

# NORTH EAST WINDOWS USA THERMAL PERFORMANCE TEST REPORT

**SCOPE OF WORK**

CW300 CASEMENT

**REPORT NUMBER**

M9793.01-116-46 R0

**TEST DATE**

01/13/22

**ISSUE DATE**

01/14/22

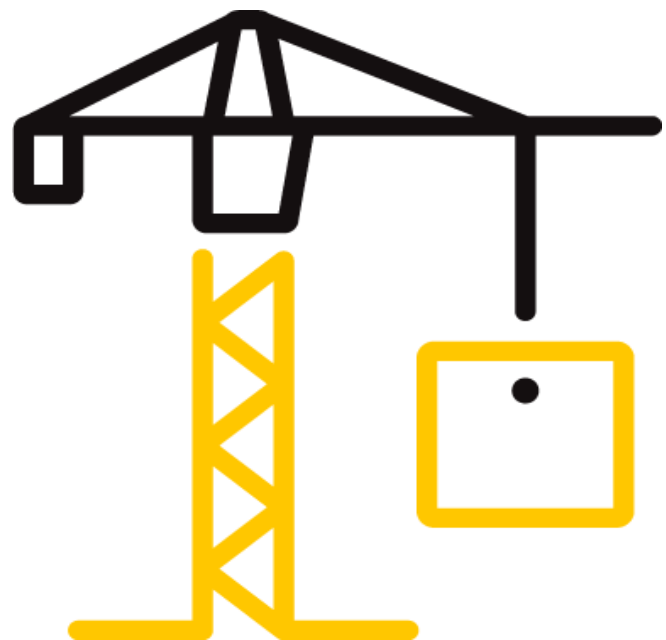
**PAGES**

19

**DOCUMENT CONTROL NUMBER**

RTTDS-R-AMER-Test-2822(a) (08/16/21)

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**TEST REPORT FOR NORTH EAST WINDOWS USA, INC.**

Report No.: M9793.01-116-46 R0  
Date: 01/14/22

**REPORT ISSUED TO**  
**NORTH EAST WINDOWS USA, INC.**  
One Kees Place P.O. Box 159  
Merrick, New York 11566

**SECTION 1**  
**SCOPE**

**SERIES/MODEL: CW300 Casement**  
**TYPE: Casement**

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by North East Windows USA, INC. to evaluate the thermal performance per NFRC 102-2020. Results obtained are tested values and were secured by using the designated test method. Testing was conducted at Intertek B&C test facility in York, Pennsylvania.

Intertek B&C will service this report for the entire test record retention period. The test record retention period ends five years after the test date. Test records, such as detailed drawings, datasheets, or other pertinent project documentation, will be retained for the entire test record retention period. Representative samples of the test specimen will be retained by Intertek B&C for a minimum of two and a half years from the submittal date to the Inspection Agency and no more than five years from the test date.

For INTERTEK B&C:

<b>COMPLETED BY</b>	Ryan P. Moser
<b>TITLE</b>	Senior Technician
<b>SIGNATURE</b>	
<b>DATE</b>	01/14/22

<b>REVIEWED BY</b>	Shon W. Einsig
<b>TITLE</b>	Technician Team Leader, IIRC
<b>SIGNATURE</b>	
<b>DATE</b>	01/14/22

RPM:pan

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This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample(s) tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

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**SECTION 2**

**SUMMARY OF TEST RESULTS**

Standardized U-factor (Ust): 0.24 Btu/hr-ft<sup>2</sup>·F (CTS Method)

**SECTION 3**

**TEST SPECIMEN SUMMARY**

<b>SERIES/MODEL</b>	CW300 Casement
<b>TYPE</b>	Casement
<b>OVERALL SIZE</b>	24" x 59" (610 mm x 1499 mm) (Model Size)
<b>NFRC STANDARD SIZE</b>	23.6" x 59.1" (600 mm wide x 1500 mm high)
<b>TEST SAMPLE SUBMITTED BY</b>	Client
<b>TEST SAMPLE SUBMITTED FOR</b>	Validation for Recertification (Production Line Unit) & Plant Qualification

**SECTION 4**

**TEST METHOD**

The specimens were evaluated in accordance with the following:

**NFRC 102-2020**, Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems

**SECTION 5**

**MATERIAL SOURCE/INSTALLATION**

The test specimen was provided by the client.

The test sample was installed in a vertical orientation, the exterior of the specimen was exposed to the cold side.

