



NATIONAL CERTIFIED TESTING LABORATORIES

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U-Factor, Solar Heat Gain Coefficient, Visible Transmittance and Condensation Resistance Calculation Report

REPORT NO: NCTL-110-18036-1
SIMULATION DATE: 12/12/15
REPORT DATE: 12/12/15

Client: ClimateGuard Manufacturing
2500 North Manufacturing
Chicago, IL 60639

Product Line: ClimateGuard Manufacturing's 500 Vinyl Picture Window

Specification: ANSI/NFRC 100-2014: "Procedure for Determining Fenestration Product U-Factors".
ANSI/NFRC 200-2014: "Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence".
NFRC 500-2014: "Procedure for Determining Fenestration Product Condensation Resistance Values".
Therm 6.x / Window 6.x NFRC Simulation Manual (Approved at test date)
Technical Interpretation Manual (2010)

Procedures and Compliance: All U-factor, Solar Heat Gain Coefficients, Visible Transmittance and Condensation Resistance values were calculated using the following characteristics: a default value of 0.30 solar absorptance for all products other than window glazed wall and sloped glazing which have a solar absorptance of 0.50. The best glazing option was used as the configuration for SHGC and VT specialty products table. NCTL is a NFRC accredited simulation laboratory and this simulation was conducted in full compliance with NFRC requirements. This report does not constitute an opinion or endorsement by the laboratory. Ratings values included in this report are for submittal to an NFRC-licensed IA and are not meant to be used directly for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) by an NFRC accredited Inspection Agency (IA) are to be used for labeling purposes. Rounding per NFRC 601-2014: "NFRC Unit and Measurement Policy". The values included in this report are not considered in compliance with ANSI/NFRC 100, ANSI/NFRC 200, and/or NFRC 500 unless the associated validation test requirements have been satisfied, as applicable. Component values included in this report are for submittals to an NFRC-licensed IA and are not meant to be used directly for labeling purposes. Only those values approved and identified on a valid CMA Label Certificate are to be used for labeling purposes. The component(s) values included in this report are not considered in compliance with ANSI/NFRC 100 or ANSI/NFRC 200 unless the associated validation test requirements have been satisfied, as applicable.

PRODUCT LINE DESCRIPTION

General: The product line modeled is ClimateGuard Manufacturing's 500 Vinyl Picture Window

Model Size Simulations: 1200 mm x 1500 mm (47.244" x 59.055")

Weatherseals: Not Applicable.

Gas Fillings:

| Gas Type | Filling Technique | Percentage |
|----------|-------------------|------------|
| Argon | Double probe | 95% |

Reinforcement: Not applicable.

Edge – of - Glass – Construction: Exterior silicone back bedding and interior rigid vinyl glazing bead.

Finish: Vinyl

Frame Description:

| Code | Type | Definition |
|------|-------|--|
| VY | Vinyl | All members are vinyl with no reinforcements |

Sash Description:

| Code | Type | Definition |
|------|----------------|---|
| N | Not applicable | Product component does not require a code |

Spacer and Sealant:

| Code | Type | Definition |
|------|-----------------------|---|
| CU-D | Coated Steel U-Shaped | Coated Steel (galvanized or tinplated) U-shaped spacer system embedded in sealant |

Dividers: Where applicable, dividers were not modeled because the gap between dividers and lites were greater than 3mm. For Solar Heat Gain and Visual Light Transmittance default dividers less than 1" and greater or equal to 1" and default patterns were used for simulations.

Divider Description: 0.1875" x 0.6100" Painted Aluminum Rectangular

Continuous Hardware Description: Not applicable

Modeling Assumptions and Comments Deemed Important:

Sealing Rules:

All cavities that are opened to the exterior within a frame section shall be modeled according to ISO 15099, Section 6.7.1, which states that cavities greater than 2mm but equal to or less than 10 mm shall be modeled as "slightly ventilated air cavities". For physical testing purposes the product is sealed at the inside surface with tape or equivalent to prevent air infiltration. Air cavities created by this sealing technique must be simulated with the standard NFRC "Frame Cavity" material. If cavities on the frame are sealed (covered) to the surround panel with tape or equivalent, those cavities are also filled with NFRC "Frame Cavity" material within the simulation model. If the frame is not covered or sealed, those areas are left hollow or opened within the simulation model.

Continuous elements:

All elements continuous within the product line are identified from the Bill-of-Materials and detailed drawings via the referenced dimensions and cut lengths as compared to the overall size of the product.

General Notes:

The Condensation Resistance results obtained from this procedure are for controlled laboratory conditions and do not include the effects of air movement through the specimen, solar radiation, and the thermal bridging that may occur due to the specific design and construction of the fenestration system opening.

Modeling assumptions:

Per the client the nail flange is removable.

The product was modeled with a nominal 1" x 4" wood stud attached to the nail flange.

Miscellaneous assumptions:

1. The screen extrusions were not modeled.
2. All radii are simulated at angles.
3. The modeling was performed in accordance with the manufacturer's assembly drawing.

Component Area and Frame Heights:

Frame heights, calculated areas, area weighted values for U-factor, SHGC, and VT, and center –of-glazing are located in approved NFRC simulation programs for all individual products.

NCTL Therm Section Filename Methodology

| Filename Codes Example: HD-CU-D-F1_003.THM | |
|---|----------------------|
| HD | Frame Section (Head) |
| CU-D | Spacer (Intercept) |
| F1 | Frame Description |
| _003 | Glazing ID #3 |

