
Bird Safe Building Requirements

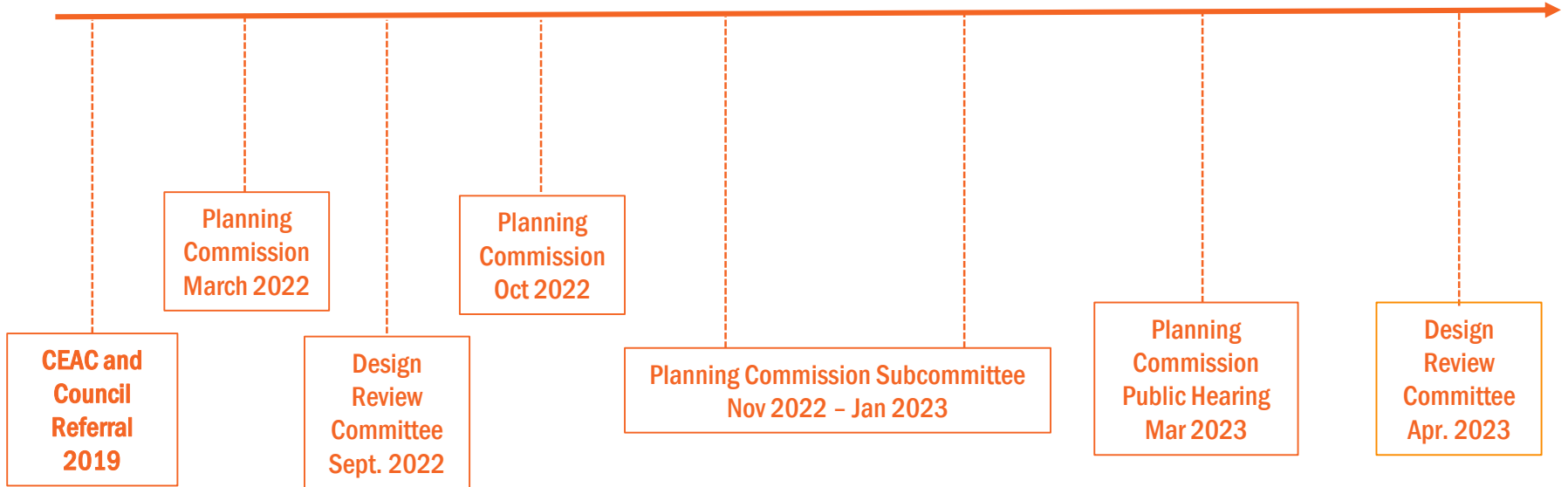
Justin Horner, Associate Planner
City Council • June 6, 2023

Overview

- **Background**
 - Referral
 - Bird Safety
 - **Proposed Ordinance**
 - Purpose
 - Applicability
 - Bird Safe Compliance
 - **Alternatives Considered, Availability & Costs**
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Background



Windows and Bird Collisions

100M - 1B

birds die every year in collisions with built structures in the United States¹

#2

leading cause of human-induced bird deaths are bird collisions with windows²

**100,000 -
700,000**

birds die every year in collisions with built structures in the Berkeley³



1. Cooper Ornithological Society study 2. Audubon Society estimate 3. Golden Gate Audubon estimate



Berkeley

- Located within the Pacific Flyway
- Home to ~ 407 species of resident & migratory birds
- Proximity to the San Francisco Bay, a site of “Hemispheric Importance”

