**Powdermill 2010**

Early tests done without background = Rossler config 1; others tests with background = Rossler config 3

**Company**/material name Threat Score Reflectance of Surface 1 IGU?

**Certoplast tape on glass**

**10V**

**1” white vertical stripes spaced 4” edge to edge**

No background, low sample size

**Threat score 4**

**10H 1” white horizontal stripes spaced 4” edge to edge**

No background

Threat score 21

**Evonik**

PLEXIGLAS SOUNDSTOP® GS CC 9 10 n0

(black h plexi)

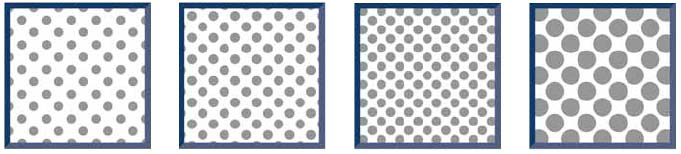
2mm embedded polyamide threads, spaced 28mm

(low sample size)

**Viracon Glass** Dot/Hole series

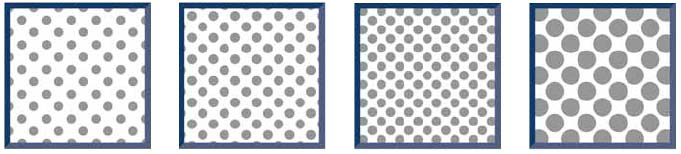
***5065****: 20% Coverage* 22 11% yes

1/8” dots; no background

** **

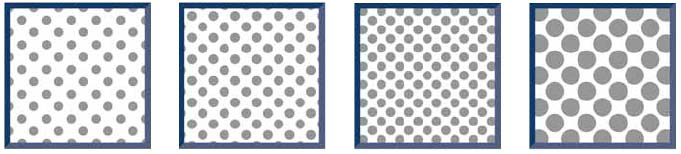
***5065****: 20% Coverage* 41 11% yes

1/8” dots; with background

** **

***5006:*** *40% Coverage* 24 11% yes

*1/8” dots no background*

** **

Line Series

***2256:*** *20% Coverage*

1/8” lines

**** 6 11% yes

Custom: 20% coverage

1/8” lines

**** 10 11% yes

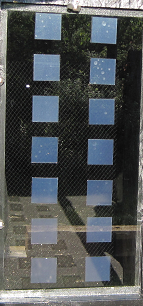
**Company**/material name Threat Score Reflectance of Surface 1 IGU?

**CYRO Industries plexiglas**

80% UV reflecting Plexiglas 52 8% in non-UV wavelengths no

No visible pattern

**Window Alert**

**2x7**

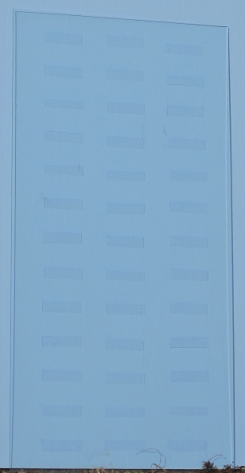
**3.5” decals spaced 3.6” x 2”**

Threat score no background 18

Threat score with background 24

**3x7 3.5” decals spaced 2.5” x 2”**

**Threat score no background 3**

**3x13**

**3.5”x0.9” decals spaced 2.5”x2”**

**Threat score no background 8**

**2x13 3.5”x0.9” decals spaced 3.6”x2”**

**Threat score no background 26**

**Company**/material name Threat Score Reflectance of Surface 1 IGU?

**Luremaking**

UV Blast paint (reflects 14% UV) no background

2” stripes 2” apart 39 variable no

As above, on UV 26 variable no

absorbing film

2” stripes alternating

with 2” absorbing stripes 14 variable no

**Solutia window film**

**No background**

**** UV Pattern prototype 17 variable no

**2” reflecting stripes x 2” absorbing stripes**

Photo taken with UV camera (not our pattern)

**Arnold Glass**

Ornilux Mikado N33 Advance

Mikado (no background) 42 16 yes

Mikado (with background) 34 16 yes

These Mikado trials done using Arnold IGU control, visually different from plain glass, so these data not comparable (but huge sample sizes) and not used in LEED table

**Company**/material name Threat Score Reflectance of Surface 1 IGU?

**SurfaceCare/Solyx?**



2 mm grey stripes spaced 28 mm

30 variable no

Small sample size; Field data would predict better score

**2011**

Tunnel turntable starting to list and becoming harder to turn…..

