WINDLOCH, LLC
COMPUTER SIMULATION REPORT

SCOPE OF WORK
2461 BROADWAY - CUSTOM COMPUTER SIMULATIONS TO DETERMINE INTERIOR SURFACE CONDENSATION AND ESTIMATED PRODUCT/ELEVATION U-FACTOR

REPORT NUMBER
L4252.01-116-45 R1

TEST DATE
10/13/20

ISSUE DATE **REVISED DATE**
10/13/20 10/16/2020

RECORD RETENTION END DATE
10/13/25

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39

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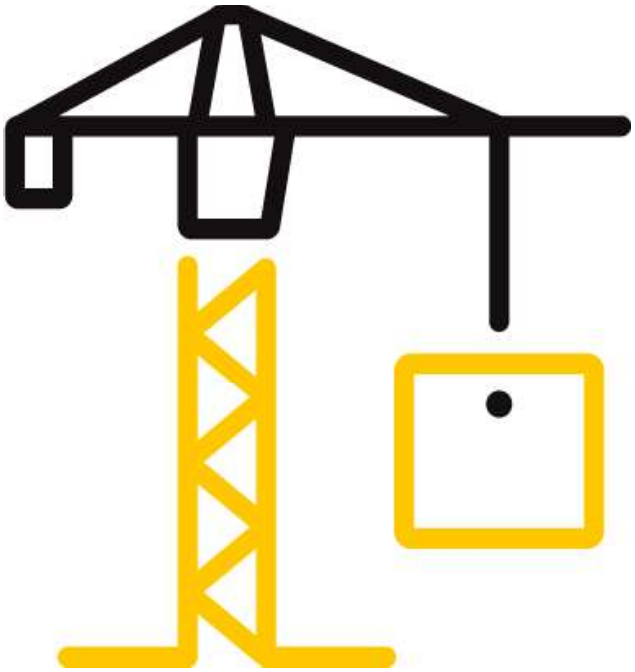

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TEST REPORT FOR WINDLOCH, LLC
Report No.: L4252.01-116-45 R1
Date: 10/16/20

REPORT ISSUED TO

WINDLOCH, LLC
467 Brook Avenue
Unit C
Deer Park, New York 11729

SECTION 1

SUMMARY

SERIES/MODEL: DS-75

Intertek Building & Construction (Intertek B&C) was contracted to perform custom computer simulations utilizing thermal modeling computer software developed by Lawrence Berkeley National Laboratory (LBNL). Results obtained are simulated values and were secured using the designated test methods.

This report is prepared for research and informational purposes only. These results are only a guide to the actual system performance and should not be interpreted as exact performance. This analysis is performed at ideal steady-state conditions and does not account for any outside influences, three-dimensional interactions, or final installation of the system in the field.

Intertek B&C is an NFRC accredited simulation laboratory and all simulations were conducted in full compliance with NFRC approved procedures and specifications.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

For INTERTEK B&C:

COMPLETED BY:	Eric S. Leitner	**REVIEWED BY:**	Allison M. Ford
TITLE:	Manager - Thermal Testing & Simulations	**TITLE:**	Simulation Technician
SIGNATURE:	Digitally Signed by: Eric S. Leitner	**SIGNATURE:**	Digitally Signed by: Allison Ford
DATE:	10/16/20	**DATE:**	10/16/20

ESL:esl

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SECTION 2
TEST METHODS

The products were evaluated in accordance with the following:

ANSI/NFRC 100-2020, *Procedure for Determining Fenestration Product U-Factors*

ANSI/NFRC 200-2020, *Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence*

THERM 7.4, *This program calculates heat loss through frame and edge-of-glass components using finite difference analysis. The program solves for temperature and heat flow distribution throughout the cross section. The temperature distribution can then be used to determine overall heat loss, total and component U-Factors, and local temperatures at points of interest.*

WINDOW 7.4, *This program calculates U-Factor and center-of-glazing (COG) temperatures using a two-dimensional heat flow analysis.*

SECTION 3
TEST PROCEDURE

The total product, including specific frame, spacer and glass details, was modeled using NFRC approved software.

FRAME AND EDGE MODELING	THERM 7.4.4
CENTER-OF-GLASS MODELING	WINDOW 7.4.14
TOTAL PRODUCT CALCULATIONS	WINDOW 7.4.14
SPECTRAL DATA LIBRARY	IGDB 74.0

Modeling Assumptions / Technical Interpretations

Any modeling assumptions and technical interpretations required to model this product are listed below.

1) To prevent air infiltration, tape was applied to all interior sash crack locations.
2) Models were constructed at ideal conditions. Hardware, fasteners, and weep holes were not modeled.
3) The modeling procedure is two-dimensional. It does not take into account three-dimensional heat flow that might occur at the corners of an assembly.
4) Spectral data for glazing with frit patterns is currently unavailable; therefore, glass options with frits were simulated as dictated but without a frit pattern.

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SECTION 4
SIMULATION SPECIMEN DESCRIPTION

SERIES/MODEL	DS-75
FRAME MATERIAL	AT - Aluminum w/ Thermal Breaks - All Members
SASH MATERIAL	AT - Aluminum w/ Thermal Breaks - All Members

GLAZING OPTIONS				
	OUTER PANE	***GAP SIZE***	***GAP FILL***	***INNER PANE***
GL1	5/16" Guardian SN68 (#2)	0.563	90% Argon	1/4" Clear

SPACER OPTIONS			
TYPE	***PRIMARY SEAL***	***SECONDARY SEAL***	***CODE***
Super Spacer Triseal	PIB	Silicone	ZF-D

SECTION 5
MEASURED SIMULATION DATA

DEWPOINT TEMPERATURE ANALYSIS*	
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph

U-FACTOR CALCULATIONS†	
Exterior Air Temperature	-0.4°F
Exterior Wind Velocity	12.3 mph (Perpendicular Flow)
Interior Air Temperature	69.8°F

**** Dewpoint temperature criteria per Windloch***
† U-Factor temperature criteria per ANSI/NFRC 100-2020

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SECTION 6
SIMULATION RESULTS

DEWPOINT TEMPERATURE ANALYSIS

The component parts of the system were modeled at the specified conditions to determine the coldest temperature on the interior surface of each section. The coldest temperature can be compared with the dewpoint at the specified temperatures to determine the probability of condensation.

Cross Section Description	Section Coldest Temperature	Dewpoint Temperature
1/400	49.0°F	38.9°F
2/400	49.2°F	38.9°F
3/400	48.0°F	38.9°F
4/400	49.8°F	38.9°F
5/400	48.9°F	38.9°F
1a/400	69.0°F	38.9°F
2a/400	40.1°F	38.9°F
4a/400	44.7°F	38.9°F
11/400	43.9°F	38.9°F
12/400	48.9°F	38.9°F
13/400	50.6°F	38.9°F
14/400	48.2°F	38.9°F

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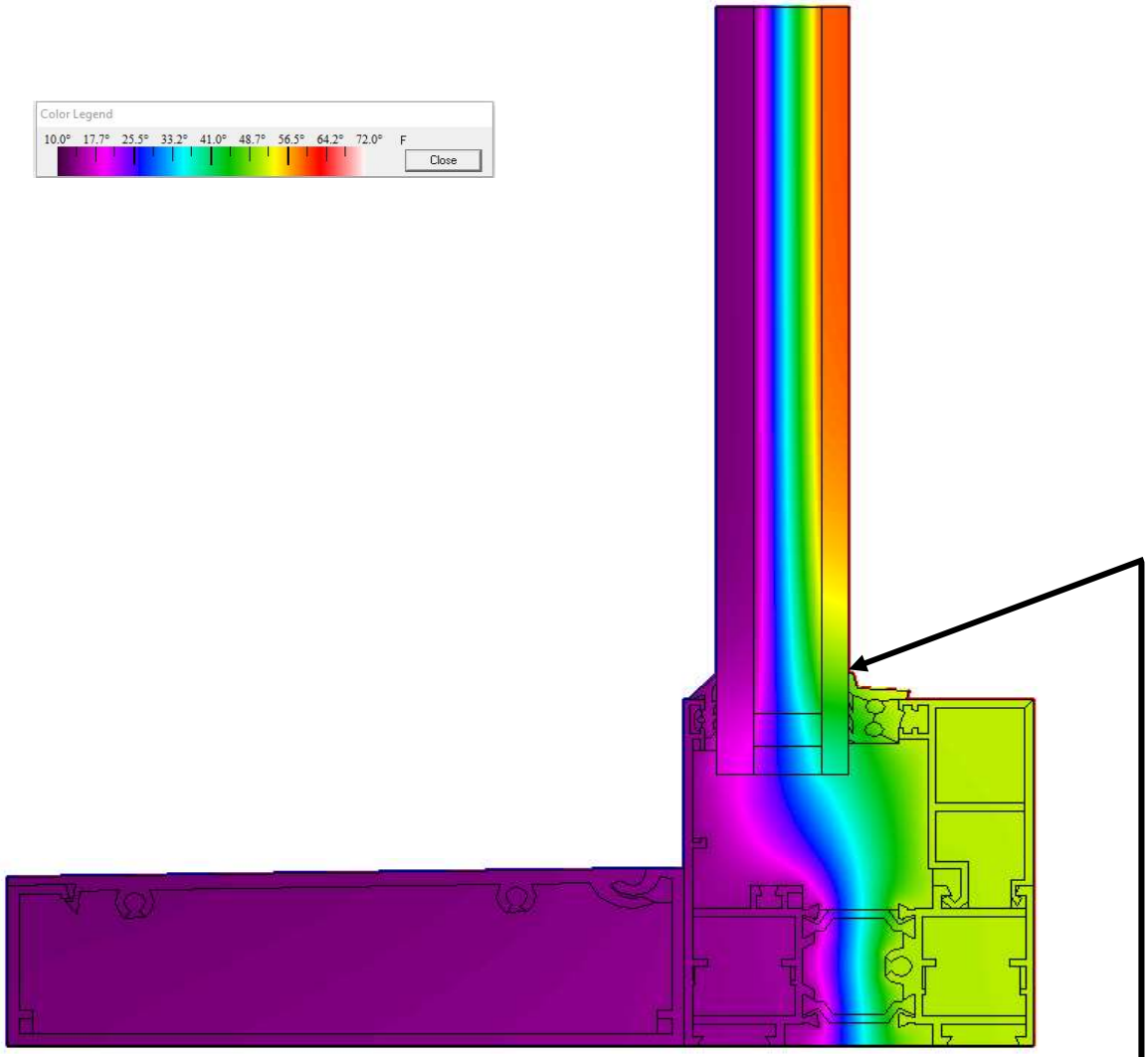
SECTION 6
SIMULATION RESULTS

DEWPOINT TEMPERATURE ANALYSIS: TEMPERATURE DISTRIBUTION PLOT

Cross Section	1/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	51.1°F
Edge of Glass Temperature	53.3°F
Coldest Interior Temperature	49.0°F

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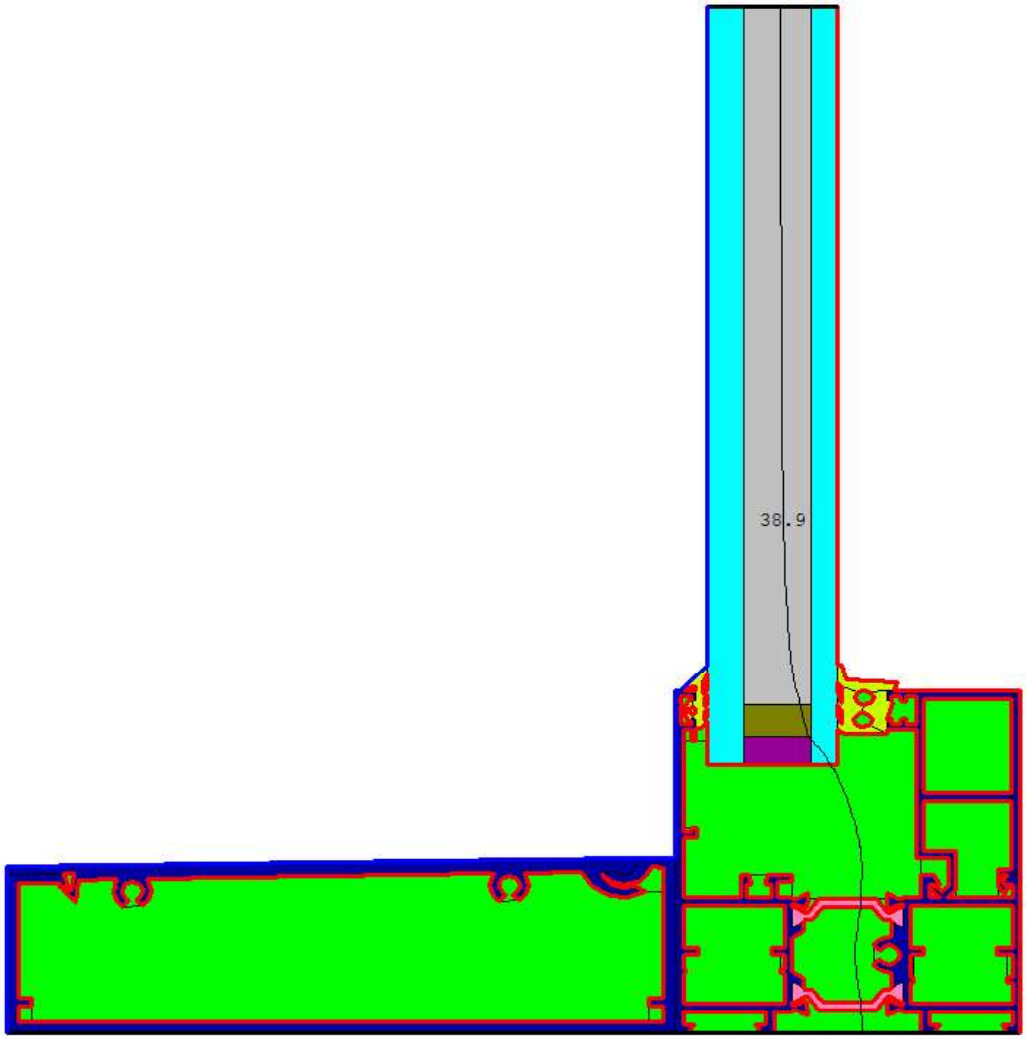
SIMULATION RESULTS

