

## BACKGROUND

Every year, hundreds of millions of birds are lost due to collisions with glass on human built structures. Bird window strikes are a major factor in the decline of the global bird population. Nearly a third of all Avian species in the U.S. have been documented in collision events from Falcons to Hummingbirds. Glass in buildings can confuse birds due to reflection, transparency, and passage effect. To help reduce bird collisions the American Bird Conservancy has developed threat factors for different types of Bird Friendly products through their tunnel testing method. These threat factors have been used in many regional and municipal building codes.

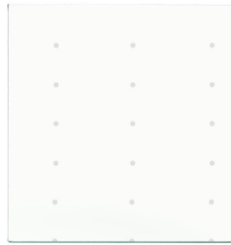
## PRODUCT DESCRIPTION

*Bird Smart™* glass combines the visual deterrence of a Laser Etch pattern on Surface #1 with Vitro Solarban® coatings on Surface #2. Each of the *Bird Smart™* offerings have been evaluated through the American Bird Conservancy and have been assigned individual threat factors. This allows fabricators to meet the bird-friendly requirements while achieving the energy performance standards your project requires. It must be heat treated and placed in an IG or Laminate.

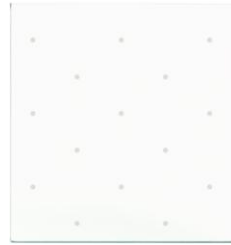
## BIRDSMART™ PRODUCT DETAILS AND AVAILABILITY



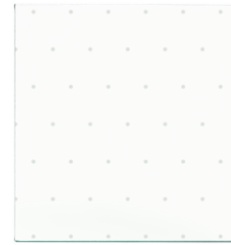
**Bird Smart™**  
**Speck 6 Inline 2x2**  
**Threat Factor: 20**



**Bird Smart™**  
**Speck 6 Inline 2x4**  
**Threat Factor: 25**



**Bird Smart™**  
**Speck 6 Shift 2x4**  
**Threat Factor: 25**



**Bird Smart™**  
**Speck 6 Shift 2x2**  
**Threat Factor: 20**

To provide multiple variations of designs while protecting birds' safety Vitro offers a combination of *BirdSmart™* Laser Etching on surface #1 along with our Low E coating on surface #2.

- Four Patterns: *BirdSmart™ Speck 6 Inline 2x2*, *BirdSmart™ Speck 6 Inline 2x4*, *BirdSmart™ Speck 6 Shift 2x4*, and *BirdSmart™ Speck 6 Shift 2x2*
- All Solarban® low-e coatings: *Solarban® 60*, *Solarban® 65*, *Solarban® 70*, *Solarban® 72*, *Solarban® 90*, *Solarban® R67*, *Solarban® R77*, *Solarban® R100*, *Solarban Champagne™*
- All Substrates: *Clear*, *Starphire®*, *Acuity®*, *Solexia®*, *Azuria®*, *Atlantica®*, *Pacifica®*, *Solarblue®*, *Solarbronze®*, *Optigray®*, *Solargray®*
- Glass Thickness: *6mm*, *8mm*, *12mm*
- Glass Sizes: *96"x130"*, *100"x144"*, *130"x204"*, *130"x240"*

### SOLAR PERFORMANCE VALUES [1]

Insulated Glass Unit Performance Comparisons 1-inch units (25mm) units with ½ inch (13mm) airspace and two ¼-inch (6mm) lites. BirdSmart® Bird Safe glass first-surface patterns do not impact the solar performance of the glass.

Products		Transmittance	Visible Light Reflectance		NFRC U-Value (BTU/hr·ft <sup>2</sup> ·°F)		Solar Heat Gain Coefficient	Color Rendering Index (CRI)
Coating	Substrate	Visible (%)	Exterior (%)	Interior (%)	Winter Nighttime	Winter w/Argon		
Solarban® 65	Clear + Clear	70	14	15	0.29	0.24	0.35	96
Solarban® 65	Acuity® + Acuity®	72	15	15	0.29	0.24	0.36	98
Solarban® 65	Starphire® + Starphire®	73	15	15	0.29	0.24	0.36	99
Solarban® 70	Clear + Clear	64	13	14	0.28	0.24	0.27	91
Solarban® 72	Acuity® + Acuity®	67	13	14	0.28	0.24	0.28	94
Solarban® 72	Starphire® + Starphire®	68	13	14	0.28	0.24	0.28	95
Solarban® 90	Clear + Clear	51	12	19	0.29	0.24	0.23	92
Solarban® 90	Acuity® + Acuity®	52	13	19	0.29	0.24	0.23	93
Solarban® 90	Starphire® + Starphire®	54	13	20	0.29	0.24	0.23	95
Solarban® R67	Clear + Clear	54	19	16	0.29	0.24	0.29	92
Solarban® R67	Acuity® + Acuity®	56	19	16	0.29	0.24	0.30	94
Solarban® R67	Starphire® + Starphire®	57	20	16	0.29	0.24	0.30	95
Solarban® R77	Clear + Clear	47	25	16	0.29	0.24	0.25	94
Solarban® R77	Acuity® + Acuity®	49	26	16	0.29	0.24	0.25	95
Solarban® R77	Starphire® + Starphire®	50	26	16	0.29	0.24	0.25	98
Solarban® R100	Clear + Clear	42	32	14	0.29	0.25	0.23	93
Solarban® R100	Acuity® + Acuity®	43	33	13	0.29	0.25	0.23	92
Solarban® R100	Starphire® + Starphire®	44	33	14	0.29	0.25	0.23	93
Solarban Champagne™	Clear + Clear	45	26	12	0.29	0.24	0.25	90
Solarban Champagne™	Acuity® + Acuity®	46	27	11	0.29	0.24	0.26	92
Solarban Champagne™	Starphire® + Starphire®	47	27	12	0.29	0.24	0.26	93

<sup>[1]</sup> All performance data calculated using LBNL windows 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

Thermal Composition and Mechanical Properties remain the same as the actual substrate of the glass being used. (Clear, Acuity®, Starphire®, or available tints) Please consult the specific Product Data Sheet for the actual Thermal and Mechanical properties.

### HEAT TREATMENT GUIDELINES

While heat treating the BirdSmart™ glass products the Laser Etched surface should be face down against the furnace rolls. This allows the Solarban® coating to face away from the furnace rolls. Even if the BirdSmart™ product is uncoated the laser etched surface should be faced down in contact with the furnace rolls. If the glass has a Solarban® coating, turn off the SO<sub>2</sub> in the furnace. SO<sub>2</sub> may cause an appreciable loss in durability of the Solarban® coating. Degradation is the result of the SO<sub>2</sub> reducing the atmosphere causing potential damage to the coating. The glass heat cycle time will remain the same as compared the same as Solarban® coated glass without the laser etch. Uncoated BirdSmart™ should be processed based on the cycle time of the substrate of the glass.

### CLEANING AND DURABILITY

The Laser Etched Surface of BirdSmart™ requires no different cleaning care than standard accepted practices for normal float glass. More complete cleaning instructions are available in Vitro's Technical Document TD-142 Glass Cleaning Recommendations.

## 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](http://VitroGlazings.com) or by calling 855-887-6457 (VTRO GLS)



## Additional Resources

*American Bird Conservancy (ABC) – Bird Friendly Building Design*

*National Glass Association (NGA) – Best Practices for Bird Friendly Glazing Design (DG01-21)*

*National Glass Association (NGA) – Bird Friendly Glass Design Strategies (FB35-12)*

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