**SECTION 6**

**LIST OF OFFICIAL OBSERVERS**

<b>NAME</b>	<b>COMPANY</b>
Shon W. Einsig	Intertek B&C
Ryan P. Moser	Intertek B&C

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**SECTION 7**

**TEST SAMPLE DESCRIPTION**

**Frame**

<b>MATERIAL</b>	VY: Vinyl		
<b>SIZE</b>	24" x 59" (Model Size)		
<b>DAYLIGHT OPENING</b>	N/A	<b>GLAZING METHOD</b>	N/A
<b>EXTERIOR COLOR</b>	White	<b>EXTERIOR FINISH</b>	Vinyl
<b>INTERIOR COLOR</b>	White	<b>INTERIOR FINISH</b>	Vinyl
<b>CORNER JOINERY</b>	Mitered / Welds / Unsealed		

**Vent**

<b>MATERIAL</b>	VY: Vinyl		
<b>SIZE</b>	22-7/8" x 58"		
<b>DAYLIGHT OPENING</b>	17-7/8" x 53"	<b>GLAZING METHOD</b>	Interior
<b>EXTERIOR COLOR</b>	White	<b>EXTERIOR FINISH</b>	Vinyl
<b>INTERIOR COLOR</b>	White	<b>INTERIOR FINISH</b>	Vinyl
<b>CORNER JOINERY</b>	Mitered / Welds / Unsealed		

**Glazing Information**

<b>LAYER 1</b>	SS	AGC Comfort Select 28 (e=0.023*, #2)	
<b>GAP 1</b>	0.63"	P1-S: Duralite Spacer	90% Argon*
<b>LAYER 2</b>	DS	AGC Comfort Select 73 (e=0.148*, #4)	
<b>GAS FILL METHOD</b>	Single-Probe Method*		

*\*Stated per the client/manufacture and can affect the validity of results*

*N/A Non-Applicable*

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**SECTION 7 (CONTINUED)**

**TEST SAMPLE DESCRIPTION (CONTINUED)**

**Weatherstripping**

DESCRIPTION	QUANTITY	LOCATION
Flexible hollow bulb gasket	1 Row	Frame and vent perimeter
Polypile with center fin	1 Row	Vent perimeter

**Hardware**

DESCRIPTION	QUANTITY	LOCATION
Multi-point lever lock assembly	1	Lock jamb
Metal keeper	3	Lock stile
Single-arm hinge	2	Head/top rail, sill/bottom rail
Roto-operator	1	Sill/bottom rail
Metal vent retainer	2 Sets	Hinge jamb/stile

**Drainage**

DRAINAGE METHOD	SIZE	QUANTITY	LOCATION
No visible weeps			

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**SECTION 8**

**THERMAL TRANSMITTANCE (U-FACTOR): MEASURED TEST DATA**

**Heat Flows**

1. Total Measured Input into Metering Box (Qtotal)	261.68 Btu/hr
2. Surround Panel Heat Flow (Qsp)	82.58 Btu/hr
3. Surround Panel Thickness	4.00 inches
4. Surround Panel Conductance	0.0475 Btu/hr·ft <sup>2</sup> ·F
5. Metering Box Wall Heat Flow (Qmb)	2.26 Btu/hr
6. EMF vs Heat Flow Equation (equivalent information)	0.0117*EMF + 0.015
7. Flanking Loss Heat Flow (Qfl)	9.37 Btu/hr
8. Net Specimen Heat Loss (Qs)	167.47 Btu/hr

**Areas**

1. Test Specimen Projected Area (As)	9.83 ft <sup>2</sup>
2. Test Specimen Projected Frame Area (Af)	3.25 ft <sup>2</sup>
3. Test Specimen Projected Glazing Area (Ag)	6.58 ft <sup>2</sup>
4. Metering Box Opening Area (Amb)	36.11 ft <sup>2</sup>
5. Metering Box Baffle Area (Ab1)	33.94 ft <sup>2</sup>
6. Surround Panel Interior Exposed Area (Asp)	26.28 ft <sup>2</sup>

**Test Conditions**

1. Average Metering Room Air Temperature (th)	69.80 F
2. Average Cold Side Air Temperature (tc)	-0.41 F
3. Average Guard/Environmental Air Temperature	71.25 F
4. Metering Room Average Relative Humidity	5.72 %
5. Metering Room Maximum Relative Humidity	5.96 %
6. Metering Room Minimum Relative Humidity	5.55 %
7. Measured Cold Side Wind Velocity (Perpendicular Flow)	12.66 mph
8. Measured Warm Side Wind Velocity (Parallel Flow)	NA mph
9. Measured Static Pressure Difference Across Test Specimen	0.00" ± 0.04" H <sub>2</sub> O

**Average Surface Temperatures**

1. Metering Room Surround Panel	66.08 F
2. Cold Side Surround Panel	-0.10 F

**Results**

1. Thermal Transmittance of Test Specimen (Us)	0.24 Btu/hr·ft <sup>2</sup> ·F
2. Standardized Thermal Transmittance of Test Specimen (Ust)	0.24 Btu/hr·ft <sup>2</sup> ·F

