

4BIRD® Etch

EFFECTIVE BIRD PROTECTION IN GLASS
ARCHITECTURE WITH ETCHED PATTERN

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BUILDING GLASS



SAINT-GOBAIN

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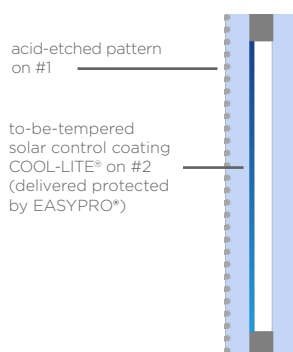
According to the American Bird Conservancy (ABC) „each year up to 1 billion birds die after hitting glass surfaces in the United States.“¹ The reasons why birds hit windows and glass facades are diverse - not to say that a sparrow has a different perception of glass than a pigeon. In general, there are two, seemingly contradicting reasons why birds may collide with glass but that are unique to the material in itself: reflectivity and transparency.

All glasses, of course, reflect the (natural) surroundings of their buildings - from the sky with its clouds down to bushes and trees in nearby streets or parks - which obviously presents to birds the continuity of their local habitat with „safe routes, shelter, and possible food ahead“² Likewise, the same perception may occur to birds if for them the glass seems to be transparent - especially corner glazings, skywalks or glass walls are known threats to birds.

With the **4BIRD® product family**, **SAINT-GOBAIN BUILDING GLASS** offers a range of solar control glass with a special focus on an effective bird protection, offering both sustainable solutions for the preservation of the biodiversity and a wiser energy consumption of building, while keeping a homogeneous and neutral external aesthetic.

¹ abcbirds.org/glass-collisions/why-birds-hit-glass

² sfplanning.org/standards-bird-safe-buildings



4BIRD®Etch acid-etched dots pattern on #1
COOL-LITE® SKN 183 II on #2



4BIRD®Etch acid-etched lines pattern on #1
COOL-LITE® XTREME 70/33 II on #2

4BIRD®Etch in double glazing unit - CLIMAPLUS®

| coating | color in reflection | light transmission LT ¹ | solar factor g-value ¹ | shading coefficient SC | selectivity |
|---|---------------------|------------------------------------|-----------------------------------|------------------------|-------------|
| with to be tempered solar control coating (delivered protected by EASYPRO®) | | [%] | [%] | g/0.87 | LT / g |

Standard composition CLIMAPLUS® 6 | 16 | 4 mm, 90% Argon with acid etched pattern on #1 and solar control coating
Values given according to the standards ¹EN 410, ²EN 673, and ³EN 12758

| | | | | | |
|--|---------------|----|----|----|------|
| 4BIRD®Etch COOL-LITE® XTREME 70/33 II DIAMANT® | extra neutral | 71 | 33 | 38 | 2.15 |
| 4BIRD®Etch COOL-LITE® XTREME 70/33 II | neutral | 70 | 33 | 38 | 2.12 |
| 4BIRD®Etch COOL-LITE® XTREME 61/29 II DIAMANT® | extra neutral | 62 | 29 | 33 | 2.14 |
| 4BIRD®Etch COOL-LITE® XTREME 61/29 II | neutral | 61 | 29 | 33 | 2.10 |
| 4BIRD®Etch COOL-LITE® SKN 083 II | extra neutral | 76 | 41 | 47 | 1.85 |
| 4BIRD®Etch COOL-LITE® SKN 183 II | neutral | 75 | 40 | 46 | 1.88 |
| 4BIRD®Etch COOL-LITE® SKN 076 II | extra neutral | 71 | 38 | 44 | 1.87 |
| 4BIRD®Etch COOL-LITE® SKN 176 II | neutral | 70 | 37 | 43 | 1.89 |

4BIRD® Etch

is a series of **specifically acid-etched pattern on #1** by our partner **SEVASA S.A.** together with selected **to-be-tempered COOL-LITE® coatings** protected **with EASYPRO® on #2** by **SAINT-GOBAIN**. The products comply with all currently known local regulations and national guidelines. The designs meet the recognized **2x2" and 2x4" rules** and tighter mandatory or voluntary regulations like **LEED Pilot Credit #55: Bird Collision Deterrence**.

AESTHETICS

The low, external reflection as well as the colour-neutral external appearance of the COOL-LITE® products associated with subtle etched pattern create an excellent combination of function and aesthetics, thus offering a smooth and homogeneous façade design and taking care of both: bird protection and comfort of the user.

COMFORT

Offering all the benefits of COOL-LITE® solar control glass, with extreme transparency and neutrality to get as much as natural daylight as possible all year round with all its benefits for both, your power consumption and your health. And with highly efficient sun protection at all time and excellent insulation to reduce the energy consumption and associated cost.

