SCOPE OF WORK
OSHA FALL PROTECTION TESTING ON CURB MOUNT FIXED AND OPERABLE SKYLIGHT, GLASS GLAZED SKYLIGHT

REPORT NUMBER
IK6417.01-303-44

TEST DATE(S)
02/05/20

ISSUE DATE
02/28/20

RECORD RETENTION END DATE
02/05/24

PAGES
72

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TEST REPORT FOR SOLATUBE INTERNATIONAL
Report No.: IK6417.01-303-44
Date: 02/28/20

REPORT ISSUED TO
SOLATUBE INTERNATIONAL
2210 Oak Ridge Way
Vista, California 92081

SECTION 1
SCOPE

Intertek Building & Construction (B&C) was contracted by Solatube International, 2210 Oak Ridge Way, Vista, California 92081 to perform fall protection testing in accordance with Occupational Safety and Health Administration (OSHA)/U.S. Department of Labor Regulations Standard 29 CFR §1910.23(e)(8) and California Occupations Safety and Health Administration (CalOSHA) Title 8 Article 2 §3212.23(e)(5), on their Curb Mount Fixed and Curb Mount Operable Skylight. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek test facility in Lake Forest, California where testing was completed. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2
SUMMARY OF TEST RESULTS

Product Type: Glass Glazed Skylight
Series/Model: Curb Mount Skylight Fixed / Curb Mount Operable Skylight

The specimens tested successfully met the Safety Test and Safety Drop Test performance requirements of OSHA Standard 29 CFR §1910.23(e)(8) and CalOSHA Title 8 Article 2 §3212(e)(5).

For INTERTEK B&C:

<table>
<thead>
<tr>
<th>COMPLETED BY:</th>
<th>REVIEWED BY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timothy Boyle</td>
<td>Jarod Hardman</td>
</tr>
<tr>
<td>Technician – Building &amp; Construction</td>
<td>Operations Manager</td>
</tr>
</tbody>
</table>

**Digital Signatures**

- Timothy Boyle
- Jarod Hardman

**Dates**

- 02/28/20

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SECTION 3
TEST METHOD(S)

The specimens were evaluated in accordance with the following:

**29 CFR Ch. XVII §1910.23(e)(8), Guarding floor and wall openings and holes.** Occupational Safety and Health Administration/U.S. Department of Labor Regulations, 2012.

**Title 8 Article 2 §3212(e)(5), Floor Openings, Floor Holes, Skylights and Roofs.**

SECTION 4
MATERIAL SOURCE/INSTALLATION

Test specimen(s) were provided by the client. Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of four years from the test completion date.

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/4" shim space.

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ANCHOR DESCRIPTION</th>
<th>ANCHOR LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Through curb flashing</td>
<td>#10 x 2 Truss head</td>
<td>12” from corner 27-3/4” o/c</td>
</tr>
</tbody>
</table>

SECTION 5
LIST OF OFFICIAL OBSERVERS

<table>
<thead>
<tr>
<th>NAME</th>
<th>COMPANY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Todd Anderson</td>
<td>Solatube International</td>
</tr>
<tr>
<td>James Hedgecock</td>
<td>Solatube International</td>
</tr>
<tr>
<td>Timothy Boyle</td>
<td>Intertek B&amp;C</td>
</tr>
</tbody>
</table>
TEST REPORT FOR SOLATUBE INTERNATIONAL
Report No.: IK6417.01-303-44
Date: 02/28/20

SECTION 6
TEST PROCEDURE

A 200 lbf weight, fabricated from a bag filled with sand, was placed on the center of the dome for a minimum of 60 seconds. The bag was removed, and the test unit was inspected for any signs of damage or failure.

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

A 200 lbf weight, fabricated from a bag filled with sand, was dropped from varying heights above the skylight starting at 2' until permanent visible damage was noted. The highest impact load sustained was recorded.

SECTION 7
TEST SPECIMEN DESCRIPTION

Product Type: Glass Glazed Skylight
Series/Model: Curb Mount Skylight Fixed / Curb Mount Skylight Operable

Test Specimen(s):

<table>
<thead>
<tr>
<th>Test Specimen #1 - Fixed</th>
<th>OVERALL AREA: 1.7 m² (18.4 ft²)</th>
<th>WIDTH</th>
<th>inches</th>
<th>HEIGHT</th>
<th>inches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Overall Size</td>
<td>1308</td>
<td>51-1/2</td>
<td>1308</td>
<td>51-1/2</td>
</tr>
<tr>
<td></td>
<td>Curb Size</td>
<td>1302</td>
<td>51-1/4</td>
<td>1302</td>
<td>51-1/4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Specimen #2 - Operable</th>
<th>OVERALL AREA: 1.7 m² (18.4 ft²)</th>
<th>WIDTH</th>
<th>inches</th>
<th>HEIGHT</th>
<th>inches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Overall Size</td>
<td>1308</td>
<td>51-1/2</td>
<td>1308</td>
<td>51-1/2</td>
</tr>
<tr>
<td></td>
<td>Curb Size</td>
<td>1302</td>
<td>51-1/4</td>
<td>1302</td>
<td>51-1/4</td>
</tr>
</tbody>
</table>
TEST REPORT FOR SOLATUBE INTERNATIONAL
Report No.: IK6417.01-303-44
Date: 02/28/20

Test Specimen #1 - Fixed
Frame Construction:

<table>
<thead>
<tr>
<th>FRAME MEMBER</th>
<th>MATERIAL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Flange</td>
<td>Aluminum Alloy</td>
<td>Part No. Varies.</td>
</tr>
<tr>
<td>Base Extrusion</td>
<td>Vinyl</td>
<td>Part No. 381091, secured to base flange with cleat.</td>
</tr>
<tr>
<td>Cleat</td>
<td>Aluminum Alloy</td>
<td>Riveted to base flange with rivet Part No. 700048.</td>
</tr>
<tr>
<td>Jointer Plate</td>
<td>Aluminum Alloy</td>
<td>Part No. 831162, secured to interior side of base flange.</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>Sealed at corners and secured with jointer plates.</td>
</tr>
</tbody>
</table>

Reinforcement: No reinforcement was utilized.

Weatherstripping: No weatherstripping was utilized.

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

<table>
<thead>
<tr>
<th>GLASS TYPE</th>
<th>SPACER TYPE</th>
<th>INTERIOR LITE</th>
<th>EXTERIOR LITE</th>
<th>GLAZING METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot; IG</td>
<td>Warm edge spacer</td>
<td>3 mm annealed – 0.76 mm PVB – 3 mm annealed</td>
<td>4 mm tempered</td>
<td>Dry set on closed cell foam (Part No. 381076), sealed at edge of glazing with sealant (Part No. 700358), and tape glazed at exterior surface (Part No. 620025).</td>
</tr>
</tbody>
</table>
TEST REPORT FOR SOLATUBE INTERNATIONAL
Report No.: IK6417.01-303-44
Date: 02/28/20

Test Specimen #2 - Operable
Frame Construction:

<table>
<thead>
<tr>
<th>FRAME MEMBER</th>
<th>MATERIAL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Flange</td>
<td>Aluminum Alloy</td>
<td>Part No. 381120.</td>
</tr>
<tr>
<td>Base Extrusion</td>
<td>Vinyl</td>
<td>Part No. 381091, secured to base flange with cleat.</td>
</tr>
<tr>
<td>Cleat</td>
<td>Aluminum Alloy</td>
<td>Riveted to base flange with rivet Part No. 700048.</td>
</tr>
<tr>
<td>Jointer Plate</td>
<td>Aluminum Alloy</td>
<td>Part No. 831162, secured to interior side of base flange.</td>
</tr>
<tr>
<td>Operable Flash</td>
<td>Aluminum Alloy</td>
<td>Part No. Varies, secured to extrusion skylight operable with #8 x 1/2&quot; screws (Part No. 720093).</td>
</tr>
<tr>
<td>Motor Cover Coated</td>
<td>Steel</td>
<td>Part No. 381053, press fit onto extrusion skylight operable.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>JOINERY TYPE</th>
<th>DETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Corners</td>
<td>Mitered Sealed at corners and secured with jointer plates.</td>
</tr>
</tbody>
</table>

Sash Construction:

<table>
<thead>
<tr>
<th>SASH MEMBER</th>
<th>MATERIAL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extrusion Skylight Operable</td>
<td>Vinyl</td>
<td>Part No. 381083.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>JOINERY TYPE</th>
<th>DETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Corners</td>
<td>Mitered Secured with corner connector (Part No. 381115) and corner binder (Part No. 381121).</td>
</tr>
</tbody>
</table>

Reinforcement: *No reinforcement was utilized.*

Weatherstripping:

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seal fin, Part No. 600235</td>
<td>1 row</td>
<td>Press fit around perimeter of extrusion skylight operable.</td>
</tr>
<tr>
<td>Seal hollow ‘D’, Part No. 600304</td>
<td>1 row</td>
<td>Press fit around perimeter of motor bracket.</td>
</tr>
</tbody>
</table>

Glazing: *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made.*
# TEST REPORT FOR SOLATUBE INTERNATIONAL

**Report No.: IK6417.01-303-44**  
**Date:** 02/28/20

## GLASS TYPE | SPACER TYPE | INTERIOR LITE | EXTERIOR LITE | GLAZING METHOD
---|---|---|---|---
1" IG | Warm edge spacer | 3 mm annealed – 0.76 mm PVB – 3 mm annealed | 4 mm tempered | Dry set on closed cell foam (Part No. 381076), sealed at edge of glazing with sealant (Part No. 700358), and tape glazed at exterior surface (Part No. 620025).