| PRODUCT | Product Number | Pane ID #1 | Pane ID #2 | Pane ID #3 | Pane Thickness #1 | Pane Thickness #2 | Pane Thickness #3 | Gap 1 | Gap 2 | Gap Fill 1 | Gap Fill 2 | % of Gap Fill 1 | % of Gap Fill 2 | Emissivity Surface 1 | Emissivity Surface 2 | Emissivity Surface 3 | Emissivity Surface 4 | Emissivity Surface 5 | Emissivity Surface 6 | Tint | Spacer | Grid Type | Grid Size | U-factor | Condensation Resistance | SHGC NO GRID | SHGC GRID<1" | SHGC GRID>=1" | VT NO GRID | VT GRID<1" | VT GRID >=1" |
|---------|----------------|---------------------------|------------------------|---------------------------|-------------------|-------------------|-------------------|-------|-------|------------|------------|-----------------|-----------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|------|--------|-----------|-----------|----------|-------------------------|--------------|--------------|---------------|------------|------------|--------------|
| | 1 | 2 mm Clear | 2 mm Clear | | 0.086 | 0.086 | | 0.678 | | AIR | | | | | | | | | | | CL | CU-D | N,G | 0.75 | 0.47 | 44 | 0.69 | 0.62 | 0.71 | 0.63 | |
| | 2 | 3 mm Clear | 3 mm Clear | | 0.123 | 0.123 | | 0.639 | | AIR | | | | | | | | | | | CL | CU-D | N,G | 0.75 | 0.47 | 44 | 0.67 | 0.61 | 0.70 | 0.62 | |
| | 3 | 2 mm Clear | 2 mm Clear | 2 mm Clear | 0.086 | 0.086 | 0.086 | 0.290 | 0.290 | AIR | AIR | | | | | | | | | | CL | CU-D | N | 0.37 | 53 | 0.63 | | 0.65 | | | |
| | 4 | 2 mm Comfort Select 73 | 2 mm Clear | | 0.087 | 0.086 | | 0.678 | | ARG | | 95 | | 0.148 | | | | | | | CL | CU-D | N,G | 0.75 | 0.32 | 57 | 0.58 | 0.52 | 0.66 | 0.59 | |
| | 5 | 3 mm Comfort Select 73 | 3 mm Clear | | 0.123 | 0.123 | | 0.639 | | ARG | | 95 | | 0.148 | | | | | | | CL | CU-D | N,G | 0.75 | 0.32 | 56 | 0.55 | 0.50 | 0.63 | 0.57 | |
| | 6 | 2 mm Comfort Select 73 | 2 mm Clear | 2 mm Clear | 0.087 | 0.086 | 0.086 | 0.290 | 0.290 | ARG | ARG | 95 | 95 | 0.148 | | | | | | | CL | CU-D | N | 0.28 | 61 | 0.54 | | 0.61 | | | |
| | 7 | 2 mm LoE ³ 366 | 2 mm Clear | | 0.087 | 0.086 | | 0.678 | | ARG | | 95 | | 0.022 | | | | | | | CL | CU-D | N,G | 0.75 | 0.28 | 60 | 0.24 | 0.21 | 0.56 | 0.50 | |
| | 8 | 3 mm LoE ³ 366 | 3 mm Clear | | 0.117 | 0.123 | | 0.639 | | ARG | | 95 | | 0.022 | | | | | | | CL | CU-D | N,G | 0.75 | 0.28 | 59 | 0.23 | 0.21 | 0.55 | 0.49 | |
| | 9 | 2 mm LoE ³ 366 | 2 mm Clear | 2 mm Clear | 0.087 | 0.086 | 0.086 | 0.290 | 0.290 | ARG | ARG | 95 | 95 | 0.022 | | | | | | | CL | CU-D | N | 0.26 | 63 | 0.22 | | 0.51 | | | |
| | 10 | 2 mm LoE ² 270 | 2 mm Clear | | 0.087 | 0.086 | | 0.678 | | ARG | | 95 | | 0.037 | | | | | | | CL | CU-D | N,G | 0.75 | 0.29 | 59 | 0.32 | 0.29 | 0.60 | 0.54 | |
| | 11 | 3 mm LoE ² 270 | 3 mm Clear | | 0.118 | 0.123 | | 0.639 | | ARG | | 95 | | 0.037 | | | | | | | CL | CU-D | N,G | 0.75 | 0.28 | 59 | 0.32 | 0.29 | 0.59 | 0.53 | |
| | 12 | 2 mm LoE ² 270 | 2 mm Clear | 2 mm Clear | 0.087 | 0.086 | 0.086 | 0.290 | 0.290 | ARG | ARG | 95 | 95 | 0.037 | | | | | | | CL | CU-D | N | 0.26 | 63 | 0.30 | | 0.55 | | | |
| | 13 | 2 mm LoE ² 270 | 2 mm Comfort Select 73 | | 0.087 | 0.087 | | 0.678 | | ARG | | 95 | | 0.037 | 0.148 | | | | | | CL | CU-D | N,G | 0.75 | 0.24 | 47 | 0.30 | 0.27 | 0.56 | 0.50 | |
| | 14 | 3 mm LoE ² 270 | 3 mm Comfort Select 73 | | 0.118 | 0.123 | | 0.639 | | ARG | | 95 | | 0.037 | 0.148 | | | | | | CL | CU-D | N,G | 0.75 | 0.24 | 47 | 0.30 | 0.27 | 0.54 | 0.48 | |
| | 15 | 2 mm LoE ² 270 | 2 mm Clear | 2 mm LoE ² 270 | 0.087 | 0.086 | 0.087 | 0.290 | 0.290 | ARG | ARG | 95 | 95 | 0.037 | | | 0.037 | | | | CL | CU-D | N | 0.21 | 65 | 0.27 | | 0.47 | | | |
| | 16 | 2 mm LoE ² 272 | 2 mm Clear | | 0.087 | 0.086 | | 0.678 | | ARG | | 95 | | 0.042 | | | | | | | CL | CU-D | N,G | 0.75 | 0.29 | 59 | 0.36 | 0.32 | 0.62 | 0.55 | |
| | 17 | 3 mm LoE ² 272 | 3 mm Clear | | 0.117 | 0.123 | | 0.639 | | ARG | | 95 | | 0.042 | | | | | | | CL | CU-D | N,G | 0.75 | 0.29 | 59 | 0.35 | 0.32 | 0.61 | 0.55 | |
| | 18 | 2 mm LoE ² 272 | 2 mm Clear | 2 mm Clear | 0.087 | 0.086 | 0.086 | 0.290 | 0.290 | ARG | ARG | 95 | 95 | 0.042 | | | | | | | CL | CU-D | N | 0.26 | 63 | 0.34 | | 0.57 | | | |
| | 19 | 2 mm LoE ² 272 | 2 mm Comfort Select 73 | | 0.087 | 0.087 | | 0.678 | | ARG | | 95 | | 0.042 | 0.148 | | | | | | CL | CU-D | N,G | 0.75 | 0.24 | 47 | 0.34 | 0.31 | 0.57 | 0.51 | |
| | 20 | 3 mm LoE ² 272 | 3 mm Comfort Select 73 | | 0.117 | 0.123 | | 0.639 | | ARG | | 95 | | 0.042 | 0.148 | | | | | | CL | CU-D | N,G | 0.75 | 0.24 | 47 | 0.33 | 0.30 | 0.55 | 0.49 | |
| | 21 | 2 mm LoE ² 272 | 2 mm Clear | 2 mm LoE ² 272 | 0.087 | 0.086 | 0.087 | 0.290 | 0.290 | ARG | ARG | 95 | 95 | 0.042 | | | 0.042 | | | | CL | CU-D | N | 0.22 | 65 | 0.31 | | 0.49 | | | |
| | 22 | 2 mm Comfort Select™ 63 | 2 mm Comfort Select 73 | | 0.088 | 0.087 | | 0.678 | | ARG | | 95 | | 0.070 | 0.148 | | | | | | CL | CU-D | N,G | 0.75 | 0.25 | 47 | 0.48 | 0.43 | 0.63 | 0.57 | |
| | 23 | 3 mm Comfort Select™ 63 | 3 mm Comfort Select 73 | | 0.124 | 0.123 | | 0.639 | | ARG | | 95 | | 0.071 | 0.148 | | | | | | CL | CU-D | N,G | 0.75 | 0.25 | 46 | 0.46 | 0.42 | 0.61 | 0.55 | |

