

Fenestration Testing Laboratory, Inc.

10235 8th Street, Rancho Cucamonga, CA 91730

Report #: T17-074

REPORT SUMMARY:

REPORT #:

T17-074

TESTED FOR:

Value Windows and Doors

1830 Flower Ave.

Duarte, CA 91010

SERIES & PRODUCT TYPE:

Eurotek 70 - PVC DUAL ACTION WINDOW

CONFIGURATION:

X

FRAME SIZE:

1200.15 mm x 1800.10 mm (47.25" x 70.87")

SPECIFICATION:

NAFS - North American Fenestration Standard/specification for windows, doors, and skylights
AAMA/WDMA/CSA 101/IS.2/A440-11

Canadian Supplement to AAMA/WDMA/CSA 101/IS.2/A440-11 North American Fenestration
Standard/Specification for windows, doors, and skylights

PRIMARY DESIGNATOR:

CLASS CW-PG70 1200.15 x 1800.10 mm (47.25 x 70.87 in) Type: DAW

TEST COMPLETION DATE: December 5, 2017

REPORT DATE: December 7, 2017

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1.0 Tested For: Value Windows and Doors
1830 Flower Ave.
Duarte, CA 91010

2.0 Purpose:

The purpose of this report is to present the testing methods employed and the test results obtained during the performance testing of one (1) PVC DUAL ACTION WINDOW described in paragraph 4.0 of this report.

3.0 Test References:

- 3.1 NAFS - North American Fenestration Standard/specification for windows, doors, and skylights AAMA/WDMA/CSA 101/I.S.2/A440-11
- 3.2 ASTM F 588-14 Forced Entry Resistance Tests for Windows
- 3.3 CAWM 301-90(1995) Forced Entry Test for Windows (CMBSO 1-79)
- 3.4 Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440-11 North American Fenestration Standard/Specification for windows, doors, and skylights

4.0 Compliance Statement: The test results in paragraph 6.0 indicate that the test sample described in paragraph 5.0 of this report met the performance requirements of the above specifications for the performance grade shown in 4.1 below.

4.1 CLASS CW-PG70 1200.15 x 1800.10 mm (47.25 x 70.87 in) Type: DAW

5.0 Sample Submitted:

5.1 Product Type: PVC DUAL ACTION WINDOW

5.2 Series: Eurotek 70

5.3 Configuration: X

| | | |
|--------------------------------|--------------------|---------------|
| 5.4 Product Dimensions: | Millimeters | Inches |
| Total Frame: | 1200.15 x 1800.10 | 47.25 x 70.87 |
| Active Sash: | 1117.60 x 1714.50 | 44.00 x 67.50 |

5.5 Glass and Glazing:

| <i>IGU Thickness</i> | <i>Spacer Type</i> | <i>Interior Lite</i> | <i>Exterior Lite</i> | <i>Glazing method</i> |
|-----------------------|--------------------|----------------------|----------------------|---|
| 1" overall wide | TPS | 1/8" Tempered | 1/8" Tempered | Inside glazed – the sash contained coextruded glazing gasket facing inward and snap-in glazing stops were applied full perimeter on the inside. The glazing stops contained a pull-in glazing gasket facing out. The IGU sat on 3/16" x 1.5" x 4.125" PVC setting blocks at ¼ points on the sill. Setting blocks were also set at ¼ points on the jambs and head. |

5.6 Weepage:

| <i>Drainage Method</i> | <i>Size</i> | <i>Quantity</i> | <i>Location</i> |
|------------------------|-------------|---------------------|---|
| Rectangular weep | 1" x 3/16" | One (1) at each end | Frame Sill outside face |
| Rectangular weep | 1" x 0.2" | One (1) at each end | Frame Sill on inside face of the sill outside leg - drained into a hollow |
| Rectangular weep | 1" x 3/16" | One (1) at each end | Sash bottom rail – vertical weep at bottom of rail |
| Rectangular weep | 1" x 0.2" | One (1) at each end | Sash bottom rail glazing pocket on the glazing leg web draining into a hollow |

