

**AAMA 1801 SOUND TRANSMISSION LOSS
TEST REPORT**

Rendered to:

TUBELITE, INC.

SERIES/MODEL: 400 CW Fiberglass Pressure Plate

TYPE: Two-Lite Curtain Wall System

Summary of Test Results					
Data File No.	Glazing (Nominal Dimensions)	Air Infiltration (cfm/ft²)		STC	OITC
		1.57 psf	6.24 psf		
B9983.01	1" IG (1/4" laminated, 1/2" air space, 1/4" laminated), Glass temperature 75°F	0.06	0.15	37	31

Reference should be made to Architectural Testing, Inc. Report No. B9983.01-113-11 for complete test specimen description. The complete test results are listed in Appendix B.

ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

TUBELITE, INC.
4878 Mackinaw Trail
Reed City, Michigan 49677

Report No: B9983.01-113-11
Revision 1: 07/10/12
Test Date: 06/29/12
Report Date: 07/09/12
Record Retention End Date: 07/09/16

Test Sample Identification:

Series/Model: 400 CW Fiberglass Pressure Plate

Type: Two-Lite Curtain Wall System

Overall Size: 79-3/4" by 79-3/4"

Glazing (Nominal Dimensions): 1" IG (1/4" Laminated, 1/2" Air Space, 1/4" Laminated),
Glass Temperature 75°F

Project Scope: Architectural Testing, Inc. was contracted by Tubelite, Inc. to conduct air leakage and sound transmission loss tests on a Series/Model 400 CW Fiberglass Pressure Plate, two-lite curtain wall system. A summary of the results is listed in the Test Results section, and the complete test data is included as Appendix B of this report. The sample was provided by the client.

Test Methods: The acoustical test was conducted in accordance with the following:

AAMA 1801-11, *Voluntary Specification for the Acoustical Rating of Windows, Doors, and Glazed Wall Sections.*

ASTM E 1425-07, *Standard Practice for Determining the Acoustical Performance of Exterior Windows and Doors.*

ASTM E 90-09, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.*

ASTM E 413-10, *Classification for Rating Sound Insulation.*

ASTM E 1332-10a, *Standard Classification for Rating Outdoor-Indoor Sound Attenuation.*

Test Methods: (Continued)

ASTM E 283-04, *Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.*

ASTM E 2235-04e1, *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods.*

Test Equipment: The equipment used to conduct this test meets the requirements of ASTM E 90. The microphones were calibrated before conducting the sound transmission loss test. The test equipment and test chamber descriptions are listed in Appendix A.

Sample Installation: Sound transmission loss tests were initially performed on a filler wall that was designed to test 40" by 86" and 80" by 86" specimens. The filler wall achieved an STC rating of 68.

The specimen plug was removed from the filler wall assembly. The test specimen was placed on a foam isolation pad in the test opening. Duct seal was used to seal the perimeter of the test specimen to the test opening on both sides. The interior side of the specimen frame, when installed, was approximately 1/4" from being flush with the receiving room side of the filler wall. A stethoscope was used to check for any abnormal air leaks around the test specimen prior to testing.

Test Procedure:

Air Leakage Test: A negative pressure of 1.57 psf was applied inside the chamber that was placed around the interior side of the test specimen. The total air leakage and extraneous air leakage measurements were used to calculate the specimen air leakage. Barometric pressure corrections were applied to the air leakage calculations.

The procedure above was repeated with a negative pressure of 6.24 psf applied to the inside of the chamber.

Sound Transmission Loss Test: The sound transmission loss test was conducted in accordance with the ASTM E 90 test method using a single direction of measurement. One background noise sound pressure level and five sound absorption measurements were conducted at each of five microphone positions. Two sound pressure level measurements were made simultaneously in both rooms at each of five microphone positions. The air temperature and relative humidity conditions were monitored and recorded during the background, absorption, source, and receive room measurements.

Sample Descriptions:

Frame Construction:

		Frame
Size		79-3/4" by 79-3/4"
Thickness		7"
Corners		Butted
	Fasteners	Screws
	Seal Method	Sealant
Material		Aluminum
	Thermal Break Material	EPDM
	Reinforcement	N/A
Daylight Opening Size (X2)		35-3/4" by 74-1/2"

Glazing:

Measured Overall Insulation Glass Unit Thickness	0.992"
Spacer Type	Aluminum

	Exterior Sheet	Gap	Interior Sheet
Measured Thickness	0.125", 0.025", 0.125"	0.442"	0.125", 0.025", 0.125"
Muntin Pattern	N/A	N/A	N/A
Material	Laminated	Air*	Laminated
Laminate Material	PVB	N/A	PVB

Glazing Method	Pressure glazed
Glazing Material	Flexible wedge gasket
Glazing Bead Material	Fiberglass with aluminum snap cover

* - Stated per Client/Manufacturer, N/A-Non Applicable

Sample Descriptions:

Components:

TYPE	QUANTITY	LOCATION
Weatherstrip		
No weatherstrip		
Hardware		
No hardware		
Drainage		
3/8" by 3/16" Weep slot	8	Head and sill snap covers

Comments: The design drawings (included in Appendix C) supplied by the client, accurately describe the Series/Model 400 CW Fiberglass Pressure Plate, two-lite curtain wall system. The dimensions on the drawings that are circled and/or checked were verified against the test specimen. The two-lite curtain wall system was disassembled, and the components will be retained by Architectural Testing for four years. Photographs of the test specimen are included in Appendix D.

Test Results: The STC (Sound Transmission Class) rating was calculated in accordance with ASTM E 413. The OITC (Outdoor-Indoor Transmission Class) was calculated in accordance with ASTM E 1332. A summary of the sound transmission loss test results on the Series/Model 400 CW Fiberglass Pressure Plate, two-lite curtain wall system is listed below.

Summary of Test Results					
Data File No.	Glazing (Nominal Dimensions)	Air Infiltration (cfm/ft ²)		STC	OITC
		1.57 psf	6.24 psf		
B9983.01	1" IG (1/4" laminated, 1/2" air space, 1/4" laminated), Glass temperature 75°F	0.06	0.15	37	31

Note: Transmission loss coefficient differences less than 6 indicate the lower limit of the transmission loss for this specimen. On each data sheet listed in Appendix B, the cells are highlighted red for the transmission loss values limited in this way. Due to the calculations and sample size, transmission loss coefficient differences between 6 and 15 indicate there has been a filler wall correction applied. On each data sheet listed in Appendix B, cells highlighted in green indicate transmission loss values affected in this way.

The complete test results are listed in Appendix B. Flanking limit tests and reference specimen tests are available upon request.

Architectural Testing will service this report for the entire test record retention period. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Architectural Testing for the entire test record retention period.

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

For ARCHITECTURAL TESTING, INC:


Kurt A. Golden
Senior Technician - Acoustical Testing

Todd D. Kister
Laboratory Supervisor - Acoustical Testing

KAG:jmcs

Attachments (pages): This report is complete only when all attachments listed are included.

