TEST REPORT

Report No.: F8970.02-109-44

Rendered to:

VELUX America LLC
Greenwood, South Carolina

PRODUCT TYPE: Skylight
SERIES/MODEL: Dynamic Dome Skylight Polycarbonate Smooth (5' x 10') (0.150 thickness)

SPECIFICATION(S): Occupational Safety and Health Administration/U.S. Department of Labor Regulations (Standards- 29 CFR) - 1910.23(e) (8)

California Code of Regulations, Title 8, Section 3212

Test Date(s): 07/29/16
Report Date: 01/09/18
Test Record Retention Date: 07/29/20
1.0 Report Issued To: VELUX America LLC
1418 Evans Pond Road
P.O. Box 5001
Greenwood, South Carolina 29648-5001

2.0 Test Laboratory: Architectural Testing, Inc., an Intertek company ("Intertek-ATI")
130 Derry Court
York, Pennsylvania 17406-8405
717-764-7700

3.0 Project Summary:

3.1 Product Type: Skylight

3.2 Series/Model: Dynamic Dome Skylight Polycarbonate Smooth (5' x 10') (0.150 thickness)

3.3 Compliance Statement: Results obtained are tested values and were secured by using test method(s) intended to address the designated performance specifications.

3.4 Test Date(s): 07/29/16

3.5 Test Record Retention End Date: All test records for this report will be retained until July 29, 2020.

3.6 Test Location: Intertek-ATI test facility in York, Pennsylvania.

3.7 Test Specimen Source: The test specimen(s) was provided by the client. Representative samples of the test specimen(s) will be retained by Intertek-ATI for a minimum of two years from the test completion date.

3.8 Drawing Reference: The test specimen drawings have been reviewed by Intertek-ATI and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek-ATI per the drawings located in Appendix B. Any deviations are documented herein or on the drawings.

3.9 List of Official Observers:

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timothy J. McGill</td>
<td>Intertek-ATI</td>
</tr>
<tr>
<td>Richard E. Hartman III</td>
<td>Intertek-ATI</td>
</tr>
</tbody>
</table>
4.0 **Test Method (intended to address listed specification(s))**:  

Occupational Safety and Health Administration/U.S. Department of Labor Regulations (Standards- 29 CFR) - 1910.23(e) (8)  

California Code of Regulations, Title 8, Section 3212  

A 400 lb. weight, fabricated from a bag filled with lead shot, was placed on the center of the screen for a minimum of 60 seconds. The bag was removed and the test unit was inspected for any signs of damage or failure.  

**Additional Loading**:  

The specimen was taken to failure using sandbags placed on the center of the screen for a minimum of 60 seconds. The highest load causing penetration or damage was recorded.  

5.0 **Test Specimen Description**:  

Intertek Building & Construction (B&C) was contracted by VELUX America LLC, 1418 Evans Pond Road on December 4, 2017 to evaluate the OSHA fall protection testing to the most recent referenced document. Occupational Safety and Health Administration (OSHA)/U.S. Department of Labor Regulations Standard 29 CFR §1910.29 – Fall protection systems and falling object protection-criteria and practices. Section 1910.29(e)(1) requires a cover to be capable of supporting without failure at least twice the maximum intended load that may be imposed on the cover at any one time.  

Intertek Building & Construction (B&C) was contracted by VELUX America LLC, 1418 Evans Pond Road on December 4, 2017 to evaluate the Cal/OSHA fall protection testing to the most recent referenced document. California Code of Regulations, Title 8, Section 3212 §(b), which states, "covers shall be capable of safely supporting the greater of 400 lbs or twice the weight of the employees, equipment and materials that may be imposed on any one square foot area of the cover at any time."
6.0 Test Specimen Description:

6.1 Product Sizes:

<table>
<thead>
<tr>
<th>Description</th>
<th>Width (inches)</th>
<th>Height (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall size</td>
<td>65-3/4</td>
<td>126</td>
</tr>
</tbody>
</table>

6.2 Frame Construction:

<table>
<thead>
<tr>
<th>Frame Member</th>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner frame</td>
<td>Aluminum</td>
<td>Extruded</td>
</tr>
<tr>
<td>Dome clamp cover</td>
<td>Aluminum</td>
<td>Extruded</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Joinery Type</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>All corners</td>
<td>Mitered</td>
</tr>
<tr>
<td></td>
<td>Miter cut and welded</td>
</tr>
</tbody>
</table>

6.3 Reinforcement: No reinforcement was utilized

6.4 Weatherstripping:

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custom shaped gasket</td>
<td>1 row</td>
<td>Located around the interior perimeter of the inner frame</td>
</tr>
</tbody>
</table>

6.5 Glazing: No conclusions of any kind regarding the adequacy or inadequacy of the poly smooth in any glazed test specimen(s) can be made.