| PRODUCT | Product Number | Pane ID #1 | Pane ID #2 | Pane ID #3 | Pane Thickness #1 | Pane Thickness #2 | Pane Thickness #3 | Gap 1 | Gap 2 | Gap Fill 1 | Gap Fill 2 | % of Gap Fill 1 | % of Gap Fill 2 | Emissivity Surface 1 | Emissivity Surface 2 | Emissivity Surface 3 | Emissivity Surface 4 | Emissivity Surface 5 | Emissivity Surface 6 | Tint | Spacer | Grid Type | Grid Size | U-factor | Condensation Resistance | SHGC NO GRID | SHGC GRID<1" | SHGC GRID>=1" | VT NO GRID | VT GRID<1" | VT GRID >=1" |
|-----------------------------|----------------|---------------------------|------------|---------------------------|-------------------|-------------------|-------------------|-------|-------|------------|------------|-----------------|-----------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|------|--------|-----------|-----------|----------|-------------------------|--------------|--------------|---------------|------------|------------|--------------|
| 0.1875" x 0.610" Rect. Grid | 24 | 2 mm Clear | 2 mm Clear | 2 mm Clear | 0.086 | 0.086 | 0.086 | 0.290 | 0.290 | AIR | AIR | | | | | | | | | | CL | CU-D | G | 0.75 | 0.37 | 53 | | 0.56 | | 0.58 | |
| 0.1875" x 0.610" Rect. Grid | 25 | 2 mm Comfort Select 73 | 2 mm Clear | 2 mm Clear | 0.087 | 0.086 | 0.086 | 0.290 | 0.290 | ARG | ARG | 95 | 95 | 0.148 | | | | | | | CL | CU-D | G | 0.75 | 0.29 | 61 | | 0.48 | | 0.54 | |
| 0.1875" x 0.610" Rect. Grid | 26 | 2 mm LoE ³ 366 | 2 mm Clear | 2 mm Clear | 0.087 | 0.086 | 0.086 | 0.290 | 0.290 | ARG | ARG | 95 | 95 | 0.022 | | | | | | | CL | CU-D | G | 0.75 | 0.27 | 63 | | 0.20 | | 0.46 | |
| 0.1875" x 0.610" Rect. Grid | 27 | 2 mm LoE ² 270 | 2 mm Clear | 2 mm Clear | 0.087 | 0.086 | 0.086 | 0.290 | 0.290 | ARG | ARG | 95 | 95 | 0.037 | | | | | | | CL | CU-D | G | 0.75 | 0.27 | 63 | | 0.27 | | 0.49 | |
| 0.1875" x 0.610" Rect. Grid | 28 | 2 mm LoE ² 270 | 2 mm Clear | 2 mm LoE ² 270 | 0.087 | 0.086 | 0.087 | 0.290 | 0.290 | ARG | ARG | 95 | 95 | 0.037 | | | 0.037 | | | | CL | CU-D | G | 0.75 | 0.22 | 65 | | 0.25 | | 0.42 | |
| 0.1875" x 0.610" Rect. Grid | 29 | 2 mm LoE ² 272 | 2 mm Clear | 2 mm Clear | 0.087 | 0.086 | 0.086 | 0.290 | 0.290 | ARG | ARG | 95 | 95 | 0.042 | | | | | | | CL | CU-D | G | 0.75 | 0.27 | 63 | | 0.30 | | 0.51 | |
| 0.1875" x 0.610" Rect. Grid | 30 | 2 mm LoE ² 272 | 2 mm Clear | 2 mm LoE ² 272 | 0.087 | 0.086 | 0.087 | 0.290 | 0.290 | ARG | ARG | 95 | 95 | 0.042 | | | 0.042 | | | | CL | CU-D | G | 0.75 | 0.22 | 65 | | 0.28 | | 0.44 | |
| VALIDATION | 0 | 2 mm LoE ² 270 | 2 mm Clear | 2 mm LoE ² 270 | 0.087 | 0.086 | 0.087 | 0.290 | 0.290 | ARG | ARG | 95 | 95 | 0.037 | | | 0.037 | | | | CL | CU-D | N | | 0.21 | 65 | 0.27 | | 0.47 | | |

A baseline product test in accordance with the "NFRC 102: Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems" is required in order to validate the "Model Size Matrix of U-Values" as previously indicated. Per Section 1.4.3 of ANSI/NFRC 100-2014, "the baseline product is the individual product selected for validation testing". **The individual product selected as the baseline product shall be the lowest simulated individual product or an individual product having a simulated U-factor within 0.60 W/ (m²*K) (0.10 BTU/HR/ft²/°F) or 20% of the listed lowest simulated U-factor.**

Note:

1. For lowest U-factor listings where multiple individual products are shown, validation testing can be conducted on any within 20% of the lowest simulated u-factor.
2. Actual simulated individual products are required for product line validation testing.

-----> Res sizes

For the purposes of validation testing, production line units and sizes shall be used to represent the baseline product. Per the client, the model size is manufactured as part of their product line; therefore the previously listed model size can be used for baseline product validation testing.

-----> Deviation Sizes

For the purposes of validation testing, production line units and sizes shall be used to represent the baseline products. Representative sizes are therefore defined as the production sizes with the least deviation (D) from the model sizes, calculated per ANSI/NFRC 100. The previously listed model sizes shall be used for baseline product validation testing.

Copies of this report and the detailed product drawings will be retained by NCTL for a period of four (4) years. This report may not be reproduced, except in full, without the approval of NCTL. Results apply only to the fenestration product simulated. The attached diskette(s) contain(s) all required NFRC data and software files.

NATIONAL CERTIFIED TESTING LABORATORIES

Performed by:



CHRISTOPHER PONDOLFINO
Simulator

Reviewed by:



MARK BENNETT
NFRC Certified Simulator
Simulator-In-Responsible-Charge

Attachments

Report Log

Product Line: ClimateGuard Manufacturing's 500 Vinyl Picture Window

Date:
12/12/15 - Original Report issued to ClimateGuard Manufacturing and Inspection Agency

ATTACHMENT A

Product Drawings

TEST SPECIMEN COMPLIES
WITH THESE DETAILS
ANY DEVIATION IS NOTED.
REPORT NO. NCTL-110-18036-1
TEST DATE 12/12/15

BILL OF MATERIAL FOR 500 SERIES PICTURE WINDOW

MIN SIZE: 26" X 15"

MAX SIZE: 60" X 76"

| <u>PVC PROFILES</u> | <u>PART #</u> | <u># per UNIT</u> | <u>MANUFACTURER</u> |
|---------------------|---------------|-------------------|---------------------|
| 1. FRAME | 3778 | 4 | VISION EXTRUSION |
| 2. GLAZING BEAD | 1622 | 4 | -II- |