	Planning Commission Recommendation to City Council (6/6/2023)	Planning Staff Proposal (3/1/2023 PC)	GG Audubon Society (2/24/2023)	Evanston, IL (2022)	Mountain View, CA (2022)	Cupertino, CA (2021)	New York, NY (2020)	Emeryville, CA (2020)	CEAC Model Ordinance (2019)	Alameda, CA (2018)	Richmond, CA (2016)	Oakland, CA (2013)	San Francisco, CA (2011)
Regulatory Document	Zoning Code	Zoning Code	Zoning Code	Zoning Code	Building Code	Zoning Code	Building Code Admin Code	Zoning Code	N/A	Zoning Code	Zoning Code	Standard Condition of Approval	Planning Code
Location	Citywide	Citywide	Citywide	Citywide	Citywide	Citywide	Citywide	Citywide	Citywide	Citywide	Citywide	Adjacent to water or park ≥ 1 acre	Within 300 ft of Urban Bird Refuge ¹
Building Height Regulated	0-100 ft	0-100 ft	0-100 ft	<ul style="list-style-type: none"> 0-60 ft 16 ft above green roof, garden 	Any height ²	Any height	<ul style="list-style-type: none"> 0-75 ft 12 ft above green roof 	Any height	2 stories or greater	35 ft or greater ³	<ul style="list-style-type: none"> 0-60 ft 60 ft above green roof 	0-60 ft	0-60 ft
Window Size	100% of windows	100% of continuous transparent material 12 sf or larger	100% of windows	100% of windows	100% of windows	90% of windows (0-60 ft) or 95% of windows (above 60 ft)	100% of windows	90% of windows 12 sf or larger	90% of windows 8 sf or larger	90% of windows 12 sf or larger	90% of windows 24 sf or larger	90% of windows	90% of windows
High-Risk Features	All features (any height)	≥ 24 sf (any height)	All features (any height)	All features (any height)	All features (any height)	N/A	All features (any height)	All features (any height)	≥ 24 sf (any height)	N/A	≥ 24 sf (any height)	N/A	≥ 24 sf (any height)
Exemptions	None ⁴	> 50% affordable	>75% affordable	<ul style="list-style-type: none"> Detached one/two-family du Townhomes/ Residential bldgs less than 3 stories 	<ul style="list-style-type: none"> Residential-only use Buildings <10,000 sf 	<ul style="list-style-type: none"> Historic bldgs Ground floor retail ≥ 15 ft height Residential in R1 not in Bird-Sensitive Areas 	10 sf of every 100 sf of glass	None	Historic bldgs 1-story bldg Ground floor commercial storefront Building with façades <50% glass	Historic bldgs Ground floor commercial storefront Buildings with façades <50% glass	Historic bldgs Buildings ≤10,000 sf Residential <45 ft height with façades <50% glass	None	Residential <45 ft height with façades <50% glass
COMPLIANCE PATHS													
Threat Factor Rating	≥ 30	≥ 30	≥ 30	<ul style="list-style-type: none"> ≥ 15 (0-60 ft) ≥ 30 (above 60 ft and high-risk features) 	Planning discretion	Planning discretion	≥ 25	N/A	N/A	N/A	N/A	N/A	N/A
Patterned Glazing	Yes	Yes	Yes	No	Planning discretion	Planning discretion	No	Yes	Yes	Yes	Yes	Yes	Yes
Exterior Devices	Yes	Yes	Yes	Yes	Planning discretion	Planning discretion	No	Yes	Yes	Yes	Yes	Yes	Yes
Alternatives	None	Qualified Biologist	None	None	Planning discretion	Qualified Biologist	None	Qualified Biologist	Alternative Compliance Plan	Alternative Compliance Plan	None	Bird Collision Reduction Plan	Zoning Admin. may waive or alter

Existing Bird Safe Ordinance



Summary of Ordinance

**New BMC Sec 23.304.150
Bird Safe Building**

- A. Purpose
- B. Applicability
- c. Bird Safe Requirements



A. Purpose

(Adapted from CEAC Draft)

Purpose. The purpose of this section is to reduce bird mortality from windows and other transparent buildings or building features known to increase the risk of bird collisions.

