

REPORT NUMBER: 100397303SAT-002 ORIGINAL ISSUE DATE: April 28, 2011 REVISED DATE: N/A

### **EVALUATION CENTER**

EPORT

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## **RENDERED TO**

## CANADIAN HOME BUILDERS ASSOCIATION EDMONTON REGION 150 SUMMERSIDE GATE SW EDMONTON AB T6X 0P5

PRODUCT EVALUATED: Exterior Wall Assemblies with Wood Framed Windows EVALUATION PROPERTY: Heat Flux through Target Wall Windows

Report of Testing Exterior Wall Assemblies with Wood Framed Windows for compliance with the applicable requirements of the following criteria: Client Specified Test Procedure

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## 2 Introduction

Intertek Testing Services NA (Intertek) has conducted testing for Canadian Home Builders Association, on exterior wall construction with wood framed windows, to evaluate the heat flux exposure through windows from a neighboring building. Testing was conducted in accordance with the client supplied test procedure adapted from *NRC-CNRC Full-Scale Fire Study of Spatial Separation*, Research Report: IRC-RR-195, Dated May 19, 2005. This evaluation began April 20, 2011 and was completed April 22, 2011.

## 3 Test Samples

### 3.1. SAMPLE SELECTION

Samples were submitted to Intertek directly from the client. Samples were not independently selected for testing. Samples were received at the Evaluation Center on April 19, 2011.

### 3.2. SAMPLE AND ASSEMBLY DESCRIPTION

Sample wall assemblies were provided pre-manufactured by the client. Each wall assembly was provided in three parts and was assembled onsite by Intertek personnel. Each test consisted of an exposing wall and a target wall. A full description of the wall construction can be found in Appendix A. A brief description of the differences in the walls can be found in the chart below:

	Wall	Wall Opening	Stud Cavity Insulation
Test A	Exposing Wall	48" x 40" wood framed window	R-20 Fiberglass insulation
	Target Wall	Two (2) 48" x 40" wood framed window	R-20 Fiberglass insulation
Test B	Exposing Wall	48" x 40" wood framed window	R-20 Fiberglass insulation
	Target Wall	Same Target Wall as Test A (New windows installed)	Same Target Wall as Test A
Test C	Exposing Wall	60" x 24" (No glass in opening)	R-20 Fiberglass insulation
	Target Wall	Same Target Wall as Test A (New windows installed)	Same Target Wall as Test A
Test D	Exposing Wall	48" x 40" wood framed window	Nominal 2 pcf Polyurethane Spray Foam
	Target Wall	Two (2) 48" x 40" wood framed window	Nominal 2 pcf Polyurethane Spray Foam

In each test, the walls were spaced with 8' of separation.

## 4 Testing and Evaluation Methods

### 4.1. INSTRUMENTATION

The fire compartment room was instrumented with four (4) thermocouples located at the center of the room spaced as seen in Appendix B. Each wall was instrumented with a total of ten (10) thermocouples as illustrated in Appendix C. The target Wall was instrumented with an additional two (2) thermocouples located behind each of the windows.

The target wall was also instrumented with five (5) Gardon Gauges to measure heat flux. One (1) Gardon gauge was placed at the horizontal center of the wall, 112" from the bottom of the target wall, flush with the exposed surface of the wall. Each window pane in the target wall was instrumented with a Gardon gauge centered in the window pane on the unexposed side of the window flush with the unexposed surface of the wall (5-1/2" from window pane without screen, 6" from window pane with screen).

#### 4.2. TEST STANDARD

The testing was performed to the specifications provided by the client and intended to replicate the testing described in the referenced test report, *NRC-CNRC Full-Scale Fire Study of Spatial Separation*, Research Report: IRC-RR-195, Dated May 19, 2005 with the modifications described in this document. Details of the test setup can be found in Appendix A. Details of instrumentation can be found in Appendix B and Appendix C.

Each test consisted of an exposing wall and a target wall as described in Section 3 and Appendix A of this document. The exposing wall was integrated with a fire compartment room. The fire compartment room dimensions can be found in Appendix B. For each test a fuel load consisting of 100 kg of 2 x 4 SPF lumber was cut and arranged in the form of two (2) cribs. An additional fuel load of 50 kg of ABS pipe was also cut and arranged as cribs on top of the two lumber cribs. The cribs were centered in the fire compartment room. Two (2) small steel pans filled with a total of 600 ml of alcohol were used as an accelerant.

## 5 Testing and Evaluation Results

### 5.1. RESULTS AND OBSERVATIONS TEST A

The test was initiated on April 20, 2011. Mark Turner, representing Landmark Group, and Brian Kobialka representing All Weather Windows, were present to witness the test. The test was initiated with the ignition of the accelerant.

Observations made during the test are listed below:

Time (min:sec)	Observations from the Fire Exposure
0:00	The test was initiated at 9:11 A.M. with the ignition of the accelerant
1:00	Abs pipe igniting
3:00	Heavy smoke from room openings



4:20	Cracking noises from exposing window
4:45	Flames from room openings
10:45	Glass broke in exposing window
11:00	Fames from exposing window
18:00	Test terminated

### 5.2. RESULTS AND OBSERVATIONS TEST B

The test was initiated on April 21, 2011. Mark Turner, representing Landmark Group, and Brian Kobialka representing All Weather Windows, were present to witness the test. The test was initiated with the ignition of the accelerant.

Observations made during the test are listed below:

Time (min:sec)	Observations from the Fire Exposure
0:00	The test was initiated at 12:45 P.M. with the ignition of the accelerant
1:30	ABS pipe melting and igniting
3:00	Heavy smoke from room openings and from the corners of the exposing window
5:45	Heavy smoke continues to emit from room openings
6:00	Flames from room openings
10:10	Cracking sounds from exposing window
15:45	Glass on exposing window broke and flames are coming out the window
22:00	Test terminated

### 5.3. RESULTS AND OBSERVATIONS TEST C

The test was initiated on April 21, 2011. Mark Turner, representing Landmark Group, and Brian Kobialka representing All Weather Windows, were present to witness the test. The test was initiated with the ignition of the accelerant.

Observations made during the test are listed below:

Time (min:sec)	Observations from the Fire Exposure
0:00	The test was initiated at 5:06 P.M. with the ignition of the accelerant
1:20	Smoke emitting from the exposing window
2:20	ABS is ignited
3:00	Flame tips are out the window
3:10	Heavy flaming out the window
4:15	Flame spreading up exposing wall and igniting gypsum paper. Flame tips
	reaching target wall
5:00	Gypsum paper has burnt off exposing wall 6' above window
7:00	Exterior window pane on lower target wall window has cracked
8:30	Smoke has lightened in color
12:30	Gypsum in fire compartment room has fallen off part of ceiling



15:20	Fiberglass insulation has fallen out exposing window
19:00	Test terminated

### 5.4. RESULTS AND OBSERVATIONS TEST D

The test was initiated on April 22, 2011. Mark Turner, representing Landmark Group, and Brian Kobialka representing All Weather Windows, were present to witness the test. The test was initiated with the ignition of the accelerant.

Observations made during the test are listed below:

Time (min:sec)	Observations from the Fire Exposure
0:00	The test was initiated at 12:56 P.M with the ignition of the accelerant
0:50	Smoke from room openings
1:10	Exposing window glass has discolored
2:22	Exposing window glass cracking
2:42	Exposing window glass cracking more
2:55	Black smoke emitting from around window frame
4:30	Exposing window continues to crack
5:30	Smoke density increasing
6:00	Flames from the room openings
10:00	Exposing window glass broke
10:38	Glass broke open and flames
12:20	Flames 5' above exposing window
13:00	Window fully breached
15:00	Drywall on exposing wall flaming at joints aboveexposing window
19:00	Flames from window increasing
20:00	Test terminated



## 6 Conclusion

Intertek Testing Services NA (Intertek) has conducted testing for Canadian Home Builders Association, on exterior wall construction with wood framed windows, to evaluate the heat flux exposure through windows from a neighboring building. Testing was conducted in accordance with the client supplied test procedure adapted from *NRC-CNRC Full-Scale Fire Study of Spatial Separation*, Research Report: IRC-RR-195, Dated May 19, 2005. This evaluation began April 20, 2011 and was completed April 22, 2011.

Testing was conducted for research purposes only, and performed as described in Section 5 of this test report. Heat fluxes behind target windows did not exceed 12 kW/m<sup>2</sup>. Test data can be found in Appendices D, E, F and G.

### INTERTEK TESTING SERVICES NA, INC

Reported by:

Joshua A. Vestal Project Engineer, Fire Resistance

Reviewed by:

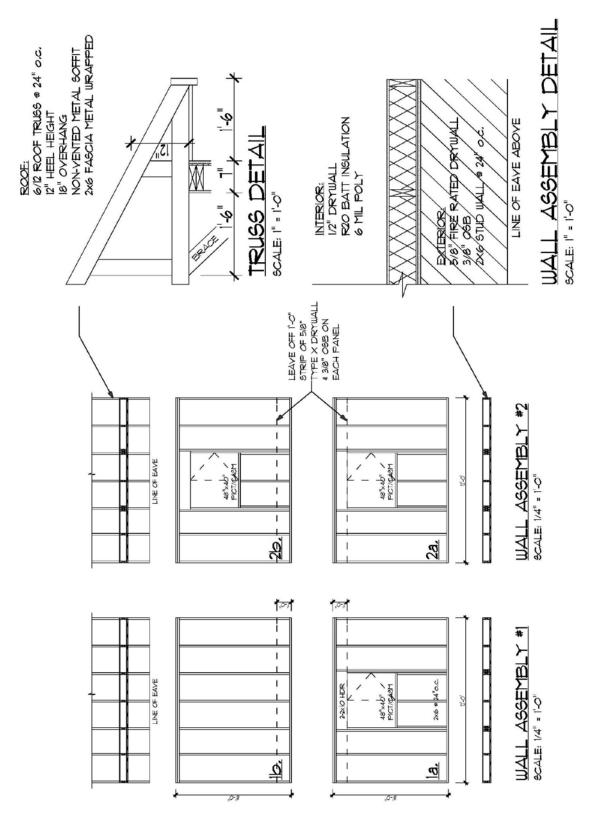
Victor M. Burgos Test Engineer, Fire Resistance



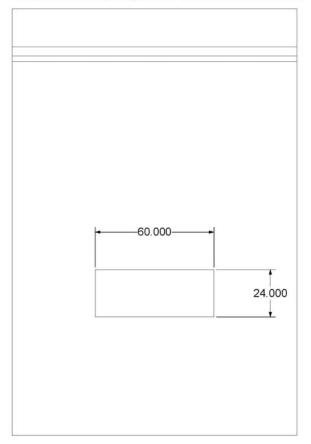
# APPENDIX A Test Assembly Descriptions







Test C Wall was built identical to Test A and B with the exception of theExposing window dimensions shown below





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Canadian Home Builders' Association

CHBA – Edmonton Region 150 Summerside Gate SW Edmonton, Alberta T6X 0P5 Phone 780-425-1020 Fax 780-425-1031 Web chbaedmonton.ca

Edited by Josh Vestal of Intertek for Final Details Assembly wall components for fire testing.

2 wall assembly's 12' long opposite each other at 8 feet apart. Built in two pieces to accommodate transportation. See detail drawing.

Wall assembly:
2 x 6 stud wall framing at 24" oc., two stories in height (16').
2 x 10 window headers.
3/8" OSB sheeting on exterior.
5/8" Exterior Board Type X drywall on exterior of OSB.
R-20 Fiberglass batt insulation.
6 Mil poly vapour barrier.
1/2" drywall to interior side of assembly.

 $2 \ge 4 \le 12^{\circ}$  pieces provided for holding stacked wall assemblies together.  $2 \ge 4 \ge 3^{\circ}$  pieces provided for bracing roof assembly on top of wall panel.

Roof assembly. See detail drawing. Non-vented soffit to 18" roof overhang. Fiberglass shingle to roof component.

Windows: 48 inches x 40 inches (width x height) Metal clad wood – Casement/fixed. Triple glazing with Low "E" and Argon filled.

Assembly of wall panels and roof.

Assembly in front of source fire (Exposing wall). Place panel 1a (with window opening) in vertical position. Place panel 1b (no window opening) on top of panel 1a. Screw though bottom plate of panel 1b into top plate of panel 1a. Use 2 x 6 x 12' boards to tie the two panels together, which will provide rigidity. Attach 3/8" OSB strip to the middle portion of panel 1a and 1b. Attach 5/8 Type X drywall strip on top of OSB strip. Attach roof assembly on top of wall panel 1b. Roof soffit to exterior side of wall assembly (5/8" drywall & 3/8" OSB side) Brace roof assembly with 2 x 4 x 3' boards provided. Window opening was adjusted to 60" wide by 24" tall. Top of window opening was placed in same location as original opening.