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**SECTION 9**

**THERMAL TRANSMITTANCE (U-FACTOR): CALCULATED TEST DATA**

**CTS Method Results**

1. Warm Side Surface Emittance of CTS (e1)	0.84
2. Warm Side Area-Weighted Surface Emittance of Specimen Frame (ef1)	0.90
3. Warm Side Area-Weighted Surface Emittance of Specimen Glazing (eg1)	0.15
4. Warm Side Surface Emittance of Surround Panel (esp1)	0.90
5. Warm Side Area-Weighted Surface Emittance in View of the Baffle (es1)	0.76
6. Warm Side Baffle Emittance (eb1)	0.92
7. Cold Side Baffle Emittance (eb2)	N/A
8. Equivalent Warm Side Surface Temperature (t1)	56.07 F
9. Equivalent Cold Side Surface Temperature (t2)	2.62 F
10. Warm Side Baffle Surface Temperature	69.26 F
11. Cold Side Baffle Surface Temperature	N/A F
12. Measured Warm Side Surface Conductance (hh)	1.24 Btu/hr·ft <sup>2</sup> ·F
13. Measured Cold Side Surface Conductance (hc)	5.62 Btu/hr·ft <sup>2</sup> ·F
14. Test Specimen Thermal Conductance (Cs)	0.32 Btu/hr·ft <sup>2</sup> ·F
15. Convection Coefficient (Kc)	0.30 Btu/(hr·ft <sup>2</sup> ·F <sup>1.25</sup> )
16. Radiative Test Specimen Heat Flow (Qr1)	90.60 Btu/hr
17. Conductive Test Specimen Heat Flow (Qc1)	76.87 Btu/hr
18. Radiative Heat Flux of Test Specimen (qr1)	9.21 Btu/hr·ft <sup>2</sup> ·F
19. Convective Heat Flux of Test Specimen (qc1)	7.82 Btu/hr·ft <sup>2</sup> ·F
20. Standardized Warm Side Surface Conductance (hsth)	1.13 Btu/hr·ft <sup>2</sup> ·F
21. Standardized Cold Side Surface Conductance (hstc)	5.28 Btu/hr·ft <sup>2</sup> ·F
22. Standardized Thermal Transmittance (Ust)	0.24 Btu/hr·ft <sup>2</sup> ·F

**SECTION 10**

**TEST DURATION**

1. The environmental systems were started at 14:38 hours, 01/12/22.
2. The test parameters were considered stable for two consecutive four hour test periods from 21:59 hours, 01/12/22 to 05:59 hours, 01/13/22.
3. The thermal performance test results were derived from 01:59 hours, 01/13/22 to 05:59 hours, 01/13/22.

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**SECTION 11**

**GLAZING DEFLECTION**

	<b>VENT</b>
<b>EDGE GAP WIDTH</b>	0.63"
<b>ESTIMATED CENTER GAP WIDTH</b> upon receipt of specimen in laboratory (after stabilization)	0.63"
<b>CENTER GAP WIDTH</b> at laboratory ambient conditions on day of testing	0.63"
<b>CENTER GAP WIDTH</b> at test conditions	0.50"

*Glass collapse determined using a digital glass and air space meter*

The sample was inspected for the formation of frost or condensation, which may influence the surface temperature measurements. The sample showed no evidence of condensation/frost at the conclusion of the test.

“This test method does not include procedures to determine the heat flow due to either air movement through the specimen or solar radiation effects. As a consequence, the thermal transmittance results obtained do not reflect performances which are expected from field installations due to not accounting for solar radiation, air leakage effects, and the thermal bridge effects that have the potential to occur due to the specific design and construction of the fenestration system opening. The latter can only be determined by in-situ measurements. Therefore, it is important to recognize that the thermal transmittance results obtained from this test method are for ideal laboratory conditions and should only be used for fenestration product comparisons and as input to thermal performance analyses which also include solar, air leakage and thermal bridge effects.”

Required annual calibrations for the Intertek B&C, 'thermal test chamber' (ICN 000001) in York, Pennsylvania were last conducted in May 2021 in accordance with Intertek B&C calibration procedure. A CTS Calibration verification was performed October 2021. A Metering Box Wall Transducer and Surround Panel Flanking Loss Characterization was performed December 2021.

The reported Standardized Thermal Transmittance (Ust) was determined using CTS Method, per Section 9.2(A) of NFRC 102.



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**SECTION 12**

**CTS CALIBRATION DATA**

1. CTS Test Date	10/02/20
2. CTS Size	9.69 ft <sup>2</sup>
3. CTS Glass/Core Conductance	0.42 Btu/hr·ft <sup>2</sup> ·F
4. Warm Side Air Temperature	69.80 F
5. Cold Side Air Temperature	-0.40 F
6. Warm Side Average Surface Temperature	53.75 F
7. Cold Side Average Surface Temperature	3.35 F
8. Convection Coefficient (Kc)	0.30 Btu/(hr·ft <sup>2</sup> ·F <sup>1.25</sup> )
9. Measured Cold Side Surface Conductance (hc)	5.62 Btu/hr·ft <sup>2</sup> ·F
10. Measured Thermal Transmittance	0.30 Btu/hr·ft <sup>2</sup> ·F

ANSI/NCSL Z540-2-1997 type B uncertainty for this test was 5.30%.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule also called "Shared Risk Approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

"Ratings included in this report are for submittal to an NFRC licensed IA for certification purposes and are not meant to be used for labeling purposes. Only those options identified on a valid Certificate of Authorization (CA) are to be used for labeling purposes."

The direction of heat transfer was from the interior (warm side) to the exterior (cold side) of the specimen. The ratings were rounded in accordance to NFRC 601, NFRC Unit and Measurement Policy. The data acquisition frequency is 5 minutes.

