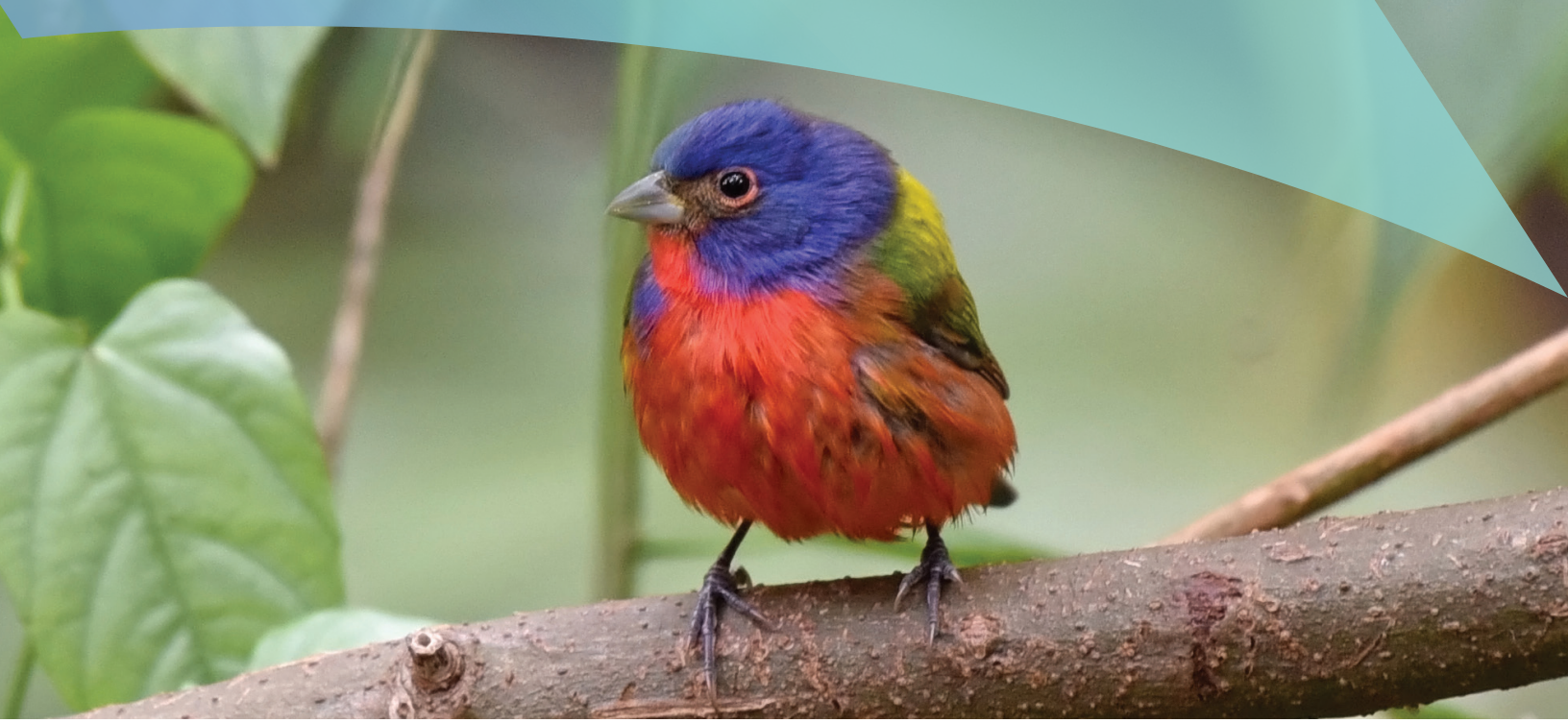


GUARDIAN® GLASS

See what's possible™

Better when bird-friendly

Building with glass blurs the lines between inside and out. It helps elevate aesthetics and the experiences of people. Glass is iconic and dynamic. Yet while humans can use environmental cues to identify glass as a barrier, there is growing realization that birds cannot. Unfortunately, researchers estimate that up to a billion birds die each year in the U.S. due to glass and building collisions.[1] Regardless of travel patterns, glass is often an invisible threat for birds, made more hazardous by location, lighting, landscaping and more.

Birds are a significant part of the natural and built environments in which we live and rely upon. Glass design can account for both human needs and bird collision avoidance – and there's growing demand for it.

In the pursuit of glass that delivers on aesthetics, safety and performance, there's a better way. It's bird-friendly.