## LOCATION | QUANTITY | DAYLIGHT OPENING | GLASS BITE
---|---|---|---
Fixed (Spec #1) | 1 | 1238 x 1238 | 48-3/4 x 48-3/4 | 1-3/8"
Sash (Spec #2) | 1 | 1238 x 1238 | 48-3/4 x 48-3/4 | 1-3/8"

**Drainage:** *No drainage was utilized.*

**Hardware:** *Operable Skylight Only*

| DESCRIPTION | QUANTITY | LOCATION |
---|---|---|
Hinge, Part No. 381410 | 2 | Secured to the top of extrusion skylight operable and base flange.
Motor and Chain Assy., Part No. 381130. | 1 | Secured to chain connector assy. with clevis pin (Part No. 381201).
Chain Connector Assy., Part No. 382055. | 1 | Secured to underside of extrusion skylight base.

**Limit Stop Device:** *No limit stop device was utilized, travel is restricted by motor and chain assy.*
SECTION 8
TEST RESULTS

The temperature during testing was 18°C (65°F). The results are tabulated as follows:

OSHA Safety Test

Test Specimen #1

<table>
<thead>
<tr>
<th>TEST METHOD</th>
<th>LOAD LOCATION</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 lbf</td>
<td>Center of Dome</td>
<td>No Visible Damage</td>
</tr>
<tr>
<td>400 lbf Static</td>
<td>Center of Dome</td>
<td>No Visible Damage</td>
</tr>
</tbody>
</table>

Test Specimen #2

<table>
<thead>
<tr>
<th>TEST METHOD</th>
<th>LOAD LOCATION</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 lbf</td>
<td>Center of Dome</td>
<td>No Visible Damage</td>
</tr>
<tr>
<td>400 lbf Static</td>
<td>Center of Dome</td>
<td>No Visible Damage</td>
</tr>
</tbody>
</table>

Observations: The 200 lbf weight was gently applied perpendicular to the center of each dome; after 60 seconds of rest time, there was no visible damage to either skylight.

Observations: The 400 lbf weight was gently applied perpendicular to the center of dome, after 60 seconds of rest time, there was no visible damage to the skylight.

OSHA Safety Drop Test

Test Specimen #1

<table>
<thead>
<tr>
<th>TEST METHOD</th>
<th>LOAD LOCATION</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 lbf</td>
<td>Center of Glass</td>
<td>No Penetration, Load Supported</td>
</tr>
<tr>
<td>400 lbf-ft (2' drop height)</td>
<td>Center of Glass</td>
<td>No Penetration, Load Supported</td>
</tr>
<tr>
<td>800 lbf-ft (4' drop height)</td>
<td>Center of Glass</td>
<td>No Penetration, Load Supported</td>
</tr>
<tr>
<td>1200 lbf-ft (6' drop height)</td>
<td>Center of Glass</td>
<td>No Penetration, Load Supported</td>
</tr>
<tr>
<td>1600 lbf-ft (8’ drop height)</td>
<td>Center of Glass</td>
<td>No Penetration, Load Supported</td>
</tr>
</tbody>
</table>
**TEST REPORT FOR SOLATUBE INTERNATIONAL**

Report No.: IK6417.01-303-44  
Date: 02/28/20

**Test Specimen #2**

<table>
<thead>
<tr>
<th>TEST METHOD</th>
<th>LOAD LOCATION</th>
<th>RESULTS</th>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 lbf</td>
<td>Center of Glass</td>
<td>No Penetration, Load Supported</td>
<td></td>
</tr>
<tr>
<td>400 lbf-ft (2' drop height)</td>
<td>Center of Glass</td>
<td>No Penetration, Load Supported</td>
<td></td>
</tr>
<tr>
<td>800 lbf-ft (4' drop height)</td>
<td>Center of Glass</td>
<td>No Penetration, Load Supported</td>
<td></td>
</tr>
<tr>
<td>1200 lbf-ft (6' drop height)</td>
<td>Center of Glass</td>
<td>No Penetration, Load Supported</td>
<td></td>
</tr>
<tr>
<td>1600 lbf-ft (8’ drop height)</td>
<td>Center of Glass</td>
<td>Impact Penetration, Load Not Supported</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note #1: At the 8' drop height, the load broke through the glass and was not supported after impact.*

**SECTION 9  
CONCLUSION**

The specimens tested successfully met the Safety Test and Safety Drop Test performance requirements of OSHA Standard 29 CFR §1910.23(e)(8) and CalOSHA Title 8 Article 2 §3212(e)(5).
SECTION 10
DRAWINGS

The test specimen drawings have been reviewed by Intertek B&C and are representative of the
test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per
the drawings included in this report. Any deviations are documented herein or on the drawings.
2.000
.794
.156
THRU
1.250
.375
.397
.156
2X

NOTES: UNLESS OTHERWISE SPECIFIED.

1. POWDER COAT SPEC ACCORDING TO SPEC
2. BREAK ALL CORNERS AND SHARP EDGES

2. QUALITY ASSURANCE REQUIREMENTS:
1. THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
2. FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:
1. PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING INDELIBLE INK AT LOCATION SHOWN.
2. IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:
1. CRITICAL DIMENSIONS ARE DENOTED BY X, XXX
2. PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS

4.1 CRITICAL DIMENSIONS ARE DENOTED BY X, XXX
4.2 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS

1.1 POWDER COAT SPEC ACCORDING TO SPEC
1.2 BREAK ALL CORNERS AND SHARP EDGES

2. QUALITY ASSURANCE REQUIREMENTS:
2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
2.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:
3.1 PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING INDELIBLE INK AT LOCATION SHOWN.
3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:
4.1 CRITICAL DIMENSIONS ARE DENOTED BY X, XXX
4.2 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS

4.1 CRITICAL DIMENSIONS ARE DENOTED BY X, XXX
4.2 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS
NOTES: UNLESS OTHERWISE SPECIFIED.

FINISH:

1.1 POWDER COAT SPEC ACCORDING TO

1.2 BREAK ALL CORNERS AND SHARP EDGES

2. QUALITY ASSURANCE REQUIREMENTS:

2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.

2.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:

3.1 PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING INDELIBLE INK AT LOCATION SHOWN.

3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:

4.1 CRITICAL DIMENSIONS ARE DENOTED BY XXX.

4.2 INSPECTION DIMENSIONS ARE NOTES BY X.

4.3 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS
NOTES: UNLESS OTHERWISE SPECIFIED.

**FINISH:**

1.1 POWDER COAT SPEC ACCORDING TO
1.2 BREAK ALL CORNERS AND SHARP EDGES

2. QUALITY ASSURANCE REQUIREMENTS:
2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
2.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:
3.1 PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING INDELIBLE INK AT LOCATION SHOWN.
3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:
4.1 CRITICAL DIMENSIONS ARE DENOTED BY .
4.2 INSPECTION DIMENSIONS ARE NOTES BY X.
4.3 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS
DETAIL A
SCALE 2 : 1
NOTES: UNLESS OTHERWISE SPECIFIED.

1. POWDER COAT SPEC ACCORDING TO SPEC 892002
2. BREAK ALL CORNERS AND SHARP EDGES

QUALITY ASSURANCE REQUIREMENTS:
2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
2.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

MARKING:
3.1 PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING INDELIBLE INK AT LOCATION SHOWN.
3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

GENERAL REQUIREMENTS:
4.1 CRITICAL DIMENSIONS ARE DENOTED BY
4.2 INSPECTION DIMENSIONS ARE NOTES BY
4.3 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS

UNLESS OTHERWISE SPECIFIED:

TOLERANCES

<table>
<thead>
<tr>
<th>Type</th>
<th>Angular</th>
<th>Linear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inch</td>
<td>±0.03</td>
<td>±0.01</td>
</tr>
<tr>
<td>Millimeter</td>
<td>±0.075</td>
<td>±0.025</td>
</tr>
</tbody>
</table>

REVISIONS

REVISION | ECO | DATE | REVISED | CHECKED | APPROVED
---       | ---- | ----- | -------- | -------- | --------
A         | 1/27/2020 |
NOTES: UNLESS OTHERWISE SPECIFIED.