ALL IN ONE SOLUTION

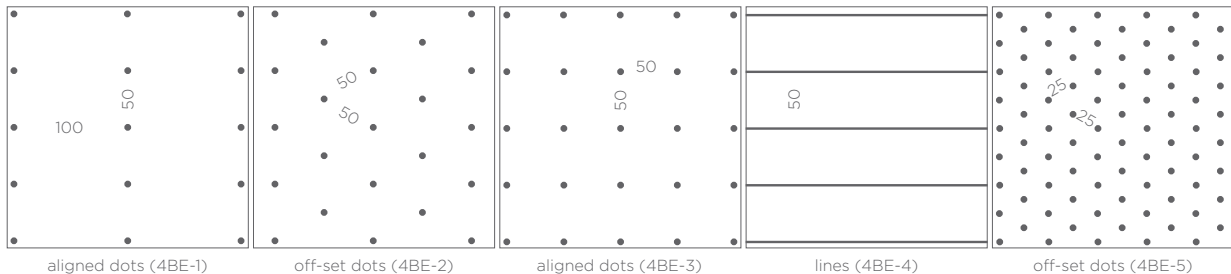
Thanks to EASYPRO® unique protective layer, both etched pattern and COOL-LITE® solar control coatings are on one single glass, thus avoiding complex composition and saving cost and weight. The processing of 4BIRD® Etch with to-be-tempered COOL-LITE® protected with EASYPRO® is exactly the same as for standard COOL-LITE® II.

DESIGNS

- off-set dots Ø6 mm, 50x50 mm (2x2"), 25x25 mm
- aligned dots Ø6 mm 50x50 mm (2x2"), 50x100 mm (2x4")
- lines 6 mm thick, 50 mm

AVAILABILITIES

thickness 6-12 mm (1/4"-7/16")
 standard size 2,250 x 3,210 mm (88" x 126 1/3")
 special size up to 2,400 x 3,210 mm (94 1/2" x 126 1/3")
 substrate PLANICLEAR®, DIAMANT®
 coating eg. COOL-LITE® XTREME 70/33 II, XTREME 61/29 II, SKN 183 II, SKN 176 II



Customized designs available on request

These designs are also available on uncoated glass (PLANICLEAR® or DIAMANT®) as 4BIRD® Kare



| reflection outside LRe [%] | reflection inside LRi [%] | Ug-value ² [W/m²K] | weight [kg/m²] | assessed sound reduction index Rw,P (C, Ctr) ³ [dB] | processing | |
|-------------------------------------|------------------------------------|----------------------------------|-------------------|---|------------|-----------|
| | | | | | EASYPRO® | tempering |

on #2

| | | | | | | |
|----|----|-----|------|-----------|------|----------------|
| 11 | 13 | 1.0 | 25.0 | 35(-1;-5) | with | to be tempered |
| 11 | 13 | 1.0 | 25.0 | 35(-1;-5) | with | to be tempered |
| 11 | 15 | 1.0 | 25.0 | 35(-1;-5) | with | to be tempered |
| 11 | 15 | 1.0 | 25.0 | 35(-1;-5) | with | to be tempered |
| 12 | 13 | 1.0 | 25.0 | 35(-1;-5) | with | to be tempered |
| 12 | 13 | 1.0 | 25.0 | 35(-1;-5) | with | to be tempered |
| 13 | 15 | 1.0 | 25.0 | 35(-1;-5) | with | to be tempered |
| 13 | 15 | 1.0 | 25.0 | 35(-1;-5) | with | to be tempered |



American Bird Conservancy (ABC) has evaluated all 4BIRD®Etch configurations and found that they **satisfied ABC's criterion for bird-friendly glass**. Corresponding **Material Threat Factors (TF)** have been given.

Acid etch pattern on #1 and coating on #2 on clear or low-iron glass

Overall outdoor reflection of the assembly <15%

| 4BE-1 | 4BE-2 | 4BE-3 | 4BE-4 | 4BE-5 |
|--|---|---|---|--|
| Aligned dots (2"x4") | Off-set dots (2"x2") | Aligned dots (2"x2") | Horizontal lines | Off-set dots (<2") |
| | | | | |
| Dots Ø6 mm Pattern spacing: 50x100 mm (2x4") | Dots Ø6 mm Pattern spacing: 50x50 mm (2x2") | Dots Ø6 mm Pattern spacing: 50x50 mm (2x2") | Line thick 6 mm Pattern spacing: 50 mm (2") | Dots Ø6 mm Pattern spacing: 25x25 mm (<2") |
| Material Threat Factor (TF) = 25 | Material Threat Factor (TF) = 20 | Material Threat Factor (TF) = 20 | Material Threat Factor (TF) = 20 | Material Threat Factor (TF) = 25 |

MAKING THE WORLD A BETTER HOME



Together with and for our customers, we design, manufacture and distribute materials and solutions that have a positive impact on everyone's life and provide well-being, quality of life and performance, while caring for the planet.

This commitment is driving our Glass Forever program, with the help of all our stakeholders, employees, customers, partners, and suppliers.

From small seeds to big rivers, our vision is to grow our business and to differentiate, while improving our environmental footprint and increasing our contribution to people's wellbeing.

Saint-Gobain Building Glass issued 18 verified Environmental Product Declarations (EPD), covering more than 165 different glazing configurations.

They describe in detail the glazing's environmental footprint, from raw material extraction to exiting the plant.

Today, this is one of the key requirements for green building certificates like LEED, BREEAM, DGNB and HQE.



SAINT-GOBAIN BUILDING GLASS

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