- Appendix-A: Equipment description (1)
- Appendix-B: Complete test results (4)
- Appendix-C: Design drawings (9)
- Appendix-D: Photographs (1)

	Architectural Testing, Inc. is accredited by the International Accreditation Service, Inc. (IAS) under the specific test methods listed under lab code TL-144, in accordance with the recognized International Standard ISO/IEC 17025:2005. The laboratory's accreditation or test report in no way constitutes or implies product certification, approval, or endorsement by IAS. This test report applies only to the specimen that was tested.
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Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	07/09/12	N/A	Original test report
1	07/10/12	Cover Page, Pages 1 and 5, Appendix B	Changed Series/Model from 400CW to 400 CW Fiberglass Pressure Plate



Architectural Testing

Appendix A

Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number	Date of Calibration
Analyzer	Hewlett Packard	HP35670A	Real time analyzer	Y002929	06/14/11 *
Data Acquisition Unit	Agilent	34970A	Data Acquisition Unit	62211	07/13/11
Receive Room Microphone	GRAS	40 AR	1/2" Microphone	Y003246	08/22/11
Source Room Microphone	GRAS	40 AR	1/2" Microphone	Y003245	08/22/11
Receive Room Preamplifier	GRAS	26 AK	1/2" Preamplifier	Y003249	08/22/11
Source Room Preamplifier	GRAS	26 AK	1/2" Preamplifier	Y003248	08/22/11
Microphone Calibrator	Bruel & Kjaer	Type 4228	Pistonphone Calibrator	Y002816	02/09/12
Noise Source	Delta Electronics	SNG-1	Noise Generator	Y002181	N/A
Equalizer	Rane	RPE 228	Programmable Equalizer	Y002180	N/A
Power Amplifiers	Crown	Xti 2000	Two, Amplifiers	005769 005770	N/A
Receive Room Loudspeakers	Renkus-Heinz Inc.	Trap Jr./9	Two, Loudspeakers	Y001784 Y001785	N/A
Source Room Loudspeakers	Renkus-Heinz Inc.	Trap Jr./9	Two, Loudspeakers	Y002649 Y002650	N/A
Receive Room Environmental Indicator	Vaisala	HMW60Y	Temperature and Humidity Sensor	Y002652	09/26/11
Source Room Environmental Indicator	Vaisala	HMW60Y	Temperature and Humidity Sensor	005066	09/07/11
Lab Pack	Architectural Testing, Inc.	NA	Lab Pack	Y001622	02/03/12
Weather Station	Davis Instruments	VantagePRO 6150C	Weather Station	Y003257	05/30/12

*- Note: The calibration frequency for this equipment is every two years per the manufacturer's recommendation.

Test Chamber:

	Volume	Description
Receive Room	234 m ³ (8291.3 ft ³)	Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor
Source Room	206.6 m ³ (7296.3 ft ³)	Stationary diffusers only Temperature and humidity controlled

	Maximum Size	Description
TL Test Opening	4.27 m (14 ft) wide by 3.05 m (10 ft) high	Vibration break between source and receive rooms

N/A-Non Applicable

Appendix B
Complete Test Results



SOUND TRANSMISSION LOSS

ASTM E 90

Architectural Testing

ATI No.	B9983.01	Date	06/29/12
Client	Tublite, Inc.		
Specimen	Series/Model: 400 CW Fiberglass Pressure Plate, two-lite curtain wall system with 1" IG (1/4" laminated, 1/2" air space, 1/4" laminated), Glass temperature 75°F		
Specimen Area	4.10 Square Meters		
Filler Area	8.89 Square Meters		
Operator	Kurt Golden		


	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp C	22.4	23.7	23.4	22.1	23.7	22.9
RH %	47.3	42.5	45.8	45.2	44.5	45.2

Freq (Hz)	Bkgrd SPL (dB)	Absorp (Square Meters)	Source SPL (dB)	Receive SPL (dB)	Filler TL (dB)	Specimen TL (dB)	95% Conf Limit	No. of Deficiencies	Trans Coef Diff
80	44.9	6.8	87.7	63.5	30.5	23	2.99	0	5.1
100	40.5	6.2	92.2	63.3	36.6	28	3.15	0	6.2
125	41.1	5.3	100.6	69.6	44.2	30	1.87	0	10.9
160	46.3	5.2	100.2	74.3	48.1	25	2.75	0	19.9
200	44.2	5.5	105.0	80.7	56.7	23	1.26	4	30.4
250	37.7	5.5	103.8	78.9	59.1	24	1.47	6	32.0
315	35.8	5.7	99.9	70.6	61.4	28	0.53	5	30.2
400	33.2	5.8	98.4	66.8	62.6	30	0.83	6	29.1
500	38.2	6.0	98.8	62.5	64.9	35	0.71	2	26.9
630	29.8	5.6	102.7	64.0	68.1	37	0.64	1	27.3
800	26.9	5.8	102.9	63.3	68.7	38	0.72	1	27.3
1000	24.6	6.0	102.0	62.0	71.6	38	0.40	2	29.8
1250	24.0	6.7	102.6	59.8	71.3	41	0.27	0	27.2
1600	18.8	6.7	108.5	68.7	73.6	38	0.29	3	32.6
2000	15.3	6.9	98.8	57.9	74.6	39	0.32	2	32.6
2500	12.0	8.1	96.5	51.4	78.3	42	0.26	0	32.8
3150	9.4	9.6	97.2	46.1	80.0	47	0.51	0	29.2
4000	8.5	11.4	95.4	40.3	82.3	51	0.51	0	28.3
5000	8.0	15.2	92.1	35.8	84.3	51	0.93	0	30.3

STC Rating = 37 *(Sound Transmission Class)*
Deficiencies = 32 *(Number of deficiencies versus contour curve)*
OITC Rating = 31 *(Outdoor/Indoor Transmission Class)*

Notes:

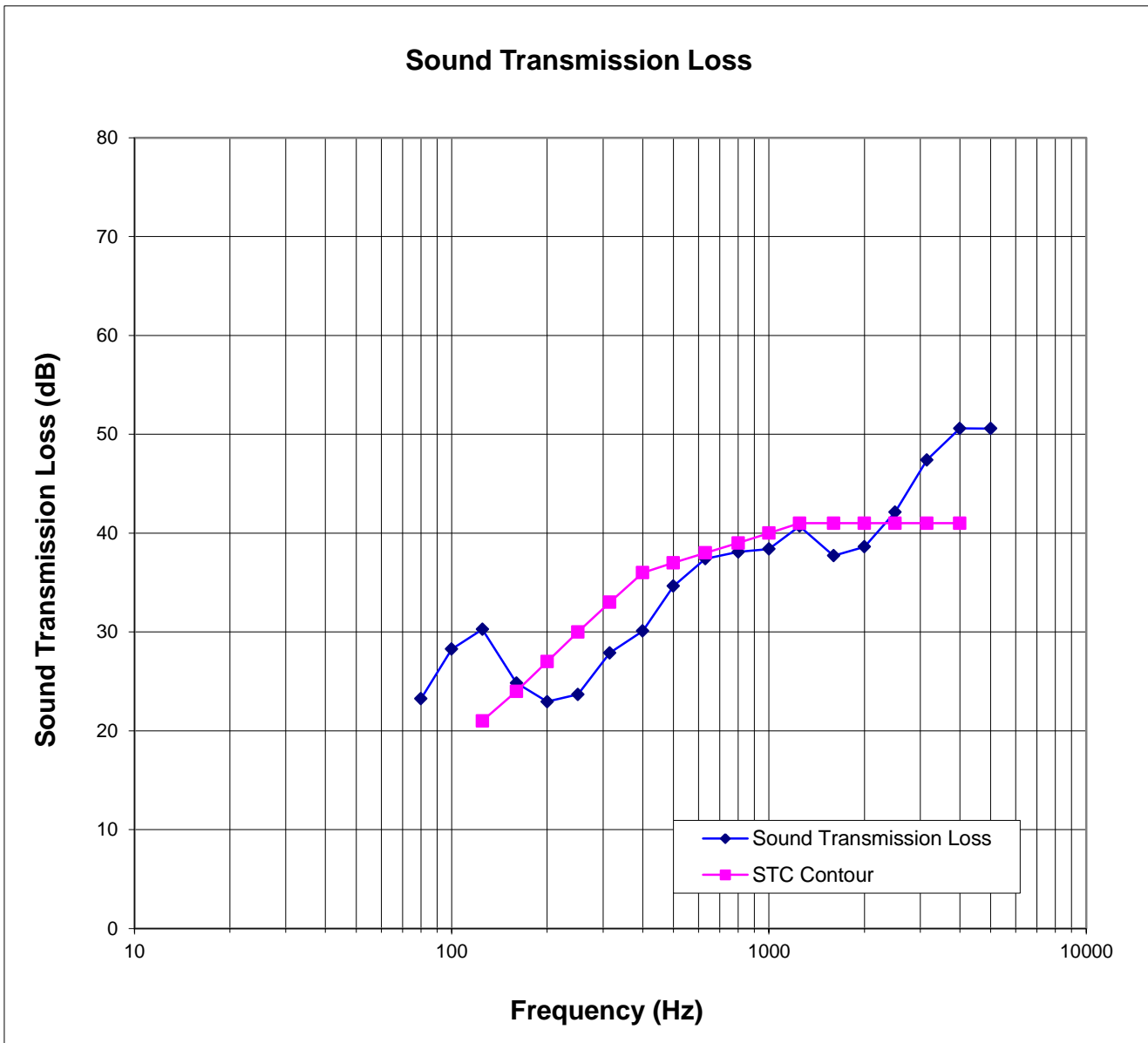
- 1) The acoustical chambers are qualified for measurements down to 80 hertz. Data reported below 80 hertz is for reference only.
- 2) Transmission loss coefficient differences less than 6 indicate the lower limit of the transmission loss for this specimen. These cells are highlighted red.
- 3) Transmission loss coefficient differences between 6 and 15 indicate there has been a filler wall correction applied. These cells are highlighted green.
- 4) Receive Room levels less than 5dB above the Background levels are highlighted in yellow.

