NATIONAL CERTIFIED TESTING LABORATORIES

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

REPORT NO: NCTL-110-18040-1
SIMULATION DATE: 12/11/15
REPORT DATE: 12/11/15

Client: ClimateGuard Manufacturing
2500 North Manufacturing
Chicago, IL 60639

Product Line: ClimateGuard Manufacturing's 1000 Vinyl Single Hung

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 1000 Vinyl Single Hung

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

Weatherseals:

Location	Weather Seal Description
Head	N/A
Lower Jamb	(3) Mohair
Meeting Rail	(2) Mohair
Sill	(3) Mohair & (1) Flexible Vinyl Bulb
Upper Jamb	N/A

Gas Fillings:

Gas Type	Filling Technique	Percentage
Argon	Double probe	95%

Reinforcement: Not applicable.

Edge – of - Glass – Construction: Exterior flexible vinyl leaf / silicone back bedding and Interior Vinyl Glazing Bead with (2) leafs of flexible vinyl

Finish: Vinyl

Frame Description:

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

Sash Description:

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

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		0.699		AIR										CL	CU-D	N,G	0.75	0.47	43		0.64	0.57		0.65	0.58	
	2	3 mm Clear	3 mm Clear		0.123	0.123		0.639		AIR										CL	CU-D	N,G	0.75	0.47	43		0.62	0.56		0.64	0.58	
	3	2 mm Clear	2 mm Clear	2 mm Clear	0.086	0.086	0.086	0.306	0.306	AIR	AIR									CL	CU-D	N		0.37	52		0.58			0.60			
	4	2 mm Comfort Select 73	2 mm Clear		0.087	0.086		0.699		ARG		95			0.148					CL	CU-D	N,G	0.75	0.33	52		0.54	0.49		0.61	0.54	
	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	0.33	53		0.51	0.46		0.58	0.52	
	6	2 mm Comfort Select 73	2 mm Clear	2 mm Clear	0.087	0.086	0.086	0.306	0.306	ARG	ARG	95	95		0.148					CL	CU-D	N		0.29	59		0.50			0.56			
	7	2 mm LoE³ 366	2 mm Clear		0.087	0.086		0.699		ARG		95			0.022					CL	CU-D	N,G	0.75	0.30	54		0.22	0.20		0.51	0.46	
	8	3 mm LoE³ 366	3 mm Clear		0.117	0.123		0.639		ARG		95			0.022					CL	CU-D	N,G	0.75	0.30	54		0.22	0.20		0.51	0.45	
	9	2 mm LoE³ 366	2 mm Clear	2 mm Clear	0.087	0.086	0.086	0.306	0.306	ARG	ARG	95	95		0.022					CL	CU-D	N		0.27	61		0.21			0.47			
	10	2 mm LoE² 270	2 mm Clear		0.087	0.086		0.699		ARG		95			0.037					CL	CU-D	N,G	0.75	0.30	54		0.30	0.27		0.56	0.50	
	11	3 mm LoE² 270	3 mm Clear		0.118	0.123		0.639		ARG		95			0.037					CL	CU-D	N,G	0.75	0.30	53		0.29	0.27		0.55	0.49	
	12	2 mm LoE² 270	2 mm Clear	2 mm Clear	0.087	0.086	0.086	0.306	0.306	ARG	ARG	95	95		0.037					CL	CU-D	N		0.27	61		0.28			0.51			
	13	2 mm LoE² 270	2 mm Comfort Select 73		0.087	0.087		0.699		ARG		95			0.037		0.148			CL	CU-D	N,G	0.75	0.26	43		0.28	0.26		0.52	0.46	
	14	3 mm LoE² 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	0.26	46		0.28	0.25		0.50	0.44	
	15	2 mm LoE² 270	2 mm Clear	2 mm LoE² 270	0.087	0.086	0.087	0.306	0.306	ARG	ARG	95	95		0.037			0.037		CL	CU-D	N		0.23	64		0.25			0.43			
	16	2 mm LoE² 272	2 mm Clear		0.087	0.086		0.699		ARG		95			0.042					CL	CU-D	N,G	0.75	0.30	54		0.33	0.30		0.57	0.51	
	17	3 mm LoE² 272	3 mm Clear		0.117	0.123		0.639		ARG		95			0.042					CL	CU-D	N,G	0.75	0.30	53		0.33	0.30		0.56	0.50	
	18	2 mm LoE² 272	2 mm Clear	2 mm Clear	0.087	0.086	0.086	0.306	0.306	ARG	ARG	95	95		0.042					CL	CU-D	N		0.27	61		0.31			0.52			
	19	2 mm LoE² 272	2 mm Comfort Select 73		0.087	0.087		0.699		ARG		95			0.042		0.148			CL	CU-D	N,G	0.75	0.26	43		0.32	0.29		0.53	0.47	
	20	3 mm LoE² 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	0.26	46		0.31	0.28		0.51	0.46	
	21	2 mm LoE² 272	2 mm Clear	2 mm LoE² 272	0.087	0.086	0.087	0.306	0.306	ARG	ARG	95	95		0.042			0.042		CL	CU-D	N		0.23	64		0.29			0.46			
	22	2 mm Comfort Select™ 63	2 mm Comfort Select 73		0.088	0.087		0.699		ARG		95			0.070		0.148			CL	CU-D	N,G	0.75	0.26	42		0.44	0.40		0.59	0.52	
	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	0.27	46		0.43	0.38		0.56	0.50	

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 0.6100" Rect. Grid	24	2 mm Clear	2 mm Clear	2 mm Clear	0.086	0.086	0.086	0.306	0.306	AIR	AIR									CL	CU-D	G	0.75	0.37	52			0.52			0.54	
0.1875" x 0.6100" Rect. Grid	25	2 mm Comfort Select 73	2 mm Clear	2 mm Clear	0.087	0.086	0.086	0.306	0.306	ARG	ARG	95	95		0.148					CL	CU-D	G	0.75	0.30	59			0.45			0.50	
0.1875" x 0.6100" Rect. Grid	26	2 mm LoE³ 366	2 mm Clear	2 mm Clear	0.087	0.086	0.086	0.306	0.306	ARG	ARG	95	95		0.022					CL	CU-D	G	0.75	0.28	61			0.19			0.42	
0.1875" x 0.6100" Rect. Grid	27	2 mm LoE² 270	2 mm Clear	2 mm Clear	0.087	0.086	0.086	0.306	0.306	ARG	ARG	95	95		0.037					CL	CU-D	G	0.75	0.28	61			0.25			0.45	
0.1875" x 0.6100" Rect. Grid	28	2 mm LoE² 270	2 mm Clear	2 mm LoE² 270	0.087	0.086	0.087	0.306	0.306	ARG	ARG	95	95		0.037			0.037		CL	CU-D	G	0.75	0.23	64			0.23			0.39	
0.1875" x 0.6100" Rect. Grid	29	2 mm LoE² 272	2 mm Clear	2 mm Clear	0.087	0.086	0.086	0.306	0.306	ARG	ARG	95	95		0.042					CL	CU-D	G	0.75	0.28	61			0.28			0.47	
0.1875" x 0.6100" Rect. Grid	30	2 mm LoE² 272	2 mm Clear	2 mm LoE² 272	0.087	0.086	0.087	0.306	0.306	ARG	ARG	95	95		0.042			0.042		CL	CU-D	G	0.75	0.24	64			0.26			0.41	
VALIDATION,	0	2 mm LoE² 270	2 mm Clear	2 mm LoE² 270	0.087	0.086	0.087	0.306	0.306	ARG	ARG	95	95		0.037			0.037		CL	CU-D	N		0.23	64		0.25			0.43		

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/ (m^2*K) (0.10 BTU/HR/ft^2/ºF) 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 1000 Vinyl Single Hung

Date:	
12/11/15	- Original Report issued to ClimateGuard Manufacturing and Inspection Agency

ATTACHMENT A

Product Drawings

TEST SPECIMEN COMMPLIES
WITH THESE DETAILS.
ANY DEVIATION IS NOTED.
REPORT NO. NCTL-110-18040-1
TEST DATE 12/11/15

BILL OF MATERIAL FOR 1000 SERIES SINGLE HUNG

MIN SIZE: 15" X 32"

MAX SIZE: 50" X 78"

COMPONENT	PART #	MANUFACTURER
1. VINYL		VISION EXTRUSION
2. BALANCES	ALUMA TILT 5/8"	CALDWELL MFG
3. BALANCE SHOE	16H70	-II-
4. PIVOT BAR	0045	TKG INC
5. LOCK & KEEPER	677207 / 677120	DECO PRODUCTS
6. VENT LOCKS	110-2505-10	RO-MAI INDUST.
7. TILT LATCH ASSY.	#WH106-2511-2L/2R	ASHLAND/TKG
8. SETTING BLOCKS	1" X 7/8" X 1/8"	FRANK LOWE
9. ANCHOR FOR BALANCE SHOR	0237	TKG INC
10. WEATHERSTRIP	W23251NG0010	AMESBURY/ULTRAFAB
11. SILLICONE	1199	DOW CORNING
12. WEEP COVER	65605	ASHLAND PROD.
13. SCREWS:		MERCHANTS FASTENER
- FOR PIVOT BAR	#6X5/8 PH.FL.410 SS	
-FOR TILT LATCH	#8X1 PH.PAN.HD	
- FOR LOCK	#6X1 PH.FL.HD	
- FOR KEEPER	#6X1 1/4 PH.FL.HD	
- FOR BALANCES	#8X1 PH.FL.HD	
- FOR MULLION	#8X2 1/2 PH.PN.HD	