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Assembly number 2 (Target wall) is 8 feet horizontally from first wall assembly. Place panel 2a (with window opening) in vertical position. Place panel 2b (with window opening) on top of panel 2a. Screw though bottom plate of panel 2b into top plate of panel 2a. Use 2 x 6 x 12' boards to tie the two panels together, which will provide rigidity. Attach 3/8" OSB strip to the middle portion of panel 2a and 2b. Attach 5/8 Type X drywall strip on top of OSB strip. Attach roof assembly on top of wall panel 2b. Roof soffit to exterior side of wall assembly (5/8" drywall & 3/8" OSB side) Brace roof assembly with 2 x 4 x 3' boards provided.

For Test A, B, and C the same target wall was utilized. New widows were installed in the target wall for each test.

For Test C the exposing wall opening was modified to have a 24" tall by 60" tall window. No glass was installed in this opening.

For Test D the wall assemblies were identical to Test A as stated above with the following changes.

- R-20 Fiberglass Batt Insulation was not installed.
- Nominal 2 pcf Polyurethane Spray Foam insulation was installed in the wall cavity.









Wednesday, April 20, 2011

Attn: Joshua Vestal, Project Engineer Intertek, 16015 Shady Falls Road Elmendorf, TX 78112 The information contained here within is for the purpose of the testing authority and the data supporting the test reports, and shall not be duplicated distributed or shared without written consent from All Weather Windows Ltd.

Subject: Window Product Details for CHBA - Edmonton Side Wall Fire Protection Tests

The window products supplied were as follows.

Overall Frame Size: 1203mm wide x 1000mm high.

#### Window Product Configuration:

Comprised of 2 individual window units mulled together.

- One aluminum clad wood out swing casement window.
- One aluminum clad wood picture window.

<u>Main window frame</u>: Western Canadian Pacific Hemlock, clear stain grade with no finger joints or laminated components. The wood is preservative treated with Dryvac N1010 Water Repellent Wood Preservative. The moisture content on the wood at processing time at NCFP is a range between 8%-12%.

The exterior of the frame is fully clad with 1.27mm extruded aluminum, including the nailing flange which is an integral part of the frame cladding.

<u>Frame</u>; thickness is 30mm and the frame depth into the wall from the nailing flange to the inside of the main frame is 4 9/16" plus an extension jamb measuring 2" in depth for a total of 6 9/16". <u>Operating Sash</u>: Sash thickness 56.8mm and 54mm at it's highest point. Sash material is solid hemlock wood with 0.53mm roll formed aluminum clad on the exterior.

#### Glazing:

<u>Product Type 1:</u> Triple Pane Sealed Unit comprised of 3 panes of glass at 3mm thick each, and a Pyrolytic Low E (manufactured by AGC Flat Glass North America under the brand name Comfort E2) coating on surface #5, and argon gas fill in both air spaces. The spacer is a 12.7mm thick extruded silicone foam spacer (manufactured by EdgeTech under the name Super Spacer), and secondary sealed with butyl hot melt sealant.

The AGC Glass Performance Calc Data for this glass configuration is as follows.

Visible Light Transmittance: 69% Visible Light Reflectance Outdoors: 21% Solar Energy Transmittance: 53% Solar Energy Reflectance Outdoors: 21% UV Light Transmittance: 37% U-Value: 0.21 Solar Heat Gain Coefficient: 0.66 Shading Coefficient: 0.76 Relative Heat Gain (BTU/Hr/Sq.Ft.): 0.76

Product Type 2: Triple Pane Sealed Unit comprised of 3 panes of glass of which the outboard pane is 7mm thick GPW (Georgian Polished Wire) and the center pane at 3mm thick, and the inboard pane at 3mm thick with a Pyrolytic Low E (manufactured by AGC Flat Glass North America under the brand name Comfort E2) coating on surface #5, and argon gas fill in both Window Details for CHBA Edm Intertek Side Wall Fire Protection Tests Page 1 of 3 21/04/11 9:43 AM



All, Weather Windows, Head Office & Manufacturing 18550 – 118A Avenue, Edmonton, Alberta, CANADA T5S 2K7 Phone: (780) 451-0670 Fax: (780) 453-3395









airspaces. The spacer is a 12.7mm thick extruded silicone foam spacer (manufactured by EdgeTech under the name Super Spacer), and secondary sealed with butyl hotmelt sealant.

#### **Glazing Method:**

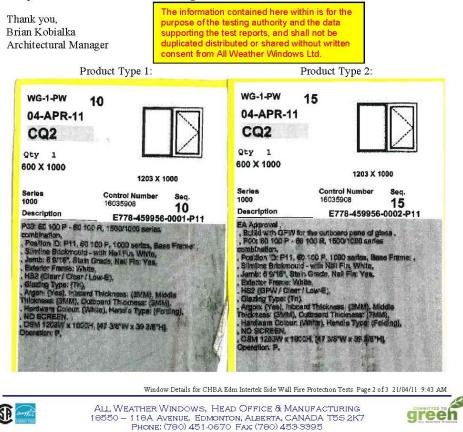
<u>Operating Sash</u>: The glass is placed into the frame from the interior and is held in the sash with wood glazing stops fastened with brad nails on the inside of the window sash. <u>Stationary Picture Window</u>: The glass is placed into the frame from the exterior and is held in place with extruded aluminum glazing stops that are snapped in place.

#### Insect Screen:

The screen frame is roll formed aluminum, with a fiberglass screen mesh at a count of 18x16 per square inch.

#### Hardware for Operating Casement Window: Truth Hardware series Encore operator.

The production stickers for the two configurations of windows are included below.



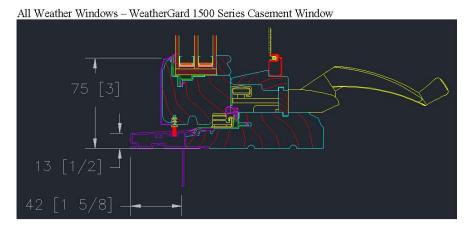




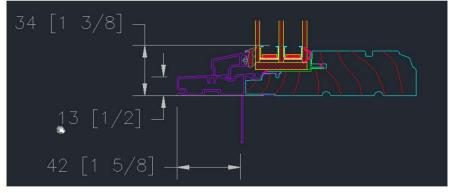


The information contained here within is for the purpose of the testing authority and the data supporting the test reports, and shall not be duplicated distributed or shared without written consent from All Weather Windows Ltd.

Product CAD details as tested shown below:



All Weather Windows - WeatherGard 1000 Series Picture Window



Window Details for CHBA Edm Intertek Side Wall Fire Protection Tests Page 3 of 3 21/04/11 9:43 AM



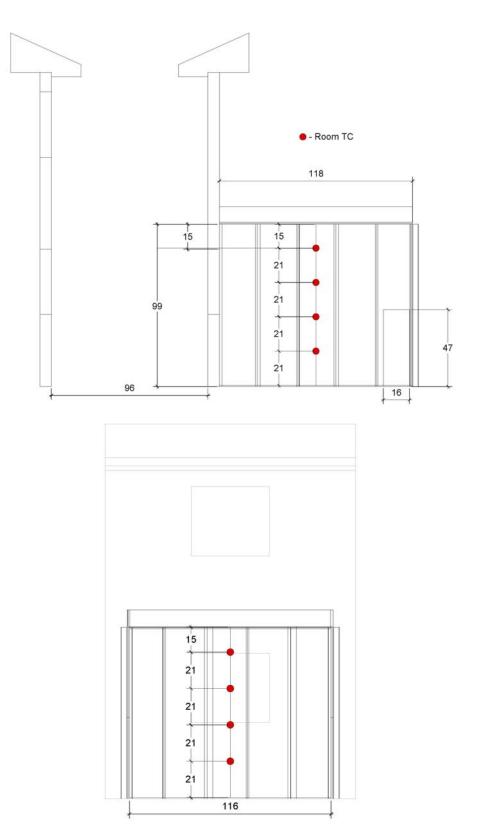
All Weather Windows, Head Office & Manufacturing 18550 – 118A Avenue, Edmonton, Alberta, CANADA T5S 2K7 Phone: (780) 451-0670 Fax: (780) 453-3395





# APPENDIX B Fire Compartment Room Description

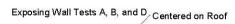


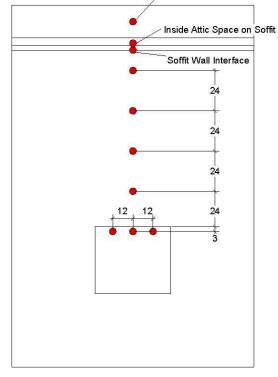


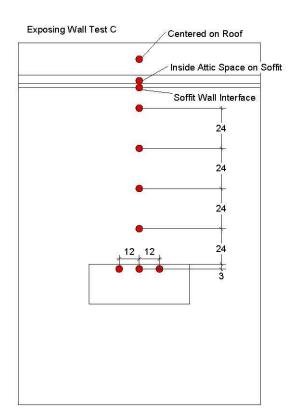


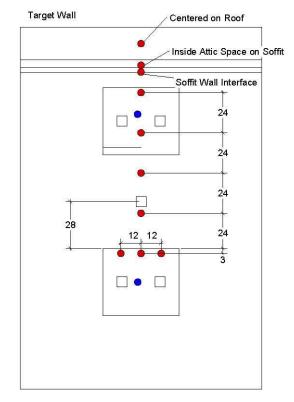
# APPENDIX C Wall Instrumentation







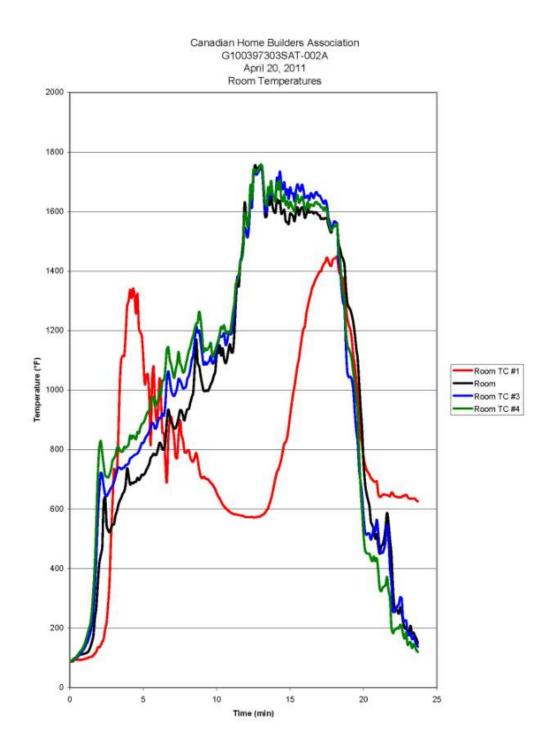




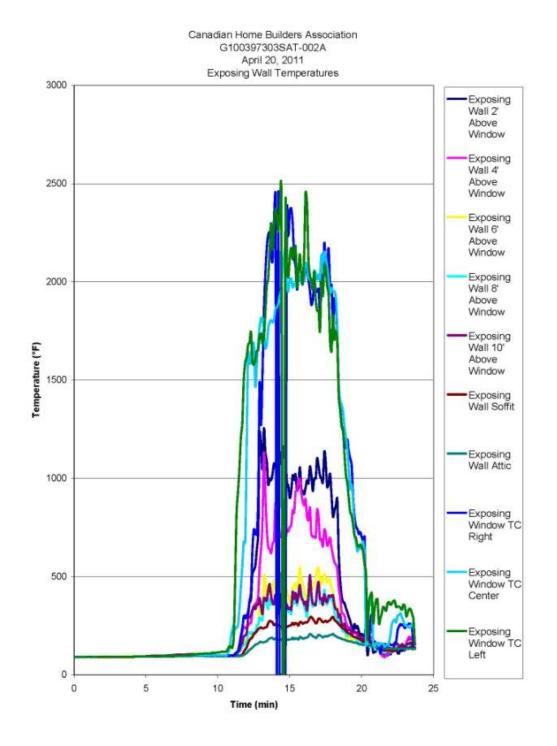
- TC on exposed side
- 🔵 TC behind wall
- 🗌 Gardon Gauge