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5.7 Pressure balancing:

| <i>Hole Size</i> | <i>Quantity</i> | <i>Location</i> |
|---------------------|-----------------|---|
| 3/16" diameter hole | Eight (8) | Frame - Two (2) on the head exposed to the exterior and two (2) on the head in the inside face of the sill outside leg Sash - Two (2) on the top rail outboard of the IGU and two (2) on the top rail glazing pocket on the glazing leg. |

5.8 Weather-stripping:

| <i>Type</i> | <i>Quantity</i> | <i>Location</i> |
|-------------------|-----------------|--|
| Coextruded gasket | One (1) strip | Full perimeter of the frame facing in. |
| Coextruded gasket | One (1) strip | Full perimeter of the sash facing out. |

5.9 Sealants: For Block Frame (For nail-on fin sealant, refer to report T17-037)

| |
|---|
| Sealant was applied at the following locations: -All block frame installation screw heads were sealed. |
|---|

5.10 Hardware:

| <i>Type</i> | <i>Quantity</i> | <i>Location</i> |
|--------------------------------------|-----------------|--|
| Dual Action Hardware and lock system | One set | Sash and frame - the sash was supported in the frame by the metal dual action hardware which included hinges at each end of the sash and hinge jamb that allowed the sash to pivot inward like a door, balancing arm for the sash to tilt inward at the top, lock rods and bolts, and a handle to actuate the operation and locking. When locked, the sash ten (10) point lock system engaged two keepers at sill, two at head, two at the lock jamb and four on the hinge jamb. Each keeper was fastened to the frame with three (3) #8 x 1.25" PFH screws. |

5.11 Construction:

| <i>Location</i> | <i>Joinery Type</i> | <i>Number of Fasteners</i> | <i>Fastener Size</i> |
|--------------------------------|-------------------------------|--|----------------------|
| Frame corners and sash corners | Mitered and fusion welded | N/A | N/A |
| PVC nail-on fin adapter | Fastened with screws to frame | Five (5) at head and sill and seven per jamb | #8 x 0.75" PFH |

5.12 Reinforcement:

| <i>Material</i> | <i>Part #</i> | <i>Location</i> |
|-----------------------------------|---------------|--|
| Rolled steel tube in frame hollow | 229029 | Full perimeter in frame - Fastened with four screws at head and sill respectively under the nail-on fin adapter, and with seven screws per jamb under the nail-on fin adapter. |
| Rolled steel shape in sash hollow | 229023 | Full perimeter in sash - Fastened with three screws at top and bottom rail respectively and four screws per jamb through the glazing pocket. |

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5.13 Installation: For Block Frame (For nail-on fin installation refer to report T17-037)

| Location on frame | Anchor type | Spacing |
|--|-------------------|---|
| Head, Sill, and jambs – Screws applied through block frame | #10 x 3.5” Screws | Two screws per head and sill; at 1/3 points at head and sill. Four screws per jamb; at 1/5 points at jambs |

6.0 - Test procedures and results: All testing procedures were performed in accordance with the performance requirements of the test specifications referenced in paragraph 3.0 of this report. The number preceding each test listed below refers to the corresponding sections in the NAFS.

9.3.1 - Operation Force (ASTM E2068-00(2016))

| Test Description | Results | Allowed | Comments |
|----------------------------------|---------------------|-------------------|----------|
| Maximum force to initiate motion | 4.44 N (1.00 lbf) | Report only | |
| Maximum force to maintain motion | 2.22 N (0.50 lbf) | 135 N (30.35 lbf) | |
| Latching device force | 44.48 N (10.00 lbf) | 100 N (22.48 lbf) | |

9.3.2 - Air Infiltration (ASTM E283-04(2012))

| Test Description | Results | Allowed | Comments |
|--|--------------------------|--------------------------|----------|
| 75 Pa differential pressure | 0.10 L/s*m ² | 1.5 L/s*m ² | |
| 1.57 psf differential pressure | 0.02 cfm/ft ² | 0.30 cfm/ft ² | |
| The tested specimen meets the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance. | | | |