W/NAILING FIN & J-CHANNEL

| | | | |
|----------------------|-----------------|--------------|-----------------------------|
| 1A. FRAME | 3777 | 4 | VISION EXTRUSION |
|----------------------|-----------------|--------------|-----------------------------|

HARDWARE

| | | | |
|-----------------------------|---------------------------|----------------|------------------------|
| 3. WEEP COVER | 110-2101-10 | 2 | RO-MAI |
| 4. SETTING BLOCK | 1" X 7/8 X 1/8 | 4 | FRANK LOWE |
| 5. SILICONE | 1199 CLEAR | A/R | DOW CORNING |

GLASS:

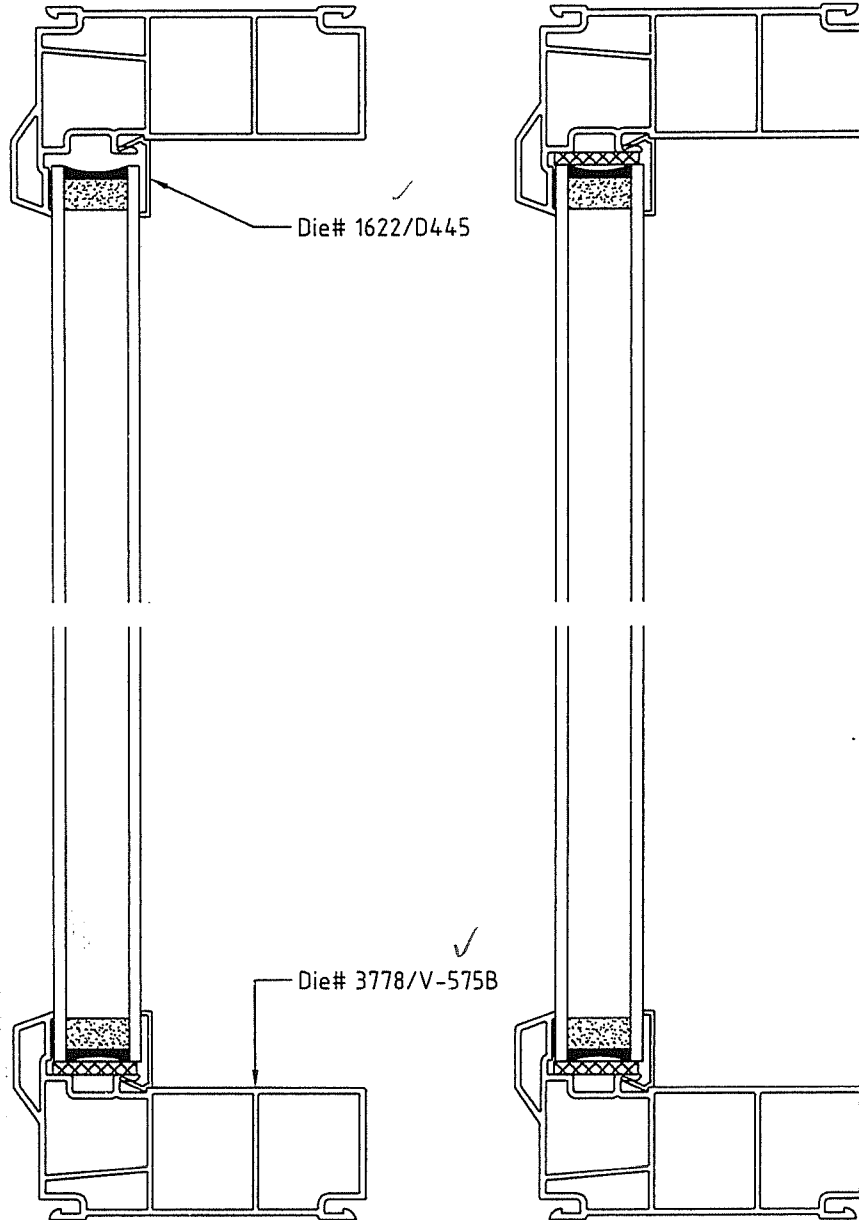
7/8" INSULATED GLASS 1 UNIT

X= NOT MODELED IN SIMULATION

TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-18036-1
 TEST DATE 12/12/15

REVISIONS

A2 Revised Tool reference number.



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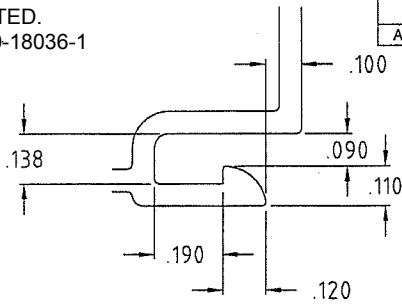


| | | | | |
|--|-------------------------|---|------------------|---------------------|
| <p>TOLERANCES X.XX ± 0.015 X.XXX ± 0.010 X.XXXX ± 0.005 DO NOT SCALE DRAWING ALL DIMENSIONS ARE IN INCHES U.S.A.</p> | | <p>CUSTOMER/DESCRIPTION: CROSS-SECTION 500 SERIES PICTURE WINDOW</p> | | |
| SIZE: "A" | COLOUR: As specified | MATERIAL: Rigid P.V.C. | TOOL NO.: N/A | DATE: 08/22/2014 |
| SHEET: 1 of 1 | DRAWN BY: MS | SCALE: n.t.s | PART NO.: N/A | DWG NO.: N/A |

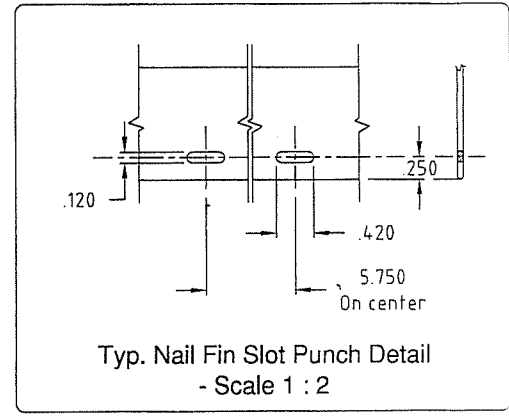
TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-18036-1
 TEST DATE 12/12/15