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Architectural Testing

ATI No. B9983.01 Date 06/29/12
Client Tublite, Inc.
Specimen Series/Model: 400 CW Fiberglass Pressure Plate, two-lite curtain wall system with 1" IG (1/4" laminated, 1/2" air space, 1/4" laminated), Glass temperature 75°F
Specimen Area 4.10 Square Meters
Filler Area 8.89 Square Meters
Operator Kurt Golden



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Architectural Testing

AAMA 1801 Data Sheet

ATI Job Number	B9983.01
Client Name	Tubelite, Inc.
Series/Model	400 CW Fiberglass Pressure Plate
Specimen Type	Two-Lite Curtain Wall System
Test Date	06/29/12
Tests Performed by	KAG

Air Leakage (ASTM E 283)

Specimen Area (ft ²)	44.17	
Test Pressure	75 pa (1.57 psf)	
Temperature (°F)	77	
Barometric Pressure (mb)	999	
Air Flow (cfm)	Measured	Corrected
Total	10.0	9.86
Extraneous	7.5	7.39
Net	2.5	2.46
Rate	0.06 cfm/ft ²	0.04 lm/m ²
Allowable Rate	0.23 cfm/ft ²	
Result	Pass	

Comments:



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Architectural Testing

AAMA 1801 Data Sheet

ATI Job Number	B9983.01
Client Name	Tubelite, Inc.
Series/Model	400 CW Fiberglass Pressure Plate
Specimen Type	Two-Lite Curtain Wall System
Test Date	06/29/12
Tests Performed by	KAG

Air Leakage (ASTM E 283)

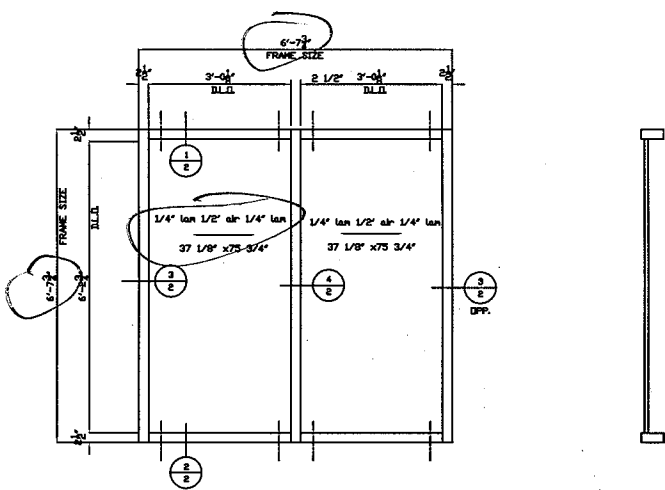
Specimen Area (ft ²)	44.17	
Test Pressure	300 pa (6.24 psf)	
Temperature (°F)	77	
Barometric Pressure (mb)	999	
Air Flow (cfm)	Measured	Corrected
Total	22.8	22.42
Extraneous	16	15.77
Net	6.8	6.65
Rate	0.15 cfm/ft ²	0.10 lm/m ²
Allowable Rate	0.25 cfm/ft ²	
Result	Pass	

Comments:

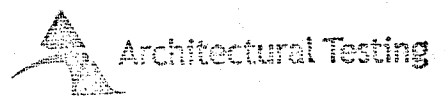


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Appendix C
Design Drawings



SL	EXTRUSION/PART	QTY.	LENGTH/SIZE	DESCRIPTION	NOTES
2	EST8223	2	36 1/8"	HEAD	
	EST8223	2	36 1/8"	SILL	
	EST8223	1	79 3/4"	L.H. JAMB	
	EST8223	1	79 3/4"	R.H. JAMB	
	EST8223	1	79 3/4"	VERTICAL MULLION	
2	PTB-99-OR	1	36 1/8"	PRESSURE PL @ HEAD	
	PTB-99-OR	2	79 3/4"	PRESSURE PL @ JAMB	
	PTB-99-OR	1	36 1/8"	PRESSURE PL @ SILL	
	PTB-99-OR	1	36 1/8"	PRESSURE PL @ SILL	
	PTB-99-OR	1	79 3/4"	PRESSURE PL @ VERT	
2	ES193	4	36 5/16"	SNAP COVER @ HORIZ	
	ES193	3	79 3/4"	SNAP COVER @ VERT	
	PTB-40	4	3 1/16"	SILL ANCHOR	
	P-2028	8	8"	LOCKING LUG	
	P-2027	4	4"	HEAD ANCHOR	
2	ES192	4	4"	GLAZING POST CLOSURE	
	P-947	4	4"	SILICONE SETTING BLOCK	
	PTB-94	35	LNFT.	THERMAL BARRIER ISOLATOR	
	PTB-90	60	LNFT.	EXT. GLAZING GASKET	
	PTB-90	60	LNFT.	INT. GLAZING GASKET	
	PTB-30	2		WATER DAM FDR 2 POKT	
	P-1094	14		SEALANT DAM	
	PTB-53	4		SEALANT DAM 1 POKT	
	S-177	16	#14-1/2" HEX. SS	SELF TAPPING	
	S-270	16	#10-3/4 PHILL. ph	TYPE 20	
	S-362	100	1/4-20 X 3/4" NYN	TYPE F	PRESSURE PLATE SCREW
		8	1/4" x 2" HEX HEAD	LAG BOLTS	not by Tubelite
		100	LNFT.	BRESSHOLE SHIMS	not by Tubelite
				1/2" BACKER ROD	not by Tubelite
				WEED BLOCKING	not by Tubelite
				3/4"	not by Tubelite
		5	TUBES	Box 795	not by Tubelite



Test sample complies with these details.
Deviations are noted.