9.3.2 - Air Exfiltration (ASTM E283-04(2012))

| Test Description | Results | Allowed | Comments |
|--|--------------------------|--------------------------|----------|
| 75 Pa differential pressure | 0.05 L/s*m ² | 1.5 L/s*m ² | |
| 1.57 psf differential pressure | 0.01 cfm/ft ² | 0.30 cfm/ft ² | |
| The tested specimen meets the A3 Canadian air exfiltration performance requirements specified in AAMA/WDMA/CSA 101/ I.S.2/A440 for air leakage resistance. | | | |

9.3.3 - Water Penetration (ASTM E547-00(2016))

| Test Description | Results | Allowed | Comments |
|--------------------|----------------------|----------------------|----------|
| 720 Pa (15.04 psf) | No water penetration | No water penetration | 1, 2 |

9.3.4.2 - Uniform Load Deflection at Design Pressure (ASTM E330-14)

| Test Description | Results | Allowed | Comments |
|--------------------------------|-----------------|-----------------|----------|
| DP70 - 3360 Pa (70.18 psf) Pos | 8.13 mm (0.32”) | 9.91 mm (0.39”) | 2 |
| DP70 - 3360 Pa (70.18 psf) Neg | 3.56 mm (0.14”) | 9.91 mm (0.39”) | 2 |

9.3.4.3 - Uniform Load Structural Overload (OL) at 1.5 x Design Pressure (ASTM E330-14)

| Test Description | Results | Allowed | Comments |
|--|-----------------|-----------------|----------|
| OL for DP75 - 5400 Pa (112.78 psf) Pos | 1.02 mm (0.04”) | 5.08 mm (0.20”) | 2 |
| OL for DP75 - 5400 Pa (112.78 psf) Neg | 0.76 mm (0.03”) | 5.08 mm (0.20”) | 2 |

9.3.5 - Forced Entry Resistance (ASTM F588-14 & CAWM 301-90(1995))

| Test Description | Results | Allowed | Comments |
|--|----------|----------|----------|
| ASTM F588 Type B and CAWM 301 Type III | No Entry | No Entry | |

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9.3.6.2 - Thermoplastic Weld Test

| Test Description | Results | Allowed | Comments |
|------------------------|---------|---|----------|
| Frame and Sash Corners | Passed | Break shall not extend along the entire weld line | |

9.3.6.4.3 - Sash/leaf concentrated load test on latch rail

| Test Description | Results | Allowed | Comments |
|-----------------------------------|-----------------|------------------|----------|
| Normal to plane 135 N (30.35 lbf) | 0.76 mm (0.03") | ≤ 1.5 mm (0.06") | |
| In the plane 230 N (51.71 lbf) | 0.76 mm (0.03") | ≤ 3.3 mm (0.13") | |

9.3.6.5.3 - Stabilizing arm load test

| Test Description | Results | Allowed | Comments |
|--|---------|-------------------------|----------|
| Sash Corners 890 N (200.08 lbf) | Passed | Sash operates/No damage | 3 |
| Top Rail at Center 1780 N (400.16 lbf) | Passed | Sash operates/No damage | 3 |

Comment #1 - Tested without insect screen.

Comment #2 - Opted to start testing at a level higher than the gateway.

Comment #3 - Section 9.3.6.5.3 states "After load removal, there shall be no damage to the window or door frame, operable sash or leaf components, glass stabilizing arm, or hardware components, and the product shall function normally." This is the criteria applied by stating "Passed" under "Results".

Testing was witnessed by: Jason Ye and other CW employees.

List of adjustments made or additional work performed on the test specimen to achieve the results shown in 6.0 above: None

For a complete description of the tested sample, refer to the attached seven (7) pages consisting of bill of materials, cross section drawings, and die drawings. This report is complete only when all the above referenced bill of materials and drawings are attached.