1.1 POWDER COAT SPEC ACCORDING TO

1.2 BREAK ALL CORNERS AND SHARP EDGES

2. QUALITY ASSURANCE REQUIREMENTS:
2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
2.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:
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3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:
4.1 CRITICAL DIMENSIONS ARE DENOTED BY .
4.2 INSPECTION DIMENSIONS ARE NOTES BY .
4.3 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS

FINISH: POWDER COAT SPEC ACCORDING TO

ANGULAR TOLERANCES:
- 0.5°
- .03 in
- .01 mm
- .05 mm
- .005 in
- .125 mm

INCH MILLIMETER

UNIT MM|INCH SCALE: 1:2 SHEET 1 OF 2

REPORT #: 96417-303-44

Date: 02/28/20

Verified by: 

SOLATUBE
2716 OAK RIDGE WAY
VISTA, CALIFORNIA 92081-8341
PH (951) 597-4400

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UNLESS OTHERWISE SPECIFIED:

UNIT MM|INCH

REV  ECO  DATE  REVISED  CHECKED  APPROVED
1  1/3/2020
NOTES: UNLESS OTHERWISE SPECIFIED.

1.1 POWDER COAT SPEC ACCORDING.
1.2 BREAK ALL CORNERS AND SHARP EDGES

2. QUALITY ASSURANCE REQUIREMENTS:
2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100%
INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
2.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL
TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:
3.1 PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING
INDELIBLE INK AT LOCATION SHOWN.
3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION
LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:
4.1 CRITICAL DIMENSIONS ARE DENOTED BY "X.XXX".
4.2 INSPECTION DIMENSIONS ARE NOTES BY "X".
4.3 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS
NOTES:
1. COLOR MATCH PER SAMPLE APPROVED BY SOLATUBE
2. STANDARD SHOP TOLERANCES FOR FLATNESS UNLESS NOTED OTHERWISE
3. CUT LENGTH: 14.2 FEET (4.33 METERS); VERIFY LENGTH FOR TRIAL RUNS
4. ALL RADII: .3MM (.012 INCH) UNLESS NOTED OTHERWISE
5. CRITICAL DIMENSIONS ARE DENOTED BY: XXXX

UNLESS OTHERWISE SPECIFIED:
- TOLERANCES
  - ANGULAR: ±0.5°
  - MILLIMETER: [X] ± 0.06, [XX] ± 0.02, [XXX] ± 0.010

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MATERIAL: Y00935
FINISH: --

DO NOT SCALE DRAWING
INTERPRET DRAWINGS IAW: ASME Y14.5 - 1994

DRAWN BY: STEVENS
CHECKED BY: --
DATE: 26 JUL 19

TITLE: EXTRUSION SKYLIGHT OPERABLE
SIZE: B
PROJECTION: (2nd)
UNIT INCH (MM): SCALE: 1:1 SHEET 1 OF 1
DWG. NO.: 381083 REV: A
NOTES:
1. COLOR MATCH PER SAMPLE APPROVED BY SOLATUBE
2. STANDARD SHOP TOLERANCES FOR FLATNESS UNLESS NOTED OTHERWISE
3. CUT LENGTH: 14.2 FEET (4.33 METERS)
4. ALL RADII .3MM (.012 INCH) UNLESS NOTED OTHERWISE
5. CRITICAL DIMENSIONS ARE DENOTED BY: [XXX]
NOTES: UNLESS OTHERWISE SPECIFIED.

FINISH:
1.1 EXTERIOR SURFACES: SMOOTH PER SPI A-3 OR EQUIVALENT.
ADD TEXTURE ONLY AFTER FIRST ARTICLE APPROVAL.
1.2 ALL SURFACES: SMOOTH PER SPI B-2 OR EQUIVALENT.

MECHANICAL REQUIREMENTS:
2.1 FILLET AND RADIUS SHALL BE .010 IN UNLESS OTHERWISE SPECIFIED.
FILETS AND ROUNDS NOT SHOWN FOR CLARITY.
2.2 PARTING LINE MISMATCH SHALL NOT EXCEED .005 IN ON EXPOSED SURFACES
AND .005 IN ON OTHER UNEXPOSED SURFACES.
2.3 FLASH ALLOWANCE SHALL NOT EXCEED .010 IN.
2.4 GATES SHALL BE NO MORE THAN +.005/-010 IN FROM SURFACE.
2.5 NO SHRINK MARKS, HAZE MARKS, BLEMISHES, WELD LINES, OR DRAG MARKS
PERMITTED WITHOUT WRITTEN APPROVAL FROM SOLATUBE INTL.

QUALITY ASSURANCE REQUIREMENTS:
3.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100%
INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
3.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL
TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

MASS PROPERTIES
4.1 MATERIAL WEIGHT: GRAMS
4.2 PART VOLUME: CM^3

MARKING:
5.1 PART NUMBER AND CURRENT REVISION LEVEL DIAL AND DATE DIAL SHALL BE
EMBOSSED ABOVE THE SURFACE IN LOCATION SHOWN.
5.2 IDENTIFY PARTS THAT CAN NOT BE MOLDED WITH PART NUMBER AND
REVISION LEVEL BY BAG AND/OR TAG METHOD.

GENERAL REQUIREMENTS:
6.1 CRITICAL/INSPECTION DIMENSIONS ARE DENOTED BY (X.XXX).
6.2 INSPECTION DIMENSIONS ARE NOTED BY X.
6.3 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS
6.4 ALL DIMENSIONS ARE AFTER PART HAS COOLED AND STABILIZED PER INSPECTION
PROCEDURES APPROVED BY SOLATUBE INTL.
6.5 ALL MODEL TOLERANCES PER SOCIETY PLASTICS INDUSTRY FINE
STANDARDS UNLESS NOTED OTHERWISE.
6.6 REF. MODEL CORNER CONNECTOR FOR DIMENSIONS NOT SPECIFIED

UNLESS OTHERWISE SPECIFIED:

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SOLATUBE. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SOLATUBE
IS PROHIBITED.

TITLE: CORNER CONNECTOR

DRAWN BY: STEVENS
DATE: 4 SEPT 19

CHECKED BY: --
APPROVED BY: --

DO NOT SCALE DRAWING

SCALE: 1:4
NOTE: UNLESS OTHERWISE SPECIFIED.

1. FINISH:
   1.1 EXTERIOR SURFACES: SMOOTH PER SPI A-3 OR EQUIVALENT. ADD TEXTURE ONLY AFTER FIRST ARTICLE APPROVAL.
   1.2 ALL SURFACES: SMOOTH PER SPI B-2 OR EQUIVALENT.

2. MECHANICAL REQUIREMENTS:
   2.1 FILLET AND RADIUS SHALL BE .010 IN. UNLESS OTHERWISE SPECIFIED. FILLETS AND ROUNDS NOT SHOWN FOR CLARITY.
   2.2 PARTING LINE MISMATCH SHALL NOT EXCEED .005 IN ON EXPOSED SURFACES AND .005 IN ON OTHER UNEXPOSED SURFACES.
   2.3 FLASH ALLOWANCE SHALL NOT EXCEED .010 IN.
   2.4 GATES SHALL BE NO MORE THAN +.005/- .010 IN FROM SURFACE.
   2.5 NO SHRINK MARKS, HAZE MARKS, BLEMISHES, WELD LINES, OR DRAG MARKS PERMITTED WITHOUT WRITTEN APPROVAL FROM SOLATUBE INT'L.