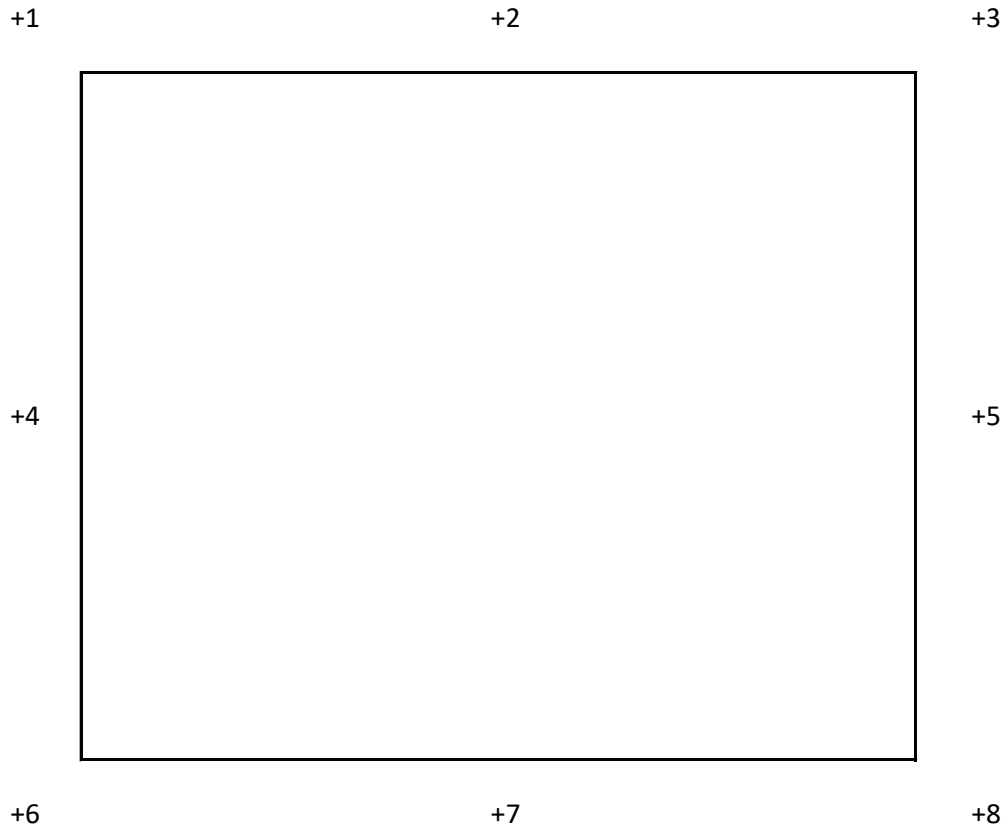
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**SECTION 13**

**SURROUND PANEL WIRING DIAGRAM**



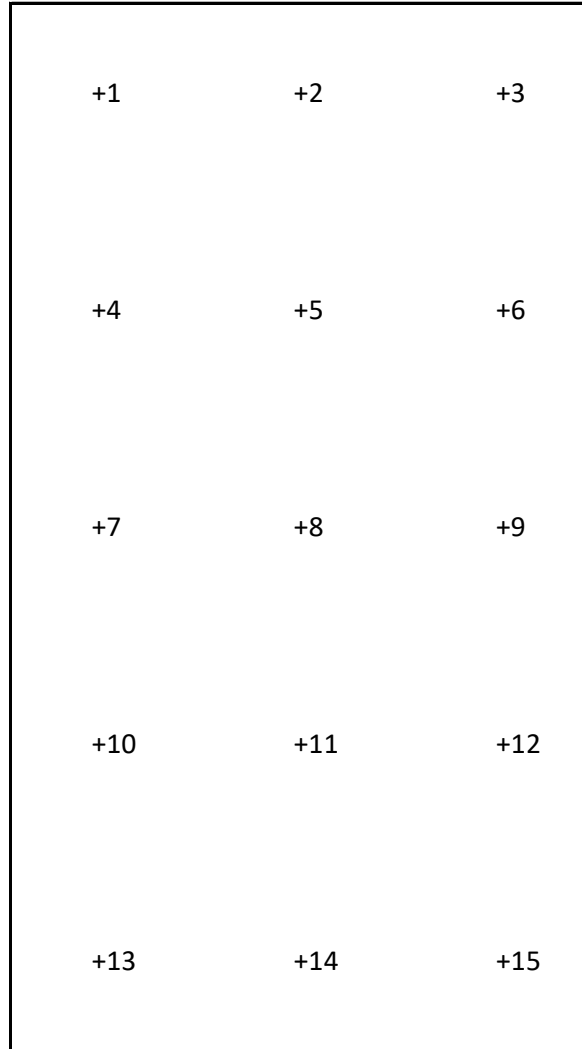
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**SECTION 14**

**BAFFLE WIRING DIAGRAM**



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**SECTION 15**

**SUBMITTAL FORM AND DRAWINGS**

The test specimen drawings which follow have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