REVISIONS

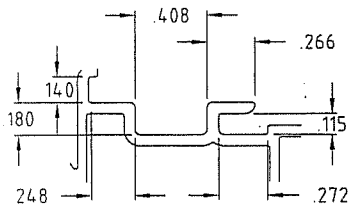
A1 Current



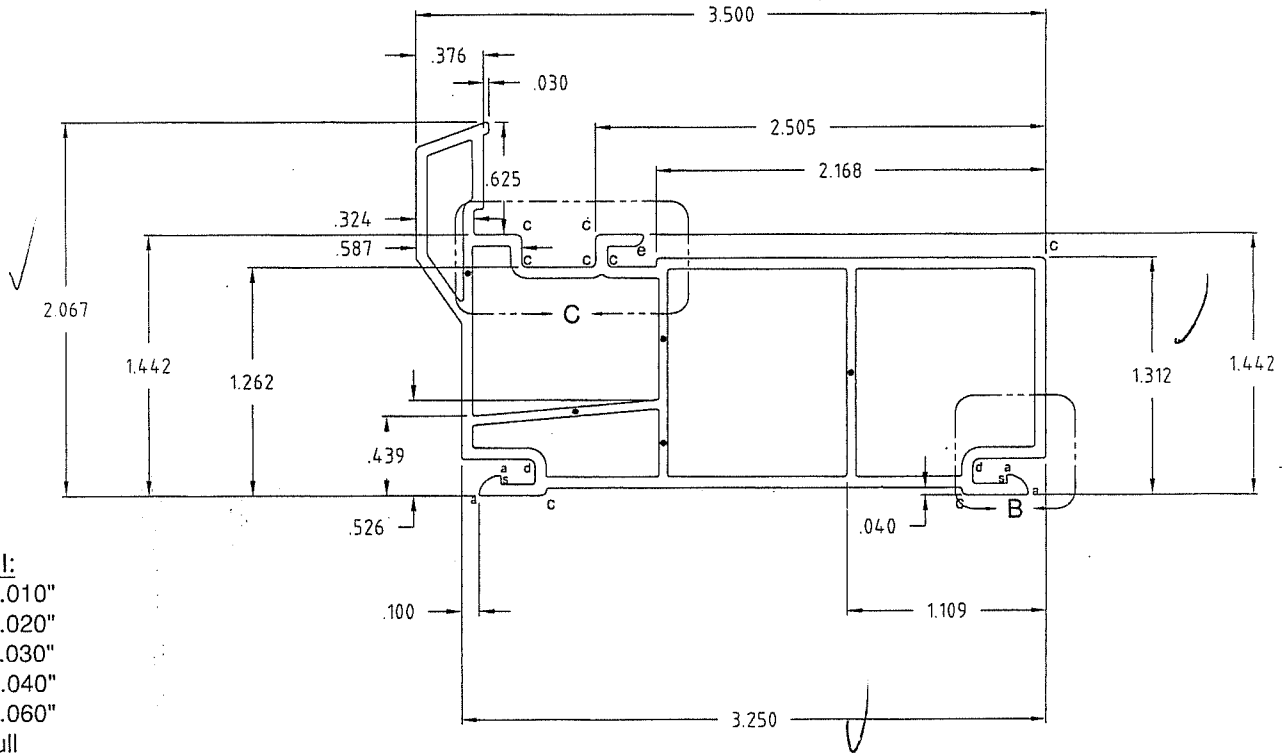
Detail B (Scale 2 : 1)
 Typ. for
 Interior & Exterior Groove
 Unless specified otherwise



Typ. Nail Fin Slot Punch Detail
 - Scale 1 : 2



Detail C (Scale 1 : 1)



RADII:

- a = 0.010"
- b = 0.020"
- c = 0.030"
- d = 0.040"
- e = 0.060"
- f = full
- s = Sharp
- unmarked = 0.015"

WALL THICKNESS: UNLESS SPECIFIED

- NOMINAL = 0.062"
- = 0.050"

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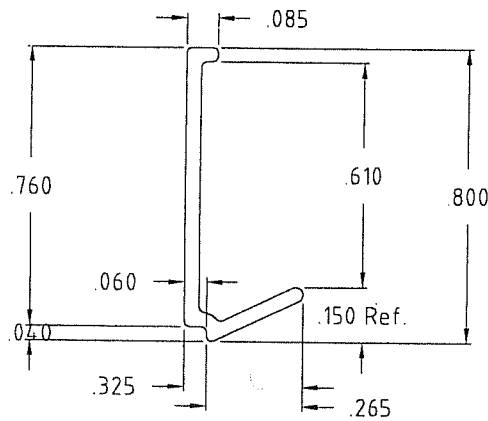


| | | | | |
|---|--------------------------------|--|----------------------------|----------------------------|
| TOLERANCES X.XX ± 0.015 X.XXX ± 0.010 X.XXXX ± 0.005 DO NOT SCALE DRAWING ALL DIMENSIONS ARE IN INCHES U.S.S. | | CUSTOMER/DESCRIPTION: 202 Series - Bending Frame Part Drawing | | |
| SIZE: "A" | COLOUR: As specified | MATERIAL: Rigid P.V.C. | TOOL NO.: 3778 | DATE: 04/18/2012 |
| SHEET: 1 of 1 | DRAWN BY: RJO | SCALE: 1 : 1 | PART NO.: V-575B | DWG NO.: E202F16 |

TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
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REVISIONS

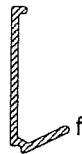
C1 Revised engagement leg as per sample.



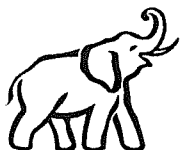
RADII:

- a = 0.010"
- b = 0.020"
- c = 0.030"
- d = 0.050"
- e = 0.060"
- f = full
- unmarked = 0.015"

WALL THICKNESS: UNLESS SPECIFIED
 NOMINAL = 0.040"



