

Bird Collision Deterrence: Summary of Material Threat Factors
The American Bird Conservancy
October, 2011

Façade Material Type	Threat Factor
<i>Opaque Material</i>	0
<i>Plexiglass</i>	
Clear plexiglass with 5/64" thick black filament in horizontal arrangement spaced 1-3/16" apart (Evonik Paraglas or similar)	9
<i>Translucent Plastics- all colors except clear</i>	
Fiberglass panel, single pane or insulated (Kalwall or similar)	2
Corrugated fiberglass panel, single pane or insulated (Resolite or similar)	2
<i>Glass</i>	
Clear Glass, single pane or insulated	100
Glass with pattern on interior (#2) surface, single pane or IGU. 1/8" minimum line thickness or dot diameter. 2" maximum space between horizontal elements and 4" maximum space between vertical elements. <u>Examples:</u> Medium grey ceramic frit - 1/8" vertical lines spaced 1/2" apart, 20% coverage (Viracon V-948 or similar) Dark grey ceramic frit - 1/8" horizontal lines spaced 1/2" apart, 20% coverage (Viracon V-901 or similar) White ceramic frit - 1/8" dia. dots w/20% coverage (Viracon 5065 or similar) White ceramic frit - 1/8" dia. dots w/40% coverage (Viracon 5006 or similar)	10 6 41 24
Glass with continuous frit on interior (#2) surface, single pane or IGU	25
Glass continuously etched (translucent level 4) on interior (#2) surface, single pane or IGU (Carvart or similar)	25
Clear wire glass with maximum 2" wire spacing, single pane or IGU (wire on outer pane).	20
Glass IGU with 1/2" thick white polycarbonate inner layer, 2" maximum diameter honeycomb (Panelite or similar)	25
Glass with pattern on exterior (#1) surface, single pane or IGU. 1/8" minimum line thickness or dot diameter. 2" maximum space between horizontal elements and 4" maximum space between vertical elements.	

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<p><u>Examples: (all Eckelt 4 Bird or similar)</u></p> <p>Orange ceramic frit- 1/4" vertical lines on 3½" centers</p> <p>Orange & black ceramic frit- ½" alternating color vertical lines on 3½" centers</p> <p>Black ceramic frit- 5/8" vertical "dot-screened" lines on 4" centers</p> <p>Orange & black ceramic frit- 5/8" alternating color vertical "dot-screened" lines on 4" centers</p> <p>Orange & black ceramic frit- 1" alternating color vertical "dot-screened" lines on 4 1/4" centers</p>	<p>10</p> <p>15</p> <p>10</p> <p>10</p> <p>10</p>
<p>Glass continuously etched (translucent level 4) on exterior (#1) surface, single pane or IGU (Carvart or similar)</p>	<p>5</p>
<p><i>Specialty Glass Products</i></p>	
<p>Coated glass with 1/16" UV reflective lines arranged in an irregular "webbed" pattern with 2" maximum spacing on interior (#2) surface, IGU (Ornilux Mikado or similar)</p>	<p>34</p>
<p>Translucent channel glass with cast "orange peel" or linear textured surface- 9" maximum face width (Pilkington Profilit or similar)</p>	<p>10</p>
<p>Glass block, 8" x 8" x 4" deep with "wavy" translucent appearance and polished surface (Pittsburgh Corning Decora or similar)</p>	<p>20</p>
<p>Glass block, 8" x 8" x 4" deep with grooved textured surface (Pittsburgh Corning Argus or similar)</p>	<p>10</p>
<p><i>Adhesive Films for Glass Retrofit</i></p>	
<p>Matte perforated vinyl signage film applied to outer (#1) surface (Scotchgal or similar)</p>	<p>2</p>
<p>Patterned film on interior (#2) surface. 1/8" minimum line thickness or dot diameter. 2" maximum space between horizontal elements and 4" maximum space between vertical elements.</p> <p>Patterned film on exterior (#1) surface. 1/8" minimum line thickness or dot diameter. 2" maximum space between horizontal elements and 4" maximum space between vertical elements.</p>	<p>see glass</p> <p>see glass</p>
<p>Adhesive decals applied to outer (#1) surface, spaced as indicated for patterned film above</p>	<p>10</p>
<p><i>Protective Screen External to Glass (fixed in place)</i></p>	
<p>Horizontal or vertical slats with 1/8" minimum face thickness and 2" maximum space between horizontal elements and 4" maximum space between vertical elements.</p>	<p>5</p>

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Horizontal or vertical slats with 1/8" minimum face thickness. Slat depth and spacing ratio shall obscure 85% of glass when analyzed from all possible viewing angles	15
Expanded metal or perforated screens having elements with maximum spacing of 2" horizontal or 4" vertical	10
Welded wire mesh with minimum 1/8" dia. wire and 2" maximum space between horizontal elements and 4" maximum space between vertical elements.	10
Fixed copper or fiberglass insect screens installed 2" minimum outboard of glass	5
Poly or nylon netting with maximum 1" opening installed 6" minimum outboard of glass	5
<i>Operable Shutters External to Glass</i>	
Perforated hinged shutter with maximum opening 2" high x 4" wide.	15
Solid opaque hinged shutter	10
Roll-up solar screen- translucent polyester woven fabric	15