# APPENDIX D Test A Data

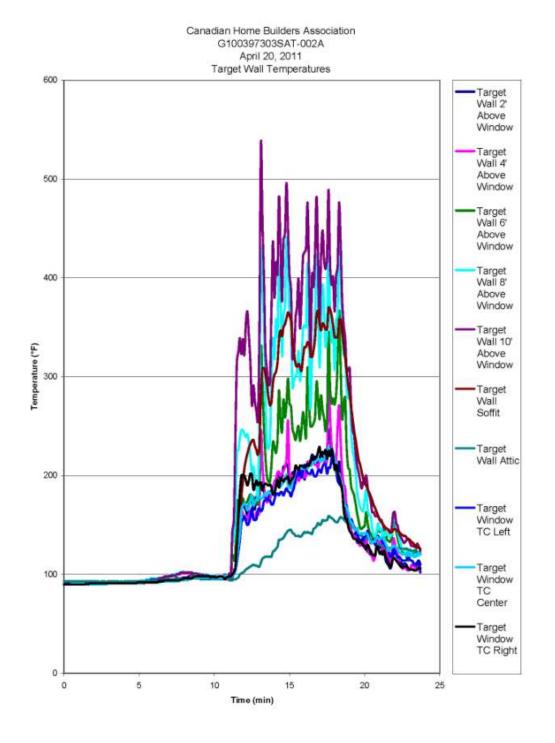




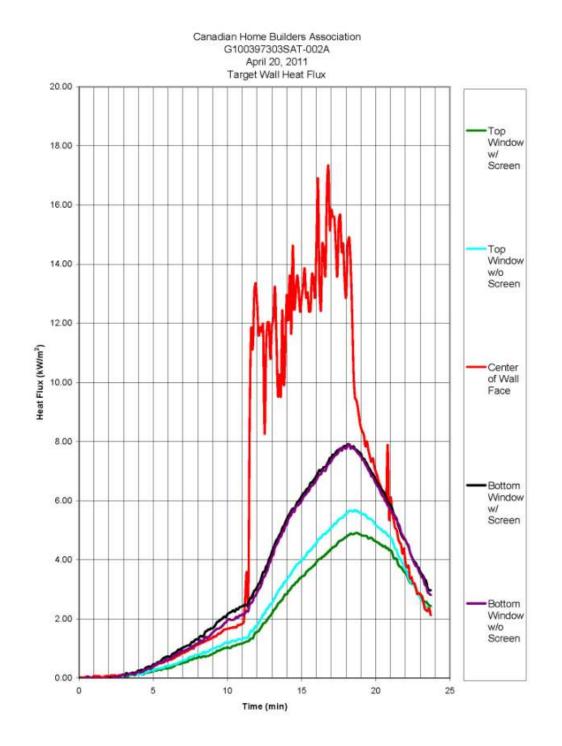




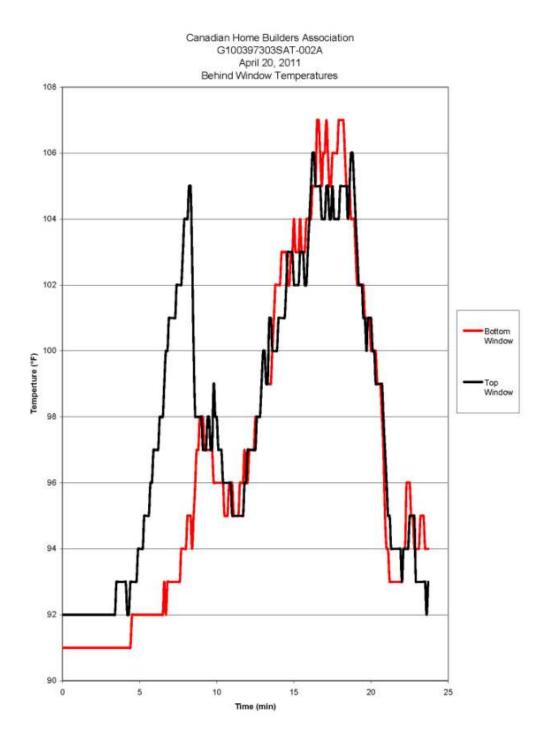
Intertek











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Canadian Home Builders Association

April 20, 2011

Time (min)		Room TC #1 ("F)	Room TC #2 (°F)		Room TC #3 (°F)		Room TC #4 (°F)	
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	0.6	94 94		107		108		114
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	0.9	95 98		113		127		137 147
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	1.2	99 102		119		154 189		180
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	2.7	505		522 535		662 671		717
	2.9	617		548		879		762
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	7.3	771		887	1	008		090
	7.4	846 899		908 932		037		128
	7.6	850		930	1	021	1	079
	7.7	832		913 898		006		059
	7.9	789		921	i - 1	011	1	087
	8 8.1	796 797		935 937		038		109
	8.2	773		957	1	070	1	145
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Canadian Home Builders Association

April 20, 2011

Time		Room TC #1	Room TC #2	Room TC#3	Room TC #4
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	9.3	70			
	9.4	70			
	9.6	68			
	9.7	68			
	9.8	67			
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	10	65		0 113	
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	10.2	62			8 1212
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	10.8	59			
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	12.4	57			
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	14.8	84			
	14.9 15	87	6 155 6 159	8 164 3 168	
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	15.7	114			
	15.8	117			
	16	121			
	16.1	125	6 159	0 164	9 1611
	16.2	128	1 160	7 165	
	16.3	130			
	16.4	132	2 159		
	16.5 16.6	134			
	16.6	135			
	16.7	130		8 166	
	16.9	138			
	17	120	8 158	7 165	4 1824
	17.1	139	9 157	5 164	5 1614
	17.2	141			
	100				
	17 1 17 2 17 3 17 4	142			



Intertek



Room TC 41 TC 51 17.5 1 17.5 1 17.7 1 18.1 18.1 18.2 18.3 18.4 18.5 18.7 18.9 19.3 19.3 19.4 19.3 19.4 19.3 19.3 19.4 19.3 19.3 19.4 19.5 19.5 19.7 20.1 20.1 20.1 20.7 20.9 20.7 20.9 21.7 21.5 22.5 23.5

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	TC Left	TC Center	w Exposing Window TC Right	2' Above Window	4' Above Window	w 6' Above Windo	w 8' Above Windo	Exposing Wall w 10' Above Window	w Soffit	Exposing Wa Attic
n)	TC #5 ("F)	TC #6 ("F)	TC #7 ("F)	TC #8 (°F)	TC #9 (°F)	TC #10 ("F)	TC #11 ("F)	TC #12 ("F)	TC #13 (*F)	TC #14 ("F)
				92						
0.1	1 9	1 9	2 92	92	93	2 9	3 9	2 9	1 91	1 9
0.3				92						
0.0				92 92						
0.0	5 8	1 9	1 92	92	91	2 9	3 9	2 9		1 9
0.0			2 92 2 92	92 92	93	2 9		2 9		
0.8				92						
0.9	9 9:	2 9	2 92	92	93	2 9	3 9	2 9	1 91	1 9
1		2 9 2 9	1 92 2 92	92 82	93	2 9 2 9		2 9		
1.2	2 93	2 9	2 92	92	93	2 9	3 9	2 9	1 91	1 9
1.3				92						
14				92 92						
1.6	6 9	1 9	2 92	92	91	2 9	3 9	2 9	1 91	1 9
1.0				92						
1.5				92						
1	2 93	2 9	2 92	93	93	3 9	4 9	3 93	2 91	1 9
2:				93 93						
2.3	3 93	2 9	2 92	93	93	3 9	4 9	3 93		1 9
2.4				93						
25	5 9: 6 9:		2 92 2 93	93 93		3 9 2 9				
2.1	7 93	3 9	2 93	83	93	3 9	3 9	2 93	3 91	1 9
2.8				93 93						
29				93						
3.	1 83	3 9	2 93	93	93	3 9	3 9	2 9	3 91	1 9
33		3 9 3 9	2 93 2 93	93	93	3 9 3 9		2 9: 2 9:		
3.4				93						
3.	5 93	3 9	2 93	93	93	3 9	4 9	2 93	2 91	1 8
3.6				93 93						
3.6		3 9	3 93	93	94	4 9	4 9	3 93	3 91	1 9
3.9				93						
4.1				93 93						
4.3	2 93	3 9	3 93	93	93	3 9	4 9	4 94	4 93	2 9
43				93 93						
4.5				93						
4.8	6 94	4 9	3 93	93	94	4 9	5 9	4 94	4 93	2 9
4.1				93						
4.5				93						
6	5 94	4 9	3 94	93	94	4 9	5 9	5 9	5 93	2 9
5.1				93 93						
5:	3 9-	4 9	3 94	94	94	4 9	6 9	7 91	8 93	2 9
5.4				94 94						
5.6				94						
5.7	7 9:	5 9	4 95	94	96	6 9	7 9	8 91	9 93	2 9
5.8			4 95 4 95	94 94						
2.3			5 95	94	95	5 9	7 9			3 9
6.1	1 81	5 9	5 95	94	9	5 9	7 9	8 91	8 93	3 8
61				95 95						
8.		7 9	5 96	95	98	8 9				
6.6 6.6				96 96						
6.7				96						
6.6	9 9	7 9	5 96	96	9	7 10	0 10	1 10	9:	3 9
6.9				96 96						
7	1 91	7 9	8 97	96	99	9 10	1 10	3 10:	2 94	4 9
7 3	2 91	3 9	6 97	97	100	0 10	3 10	3 10:	3 94	4 9
73				97 97						
7.5	5 91	B 9	7 98	97	100		2 10		3 94	4 9
7.6	6 91	9 9	7 98	97	10	1 10	3 10	4 10-	4 96	5 9
7.2				97						
7.5	9 10	9 9	8 100	98	10:	2 10	4 10	5 10	5 91	7 9
1	8 10	9 9	8 99	98	10	2 10	4 10	5 10	5 97	7 9
8.1				99						
8.3	3 10:	3 9	9 100	99	10:	2 10	6 10	7 10	B 96	5 9
8.4	4 10:	3 9	9 99	99	10	1 10	4 10	5 10	6 96	8 9
8.5	5 10 6 10			99 99	10			4 10: 3 10:	5 91	

	Exposing Wi TC Left TC #5		Exposing Wind TC Center TC #6	low Exp TC TC	Right	v Exposing Wall 2' Above Windov TC #8	Exposing Wall 4' Above Windov TC #9	Exposing Wall 6' Above Windo TC #10	Exposing w 8' Above TC #11	g Wall Window	Exposing Wall 10' Above Window TC #12	Exposing Wall # Soffit TC #13	Exposing W Attic TC#14	W
)	('F)		(°F)	(°F)	1	(°F)	(°F)	(°F)	(*F)		(°F)	(*F)	(*F)	
8.7 8.8		107 108		101	10					102				
8.9		108		100	10					100				
9		108		100	10	98 98	8 98		9	99	99	9 96	5	8
9.1		110		100	10				9	99				1220
9.2		109		100	10				8	98 99				100
9.4		110		100	10				9	99				
9.5		110		100	10					99				3
9.6 9.7		112 112		100	91					99 99				and and
9.8		112		99	95				8	99				19
9.9		113		100	90				8	99				3
10		115 114		100	91				8	98 98				No.
10.2		117		100	10				8	97				
10.3		118		100	9				7	97				1
10.4		117		100	95				8	97				2
10.5 10.6		118 120		100	91				8	97 96				1
10.7		133	1 1	112	91	8 91	9	7 9	7	97	91	7 96	3	3
10.8		145		128	9					97				1
10.9		143 138		190 226	10				8	98 97				
11.1		187		254	95	3 91	7 91	7 9	8	97	97	7 95	5	1
11.2		483		234	10				9	98				
11.3		825 933		241 255	114					106 107				-
11.5		1053	1	340	15		1 14	4 11		119				
11.6		1207		448	194					129				5
11.7		1285		557 877	241					143				10
11.8 11.9		1589		671	20					154				10
12		1616		151	29					168				1
12.1		1679		640	303					216				13
12.2 12.3		1691 1745		583 618	376					217 208				13
12.4		1589		684	62					219				13
12.5		1578		888	73					204				14
12.6		1600 1647		469 567	71					220 251				16
12.3		1853		891	89					251				15
12.9		1725		769	148		544	4 34	3	291		1 236		16
13		1737		814	127					279				16
13.1 13.2		1688		816 740	153					278 392				16
13.3		1844		662	203					385				16
13.4		1982		680	2174					353				17
13.5		2017		766	223					337				18
13.6		2164		794 806	225					386 360				18
13.8		2165		794	210					361				16
13.9		2287		808	2310					364				18
14		2371 2340		862 869 RA1	244 D PROBE	3 1062				372 338				18
14.2		2255		892	246I					295				18
14.3		2361	19	930 BAI	DPROBE	1098	698	8 42	0	324	339	9 247		17
14.4	BAD PROBE	2500			D PROBE D PROBE	1134				378 428				18
14.5	BAD PROBE		21	132 BAI	D PROBE	1104				428				18
14.7		2392	21	169 BAI	DPROBE	1097	75	7 46	6	369	351	1 246		17
14.8		2046		968	237					358				18
14.9 15		2023 2126		951 014	2234					322 319				12
15.1		2173		017	237					310				18
15.2		2114	15	973	229	5 1015	5 83	7 44	8	392	423	3 265	5	18
15.3 15.4		2166		990 987	213					363 393				18
15.5		1973		971	1963					354				18
15.8		2059	20	015	2015	5 963	991	3 47	4	398	409	9 251		18
15.7		2140		023	2013					448				15
15.8 15.9		2034		997 986	200					413				19
18		2149		029	201	919		4 42	5	350				18
16.1		2454	20	097	206	s 954	89	5 39		324	372	2 268		18
16.2		2392		085	205					295				19
16.3 16.4		2109 2032		024	201				8	375 463				19
16.5		2006	20	001	1883	3 1015	5 716	6 43	7	380	415	5 295	5	20
16.6		1963	15	982	1905	3 936	3 70:	2 43	5	347	362	2 285	5	15
16.7		2053 1912	20	056 044	200		1 70: 8 691			364 369				15
16.8 16.9		1812		044	196					389 423				18
17		1853	20	037	1964	1063	80	3 54	4	447	472	2 286	8	20
17.1		1749		012	185			47	5	367				20
17.2		2002 1928		139 043	211					382 382				19
16.3		1928		043 151	198	3 1135			0	382	356	268	1	19