3. QUALITY ASSURANCE REQUIREMENTS:
   3.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
   3.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

4. MASS PROPERTIES
   4.1 MATERIAL WEIGHT: GRAMS
   4.2 PART VOLUME: CM^3

5. MARKING:
   5.1 PART NUMBER AND CURRENT REVISION LEVEL DIAL AND DATE DIAL SHALL BE EMBOSSED ABOVE THE SURFACE IN LOCATION SHOWN.
   5.2 IDENTIFY PARTS THAT CAN NOT BE MOLDED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

6. GENERAL REQUIREMENTS:
   6.1 CRITICAL/INSPECTION DIMENSIONS ARE DENOTED BY X.XXX.X
   6.2 INSPECTION DIMENSIONS ARE NOTED BY X.XXX.X
   6.3 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS
   6.4 ALL DIMENSIONS ARE AFTER PART HAS COOLED AND STABILIZED PER INSPECTION PROCEDURES APPROVED BY SOLATUBE INT'L.
   6.5 ALL MODEL TOLERANCES PER SOCIETY PLASTICS INDUSTRY FINE STANDARDS UNLESS NOTED OTHERWISE.
   6.6 REF. MODEL CORNER BINDER FOR DIMENSIONS NOT SPECIFIED

UNLESS OTHERWISE SPECIFIED:

TOLERANCES
   ANGULAR: ±.05°
   MILLIMETER: ± .005 [XX] ± .012 [XXX] ± .02 [XXX]
   INCH: ± .01 [XX] ± .005 [XXX]

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MATERIAL: B90010

DRAWN BY: STEVENS
DATE: 4 SEPT 19

CHECKED BY: --
APPROVED BY: --

DO NOT SCALE DRAWING

SCALE: 1:1
SHEET: 1 OF 2

2292 OAK RIDGE WAY
VISTA, CALIFORNIA 92081-8341
PH: (760) 557-4400
NOTES: UNLESS OTHERWISE SPECIFIED.

1.1 POWDER COAT SPEC ACCORDING TO.
1.2 BREAK ALL CORNERS AND SHARP EDGES

2. QUALITY ASSURANCE REQUIREMENTS:
2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
2.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:
3.1 PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING INDELIBLE INK AT LOCATION SHOWN.
3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:
4.1 CRITICAL DIMENSIONS ARE DENOTED BY X.XXX.
4.2 INSPECTION DIMENSIONS ARE NOTES BY X.
4.3 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS
UNLESS OTHERWISE SPECIFIED:

- TOLERANCES:
  - ANGULAR: ±0.5°
  - MILLIMETER:
    - X ± 0.03
    - XX ± 0.01
    - XXX ± 0.05
    - [X] ± 0.75
    - [XX] ± 0.25
    - [XXX] ± 0.125

- MATERIAL: 381072
- FINISH: NONE
- DRAWN BY STEVENS
- CHECKED BY
- APPROVED BY

PROPRIETARY AND CONFIDENTIAL
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NOTE: UNLESS OTHERWISE SPECIFIED.

1. **FINISH:**
   - POWDER COAT SPEC ACCORDING TO
   - BREAK ALL CORNERS AND SHARP EDGES

2. **QUALITY ASSURANCE REQUIREMENTS:**
   - THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
   - FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. **MARKING:**
   - PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING INDELIBLE INK AT LOCATION SHOWN.
   - IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

4. **GENERAL REQUIREMENTS:**
   - CRITICAL DIMENSIONS ARE DENOTED BY
   - INSPECTION DIMENSIONS ARE NOTED BY
   - PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS

---

REPORT #: 66417-303-44
DATE: 02/28/20
VERIFIED BY:

---

TITLE: BRACKET BENT
SIZE: B
PROJECTION: [3rd]
DWG. NO.: 381344
REV: 1
UNIT MM/INCH: SCALE: 1:1 SHEET 1 OF 2
CHAIN CONNECTOR
BRACKET BENT

Report #: K6417-303-44
Date: 02/28/20
Verified by: [Signature]

DWG. NO. 381344
REV B

SCALE: 1:1
NOTES: UNLESS OTHERWISE SPECIFIED.

1. FINISH:
   1.1 POWDER COAT SPEC ACCORDING TO
   1.2 BREAK ALL CORNERS AND SHARP EDGES

2. QUALITY ASSURANCE REQUIREMENTS:
   2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
   2.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:
   3.1 PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING INDELIBLE INK AT LOCATION SHOWN.
   3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:
   4.1 CRITICAL DIMENSIONS ARE DENOTED BY X.
   4.2 INSPECTION DIMENSIONS ARE NOTES BY X.
   4.3 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS

UNLESS OTHERWISE SPECIFIED:

TOLERANCES
   ANGULAR: X ± 0.5
   INCH: X ± .03
   MILLIMETER: X ± .075
   XX: X ± .01
   XXX: X ± .005
   XXXX: X ± .25

MATERIAL: 382044
FINISH: --

DO NOT SCALE DRAWING

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---

REPORT:

Report #: X6417-303-44
Date: 02/26/20
Verified by:

---

SOLATUBE
2212 OAK RIDGE WAY
VISTA, CALIFORNIA 92081-8341
Ph: (760) 557-4400

PV PANEL MOUNTING BRACKET RIGHT BENT

SIZE: B
DRAWN BY: STEVENS
DATE: 11/12/19
CHECKED BY:
DATE:
APPROVED BY:
DATE:

UNIT: MM (INCH)
SCALE: 1:1
SHEET: 1 OF 2
NOTES: UNLESS OTHERWISE SPECIFIED.

FINISH:
1.1 POWDER COAT SPEC ACCORDING TO
1.2 BREAK ALL CORNERS AND SHARP EDGES

2. QUALITY ASSURANCE REQUIREMENTS:
2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
2.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:
3.1 PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING INDELIBLE INK AT LOCATION SHOWN.
3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:
4.1 CRITICAL DIMENSIONS ARE DENOTED BY X.XXX.
4.2 INSPECTION DIMENSIONS ARE NOTES BY X.
4.3 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS.
NOTES: UNLESS OTHERWISE SPECIFIED.

1. FINISH:
   1.1 POWDER COAT SPEC ACCORDING TO
   1.2 BREAK ALL CORNERS AND SHARP EDGES

2. QUALITY ASSURANCE REQUIREMENTS:
   2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100%
       INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
   2.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL
       TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:
   3.1 PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING
       INDLEGIBLE INK AT LOCATION SHOWN.
   3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION
       LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:
   4.1 CRITICAL DIMENSIONS ARE DENOTED BY .
   4.2 INSPECTION DIMENSIONS ARE NOTES BY .
   4.3 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS

---

UNLESS OTHERWISE SPECIFIED:

- TOLERANCES
  - ANGULAR: ± .05°
  - MILLIMETER: ± X.X
  - INCH: ± .03, XX ± .01, XXX ± .005

- MATERIAL: 220320
- FINISH: --

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---

REPORT #: 36417-903-44
DATE: 02/26/20
VERIFIED BY: [Signature]
NOTES: UNLESS OTHERWISE SPECIFIED.

FINISH:
1.1 POWDER COAT SPEC ACCORDING TO PART
1.2 BREAK ALL CORNERS AND SHARP EDGES

2. QUALITY ASSURANCE REQUIREMENTS:
2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
2.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:
3.1 PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING INDELIBLE INK AT LOCATION SHOWN.
3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:
4.1 CRITICAL DIMENSIONS ARE DENOTED BY .X.XX.
4.2 INSPECTION DIMENSIONS ARE NOTES BY X.
4.3 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS

---

4.1 CRITICAL DIMENSIONS ARE DENOTED BY .X.XX.

---

UNLESS OTHERWISE SPECIFIED:

---

FINISH:

---

DO NOT SCALE DRAWING

---

REVISIONS

---

REV. ECO DATE REVISED CHECKED APPROVED
1 1/24/2020

---
NOTES: UNLESS OTHERWISE SPECIFIED.

1.1 **POWDER COAT SPEC ACCORDING**
1.2 **BREAK ALL CORNERS AND SHARP EDGES**

2. QUALITY ASSURANCE REQUIREMENTS:
2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
2.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:
3.1 PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING INDELIBLE INK AT LOCATION SHOWN.
3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:
4.1 CRITICAL DIMENSIONS ARE DENOTED BY **XXX**.
4.2 INSPECTION DIMENSIONS ARE NOTES BY **X**.
4.3 **PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS**

---

UNLESS OTHERWISE SPECIFIED:

TOLERANCES

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MATERIAL

382076

FINISH

NONE

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DRAWN BY

STEVENS

DATE

6 JAN 20

CHECKED BY

DATE

APPROVED BY

DATE

SOLATUBE

2742 OAK RIDGE WAY
VISTA, CALIFORNIA 92083-8341
PH (951) 597-4400

UNIT MM/INCH

SCALE: 1:1

SHEET 1 OF 2

REV

1

382062

[2nd]
1.1 Powder coat spec according to
1.2 Break all corners and sharp edges

2. Quality Assurance Requirements:
2.1 The supplier must maintain statistical process control (SPC) or 100% inspection on critical parameters during production.
2.2 First article: First article verification is required prior to initial tool approval or approval of a tool change.

3. Marking:
3.1 Part number and current revision level shall be stamped in contrasting indelible ink at location shown.
3.2 Identify parts that cannot be stamped with part number and revision level by bag and/or tag method.

4. General Requirements:
4.1 Critical dimensions are denoted by (X.XXX).
4.2 Inspection dimensions are notes by X.
4.3 Part dimensioned per ANSI Y14.100-2000 Standards

Notes: Unless otherwise specified.