# NFRC PRODUCT CERTIFICATION PROGRAM

## Submittal Form for Test Samples



For use by Manufacturers, Lineal Suppliers and Fabricators

1. Information on Production of the Test Sample (complete ALL fields):

Manufacturer: Northeast Windows USA, INC. Date of sample manufacture: 9/30/2021

Plant Address where manufactured: 1 KEES PLACE

City: MERRICK State: NEW YORK Zip Code: 11566

Name of IA: ALI - FGIA Phone: 516-458-7465 Fax: 516-868-3577

2. Product Information (complete APPLICABLE fields):

Existing Product Line ID (CPD) No.: NEW-A-24 Product/Operator Type (Table 4-3 of NFRC 100): CSSV

Series/Model: CASEMENT - CW300

3. Test sample is being submitted for (select ONE):

- a.  Validation for Initial Certification (prototype only) no plant qualification
- b.  Validation for Initial Certification or Recertification (production line unit) & plant qualification
- c.  Plant Qualification Only (production line unit)
- d.  Test Only Alternative (production line unit) & plant qualification

I, ALEX KAISERMAN, as the designated agent for NORTHEAST WINDOWS USA do hereby attest that the foregoing information is true to the best of my information, knowledge, and belief. Further, if the unit is identified in Section 3 as a production line unit, I hereby authorize the NFRC-accredited testing laboratory to send a copy of the test report to the IA identified above for plant qualification purposes pursuant to the NFRC Product Certification Program.

Signature: ALEX KAISERMAN Digitally signed by ALEX KAISERMAN Date: 2021.10.15 12:35:08 -0400 Date: 10/15/2021

### For Laboratory Use Only

1. Laboratory: Injatak

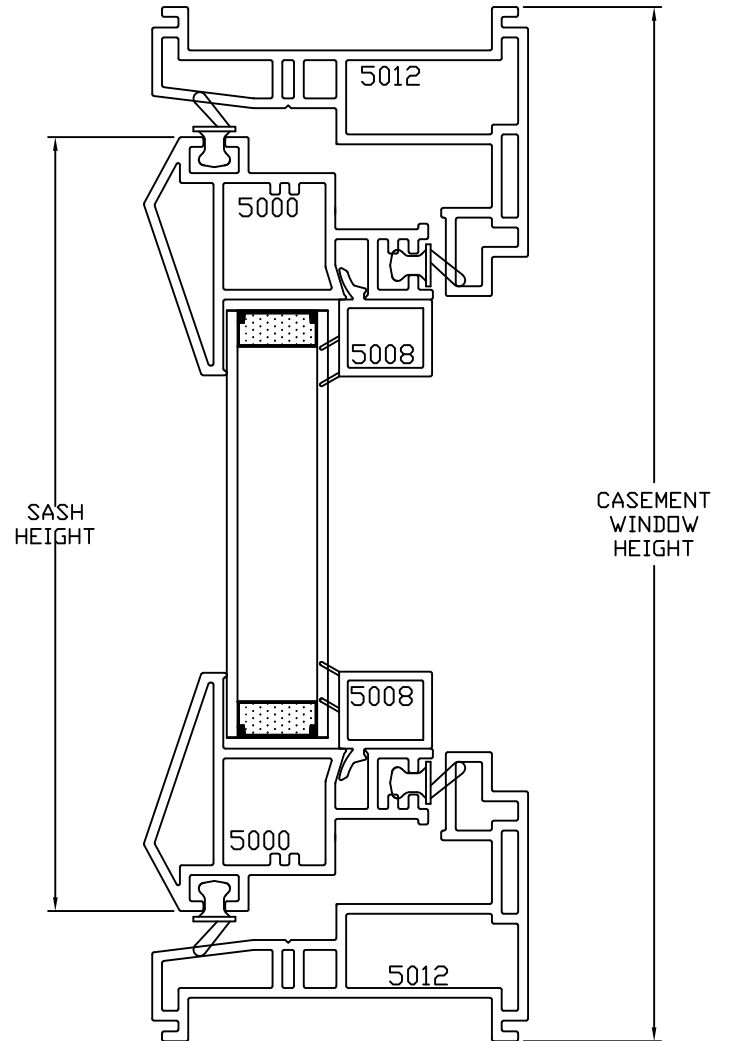
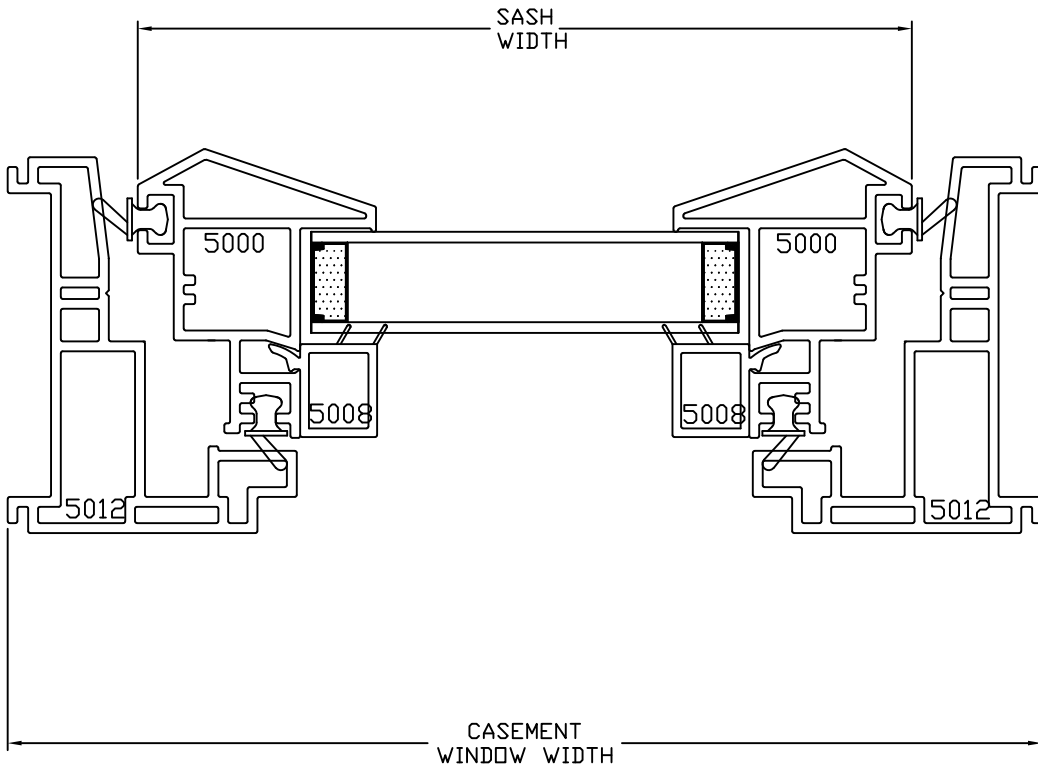
2. Date Sample Received: 12/22/21 Test Report #: m9793.01