DEWPOINT TEMPERATURE ANALYSIS: DEWPOINT LINE PLOT

Cross Section	1/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	51.1°F
Edge of Glass Temperature	53.3°F
Coldest Interior Temperature	49.0°F

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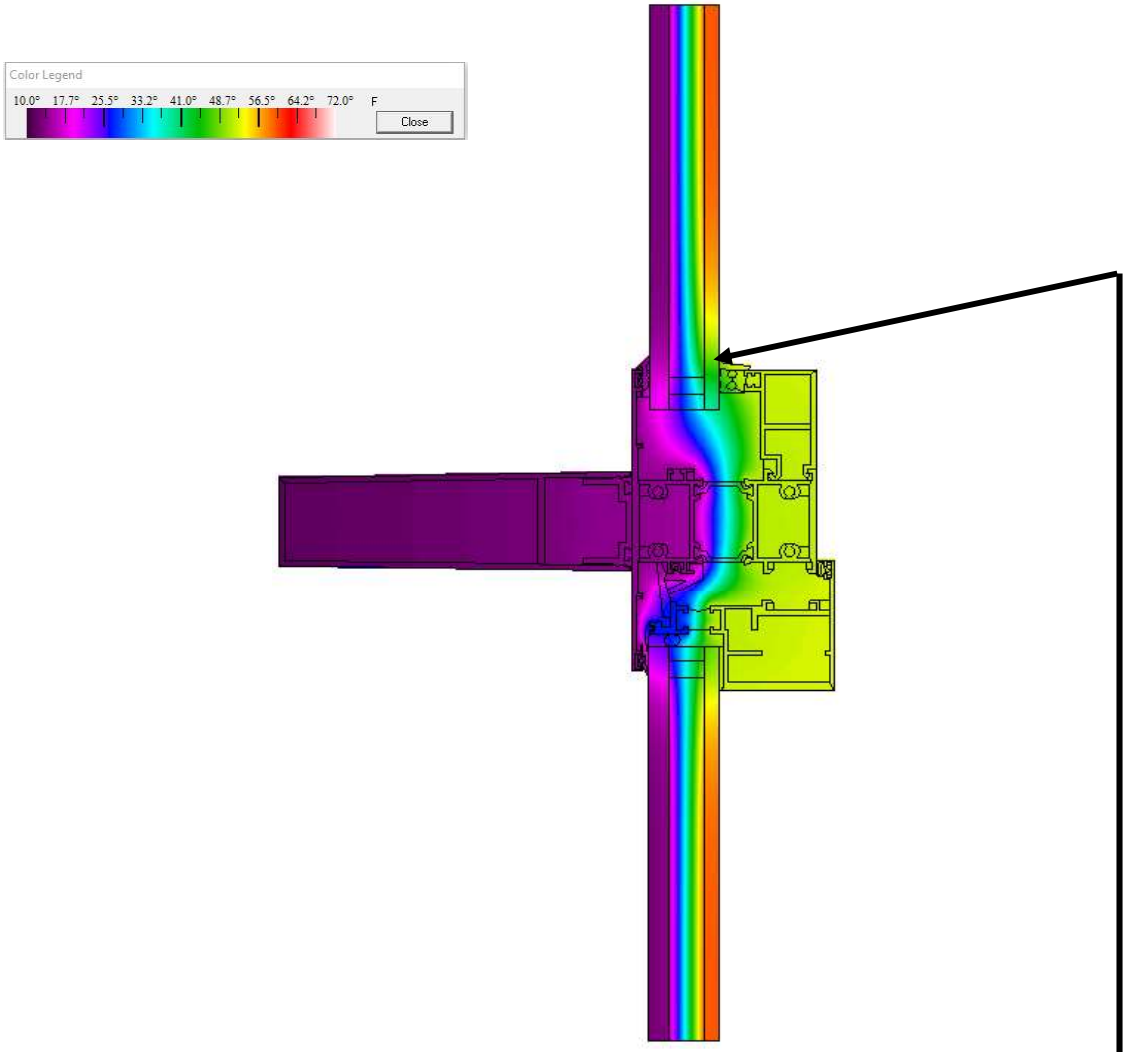
SIMULATION RESULTS

DEWPOINT TEMPERATURE ANALYSIS: TEMPERATURE DISTRIBUTION PLOT

Cross Section	2/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	51.3°F
Edge of Glass Temperature	53.0°F
Coldest Interior Temperature	49.2°F

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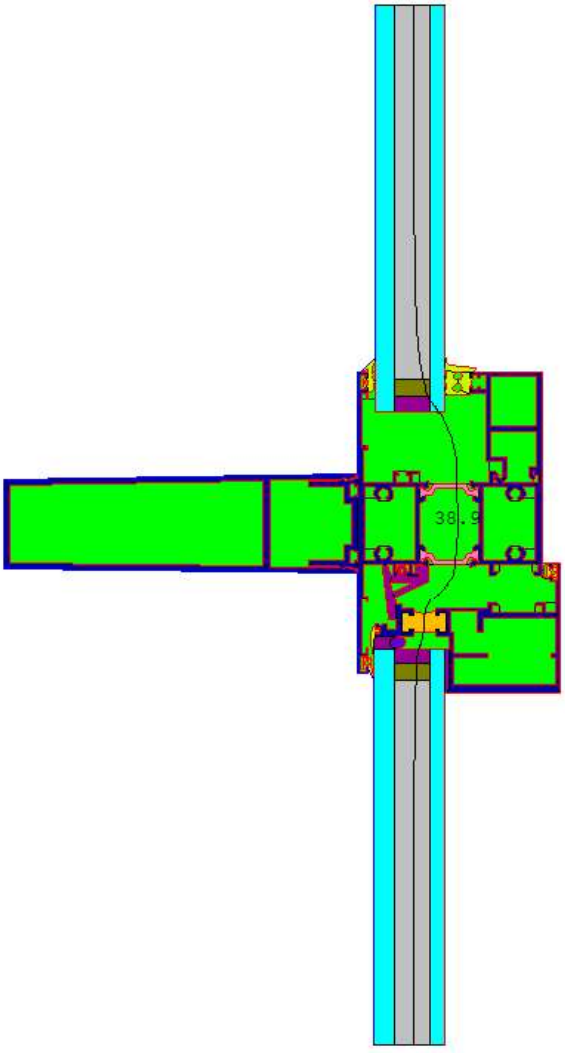
DEWPOINT TEMPERATURE ANALYSIS: DEWPOINT LINE PLOT

Cross Section	2/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	51.3°F
Edge of Glass Temperature	53.0°F
Coldest Interior Temperature	49.2°F

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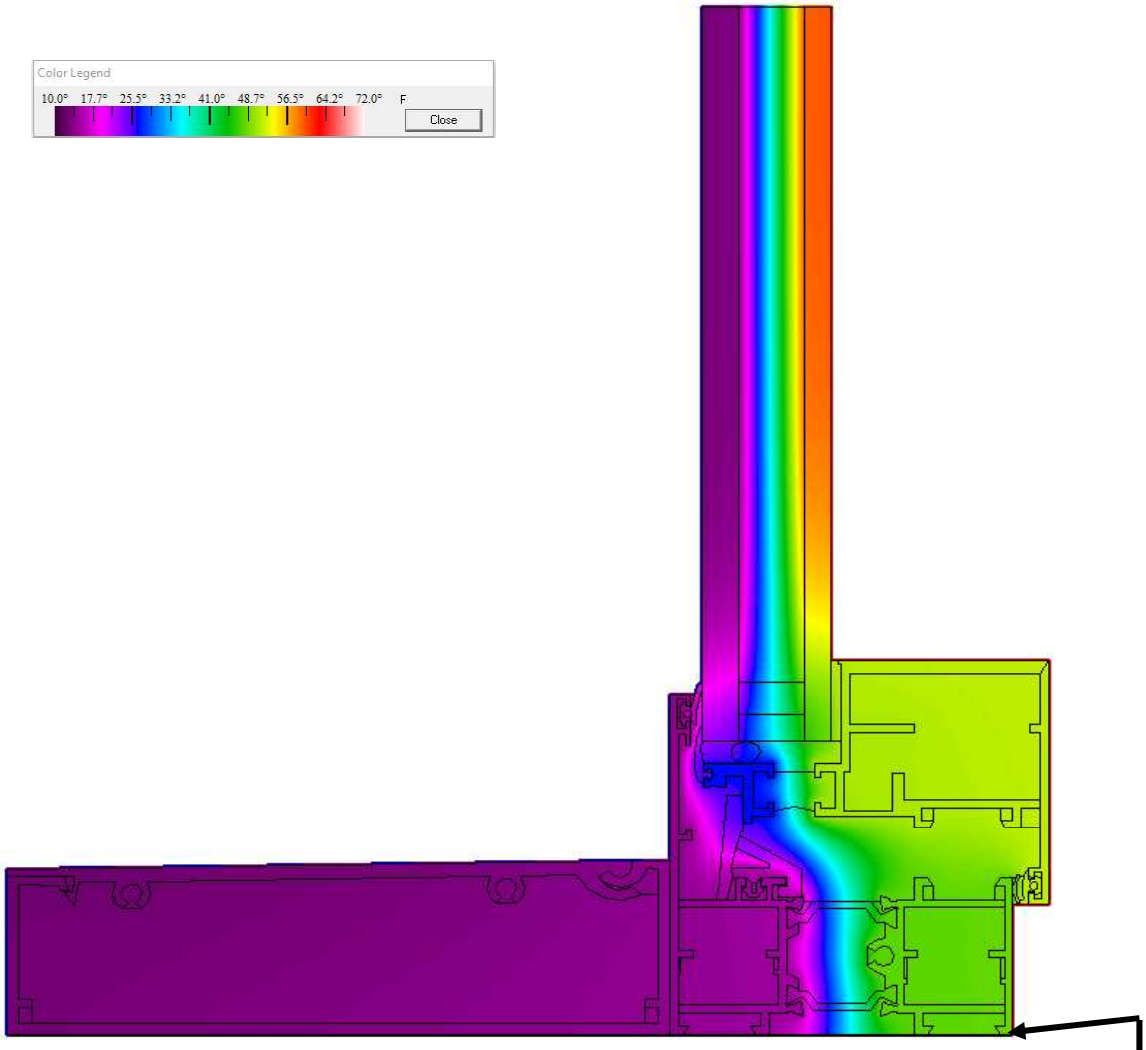
DEWPOINT TEMPERATURE ANALYSIS: TEMPERATURE DISTRIBUTION PLOT

Cross Section	3/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	48.0°F
Edge of Glass Temperature	54.9°F
Coldest Interior Temperature	48.0°F