003873	035AT-002A				Sanauk	an Home Builders A	and a second and a				April 20, 2
	Exposing V TC Left	Nindow	Exposing Window TC Center	w Exposing Windov TC Right		Exposing Wall 4' Above Window	Exposing Wall 6' Above Window	Exposing Wall r8' Above Window	Exposing Wall 10' Above Window	Exposing Wall Soffit	Exposing W
ne	TC #5		TC #6	TC #7	TC #8	TC #9	TC #10	TC#11	TC#12	TC #13	TC #14
in)	("F)		("F)	(°F)	(°F)	(°F)	(°F)	("F)	(°F)	(*F)	(*F)
17.5	5	2068	212	5 208		718	496			275	1
17.6	5	1977	207	7 2084	956			357	371	269	1
17.7	7	1937	201	2 2170	971	672	485	i 387	404	275	2
17.8	в	1697	194	1 1978	1023	698	487	404	398	278	2
17.8	9	1646	196	8 1986	918	648	444	382	403	289	2
18	8	1828	195	0 179	6 806	605	415	369	405	295	2
18.1	1	1706	195	2 191	835	576	375	323	356	282	2
18 1	2	1749	192	4 189	881	561	354	298	334	273	1
18.3	3	1703	178	2 1708	8 897	540	345	289	333	267	1
18.4	1	1423	149	3 144	622	447	325	261	282	258	1
18.5	5	1347	139	3 136	488	397	302	282	308	251	1
18.6	8	1267	137	6 1274	404	322	240	241	263	243	1
18.7	7	1251	134	0 1243	373	312	230	220	250	237	1
18.8	в	1123	125	9 1224	365	302	223	235	260	232	1
18.9		1022	121								
15	9	976	114	6 119	319	248	185	198	222	216	1
19.1	1	901	104	6 113	3 295	238	185	207	232	212	1
19.1	2	829	94	6 110	273	242	201	210	227	208	1
19.3	3	812	96	9 1070	248	218	180	194	219	202	1
19.4	9	765	88	2 910	220	209	175	197	217	197	1
19.5		708	72								
19.6		697	67								
19.7		660	83								
19.6		852	64								
19.9	9	663	64	8 72	198	176	151	153	192	179	1
20	0	852	84	2 70	209	191	164	184	183	174	1
20.1	1	627	67	9 68	195	179	156	154	168	170	1
20.3		561	60								
20.3	3	521	15	3 17	3 240	191					
20.4		180	16								
20.6		367	35								
20.6		404	35								
20.7		417	40								
20.8		264	15								
20.5		334	14								
21	1	382	16	2 16	122	139	138	131	153	142	1
21.1		385	16								
21.3		261	14								
21.3		286	15								
21.4		316	15								
21.5		346	15								
21.8		337	14								
21.7		327	15								
21.8		364	15								
21.5		370	16								
2.		357	20								
22.1		363	25								
22 2		376	27								
22.3		376	28								
22.4		345	26								
22.5		349	30								
22.8		347	30								
22.7		341	31								
22.8		332	29	3 25	122						
22.5		358	27								
23		350	25								
23.1		298	25								
23.		316	24								
23.3		335	24								
23.4		334	24								
23.5		312	26								
23.6		281	24								
23.1	1	157	15	5 15	137	151	135	130	138	137	1



me iin)	Target Windo TC Left TC #21 (°F)	w Target Windo TC Center TC #22 (°F)	w Target Windov TC Right TC #23 (°F)	w Target Wall 2' A bove Window TC #24 ('F)	Target Wall w 4' Above Wind TC #25 ("F)	Target Wall ow 6' Above Windo TC #26 ("F)	Target Wall w 8° Above Windo TC #27 (°F)	Target Wall ow 10° Above Wind TC #28 ("F)	Target V low Soffit TC #29 ("F)	All Target W Attic TC #30 ("F)	fall
0			0 9					31 31	90 90	90 91	93
0	2 9	10 5	0 9	0 9	1	91	91 5	91	90	91	93
0			0 9					91 91	90	90 90	93 93
0	5 6	90 96	0 9	0 9	1	91	31 1	31	90	90	93
0			10 9 10 9					91 91	90 90	90 90	93
0			0 9					31	90	90	93 93
0			0 9		!			91 91	90 90	90 90	93 93
1	1 6	80 8	0 9	0 9	1	91	91 (	91	90	90	83
1			10 9 10 9					91 91	90	90 90	93 93
1			0 9					91	90	90	93
1			0 9					31 31	90 90	90 90	93
1			0 9					31	90	90	93 93
1			0 9		1			91	90	90	93
	2 5	91 E	0 9	1 9	1	91	91 5	91 91	90	90 91	93 93
2			0 9	1 9	1			31	90	91	93 93
2	3 6	90 5	10 9 10 9	1 9	1	91	31 .	91 91	90 90	91 90	93 93
2	4 9	10 S	0 9		1			91 91	90 91	90 91	92 93
2	8 8		0 9	1 9	1	91	91 1	31	91	91	93
2			10 9 10 9					91	91 91	90 90	93 92
2	9 9	11 5	1 9	1 9	1	91 1	91 9	31	91	91	93
3			1 9					91 91	91 91	91 91	93 93
3			1 9		1			31	91	91	93
3			1 9					91 91	91 91	91 91	93 93
3	5 8	11 5	1 9	1 9	1	91	81 1	31	91	91	83
3			11 9 11 9					31 31	91 91	91 91	93 92
3.	8 9	11 \$	1 9	1 9	1	91	91 1	91	91	91	93
3			11 9 11 9					91 92	91 91	91 91	92 93
4	1 9	1 \$	1 9	1 9	1	91	92 1	32	92	91	93
4			11 9 11 9					32 32	92 92	91 91	93 93
4	4 5	1 5	1 9	1 9	1	92	32 1	32	92	91	93
4			11 9 11 9					92 93	92 92	91 91	93 93
4	7 5	81 5	1 9	1 9	2	92	93 !	33	93	91	83
4			11 9 11 9					93 93	93 93	91 91	93 93
	5 6	91 5	1 9	2 9	2	93	33 (	93	93	91	93
5			1 9					34 34	93 93	91 91	93 93
5	3 6	1 5	2 9	2 9	2	93	34 1	34	93	92	93
5.5			2 9					94 95	93 94	92 92	93 93
5	6 9	12 5	2 9	2 9	2	94 9	35 1	95	94	92	94
5			2 9					95 36	94 95	92 92	94 94
5	9 9	12 5	2 9	2 9	2	94	95 (	96	95	93	94
6			12 9 12 9					36 36	95 95	92 93	94 94
6	2 9	12 5	2 9	2 9	3	84	96 1	36	95	93	94
6 6			2 9					36 37	96 96	93 93	94 94
6.	5 9	3 8	3 9	3 9	4	96	96 1	37	96	93	84
6 6			3 9 3 9					97 38	97 98	93 93	94 95
6	8 9	3 5	3 9	4 9	4	96	37 1	98	98	93	95
6			13 9 13 9					98 99	98 98	94 94	95 95
7	1 9	3 6	3 9	4 9	5	98	98 9	39	99	94	95
7			13 9 13 9					00 00	99 99	94 94	95 85
7	4 8	93 5	3 9	4 9	6 1	00 11	00 10	00	99	94	96
7			13 9 9	4 9 4 9	6 1	00 11	00 10 00 10		100	94 94	96 96
7.	7 8	14 5	4 9	4 9	6 1	00 11	11 11	12 1	101	85	96
7			14 9 14 9			01 10			102	95 96	96 96
	8 8	95 8	14 9	6 9	7 1	01 1	12 11	12 1	102	96	96
8 8			15 9 14 9	6 9 6 9	7 1	01 1			102	96 96	96 96
8	3 9	6 9	5 9	6 9	8 1	01 11	12 16	02 1	102	96	96
- 6	4 9		15 9	6 9	7 1	00 11			102	96	97
8	5 1	16 5	6 9	6 9	7	99 11	10 11	32	102	96	96

TC Left TC #21	indow Target Windo TC Center TC #22	TC Right TC #23	2" A bove Window TC #24	TC #25	TC #26			TC #28	low Soffit TC #25		
(°F) 8.7	(°F) 97	(°F) 97 91	("F) 3 98	('F)	(°F) 100	100	(°F) 101	("F)	(°F)	(°F) 96	96
8.8		37 9			99	99	100		101	96	96
8.9		97 9			99	99	101		100	96	96
9		37 9 37 9			99 99	99 99	101		100 99	96 96	96 95
9.1 9.2		37 9 37 9			99	99	100		100	96	85
9.3	97 9	37 9			99	99	100		99	96	85
9.4		97 9			99	99	100		99	96	95
9.5 9.6		37 9 37 9			99 98	99 99	100		99	96 96	95 95
97		17 9			98	99	99		98	96	95
9.8		36 9			98	99	99		98	96	95
9.9 10		36 91 36 91			98 96	98 98	99 99		98 98	96 96	95 95
0.1		16 9 10 9			98	98	99		98	96	95
0.2	97 1	96 91	7 97		98	98	98		97	96	95
0.3		36 9			98	98	98		97	96	95
0.4		37 9 36 9			98	98 98	98		97 96	96 96	95 95
0.6		36 9			98	98	98		97	96	95
0.7	100 1	99 9	5 95		97	88	98		97	96	95
0.8		36 9			97	98	98		97	96	95
0.9		96 9 97 9			98	98 98	98 99		97 101	96 96	95 94
1.1	98 1	97 9	8 99		98	98	99		100	96	94
1.2		38 10			105	119	134		144	97	94
1.3	100 10 103 10	30 10 33 10			104 105	114 123	134 158		155 239	100 105	95 95
1.5	112 1	16 12	9 123		154	174	224		315	117	96
1.6		28 15			154	162	226		325	136	97
1.7		13 18 35 20			163	168 175	238		339 323	159 179	100
1.9		70 20			161	177	246		338	194	102
12	159 1				158	171	242		322	207	103
2.1		70 19 55 19			157	172	239 242		355 366	216 222	105
23		55 19 58 19			161	178	234		341	222	100
2.4		75 20			164	181	219		315	232	108
25		30 20			163	179	202		271	235	109
2.6	156 1 155 1	70 18 73 19			158	178	209		291 275	236 230	110
2.8		76 19			163	174	192		265	228	109
2.9	165 1				160	171	177		255	221	108
13 3.1		79 19 77 19			163 245	199	262 425		348 536	229 282	108
3.2	166 1				212	292	388		157	308	116
3.3	174 18	31 19	184		190	249	353	4	401	309	117
3.4	175 11				179	219	282		327	303	118
3.5	177 18	30 19 34 19			173	199	231		307	293 279	118
3.7		12 19			176	194	236		293	271	118
3.8	171 1				182	211	296		368	274	118
3.9	171 18 176 11	30 18 34 18			188	234	339 318		137 380	294 302	123
4.1		32 18			196	229	358		\$18	302	124 126
4.2	182 19	34 19	5 200		203	235	342	19	104	314	128
4.3		88 18			204	286	411		182	337 347	135
44 45		39 19 31 19			200 202	256 244	388 321		434 376	347	135 138
4.6	180 19	33 19	4 209		205	277	362		438	350	137
4.7		37 19			209	259	372		145	353	140
4.8 4.9	187 20 184 11	01 19 30 19			216 256	272 288	440 413		196 149	359 365	142
15		38 19			202	273	364		103	362	145
5.1	179 18	37 19	5 190		199	270	356		388	356	145
5.2 5.3		34 19 37 20			200	247 242	289 296		918 920	338 325	142
5.4		06 21			192	236	301		320	313	139
5.5	199 2	20	8 205		205	244	304		371	310	139
5.8		20 20			195	250	326		399	313	139
5.7 5.8	204 21 198 21	39 211 37 211			197 201	235 247	296		349 381	310	138
5.9	206 21	07 20	9 204		208	284	349		122	320	141
16	211 20	17 20	3 196		198	253	352	14	426	330	143
6.1		20			200	239	350		130	330	142
6.2 6.3	203 2i 202 2	17 21 10 21	2 210 0 214		214 213	309 272	415		476 405	335 333	143 142
6.4	202 2	10 21-	4 215		212	250	267	1	320	324	142
6.5	206 2	11 21	B 221		215	250	317	14	104	320	141
6.6 6.7	201 2 199 2	14 21 14 21			213	253 259	328 361		391 427	327 339	146 147
6.8		14 21:			211	259	424		182	363	147
6.9	205 21	17 22-	9 211		208	278	377		120	367	152
17		16 22			215	257	310		354	354	150
7172	203 2 209 2	14 22 17 22	0 223 4 219		214 216	281 266	351 393		422 448	347 354	151
		16 22			215	258	369		18	352	154