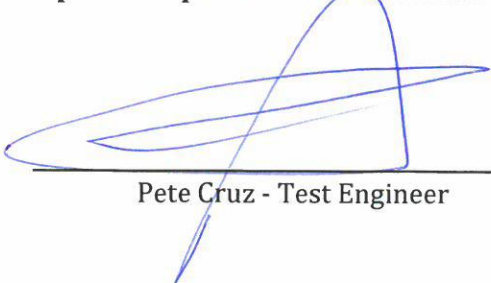
The bill of materials, cross section drawings, and die drawings of frame and sash members are on file and have been compared to the sample submitted. Test sample sections, bill of materials, drawings and a copy of this report will be retained at the test laboratory for four years.

This test report may not be modified in any way without the written consent of Fenestration Testing Laboratory, Inc (FTL).

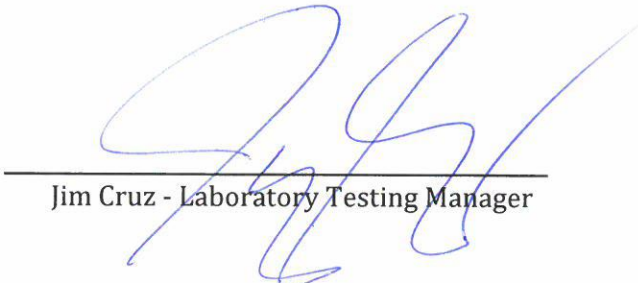
The preceding test results relate only to the tested specimen and were obtained by using the applicable test methods listed in section 3.0 and 6.0 above. This report does not constitute certification of this product or an endorsement by this laboratory. It is the property of the client named in section 1.0 above. Certification can only be granted by an approved administrator and/or validator.

Test Completion Date: December 5, 2017

Report Completion Date: December 7, 2017



Pete Cruz - Test Engineer



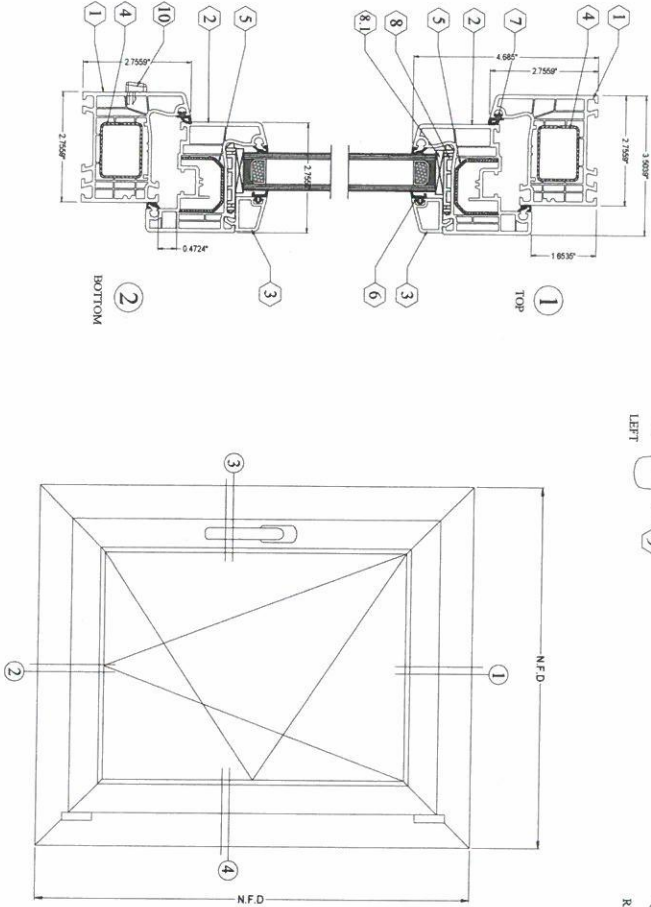
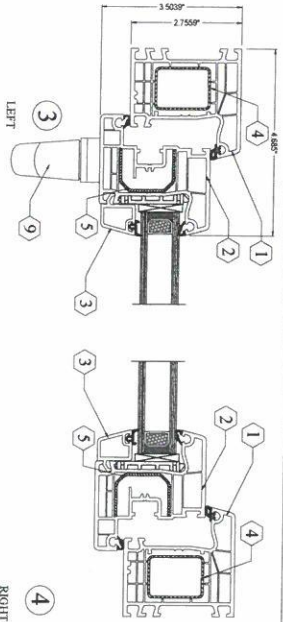
Jim Cruz - Laboratory Testing Manager