B. Basic Requirements (Applicability)

Only applies to projects that
require a **building permit**
(e.g. not repairs)

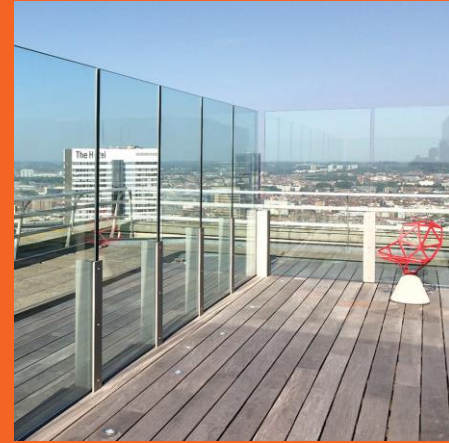
1. Transparent or Reflective Surfaces (100 feet)

- Windows, mirrors, surfaces
- No minimum size threshold



2. High-Risk Features (any grade)

- Railings
- Awnings
- Wind/sound barriers
- Balconies
- Glass walls
- Greenhouses



	Phase 1 Fall 2023	Phase 2 January 1, 2025	Phase 3 January 1, 2028
Non-Residential Projects	<u>New</u>	<u>Existing</u>	
Residential and Mixed Use	<u>New</u> large projects (10,000 sf+)	<u>New</u> small projects (10,000 sf or smaller) <u>New</u> affordable housing projects	<u>Replacement</u> windows on residential buildings
High-Risk Features	<u>New</u> High Risk Features		

Phase-In Periods (date of building permit)

Phase-In Period Caveats



1. Vesting for SB 330 projects
2. High-Risk Facades *not* phased-in



C. Bird Safe Requirements

- 1. American Bird Conservancy (ABC) Threat Factor Rating (30 or less)**
- 2. Patterned Glazing Treatment**
- 3. External Glazing Treatment**

Masonry



Solyx SX-BSFD Frost Dot Bird Safety Film



Aviprotek Pattern 213/Horizontal



7

25

1



15

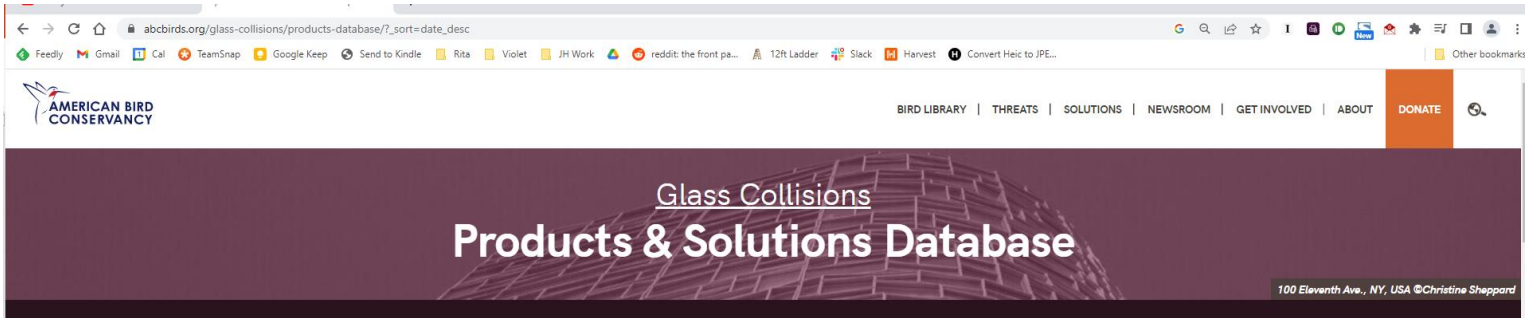
ACRYLITE Soundstop XT with Bird Guard



30

Aviprotek Pattern 215

1. ABC Threat Factor of 30 or Less



Kalwall®
Kalwall
Threat Factor: 2
non-reflective white surface
Product Line: Kalwall
Website
Color: white/off-white