= NOT MODELED IN SIMULATION

TEST SPECIMEN COMMPLIES
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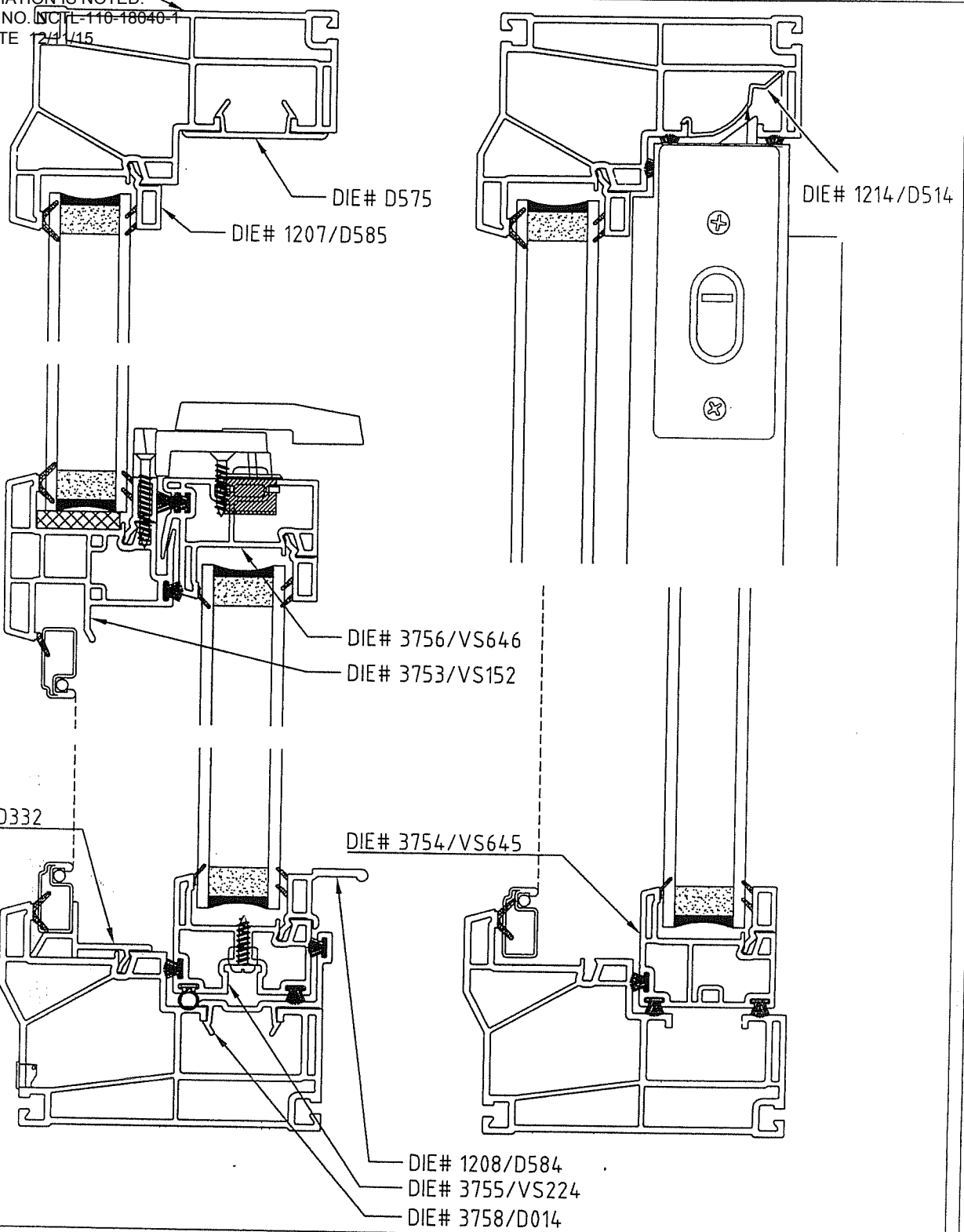
REPORT NO. ~~NCTL-110-18040-1~~
TEST DATE ~~12/11/15~~

REVISIONS	
A2	Revised Tool reference number.

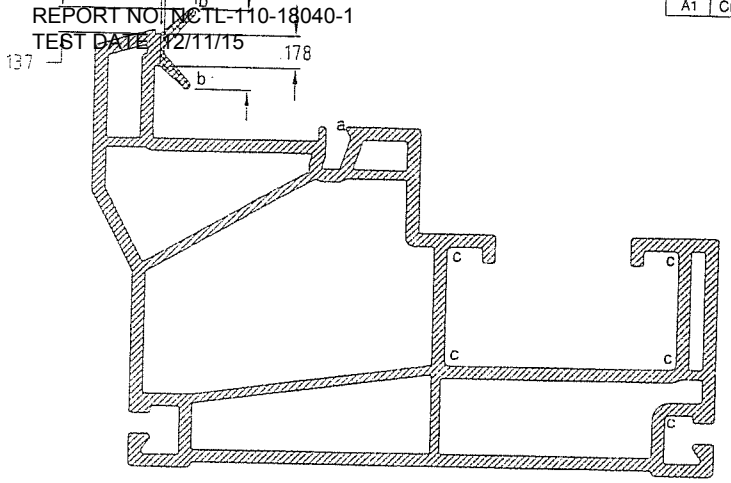


VISION™
EXTRUSIONS LIMITED

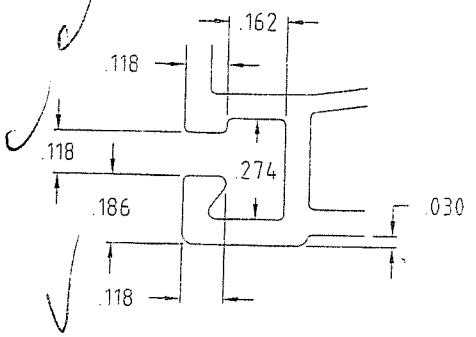
TOLERANCES	CUSTOMER/DESCRIPTION:			
X.XX ± 0.015 X.XXX ± 0.010 X.XXXX ± 0.005 DO NOT SCALE DRAWING ALL DIMENSIONS ARE IN INCHES U.O.S.	CROSS–SECTION 1000 SINGLE HUNG			
SIZE: "A"	COLOUR: As specified	MATERIAL: Rigid P.V.C.	TOOL NO.: N/A	DATE: 10/17/2014
SHEET: 1 of 1	DRAWN BY: MS	SCALE: n.f.s	PART NO.: N/A	DWG NO.: N/A

TEST SPECIMEN COMMPLIES
WITH THESE DETAILS.
ANY DEVIATIONS NOTED.
REPORT NO: NCTL-110-18040-1
TEST DATE: 12/11/15

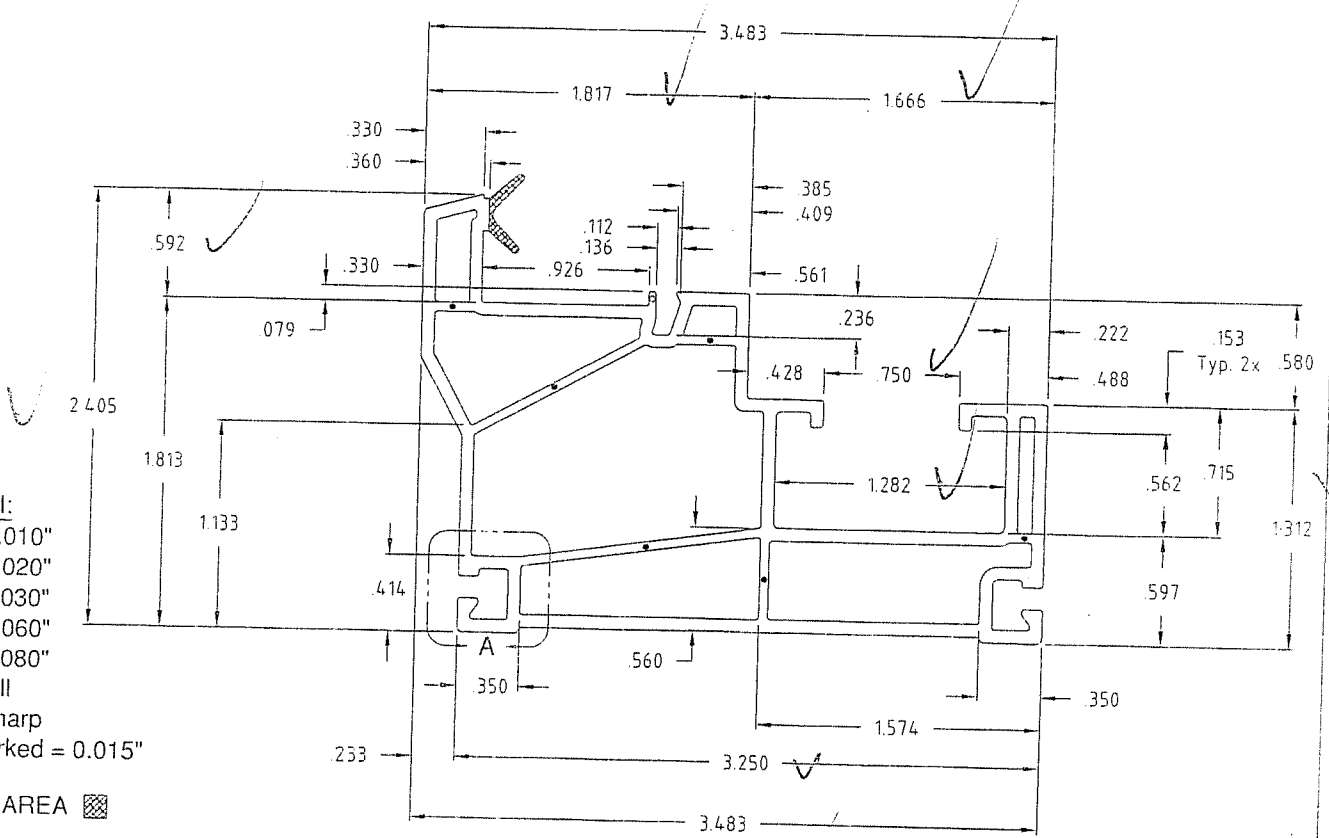
REVISIONS	
A1	Current



Radius & Flex Detail
Scale 1 : 1



Detail A (Scale 2 : 1)
Typ. Interior & Exterior Accessory Groove
Unless otherwise Specified



RADII:
a = 0.010"
b = 0.020"
c = 0.030"
d = 0.060"
e = 0.080"
f = full
s = Sharp
unmarked = 0.015"