CUSTOMER NAME:

Sectional Drawing EUROTEK WINDOW_TILT & TURN

Series #:

70



BOM

| INDEX | PART NUMBER | DESCRIPTION | QTY | VENDOR | MATERIAL |
|-------|-------------|--------------------------------------|-----|----------|------------------|
| 1 | 149307 | FRAME-70 MM 4000 | 4 | ALUPLAST | PVC |
| 2 | 149330 | SASH-77 MM 4000 | 4 | ALUPLAST | PVC |
| 3 | 120636 | Glazing Bead | 4 | ALUPLAST | PVC |
| 4 | 229029 | REINFORCEMENT 1.25 MM | 4 | ALUPLAST | Galvanized steel |
| 5 | 229023 | REINFORCEMENT 1.5 MM | 4 | ALUPLAST | Galvanized steel |
| 6 | 429312 | REPAIR GASKETS | 1 | ALUPLAST | EPDM |
| 7 | 449980 | GASKET STANDARD | 2 | ALUPLAST | EPDM |
| 8 | 670301 | Compression Block | 8 | ALUPLAST | PVC |
| 8.1 | 659908 | Glazing Block - 5mm Green | 8 | ALUPLAST | PVC |
| 9 | 54116 | WINDOW HANDLE | 1 | MACO | Steel |
| 10 | 696923 | WEEP HOLE COVER | 2 | ALUPLAST | PVC |
| 11 | 358016 | Sash Lifter RH on Frame | 1 | MACO | Steel |
| 12 | 96591 | Striker on Frame | 9 | MACO | Steel |
| 13 | 52481 | Scraper on Hinge | 1 | MACO | Steel |
| 14 | 52484 | Pivot Pin 7mm Support Pin | 1 | MACO | Steel |
| 15 | 201748 | Tilt and Turn Drive Gear | 1 | MACO | Steel |
| 16 | 222201 | Corner Element | 1 | MACO | Steel |
| 17 | 222206 | Corner Element Horizontally | 1 | MACO | Steel |
| 18 | 211996 | Roller Sashon Stay | 1 | MACO | Steel |
| 19 | 222214 | Corner Element Vertically Expandable | 1 | MACO | Steel |

FENESTRATION TESTING LAB

REPORT NO:

DATE:

777-074
12/5/17

File No.:

TILT AND TURN

| Standard | Sectional Area | Unspec | Designed | Checked | File No.: |
|----------|----------------|---------------|---------------|---------------|---------------|
| Material | PVC | Theor. Weight | TK. Tolerance | Drawn | TILT AND TURN |
| | | | | Eric Ma | |
| | | | | Approved | |
| | | | | Yang Jing Wen | |
| | | | | Mapping | |
| | | | | | 06/29/2017 |