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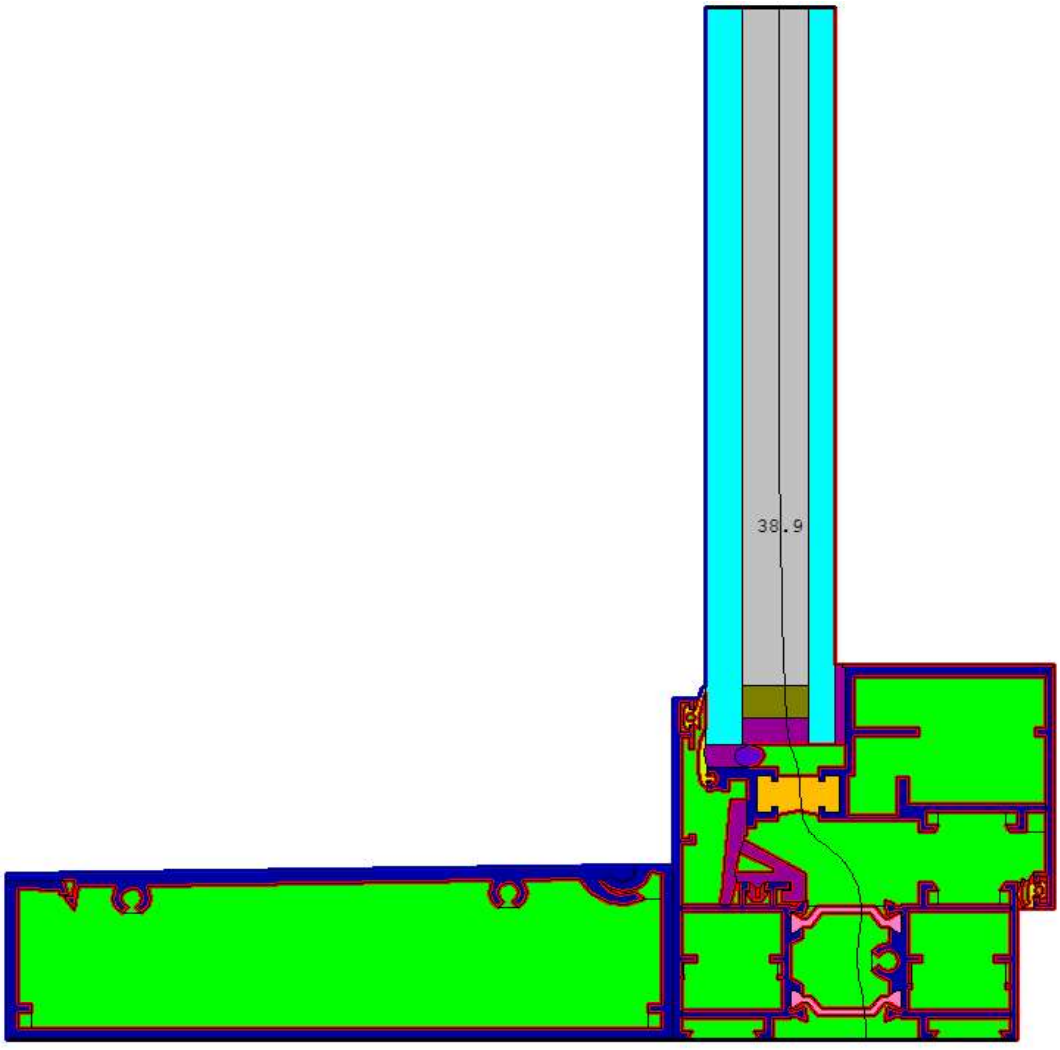
Cross Section	3/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	48.0°F
Edge of Glass Temperature	54.9°F
Coldest Interior Temperature	48.0°F

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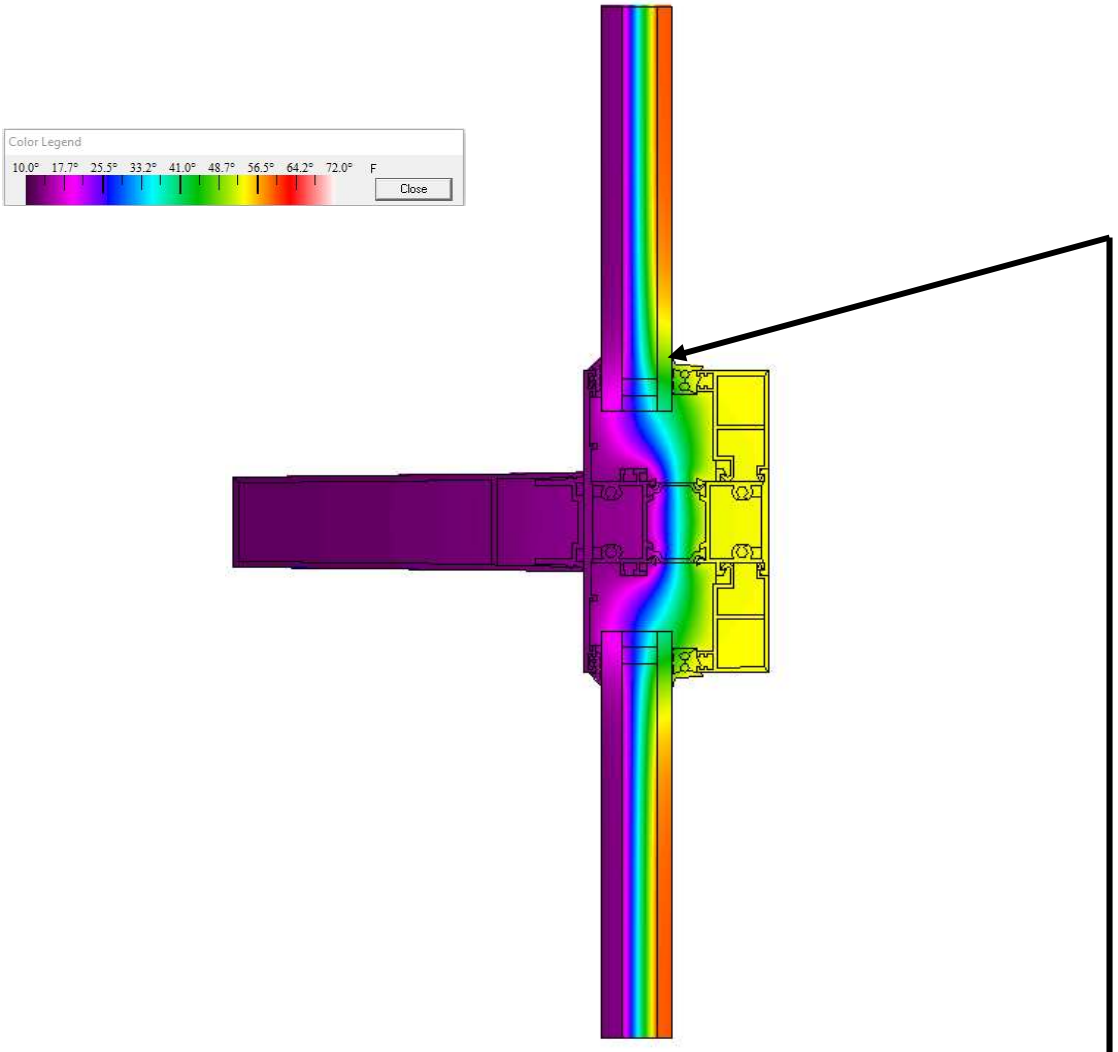
DEWPOINT TEMPERATURE ANALYSIS: TEMPERATURE DISTRIBUTION PLOT

Cross Section	4/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	53.6°F
Edge of Glass Temperature	53.5°F
Coldest Interior Temperature	49.8°F

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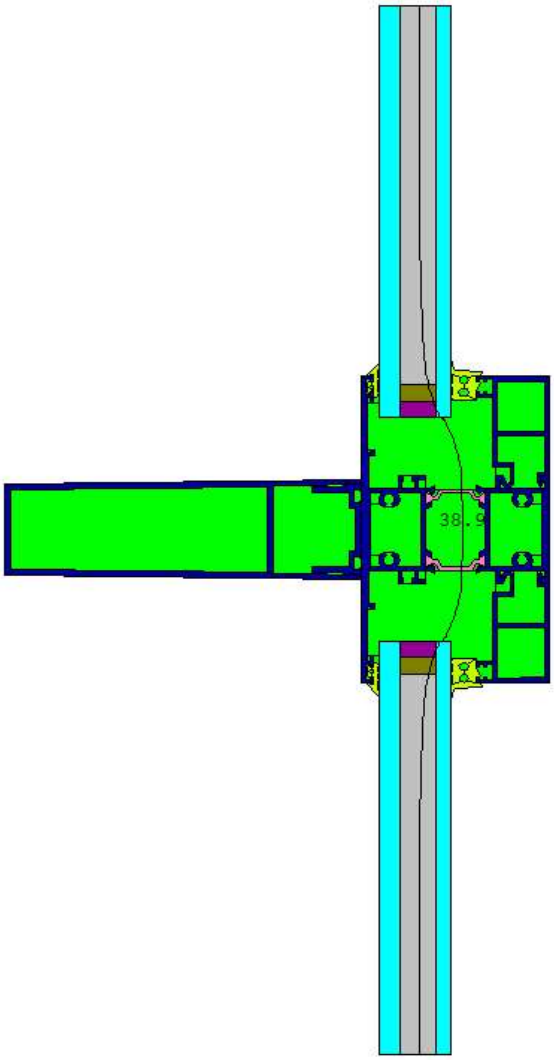
DEWPOINT TEMPERATURE ANALYSIS: DEWPOINT LINE PLOT

Cross Section	4/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	53.6°F
Edge of Glass Temperature	53.5°F
Coldest Interior Temperature	49.8°F

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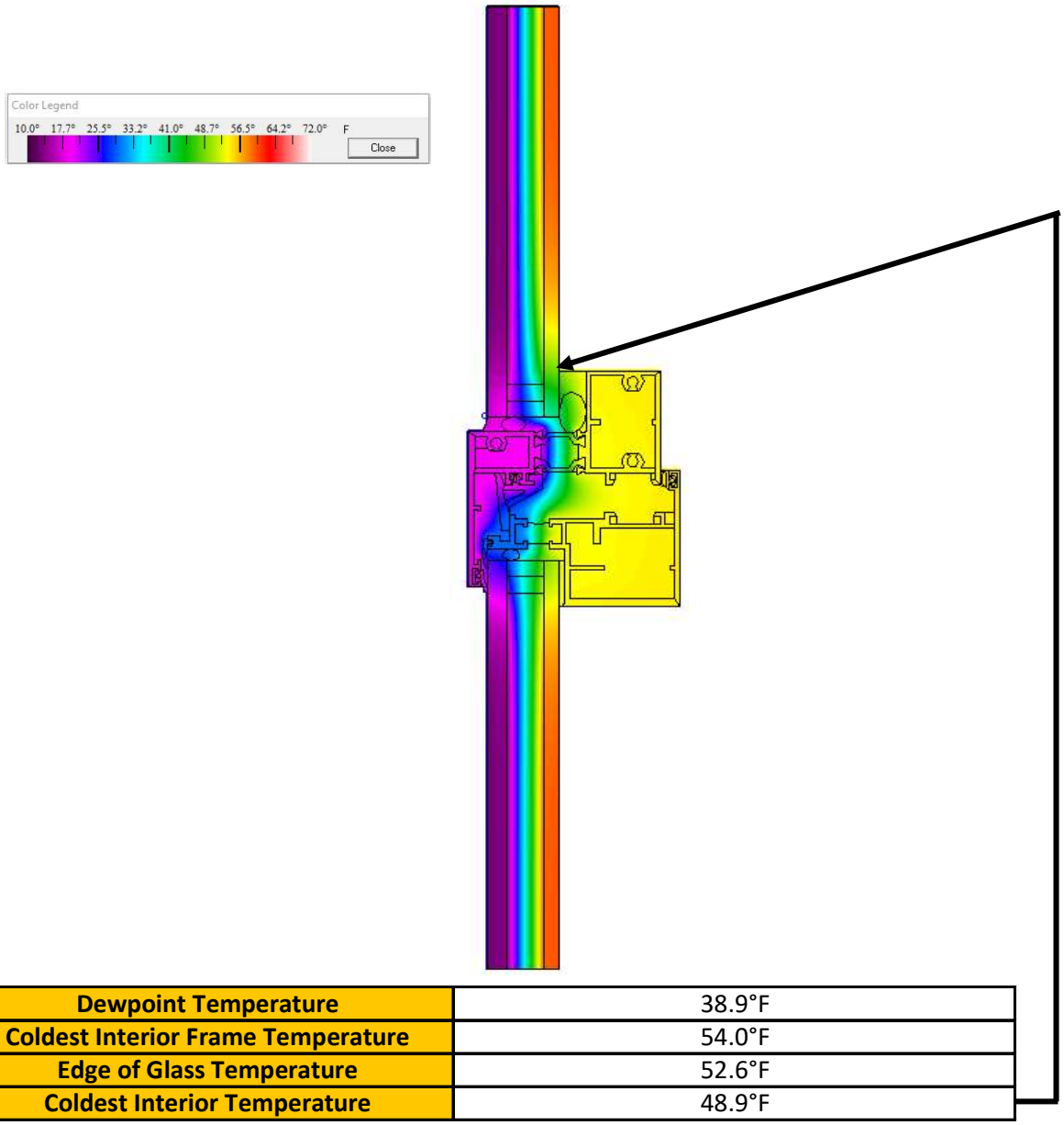
DEWPOINT TEMPERATURE ANALYSIS: TEMPERATURE DISTRIBUTION PLOT

Cross Section	5/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	54.0°F
Edge of Glass Temperature	52.6°F
Coldest Interior Temperature	48.9°F

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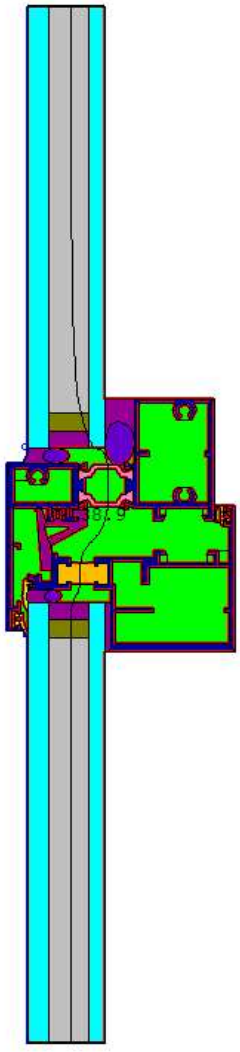
DEWPOINT TEMPERATURE ANALYSIS: DEWPOINT LINE PLOT