FLEX AREA ▨

WALL THICKNESS: UNLESS SPECIFIED
NOMINAL = 0.070"
• = 0.050"
◦ = 0.040"

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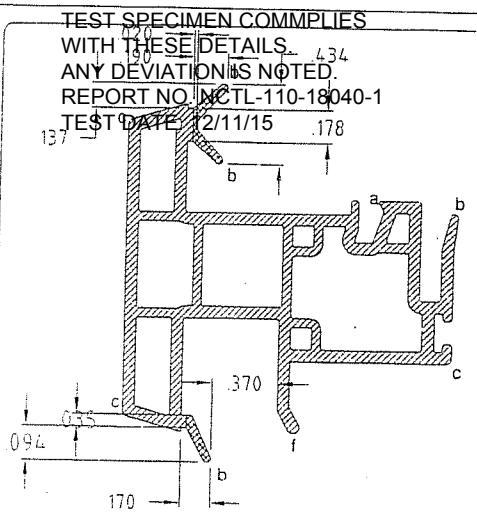
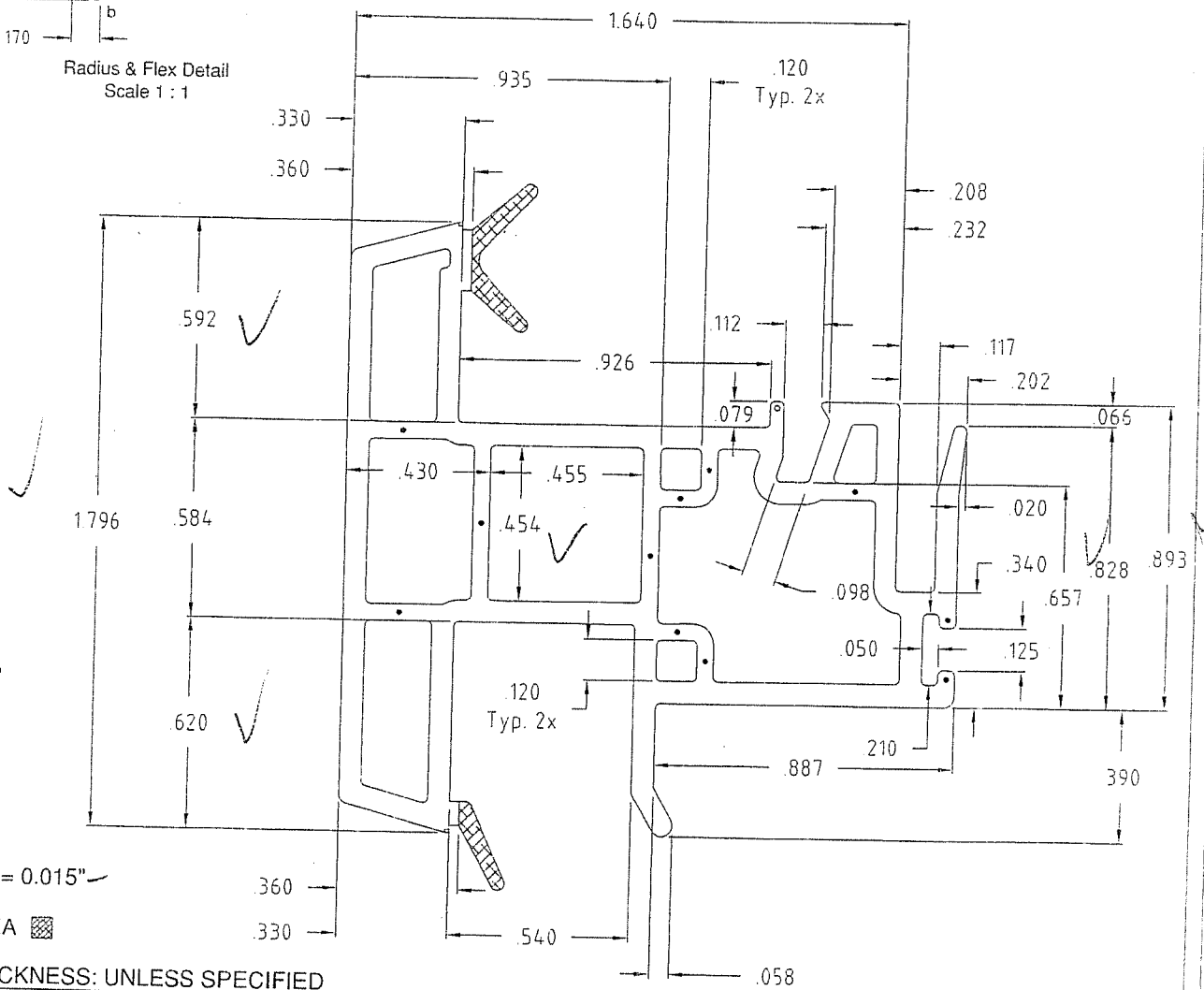
TOLERANCES	CUSTOMER/DESCRIPTION:			
X.XX ± 0.015 X.XXX ± 0.010 X.XXXX ± 0.005 DO NOT SCALE DRAWING ALL DIMENSIONS ARE IN INCHES U.O.S.	202 Series – Single Hung Main Frame Part Drawing			
SIZE: "A"	COLOUR: As specified	MATERIAL: As specified	TOOL NO.: 3752	DATE: 03/15/2012
SHEET: 1 of 1	DRAWN BY: RJO	SCALE: 1 : 1	PART NO.: V–155	DWG NO.: E202F04

TEST SPECIMEN COMMPLIES
WITH THESE DETAILS.
ANY DEVIATIONS NOTED.
REPORT NO. NCTL-110-18040-1
TEST DATE 12/11/15

REVISIONS	
A1	Current



Radius & Flex Detail
Scale 1 : 1



RADII:
a = 0.010"
b = 0.020"
c = 0.030"
d = 0.060"
e = 0.080"
f = full
s = Sharp
unmarked = 0.015"

FLEX AREA

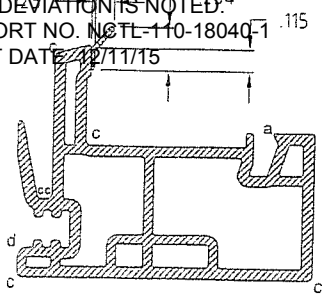
WALL THICKNESS: UNLESS SPECIFIED
NOMINAL = 0.065"
• = 0.050"
◦ = 0.040"

VISION™
EXTRUSIONS LIMITED

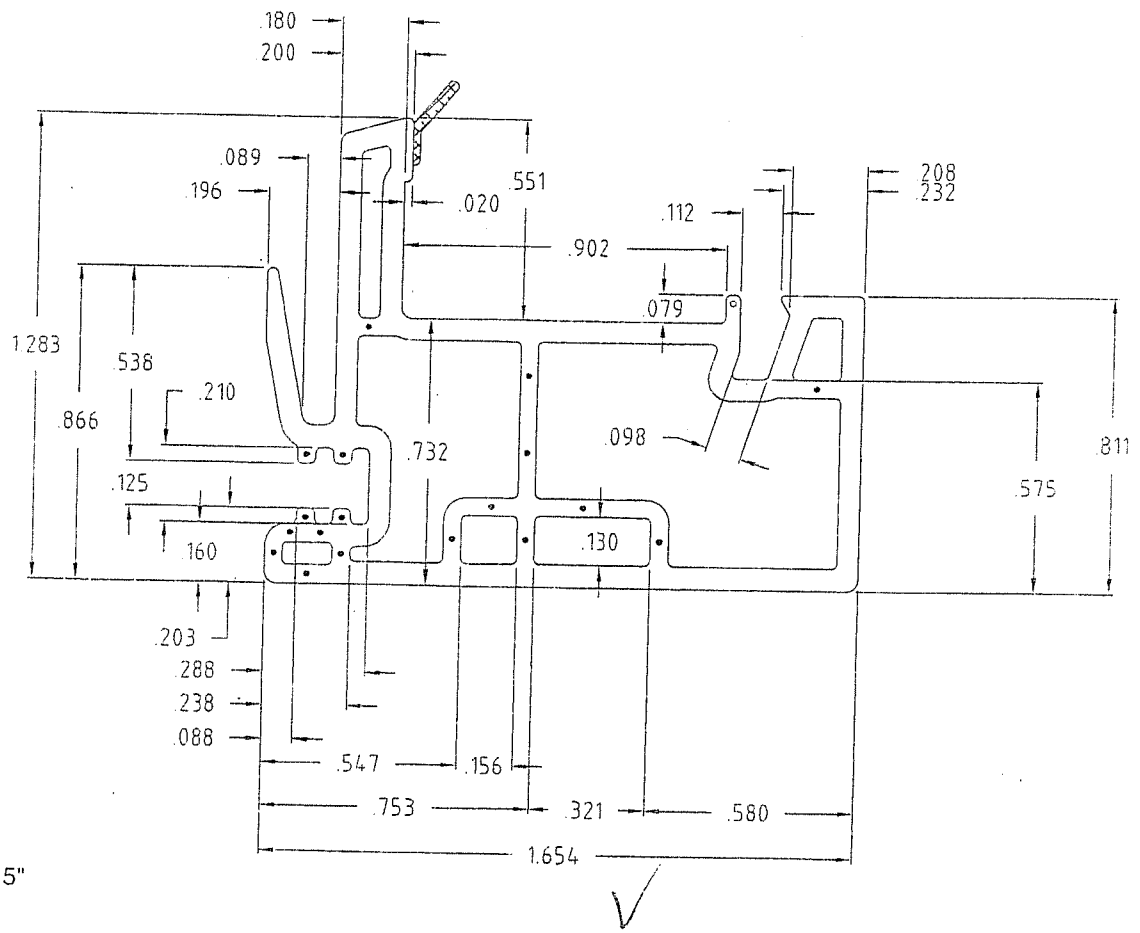
TOLERANCES	CUSTOMER/DESCRIPTION:			
X.XX ± 0.015 X.XXX ± 0.010 X.XXXX ± 0.005 DO NOT SCALE DRAWING ALL DIMENSIONS ARE IN INCHES U.O.S.	202 Series – Single Hung Mullion Part Drawing			
SIZE: "A"	COLOUR: As specified	MATERIAL: As specified	TOOL NO.: 3753	DATE: 03/15/2012
SHEET: 1 of 1	DRAWN BY: RJO	SCALE: 1 : 1	PART NO.: V-152	DWG NO.: E202F05