---

Report:
K6417-303-44
Date: 02/28/20
Verified by:

---

UNLESS OTHERWISE SPECIFIED:

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<td>X ± .03</td>
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<td>XXX ± .005</td>
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PROPRIETARY AND CONFIDENTIAL

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Material:
220320

Finish:
None

Do Not Scale Drawing
NOTES:

1. PACKAGED IN CARDBOARD BOX, LOOSE; APPROX. 350FT [100m] LENGTHS
NOTES:

1. PACKAGED IN CARDBOARD BOX, LOOSE; APPROX. 350FT (100m) LENGTHS
**REVISIONS**

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**NOTES: UNLESS OTHERWISE SPECIFIED.**

**FINISH:**

1.1 **POWDER COAT SPEC ACCORDING TO SPEC**
1.2 **BREAK ALL CORNERS AND SHARP EDGES**

**QUALITY ASSURANCE REQUIREMENTS:**

2.1 **THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.**
2.2 **FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.**

**MARKING:**

3.1 **PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING INDELIBLE INK AT LOCATION SHOWN.**
3.2 **IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.**

**GENERAL REQUIREMENTS:**

4.1 **CRITICAL DIMENSIONS ARE DENOTED BY**
4.2 **PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS**

---

**BASE FLANGE BENT**

**UNLESS OTHERWISE SPECIFIED:**

**TOLERANCES ANGULAR:**

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**PROPRIETARY AND CONFIDENTIAL**

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**MATERIAL**

SEE TABLE

**FINISH**

--

**DO NOT SCALE DRAWING**

---

**UNLESS OTHERWISE SPECIFIED:**

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<th>BENT PART NO.</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
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<td>BASE FLANGE 1.5&quot; X 2&quot; BENT</td>
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<td>BASE FLANGE 3&quot; X 4&quot; BENT</td>
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<td>381362</td>
<td>BASE FLANGE 4&quot; X 4&quot; BENT</td>
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</table>
NOTES: UNLESS OTHERWISE SPECIFIED.

**FINISH:**

1.1 POWDER COAT SPEC ACCORDING TO.
1.2 BREAK ALL CORNERS AND SHARP EDGES

2. QUALITY ASSURANCE REQUIREMENTS:

2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100% INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
2.2 FIRST ARTICALE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:

3.1 PART NUMBER AND CURRENT REVISION LEVEL SHALL BE STAMPED IN CONTRASTING INDELIBLE INK AT LOCATION SHOWN.
3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:

4.1 CRITICAL DIMENSIONS ARE DENOTED BY (X.XXX).
4.2 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS

---

**TOLERANCES**

**ANGULAR:** ±0.5°

**INCH:**

- ± .05
- ± .1
- ± .125

**MILLIMETER:**

- ± 0.3
- ± 0.75
- ± 3.0
- ± 10.0

---

**UNLESS OTHERWISE SPECIFIED:**

**PROPRIETARY AND CONFIDENTIAL**

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**MATERIAL:**

SEE TABLE

**FINISH:**

--

**CHECKED BY:**

--

**APPROVED BY:**

--

**DRAWN BY:**

STEVENS

**DATE:**

9/24/19

**REVISIONS**

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NOTES: UNLESS OTHERWISE SPECIFIED.

1. FINISH:
   1.1 POWDER COAT SPEC ACCORDING TO SPEC 892000
   1.2 BREAK ALL CORNERS AND SHARP EDGES

2. QUALITY ASSURANCE REQUIREMENTS:
   2.1 THE SUPPLIER MUST MAINTAIN STATISTICAL PROCESS CONTROL (SPC) OR 100%
       INSPECTION ON CRITICAL PARAMETERS DURING PRODUCTION.
   2.2 FIRST ARTICLE: FIRST ARTICLE VERIFICATION IS REQUIRED PRIOR TO INITIAL
       TOOL APPROVAL OR APPROVAL OF A TOOL CHANGE.

3. MARKING:
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       INDELIBLE INK AT LOCATION SHOWN.
   3.2 IDENTIFY PARTS THAT CANNOT BE STAMPED WITH PART NUMBER AND REVISION
       LEVEL BY BAG AND/OR TAG METHOD.

4. GENERAL REQUIREMENTS:
   4.1 CRITICAL DIMENSIONS ARE DENOTED BY [X.XXX].
   4.2 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS

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<td>BASE FLANGE 1.5&quot; X 1.5&quot; COATED</td>
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<td>381384</td>
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<td>381399</td>
<td>BASE FLANGE 1.5&quot; X 4&quot; COATED</td>
<td>381273</td>
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<td>381407</td>
<td>BASE FLANGE 2&quot; X 2&quot; COATED</td>
<td>381284</td>
</tr>
<tr>
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<td>BASE FLANGE 2&quot; X 3&quot; COATED</td>
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<td>381362</td>
</tr>
</tbody>
</table>
1.1 POWDER COAT SPEC ACCORDING TO SPEC
1.2 BREAK ALL CORNERS AND SHARP EDGES

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4. GENERAL REQUIREMENTS:
4.1 CRITICAL DIMENSIONS ARE DENOTED BY .
4.2 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS

BENT PART NO. | DESCRIPTION          | MATERIAL
---------------|----------------------|----------
381414         | CLEAT SKYLIGHT 1.5' BENT | 381368   
381423         | CLEAT SKYLIGHT 2' BENT  | 381371   
381439         | CLEAT SKYLIGHT 3' BENT  | 381387   
381458         | CLEAT SKYLIGHT 3.5' BENT| 381396   
381465         | CLEAT SKYLIGHT 4' BENT  | 381402   

UNLESS OTHERWISE SPECIFIED:

PROPRIETARY AND CONFIDENTIAL
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NOTES: UNLESS OTHERWISE SPECIFIED.

1.1 POWDER COAT SPEC ACCORDING TO SPEC.
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4. GENERAL REQUIREMENTS:
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4.2 PART DIMENSIONED PER ANSI Y14.100-2000 STANDARDS

UNLESS OTHERWISE SPECIFIED:

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### Notes:

Unless otherwise specified:

1. **Finish:**
   - 1.1 Powder coat spec according to Spec 892000
   - 1.2 Break all corners and sharp edges

2. **Quality Assurance Requirements:**
   - 2.1 The supplier must maintain statistical process control (SPC) or 100% inspection on critical parameters during production.
   - 2.2 First Article: first article verification is required prior to initial tool approval or approval of a tool change.

3. **Marking:**
   - 3.1 Part number and current revision level shall be stamped in contrasting indelible ink at location shown.
   - 3.2 Identify parts that cannot be stamped with part number and revision level by bag and/or tag method.

4. **General Requirements:**
   - 4.1 Critical dimensions are denoted by (X.XXX).
   - 4.2 Part dimensioned per ANSI Y14.100-2000 standards

---

#### Coated Part Numbers

<table>
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### Drawing Information

- **Report #:** K6417-303-44
- **Date:** 02/28/20
- **Verified by:**

---

### Material:

- See Table

### Finish:

- Coated

---

### Toleraences:

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---

### Approval:

- Drawn by: STEVENS
- Date: 9/23/19
- Checked by:
- Approved by:

---

### Scale:

- 1:2

---

### Notes:

- Unless otherwise specified, powder coat spec according to Spec 892000, break all corners and sharp edges.

---

### Quality Assurance:

- The supplier must maintain statistical process control (SPC) or 100% inspection on critical parameters during production.
- First article verification is required prior to initial tool approval or approval of a tool change.

---

### Marking:

- Part number and current revision level shall be stamped in contrasting indelible ink at location shown.
- Identify parts that cannot be stamped with part number and revision level by bag and/or tag method.

---

### General Requirements:

- Critical dimensions are denoted by (X.XXX).
INSULATED GLAZING ASSEMBLY SPECIFICATION

PERFORMANCE CHARACTERISTICS
- U-FACTOR: ≤ 0.5 (BTU/H FT2 °F) OR ≤ 2.84 (W/M2 °C)
- SHGC: ≤ 0.28
- VT: 60% MIN
- UV PROTECTION: 95% BLOCKAGE MIN

MATERIAL / CONSTRUCTION
- REFERENCE INTERNAL DOCUMENT 990885

SUPPLIER REQUIREMENTS
- NAFS SPECIFICATIONS REQUIRE THAT IGUS SHALL BE EVALUATED FOR CONFORMANCE WITH ASTM E2190. STANDARD SPECIFICATION FOR INSULATING GLASS UNIT PERFORMANCE AND EVALUATION. NFRC 706-2010 PROVIDES DETAILS FOR CERTIFICATION PROGRAMS.
- NFRC 700 AND NFRC 705 REQUIRE THAT IGUS BE CERTIFIED WITH A PARTICIPATING IG CERTIFICATION PROGRAM. SUPPLIER PF IGU MUST BE LISTED IN THE "IGC DIRECTORY."

