

Sungate® 400 is a passive low-e glass from PPG designed specifically for use in heating-dominated climates. Manufactured with an 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 9 percent better than passive low-e glasses manufactured with a “hard” pyrolitic coating, such as **Sungate 500** glass by PPG, and similar products from other manufacturers.

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 Visible Light Transmittance (VLT) of 76 percent. On ultra-clear **Starphire®** 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, this configuration generates a winter U-value of 0.32 and a Solar Heat Gain Coefficient (SHGC) of 0.72, which is 13 percent better than the 0.63 SHGC attained with conventional clear glass in a third-surface configuration. **Sungate 400** glass also has been engineered to work with **Solarban® 70XL** and **Solarban 60** glasses to optimize performance in triple-pane insulating glass units.

For an even greater range of aesthetic and performance options, **Sungate 400** glass can be combined with nautically inspired tints from **Oceans of Color®** collection or nature-inspired tints from **Earth & Sky Performance Tints** 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.

Sustainable Design and Architectural Glass

Sustainable design, green building, safeguarding the environment and the long-term management of energy costs



Sungate 400 glass is a highly transparent, low-e glass designed specifically for heating-dominated, northern climates. It is manufactured with an MSVD “soft coat” that helps buildings retain solar and furnace heat to reduce winter heat costs.

are vital considerations for today’s building designers. **Sungate 400** glass is one more tool PPG offers architects and building owners to reach their design objectives.

In addition to making products that support sustainable design, PPG is a pioneer of developing innovative technologies that reduce energy consumption during the glass-making process. PPG promotes environmentally responsible manufacturing by recovering and reusing virtually all of its glass manufacturing byproducts and by shipping its materials on reusable steel racks.

The first and only glass manufacturer to have its entire collection of architectural glasses Cradle to Cradle Certified™, PPG also promotes regional sourcing through its worldwide network of certified glass fabricators and laminators.

Sungate 400 glass promotes sustainable design and can provide LEED credit opportunities according to the following criteria:

Sungate® 400 supports green building in these LEED categories:

| LEED / Green Design Category | Feature | Benefit |
|-------------------------------|---|---|
| Optimizing Energy Performance | SHGC designed for passive solar applications, U-value, and Tvis performance | Enhance energy performance of building |
| Daylight & Views | Sungate 400 has exceptional visible light transmittance | Connectivity to natural lighting and the outdoors |
| Innovation in Design | MBDC Cradle-to-Cradle Certification | Selection of environmentally focused products |

SUNGATE® 400

Low-E Glass

Fabrication

Sungate 400 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 PPG Certified Network (PPG/CFP, CCWF, and CLP) as well as PPG Qualified Supplier fabricators throughout the U.S. and Canada.

Additional Resources

Sungate 400 glass is just one of the **EcoLogical Building Solutions** from PPG. For more information, or to obtain samples of **Sungate** 400 glass, call 1-888-PPG-IDEA (774-4332), or visit www.ppgideascales.com.