TEST SPECIMEN COMMPLIES
WITH THESE DETAILS.
ANY DEVIATION IS NOTED.
REPORT NO. NCTL-110-18040-1
TEST DATE 12/11/15

REVISIONS	
A1	Current



Radius & Flex Detail
Scale 1 : 1



RADII:
a = 0.010"
b = 0.020"
c = 0.030"
d = 0.060"
e = 0.080"
f = full
s = Sharp
unmarked = 0.015"

FLEX AREA

WALL THICKNESS: UNLESS SPECIFIED
NOMINAL = 0.060"
• = 0.050"
◦ = 0.040"

VISION™
EXTRUSIONS LIMITED

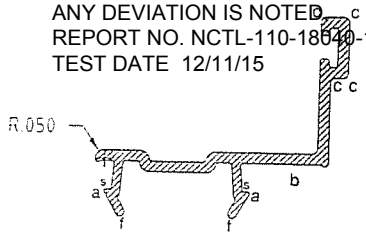
TOLERANCES
X.XX ± 0.015
X.XXX ± 0.010
X.XXXX ± 0.005
DO NOT SCALE DRAWING
ALL DIMENSIONS ARE IN INCHES U.O.S.

CUSTOMER/DESCRIPTION:
202 Series – Interlock Sash
Part Drawing

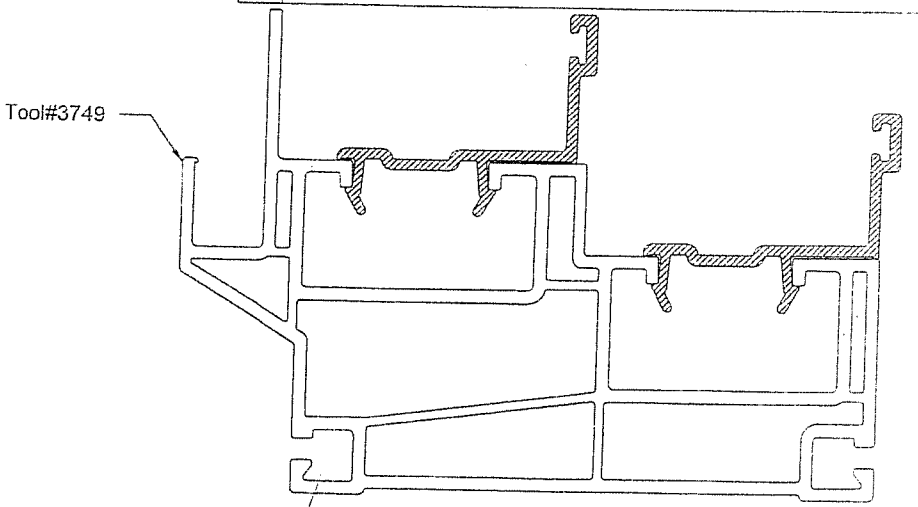
SIZE:	COLOUR:	MATERIAL:	TOOL NO.:	DATE:
"A"	As specified	As specified	3756	03/19/2012
SHEET:	DRAWN BY:	SCALE:	PART NO.:	DWG NO.:
1 of 1	RJO	2 : 1	V-646	E202S03

TEST SPECIMEN COMMPLIES
WITH THESE DETAILS.
ANY DEVIATION IS NOTED
REPORT NO. NCTL-110-18040-1
TEST DATE 12/11/15

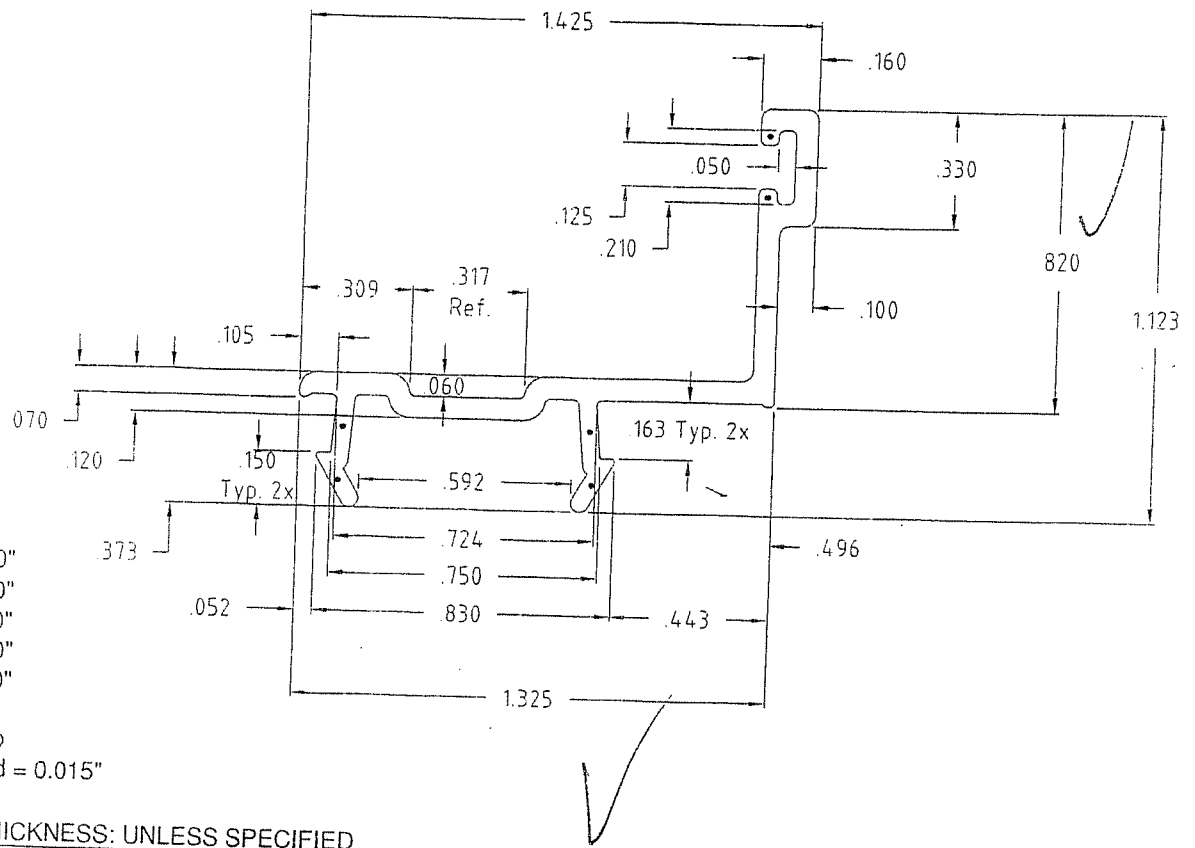
REVISIONS	
A1	Current



Radius Detail
Scale 1 : 1



Applications Detail
Scale 1 : 1



RADII:
a = 0.010"
b = 0.020"
c = 0.030"
d = 0.060"
e = 0.080"
f = full
s = Sharp
unmarked = 0.015"

WALL THICKNESS: UNLESS SPECIFIED
NOMINAL = 0.060"
• = 0.050"

VISION™
EXTRUSIONS LIMITED

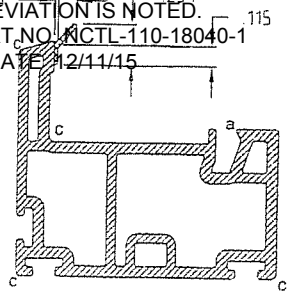
TOLERANCES
X.XX ± 0.015
X.XXX ± 0.010
X.XXXX ± 0.005
DO NOT SCALE DRAWING
ALL DIMENSIONS ARE IN INCHES U.O.S.

CUSTOMER/DESCRIPTION:
202 Series – Sealed Pocket Cover
Part Drawing

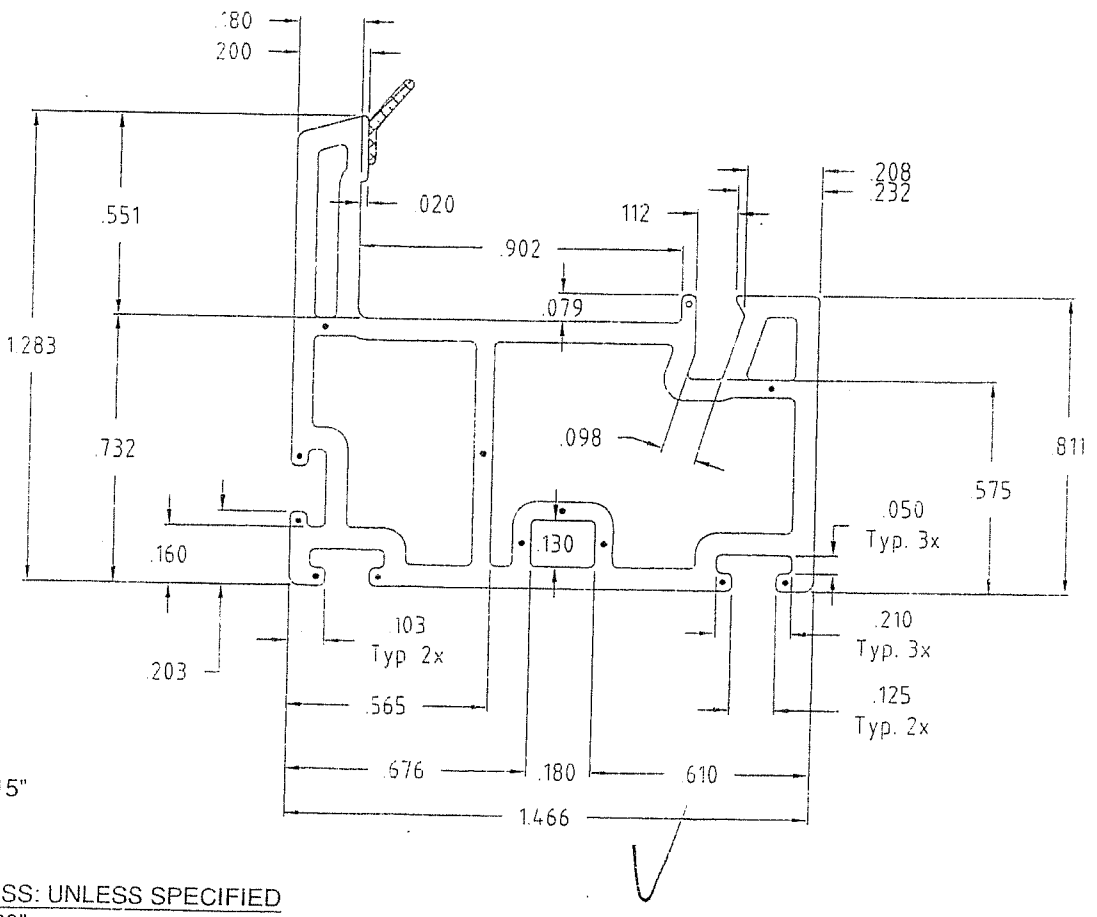
SIZE:	COLOUR:	MATERIAL:	TOOL NO.:	DATE:
"A"	As specified	As specified	3758	03/19/2012
SHEET:	DRAWN BY:	SCALE:	PART NO.:	DWG NO.:
1 of 1	RJO	2 : 1	D-014	E202X02