MARKING & ETCHING
- SOLATUBE LOGO (FONT SIZE: AS DIMENSIONED)
- MARKINGS PER ANSI STANDARDS (WILL COMPLY WITH ANSI Z97.1 - 2015): FONT SIZE PER MANUFACTURER STANDARD
- INSULATED GLASS WILL HAVE A GAS CONTENT INITIAL AND AFTER WEATHERING (GCIA) REPORT

TOLERANCES

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<td>±12.5°</td>
<td>±0.05</td>
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UNLESS OTHERWISE SPECIFIED:

DO NOT SCALE DRAWINGS
Solatube International  
2210 Oak Ridge Way  
Vista, CA 92081

SPECIFICATION / SOURCE CONTROL DRAWING (SCD)

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<th>REV</th>
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REGULATORY CONTROLLED: ☐ NO / ☑ YES

CERTIFICATE OF CONFORMANCE : Required once per year

SHELF LIFE : 6 months.

STORAGE: Store in closed container in a dry and cool area. Keep away from heat source and sources of ignition.

HANDLING: Handle in accordance with good industrial hygiene and safety practice. Provide appropriate exhaust ventilation and dust collection at machinery. Avoid dust formation. All metal parts of the mixing and processing equipment must be earthed.

APPROVED MANUFACTURERS:
1. INEOS STYROLUTION GROUP
2. 
3. 

MANUFACTURER PART NO.:
1. LURAN S 757G
2. 
3. 

SUPPLIER:

SUPPLIER PART NO.:

PART NO.: 890010

DESCRIPTION (30 CHARACTERS PER LINE):
Line 1: RESIN ASA BLACK

ATTACHMENTS: ☐ CATALOG PAGE ☐ VENDOR SPECIFICATION ☐ DRAWING ☑ OTHER: MSDS
☐ QUOTE ☐ MATERIAL CERTIFICATION ☐ FIRST ARTICLE

ORIGINATOR DATE: 

APPROVED BY/ DATE: 

SHEET 1 OF
## Specification / Source Control Drawing (SCD)

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<td>REMOVE GAGE REFERENCE</td>
<td>MM</td>
<td>CS</td>
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REGULATORY CONTROLLED: ☒ YES – REFERENCE ATI TEST REPORT C5760.01-301-44

## Sheet Steel

**TYPE:** STEEL GRADE CS (COMMERCIAL STEEL) TYPE B, COLD ROLLED, COATING AZ-50

**THICKNESS:** 0.0276” +/- .004”

**SIZE:** 48.0” (+0.69”/-0.0) x 45.0” (+0.75”/-0.0) SHEET

**Requirements:**
1. COMPLIES WITH EU (RoHS Directive) AND ASTM A792/A792M
2. THICKNESS CANNOT BE REDUCED WITHOUT CHANGE NOTICE, TESTING AND/OR APPROVAL FROM 3rd PARTY COMPLIANCE & CERTIFICATION TEST;
3. STEEL SHALL BE CORROSION RESISTANT; IBC SECTION 1503
4. CERTIFICATE OF CONFORMANCE REQUIRED W/ P.O

**Note:** “ZINCALUME PLUS STEEL” IS RESIN COATED; RESIN COATING OFFERS SOME CORROSION PROTECTION AND LUBRICATION PROPERTIES.

**Approved Manufacturers:**
1. STEEL SCAPE
2. (Vendor)
3. (Vendor)

**Manufacturer Part No.:**
1. ZINCALUME PLUS
2. (Vendor Part No.)
3. (Vendor Part No.)

**Supplier:**

**Supplier Part No.:**

**Part No.:** 200965

**Description (30 Characters Per Line):**
1. SHEET STEEL ZINCALUME PLUS
2. 24 GAUGE

**Attachments:**
- CATALOG PAGE
- VENDOR SPECIFICATION
- DRAWING
- OTHER
- QUOTE
- MATERIAL CERTIFICATION
- FIRST ARTICLE

**Originator Date:** C STEVENS 20 FEB 13

**Approved By/ Date:**

**Sheet 1 of 1**
# SPECIFICATION / SOURCE CONTROL DRAWING (SCD)

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REGULATORY CONTROLLED: [ ]

**MATERIAL:** ALUMINUM ALLOY 3105  
**TEMPER:** H24  
**THICKNESS:** 14 GAUGE (~.063 INCH)  
**FINISH:** MILLED FINISH  
**PAINT:** NONE  
**TOLERANCE:** LENGTH AND WIDTH: -0/+0.0625"; FLATNESS: 6.7 i-UNITS (1/16" per 12")

**MANUFACTURER:**  
**MANUFACTURER PART NO.:**

**SUPPLIER:**  
**SUPPLIER PART NO.:**

**PART NO.:** 201895  
**DESCRIPTION (30 CHARACTERS PER LINE):**  
Line 1: SHEET ALUM 48 X 56.6 3105 H24  
Line 2: 14 GAUGE

**ATTACHMENTS:**  
- [ ] CATALOG PAGE  
- [ ] VENDOR SPECIFICATION  
- [ ] DRAWING  
- [ ] OTHER  
- [ ] QUOTE  
- [ ] MATERIAL CERTIFICATION  
- [ ] FIRST ARTICLE

**ORIGINATOR DATE:**  
**APPROVED BY/ DATE:**  
**SHEET 1 OF 1**
MATERIAL: ALUMINUM ALLOY 3105
TEMPER: H24
THICKNESS: 14 GAUGE (~.063 INCH)
FINISH: MILLED FINISH
PAINT: NONE
TOLERANCE: LENGTH AND WIDTH: -0/+.0625"; FLATNESS: 6.7 i-UNITS (1/16" per 12")
SPECIFICATION / SOURCE CONTROL DRAWING (SCD)

REV ECO DESCRIPTION REV BY CHECK’D DATE
A 3094-1 INITIAL RELEASE CS
B 3107-1 ADD TOLERANCE CS

REGULATORY CONTROLLED: □

MATERIAL: ALUMINUM ALLOY 3105
TEMPER: H24
THICKNESS: 14 GAUGE (~ .063 INCH)
FINISH: MILLED FINISH
PAINT: NONE

TOLERANCE: LENGTH AND WIDTH: -0/+0.0625”; FLATNESS: 6.7 i-UNITS (1/16” per 12”)

MANUFACTURER: MANUFACTURER PART NO.:
SUPPLIER: SUPPLIER PART NO.:
PART NO.: DESCRIPTION (30 CHARACTERS PER LINE):
201927 Line 1: SHEET ALUM 48 X 104.5 3105 H24
Line 2: 14 GAUGE

REV: B

Attachments:
□ CATALOG PAGE □ VENDOR SPECIFICATION □ DRAWING □ OTHER
□ QUOTE □ MATERIAL CERTIFICATION □ FIRST ARTICLE

ORIGINATOR DATE: CSTEVENS 10 JUL 19
APPROVED BY/ DATE: SHEET 1 OF 1
**SPECIFICATION / SOURCE CONTROL DRAWING (SCD)**

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REGULATORY CONTROLLED: [ ]

**MATERIAL:** 304 STAINLESS STEEL

**THICKNESS:** 16 GAUGE (~.063 INCH)

**SURFACE FINISH:** 2B DULL

**PAINT:** NONE

**LENGTH AND WIDTH TOL.:** -0/+0.0625"

**FLATNESS TOL.:** MAX. 1/2" VARIANCE OVER 48"

**MANUFACTURER:**

**MANUFACTURER PART NO.:**

**SUPPLIER:**

**SUPPLIER PART NO.:**

**PART NO.:** 220320

**DESCRIPTION (30 CHARACTERS PER LINE):**

Line 1: SHEET STAINLESS STEEL 304 16GA

Line 2: 48" X 48"

**REV:** A

**Attachments:**

- [ ] CATALOG PAGE
- [ ] VENDOR SPECIFICATION
- [ ] DRAWING
- [ ] OTHER
- [ ] QUOTE
- [ ] MATERIAL CERTIFICATION
- [ ] FIRST ARTICLE

**ORIGINATOR DATE:** CSTEVENS  20 OCT 19

**APPROVED BY/ DATE:**

**SHEET 1 OF 1**
**SPECIFICATION / SOURCE CONTROL DRAWING (SCD)**

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REGULATORY CONTROLLED: □ NO / □ YES –

**CLOSED CELL FOAM EXTRUSION**

**SIZE:** 0.250” X 0.375” (+/- .032) RECTANGLE

**MATERIAL:** 2A1 EPDM (preferred), NEOPRENE, NBR, SBR, PVC, (OR BLEND) FOAM/SPONGE; BLACK

**ADHESIVE:** ACRYLIC PSA ON 0.375” SIDE; 50 TO 100 FT ROLLS

**NOTE:** ADHESIVE FACING OUTWARD IS STANDARD FOR EPDM

---

**APPROVED MANUFACTURERS:**
1. 
2. 
3. 

**MANUFACTURER PART NO.:**
1. 
2. 
3. 

**SUPPLIER:**

**SUPPLIER PART NO.:**

**PART NO.:** 381076

**DESCRIPTION (30 CHARACTERS PER LINE):**

Line 1: CLOSED CELL FOAM

Line 2: 1/4” X 3/8”