Sungate® 400 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 | | | | |
| Insulating Vision Unit Performance Comparisons 1-inch (25mm) units with 1/2-inch (13mm) airspace and two 1/4-inch (6mm) lites; interior lite clear | | | | | | | | | | | |
| SUNGATE® 400 Low-E | | | | | | | | | | | |
| SUNGATE 400 (2) Clear + Clear | 28 | 76 | 51 | 14 | 16 | 0.32 | 0.31 | 1.75 | 0.69 | 0.60 | 1.28 |
| SUNGATE 400 (2) STARPHIRE + STARPHIRE | 39 | 80 | 65 | 14 | 20 | 0.32 | 0.31 | 1.75 | 0.78 | 0.68 | 1.18 |
| Clear + SUNGATE 400 (3) Clear | 28 | 76 | 51 | 14 | 17 | 0.32 | 0.31 | 1.75 | 0.73 | 0.63 | 1.21 |
| STARPHIRE + SUNGATE 400 (3) STARPHIRE | 39 | 80 | 65 | 14 | 22 | 0.32 | 0.31 | 1.75 | 0.83 | 0.72 | 1.11 |
| SOLEXIA + SUNGATE 400 (3) Clear | 15 | 66 | 33 | 12 | 9 | 0.32 | 0.31 | 1.75 | 0.50 | 0.44 | 1.52 |
| ATLANTICA + SUNGATE 400 (3) Clear | 8 | 58 | 25 | 10 | 7 | 0.32 | 0.31 | 1.75 | 0.40 | 0.35 | 1.67 |
| CARIBIA + SUNGATE 400 (3) Clear | 12 | 58 | 25 | 10 | 7 | 0.32 | 0.31 | 1.75 | 0.39 | 0.34 | 1.72 |
| AZURIA + SUNGATE 400 (3) Clear | 20 | 59 | 25 | 10 | 7 | 0.32 | 0.31 | 1.75 | 0.39 | 0.34 | 1.73 |
| PACIFICA + SUNGATE 400 (3) Clear | 8 | 37 | 20 | 7 | 6 | 0.32 | 0.31 | 1.75 | 0.34 | 0.29 | 1.25 |
| SOLARBLUE + SUNGATE 400 (3) Clear | 15 | 48 | 31 | 8 | 9 | 0.32 | 0.31 | 1.75 | 0.49 | 0.42 | 1.14 |
| SOLARBRONZE + SUNGATE 400 (3) Clear | 12 | 46 | 32 | 8 | 10 | 0.32 | 0.31 | 1.75 | 0.50 | 0.44 | 1.05 |
| SOLARGRAY + SUNGATE 400 (3) Clear | 12 | 38 | 27 | 7 | 9 | 0.32 | 0.31 | 1.75 | 0.44 | 0.38 | 0.99 |
| OPTIGRAY + SUNGATE 400 (3) Clear | 4 | 20 | 13 | 5 | 6 | 0.32 | 0.31 | 1.75 | 0.26 | 0.23 | 0.88 |
| GRAYLITE + SUNGATE 400 (3) Clear | 3 | 12 | 15 | 5 | 7 | 0.32 | 0.31 | 1.75 | 0.30 | 0.26 | 0.46 |
| OPTIBLUE + SUNGATE 400 (3) Clear | 21 | 55 | 41 | 9 | 13 | 0.32 | 0.31 | 1.75 | 0.62 | 0.53 | 1.03 |
| VISTACOO™ (Subtly Reflective) and SOLARCOOL® (Reflective) with SUNGATE® 400 Low-E (3) | | | | | | | | | | | |
| VISTACOO (2) AZURIA + SUNGATE 400 (3) Clear | 17 | 46 | 20 | 21 | 11 | 0.32 | 0.31 | 1.75 | 0.33 | 0.28 | 1.61 |
| VISTACOO (2) CARIBIA + SUNGATE 400 (3) Clear | 10 | 45 | 20 | 20 | 10 | 0.32 | 0.31 | 1.75 | 0.33 | 0.28 | 1.59 |
| VISTACOO (2) PACIFICA + SUNGATE 400 (3) Clear | 6 | 28 | 16 | 11 | 8 | 0.32 | 0.31 | 1.75 | 0.29 | 0.25 | 1.12 |
| VISTACOO (2) SOLARGRAY + SUNGATE 400 (3) Clear | 10 | 30 | 23 | 11 | 11 | 0.32 | 0.31 | 1.75 | 0.38 | 0.33 | 0.89 |
| SOLARCOOL (2) SOLEXIA + SUNGATE 400 (3) Clear | 5 | 26 | 15 | 24 | 14 | 0.32 | 0.31 | 1.75 | 0.28 | 0.24 | 1.07 |
| SOLARCOOL (2) CARIBIA + SUNGATE 400 (3) Clear | 4 | 23 | 10 | 19 | 10 | 0.32 | 0.31 | 1.75 | 0.22 | 0.19 | 1.18 |
| SOLARCOOL (2) AZURIA + SUNGATE 400 (3) Clear | 6 | 23 | 10 | 19 | 10 | 0.32 | 0.31 | 1.75 | 0.22 | 0.19 | 1.21 |
| SOLARCOOL (2) PACIFICA + SUNGATE 400 (3) Clear | 2 | 14 | 8 | 10 | 8 | 0.32 | 0.31 | 1.75 | 0.21 | 0.18 | 0.78 |
| SOLARCOOL (2) SOLARBLUE + SUNGATE 400 (3) Clear | 5 | 19 | 15 | 15 | 13 | 0.32 | 0.31 | 1.75 | 0.29 | 0.25 | 0.75 |
| SOLARCOOL (2) SOLARBRONZE + SUNGATE 400 (3) Clear | 4 | 18 | 16 | 14 | 14 | 0.32 | 0.31 | 1.75 | 0.31 | 0.26 | 0.68 |
| SOLARCOOL (2) SOLARGRAY + SUNGATE 400 (3) Clear | 4 | 15 | 13 | 11 | 11 | 0.32 | 0.31 | 1.75 | 0.27 | 0.24 | 0.63 |
| SOLARCOOL (2) GRAYLITE + SUNGATE 400 (3) Clear | <1 | 3 | 3 | 5 | 5 | 0.32 | 0.31 | 1.75 | 0.14 | 0.12 | 0.25 |

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.ppgideascales.com or request our Architectural Glass Catalog.

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