				<b>.</b>		·····			·····	······	·····		
me	TC Left TC #21	TC Ce TC #2	nter	Target Window TC Right TC #23	2' A bove Window TC #24	TC #25	TC #26	ndow	8" Above Window TC #27	Target Wall 10° Above Window TC #28	TC #29	Attic TC #30	
1in)	("F)	(°F)		(°F)	("F)	("F)	(*F)			("F)	(*F)	(°F)	
17		202	216					258	344	422	348	155	
17		208 208	229	225				345	458 364	489	370 368	159	
17		217	224	220				273	304	393	360	157	
17		222	224					278	349	401	352	156	
	8	211	217	206			5	272	307	366	340	154	
18	1	205	207	211				282	357	402	340	153	
18		195	201	202				314	363	412	340	153	
18		192	202					367	442	476	356	156	
18 18		190 189	196	192				312	402	436	358 347	158	
18		189	191					258	350	379	347	15/	
18		168	170					279	323	333	332	150	
18		170	168					230	287	308	306	153	
18	9	161	163	149	152	151	3	208	278	306	292	153	
	9	155	157	144				206	288	309	282	152	
19		156	153					189	246	272	289	150	
19		152 148	151 146	138				184	225 218	246	257 245	148 146	
19		148	146					171	218	241 222	245	146	
19		142	145	134				162	183	210	236	143	
19		137	142					154	175	203	216	142	
19		135	141	133				147	168	195	211	140	
19		135	142	132				146	185	187	204	139	
19		137	141	129				148	164	194	197	138	
	10	138	142					149	176	193	192	137	
20		139	142 140					163	185	200	190 186	137	
20		138	136					144	160	181	183	135	
20		132	133					141	159	174	179	135	
20		132	132					138	147	163	175	134	
20	6	135	134	120	116	114	4	135	139	163	170	133	
20		130	133					137	139	159	167	132	
20		137	138					142	144	159	163	131	
20		139 135	137 135					147	152 145	159 155	159 156	130	
21	21	135	135	123				143	145	155	150	129	
21		132	137	120				139	134	151	151	128	
21		131	137	124				145	143	148	149	128	
21	4	129	131	119	114	123	3	141	140	147	147	127	
21		127	128					135	141	146	146	127	
21		123	124	111				134	139	145	144	127	
21 21		118	126	108				133	138 141	142	143 143	127	
21		125	127					152	141	162	143	127	
	2	124	129					151	160	162	146	127	
22		120	128			125	5	144	149	152	145	127	
22		117	126					136	144	149	144	127	
22		118	122					130	136	141	143	127	
22		116	122					128	130	138	141	126	
22		114	120	107				123	125 125	135	140 139	126 126	
22		114	121					121	125	132	139	126	
22		115	119					117	120	135	138	126	
22		117	123					114	118	138	136	125	
	13	115	119					118	123	133	135	125	
23		114	120					122	122	129	133	124	
23		113	121	105				120	118	129	132	124	
23		110	118					122	119	128	130	123	
23		111	118					125	120	128	129	123	
23		112	120	105				121	119	131	127	122	
23		102	122					122	119	128	127	122	

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Time (min)		Behind Bottom Window TC #31 (°F)	Behind Top Window TC #32 ("F)	Heat Flux Top Window w/ Screen (kW/m <sup>2</sup> )	Heat Flux Top Window w/o Screen (kW/m <sup>2</sup> )	Heat Flux Center of Wall Face (kW/m <sup>2</sup> )	Heat Flux Bottom Window w/ Screen (kW/m <sup>2</sup> )	Heat Flux Bottom Window w/o Screen (kW/m <sup>2</sup> )
	0	91	92		0.00	0.00	0.00	0.00
	0.1	91	93		0.02	0.02	0.00	-0.02
	0.2	91 91	93	2 0.02	0.00	0.02	-0.05	-0.07 -0.05
	0.4	91	93	0.00	0.02	0.02	-0.02	-0.05
	0.5	91	93		0.02	0.05	0.00	0.00
	0.7	91	93	0.00	0.00	0.02	0.02	0.02
	0.8	91	93		0.00	0.02	0.00	0.00
	0.9	91	91		0.00	0.02	-0.02	-0.05
	1.1	91	93	2 0.02	0.05	0.07	-0.05	-0.02
	1.2	91 91	93		0.05	0.07	-0.02	0.00
	1.4	91	93	0.00	0.00	0.05	-0.02	-0.05
	1.5	91	91		0.00	0.02	-0.02	-0.02
	1.6	91	91		0.02		-0.05	-0.07
	1.8	91	93	2 0.02	0.05	0.07	-0.02	-0.02
	1.9	91 91	93	2 0.02 2 0.05	0.02	0.07	0.02	8.02 -0.02
	2.1	91	93		0.02	0.07	0.02	-0.02
	22	91	93		0.05	0.10	-0.02	-0.05
	2.3	91	9.		0.02	0.10	-0.02	-0.05
	2.5	91	93	0.02	0.02	0.07	0.05	0.05
	2.8	91 91	93		0.02	0.07	0.05	0.00
	2.8	91	93	0.05	0.05	0.10	0.05	0.02
	2.9	91	93		0.07	0.12	0.12	0.12
	3.1	91	93		0.07	0.12	0.09	0.09
	3.2	91	93	0.05	0.07	0.12	0.16	0.09
	3.3 3.4	91 91	93	2 0.05	0.10		0.12	0.12
	3.5	91	93	0.10	0.10	0.17	0.14	0.14
	3.6	91	93	0.10	0.10	0.17	0.19	D.14
	3.7	91	91		0.12	0.17	0.16	0.12
	3.9	91	93	0.12	0.12	0.21	0.21	0.19
	4.1	91 91	93		0.15	0.24	0.26	0.21 0.19
	4.1	91	93	2 0.12	0.12	0.24	0.23	0.13
	4.3	91	93	0.12	0.15	0.26	0.26	0.21
	4.4	91 92	93		0.17	0.29	0.28	0.26
	4.6	92	93	0.17	0.20	0.31	0.37	0.30
	4.7	92	93		0.22	0.33	0.40	D.33 0.30
	4.9	92		0.22	0.23	0.30	0.40	0.35
	5	92	94	0.22	0.25	0.38	0.47	0.39
	5.1	92	94	0.27	0.30	0.43	0.47	8.42 0.46
	5.3	92	98		0.32	0.48	0.54	0.49
	5.4	92	95		0.32	0.50	0.54	0.51
	5.8	92			0.32	0.53	0.63	0.58
	5.7	92	96	0.32	0.35	0.53	0.68	0.56
	5.8 5.9	92	96	0.32 0.32	0.40	0.57	0.70	0.60
	6	92	97	0.32	0.40	0.60	0.73	0.63
	6.1	92	91		0.42	0.62	0.73	0.63
	6.3	92			0.45	0.62	0.82	0.72
	8.4	92	90	0.40	0.47	0.87	0.84	0.77
	6.5 6.6	92	98	0.45	0.47	0.72	0.87	0.77
	8.7	92	100	0.47	0.52	0.76	0.98	0.86
	6.8 6.9	93			0.54	0.79	0.96	0.86
	5.9	93			0.59	0.86	1.01	0.93
	7.1	93	10		0.59	0.86	1.05	0.93
	72	93		0.55	0.62	0.91	1.08	0.95
	7.4	93	102	0.60	0.69	0.96	1.10	1.00
	7.5	93			0.72	0.98	1.15	1.02
	7.6	93			0.72	1.00	1.22	1.07
	7.8	94	103	0.67	0.77	1.07	1.29	1.12
	7.9 8	94 94	104	0.67	0.79	1.12	1.31	1.16
	8.1	95	104	0.72	0.79	1.15	1.38	1.23
	8.2	95	105	5 0.70	0.82	1.17	1.43	1.28
	83	95 94			0.84	1.19	1.40	1.23
	8.5	95	100	0.72	0.84	1.24	1.57	1.39
	8.6	96	98	0.74	0.89	1.27	1.59	1.35

îme		Behind Bottom Window TC #31	Behind Top Window TC #32	Heat Flux Top Window Screen	wi	Heat Flux Top Window w/o Screen	Heat Flux Center of Wall Face	Heat Flux Bottom Window w/ Screen	w/o Screen
m in)	8.7	(°F) 97	("F)	(kW/m <sup>2</sup> ) 98	0.74	(kW/m <sup>2</sup> ) 0.89	(kW/m <sup>2</sup> ) 1.29	(kW/m <sup>2</sup> ) 1.64	(kW/m <sup>2</sup> ) 1.39
	8.8	97		98	0.77				1.42
	8.9	98		98	0.79				1.49
	9	98		98	0.82				1.53
	9.1	98 97		97 97	0.84		1.41	1.73	1.58 1.63
	9.3	97		97	0.92				1.67
	9.4	97		98	0.92				1.67
	9.5	97		99	0.94				1.70
	9.6	97		97 97	0.97		1.55	1.99	1.74
	9.8	96		99	1.02				1.86
	9.9	98		98	1.02				1.88
	10	96		98	1.04			2.15	1.95
	10.1	96 96		97 97	1.02			2.20	2.00
	10.3	96		97	1.07				1.97
8	10.4	96		96	1.09			2.29	1.97
	10.5	95		96	1.09				2.00
	10.6	95 95		96 96	1.12			2.34	2.07
	10.7	96		96	1.14				2.04
	10.9	96		86	1.17	1.31	1.81	2.41	2.11
	11	98		85	1.17			2.43	2.18
	11.1	95 95		95 95	1.19			2.46	2.14
	11.3	95		95	1.24				2.20
3	11.4	95		95	1.24	1.38	2.48	2.50	2.25
	11.5	96		95	1.29				2.49
	11.6	96 96		95 95	1.34		11.80		2.53
	11.8	97		96	1.46			2.95	2.76
	11.9	96		96	1.54				2.79
	12	96		97	1.56			3.09	2.90
	12.1	97 97		97 97	1.59			3.18 3.25	3.00
	12.3	97		97	1.74				3.18
	12.4	97		97	1.84				3.37
	12.5	98		97	1.86				3.44
	12.6	98		98 98	1.91		11.20	3.77 3.64	3.65 3.67
	12.8	98		98	2.06			4.02	3.86
	12.9	99		99	2.11	2.50	10.79	4.12	3.95
	13	100		00	2.19				4.11
	13.1	100		99	2.28				4.18
	13.3	99		99	2.41				4.51
3	13.4	99		01	2.51	2.92	9.55	4.72	4.60
	13.5	99		01	2.56			4.84	4.74
	13.6	100		00	2.61			4.91 5.09	4.79
	13.8	102		00	2.76		9.93	5.15	4.97
1	13.9	102		00	2.83	3.26			5.16
	14	102		01	2.83			5.38	5.18
	14.1	102		01	2.93			5.47 5.57	5.37 5.46
	14.3	103		101	3.05				5.53
-	14.4	103	1	01	3.13	3.84	14.61	5.73	5.67
	4.5	103		02	3.15			5.73	5 62
	4.6	102		03	3.23			5.82	5.78
1	14.8	103	1	03	3.33	3.88	13.16	5.99	5.85
1	14.9	103		03	3.38		12.39	6.06	5.92
3	15 15.1	104		02	3.43			6.15 6.25	5.99 6.11
	15.2	103		102	3.45				6.18
	15.3	103	1	02	3.58	4.15	12.87	6.36	6.23
1	15.4	104		03	3.63	4.25	13.04	6.41	6.30
	15.5	103		03	3.87			6.46 6.60	6.34 6.46
	15.0	103		182	3.75				6.50
1	15.8	104	1	02	3.80	4.45	13.47	6.69	6.55
	15.9	104		03	3.85				B.62
16	16	104		104	3.92				6.71 6.81
	16.2	104		05	4.00			5.95	6.81
	16.3	105		06	4.05		12.44		6.90
1	16.4	105	1	105	4.10	4.82	14.69	7.06	7.02
	16.5	107		05	4.12				
	16.6 16.7	107		05	4.17				7.02
	16.8	105		104	4.27	4.97			7.25
	16.9	106	1	04	4.32	5.04	15.19	7.44	7.27
	17	106		04	4.37	5.09	15.83		7.34
	17.1	107		105 105	4.42		15.62	7.55	7.43 7.50
		105		104	4.47				7.55
	17.3								