3. Date Sample Tested: 1/13/22 By: ppw

4. Modifications made: \_\_\_\_\_



\_\_\_\_\_

\_\_\_\_\_



DO NOT SCALE DRAWING

NO.	REVISION	BY	DATE

 LOCATION FOR IMPACT TEST SPECIFICATION-LENGTHS TO 3/8"	DRAWN FOR  QUALITY LINEALS BY DDS DESIGNS "OUR NAME SAYS IT ALL"	1) MATERIAL RIGID PVC 2) CAPSTOCK 3) UNSPECIFIED WALLS 4) BREAK ALL CORNERS R 5) AREA SQ.IN. 6) WT/FT LBS/FT	TITLE CW300 WELD MAIN FRAME/WELDED SASH DWN BY DDS SCALE DATE 02/28/12 CHKD BY APPD BY COMPUTER NO
		DWG NO CW300 CROSS SECTION	

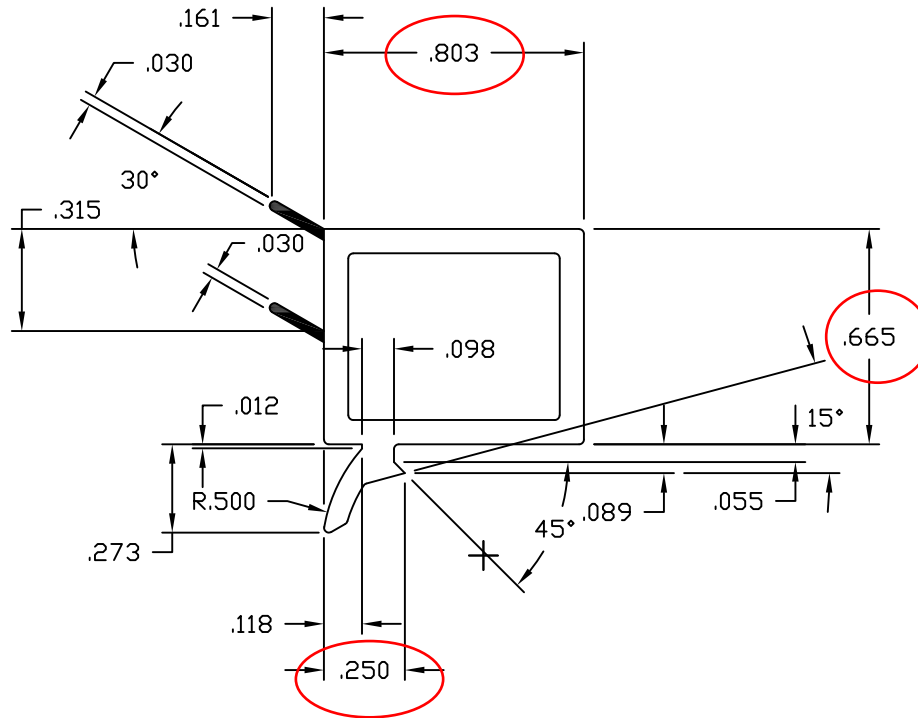
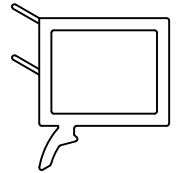




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Verified by: *Bryan P. Moser*