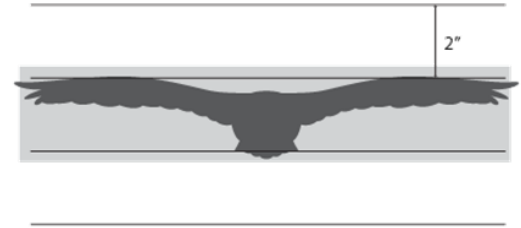
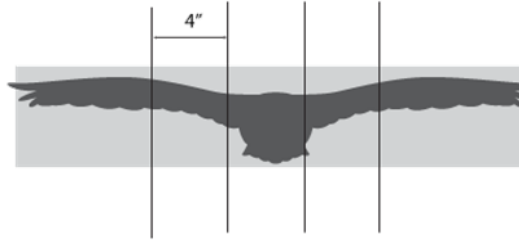
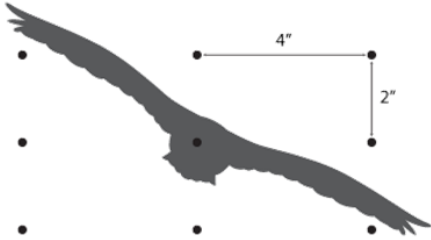
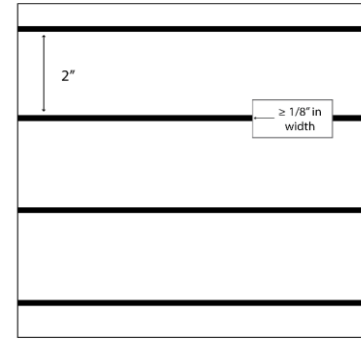
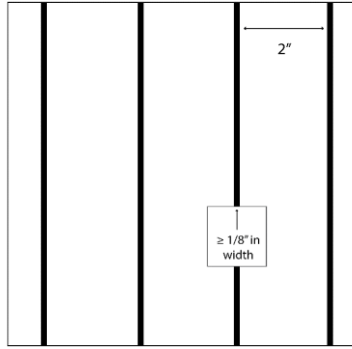
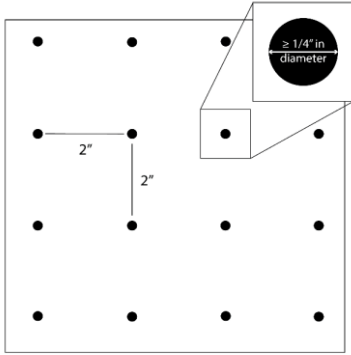
Product Name

Website/Contact Info

Guardian Bird1st™ 2x2" White Frit with ClimaGuard 1.0+ (S1)
Guardian Industries
Threat Factor: 20
6mm white dots, 2x2" offset or aligned, Double or Triple IGU. White Frit Pattern on S1 or S2 laminated to SunGuard SN 51 on S4, clear or low-iron glass.
ABC Approved: Yes **Marker Type:** Dot Pattern **Product Line:** Frit
Website
Color: white **Evaluation Type:** BirdVis and Prescriptive