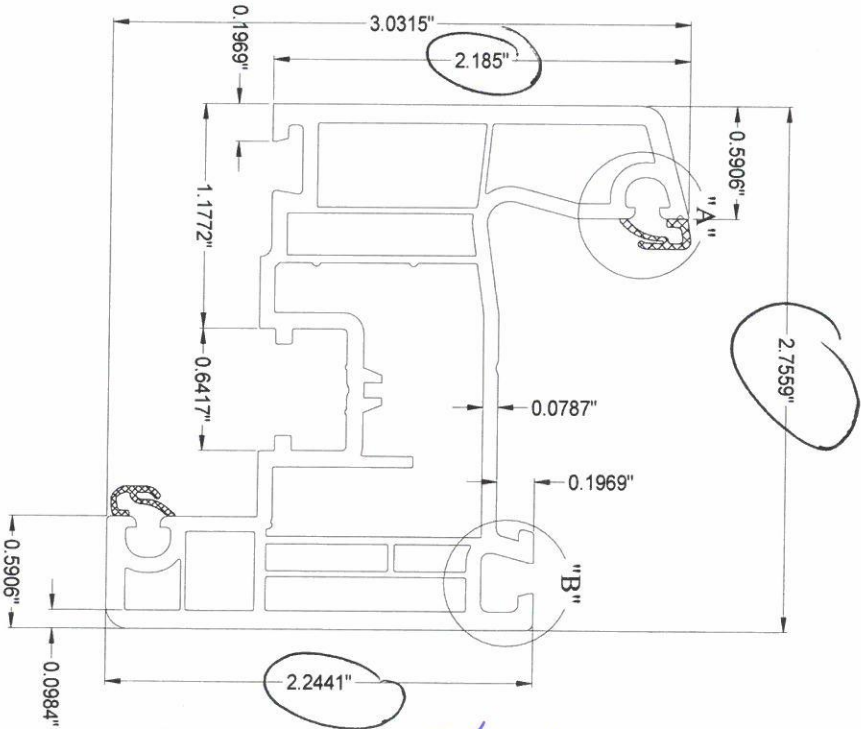
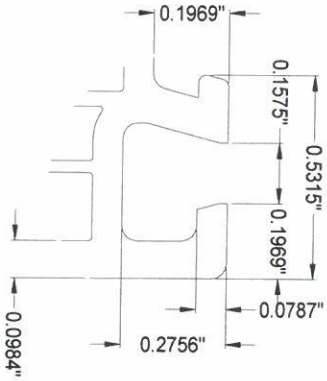
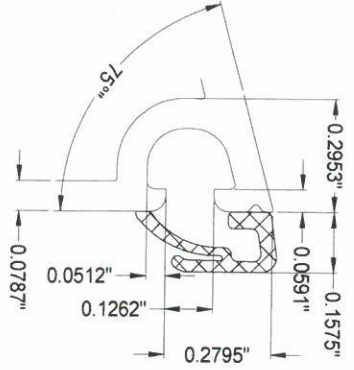


CUSTOMER NAME:

Part No.

149320

Series #:



FENESTRATION TESTING LAB
 REPORT NO: T17-074
 DATE: 12/5/17

| | | | | | | | | | |
|----------|-----|----------------|--|--------------|--|----------|-------------------|----------|--|
| Standard | | Sectional Area | | Unspec | | Designed | James Ye Checked | File No: | |
| Material | PVC | Theor. Weight | | TK Tolerance | | Drawn | James Ye Approved | | |



CUSTOMER NAME:

Part No.

149307

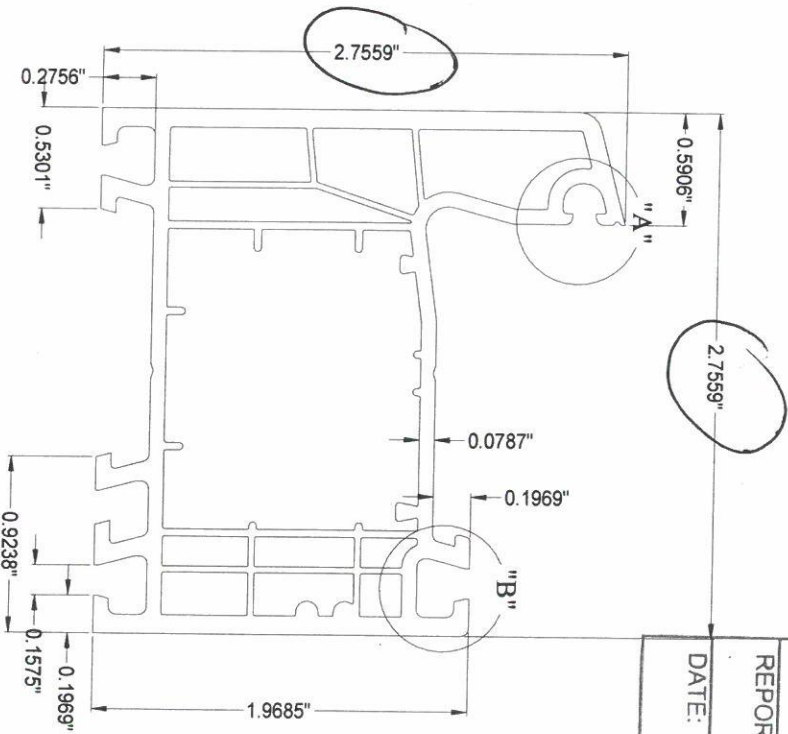
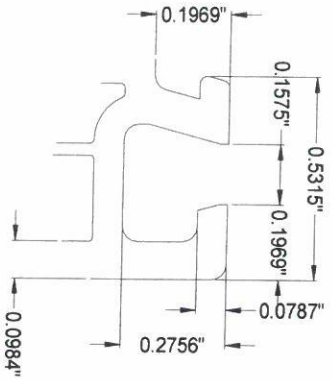
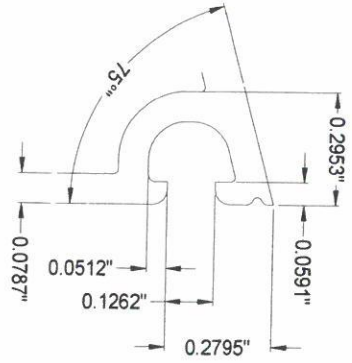
Series #:

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REPORT NO:

DATE:

117-074
12/5/17



Standard

Sectional Area

Unspec

Designed

James Ye
Checked

File No:

Material

PVC

Theor. Weight

TK Tolerance

Drawn

James Ye
Approved

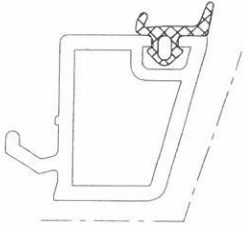


CUSTOMER NAME:

Part No.

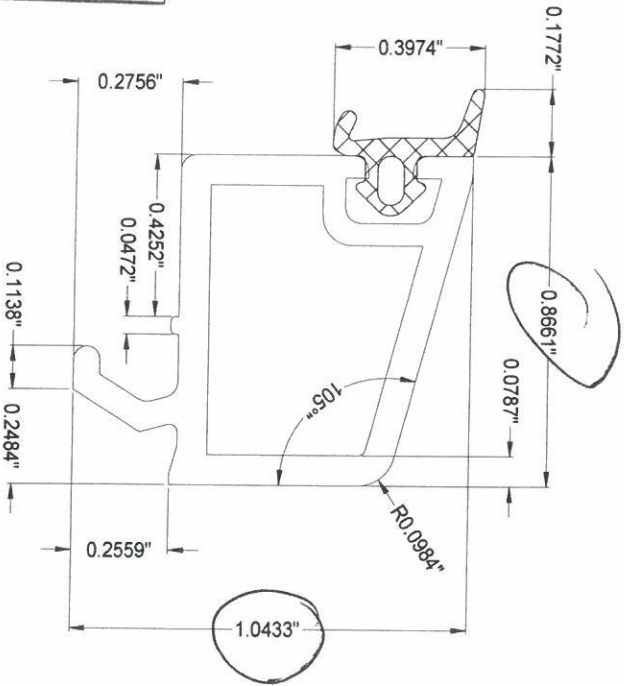
120636

Series #:



EXPOSED SURFACE

1 : 1



SCALE: 2 : 1

26 - 27mm

FENESTRATION TESTING LAB

REPORT NO.:

717-074

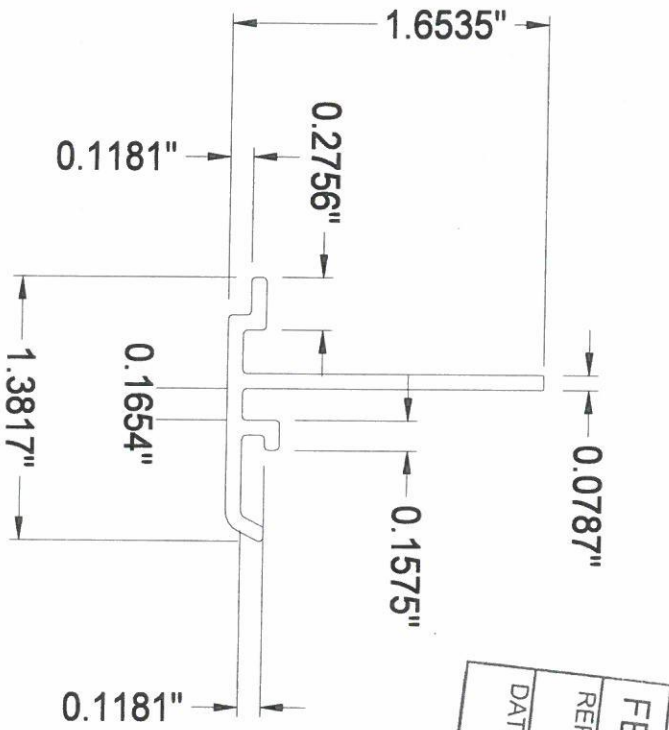
DATE:

12/5/17

| Standard | Sectional Area | Unspec | Designed | James Ye | Checked | File No.: |
|----------|----------------|---------------|---------------|----------|----------|-----------|
| Material | PVC | Theor. Weight | TK. Tolerance | Drawn | James Ye | Approved |
| | | | | | | |



| | | |
|----------------|--------|-----------|
| CUSTOMER NAME: | | Series #: |
| Part No. | 119210 | |



FENESTRATION TESTING LAB
 REPORT NO: T17-074
 DATE: 12/5/17

| | | | | | | |
|----------|----------------|---------------|----------|----------|----------|----------|
| Standard | Sectional Area | Unspec | Designed | James Ye | Checked | File No: |
| Material | Theor. Weight | TK. Tolerance | Drawn | James Ye | Approved | |
| | | | | | | |

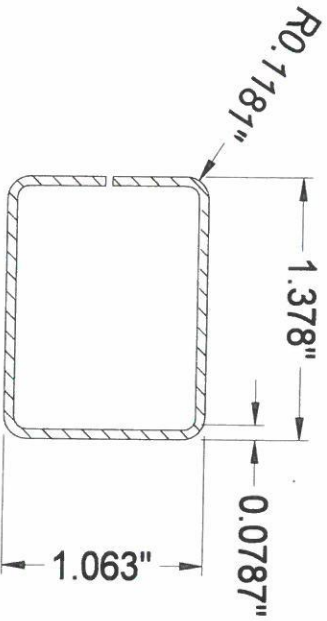


CUSTOMER NAME:

Part No.

229029

Series #:



FENESTRATION TESTING LAB

REPORT NO:

DATE:

177-074

12/5/12

| Standard | Sectional Area | Unspec | Designed | James Ye Checked | File No: |
|----------|----------------|---------------|--------------|------------------|-------------------|
| Material | PVC | Theor. Weight | TK Tolerance | Drawn | James Ye Approved |
| | | | | | |



CUSTOMER NAME:

Part No.

229023

Series #:

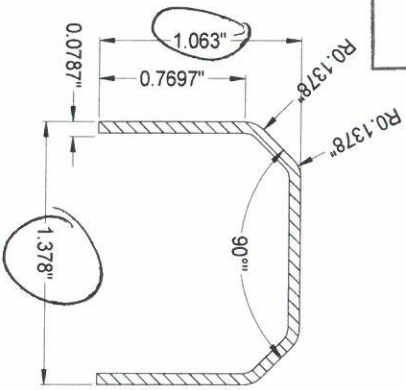
FENESTRATION TESTING LAB

REPORT NO:

117-074

DATE:

12/5/17



| Standard | Sectional Area | Unspec | Designed | James Ye | Checked | File No: |
|----------|----------------|---------------|--------------|----------|----------|----------|
| Material | PVC | Theor. Weight | TK Tolerance | Drawn | James Ye | Approved |
| | | | | | | |