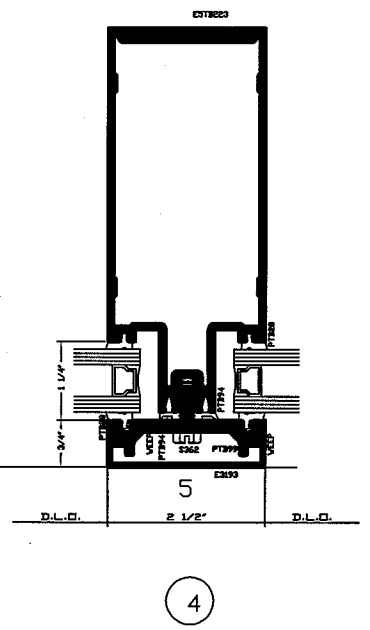
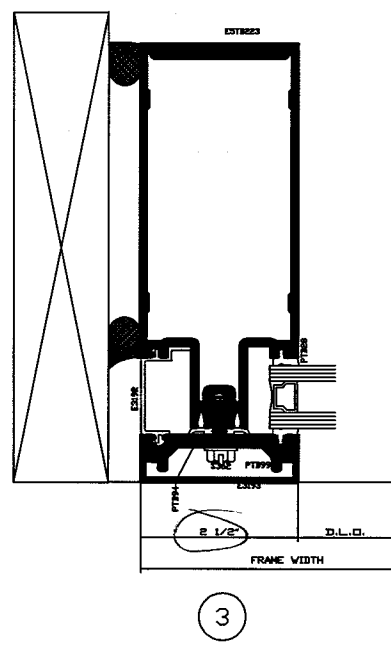
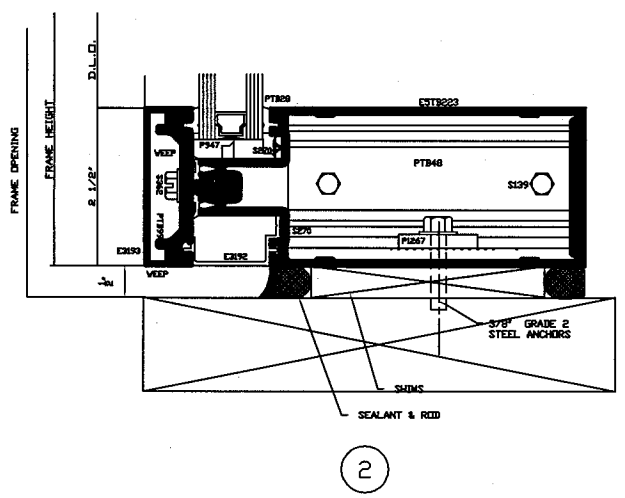
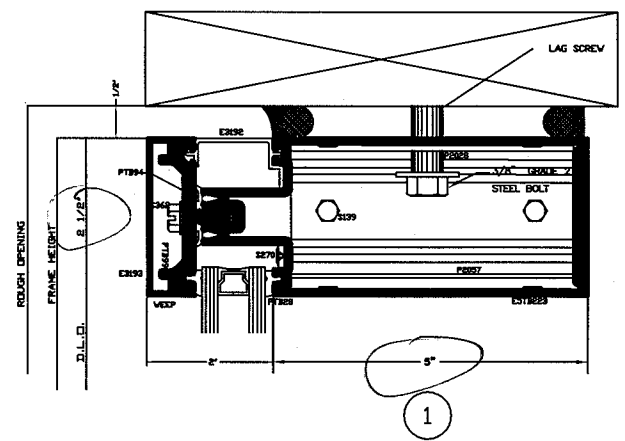
Report# B9983.01-113-11
Date 7/9/12 Tech K6

GENERAL NOTES

- 1) TYPICAL GLASS BITE = 1/2"
- 2) VERTICAL GASKETS RUN THROUGH
- 3) SEAL ENDS OF HORIZONTAL GASKETS TO VERTICAL GASKETS WITH BUTYL SEALANT
- 4) SETTING BLOCKS LOCATED @ 1/4 POINTS OF D.L.O.
- 5) ATTACH PRESSURE PLATE @ 4" O.C.

TEST DATE: June 2012

SCALE: 3/4"=1'-0"	FACTORY ORDER NO.
DRAWN BY: T.Trish	400 CV Fiber pressure plate
REVISION	STC TEST MCKK-UP
	LOCATION: YORK, PENNSYLVANIA
	ARCHITECT
	CUSTOMER
	ORDER NO.
TUBELITE INC.	
8000 MACKINAV TRAIL, P.O. BOX 118 REED CITY, MICHIGAN 49677 616-852-2211	
DATE: 05/14/2012	SHEET 1 OF 2



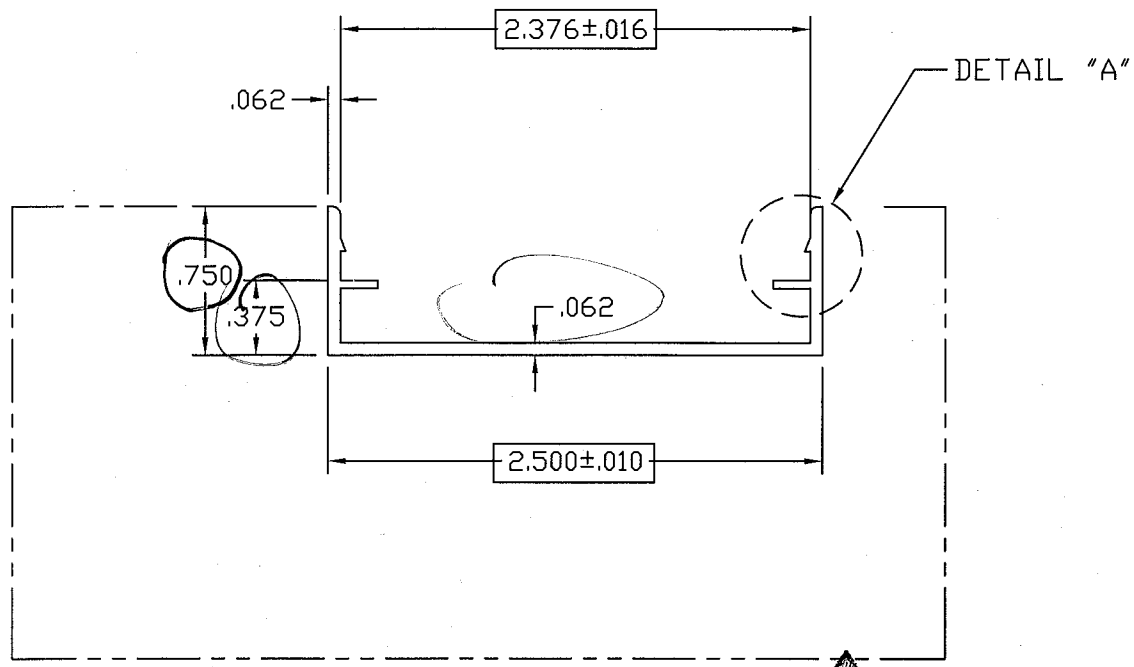
Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 89983.01-113-11
Date 7/9/12 Tech 166