Cross Section	5/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	54.0°F
Edge of Glass Temperature	52.6°F
Coldest Interior Temperature	48.9°F

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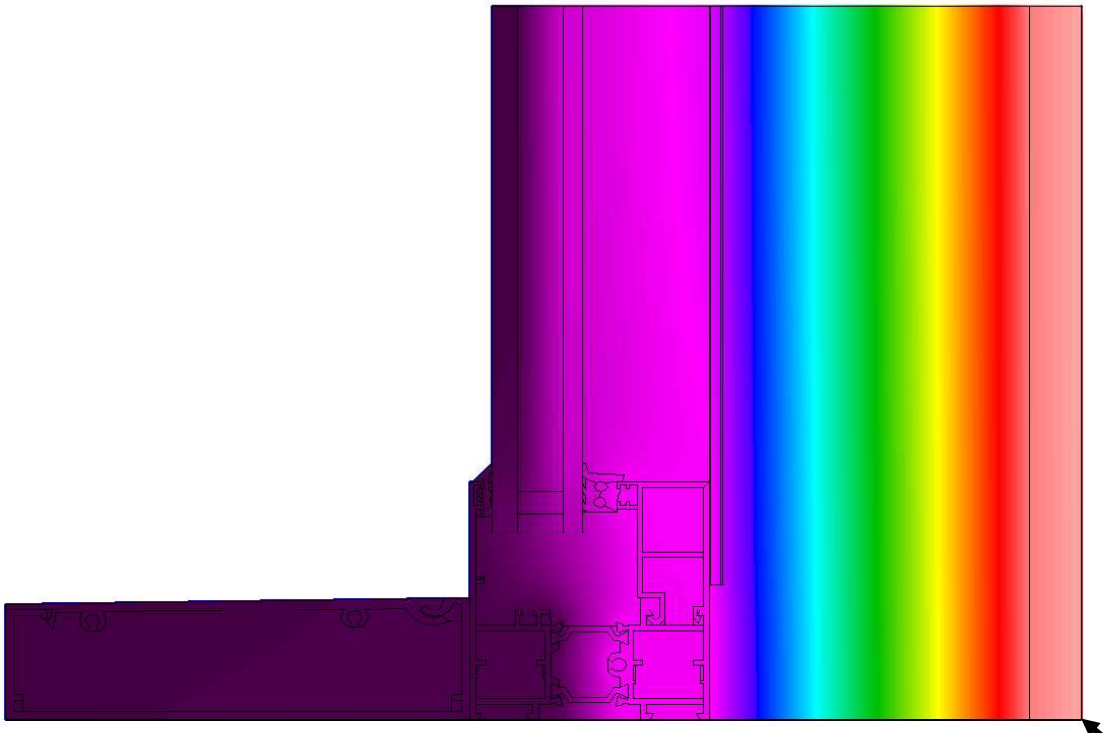
DEWPOINT TEMPERATURE ANALYSIS: TEMPERATURE DISTRIBUTION PLOT

Cross Section	1a/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	69.0°F
Edge of Glass Temperature	-
Coldest Interior Temperature	69.0°F

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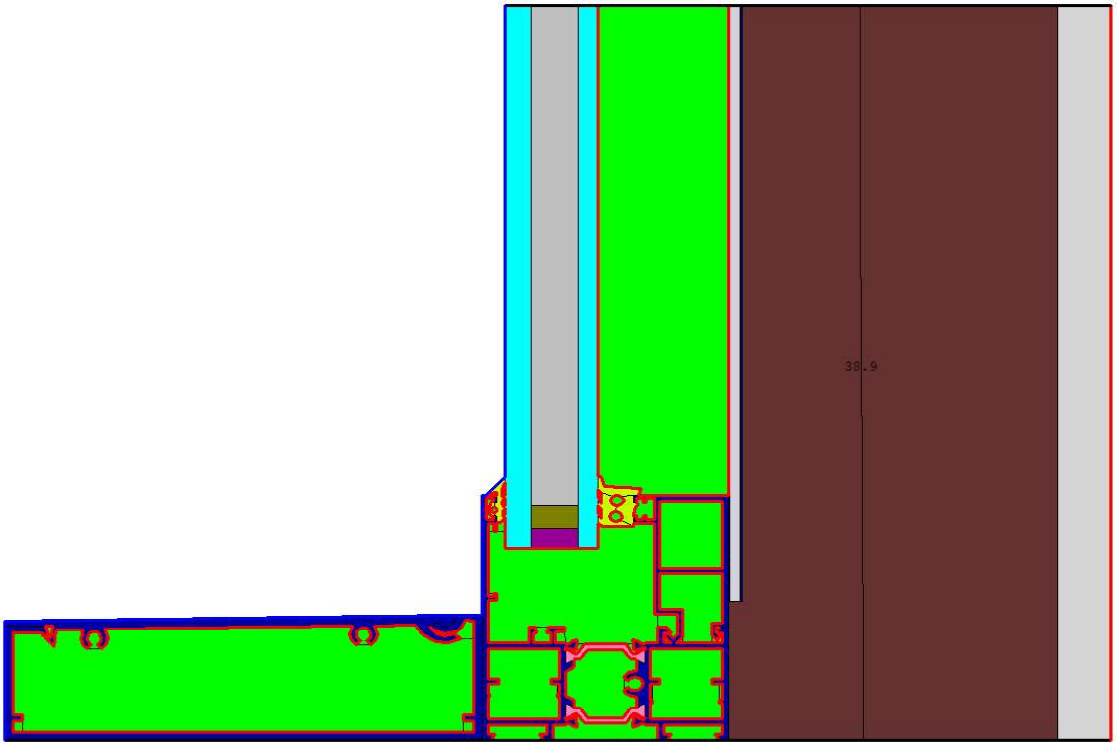
DEWPOINT TEMPERATURE ANALYSIS: DEWPOINT LINE PLOT

Cross Section	1a/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	69.0°F
Edge of Glass Temperature	-
Coldest Interior Temperature	69.0°F

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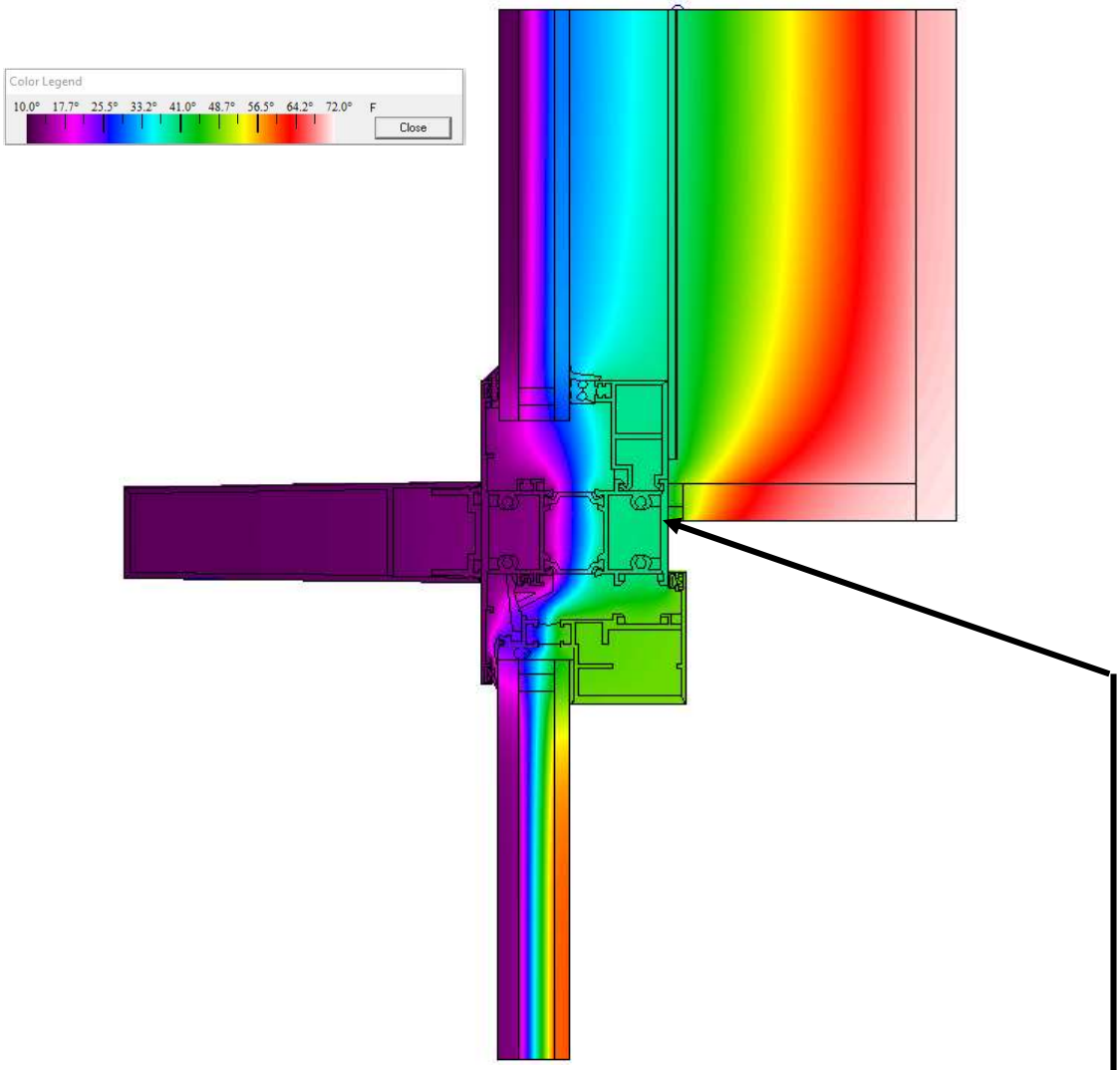
DEWPOINT TEMPERATURE ANALYSIS: TEMPERATURE DISTRIBUTION PLOT

Cross Section	2a/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	40.1°F
Edge of Glass Temperature	53.2°F
Coldest Interior Temperature	40.1°F

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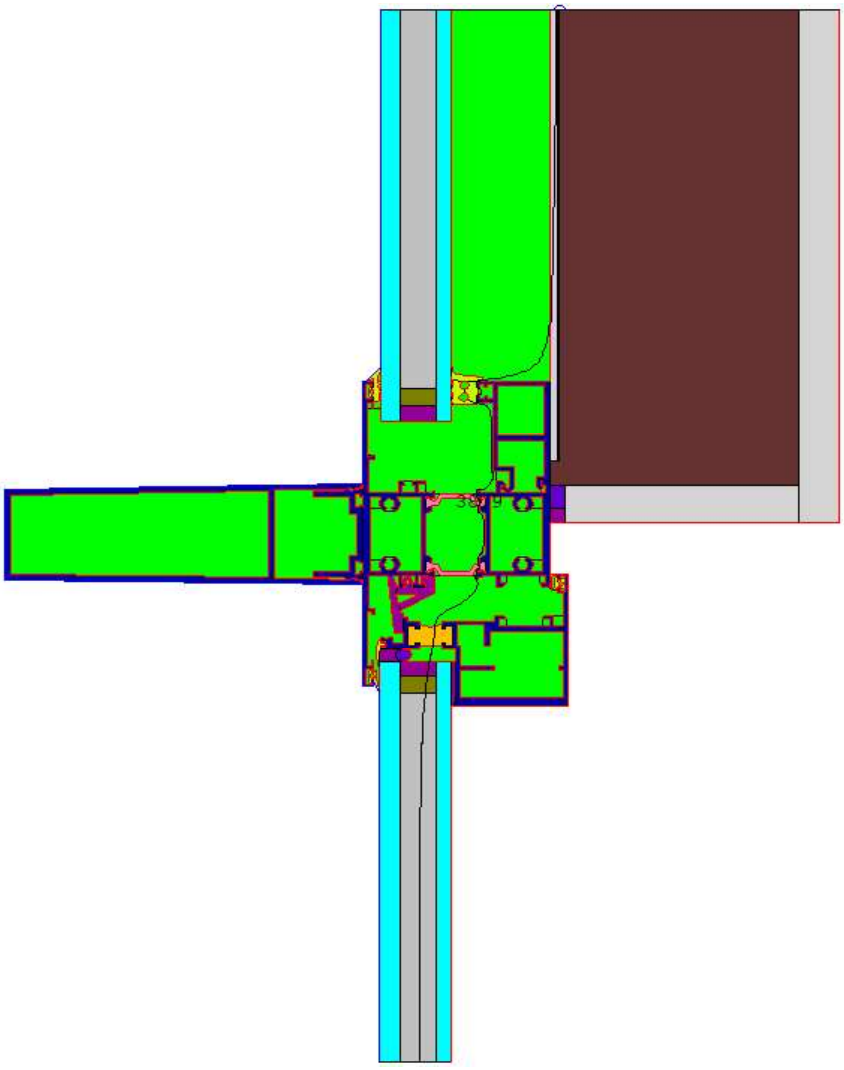
Cross Section	2a/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	40.1°F
Edge of Glass Temperature	53.2°F
Coldest Interior Temperature	40.1°F