April 20, 2011

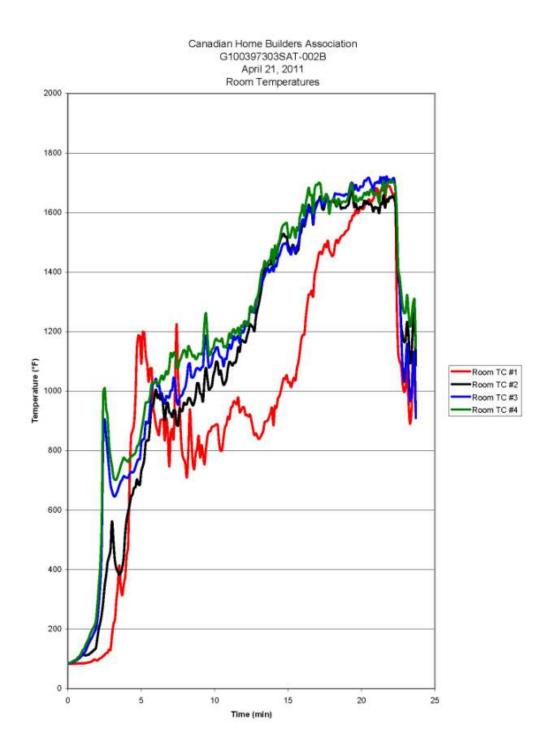
April 20, 2011

1003973	035AT-002A				Ganadian Ho	ime Builders Associa	aon	
fime min)	Behind Bottom Window TC #31 ("F)	Behind Top Window TC #32 ("F)	Heat FI Top Wi Screen (kW/m <sup>2</sup>	ndow wl	Heat Flux Top Window w/o Screen (kW/m <sup>3</sup> )	Heat Flux Center of Wall Face (kW/m <sup>2</sup> )	Heat Flux Bottom Window w/ Screen (kW/m <sup>2</sup> )	Heat Flux Bottom Window w/o Screen (kW/m <sup>2</sup> )
17.5			105	4 62	5 37	15.45	7.72	7.67
17.6			104	4.64	5.39	15.67	7.77	7.76
17.7			104	4.67	5.42	14.42	7.77	7.69
17.8			104	4.69	5.44	14.69	7.81	7.78
17.9			104	4.74	5.51	13.44	7.86	7.78
18			105	4.77	5.54	12.90	7.84	7.76
18.1			105	4.82	5.61	14.59	7.91	7.85
18.2			105	4.84	5.64	14.90	7.91	7.90
18.3			105	4.89	5.66	13.99	7.84	7.76
18.4			105	4.83	5.64	12.37	7.81	7.81
			105					
18.5				4.87	5.64	10.29	7.84	7.76
18.6			105	4.89	5.69	9.48	7.74	7.74
18.7			108	4.92	5.84	9.38	7.72	7.67
18.8			106	4.89	5.64	9.10	7.67	7.60
18.9			105	4.87	5.59	8.74	7.63	7.55
19			104	4.84	5.58	8.45	7.58	7.48
19.1			103	4.82	5.54	8.33	7.41	7.39
19.2			102	4.82	5.54	8.19	7.41	7.34
19.3			102	4.82	5.51	7.83	7.32	7.22
19.4			102	4.79	5.44	8.00	7.25	7.15
19.5			101	4.72	5.39	7.71	7.13	7.04
19.6			101	4.74	5.39	7.50	7.06	6.97
19.7			100	4.74	5.37	7.31	6.97	B.83
19.8			101	4.89	5.32	7.43	6.90	6.81
19.9			101	4.64	5.24	7.14	6.81	6.69
20			101	4.62	5.17	6.97	6.69	6.57
20.1			100	4 59	5.12	6.83	6.60	6.50
20.2			100	4.57	5.09	6.64	8.53	B.43
20.3			99	4.52	5.04	6.52	6.43	6.32
20.4			99	4.49	5.02	6.38	6.36	6.20
20.5			99	4.44	4.95	6.26	6.32	6.13
20.6			99	4.47	4.95	5.99	6.25	6.09
20.7			99	4.39	4.90	5.99	6.08	5.95
20.8	97		98	4.39	4.82	7.88	5.96	5.83
20.9			97	4.32	4.80	5.40	5.89	5.81
21			96	4.32	4.75	6.11	5.85	5.69
21.1			85	4.25	4.87	5.84	5.73	5.62
21.2			95	4.07	4.53	5.37	5.57	5,53
21.3			94	4.05	4.38	5.09	5.47	5.48
21.4			94	4.02	4.33	5.01	5.38	5.34
21.5			94	3.85	4.15	4,73	5.17	5.23
21.8			94	3.77	4.08	4.58	5.05	5.13
21.7			94	3.75	3.98	4.51	4.87	4.92
21.8			94	3.67	3.88	4.20	4.77	4.83
21.9			94	3.60	3.78	4.37	4.70	4,74
22			93	3.55	3.68	3.89	4.65	4.67
22.1			94	3.48	3.59	3.75	4.58	4 55
22.2			94	3.33		3.80	4.44	4.48
22.3			94	3.23	3.26	3.37	4.26	4.25
22.4			94	3.20	3.21	3.41	4.12	4.13
22.5			95	3.18	3.21	3.22	4.02	4.00
22.8			95	3.13	3.12	3.20	3.93	3.88
22.7			95	3.05	3.04	3.03	3.88	3.79
22.8			95	2.93	2 92	2.84	3.77	3.76
22.9			93	2.83	2.82	2.87	3.72	3.62
23			93	2.81	2.70	2.84	3.58	3.51
23.1			93	2.78	2.82	2.72	3.51	3.41
23.2			93	2.83	2.57	2.58	3.44	3.37
23.3			93	2.56	2.45	2.34	3.34	3.16
23.4			93	2.58	2.40	2.29	3.27	3.11
23.5			93	2.51	2.37	2.27	3.04	2.90
23.6	94		92	2.46	2.28	2.36	2.97	2.86
23.7	94		93	2.43	2.25	2.13	2.97	2.81