FULL SCALE RADIUS DETAIL



VISIONTM
 EXTRUSIONS LIMITED

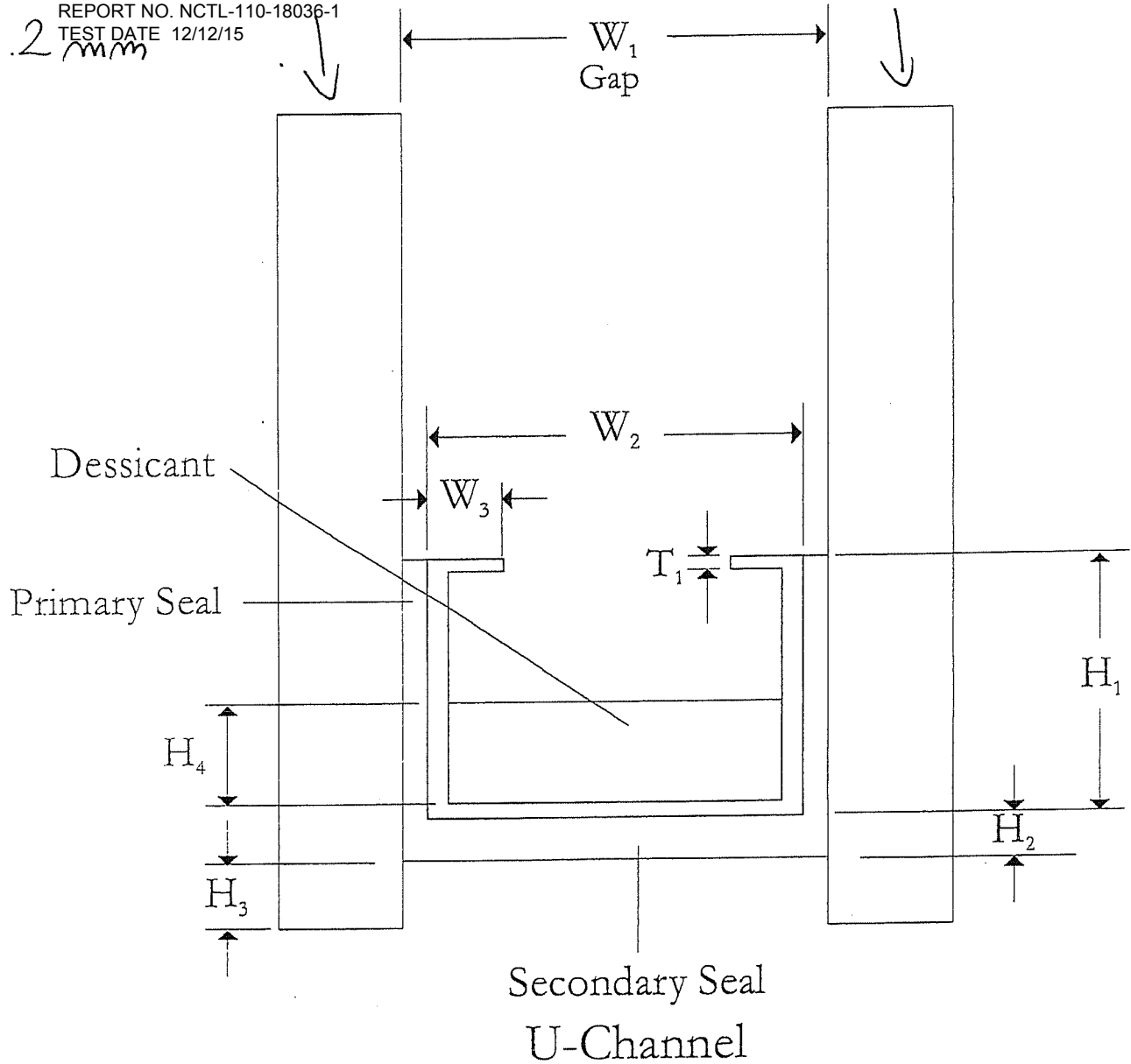
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| | | | | |
|---|-------------------------|---|---------------------|---------------------|
| TOLERANCES X.XX ± 0.015 X.XXX ± 0.010 X.XXXX ± 0.005 DO NOT SCALE DRAWING ALL DIMENSIONS ARE IN INCHES U.O.S. | | CUSTOMER/DESCRIPTION: <p style="text-align: center;">130 Series 7/8" Glass Stop</p> | | |
| SIZE: "A" | COLOUR: As specified | MATERIAL: As specified | TOOL NO.: 1622 | DATE: 05/23/09 |
| SHEET: 1 of 1 | DRAWN BY: RJO | SCALE: 2 : 1 | PART NO.: 130A28 | DWG NO.: E130A28 |

TEST SPECIMEN COMPLIES WITH THESE DETAILS. ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-18036-1
 TEST DATE 12/12/15

SS 2.2 mm
 0.088

0.088



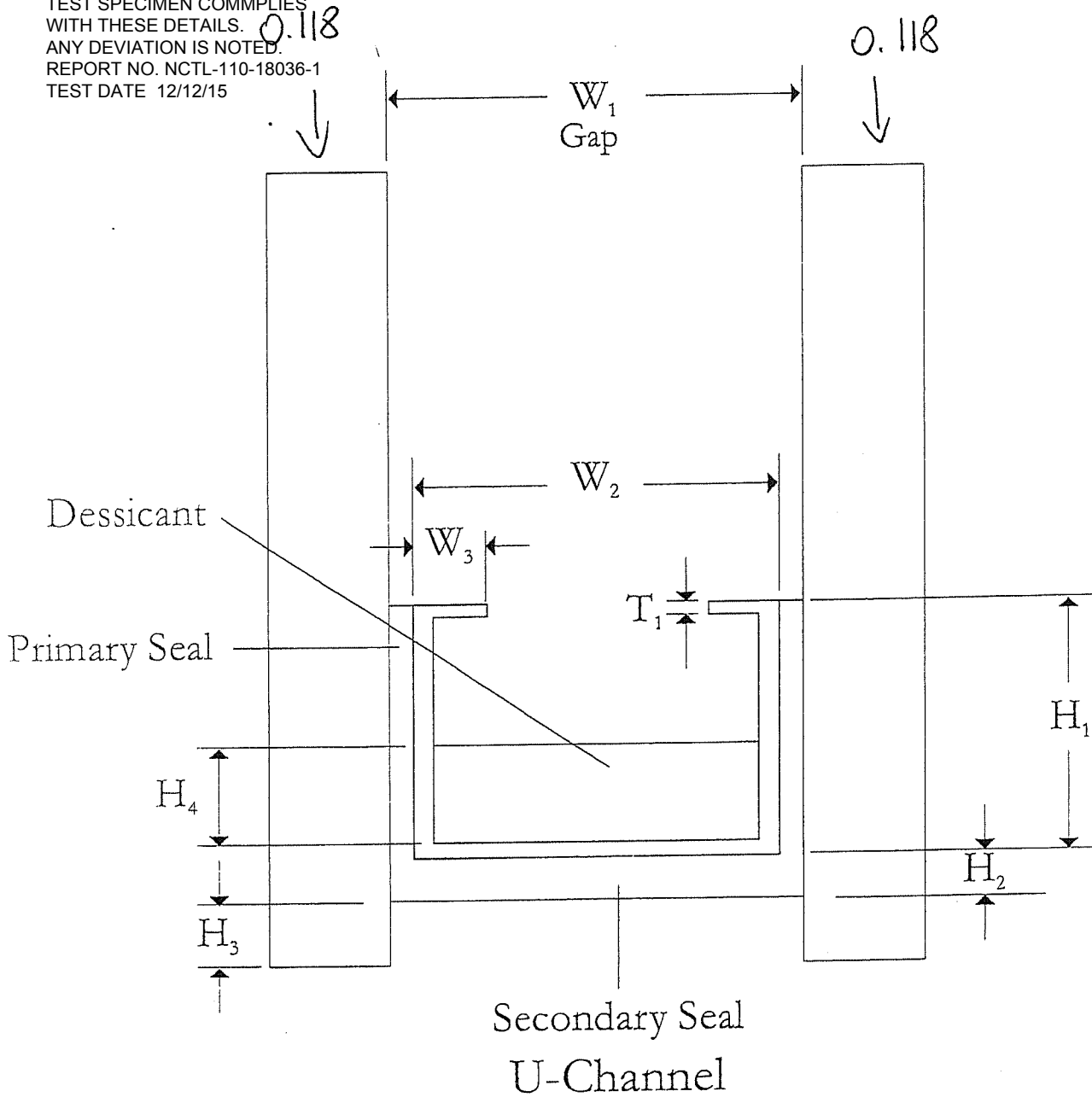
Spacer Dimensions - Fill dimensions where applicable - Please fill out a spacer sheet for each spacer used whether spacer type or size.

