARGRAY + SUNGATE 500 (3) Clear	17	37	28	8	8	0.35	0.35	1.96	0.47	0.40	0.92
OPTIGRAY 23 + SUNGATE 500 (3) Clear	6	19	13	6	6	0.35	0.35	1.96	0.28	0.24	0.80
GRAYLITE + SUNGATE 500 (3) Clear	5	11	16	5	6	0.35	0.35	1.96	0.33	0.28	0.41
<b>VISTACOO™ (Subtly Reflective) and SOLARCOOL® (Reflective) with SUNGATE® 500 Low-E (3)</b>											
VISTACOO (2) AZURIA + SUNGATE 500 (3) Clear	24	44	19	22	11	0.35	0.35	1.96	0.34	0.29	1.53
VISTACOO (2) CARIBIA + SUNGATE 500 (3) Clear	14	44	19	22	11	0.35	0.35	1.96	0.34	0.29	1.51
VISTACOO (2) PACIFICA + SUNGATE 500 (3) Clear	9	27	16	11	8	0.35	0.35	1.96	0.31	0.27	1.03
VISTACOO (2) SOLARGRAY + SUNGATE 500 (3) Clear	14	29	23	12	10	0.35	0.35	1.96	0.41	0.35	0.83
SOLARCOOL (2) PACIFICA + SUNGATE 500 (3) Clear	3	14	9	10	7	0.35	0.35	1.96	0.23	0.20	0.70
SOLARCOOL (2) SOLEXIA + SUNGATE 500 (3) Clear	6	25	15	24	13	0.35	0.35	1.96	0.31	0.26	0.98
SOLARCOOL (2) CARIBIA + SUNGATE 500 (3) Clear	5	22	10	19	10	0.35	0.35	1.96	0.24	0.20	1.11
SOLARCOOL (2) AZURIA + SUNGATE 500 (3) Clear	8	22	10	20	10	0.35	0.35	1.96	0.23	0.20	1.11
SOLARCOOL (2) SOLARBLUE + SUNGATE 500 (3) Clear	6	18	15	15	12	0.35	0.35	1.96	0.32	0.27	0.67
SOLARCOOL (2) SOLARBRONZE + SUNGATE 500 (3) Clear	5	18	17	14	13	0.35	0.35	1.96	0.34	0.29	0.61
SOLARCOOL (2) SOLARGRAY + SUNGATE 500 (3) Clear	5	15	14	11	10	0.35	0.35	1.96	0.30	0.26	0.56
SOLARCOOL (2) GRAYLITE + SUNGATE 500 (3) Clear	1	5	9	5	7	0.35	0.35	1.96	0.25	0.21	0.21

All performance data calculated using LBNL Window 5.2 software, except European U-Value, which is calculated using WinDat version 3.0.1 software. For detailed information on the methodologies used to calculate the aesthetic and performance values in this table, please visit [www.ppgideasces.com](http://www.ppgideasces.com) or request our Architectural Glass Catalog.

© 2009 PPG Industries, Inc. All rights reserved. *Atlantica, Azuria, Azurlite, Caribia, Graylite, IdeaScapes, Oceans of Color, Optigray, Pacifica, Solarban, Solarblue, Solarbronze, Solarcool, Solargray, Solexia, Starphire, Sungate, Vistacool*, PPG, the PPG logo and the PPG Certified Fabricator Network logo are trademarks and EcoLogical Building Solutions is a service mark owned by PPG Industries, Inc. Cradle to Cradle is a certification mark for MBDC.



Printed in U.S.A.  
7059 8/09 10M