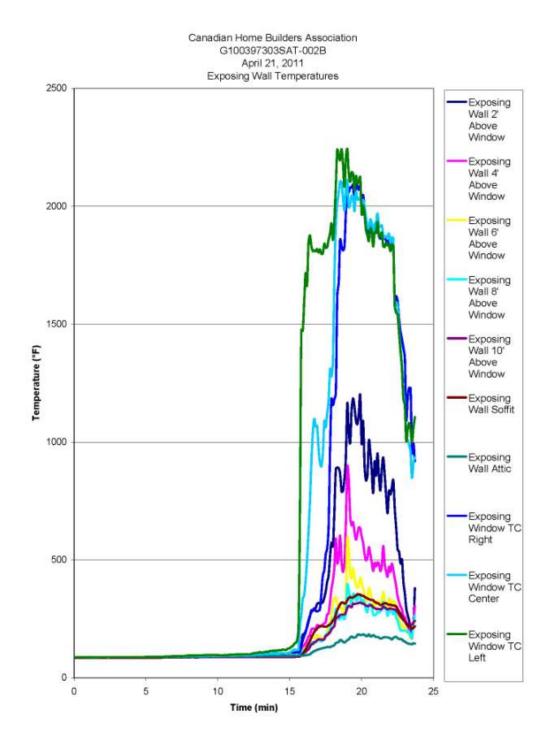


## APPENDIX E Test B Data

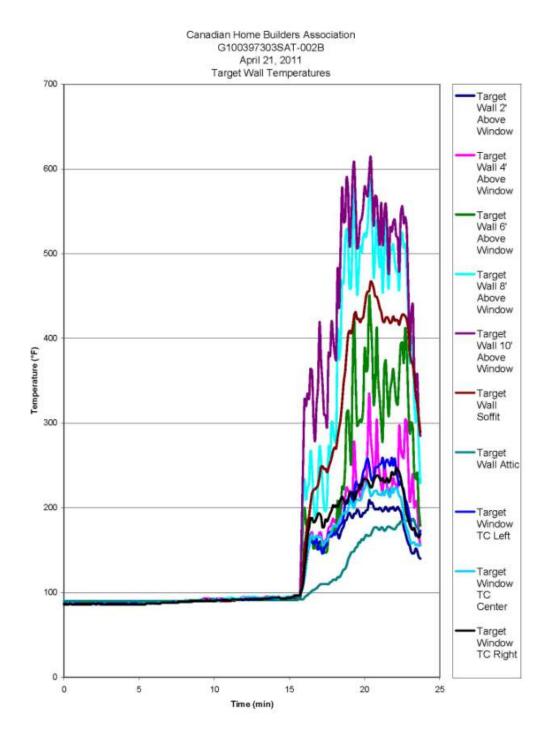




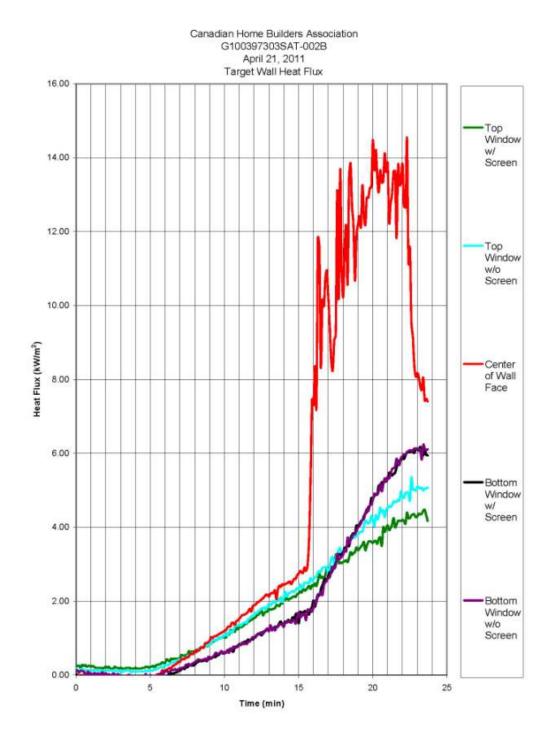


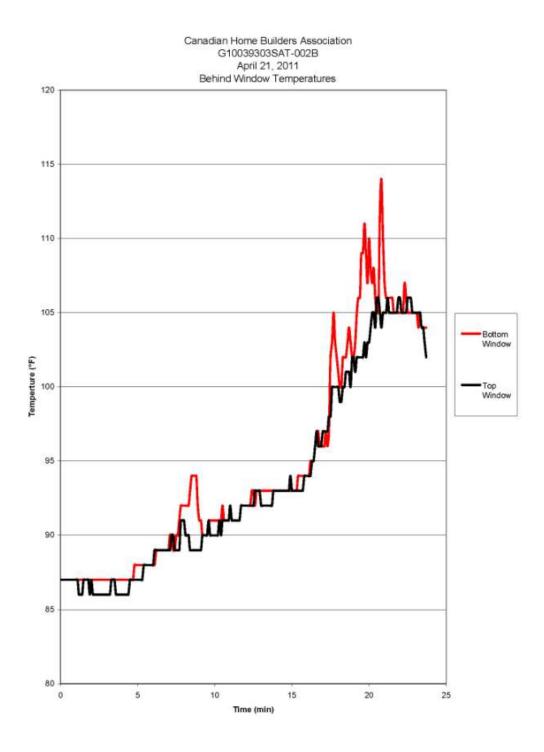












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Time (min)		Room TC #1 *F)	Room TC #2 (°F)	Ro TC (°F)		Room TC #4 (°F)
	0	B		84 86	84 85	B
	0.1	8		88	85	8
	0.3	8		90	88	9
	0.4	В		94	91	9
	0.5	8		96 98	92 95	9
	0.0	8		102	100	10
	0.8	8	5	106	103	11
	0.9	8	5	111	109	11
	11	B	5	115 113	113	12
	1.1	8		113	120	13
		8	7	113	138	15
	1.4	8	8	114	150	16
	1.5	8	9	118	160	18
	1.0	9		122	179	19
	1.8	0	0	131	190	21
	1.9	9	6	136	200	22
	21	9		168	229	27
	21	9		201	284	34
	22	10	5	250	470	56
	2.4	10	9	290	831	98
	2.5	11		344	905	101
	2.8 2.7	11:		380 424	847 793	94 91
	2.8	13		443	738	82
	2.9	13	0 4	467	887	77
	- 3	17		562	885	74
	3.1	21	6 .	495 430	649 646	71 70
	3.2 3.3	29		404	855	70
	3.4 3.5	34	5 3	393	667	71
	3.5	41	4	383	683	73
	3.6 3.7	34 31-		390 407	695 703	74 76
	3.8	35		443	714	70
	3.9 4	37		521	711	77
	4	44		568	709	76
	4.1 4.2	48	0	594 817	709 721	76 77
	4.2	84		645	728	77
	4.4	86		853	726	78
	4.5	88		874	731	78
	4.6	97 114		677 703	745	79
	4.7	114		703	761	81
	4.9	118		585	772	83
	5	109		732	825	86
	5.1	119		748 771	837 840	89
	5.2 5.3	119		827	898	
	5.4 5.5	109		835	891	96
	5.5	103		835	898	96
	5.8	107		891	948	98
	5.7 5.8	107		955 950	1003	102
	5.9	91	8	983	1029	102
	6	88	4 1	005	1041	103
	6.1	86 85		977 989	1016	102
	6.2 6.3	85		989 971	1022 994	102 104
	8.4	90	4 1	992	989	105
	6.5	90	2	939	971	103
	6.6 6.7	83		902 947	958	105
	6.7 6.8	90 86		947 961	983	106
	6.9	74	7 1	929	978	108
	7	85	7 1	925	1001	112
	7.1 7.2	87 84		912 935	1003	111
	73	102		935 934	1045	112
	7.4	122	4 1	889	972	108
	7.5	105	2	884	954	107
	7.6	96		941	976	109
	7.7	84		933	983	111 112
	7.9	78		960	1004	112
	8	75	8	955	1014	113
	8.1	71	0	956	1043	111
	82	79 93		975 976	1086	115
	83	93 85		976 963	1093	114
	8.5 8.6	76	1 1	952 961	1045	111



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Time (min)		Room TC #1 ("F)		Room TC #2 (°F)	Room TC#3 (°F)	Room TC #4 (°F)
()	8.7		769	985	1070	1107
	8.8		807	1026	1077	1111
	8.9		849	1025	1075	1125
	9.1		818	993	1070	
	9.2		789	966	1078	
	9.3		754	1037	1156	1225
	9.4		804	1078	1185	1261
	9.5		846	1042	1130	
	9.6		864	1005	1080	
	9.7		865	1010	1083	
	98		881	1017 1051	1096	1140
	10		884	1070	1133	
	10.1		888	1099	1146	
	10.2		888	1094	1146	
	10.3		825	1055	1122	
	10.4		799	1069 1039	1114	1167
	10.5		803	1039	1083	
	10.7		878	1027	1109	
	10.8		888	1040	1108	1146
	10.9		914	1078	1139	1169
	11		908	1098	1158	1193
	11.1		943	1094	1142	
	11.2 11.3		948 965	1086 1095	1159 1184	
	11.4		962	1095	1172	1193
	11.5		958	1113	1179	1202
	11.6		978	1147	1185	1212
	11.7		929	1132	1183	
	11.8		936	1171	1204	1220
	11.9		945 945	1170	1196 1204	
	12.1		919	1165	1204	1233
	12.2		920	1186	1231	1219
	12.3		814	1201	1238	1231
	12.4		921	1224	1271	1282
	12.5		889	1219	1285	1284
	12.6		874	1214	1274	1266
	12.7		858	1202 1248	1263 1294	
	12.9		847	1272	1315	1305
	13		839	1294	1332	1335
	13.1		845	1320	1349	
	13.2		854	1351	1362	
	13.3		866	1382	1375	1412
	13.4		895	1413	1388	1437
	13.6		901	1420	1414	
	13.7		913	1424	1399	
	13.8		927	1427	1407	1445
	13.9		943	1440	1416	
	14		885	1418	1402 1425	1426
	14.1 14.2		949	1458	1425	1488
	14.3		974	1479	1446	1489
	14.4		983	1497	1456	1504
	14.5		000	1513	1472	
	14.6		025	1522	1488	
	14.7 14.8		043	1528	1495	1559
	14.8		053	1518	1494	1582 1585
	14.8		029	1490	1430	
	15.1		030	1480	1467	1515
	15.2	1	013	1468	1459	
	15.3	1	031	1491	1481	1550
	15.4		045	1484		1643
	15.5 15.6	1	038	1462	1468	
	15.7		097	1403	1400	1541
	15.8	1	135	1523	1532	
	15.9	1	174	1537	1558	1601
	16		189	1574	1577	1626
	16.1		190	1553	1560	
	16.2	1	248	1573	1583	
	16.3		290 324	1597	1604 1620	1656
	16.5		324	1626	1620	1683
	16.6		337	1616	1605	1659
	16.7		318	1559	1584	1597
	16.8		388	1807	1804	1676
	16.9		410	1628	1618	1693
	17 17 1		437	1637	1632	1693
	17.2		462	1643		
					1624	
	17.3	- 1	460 478	1617	1024	1648



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Time	Room TC #1	Room TC #2	Room TC#3	Room TC#4
(min)	('F)	("F)	(°F)	(°F)
(17.5		1627	1837	165:
17.6		1651	1639	166
17.7		1642	1653	164
17.8		1608	1821	159
17.9		1637	1634	162
18		1636	1638	164
18.1	1460	1636	1648	164
18.2		1630	1864	164
18.3		1620	1662	1624
18.4		1620	1661	164
18.5		1634	1662	163
18.5		1613	1658	163
18.0		1613		163
18.8		1615	1655	163
18.8				
		1618	1661	163
19		1622	1661	1641
19.1	1545	1626	1659	1654
19.2		1651	1683	168
19.3		1674	1699	169
19.4		1656	1696	1671
19.5		1618	1676	164
19.6		1630	1693	165
19.7		1613	1878	1631
19.8		1611	1874	164
19.9		1619	1687	1651
20		1618	1885	164:
20.1	1611	1624	1889	1655
20.2		1640	1707	166
20.3		1628	1706	1651
20.4		1638	1714	1661
20.5		1627	1716	1851
20.6		1630	1701	167
20.7		1622	1690	1675
20.8		1603	1672	1661
20.9		1618	1699	1665
21	1681	1615	1699	166
21.1	1676	1615	1704	1654
21.2		1598	1899	1631
21.3		1632	1719	1673
21.4	1674	1628	1895	1683
21.5	1689	1658	1719	170
21.8	1851	1618	1699	1663
21.7		1644	1721	1693
21.8	1687	1636	1704	1691
21.9	1689	1651	1711	170
22	1677	1649	1701	1703
22.1	1864	1858	1712	170
22.2	1662	1648	1715	1691
22.3	1657	1628	1681	1688
22.4		1509	1587	159
22.5	1126	1378	1406	1411
22.8		1349	1334	138
22.7		1221	1191	1321
22.8		1187	1078	128
22.9		1164	1031	128
23		1170	1089	126
23.1	1111	1232	1159	132
23.2		1191	1068	1284
23.3		1095	968	121
23.4		1122	986	124
23.4		1219	1076	124
23.0		1219	1126	129.
23.6	1027			



ie	Exposing Window TC Left TC #5	v Exposing Windo TC Center TC #6	w Exposing Window TC Right TC #7					Exposing Wall w 10' Above Windo TC #12		II Exposing W Attic TC #14	fal
in)	("F)	(°F)	(°F)	(°F)	(°F)	(°F)	(*F)	(°F)	(°F)	(*F)	
1	0 8	в в	88 88	88	8	8 8	8 8	17 8	6 8	7	8
0.			88 88					7 8			8
0.0			88 88 89 88					7 8 7 8			8
0.4	4 BI	8 8	88 88	88	8	8 8	9 8	17 8	6 8	7	6
0.0			88 88					8			8
0.0			88 88 89 88					18 8 17 9			8
0.0	8 8	7 8	88 88	88	8	8 8	8 8	17 8	6 8	7	8
0.9			88 88 87 88					17 8 17 8			6
1.		7 8	87 87	88	8	8 8	8 8	17 8		7	6
1.			87 87					7 8			8
1.2			87 87 87 87					17 8 17 8			8
1.	5 8	7 8	87 87	88	8	8 8	8 8	17 8	6 8	7	8
1.			87 87 88 88					17 8 17 8			8
1.			88 88 88 88					17 8			8
1.1	9 81	8 8	88 88	88	8	8 8	8 8	17 8	6 8	7	8
2	2 BI 1 BI		88 88 88 88					7 8 17 8	6 8 6 8		8
2			88 88					17 8			8
2.3	3 BI	8 8	88 88	88	8	8 6	8 8	17 8	6 8	7	8
2:			87 88 88 88					17 8 17 8			8 6
21	6 81	8 8	88 88	88	8	8 8	8 8	17 8	6 8	7	8
2.			88 88					17 8			8
21			88 88 88 88					17 8 17 8			8
3	3 81	6 6	88 88	88	8	8 8	8 8	17 8	6 6	7	8
3.			88 88 89 88					17 8 17 8			8
3.		8 8	88 88			8 8		17 8 17 8		7	8
3.	4 BI	8 8	88 88	88	8	8 6	8 8	17 8	6 8	7	8
31			88 88 88 88					7 8 7 8			8
3.			88 88					17 8			8
3.1			99 99					17 8			8
3.	9 BI 4 BI		88 88					17 8 17 8			8
4	1 81	8 8	88 88	88	8	8 6	8 8	17 8	6 8	7	8
4.			88 88					17 8			8
4.			88 88 88 88					18 8 18 8			8
4 !	5 81	8 8	88 88	88	8	8 8	18 8	8 8	6 8	7	8
41			88 88 88 88					17 8 18 8			8
4.1			88 86					17 8			8
4.		8 8	99 98	88	8	9 6		8 8			8
5.			89 88 89 88					17 9 18 8			8
5.		9 8	89 89	89	8	9 6		8 8			8
5			89 89					8 8			8
5.			89 89 89 89					19 9 18 8	6 8 6 8		8
5.	8 8	9 8	89 89	89	8	9 8	9 8	8 8	6 8	7	8
5			89 89					18 8 18 8			8
51			89 89 89 89		8	9 8		8 8		7	8
10	6 8!	9 8	89 89	89	8	9 8	9 8	19 8	6 8	7	8
6. 6.			89 89 90 90		9	9 9		19 8 19 8			8
6.	3 91	0 9	90 90	90	9	0 9	1 8	19 8	7 8	7	8
8.			90 90					0 8			8
6. 6.			90 90 91 90			1 9		19 8 19 8			0 00
6.	7 9	1 9	91 90	91	9	1 9	11 8	9 8	7 8	8	8
61			91 91					9 8			8
6.		2 6	91 91 91 91					19 8 10 8			8
7	1 9:	2 9	92 91	91	9	1 9	11 9	0 8	7 8	8	8
7 :			92 92 91 92			1 9		19 8 10 8			8
7.	4 93	2 5	91 92	91	9	1 9	1 9	0 8	7 8	8	8
7.5	5 93	2 9	91 92	91	9	1 9	1 9	0 8	7 8	8	8
7.5	6 93 7 93	3 6	91 92 92 92	91	9	1 9		11 9	7 8 7 8	8	6 8
71	8 94	4 5	92 93	92	9	2 9	3 9	2 8	7 8	8	8
7.5	9 9:	5 5	93 94	93	9	3 9	4 9	2 8	7 8	9	8
8.		5	93 94 93 94	93 92	9	3 9	14 9 13 9	13 8 12 8	7 8 7 8	8	8
8.	2 95	5 5	93 94	92	9	3 9	3 9	2 8	8 8	9	8
8.	3 9:	5 5	93 93	92	9	2 9	3 9	2 8	8 8	9	ŝ
8.			93 93 92 93	92 92				2 8 2 8			9 9
8 :	5 91 6 91		92 93 93 93	92	9	4 8	14 9	2 8	7 8	9	0