| Gap | Primary Seal | Secondary Seal | Material | Fill |
|--|---|---------------------------------------|--|---|
| <input type="checkbox"/> W_1 <u>.699"</u> | <input checked="" type="checkbox"/> Butyl | <input type="checkbox"/> Butyl | <input type="checkbox"/> Aluminum | <input checked="" type="checkbox"/> Dessicant |
| <input checked="" type="checkbox"/> W_2 <u>.657"</u> | <input type="checkbox"/> PIB | <input type="checkbox"/> PIB | <input type="checkbox"/> Steel - Mild | <input type="checkbox"/> Air |
| <input type="checkbox"/> W_3 <u>.128"</u> | <input type="checkbox"/> Polysulphide | <input type="checkbox"/> Polysulphide | <input type="checkbox"/> Steel - Stainless | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> W_4 _____ | <input type="checkbox"/> Silicone | <input type="checkbox"/> Silicone | <input checked="" type="checkbox"/> Steel - Galvanized | |
| <input type="checkbox"/> H_1 <u>.300"</u> | <input type="checkbox"/> Urethane | <input type="checkbox"/> Urethane | <input type="checkbox"/> Vinyl | |
| <input type="checkbox"/> H_2 <u>.050"</u> | <input type="checkbox"/> None | <input type="checkbox"/> None | <input type="checkbox"/> Foam _____ | |
| <input type="checkbox"/> H_3 <u>.062"</u> | <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> H_4 <u>.065"</u> | | | | |
| <input type="checkbox"/> H_5 _____ | | | | |
| <input type="checkbox"/> T_1 <u>.011"</u> | | | | |

7/8"

with SS GLASS
 2.2 mm = 0.088 inch

TEST SPECIMEN COMPLIES WITH THESE DETAILS. ANY DEVIATION IS NOTED. REPORT NO. NCTL-110-18036-1 TEST DATE 12/12/15

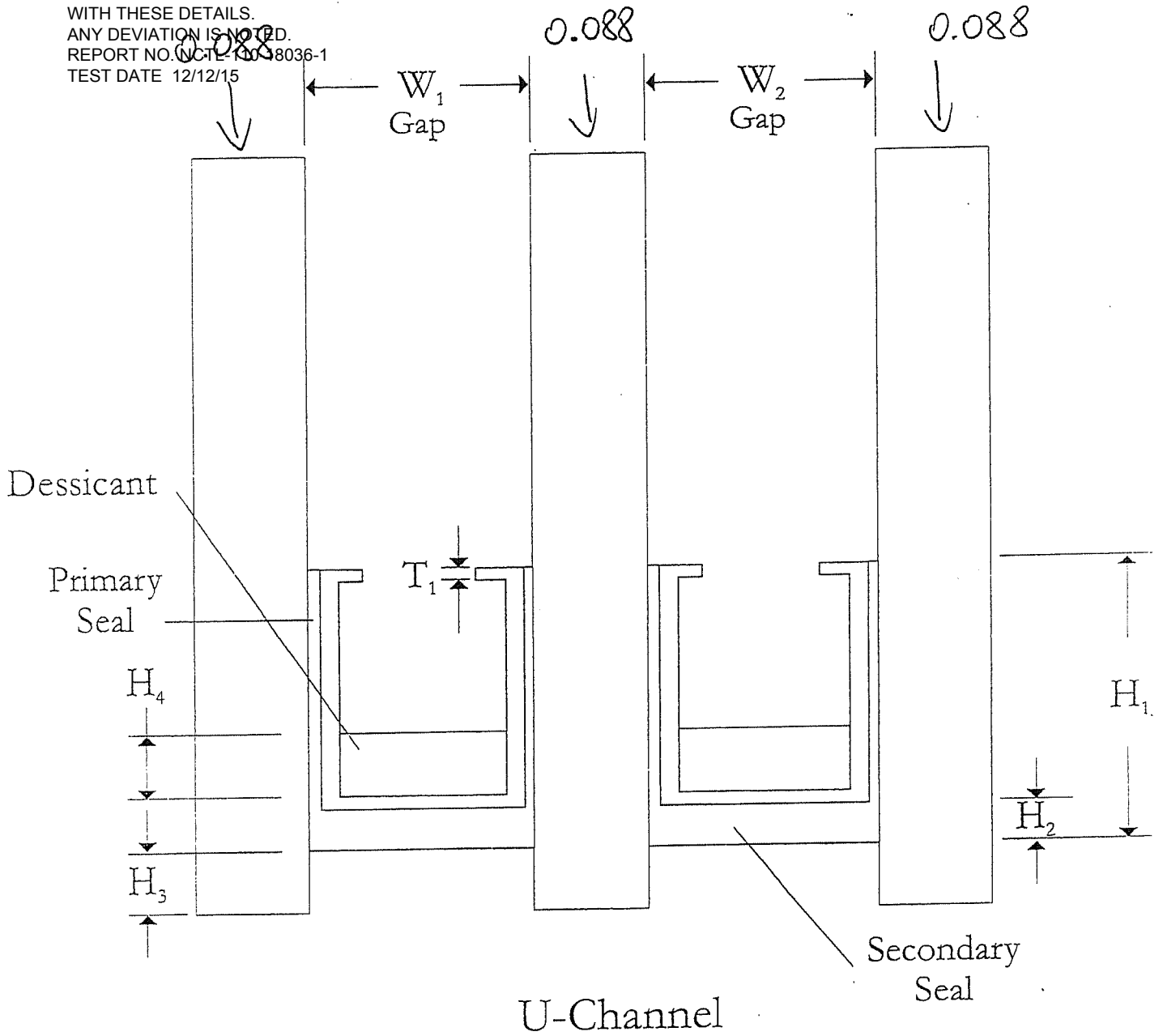


Spacer Dimensions - Fill dimensions where applicable - Please fill out a spacer sheet for each spacer used whether spacer type or size.

| Gap | Primary Seal | Secondary Seal | Material | Fill |
|--|---|---------------------------------------|--|---|
| <input type="checkbox"/> W_1 <u>.639</u> " | <input checked="" type="checkbox"/> Butyl | <input type="checkbox"/> Butyl | <input type="checkbox"/> Aluminum | <input checked="" type="checkbox"/> Dessicant |
| <input type="checkbox"/> W_2 <u>.594</u> " | <input type="checkbox"/> PIB | <input type="checkbox"/> PIB | <input type="checkbox"/> Steel - Mild | <input type="checkbox"/> Air |
| <input type="checkbox"/> W_3 <u>.128</u> " | <input type="checkbox"/> Polysulphide | <input type="checkbox"/> Polysulphide | <input type="checkbox"/> Steel - Stainless | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> W_4 _____ " | <input type="checkbox"/> Silicone | <input type="checkbox"/> Silicone | <input checked="" type="checkbox"/> Steel - Galvanized | |
| <input type="checkbox"/> H_1 <u>.300</u> " | <input type="checkbox"/> Urethane | <input type="checkbox"/> Urethane | <input type="checkbox"/> Vinyl | |
| <input type="checkbox"/> H_2 <u>.050</u> " | <input type="checkbox"/> None | <input type="checkbox"/> None | <input type="checkbox"/> Foam _____ | |
| <input type="checkbox"/> H_3 <u>.062</u> " | <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> H_4 <u>.065</u> " | | | | |
| <input type="checkbox"/> H_5 _____ " | | | | |
| <input type="checkbox"/> T_1 <u>.011</u> " | | | | |