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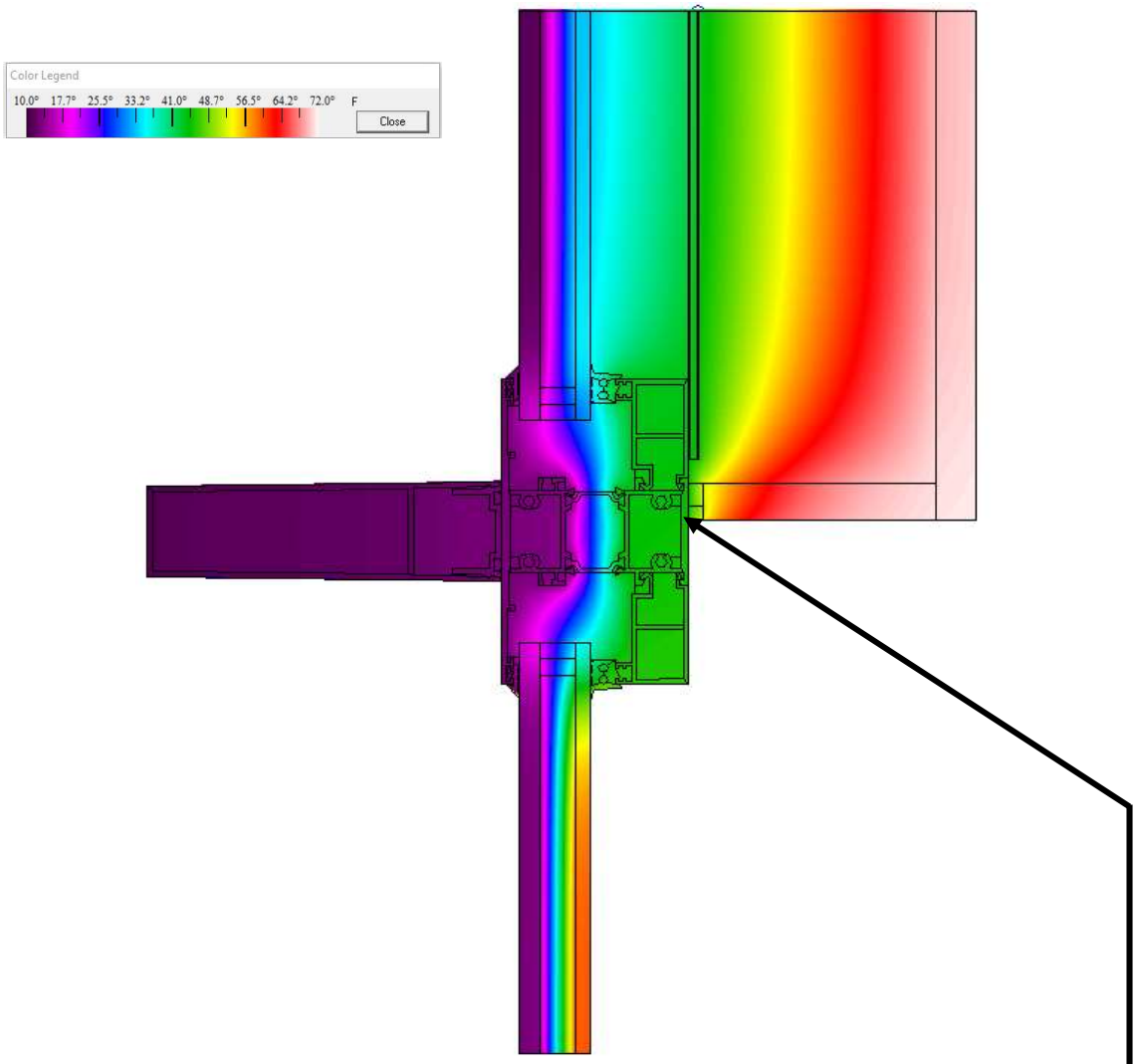
DEWPOINT TEMPERATURE ANALYSIS: TEMPERATURE DISTRIBUTION PLOT

Cross Section	4a/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	44.7°F
Edge of Glass Temperature	51.8°F
Coldest Interior Temperature	44.7°F

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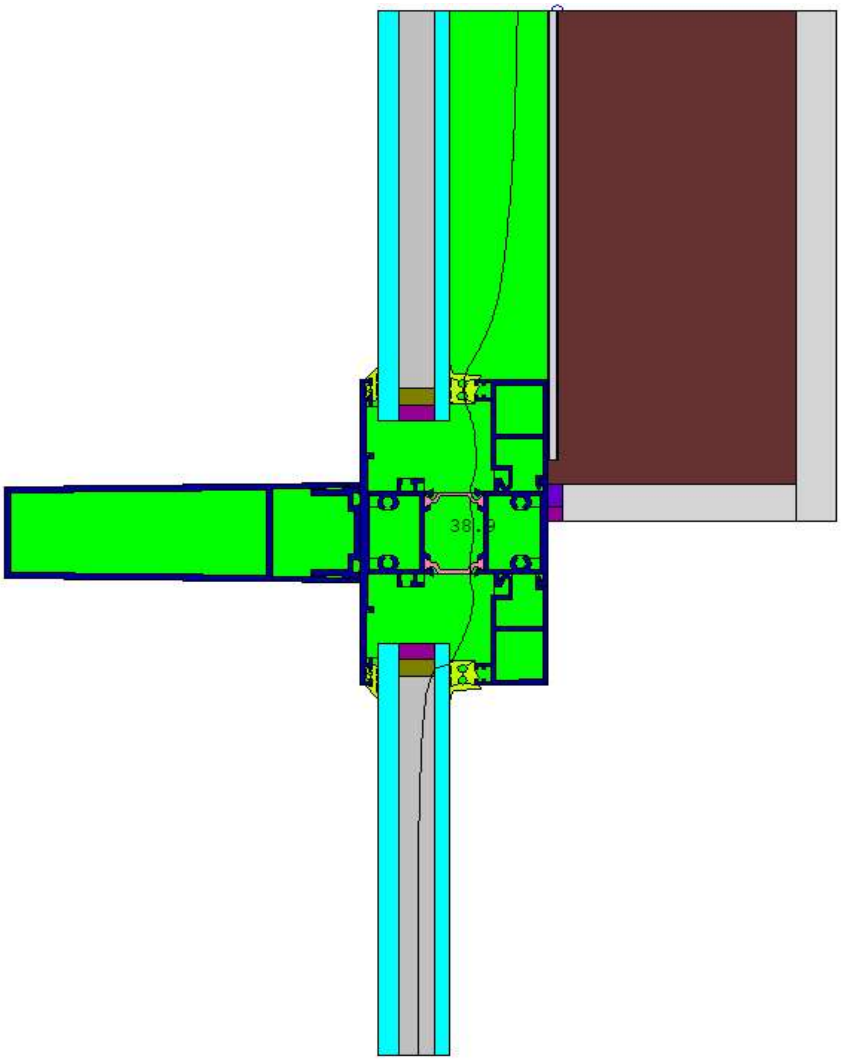
DEWPOINT TEMPERATURE ANALYSIS: DEWPOINT LINE PLOT

Cross Section	4a/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	44.7°F
Edge of Glass Temperature	51.8°F
Coldest Interior Temperature	44.7°F

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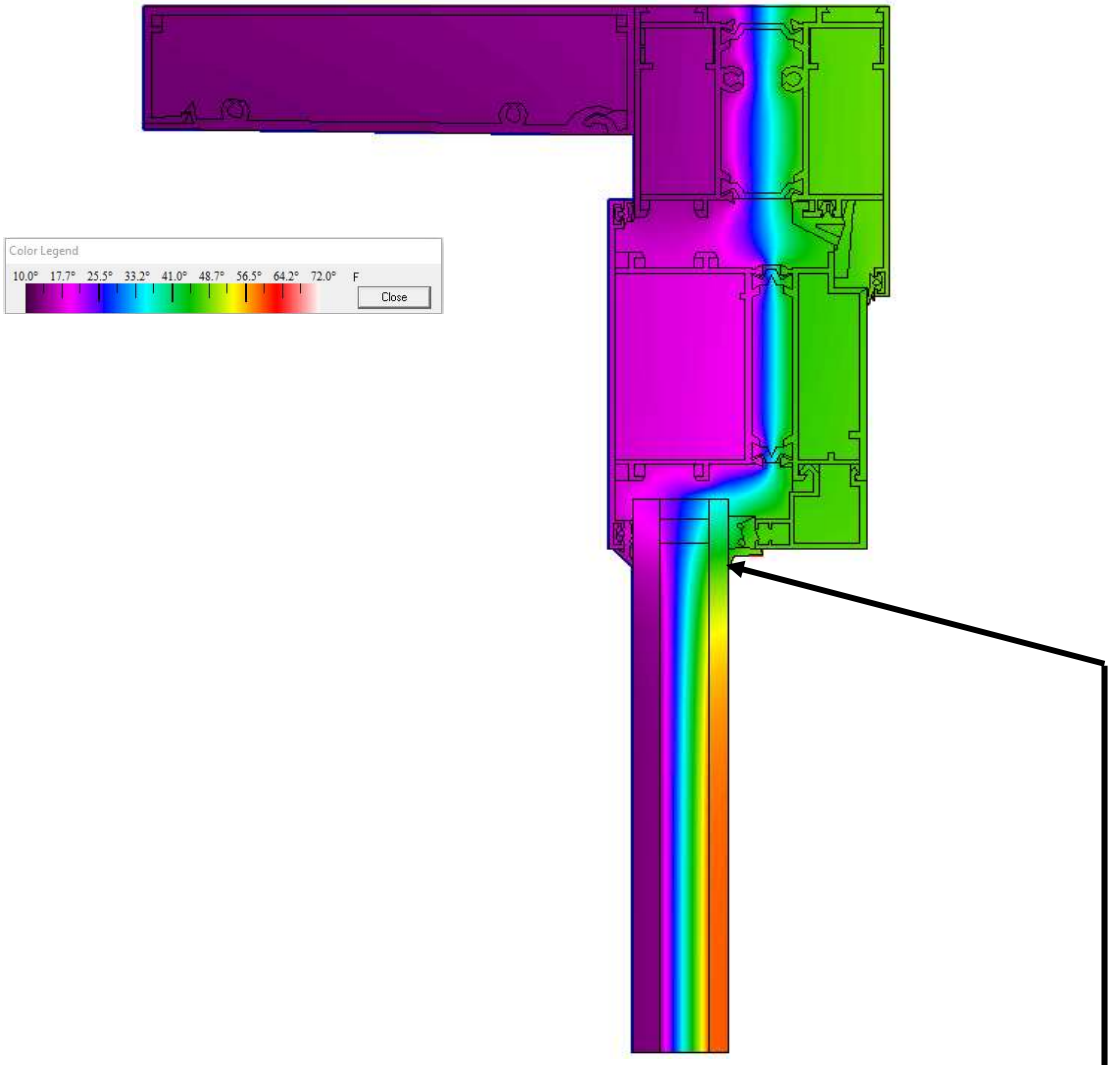
DEWPOINT TEMPERATURE ANALYSIS: TEMPERATURE DISTRIBUTION PLOT

Cross Section	11/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	43.9°F
Edge of Glass Temperature	51.6°F
Coldest Interior Temperature	43.9°F

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Cross Section	11/400
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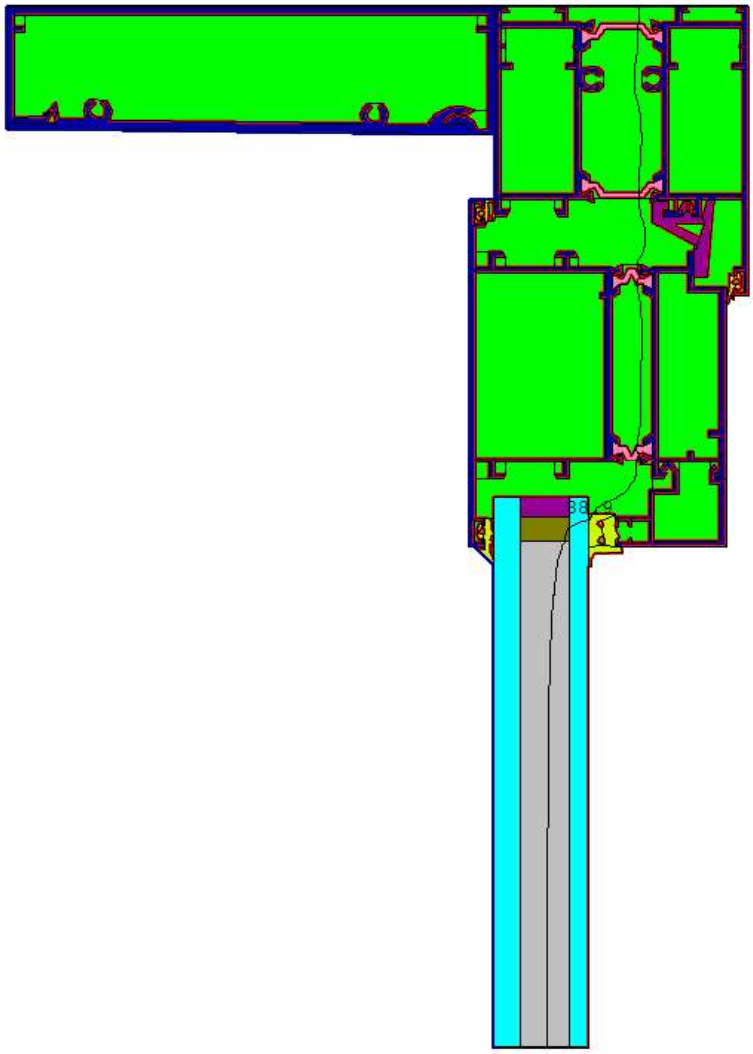
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	43.9°F
Edge of Glass Temperature	51.6°F
Coldest Interior Temperature	43.9°F