AREA OF RIGID PVC = .229  
 AREA OF SOFT PVC = .006

WT/FT OF RIGID PVC = .144  
 WT/FT OF SOFT PVC = .004

DO NOT SCALE DRAWING

NO.	REVISION	BY	DATE

 LOCATION FOR IMPACT TEST SPECIFICATION-LENGTHS TO 3/8"	ALLOWABLE BOW MAX. 1" PER 14' ANGULARITY TO BE ± 1/2	TITLE CASEMENT WINDOW CSMT GLAZING BEAD			
	DRAWN FOR  BY  "OUR NAME SAYS IT ALL"	1) MATERIAL <b>RIGID PVC</b> 2) CAPSTOCK 3) UNSPECIFIED WALLS 4) BREAK ALL CORNERS R .065 5) AREA SQ. IN .235 6) WT/FT LBS/FT .148	DWN BY DDS	SCALE FULL	DATE 11/14/02
		COMPUTER NO			
		DWG NO <b>5008</b>			

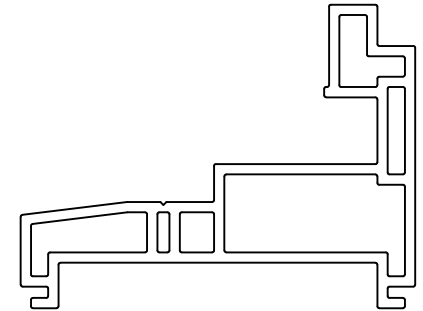
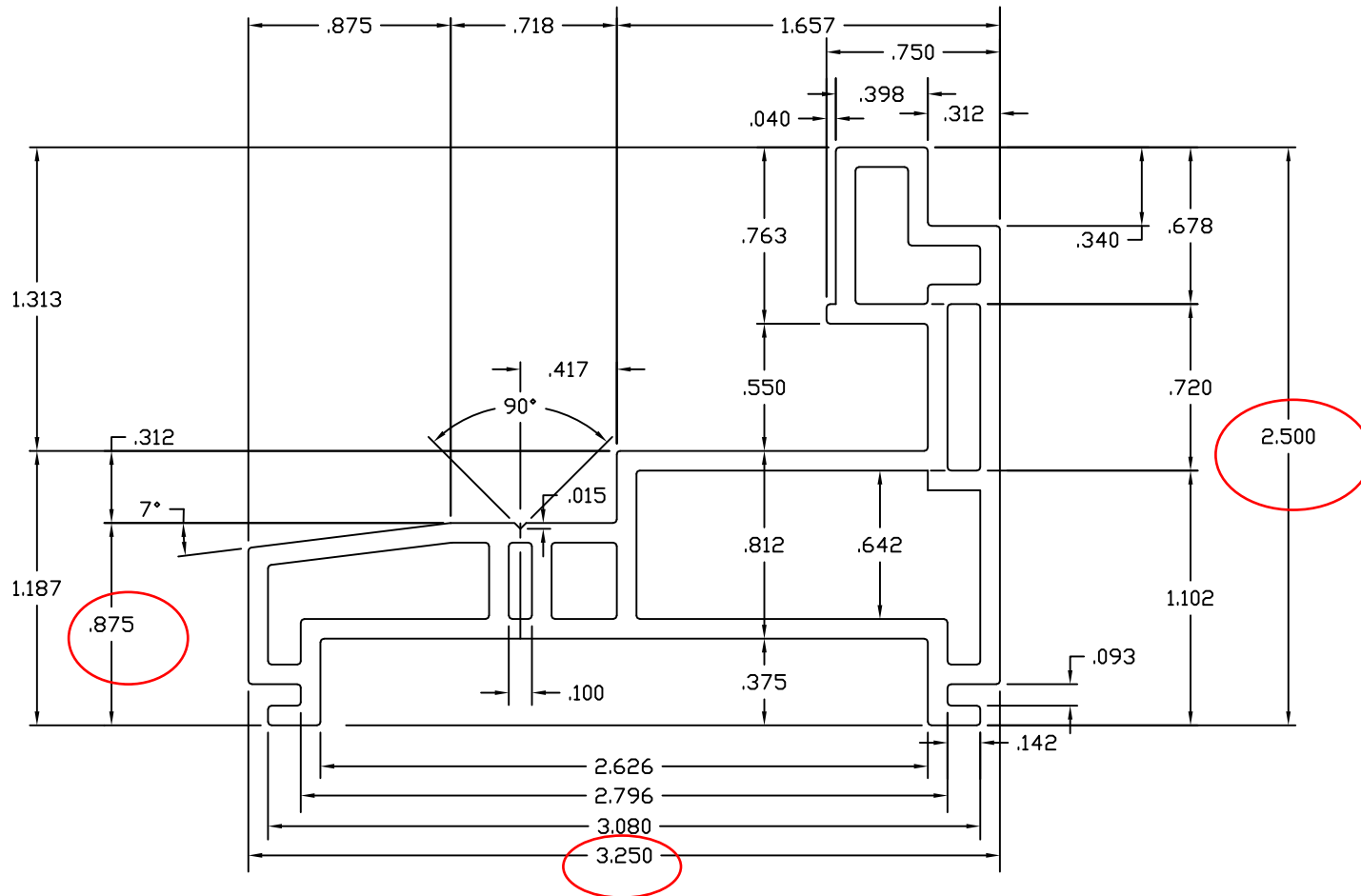