SCALE	FULL	FACTORY ORDER NO.	
DRAWN BY	T. TRINH	JOB NAME	400 CW std fiber glass STC TEST MOCK-UP
REVISION		LOCATION	WALKER, MICHIGAN
		ARCHITECT	
		CUSTOMER	
		ORDER NO.	
TUBELITE INC.		8000 MACKINAV TRAIL, P.O. BOX 118 REED CITY, MICHIGAN 49677 616-852-2211	
DATE	5/14/12	SHEET	2 OF 2

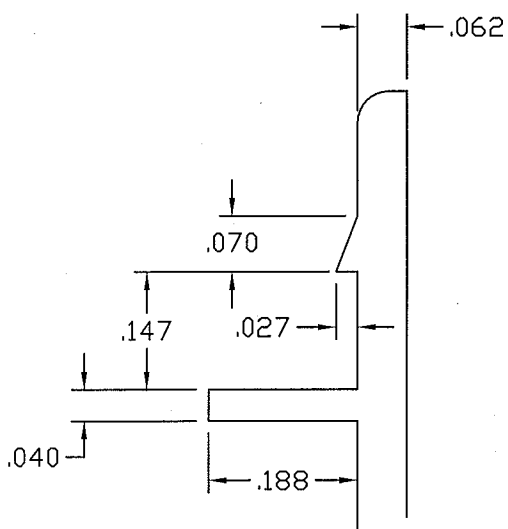
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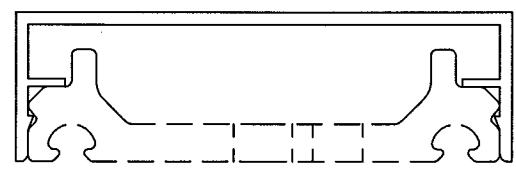
EXPOSED
FULL SIZE

Architectural Testing
Test sample complies with these details.
Deviations are noted.

Report# 899P3.01-113-11
Date 7/9/12 Tech KG.



DETAIL "A"
4X SIZE



PTB99
ASSEMBLY
FULL SIZE

WAUSAU DIE NUMBER 860753
USE WITH PTB99 FIBERGLASS
PRESSURE PLATE

© 2006 TUBELITE INC. ALL RIGHTS RESERVED
ALUMINUM ASSOCIATION STANDARD
TOLERANCES APPLY UNLESS NOTED
ALL UNSPECIFIED RADII .015
* INDICATES .031 RADIUS

TUBELITE
DEPENDABLE
LEADERS IN ECO-EFFICIENT STOREFRONT,
CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
WALKER, MICHIGAN 49544

WALL THK.	NOTED	SECTION CLASS	S	MAT'L	6063-T5	RATIO	215:1
PERIMETER OUT (TOTAL)	8.656	AREA	.257	WGT/FT	.302		
FACTOR	29	CIRCLE SIZE	2.610	INFILL VOLUME	N/A		

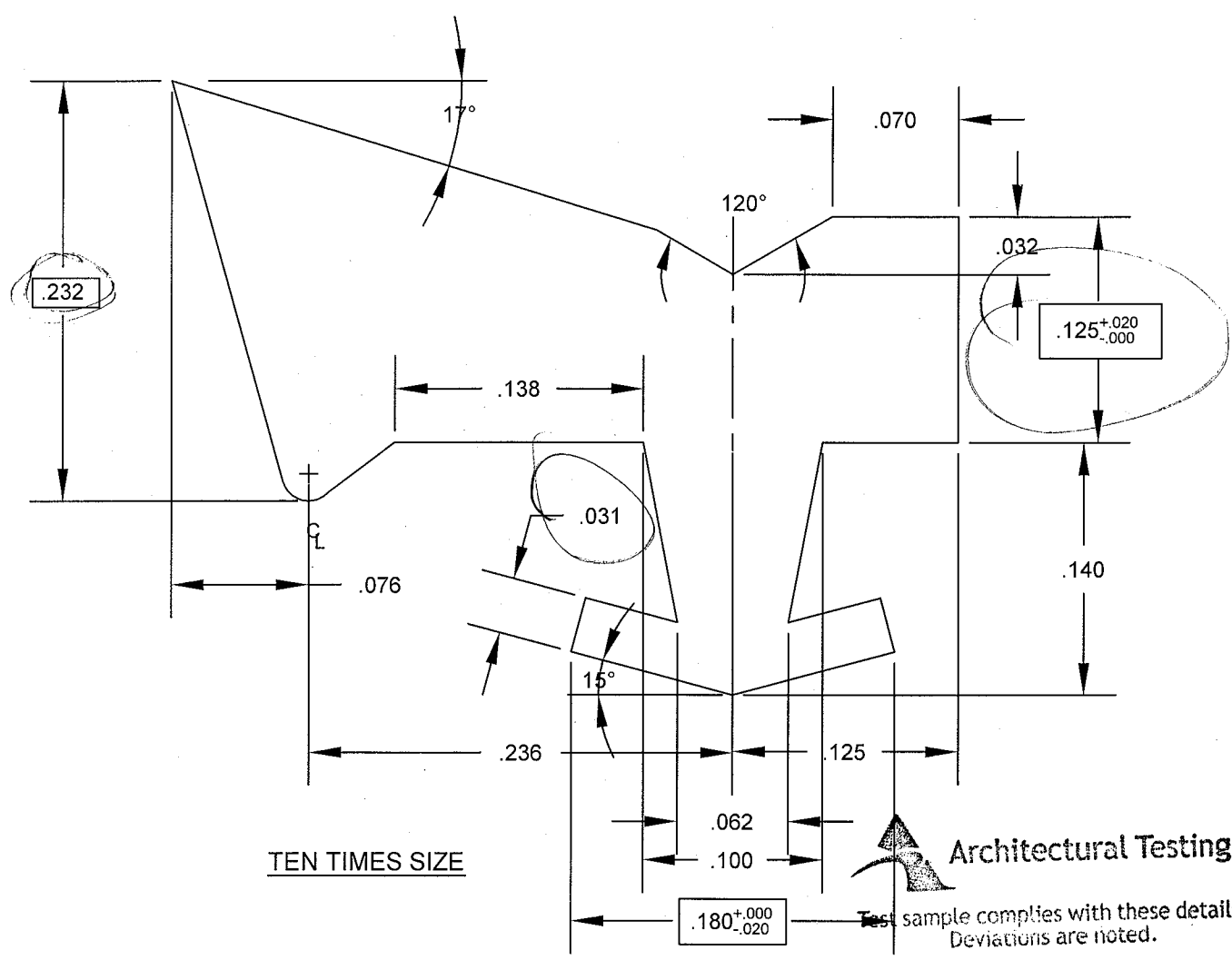
RXX	.214	SXX	.066	IXX	.012	CXX	.573
RYY	.941	SYY	.182	IYY	.227	CYY	1.250

SNAP COVER 2 1/2" X 3/4" FOR PTB99
400 SERIES CURTAINWALL

DRAWN BY	JEM	DRWG DATE	02/15/12	APPV'D BY		DATE APPV'D	
DWG SCALE	NOTED	PRODUCT CODE	290	E3193		REV	

REV	DATE	DESCRIPTION	INTL
	03/30/12	RELEASED FOR PRODUCTION PER ER-021205	JEM

☐ DENOTES CRITICAL DIMENSION
ALL DIES PROPERTY OF TUBELITE



TEN TIMES SIZE

Architectural Testing
 Test sample complies with these details.
 Deviations are noted.
 Report# B9983.01-113-11
 Date 7/9/12 Tech K6