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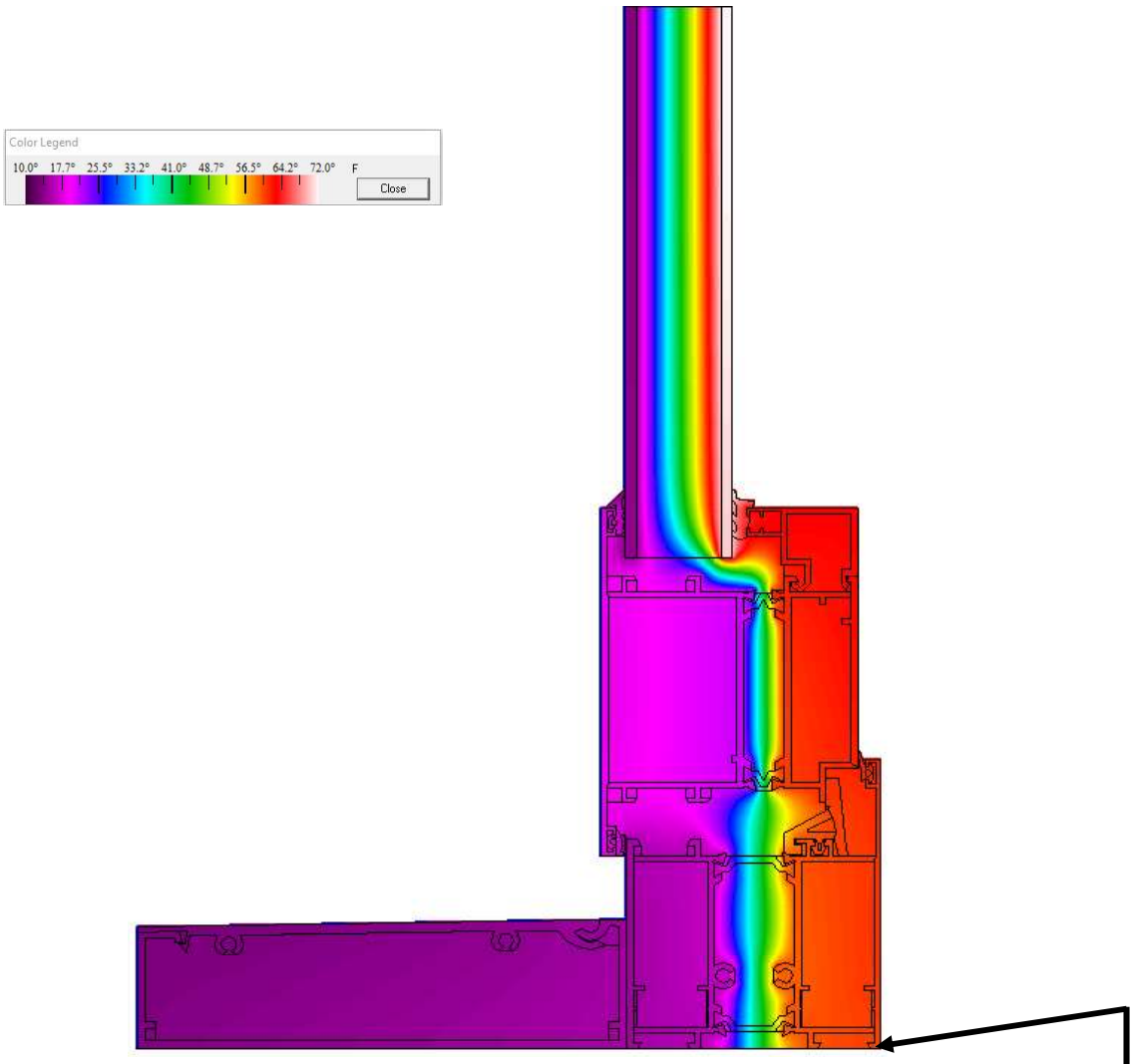
Cross Section	12/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	48.9°F
Edge of Glass Temperature	-
Coldest Interior Temperature	48.9°F

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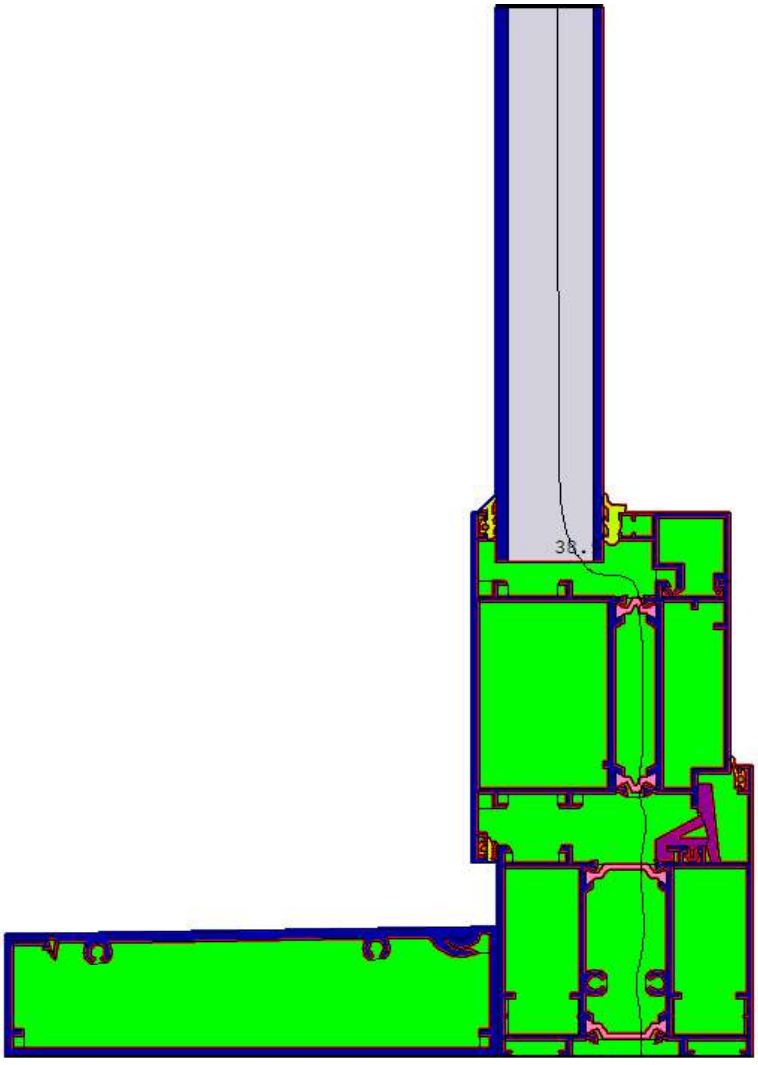
SECTION 6
SIMULATION RESULTS

DEWPOINT TEMPERATURE ANALYSIS: DEWPOINT LINE PLOT

Cross Section	12/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	48.9°F
Edge of Glass Temperature	-
Coldest Interior Temperature	48.9°F

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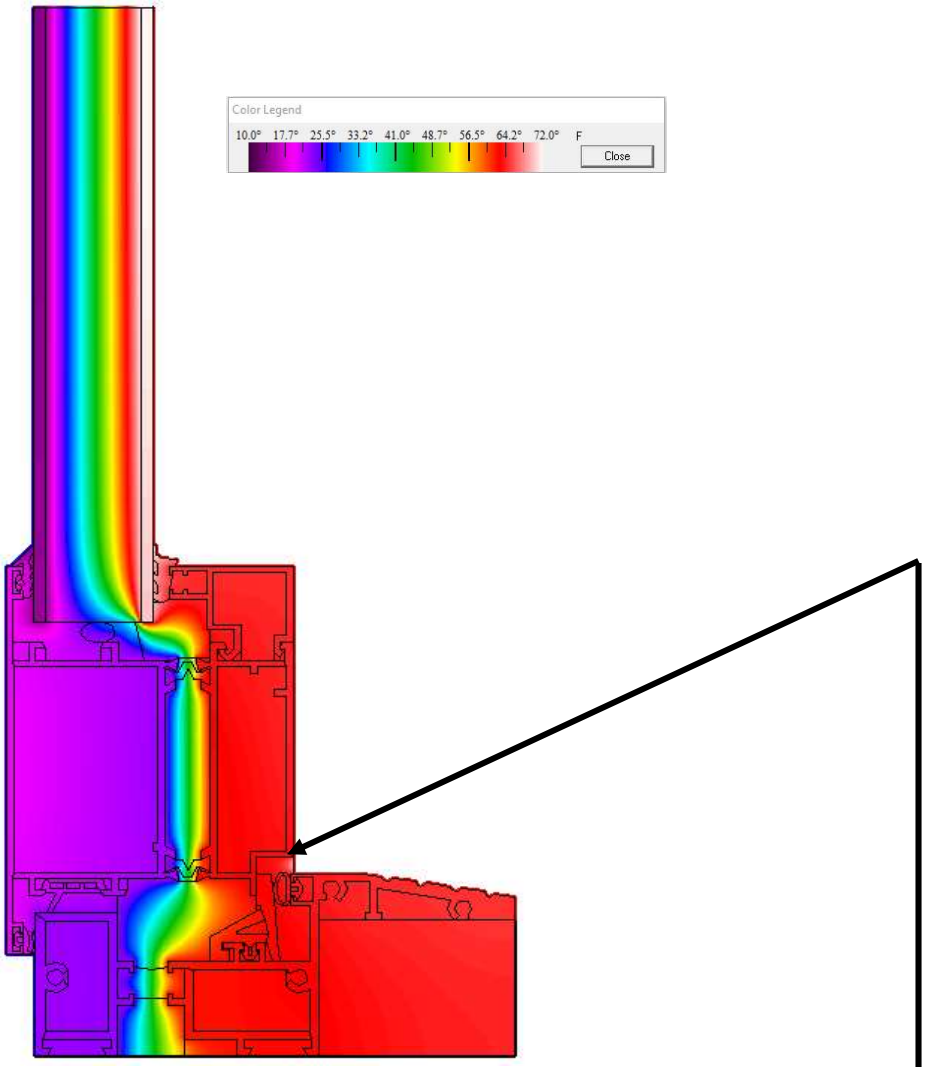
SECTION 6
SIMULATION RESULTS

DEWPOINT TEMPERATURE ANALYSIS: TEMPERATURE DISTRIBUTION PLOT

Cross Section	13/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	50.6°F
Edge of Glass Temperature	-
Coldest Interior Temperature	50.6°F

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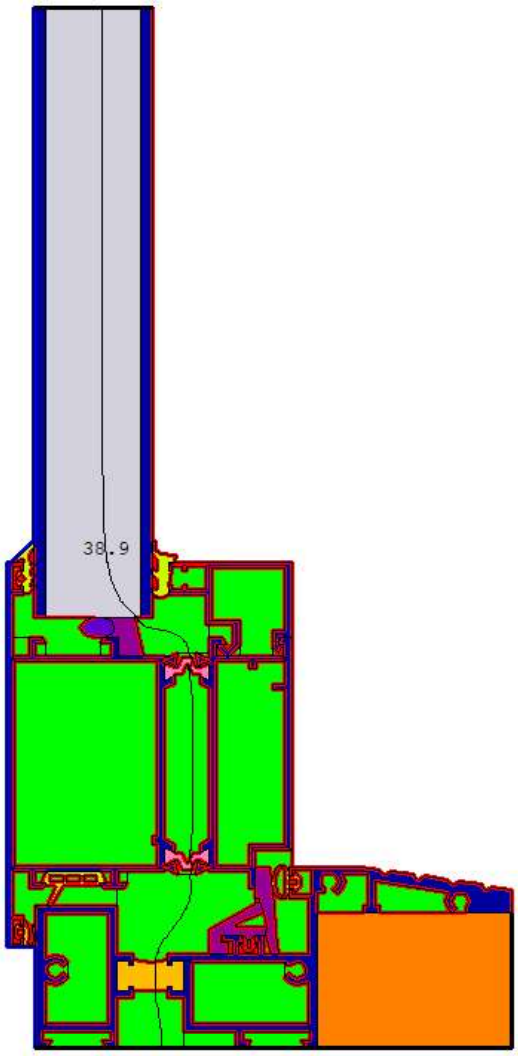
SECTION 6
SIMULATION RESULTS