TEST SPECIMEN COMMPLIES
WITH THESE DETAILS.
ANY DEVIATION IS NOTED.
REPORT NO. NCTL-110-18040-1
TEST DATE 12/11/15

REVISIONS	
A1	Current



Radius & Flex Detail
Scale 1 : 1



RADII:
a = 0.010"
b = 0.020"
c = 0.030"
d = 0.060"
e = 0.080"
f = full
s = Sharp
unmarked = 0.015"

FLEX AREA ▨

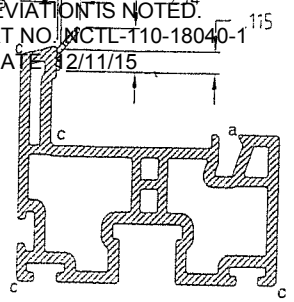
WALL THICKNESS: UNLESS SPECIFIED
NOMINAL = 0.060"
• = 0.050"
◦ = 0.040"

VISION™
EXTRUSIONS LIMITED

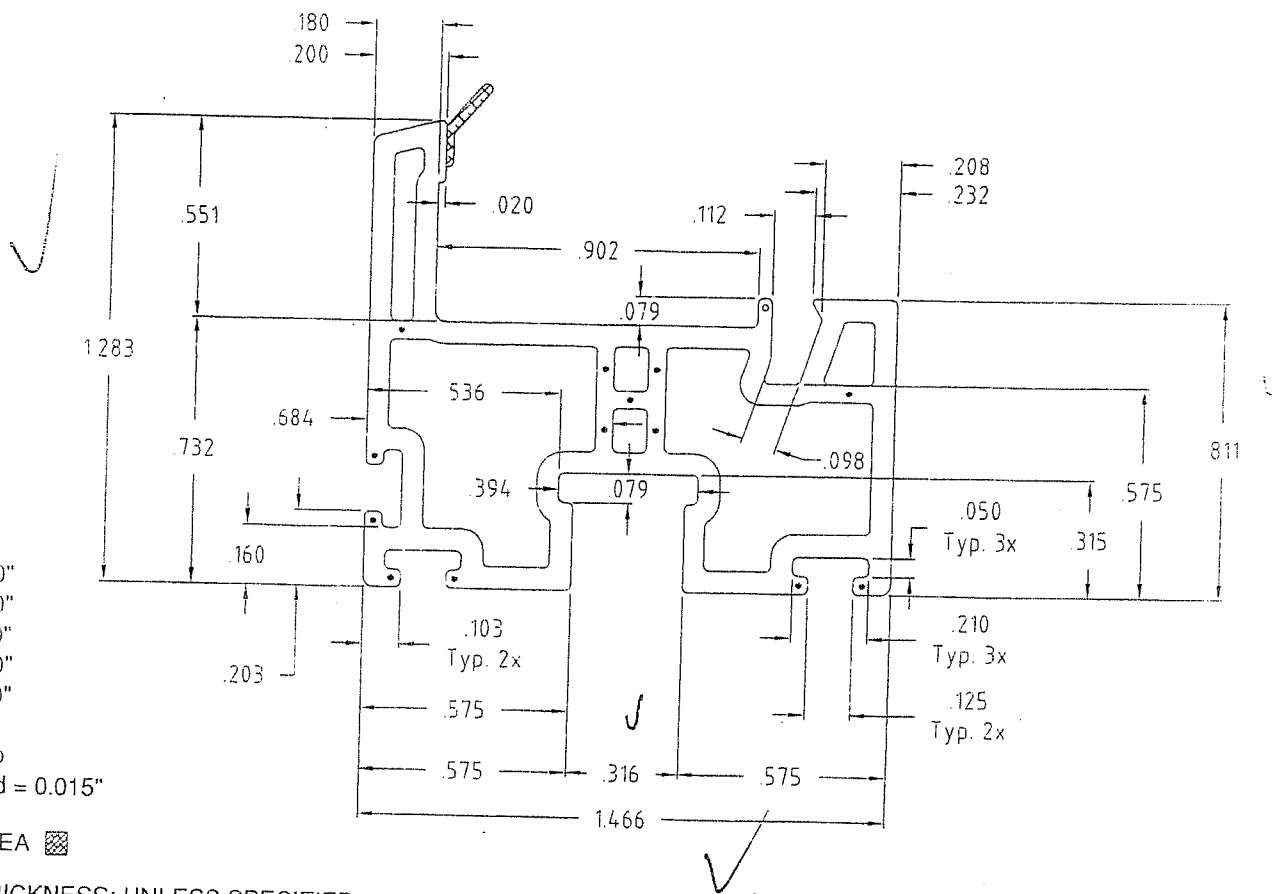
TOLERANCES	CUSTOMER/DESCRIPTION:			
X.XX ± 0.015 X.XXX ± 0.010 X.XXXX ± 0.005 DO NOT SCALE DRAWING ALL DIMENSIONS ARE IN INCHES U.O.S.	202 Series – Stile Sash Part Drawing			
SIZE: "A"	COLOUR: As specified	MATERIAL: As specified	TOOL NO.: 3754	DATE: 03/19/2012
SHEET: 1 of 1	DRAWN BY: RJO	SCALE: 2 : 1	PART NO.: V-645	DWG NO.: E202S01

TEST SPECIMEN COMMPLIES
WITH THESE DETAILS.
ANY DEVIATIONS NOTED.
REPORT NO. MCTL-110-18040-1
TEST DATE 12/11/15

REVISIONS	
A1	Current



Radius & Flex Detail
Scale 1 : 1



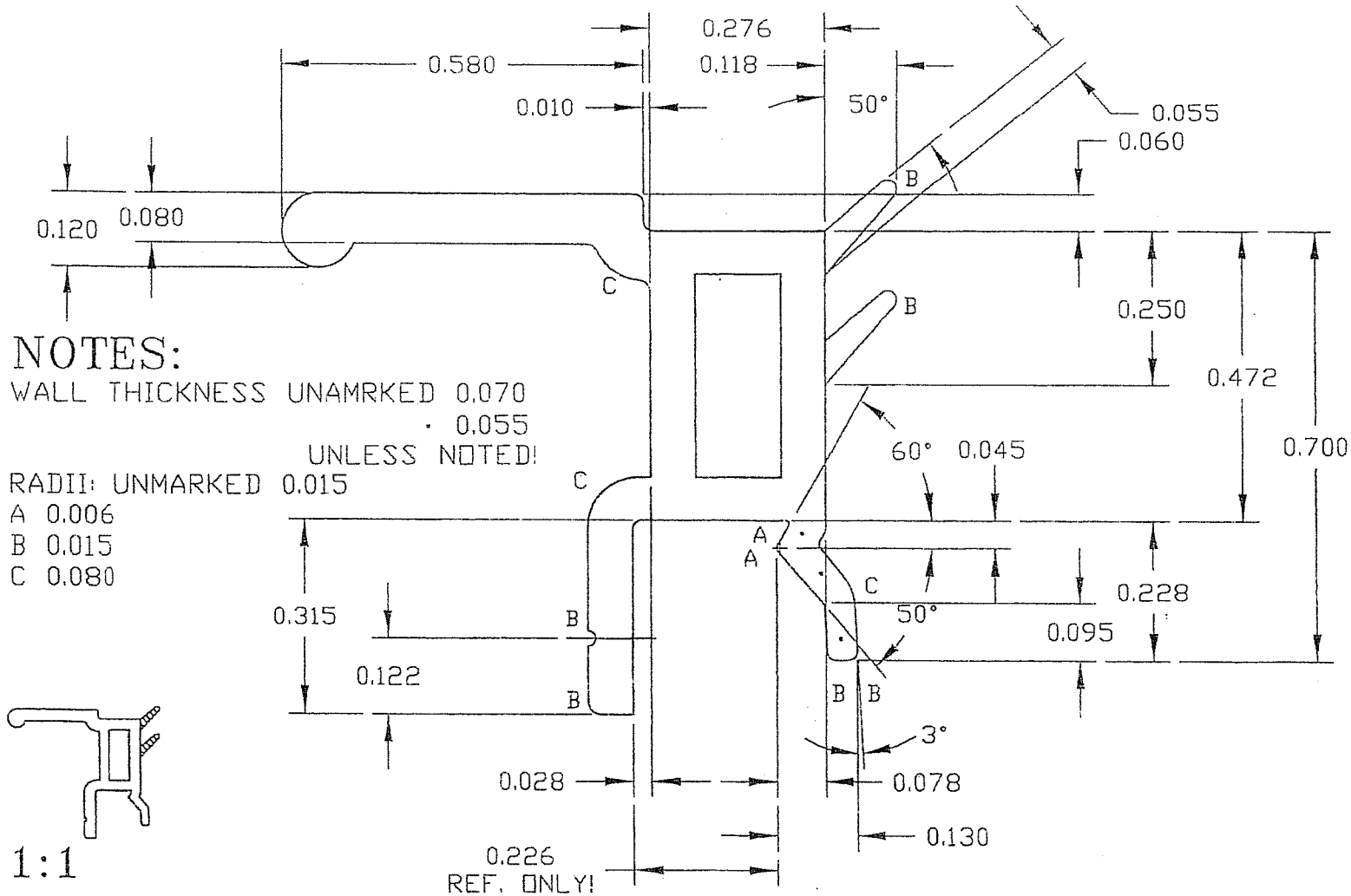
RADII:
a = 0.010"
b = 0.020"
c = 0.030"
d = 0.060"
e = 0.080"
f = full
s = Sharp
unmarked = 0.015"