**ATTACHMENTS:**
- □ CATALOG PAGE
- □ VENDOR SPECIFICATION
- □ DRAWING
- □ OTHER
- □ QUOTE
- □ MATERIAL CERTIFICATION
- □ FIRST ARTICLE

**ORIGINATOR DATE:** C. STEVENS 20 JUL 19

**APPROVED BY/ DATE:** SHEET 1 OF
DOUBLING SIDED FOAM TAPE

ADHESIVE: ACRYLIC BASE PSA

WIDTH: 0.250 +/- .020”

THICKNESS: 0.045” (1.1 MM) ± 10%

COLOR: BLACK

LINER: POLY BASED RELEASE LINER (ONE SIDE)

NOTE: REFER TO MANUFACTURER SPECIFICATIONS FOR PACKAGING, ROLL SIZE, SHELF LIFE, STORAGE CONDITIONS, APPLICATION TEMPERATURE RANGE AND REQUIRED PRESSURE FOR PROPER ADHESION TO SUBSTRATES.
# SPECIFICATION / SOURCE CONTROL DRAWING (SCD)

<table>
<thead>
<tr>
<th>REV</th>
<th>ECO</th>
<th>DESCRIPTION</th>
<th>REV BY</th>
<th>CHECK'D</th>
<th>DATE</th>
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<tr>
<td>A</td>
<td>3101-1</td>
<td>INITIAL RELEASE</td>
<td></td>
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</table>

**RIVET**

- **SIZE:** 0.125” (3.2mm) BODY DIA. X BODY LENGTH 0.313” (8 mm)
- **GRIP RANGE:** 0.126” (3.2mm) - .0187” (4.8mm)
- **TYPE:** OPEN / DOME HEAD
- **MATERIAL:** 5052 ALUMINUM BODY / STEEL MANDREL
- **FINISH:** ANODIZED BLACK (BODY)
- **NOTES:** RECOMMENDED WORK HOLE DIA.: 0.129” – 0.133”

**5056 Aluminum Body/Steel Mandrel – Domed Head – Finish: Black / Plain**

<table>
<thead>
<tr>
<th>Hole Size</th>
<th>Rivet Part Number</th>
<th>Rivet Diameter</th>
<th>Nominal Rivet Diameter</th>
<th>(L) Nominal Rivet Body Length</th>
<th>(F) Nominal Bled Side Protrusion</th>
<th>Nominal Body Dia.</th>
<th>Grip Range</th>
<th>(D) Body Diameter</th>
<th>(E) Flange Diameter</th>
<th>(W) Nominal Mandrel Diameter</th>
<th>(H) Flange Thickness</th>
<th>Lbs. (N)</th>
<th>Lbs. (N)</th>
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</thead>
</table>

**APPROVED MANUFACTURERS:**
1. Intertek
2. 
3. 

**MANUFACTURER PART NO.:**
1. 
2. 
3. 

**SUPPLIER:**

**SUPPLIER PART NO.:**

**PART NO.: 700048**

- **DESCRIPTION (30 CHARACTERS PER LINE):**
  - Line 1: RIVET 1/8” x 5/16” AL/ST BLACK
  - Line 2: OPEN/ DOME HEAD

**ATTACHMENTS:**

- [ ] CATALOG PAGE
- [ ] VENDOR SPECIFICATION
- [ ] DRAWING
- [ ] OTHER
- [ ] QUOTE
- [ ] MATERIAL CERTIFICATION
- [ ] FIRST ARTICLE

**ORIGINATOR DATE:**

**APPROVED BY/ DATE:**

**SHEET 1 OF 1**
**SPECIFICATION / SOURCE CONTROL DRAWING (SCD)**

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<td>11/8/19</td>
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REGULATORY CONTROLLED: ☐ NO / ☑ YES -

**POLYURETHANE ADHESIVE SEALANT**

**MATERIAL:** SINGLE COMPONENT POLYURETHANE

**COLOR:** BLACK

**PACKAGE STYLE:** 20 OZ. (310 ml SAUSAGE) CARTIRIGE

**ELONGATION AT BREAK (ASTM D412):** 400% (min)

**APPROVED MANUFACTURERS:**
1. 3M
2. BASF
3. [Supplier Name]

**MANUFACTURER PART NO.:**
1. 595
2. TX-1
3. [Part Number]

**PART NO.:** 700358

**DESCRIPTION (30 CHARACTERS PER LINE):**

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<tr>
<th>Line 1:</th>
<th>SEALANT, POLYURETHANE SEALANT</th>
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</thead>
<tbody>
<tr>
<td>Line 2:</td>
<td></td>
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</tbody>
</table>

**ATTACHMENTS:**
- [ ] CATALOG PAGE
- [ ] VENDOR SPECIFICATION
- [ ] DRAWING
- [ ] OTHER
- [ ] QUOTE
- [ ] MATERIAL CERTIFICATION
- [ ] FIRST ARTICLE

**ORIGINATOR DATE:** CSTEVENS 11/8/19

**APPROVED BY/ DATE:**

**SHEET 1 OF 1**
# Screw

- **Type:** #10 X 3” SELF PIERCING, PHILLIPS, TRUSS HEAD
- **Thread / Point:** TYPE A; 12 THREAD PER INCH; SELF PIERCING TIP (25° ±5°)
- **Material:** CARBON STEEL AISI 1018-1022 OR EQUAL
- **Finish / Coating:** REFERENCE STI SPECIFICATION NO. 990005
- **Hardness:** SURFACE ROCKWELL C45 MIN. ; CORE ROCKWELL C28-38

## Specifications

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**Regulatory Controlled:**  NO / [YES – CERTIFICATE OF CONFORMANCE REQUIRED]

**Approved Manufacturers:**
1.  
2.  
3.  

**Manufacturer Part No.:**
1.  
2.  
3.  

**Supplier:**  

**Supplier Part No.:**  

**Part No.:** 700442

**Description (30 Characters Per Line):**
- Line 1: SCREW #10 X 3" SELF PIERCE, PHILLIPS
- Line 2: TRUSS HEAD

**Attachments:**
- [ ] Catalog Page
- [ ] Vendor Specification
- [ ] Drawing
- [ ] Other
- [ ] Quote
- [ ] Material Certification
- [ ] First Article

**Originator Date:** CSTEVENS 11/11/19

**Approved By/ Date:** SHEET 1 OF 1
**SPECIFICATION / SOURCE CONTROL DRAWING (SCD)**

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REGULATORY CONTROLLED: [ ] NO / [ ] YES -

**RIVET**

**SIZE:** 1/8 DIA. X 1/4 (0.121 – 0.125 DIA.) X (0.031 – 0.187 GRIP)

**TYPE:** BLIND, MULTI-GRIP, BUTTON HEAD/ DOME HEAD

**MATERIAL:** ALUMINUM BODY / STEEL ZINC COATED MANDREL

**NOTES:**
Sheer: 165 lbf (Pound Force)
Tensile: 230 lbf (Pound Force)

**APPROVED MANUFACTURERS:**
1. AVDEL AVEX
2. MARSON
3.

**MANUFACTURER PART NO.:**
1. 1661-00410 or 1691-00410
2. AB41-43MGV
3.

**SUPPLIER:**

**SUPPLIER PART NO.:**

**PART NO.:** 700635

**DESCRIPTION (30 CHARACTERS PER LINE):**

Line 1: RIVET 1/8” X 1/4” BLIND, MULTI-GRIP

Line 2: ALUM/STEEL, LOW PROFILE

**ATTACHMENTS:**
[ ] CATALOG PAGE [ ] VENDOR SPECIFICATION [ ] DRAWING [ ] OTHER
[ ] QUOTE [ ] MATERIAL CERTIFICATION [ ] FIRST ARTICLE

**ORIGINATOR DATE:** STEVENS 2/13/13

**APPROVED BY/ DATE:**

**SHEET 1 OF 1**
Avex® 1661

For installation information please refer to the tooling overview and manuals on our website www.avdelglobal.com.

For the installation please refer to the description of the tool and our manuals available on our website.

Per le istruzioni di installazione, consultare i manuali e la panoramica dei attrezzi sul nostro sito web.

Para ver información sobre maquinados de colado, consulte nuestras páginas web, apartados visión general de máquinas y manuales.