DEWPOINT TEMPERATURE ANALYSIS: DEWPOINT LINE PLOT	
Cross Section	13/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	50.6°F
Edge of Glass Temperature	-
Coldest Interior Temperature	50.6°F

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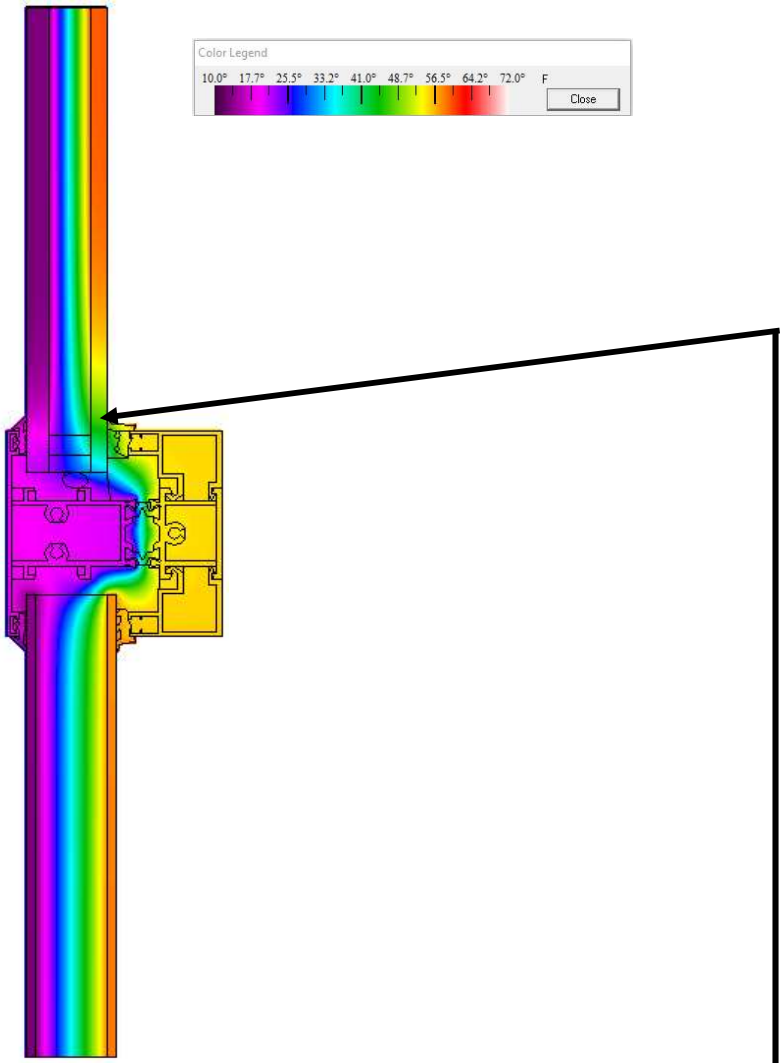
SECTION 6
SIMULATION RESULTS

DEWPOINT TEMPERATURE ANALYSIS: TEMPERATURE DISTRIBUTION PLOT

Cross Section	14/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	54.9°F
Edge of Glass Temperature	53.1°F
Coldest Interior Temperature	48.2°F

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SECTION 6
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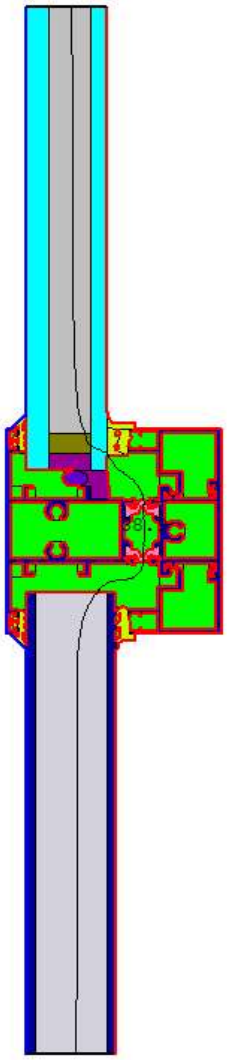
DEWPOINT TEMPERATURE ANALYSIS: DEWPOINT LINE PLOT

Cross Section	14/400
Exterior Air Temperature	10°F
Interior Air Temperature	72°F
Relative Humidity	30% RH
Exterior Wind Velocity	15 mph



Dewpoint Temperature	38.9°F
Coldest Interior Frame Temperature	54.9°F
Edge of Glass Temperature	53.1°F
Coldest Interior Temperature	48.2°F

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SECTION 6

SIMULATION RESULTS

U-FACTOR CALCULATIONS

The U-Factor of the system was determined in general accordance with ANSI/NFRC 100-2017: Procedures for Determining Fenestration Product U-Factors. Complete calculation data is shown in the charts below.

Elevation Description	U-Factor	SHGC	VT
Large Vision	0.321	0.314	0.565
Small Vision	0.360	0.288	0.513
Operable	0.343	0.310	0.555
Large Spandrel	0.086	0.001	0.000

Typical Window (Combined)	**0.335**	**0.308**	**0.553**

Typical Window w/ Shadow Box (Combined)	**0.217**	**0.152**	**0.270**

Door	**0.413**	**0.204**	**0.348**

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SECTION 6
SIMULATION RESULTS

U-FACTOR CALCULATIONS (4 Cross Section Product - FIXD, CSSV, PRAW)	
Elevation Description	Large Vision
Height:	100.240
Width:	60.120
Area:	41.850

	THERM Values			Calculated Data				
	Cross Section	**U-Factor**	**Height**	**Width**	**Area**	**U*A**	**SHGC*A**	**VT*A**
Frame	1/400 - Head	0.658	3.308	57.077	1.311	0.863	0.049	0.000
	1/400 - Sill	0.659	3.308	57.077	1.311	0.864	0.049	0.000
	1/400 - Left Jamb	0.619	3.308	96.932	2.227	1.379	0.078	0.000
	2/400 - Right Jamb	0.682	2.777	96.932	1.869	1.275	0.072	0.000
Edge	1/400 - Head	0.309	2.500	51.535	0.895	0.277	0.328	0.603
	1/400 - Sill	0.309	2.500	51.535	0.895	0.277	0.328	0.603
	1/400 - Left Jamb	0.307	2.500	91.123	1.582	0.486	0.580	1.065
	2/400 - Right Jamb	0.308	2.500	91.123	1.582	0.488	0.580	1.065
Glass	COG - GL1	0.250	88.623	49.035	30.178	7.544	11.070	20.323
	SHGC - GL1	0.367						
	VT - GL1	0.673						

Sums:	41.850	13.452	13.135	23.658

Total Product Calculations	
U-Factor:	0.321
SHGC:	0.314
VT:	0.565

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Total Quality. Assured.

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SECTION 6
SIMULATION RESULTS

U-FACTOR CALCULATIONS (4 Cross Section Product - FIXD, CSSV, PRAW)	
Elevation Description	Small Vision
Height:	34.050
Width:	60.120
Area:	14.216

	THERM Values			Calculated Data				
	Cross Section	**U-Factor**	**Height**	**Width**	**Area**	**U*A**	**SHGC*A**	**VT*A**
Frame	1/400 - Head	0.658	3.308	57.077	1.311	0.863	0.049	0.000
	5/400 - Sill	0.755	1.909	57.077	0.757	0.572	0.032	0.000
	4/400 - Left Jamb	0.619	2.777	31.441	0.606	0.375	0.021	0.000
	1/400 - Right Jamb	0.619	3.308	31.441	0.722	0.447	0.025	0.000
Edge	1/400 - Head	0.309	2.500	51.535	0.895	0.277	0.328	0.603
	5/400 - Sill	0.306	2.500	51.535	0.895	0.274	0.328	0.603
	4/400 - Left Jamb	0.305	2.500	26.332	0.457	0.140	0.168	0.308
	1/400 - Right Jamb	0.307	2.500	26.332	0.457	0.140	0.168	0.308
Glass	COG - GL1	0.250	23.832	49.035	8.115	2.029	2.977	5.465
	SHGC - GL1	0.367						
	VT - GL1	0.673						

Sums:	14.216	5.117	4.097	7.286

Total Product Calculations	
U-Factor:	0.360
SHGC:	0.288
VT:	0.513

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SECTION 6
SIMULATION RESULTS

U-FACTOR CALCULATIONS (4 Cross Section Product - FIXD, CSSV, PRAW)	
Elevation Description	Operable
Height:	66.190
Width:	60.120
Area:	27.634

	THERM Values			Calculated Data				
	Cross Section	**U-Factor**	**Height**	**Width**	**Area**	**U*A**	**SHGC*A**	**VT*A**
Frame	5/400 - Head	0.775	1.909	57.000	0.756	0.585	0.033	0.000
	3/400 - Sill	0.761	3.386	57.000	1.340	1.020	0.058	0.000
	2/400 - Left Jamb	0.754	2.854	63.542	1.260	0.950	0.054	0.000
	3/400 - Right Jamb	0.769	3.386	63.542	1.494	1.149	0.065	0.000
Edge	5/400 - Head	0.264	2.500	51.380	0.892	0.236	0.327	0.601
	3/400 - Sill	0.277	2.500	51.380	0.892	0.247	0.327	0.601
	2/400 - Left Jamb	0.273	2.500	58.395	1.014	0.277	0.372	0.683
	3/400 - Right Jamb	0.278	2.500	58.395	1.014	0.282	0.372	0.683
Glass	COG - GL1	0.250	55.895	48.880	18.973	4.743	6.960	12.777
	SHGC - GL1	0.367						
	VT - GL1	0.673						

Sums:	27.634	9.489	8.568	15.344

Total Product Calculations	
U-Factor:	0.343
SHGC:	0.310
VT:	0.555

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SECTION 6
SIMULATION RESULTS

U-FACTOR CALCULATIONS (4 Cross Section Product - FIXD, CSSV, PRAW)	
Elevation Description	Large Spandrel
Height:	100.240
Width:	60.120
Area:	41.850

	THERM Values			Calculated Data				
	Cross Section	**U-Factor**	**Height**	**Width**	**Area**	**U*A**	**SHGC*A**	**VT*A**
Frame	1a/400 - Head	0.068	3.308	57.077	1.311	0.090	0.005	0.000
	1a/400 - Sill	0.068	3.308	57.077	1.311	0.090	0.005	0.000
	1a/400 - Left Jamb	0.068	3.308	96.932	2.227	0.152	0.009	0.000
	2a/400 - Right Jamb	0.262	2.777	96.932	1.869	0.490	0.028	0.000
Edge	1a/400 - Head	0.068	2.500	51.535	0.895	0.061	0.000	0.000
	1a/400 - Sill	0.068	2.500	51.535	0.895	0.061	0.000	0.000
	1a/400 - Left Jamb	0.068	2.500	91.123	1.582	0.107	0.000	0.000
	2a/400 - Right Jamb	0.482	2.500	91.123	1.582	0.763	0.000	0.000
Glass	COG - SP1	0.059	88.623	49.035	30.178	1.777	0.000	0.000
	SHGC - SP1	0.000						
	VT - SP1	0.000						

Sums:	41.850	3.590	0.047	0.000

Total Product Calculations	
U-Factor:	0.086
SHGC:	0.001
VT:	0.000

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SECTION 6
SIMULATION RESULTS

U-FACTOR CALCULATIONS (4 Cross Section Product - FIXD, CSSV, PRAW)	
Elevation Description	Door (Vision)
Height:	98.690
Width:	46.000
Area:	31.526

	THERM Values			Calculated Data				
	Cross Section	**U-Factor**	**Height**	**Width**	**Area**	**U*A**	**SHGC*A**	**VT*A**
Frame	11/400 - Head	0.671	6.852	39.148	1.863	1.250	0.071	0.000
	14/400 - Sill	0.701	1.734	39.148	0.471	0.330	0.019	0.000
	11/400 - Left Jamb	0.654	6.852	94.397	4.492	2.935	0.167	0.000
	11/400 - Right Jamb	0.654	6.852	94.397	4.492	2.935	0.167	0.000
Edge	11/400 - Head	0.318	2.500	29.796	0.517	0.164	0.190	0.348
	14/400 - Sill	0.316	2.500	29.796	0.517	0.164	0.190	0.348
	11/400 - Left Jamb	0.315	2.500	87.604	1.521	0.479	0.558	1.024
	11/400 - Right Jamb	0.315	2.500	87.604	1.521	0.479	0.558	1.024
Glass	COG - GL1	0.250	85.104	27.296	16.132	4.033	5.917	10.864
	SHGC - GL1	0.367						
	VT - GL1	0.673						

Sums:	31.526	12.771	7.836	13.609

Total Product Calculations	
U-Factor:	0.405
SHGC:	0.249
VT:	0.432

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SECTION 6
SIMULATION RESULTS

U-FACTOR CALCULATIONS (4 Cross Section Product - FIXD, CSSV, PRAW)	
Elevation Description	Door (Panel)
Height:	23.820
Width:	46.000
Area:	7.609