FLEX AREA

WALL THICKNESS: UNLESS SPECIFIED
NOMINAL = 0.060"
• = 0.050"
◦ = 0.040"

VISION™
EXTRUSIONS LIMITED

TOLERANCES	CUSTOMER/DESCRIPTION:			
X.XX ± 0.015 X.XXX ± 0.010 X.XXXX ± 0.005 DO NOT SCALE DRAWING ALL DIMENSIONS ARE IN INCHES U.O.S.	202 Series – Sash Rail Part Drawing			
SIZE: "A"	COLOUR: As specified	MATERIAL: As specified	TOOL NO.: 3755	DATE: 03/19/2012
SHEET: 1 of 1	DRAWN BY: RJO	SCALE: 2 : 1	PART NO.: V-224	DWG NO.: E202S02



NOTES:

WALL THICKNESS UNAMRKED 0.070
· 0.055
UNLESS NOTED!

RADII: UNMARKED 0.015
A 0.006
B 0.015
C 0.080

1:1

TEST SPECIMEN COMMPLIES WITH THESE DETAILS.
ANY DEVIATION IS NOTED.
REPORT NO. NCTL-110-18040-1
TEST DATE 12/11/15

DOMINION PLASTICS INC.

CUSTOMER:

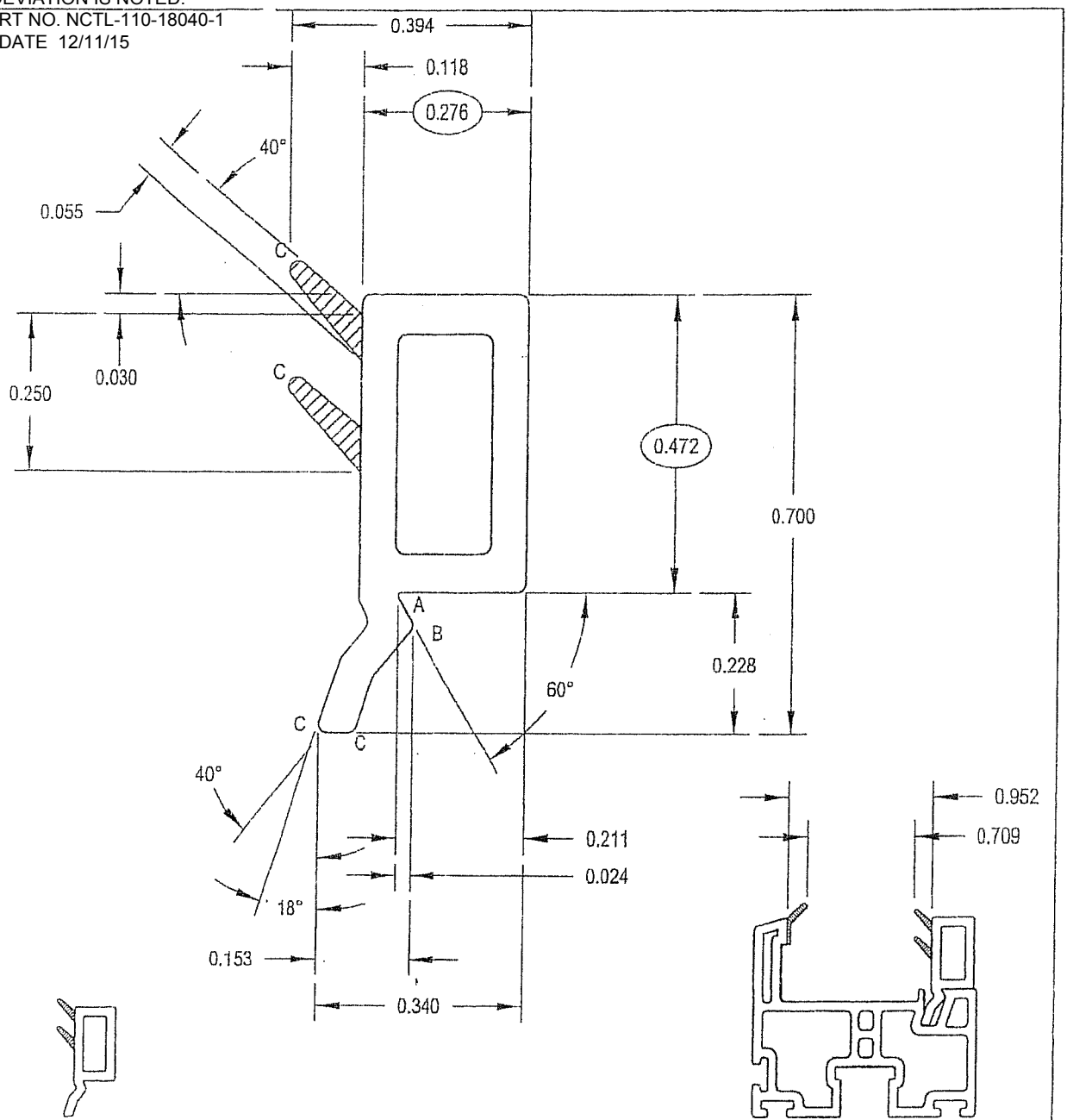
DOMINION

PART NAME:

7/8" PULL RAIL STOP

MATERIAL: PVC	FILE No.	DIE No.
SCALE: 4:1		D584
DWN BY: CDF	DATE	PROG. No.
CHKD BY:	25-JULY--97	D909

TEST SPECIMEN COMMPLIES
WITH THESE DETAILS.
ANY DEVIATION IS NOTED.
REPORT NO. NCTL-110-18040-1
TEST DATE 12/11/15



1:1

ALL DIMENSIONS TOLERANCED TO +/- 0.020" UNLESS SPECIFIED

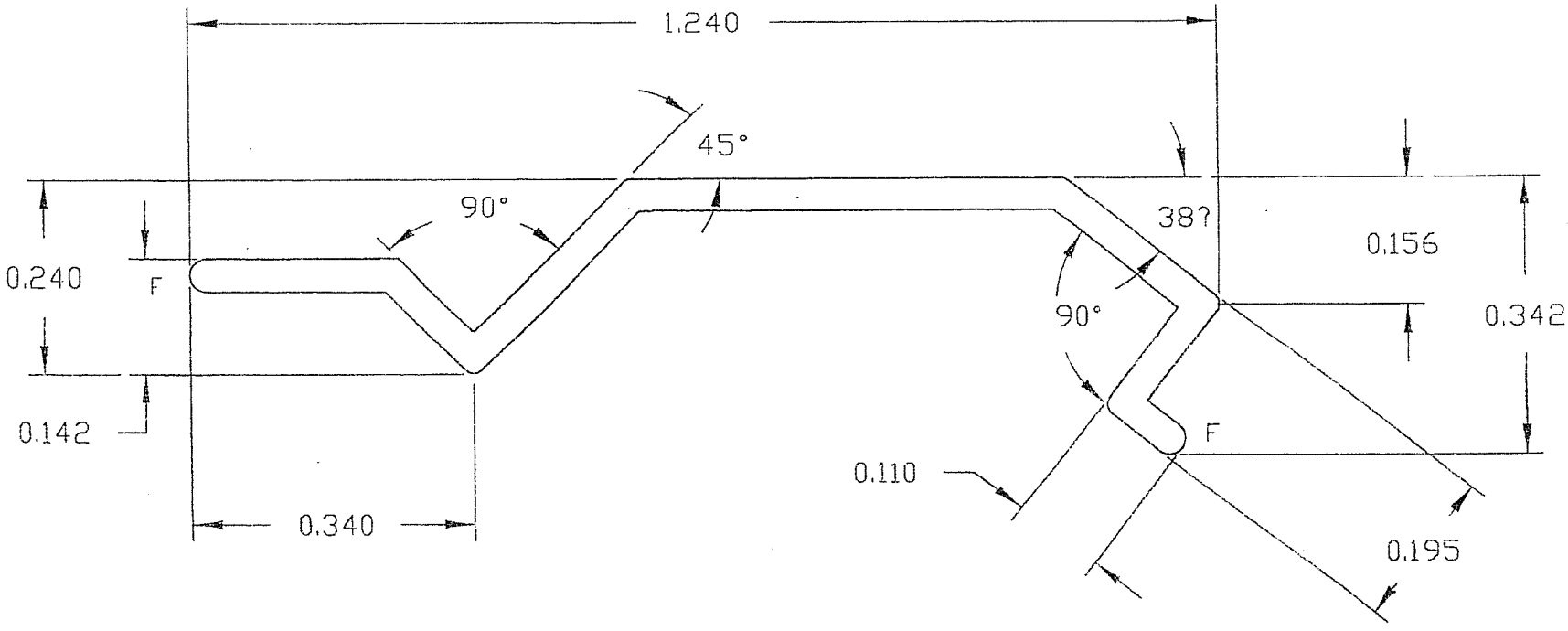
REVISIONS	NOTES:	RADII: UNMARKED: 0.015	SYMBOLS:
1) REDUCE WALL THICKNESS 14/FEB/01	WALL THICKNESS:	A 0.006 E — I —	= CAPSTOCK
2) MOVE FLEX AND CHANGE HOOK	EXTERIOR: 0.060	B 0.010 F FULL J —	⌖ = THEORETICAL SHARP
—	INTERIOR: —	C 0.015 G — K —	= HOLD DIMENSION +/- 0.005
	TOLERANCES +/- 0.006"	D — H — S SHARP	

Dominion Plastics Inc.