**Company**/material name Score Reflectance of Surface 1 Insulated Glass?

Chart tape on glass, all with no background

.25” wide white vertical stripes spaced 4” (10V) Threat score 9



.25” wide white vertical stripes spaced 3” Threat score 17 (??)

.25” white horizontal stripes spaced 4”Threat score 11

.25” white stripes spaced 4” 72.5 degrees Threat score 5

.25” white stripes spaced 4” 45 degrees Threat score 8

1/8” black horizontal stripes spaced 1”Threat score 7

1/8” black vertical stripes spaced 2” Threat score 6



**Arnold Glass**

**Grid**

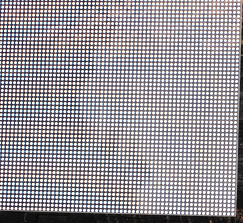
**Threat score 45**

**(probably random)**

****

**Not tested**

**Lots of dots**

**Threat score**  68

**(attracting birds)**

**2012**

**Guardian Glass**

Photovoltaic Grey Crystal 23 6% yes

Not commercially available

Tested with background



Walker Glass tested with background

Reversed dots

threat score 39

****Fine mesh

Threat score 36.5

211/Continuous stripe

3 3” spacing

Threat score 28

(2013 score 34)

Velour

threat score 35

**Arnold Glass**

**Unit 2 (commercially available – solar control glass)**

Outside: 6mm Float Scandic (THIS SIDE IS OUTSIDE)

Cavity: 16mm spacer

Inside: 8mm laminated Float mikado (0.76 PVB)

threat score 23

**Unit 7 (same configuration previously tested at Powdermill, commercially available, version in original LEED table) Mikado N33 Advance**

Outside: 4mm Float mikado (non-tempered) (THIS SIDE IS OUTSIDE)

Cavity: 16mm spacer

Inside: 8mm laminated Float N33 (0.76 PVB)

**Score 2012: 72.9** Trials: 85 WRONG! SHOULDN’T USE 2010 DATA,

**Score 2010: 66.3** Trials:169 NEED TO CHANGE ORNILUX SCORE IN

Composite score: 68.5 TABLE

Threat score 27

**Unit 8: Laminated Screen Print on surface 1**

White, vertical stripe; 3mm stripe / 15 mm space

**Score 2012**: insufficient trials (33)

**Score 2011**: 71.3 Trials: 94

Composite score: 73.2

Threat score 27 n/a no

**Unit F12-8: 12 mm triple laminate guardrail glass**

**Tested without background**

3 x’s 4 mm float; 2 x’s Mikado; 2 x’s 0.76 mm PVB

**Threat score 52** Trials: 100

ALSO TESTED Ten ARNOLD IGU PROTOTYPES

2013

**Walker Glass**

Etched glass patterns

5??/Continuous stripe

3” spacing

Threat score 34

511/ Barcodes

Threat score 43

vertical lines variously 1/16" to 3/16" wide,

spaced variously 3/16" to 5/8" apart,

staggered across surfaces 1 and 2

512/ Ribbons

Threat score 21

**Convenience Group Feather Friendly**

DIY tape

1/8” white squares, spaced 2” on center

Threat score 23

**Arnold Glass**

**Sample 8-F 12 ORNILUX mikado mono 12mm**

**Tested with background**

12mm laminated made of:

4mm Float mikado (face 2) / 0,76mm PVB / 4mm Float /

0,76mm PVB / 4mm Float mikado (face 5)

**Threat Score 36** Trials=83

Tested in 2012 without background, with random result LEED score might need to be restricted to installations like balconies, where light on surface ½ is asymetric; would not apply for freestanding handrails or glass walls

**14 Prototypes, some now commercially available**

**Including**

**ORNILUX mikado UNO // U-Value 1,0**

Outside: **6mm** Float mikado (to face 2)

Spacer: **10mm** Argon

Inside: 8mm laminated 2x4 Float (0,76mm PVB) N10 (face 3)

Alternative low-E coating - with 70% light

transmission can be used as light solar control

**threat score 26 trials 98**

**19-S13**

**ORNILUX mikado mono - laser I**

4mm Float with lasered surface (face 1)

(face 1 = bird approach side)

on demand HJ Arnold

**threat score 55** Trials: 80

20-S13

**ORNILUX mikado mono - laser II**

****4mm Float with into glass lasered structure (face 1)

*(Face 1 = bird approach side)*

on demand HJ Arnold

**threat score 58** Trials: 84

**Ferro**

**Three more or less untestable prototypes**

**Guardian**

**Four visible pattern samples – possibly commercially available frit patterns?**

**PPG**

**Samples arrived at the very end of fall – 2 prototypes and various controls**