Threat Factor Rating & Description

1. ABC Threat Factor of 30 or Less



2. Patterned Glazing Treatment

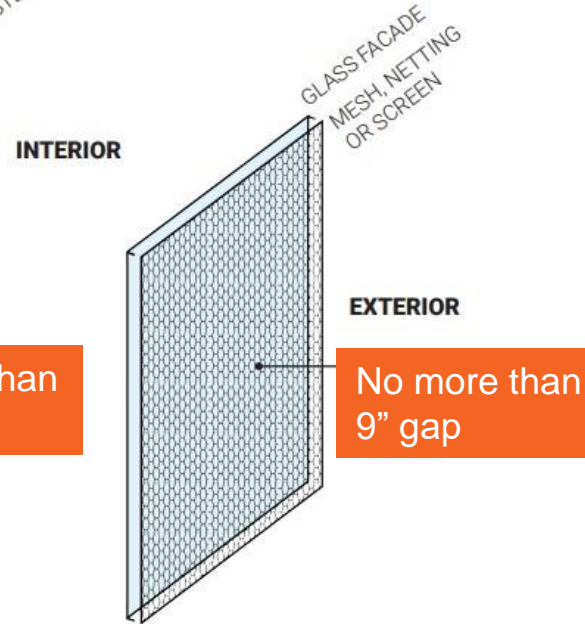
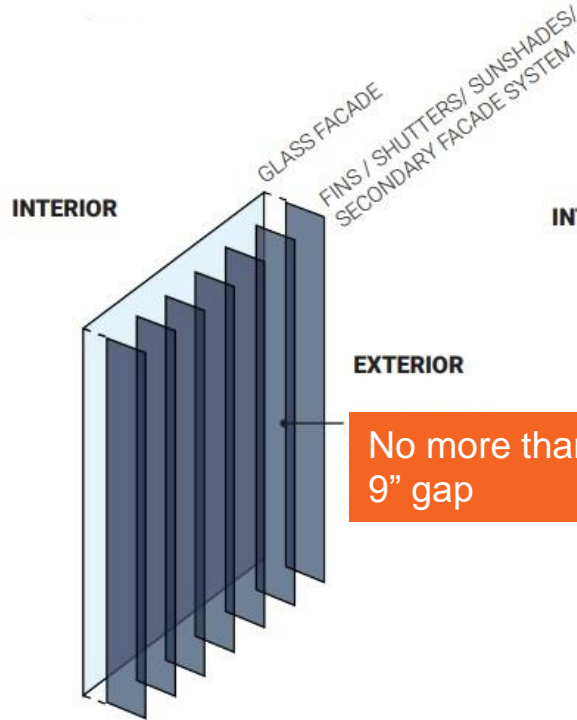
Planning Commission Recommendation

- a. Visible Light Reflectance from the Exterior $\leq 15\%$;
- b. Frit, ceramic ink, or other marker types must be opaque (or have a Visible Contrast Level $> .0$ from BirdVis app (<http://3.140.67.204:3838/> Luro, 2021))
- c. As viewed from Surface 1, all low-e coatings must be behind the pattern;
- d. Clear or low-iron glass;
- e. A pattern that is made up of one of the following elements or a combination:
 - 1. **Continuous lines at least 1/8" wide, nowhere more than 2" apart, measures edge to edge (see Figure 23.304.XXX, right);**
 - 2. **Circular, square, or irregular solid shapes that are nowhere more than 2" from another shape, measured horizontally or vertically, (edge to edge) or 2.83" diagonally (see Figure 23.304.XXX, left). Each shape must have a minimum area of ≥ 0.20 square inches, which corresponds approximately with circles of diameter 1/4"; and**
- f. Patterns on side 1 or side 2 only.

Proposed Ordinance

2. *Patterned Glazing Treatment.* Panes with patterns that are etched, fritted, stenciled, silk-screened, or otherwise permanently incorporated into the transparent material. If the pattern utilizes dots or other isolated solid shapes, each dot or shape must be at least a 1/4 inch in diameter and be no more than 2 inches apart in any direction (see Figure 23.304-2, left). If the pattern utilizes lines, they must be at least 1/8 inch in width and spaced no more than 2 inches apart (see Figure 23.304-2, left).

2. Patterned Glazing Treatment: Change to Planning Commission Recommendation



3. External Screens, Shutters, or Shading Devices

Alternatives Considered

- Window size threshold of 12 sq. ft.
- Exemption for smaller residential projects with less than 50% transparent or reflective material
- Exemption for affordable housing projects
- Qualified Biologist compliance pathway



- Berkeley-based building material retailers do not currently carry bird-safe products
- Bird-safe window costs can vary
- Energy-efficiency features may complicate bird-safe options
- Window films/tapes offer less expensive options, with caveats
- Cost may vary widely based on project type and size

Window Type	Cost Range/Sq. Ft.	Difference vs Standard/Sq. Ft.
Standard	\$12 - \$15	
Fritted	\$15 - \$20	\$3 - \$4
Etched	\$25 - \$30	\$13 - \$15
Ultra Violet (UV)	\$35 - \$40	\$23 - \$25
Window Films/Tapes	\$6	\$6

Cost and Availability: Bird Safe Windows

Questions?

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