CUSTOMER: DOMINION

DESCRIPTION: 7/8" GLASS STOP

DATE:	SCALE:	DWG. NO.	DIE NO.	REV. NO.
14-FEB-01	4:1		D585	2
DRAWN BY:	MATERIAL:	PROJECT. NO.	PROG. NO.	
CDF	PVC		D910	



NOTES:

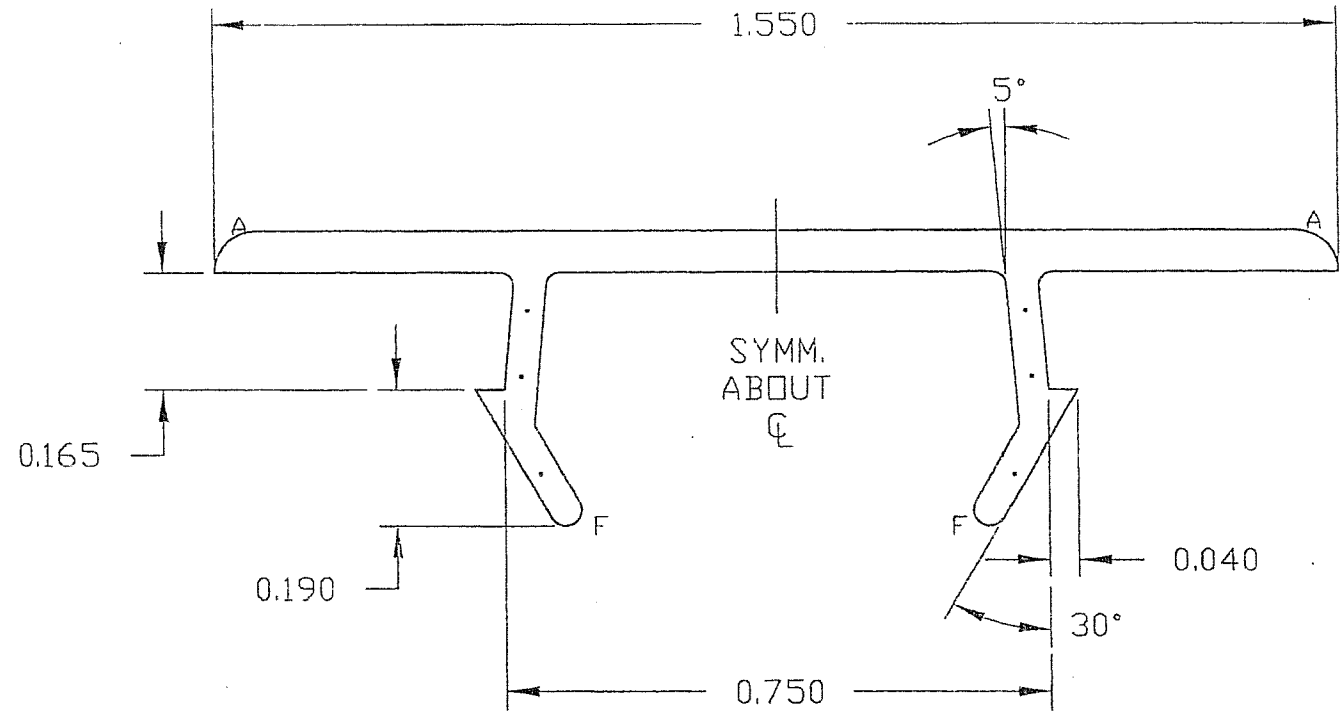
WALL THICKNESS: 0.040
RADII: UNMARKED 0.015
F FULL

1:1

TEST SPECIMEN COMMPLIES WITH THESE DETAILS.
ANY DEVIATION IS NOTED.
REPORT NO: NCTL-110-18040-1
TEST DATE 12/11/15

DOMINION PLASTICS LTD	CUSTOMER: DOMINION	PART NAME: BALANCE COVER		
		MATERIAL: PVC	FILE No.	DIE No: D514
		SCALE: 5:1		
		DWN BY: CDI	DATE: 16-FEB-93	PROG No. D1550
		CHKD BY.		

TEST SPECIMEN COMMPLIES
WITH THESE DETAILS.
ANY DEVIATION IS NOTED.
REPORT NO: NCTL-110-18040-1
TEST DATE 12/11/15



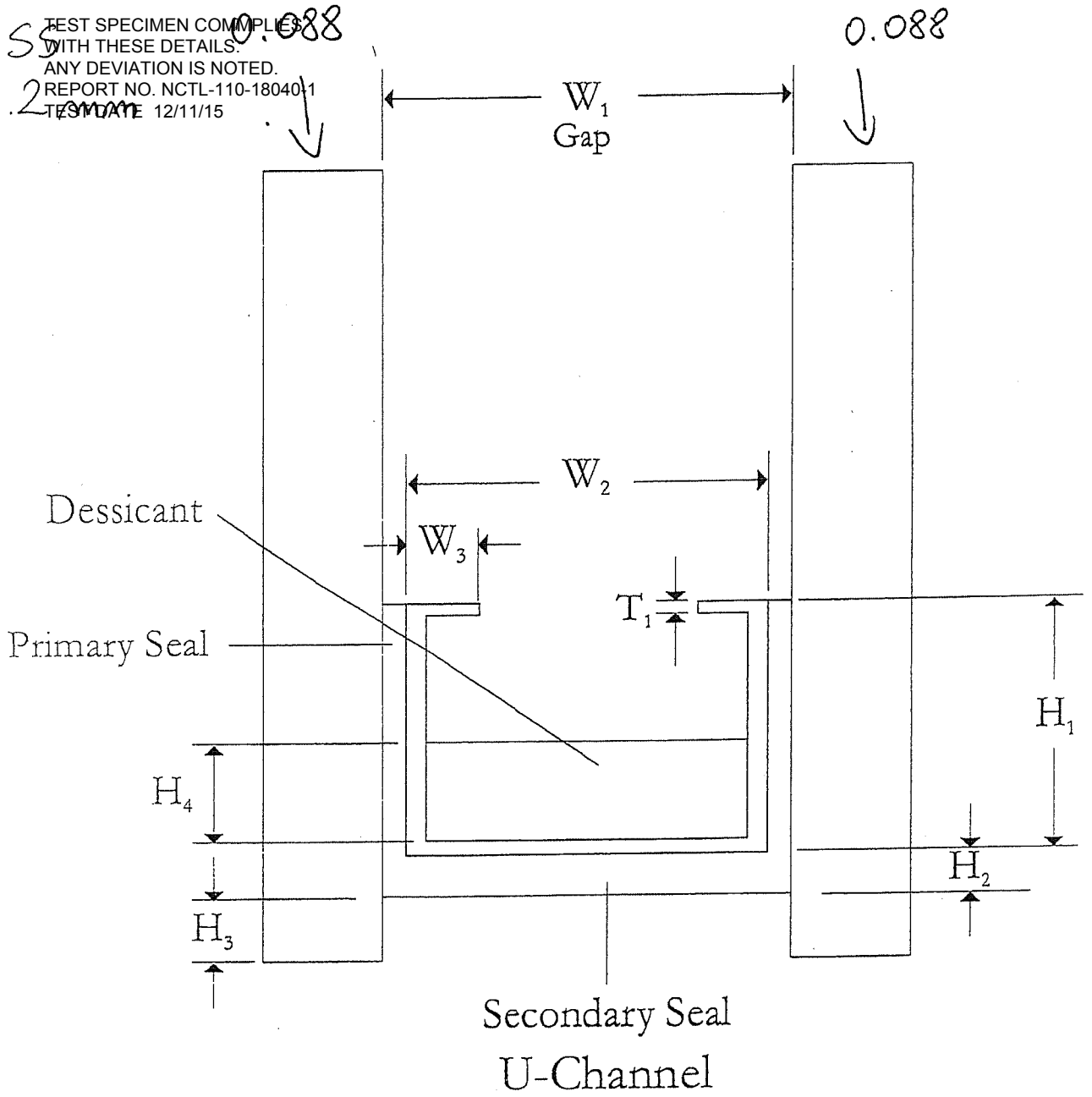
1:1

WALL THICKNESS: 0.060
· 0.045
RADII: UNMARKED 0.015
A 0.060
F FULL

DOMINION PLASTICS LTD	CUSTOMER: DOMINION	PART NAME: FLAT POCKET COVER		
		MATERIAL: PVC	FILE No.	DIE No: D575
		SCALE: 4:1		
		DWN BY: CDI	DATE: 29-JUNE-92	PROG No. D1061
		CHKD BY.		