7/8" with DS GLASS
3mm = 0.118 inch

TEST SPECIMEN COMPLIES WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTE-1038036-1
 TEST DATE 12/12/15

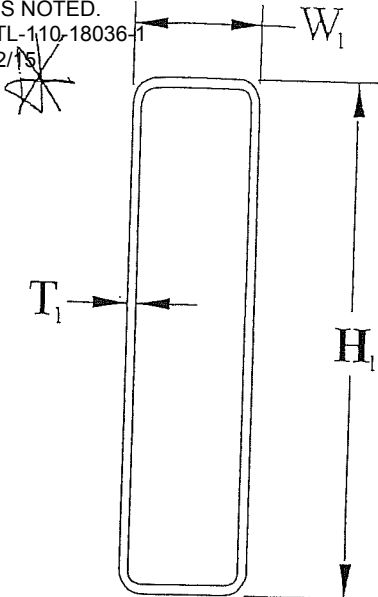


Spacer Dimensions - Fill dimensions where applicable - Please fill out a spacer sheet for each spacer used whether spacer type or size.

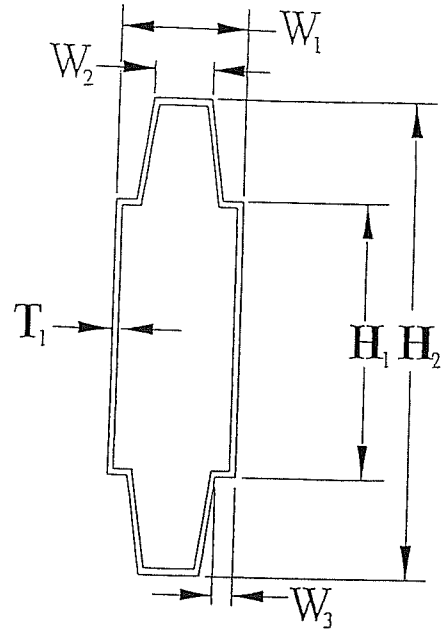
| | Gap | Primary Seal | Secondary Seal | Material | Fill |
|--------------------------|---------------------|---|---------------------------------------|--|---|
| <input type="checkbox"/> | W_1 <u>.306</u> " | <input checked="" type="checkbox"/> Butyl | <input type="checkbox"/> Butyl | <input type="checkbox"/> Aluminum | <input checked="" type="checkbox"/> Dessicant |
| <input type="checkbox"/> | W_2 <u>.266</u> " | <input type="checkbox"/> PIB | <input type="checkbox"/> PIB | <input type="checkbox"/> Steel - Mild | <input type="checkbox"/> Air |
| <input type="checkbox"/> | W_3 <u>.078</u> " | <input type="checkbox"/> Polysulphide | <input type="checkbox"/> Polysulphide | <input type="checkbox"/> Steel - Stainless | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> | W_4 _____ " | <input type="checkbox"/> Silicone | <input type="checkbox"/> Silicone | <input checked="" type="checkbox"/> Steel - Galvanized | |
| <input type="checkbox"/> | H_1 <u>.300</u> " | <input type="checkbox"/> Urethane | <input type="checkbox"/> Urethane | <input type="checkbox"/> Vinyl | |
| <input type="checkbox"/> | H_2 <u>.050</u> " | <input type="checkbox"/> None | <input type="checkbox"/> None | <input type="checkbox"/> Foam _____ | |
| <input type="checkbox"/> | H_3 <u>.062</u> " | <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> | H_4 <u>.065</u> " | | | | |
| <input type="checkbox"/> | H_5 _____ " | | | | |
| <input type="checkbox"/> | T_1 <u>.011</u> " | | | | |

17/64 $7/8$ " TRIPLE with 2.2 mm GLASS
 3 x 0.088 inch

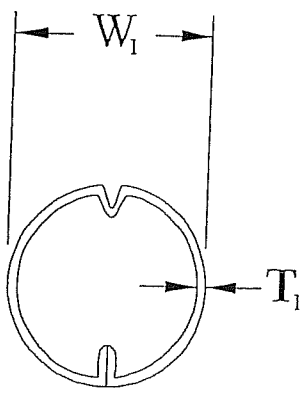
TEST SPECIMEN COMPLIES
 WITH THESE DETAILS.
 ANY DEVIATION IS NOTED.
 REPORT NO. NCTL-110-18036-1
 TEST DATE 12/12/15



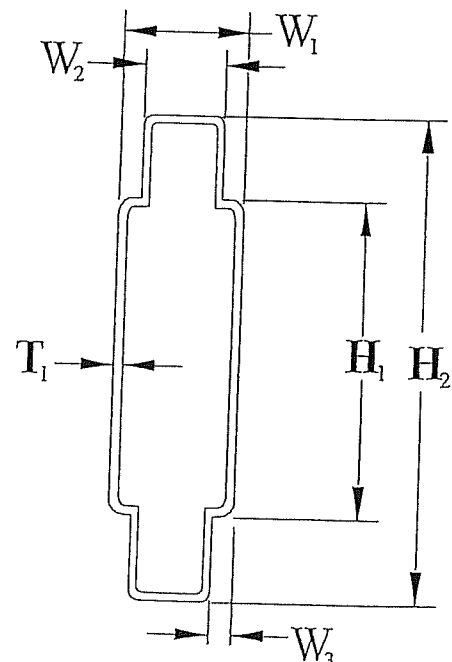
Rectangular



Decorative



Pencil



Decorative

Divider Dimensions - Fill dimensions where applicable - Please fill out a divider sheet for each divider size used.

| Dimensions | | | Material | | |
|---|--|--|---------------------------------------|---|--------------------------------------|
| <input checked="" type="checkbox"/> W_1 , <u>3/16</u> " | <input type="checkbox"/> W_2 _____ " | <input type="checkbox"/> W_3 _____ " | <input type="checkbox"/> Aluminum | <input type="checkbox"/> Steel - Galvanized | <input type="checkbox"/> Other _____ |
| <input checked="" type="checkbox"/> H_1 , <u>5/8</u> " | <input type="checkbox"/> H_2 _____ " | <input type="checkbox"/> T_1 , <u>.018</u> " | <input type="checkbox"/> Steel - Mild | <input type="checkbox"/> Steel - Stainless | |