NOTE
 EPDM MATERIAL DOES NOT MEET
 ASTM C-509 FIRE RESISTANCE RATING.
 USE P-1742 TO MEET ASTM C-509

SPECIFICATIONS

MATERIAL: EPDM
 50 ±5 DURO SHORE A
 PER ASTM D 2000
 LINE CALL OUT
 (2BA 510 A13 B13 C12 F17 P2)

RMA CLASS 1 TOLERANCE

DART IS SYMMETRICAL ABOUT CENTERLINE

GASKET IS DESIGNED FOR 1/8" FACE CLEARANCE
 (TB WALL) - USED EACH SIDE OF GLASS
 EPG PART NO. - 5443-04-01



ACTUAL SIZE

© 2006 TUBELITE INC. ALL RIGHTS RESERVED
 ALL UNSPECIFIED RADII .015
 * INDICATES .031 RADIUS
 □ DENOTES CRITICAL DIMENSION



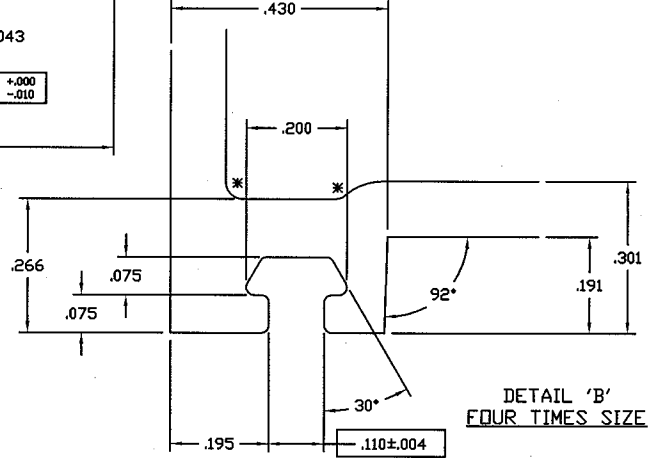
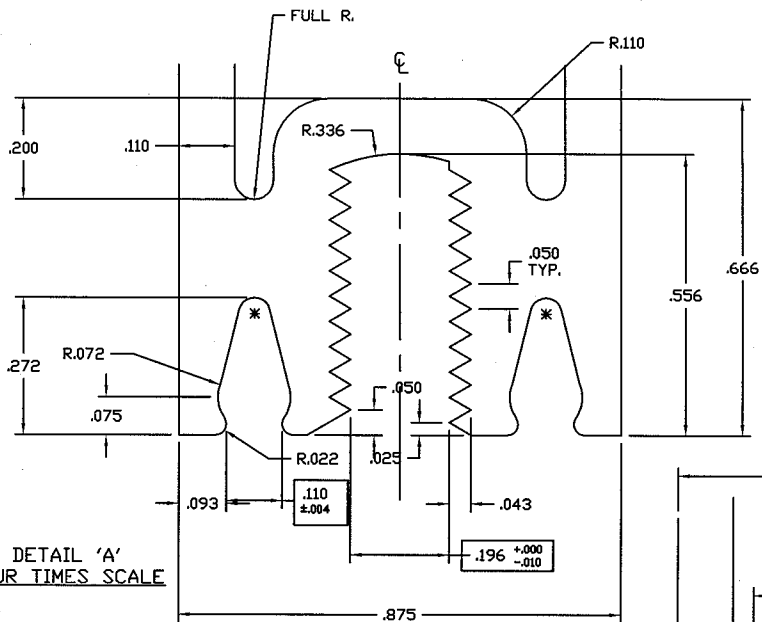
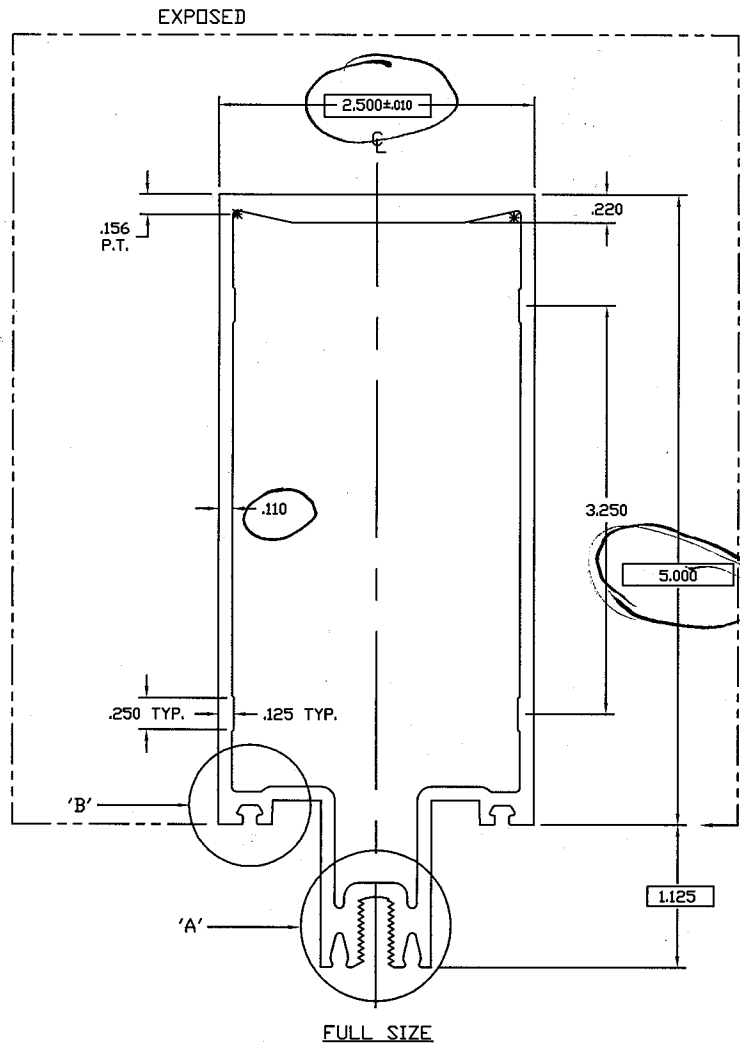
3056 WALKER RIDGE NW, SUITE G
 WALKER, MICHIGAN 49544

REV	DATE	DESCRIPTION	INTL
	11/27/91	Revise Shape & Material per ED 1306	DDL
	01/08/92	Release to Production	DDL

GASKET - TB WALL FOR
 1/4", 1/2", 3/4", AND 1" GLASS

DRAWN BY DDL	DRWG DATE 11/27/91	APPV'D BY	DATE APPVD
DRWG SCALE Noted	PRODUCT CODE 280/290	PTB28	
			REV

ESTB223



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B9983-01-113-11
Date 7/9/12 Tech KG.