<table>
<thead>
<tr>
<th>Glazing Type</th>
<th>Glazing Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/32&quot; poly smooth</td>
<td>The glazing was set from the exterior onto a custom shaped gasket against the extruded aluminum frame. The glazing was secured using an aluminum extruded dome clamp cover with a bead of sealant on the glazing. The dome clamp cover was secured using #10 x 5/8&quot; screws located 2&quot; from all corners and 12&quot; on center.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location</th>
<th>Quantity</th>
<th>Daylight Opening (inches)</th>
<th>Glazing Bite (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dome</td>
<td>1</td>
<td>59-3/4 x 120</td>
<td>7/8</td>
</tr>
</tbody>
</table>

7.0 Installation: The specimen was installed into a Spruce-Pine-Fir wood buck.

<table>
<thead>
<tr>
<th>Location</th>
<th>Anchor Description</th>
<th>Anchor Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum frame</td>
<td>#10 x 1-1/2&quot; pan head screw</td>
<td>8&quot; from corners, 12&quot; on center</td>
</tr>
</tbody>
</table>
8.0 Test Results: The results are tabulated as follows:

8.1 California (and OSHA) minimum loading:

<table>
<thead>
<tr>
<th>Test Load</th>
<th>Load Location</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 lbf</td>
<td>Center of dome</td>
<td>No visible damage</td>
</tr>
</tbody>
</table>

*Note: The 400 lbf weight was gently applied perpendicular to the center of the dome. After 60 seconds of rest time, there was no visible damage to the glazing.*

8.2 Additional loading (applied on the same unit in the listed order):

<table>
<thead>
<tr>
<th>Test Load</th>
<th>Load Location</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>509 lbf at rest</td>
<td>Center of dome</td>
<td>No visible damage</td>
</tr>
<tr>
<td>615 lbf at rest</td>
<td>Center of dome</td>
<td>No visible damage</td>
</tr>
<tr>
<td>722 lbf at rest</td>
<td>Center of dome</td>
<td>No visible damage</td>
</tr>
<tr>
<td>830 lbf at rest</td>
<td>Center of dome</td>
<td>No visible damage</td>
</tr>
<tr>
<td>943 lbf at rest</td>
<td>Center of dome</td>
<td>No visible damage</td>
</tr>
<tr>
<td>1053 lbf at rest</td>
<td>Center of dome</td>
<td>No visible damage</td>
</tr>
<tr>
<td>1166 lbf at rest</td>
<td>Center of dome</td>
<td>No visible damage</td>
</tr>
<tr>
<td>1275 lbf at rest</td>
<td>Center of dome</td>
<td>See Note #1</td>
</tr>
</tbody>
</table>

*Note #1: At 1275 lbf, the load created on opening larger than one square foot.*

9.0 Test Results: The results are tabulated as follows:

The specimen was evaluated in accordance with Occupational Safety and Health Administration (OSHA)/U.S. Department of Labor Regulations Standard 29 CFR §1910.29(e)(1) to be capable of supporting twice the maximum intended load, up to (583) ft-lb.

The specimen was evaluated in accordance with California Code of Regulations, Title 8, Section 3212 §(b) to be capable of safely supporting loads exceeding 400 ft-lb.
Intertek-ATI will service this report for the entire test record retention period. Test records such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Intertek-ATI for the entire test record retention period.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Intertek-ATI.

For ARCHITECTURAL TESTING, Inc.

Richard E. Hartman III
Technician

Timothy J. McGill
Manager – Product Testing

REH: asm/abo

Attachments (pages): This report is complete only when all attachments listed are included.
  Appendix-A: Photograph(s) (1)
  Appendix-B: Drawing(s) (15)
Appendix A

Photograph(s)

Photo No. 1
View of Tested Specimen

Photo No. 2
Test Specimen during 400 lb. Load
Appendix B

Drawing(s)
Specifications – generally

Poly carbonate/Acrylic Alloy 309079.64
Impact modified acrylic (Outer dome) 309209.64
Impact modified acrylic (Inner dome) 309210.64
Acrylic sheets for commercial 309052.64