TEST SPECIMEN COMPLIES WITH THESE DETAILS.
ANY DEVIATION IS NOTED.
REPORT NO. NCTL-110-18040-1
TEST DATE 12/11/15

SS 0.088 2.2mm



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

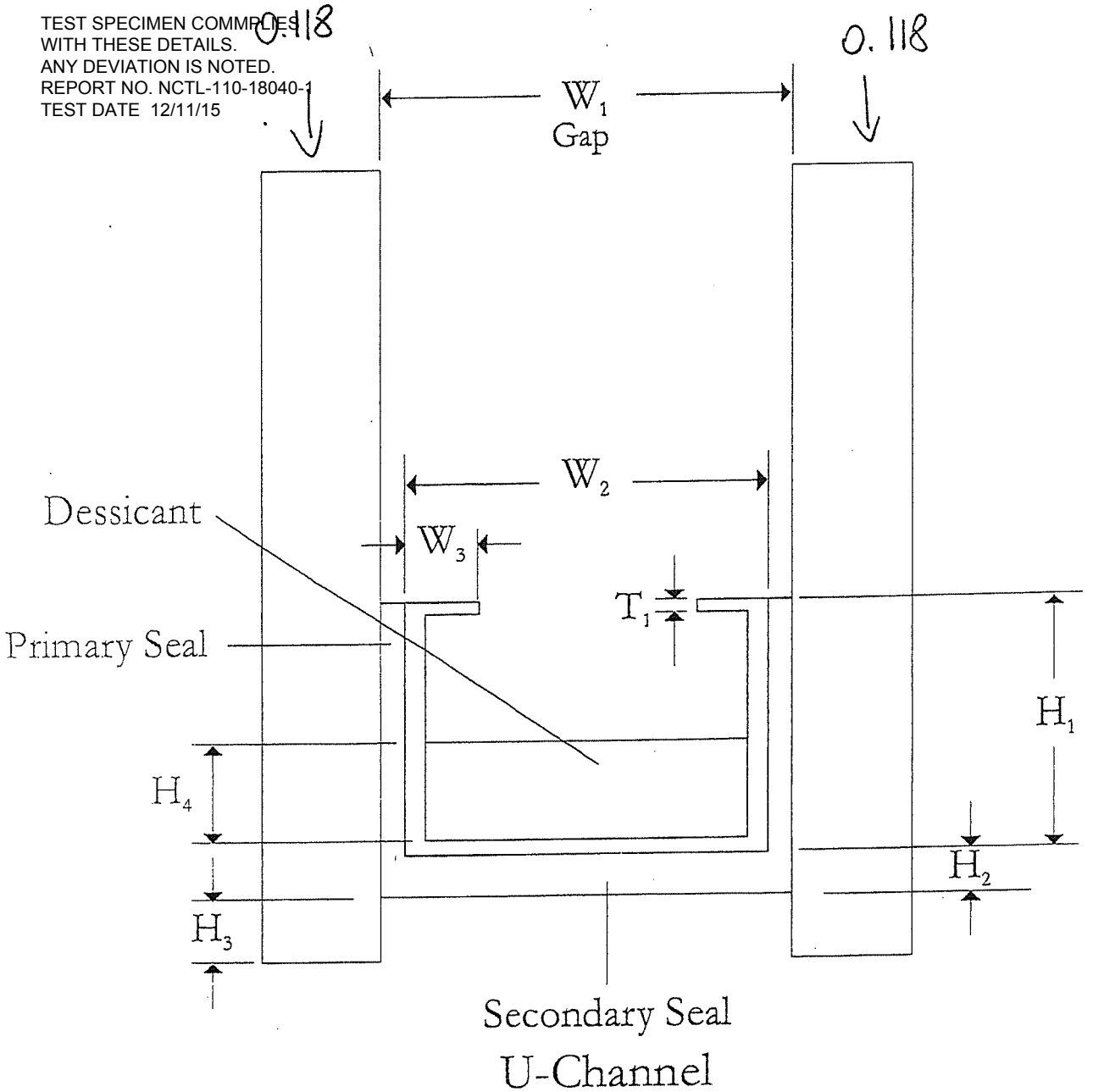
Gap		Primary Seal	Secondary Seal	Material	Fill
☐ W_1	.699 "	☒ Butyl	☐ Butyl	☐ Aluminum	☒ Dessicant
21/32 ☐ W_2	.657 "	☐ PIB	☐ PIB	☐ Steel - Mild	☐ Air
☐ W_3	.128 "	☐ Polysulphide	☐ Polysulphide	☐ Steel - Stainless	☐ Other _____
☐ W_4	"	☐ Silicone	☐ Silicone	☒ Steel - Galvanized	
☐ H_1	.300 "	☐ Urethane	☐ Urethane	☐ Vinyl	
☐ H_2	.050 "	☐ None	☐ None	☐ Foam _____	
☐ H_3	.062 "	☐ Other _____	☐ Other _____	☐ Other _____	
☐ H_4	.065 "				
☐ H_5	"				
☐ T_1	.011 "				

7/8 "

with SS GLASS

2.2 mm = 0.088 inch

TEST SPECIMEN COMPLIES
WITH THESE DETAILS.
ANY DEVIATION IS NOTED.
REPORT NO. NCTL-110-18040-1
TEST DATE 12/11/15



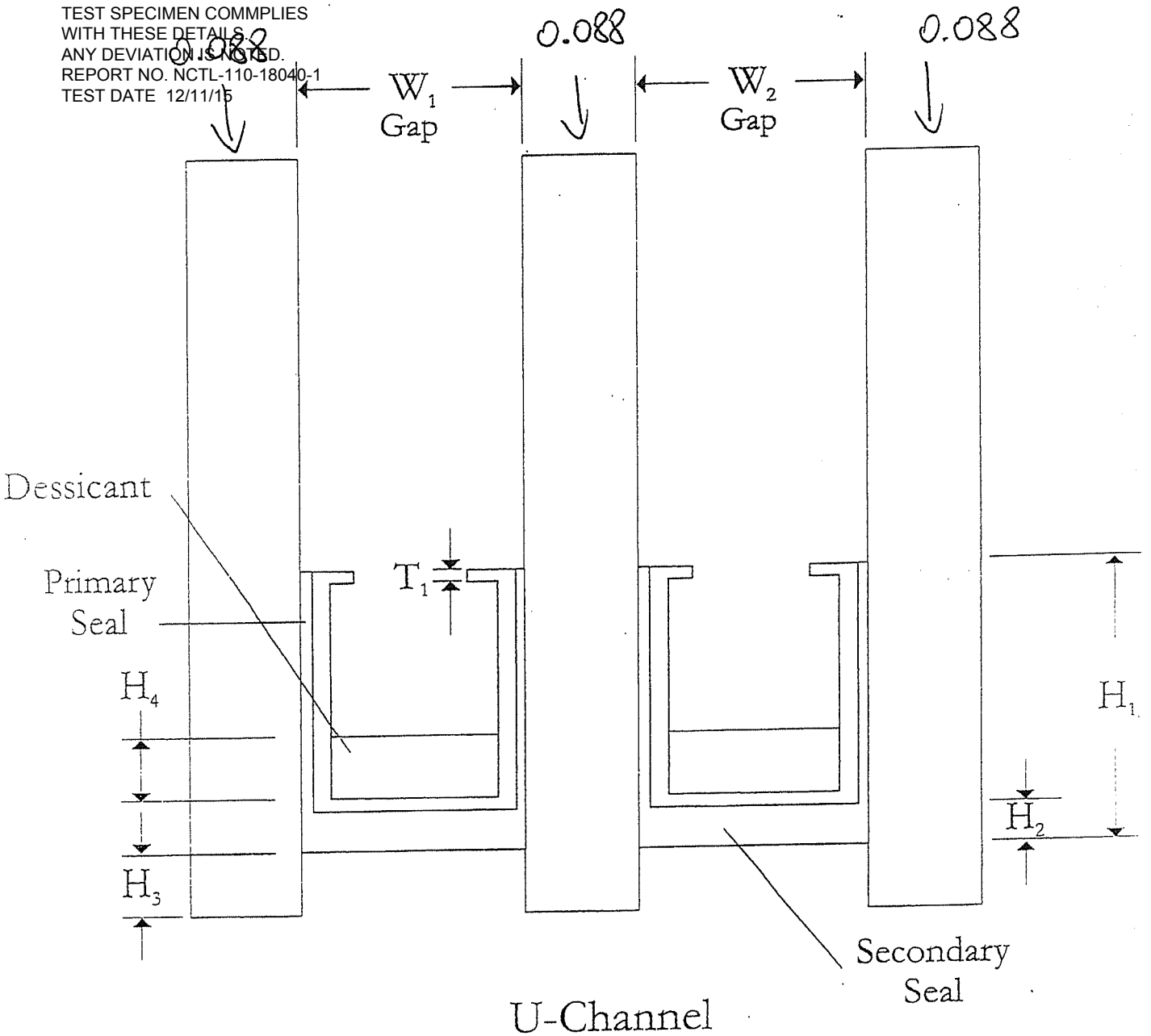
Spacer Dimensions -Fill dimensions where applicable - Please fill out a spacer sheet for each spacer used whether spacer type or size.

Gap		Primary Seal	Secondary Seal	Material	Fill
☐ W_1 .639 "		☒ Butyl	☐ Butyl	☐ Aluminum	☒ Dessicant
9/32 ☐ W_2 .594 "		☐ PIB	☐ PIB	☐ Steel - Mild	☐ Air
☐ W_3 .128 "		☐ Polysulphide	☐ Polysulphide	☐ Steel - Stainless	☐ Other _____
☐ W_4 _____ "		☐ Silicone	☐ Silicone	☒ Steel - Galvanized	
☐ H_1 .300 "		☐ Urethane	☐ Urethane	☐ Vinyl	
☐ H_2 .050 "		☐ None	☐ None	☐ Foam _____	
☐ H_3 .062 "		☐ Other _____	☐ Other _____	☐ Other _____	
☐ H_4 .065 "					
☐ H_5 _____ "					
☐ T_1 .011 "					

7/8" with DS GLASS

3 mm = 0.118 inch

TEST SPECIMEN COMMPLIES
WITH THESE DETAILS.
ANY DEVIATION IS NOTED.
REPORT NO. NCTL-110-18040-1
TEST DATE 12/11/15



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
☐ W_1	.306 "	☒ Butyl	☐ Butyl	☐ Aluminum	☒ Dessicant
17/64 ☐ W_2	.266 "	☐ PIB	☐ PIB	☐ Steel - Mild	☐ Air
☐ W_3	.078 "	☐ Polysulphide	☐ Polysulphide	☐ Steel - Stainless	☐ Other _____
☐ W_4	"	☐ Silicone	☐ Silicone	☒ Steel - Galvanized	
☐ H_1	.300 "	☐ Urethane	☐ Urethane	☐ Vinyl	
☐ H_2	.050	☐ None	☐ None	☐ Foam _____	
☐ H_3	.062 "	☐ Other _____	☐ Other _____	☐ Other _____	
☐ H_4	.065 "				
☐ H_5	"				
☐ T_1	.011 "				

7/8" TRIPLE with 2.2 mm GLASS

3 x 0.088 inch