WAS E906H01

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* INDICATES .031 RADIUS
□ DENOTES CRITICAL DIMENSION
ALL DIES PROPERTY OF TUBELITE

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CURTAINWALL AND ENTRANCE SYSTEMS

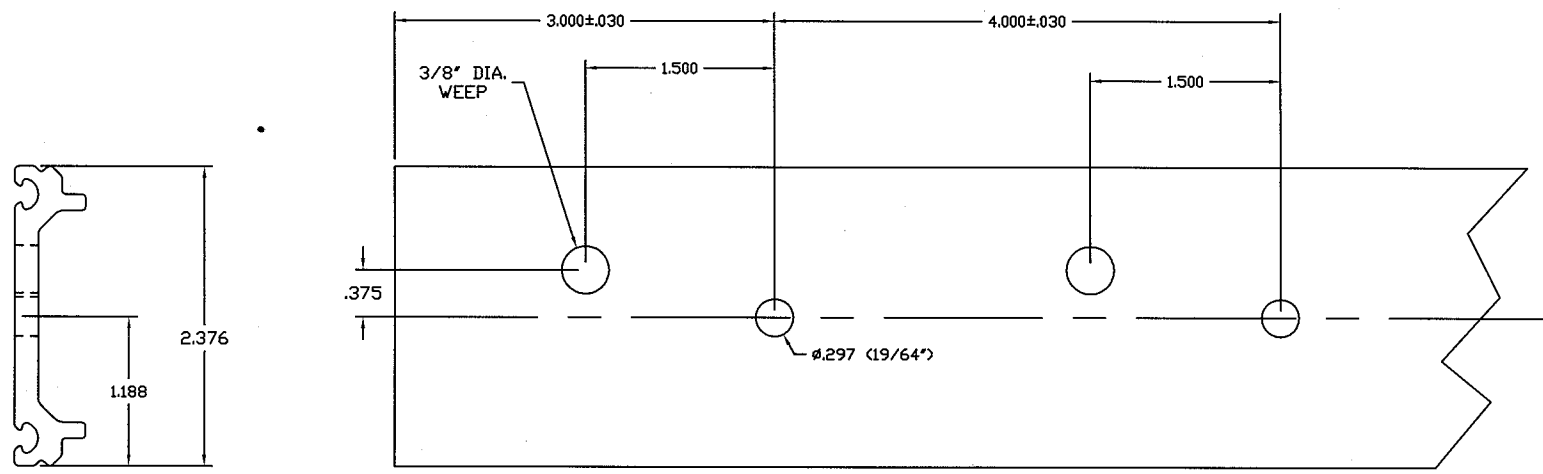
3056 WALKER RIDGE NW, SUITE G
WALKER, MICHIGAN 49544

WALL THK	.110	SECTION CLASS	H	MAT'L	6063-T5	RATIO	24:1
PERIMETER (EXT. TOTAL)	21,742(37,6373)		AREA	2,303	WGT/FT	2,709	
FACTOR	14	CIRCLE SIZE	6.409	INFILL VOLUME	N/A		
RXX	2.143	SXX	3.310	DXX	10.578	CXX	3.196
RYY	.925	SYY	1.578	IYY	1.973	CYY	1.250

MULLION 2 1/2" X 5"
400 SERIES CURTAINWALL

DRAWN BY	NIK	DRWG DATE	06/08/07	APP'D BY		DATE APP'D	
DWG SCALE	NOTED	PRODUCT CODE	290	ESTB223			

PTB99

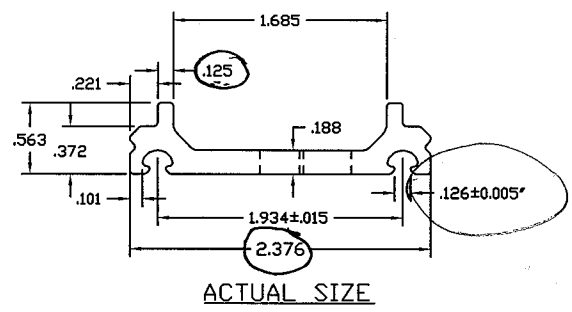
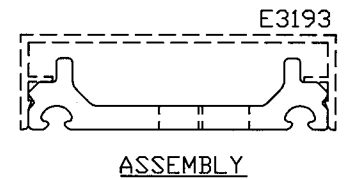


REPEAT PATTERN @ 4" O.C. FOR LENGTH OF PART.



Test sample complies with these details.
Deviations are noted.

Report# B9983.01-113-11
Date 7/9/12 Tech KG



NOTE: TOTAL PART LENGTH = 290' (24'-2")
SUPPLIER PART NUMBER: 866-290

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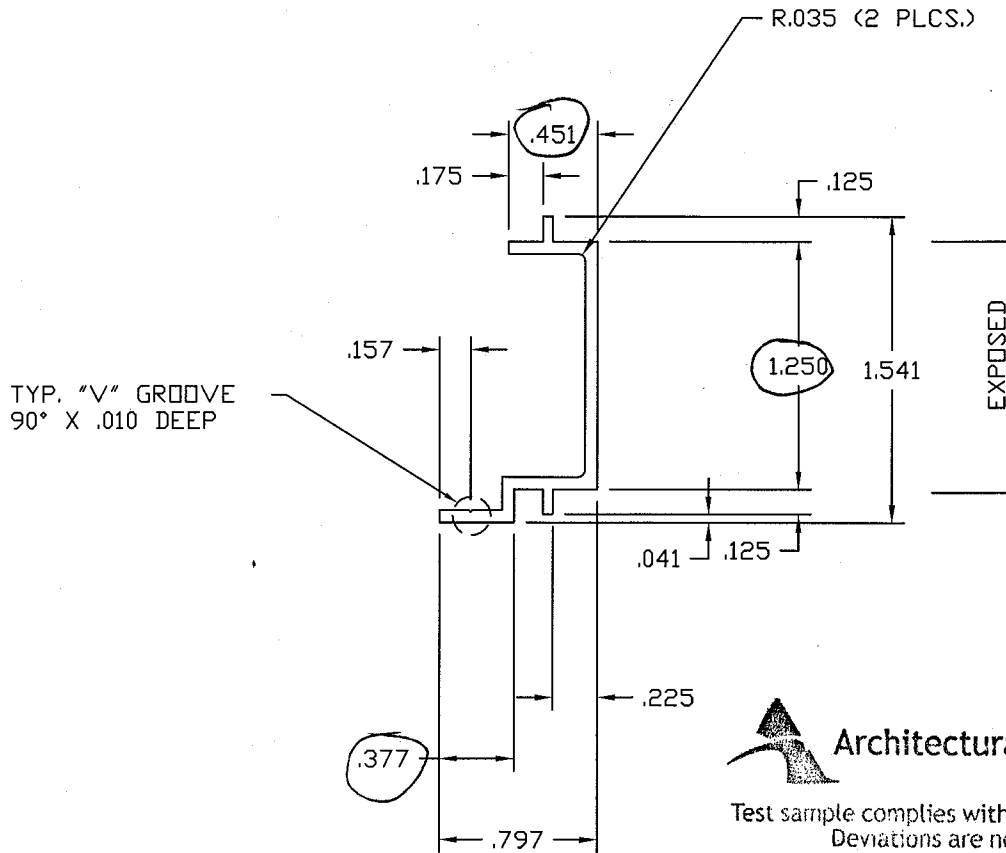
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LEADER IN HIGH EFFICIENCY CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
WALKER, MICHIGAN 49544

REV	DATE	DESCRIPTION	INTL.
	03/30/12	RELEASED FOR PRODUCTION PER ER-021205	JEM

DRAWN BY: JEM	DRWG DATE: 02/15/12	APPV'D BY:	DATE APPV'D:
DRWG SCALE NOTED	PRODUCT CODE: 290	PTB99	REV:

FIBERGLASS PRESSURE PLATE 2 1/2"
400 SERIES CURTAINWALL



Test sample complies with these details.
Deviations are noted.

Report# 89983.01-113-11
Date 7/9/12 Tech K6.