<table>
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<tr>
<th>English</th>
<th>Français</th>
<th>Deutsch</th>
<th>Italiano</th>
<th>Español</th>
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</thead>
<tbody>
<tr>
<td>Dome head</td>
<td>Tête plate</td>
<td>Flachrundkopf</td>
<td>Testa tonda</td>
<td>Cabeza alomada</td>
</tr>
</tbody>
</table>

Body: Aluminum alloy*<br>(2.5% Mg) Natural<br>Corps: Alliage d'aluminium*<br>(2.5% Mg) Brut<br>Hülse: Aluminium*<br>(2.5% Mg) Blaníc<br>Corpo: Lega di alluminio*<br>(2.5% Mg) Nessuna tintura<br>Cuerpo: Aluminio*<br>(2.5% Mg) Natural

Stem: Low carbon steel***<br>Tige: Acier bas carbone***<br>Dorn: Stahl***<br>Gambo Alluminio a basso tenore di carbonio***<br>Vástago: Acero bajo en carbono***

Zinc coated<br>Revêtement zingué<br>Zinkiert<br>Tecido di zincato<br>Zinato<br>Verzinkt

** AA 5052, DIN 1725, AlMg2.5, Werkstoff 3.3523<br>*** BS3311 type W, SAE 1018/1018/1022, DIN 1034, Cq15/Cq22

<table>
<thead>
<tr>
<th>ø</th>
<th>nom</th>
<th>min</th>
<th>max</th>
<th>M</th>
<th>B</th>
<th>D</th>
<th>E</th>
<th>lbf*</th>
<th>lbf**</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0 mm</td>
<td>0.031</td>
<td>0.172</td>
<td>0.122</td>
<td>0.130</td>
<td>0.360</td>
<td>0.262</td>
<td>0.051</td>
<td>0.066</td>
<td>0.157</td>
</tr>
<tr>
<td>1/8&quot; (3.2 mm)</td>
<td>0.047</td>
<td>0.250</td>
<td>0.157</td>
<td>0.312</td>
<td>0.219</td>
<td>0.375</td>
<td>0.262</td>
<td>0.051</td>
<td>0.070</td>
</tr>
<tr>
<td>5/32&quot; (4.0 mm)</td>
<td>0.020</td>
<td>0.125</td>
<td>0.031</td>
<td>0.187</td>
<td>0.047</td>
<td>0.250</td>
<td>0.157</td>
<td>0.370</td>
<td>0.262</td>
</tr>
<tr>
<td>3/16&quot; (4.8 mm)</td>
<td>0.062</td>
<td>0.250</td>
<td>0.187</td>
<td>0.437</td>
<td>0.187</td>
<td>0.500</td>
<td>0.500</td>
<td>0.396</td>
<td>0.071</td>
</tr>
</tbody>
</table>
| 1/4" (6.4 mm) | 0.060 | 0.325 | 0.261 | 0.275 | 0.660 | 0.530 | 0.105 | 0.158 | 0.700 | 0.560 | 0.1610.04506**

All dimensions in inches / en pouces / alle Maße in Zoll / in pollici / en pulgadas

1) Typical values / valeurs moyennes / typische Werte / Valori tipici / resistencias máximas recomendadas
2) Stem: zinc plated, dear trivalent passivated / tige: revêtement zingué, passivation dore trivalente / Dorn: verzinkt, klar chromatiert Dr-frei / Gambo: zincato, passazione chìara trivalente / Vástago: zincado, pasado claro trivalente

Report #: K6417-303-44
Date: 02/28/20
Verified by: [Signature]
### Multi-Grip Aluminum Rivet, Clear Zinc Plated Steel Mandrel

#### Buttonhead

<table>
<thead>
<tr>
<th>Part #</th>
<th>Grip Range</th>
<th>Drill No. &amp; Hole Size</th>
<th>Bull Stock</th>
<th>Std. Qty.</th>
<th>500/Pack Stock</th>
<th>Package Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABG1-4MGV</td>
<td>3/32-41/64&quot;</td>
<td>0.036&quot; (.965)</td>
<td>MG4158</td>
<td>18M</td>
<td>MG4178</td>
<td>500</td>
</tr>
<tr>
<td>ABG2-6MGV</td>
<td>6/32-19/64&quot;</td>
<td>0.050&quot; (.953)</td>
<td>MG4157</td>
<td>18M</td>
<td>MG4178</td>
<td>500</td>
</tr>
<tr>
<td>ABG4-8MGV</td>
<td>8/32-21/64&quot;</td>
<td>0.050&quot; (.953)</td>
<td>MG4157</td>
<td>18M</td>
<td>MG4178</td>
<td>500</td>
</tr>
<tr>
<td>ABG6-10MGV</td>
<td>10/32-23/64&quot;</td>
<td>0.050&quot; (.953)</td>
<td>MG4157</td>
<td>18M</td>
<td>MG4178</td>
<td>500</td>
</tr>
<tr>
<td>ABG8-12MGV</td>
<td>12/32-25/64&quot;</td>
<td>0.050&quot; (.953)</td>
<td>MG4157</td>
<td>18M</td>
<td>MG4178</td>
<td>500</td>
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#### Large Flange

<table>
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<tr>
<th>Part #</th>
<th>Grip Range</th>
<th>Drill No. &amp; Hole Size</th>
<th>Bull Stock</th>
<th>Std. Qty.</th>
<th>500/Pack Stock</th>
<th>Package Qty</th>
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<tbody>
<tr>
<td>ABG41-4MGV</td>
<td>4/32-61/64&quot;</td>
<td>0.059&quot; (.995)</td>
<td>MG4244</td>
<td>20M</td>
<td>MG4271</td>
<td>500</td>
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<tr>
<td>ABG52-6MGV</td>
<td>6/32-11/64&quot;</td>
<td>0.059&quot; (.995)</td>
<td>MG4244</td>
<td>20M</td>
<td>MG4271</td>
<td>500</td>
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<tr>
<td>ABG66-8MGV</td>
<td>8/32-11/64&quot;</td>
<td>0.059&quot; (.995)</td>
<td>MG4244</td>
<td>20M</td>
<td>MG4271</td>
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<td>ABG86-10MGV</td>
<td>10/32-11/64&quot;</td>
<td>0.059&quot; (.995)</td>
<td>MG4244</td>
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#### 120° Countersunk

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<th>Drill No. &amp; Hole Size</th>
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<th>Std. Qty.</th>
<th>500/Pack Stock</th>
<th>Package Qty</th>
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<td>AGC1-4MGV</td>
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**Report #:** K6417-303-44  
**Date:** 02/28/20  
**Verified by:** [Signature]

**Terms:**

We reserve the right to substitute Verson brand rivets or rivets of any time.  

**Terms of Sale:** Net 30 days.  

**Freight Terms:** Freight prepaid by our chosen carrier on shipments of $350.00 or more. Continental USA.  

**Tools and fasteners may be combined for prepaid freight. Minimum order $350.00, $5.00 for small parts.**  

**Returns:** No returns accepted without prior written approval. All returns subject to 15% handling, restocking and inspection charge.  

**Warranty:** Alice warrants its products to be free from defects in materials and workmanship. Alleged defective material is subject to inspection. Material will be replaced or credit issued at our option after inspection. Alice is not responsible for secondary operations performed after the sale of product.  

**Pricing:** Different sizes and/or tools may be combined to qualify for volume pricing. Prices subject to change without notice.

**Marson**, **Intertek**, and **Henloch** are registered trademarks of Verson Fastening Systems.  

**Ultra-Grip** is a registered trademark of Creation Engineering.  

**Tigrip** is a registered trademark of George F. Sunkle & Co.

[Signature]
<table>
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<td>INITIAL RELEASE</td>
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REGULATORY CONTROLLED:  ☑ NO / ☐ YES

**SCREW**
- **TYPE:** #8 X 1/2” SELF TAPPING, PHILLIPS, TRUSS HEAD
- **THREAD / POINT:** SELF TAPPING SHEET METAL SCREW
- **MATERIAL:** 304 STAINLESS STEEL OR EQUAL
- **FINISH/COATING:** BLACK OXIDE COATING WITH WAX OR OIL FINISH

**APPROVED MANUFACTURERS:**
1.  
2.  
3.  

**MANUFACTURER PART NO.:**
1.  
2.  
3.  

**SUPPLIER:**

**SUPPLIER PART NO.:**

**PART NO.:** 720093  
**DESCRIPTION (30 CHARACTERS PER LINE):**

- **Line 1:** SCREW #8 X 1/2” SELF TAPPING, PHILLIPS  
- **Line 2:** TRUSS HEAD

**ATTACHMENTS:**
- ☑ CATALOG PAGE  
- ☑ VENDOR SPECIFICATION  
- ☑ DRAWING  
- ☑ OTHER QUOTE  
- ☑ MATERIAL CERTIFICATION  
- ☑ FIRST ARTICLE

**ORIGINATOR DATE:** CSTEVEWS 11/5/19  
**APPROVED BY/ DATE:** SHEET 1 OF 1
TEST REPORT FOR SOLATUBE INTERNATIONAL  
Report No.: IK6417.01-303-44  
Date: 02/28/20

SECTION 11  
REVISION LOG

<table>
<thead>
<tr>
<th>REVISION #</th>
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<th>PAGES</th>
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