Note: 1. 4X8' dome shown
2. Height is based on the width dimension

<table>
<thead>
<tr>
<th>Size</th>
<th>L</th>
<th>W</th>
<th>H (Exterior dome)</th>
<th>H (Second dome)</th>
<th>H (Third dome)</th>
<th>L1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>667.5</td>
<td>667.5</td>
<td>182</td>
<td>156.5</td>
<td>131</td>
<td>486</td>
</tr>
<tr>
<td>3</td>
<td>1277</td>
<td>1277</td>
<td>368</td>
<td>325.5</td>
<td>295</td>
<td>638</td>
</tr>
<tr>
<td>4</td>
<td>1582</td>
<td>1582</td>
<td>467</td>
<td>425.5</td>
<td>396</td>
<td>638</td>
</tr>
<tr>
<td>5</td>
<td>1866.5</td>
<td>1866.5</td>
<td>555.5</td>
<td>519.5</td>
<td>484</td>
<td>700.5</td>
</tr>
<tr>
<td>7</td>
<td>2191</td>
<td>2191</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>2496</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>3106</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Material
Poly carbonate, or acrylic, or impact modified acrylic

VEILUX 450 Old Brickyard Rd., Greenwood, South Carolina 29648

Specifications - generally

Polycarbonate/Acrylic Alloy 309079.64
Impact modified acrylic (Outer dome) 309209.64
Impact modified acrylic (Inner dome) 309210.64
Acrylic sheets for commercial 309052.64

CDx, CEx
Dome

Note: 1. 4X8' dome shown
2. Height is based on the width dimension
Regardless of tolerance
35° cut must extend past this leg

<table>
<thead>
<tr>
<th>Size</th>
<th>L</th>
<th>Number of Holes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 ft</td>
<td>757</td>
<td>2</td>
</tr>
<tr>
<td>3 ft</td>
<td>1062</td>
<td>3</td>
</tr>
<tr>
<td>4 ft</td>
<td>1366</td>
<td>4</td>
</tr>
<tr>
<td>5 ft</td>
<td>1671</td>
<td>5</td>
</tr>
<tr>
<td>6 ft</td>
<td>1976</td>
<td>6</td>
</tr>
<tr>
<td>7 ft</td>
<td>2281</td>
<td>7</td>
</tr>
<tr>
<td>8 ft</td>
<td>2586</td>
<td>8</td>
</tr>
<tr>
<td>10 ft</td>
<td>3195</td>
<td>10</td>
</tr>
<tr>
<td>12 ft</td>
<td>3701</td>
<td>12</td>
</tr>
<tr>
<td>14 ft</td>
<td>4207</td>
<td>14</td>
</tr>
<tr>
<td>16 ft</td>
<td>4713</td>
<td>16</td>
</tr>
<tr>
<td>18 ft</td>
<td>5220</td>
<td>18</td>
</tr>
<tr>
<td>20 ft</td>
<td>5726</td>
<td>20</td>
</tr>
<tr>
<td>22 ft</td>
<td>6232</td>
<td>22</td>
</tr>
<tr>
<td>24 ft</td>
<td>6738</td>
<td>24</td>
</tr>
<tr>
<td>26 ft</td>
<td>7244</td>
<td>26</td>
</tr>
<tr>
<td>28 ft</td>
<td>7750</td>
<td>28</td>
</tr>
<tr>
<td>30 ft</td>
<td>8256</td>
<td>30</td>
</tr>
<tr>
<td>32 ft</td>
<td>8762</td>
<td>32</td>
</tr>
<tr>
<td>34 ft</td>
<td>9268</td>
<td>34</td>
</tr>
<tr>
<td>36 ft</td>
<td>9774</td>
<td>36</td>
</tr>
<tr>
<td>38 ft</td>
<td>10280</td>
<td>38</td>
</tr>
<tr>
<td>40 ft</td>
<td>10786</td>
<td>40</td>
</tr>
</tbody>
</table>

VELUX America Inc. CONFIDENTIAL
Max. surface deviation in this area after welding: 1mm typ.

Fully weld along outer profile

Note: Max. weld height allowed is 1.5mm

Size
\[
\begin{array}{c|c}
\text{L} & \\
2' & 716 \\
3' & 1021 \\
4' & 1326 \\
5' & 1631 \\
6' & 1936 \\
7' & 2241 \\
8' & 2545 \\
10' & 3153 \\
22.5 & 678 \\
30.5 & 881 \\
34.5 & 983 \\
46.5 & 1288 \\
\end{array}
\]

Squareness: D1-D2±5mm

Max. 1mm misalignment allowed

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VE LUX A/S reg. office: Ådalsvej 99, DK-2970 Hørsholm. CVR-no. 30003519

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**Specifications - generally**

<table>
<thead>
<tr>
<th>Material</th>
<th>Specifications - generally</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extruded Aluminum</td>
<td>Generally 309078.64 6063/T5 Aluminum</td>
<td>08/18/2016</td>
</tr>
</tbody>
</table>