FULL SCALE

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CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
WALKER, MICHIGAN 49544

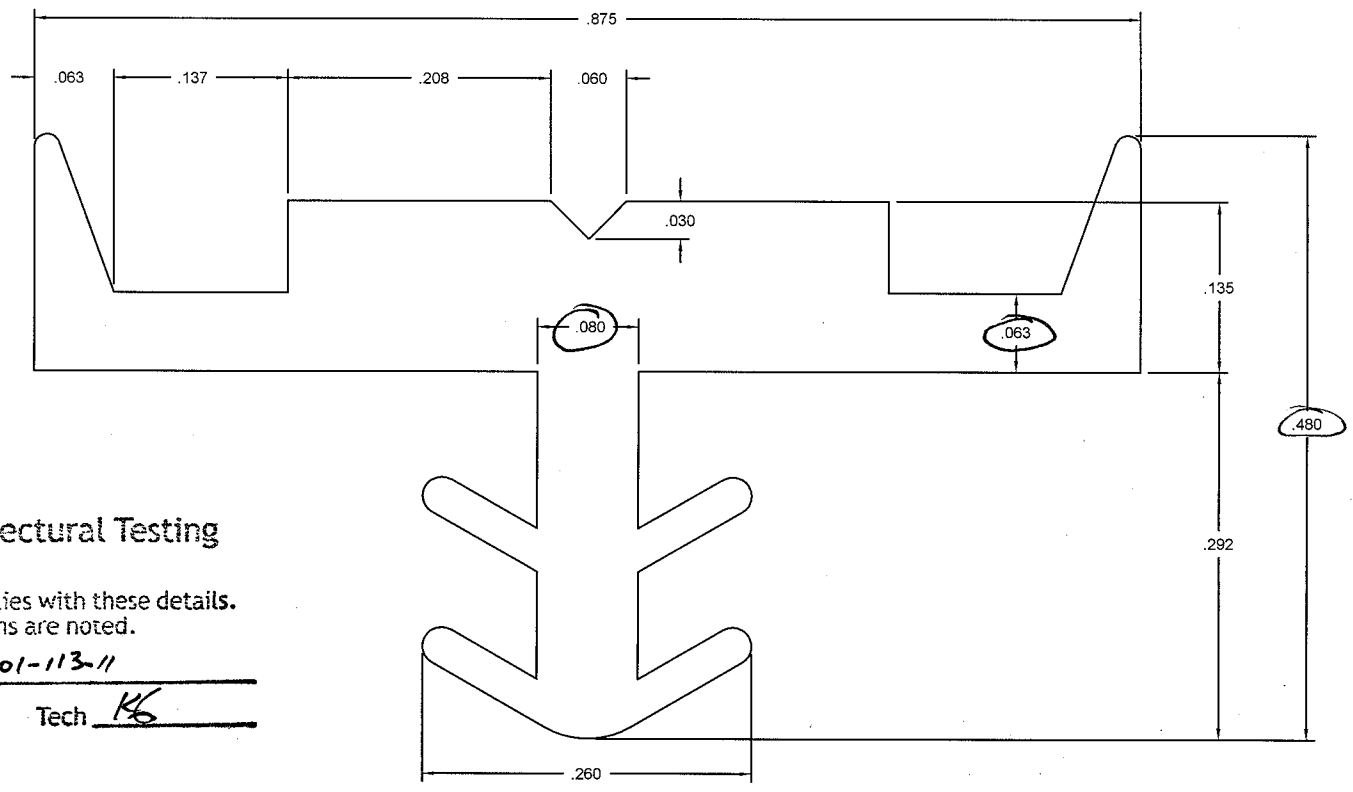
WALL THK.	.062	SECTION CLASS	S	MAT'L	6063-T5	RATIO	325:1
PERIMETER OUT (TOTAL)	5.682	AREA	.170	WGT/FT	.200		
FACTOR	29	CIRCLE SIZE	1.644	INFILL VOLUME	N/A		

RXX	.526	SXX	.072	IXX	.047	CXX	.886
RYY	.213	SYY	.037	IYY	.008	CYY	.587

GLAZING POCKET CLOSURE
400 SERIES CURTAINWALL

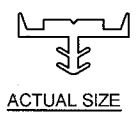
DRAWN BY	KMH	DRWG DATE	06/30/92	APPV'D BY		DATE APPV'D	
DWG SCALE	FULL	PRODUCT CODE	290	E3192		REV	

REV	DATE	DESCRIPTION	INTL
		TO CUSTOMER FOR APPROVAL	KMH
	7-6-92	RELEASE TO TOOLING	KMH
	7-29-92	RELEASE TO PRODUCTION AND CHANGE DESCRIPTION	J. M.



Test sample complies with these details.
Deviations are noted.

Report# B9983-01-113-11
Date 7/9/12 Tech K6



SUPPLIER - EPG
PART# - 6396-02-00
MATERIAL - EPDM, 70 DUROMETER

TEN TIMES SIZE

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□ DENOTES CRITICAL DIMENSION

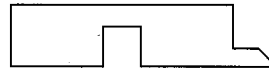
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OUTERWALL AND INTERIOR SYSTEMS

3056 WALKER RIDGE NW, SUITE G
WALKER, MICHIGAN 49544

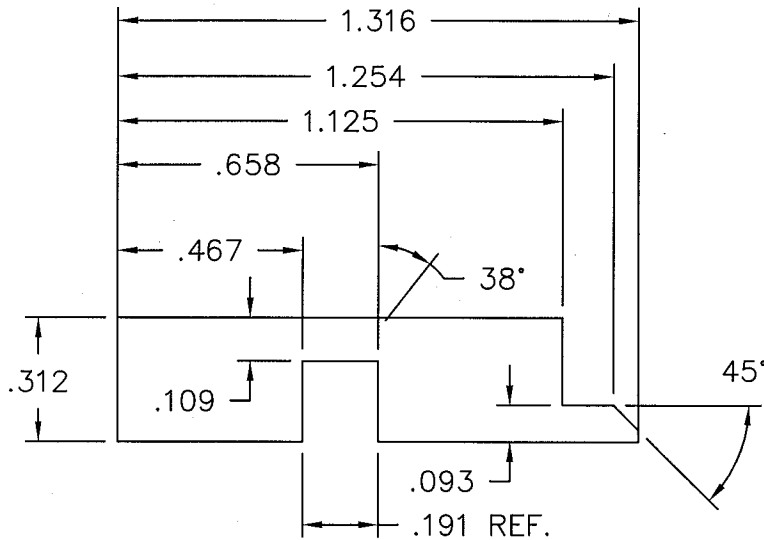
400 CW ISOLATOR GASKET

REV	DATE	DESCRIPTION	INTL
	08/28/06	RELEASED FOR PRODUCTION	LDC

DRAWN BY	LDO	DRWG DATE	06/22/06	APP'D BY	DATE APP'VD	REV.
DRWG SCALE	NOTED	PRODUCT CODE	290	PTB94		



ACTUAL SIZE



2X SIZE



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 89983.01-113-11
Date 7/9/12 Tech NIK

NOTES

PURCHASED PART FROM TRELLEBORG
MATERIAL: BLACK SILICONE
85 +/-5 DUROMETER
LENGTH = 4"

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CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
WALKER, MICHIGAN 49544

REV	DATE	DESCRIPTION	INTL
	09/17/08	RELEASE FOR PRODUCTION	NIK

SILICONE SETTING BLOCK FOR 200, 400, AND 1900 SERIES SYSTEMS			
DRAWN BY NIK	DRWG DATE 09/17/08	APPV.D BY	DATE APPVD
DRWG SCALE NOTED	PRODUCT CODE 290	P947	
			REV

Appendix D

Photographs



Receive Room View of Installed Specimen



Source Room View of Installed Specimen