	THERM Values			Calculated Data				
	Cross Section	**U-Factor**	**Height**	**Width**	**Area**	**U*A**	**SHGC*A**	**VT*A**
Frame	14/400 - Head	0.643	1.721	39.154	0.468	0.301	0.017	0.000
	13/400 - Sill	0.797	4.109	39.154	1.117	0.890	0.051	0.000
	12/400 - Left Jamb	0.589	6.846	20.905	0.994	0.585	0.033	0.000
	12/400 - Right Jamb	0.589	6.846	20.905	0.994	0.585	0.033	0.000
Edge	14/400 - Head	0.295	2.500	29.809	0.518	0.153	0.000	0.000
	13/400 - Sill	0.328	2.500	29.809	0.518	0.170	0.000	0.000
	12/400 - Left Jamb	0.309	2.500	15.490	0.269	0.083	0.000	0.000
	12/400 - Right Jamb	0.309	2.500	15.490	0.269	0.083	0.000	0.000
Glass	COG - P1	0.213	12.990	27.309	2.464	0.525	0.000	0.000
	SHGC - P1	0.000						
	VT - P1	0.000						

Sums:	7.609	3.374	0.134	0.000

Total Product Calculations	
U-Factor:	0.443
SHGC:	0.018
VT:	0.000

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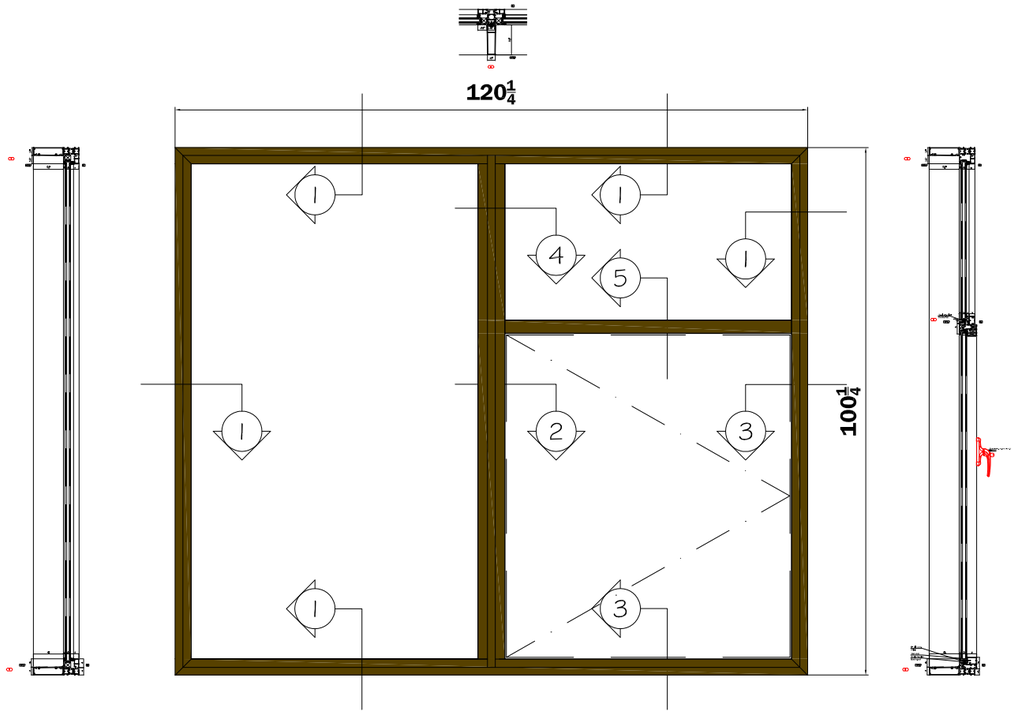
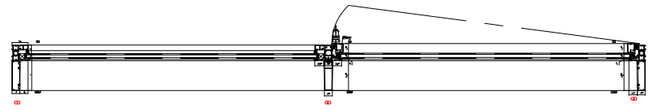
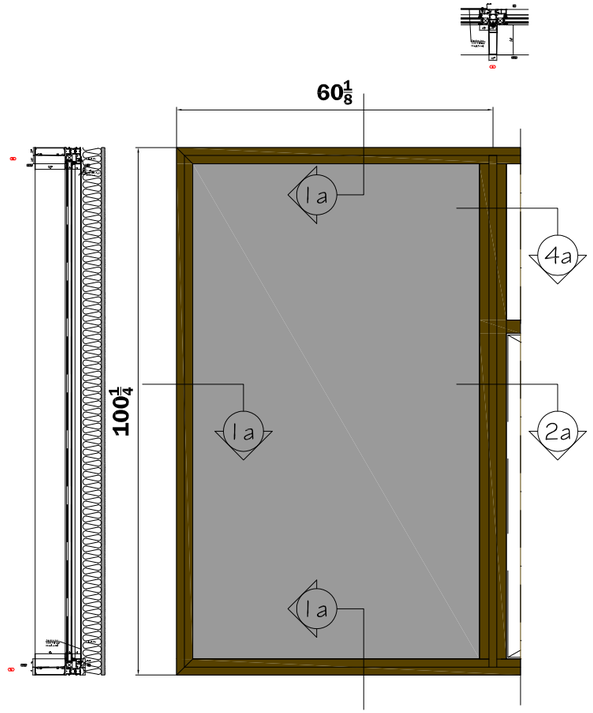
SECTION 7
DRAWINGS / BILL OF MATERIALS

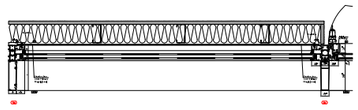
The drawings which follow have been reviewed by Intertek B&C and are representative of the simulation result(s) reported herein. Any deviations are documented herein or on the drawings.



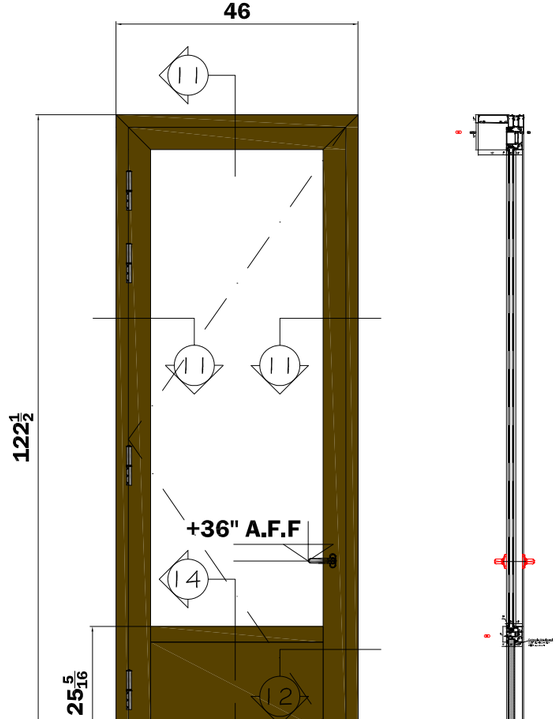


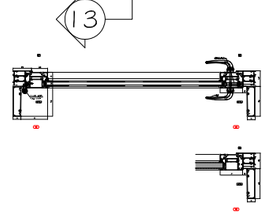
TYPICAL WINDOW





TYPICAL FIXED WINDOW WITH SHADOW BOX





TYPICAL DOOR

GLASS

GLASS TYPE SPECIFICATION:
SILICON SEALS FOR INSULATED UNITS TO BE BLACK

VISION: 1 1/8" INSULATED GLASS
OUTER PANE: 5/16" GUARDIAN SN68#2 ON CLEAR TEMPERED
9/16" BLACK SUPER SPACER TRISEAL WITH ARGON.
INNER PANE: 1/4" CLEAR TEMPERED

SHADOW BOX: 1 1/8" INSULATED GLASS
OUTER PANE: 5/16" GUARDIAN SN68#2 ON CLEAR TEMPERED
9/16" BLACK SUPER SPACER TRISEAL WITH ARGON.
INNER PANE: 1/4" CLEAR TEMPERED
ACM PANEL TO BE INSTALLED FROM INSIDE - COLOR - MATTE BSM BLACK

ALUMINUM

ALUMINUM EXTRUSIONS TO BE 6063 ALLOY TEMPER T-6

ALUMINUM FINISH

EXTERIOR - AAMA 2605 - DURANAR SUNSTORM ANODIC BRONZE PPG UC126180F.
INTERIOR - AAMA 2603 - DURACRON S600 ANODIC BRONZE UC137077.

SHADOW BOX - AAMA 2605 COLOR TO BE MATTE BSM BLACK.

HARDWARE

BY GIESSE ITALY - COLOR TIGER 68/60307 BRONZE.

GASKETS

ALL GASKETS TO BE E.P.D.M.
CENTER GASKET TO BE SILICONE

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Report #: L4252-116-45
Date: 10/13/2020
Verified by:

WINDLOCH
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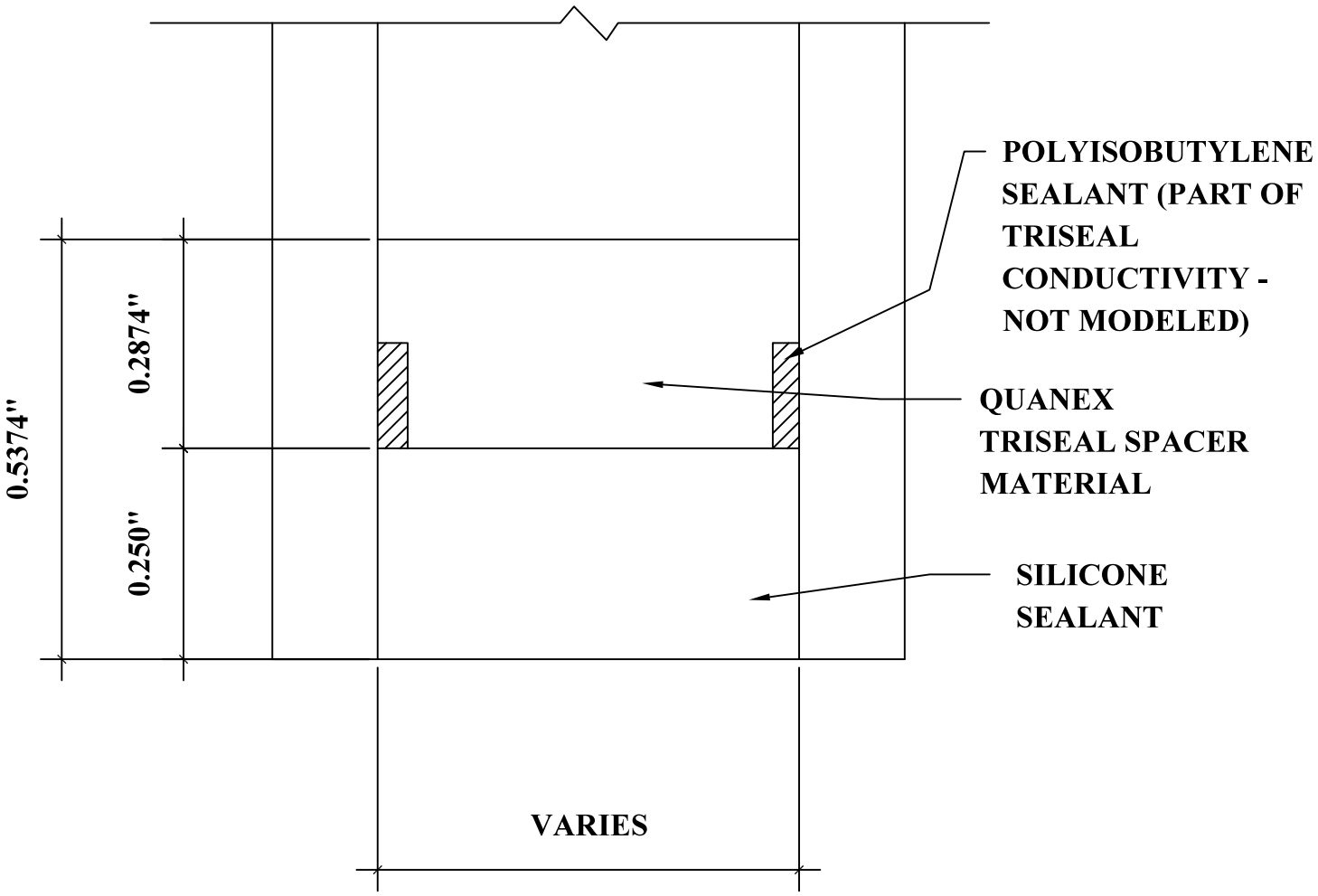
info@windloch.com
WWW.WINDLOCH.COM

REV.	DESCRIPTION	BY	DATE

PROJECT: 2461 BROADWAY
LOCATION: 2461 BROADWAY, NEW YORK, NY
ARCHITECT: ODA
CONSULTANT: TT
SHEET DESCRIPTION: TYPICAL WINDOWS/DOORS

DRAWN BY: YOAV BEN-SHIMON
SCALE:
DATE: 09/10/20
SHEET NO.: 400



DETAIL FOR THERMAL MODELING OF
QUANEX SUPER SPACER TRISEAL (ZF-D)

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SECTION 8
REVISION LOG

REVISION #	DATE	PAGES	REVISION
.01R0	10/13/20	N/A	Original Report Issued to Windloch, LLC.
.01R1	10/16/20	N/A	Add insulation and sheetrock to spandrel areas per Windloch, LLC.