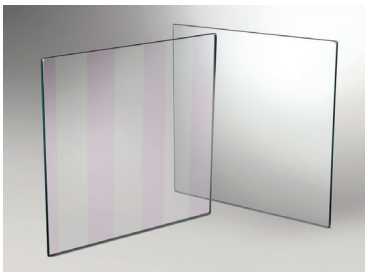
Guardian bird-friendly glass provides a range of options for safe, high-performing glass – giving architects and designers choice and control.

1 Scott R. Loss, Sara S. Loss, Peter P. Marra and Tom Will, *Bird–building Collisions in the United States: Estimates of Annual Mortality and Species Vulnerability*, The Condor: Ornithological Applications in January 2014.

Performance that takes flight

Tested by bird conservationists for proven effectiveness, Guardian Bird1st™ UV and Etch are applied to surface 1 of the glass, and frit can be applied to surface 2 for best results. When paired with your favorite SunGuard® low-E coatings, they can also help meet the energy performance requirements and support LEED Pilot Credit 55 qualification. Guardian bird-friendly products are available on UltraClear® low-iron glass and standard clear glass.

Product details and availability



Guardian Bird1st™ UV

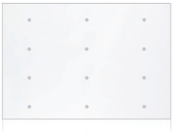
This UV-coating is applied to the #1 surface of an outboard laminated IGU and helps limit bird collisions while leaving views clear and open.[2]

- *Pattern:* Vertical stripe orientation
- *Four SunGuard low-E coatings:* NU 78/65, SN 68, SNX 51/23 and SNX 62/27
- *Threat Factor (TF)*
  - **20:** UV with NU 78/65
  - **18:** UV with SN 68
  - **23:** UV with SNX 51/23
  - **25:** UV with SNX 62/27
  - **17:** UV monolithic – no low-E coating
- *Maximum Size:* 102" x 144"
- *Thickness:* 6mm
- *Safety:* Heat-treated, lamination required

Bird1st Etch 11

Bird1st Etch 13

Bird1st Etch 17

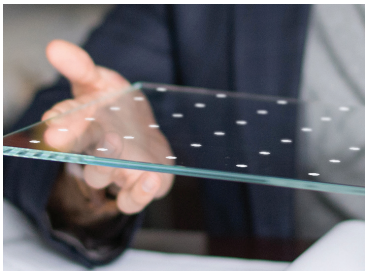


Bird1st Etch 21

Guardian Bird1st™ Etch

This acid-etched pattern is applied to the #1 surface and allows you to explore various aesthetics, while maintaining views and mitigating bird collisions.

- *Four patterns:* Vertical lines with variable spacing meeting the 2" x 4" Rule; 3mm continuous horizontal lines, spaced 2" apart; 2" x 2" 5mm dots; 2" x 4" 6mm dots
- *Four SunGuard low-E coatings:* SN 68, SNX 62/27 and SNX 51/23 and SN 54[3]
- *Threat Factor (TF)*
  - **23:** Bird1st Etch 11
  - **30:** Bird1st Etch 13
  - **25:** Bird1st Etch 17
  - **25:** Bird1st Etch 21
- *Maximum Sizes:*
  96" x 130" (Bird1st Etch 11 and Etch 13);
  102" x 204" (Bird1st Etch 17 and Etch 21)
- *Thickness:* 5mm, 6mm, 8mm and 10mm
- *Safety:* Heat-treated and laminated



Bird-friendly fritted glass

The fritted option is the most visible to the human eye and offers the greatest data around efficacy in protecting birds.

- *Four patterns:* 20% white dots, 40% white dots, 2" x 2" gray and 2" x 2" white dots, 2" x 4" gray and 2" x 4" white dots
- *Three SunGuard low-E coatings:* SNX-L 62/34, SN-L 68 and SNX 62/27
- *Threat Factor (TF)*
  - **21:** 20% white dots
  - **22:** 40% white dots
  - **20:** 2" x 2" gray and white dots
  - **25:** 2" x 4" gray and white dots
- *Maximum Size:* 130" x 204"
- *Thickness:* 6mm
- *Safety:* Heat-treated

Learn more about our bird-friendly approach at **GuardianGlass.com**.

2 The UV stripes are more pronounced when the glass is wet or when condensation forms. Surface residue can also make the stripes more visible.

3 Low-E coatings are applied to the #2 surface

www.guardianglass.com

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