**Material**

6063/T5 Aluminum

**VELUX**

SKY-PRS

450 Old Brickyard Rd., Greenwood, South Carolina 29648

**Approvals**

TMA-A

**Checked by/drawn by/date**

/MM/21.03.2016

**Scale**

2:1

**Unspec. meas.**

mm

**General tolerance**

±.5

**Size**

A

**Category**

<table>
<thead>
<tr>
<th>Category</th>
<th>Product instructions no.</th>
<th>Operation</th>
<th>Edition</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>302361</td>
<td>000</td>
<td>00 01</td>
</tr>
</tbody>
</table>

**Notes:**

1. Cross sectional area - 138 mm sq.
2. Break Corners - .38R
3. Purchased lineal length is 120"
SECTION A-A

Center hole is for any length larger than 5ft.

For standard acrylic, impact modified acrylic, & PC (Certified) only

For polycarbonate (Impact) only

Note: 1. Cutting drawing is for both the dome clamp cover and the tall dome clamp cover.
2. Pre drilled 4mm hole goes through both legs of clamp cover.

Size L

2 foot 709
3 foot 1014
4 foot 1318
5 foot 1623
6 foot 1928
7 foot 2233
8 foot 2538
10 foot 3147
225 671
305 874
345 976
465 1281
Fully Weld along outer profile

Note: welding drawing is for both the dome clamp cover and the tall dome clamp cover

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Scale 1:1

Squarness: D1-D2 ±5mm

D1

D2

A

SECTION A-A

Size L
2' 709
3' 1014
4' 1319
5' 1623
6' 1928
7' 2233
8' 2538
10' 3148
225 734
305 937
345 1039
465 1344

Note: welding drawing is for both the dome clamp cover and the tall dome clamp cover
Silicone squeeze out allowed in this area

Notes:
Silicone bead shape is not important.
Min/Max diameter is used to determine total area.
No gaps in silicone allowed.
No squeeze out allowed on lens.
Snip corner as shown

Max 1mm flashing allowed in this area

SECTION B-B
SCALE 1 : 1

Depth of condensation groove
Max 9
Min 8

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CONFIDENTIAL
Max. surface deviation in this area after welding 1mm typ.

All other areas 3mm flashing allowed

Max. 1mm flashing allowed in this area

Max. 2mm flashing allowed in this area

Size L L2
2 659 713
3 964 1017
4 1258 1322
5 1573 1627
6 1878 1932
7 2183 2237
8 2488 2541
10 3097 3151
225 663 717
305 924 978
345 926 980
445 1221 1285

Max. 2mm flashing allowed in this area

Max. 1mm flashing allowed in this area

All other areas 3mm flashing allowed

Report #: F9970.01-1-229-44
Date: 08/30/2016
Verified by: [Signature]

VE LUX America Inc. CON FI DENTIAL
Wool felt for wicking (grey)

Material

25 ±2

(1/4"

6.35

Profile/cutting

Gasket wick

CDx,CEx,CTx,CGx,CHx,CJx

Specifications - generally

Velux gasket wick mat'l commercial domes 309212.64

CDx,CEx,CTx,CGx,CHx,CJx

Gasket wick

Profile/cutting

Material

Foam gasket wick mat'l commercial domes 309212.64

CDx,CEx,CTx,CGx,CHx,CJx

Gasket wick

Profile/cutting
Wick must not extend beyond this surface

Wick must contact all 4 posts

DETAIL A
SCALE 1 : 2

Place wicks in all four corners

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CONFIDENTIAL

VELEX
SKY-PRS
450 Old Brickyard Rd., Greenwood, South Carolina 29648

CDx, CEx, CTx, CGx, CHx, CJx

Gasket
Wick placement

Report #: F8970.01.01-109-44
Date: 08/18/2016
Verified by: [Signature]

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**VELUX America Inc. CONFIDENTIAL**

- **Material:** Torx Pan head, SST, #2 drill point #10-16x5/8"

- **Specifications - generally**
  - Stainless steel screws

- **CDx, CEx, CTx, CGx, CHx, CJx**

- **Torx screw**

- **Product instructions no.:** 414010.64

**VELUX**
450 Old Brickyard Rd., Greenwood, South Carolina 29648

**Approvals**
TMA-A

**Checked by/drawn by/date**
/MM/20.01.2016

<table>
<thead>
<tr>
<th>Scale</th>
<th>Unspec. meas.</th>
<th>General tolerance</th>
<th>Size</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:1</td>
<td>Inches</td>
<td>±.015</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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