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Verified by: *Ryan P. Moser*



DO NOT SCALE DRAWING

NO.	REVISION	BY	DATE

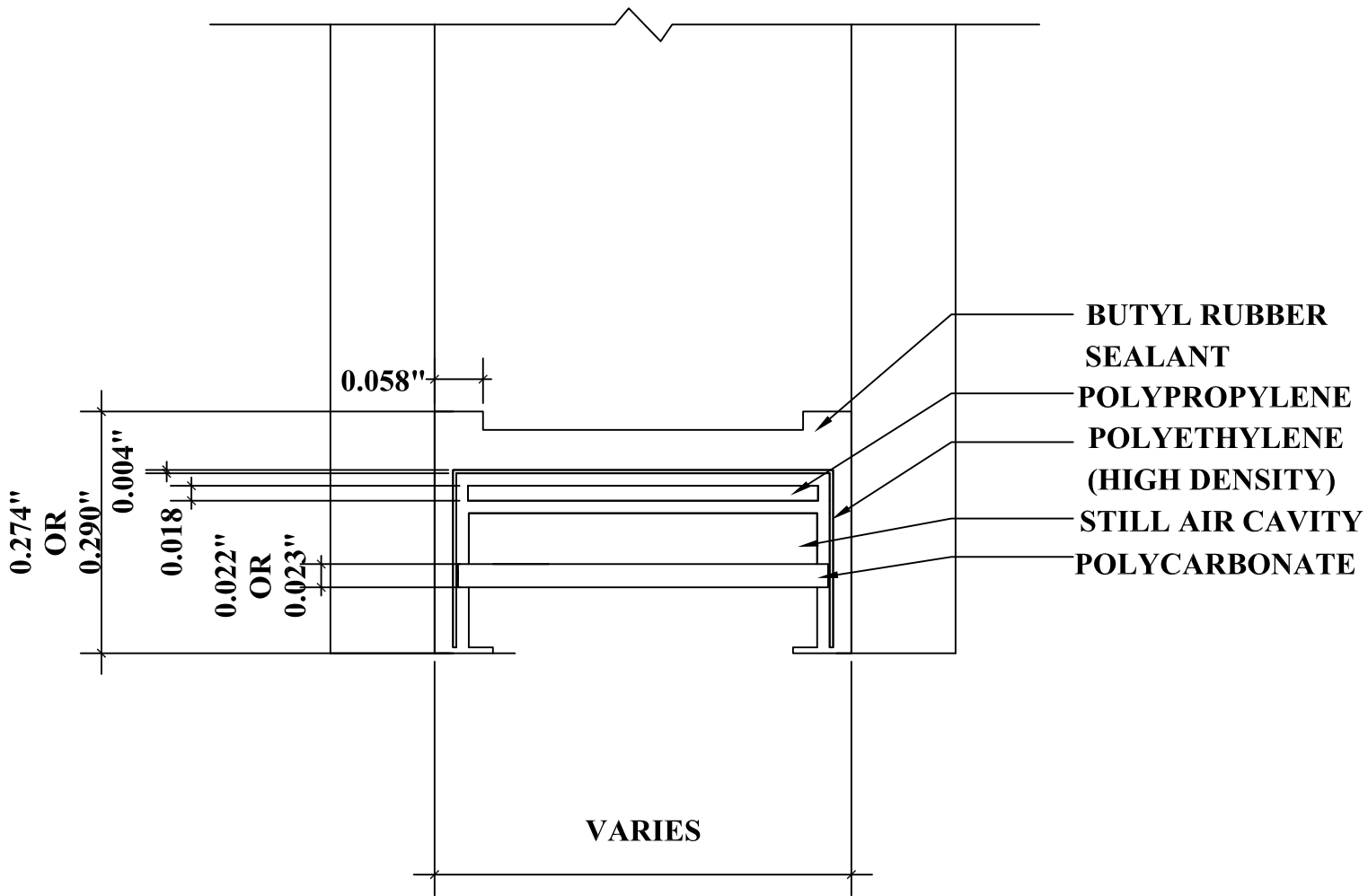
 LOCATION FOR IMPACT TEST SPECIFICATION-LENGTHS TO 3/8"		ALLOWABLE BOW MAX. 1" PER 14' ANGULARITY TO BE ± 1/2	
DRAWN FOR  BY  "OUR NAME SAYS IT ALL"	1) MATERIAL <b>RIGID PVC</b> 2) CAPSTOCK 3) UNSPECIFIED WALLS 4) BREAK ALL CORNERS R <b>.080</b> 5) AREA <b>1.192</b> SQ. IN. 6) WT/FT <b>.750</b> LBS./FT.		TITLE CASEMENT WINDOW CSMT MAIN FRAME
	DWN BY DDS	SCALE 2:1	DATE 11/14/02



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Date: 01/13/2022

Verified by: *Bryan P. Moser*



DETAIL FOR THERMAL MODELING OF  
QUANEX DURALITE SPACER (P1-S)

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**SECTION 16**

**REVISION LOG**

<b>REVISION #</b>	<b>DATE</b>	<b>PAGES</b>	<b>REVISION</b>
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