	TC Left	Exposing Window TC Center	TC Right	2' Above Window	4' Above Window	v 6' Above Windo	w 8' Above Windo	Exposing Wall w 10' Above Windo	Exposing Wall w Soffit	Attic
	TC #5	TC #6	TC #7	TC #8	TC #9	TC #10	TC#11	TC #12	TC #13	TC #14
n) 8.7	(°F) 96	(°F) 93	(°F) 94	(°F) 92	(°F) 93	(°F)	("F) 15 9	(°F) 13 8	(*F) 8 89	(°F)
8.8	BE			92					8 89	
8.9	96			92	93				8 89	
9	96		95	92			15 9		8 90	
9.1 9.2	97	94 94	94 94	93 92					18 90 18 90	
9.3	97			92					8 90	
9.4	97	84	94	92	93	3 9	14 9	12 8	18 90	9 9
9.5	97			92					90 90	
9.6 9.7	97			92			13 9 13 9		18 90 18 90	
9.8	97	93		92					18 90	
9.9	96	93	94	93	93	3 9	3 9	13 8	8 90	) 9
10	97			93					8 90	
10.1	96			93			13 9 14 9		18 90 18 90	
10.3	96			93					8 90	
10.4	96			93	91				8 90	
10.5	97	94	94	93	93	3 9	14 9	13 8	8 90	) 9
10.6	96			93			4 9		90	
10.7	97			93					8 90	
10.9	98			83					18 90	
11	99	94	95	93	9:	3 9	3 9	12 8	8 90	) 9
11.1	99			93					90 90	
11.2	99		96 97	92	93	3 9 3 0	13 9 13 9		8 90	
11.4	100		97	93					18 90	
11.5	100	96	97	93	93	3 9	14 9	14 8	18 90	) 9
11.6	100			93					8 90	
11.7 11.8	100	96 96		93 94					18 90 18 90	
11.9	101	96		94					18 91	
12	100	95	97	93	94	4 9	5 9	15 8	9 91	1 9
12.1	101	96		93					9 91	
12.2	100	96 98		93			15 9 16 9		19 91 19 91	
12.4	103			94			6 9		9 91	
12.5	105	98	100	94	9		16 9	15 8	9 91	1 9
12.6	105			94					9 91	
12.7	106			95 94					19 91 19 91	
12.8	109			94					9 91	
13	108			94					9 92	
13.1	107			94					9 92	
13.2	109		105	94 94			5 9 5 9		9 92	
13.3 13.4	110	101	103	94					9 92	
13.5	111	101	103	95					9 92	
13.6	113		104	95					9 92	
13.7	115			96					9 92	
13.8 13.9	115			96					19 92 19 92	
14	115			96					9 92	
14.1	116	105	105	95	98	6 9	6 9	15 8	9 92	2 9
14.2 14.3	117			95			16 9 16 9		9 92	
14.3	117			95					9 92	
14.5	120	105	103	95	95	5 9	6 9	15 8	9 92	2 9
14.6	119			95					9 92	
14.7 14.8	118		103	95					9 92	
14.8	125			96					19 92	
15	126	107	106	96	9	5 9	6 9	15 8	9 92	2 9
15.1	132			96					9 92	
15.2 15.3	135		107	96 96					19 92 19 93	
15.4	143		107	96					9 93	
15.5	157	118		96	9	7 9	7 9	16 9	0 93	9 9
15.8	207		107	96					0 93	
15.7	660			101			8 9		93	
15.8 15.9	1476	267		144					18 97 11 103	
16	1595	351	178	187				8 10	17 111	1 9
16.1	1716	413	193	198	148	8 12	9 12	10 11	0 121	9
16.2	1665			214		13	7 12	5 11	7 134	9
16.3 16.4	1845			238						
16.5	1832			285						
16.6	1810	1039	286	286	210	17	4 15	14	4 183	3 11
16.7	1813		295	290	20	7 17	0 15	1 15	1 195	5 11
18.8 16.0	1809			297						
16.9 17	1819		282	313						
17.1	1817		291	316	216	3 17	5 15			12
17.2	1798	897	363	316	22:	2 17	1 15	15 18	2 220	) 12
17.3	1800	952	434	322	226	6 16	7 15	18 18	219	3 12

1003973	303SAT-0028				Canadia	an Home Builders #	ssociation				April 21,
		lindow		/ Exposing Window		Exposing Wall	Exposing Wall	Exposing Wall	Exposing Wall	Exposing Wall	
200215	TC Left		TC Center	TC Right					10' Above Window		Attic
'im e	TC #5		TC #6	TC #7	TC #8	TC #9	TC #10	TC #11	TC #12	TC #13	TC #14
nin)	('F)		(°F)	(°F)	(°F)	(°F)	(°F)	(*F)	(°F)	(*F)	(*F)
17		1824	1063			238					
17		1828	1123								
17.		1858	1177								
17.		1928	1278								
1/		1928	1341								
18		1938	1693								
18		2088	1915								
18		2239	2010								
18		2216	2056								
18		2196	2106								
18		2243	2100								
18		2179	2036								
18		2083	1982								
18.		2201	2089								
1		2243	2110								
19.	1	2143	1997	205	3 1042	845	541	373	305	339	i
19.	2	2104	2011	208	996	685	438	3 336	302	343	1
19.	3	2145	2045	5 2071	1137	647	421	313	300	340	6 19
19	4	2138	2044	1 209	1185	660	465	5 356	315	341	
19	5	2069	1979	3 2014	1 1149	620	428	3 354	314		
19	6	2129	2062	2 210	5 1090	586					
19		2098	2029								
19		2107	2030								
19.		2124	2036								
2		1967	2001								
20		2002	2027								
20		1965	2000								
20		1900	1953								
20		1876	1917								
20		1853	1904								
20		1906	1945								
20		1896	1928			489					
20		1830	1973								
20,		1887	1933								
21		1934	1953								
21		1879	1914								
21		1869	1913								
21		1888	1919								
21		1831	1880								
21		1828	1868				326				
21		1846	1874								
21		1835	1868								
21.		1834	1884								
2		1810									
22		1839	1868								
22		1831	1863								
22		1580	1578								
22	4	1549	1593	161			288	3 254	285	303	1
22.		1540	1576								
22.		1461	1476								
22		1386	1408								
22		1309	1326								
22		1186	1215								
2		1154	1158								
23		1005	1016								
23.		1056	1010								
23		1081	987								
23.		1052	958								
23		1000	849			168					
23		1060	912				217				
23.	7	1106	937	811	3 380	305	252	2 263	242	219	1

e	TC Left TC #21	w Target Window TC Center TC #22	TC Right TC #23	2' A bove Wind TC #24	TC #25	TC #26	TC #27	Target Wall dow 10° Above Win TC #28	dow Soffit TC #29	Vall Target W Attic TC #30	/all
n)	(°F)	(°F)	(°F)	("F)	('F)	(°F)	(°F)	("F)	("F)	(°F)	
0.1		7 8					87 87	87 87	87 87	87 87	90 90
0.7	8	7 8	6 8	8	87	87	87	87	87	87	90
0.3		7 8					87 87	87 87	87 87	87 87	90 90
0.5	5	7 8	7 8	6	87	87	87	87	87	87	90
0.0		7 8					87 87	87 87	87 87	87 87	90 90
0.8	6	7 8	6 8	6	87	87	87	87	86	87	90
0.9		6 8					87 87	87 87	86 86	87 87	90 90
1.1	6	8 8	6 8	6	88	87	87	87	86	87	90
12		6 8 6 8	6 6 6 8				87 87	87 87	86 86	87 87	90 90
1.4	E	6 8	6 8	6	86	86	87	87	86	87	90
1.6		6 8	6 8				87 87	87 87	86 86	87 87	90 90
1.7			6 8				87	87	86	87	90
1.8	6	7 8	6 8	6	87	87	87	87	87 87	87	90
1.5		7 8		7	87		87 87	87 87	87	87 87	90 90
2.1	6	7 8	7 8	6	87		87	87	87	87	90
23		7 8 7 8					87 87	87 87	86 87	87 87	90 90
2.4	8	7 8	7 8	7	87	87	87 87	87 87	86 86	87 87	90 90
2.8	E	7 8	6 8	6	87	87	87	87 87	86	87 87	90 90
2.7	E	7 8	7 8	6	87	87	87	87	87	87	90
2.8		7 8	6 8 6 8				87 87	87 87	86 86	87 87	90 90
1	6		6 8				87	87	86	87	90
3.1		6 8	6 8 6 8				87 87	87 87	86 86	87 87	90 90
3.3	6	6 8	6 8	6	86	87	87	87	86	87	90
3.4			6 8 6 8				87 87	87 87	86 86	87 87	90 90
3.6	8	7 8	6 8	6	87	87	87	87	86	87	90
3.7		7 8					87 87	87 87	86 86	87 87	90 90
3.5	6	7 8	6 8	6	87	87	87	87	86	87	90
4.1		6 8 6 8					87 87	87 87	86 86	87 87	90 90
4.2	E	17 B	6 8	8	87	87	87	87	86	87	90
4.3		7 8					87 87	87 87	86 87	87 87	90 90
4.5	6	7 8	6 8	8	87	87	87	87	87	87	90
4.8	8		6 8 6 8				87 87	87 87	86 87	87 87	90
4.8	E	7 8	6 8	6	87	87	87	87	87	87	90
4.5		7 8					87 87	87 87	87 87	97 87	90 90
5.1	6	17 8	6 8	6	87	87	87	87	87	87	90
52		7 8 7 8					87 87	87 87	87 87	87 87	90 90
5.4	6	7 8	7 8	6	87	87	87	87	87	87	90
5.5		7 8					87 87	87 87	87 87	87 87	90 90
5.7	6	7 8	7 8	7	87	88	88	88	87	87	90
5.5		7 8					87 88	88	87 87	87 87	90 90
E	8	7 8	7 8	7	88	88	88	88	87	87	90
6.1 6.2		7 8					88 88	88 88	87 87	87 88	90 90
6.3	8	I7 B	8 8	7	88	88	88	88	88	88	90
6.4 6.5		8 8	8 8				88 88	89 89	88 88	88 88	90 90
6.6	5	8 8	8 8	8	89	89	89	89	88	88	90
8.7 6.8	6	8 8	8 8	8	89	89	89 89	89 89	88 88	88 88	90 90
6.5	6	8 8	8 8	8	89	89	89	89	88	88	90
7	6	8 8	8 8				89 89	89	88 88	88 88	90 90
72	6		8 8	8	89		89	89	88	88	90
73	8	9 8	8 8	8	89	89	89	89	88	88	90
7.4		8 B 9 8	8 8		89 89		89 89	89 89	88 89	88 88	90 90
7.8	6	9 8	9 9	9	89	89	89	89	89	88	90
7.2		9 8	9 8 9 8	9	89 89		89 89	89 90	89 89	89 89	90 90
7.5	6	9 8	9 8	9	90	90	89	90	89	89	90
8.1	E	9 8	9 8 9 8	9	90	90	90 90	90 90	89 90	89 89	90 90
8.2	8	9 8	9 8	9	91	91	90	91	90	89	90
8.3	6	9 8	9 6	9	90	91	90 90	90 90	90 90	89 89	90 91
8.4											

T	arget Windo C Left C #21	w Target Window TC Center TC #22	Target Windo TC Right TC #23	w Target Wall 2' A bove Wind TC #24	Target Wall ow 4' Above Win TC #25	Target Wall dow 6' Above Win TC #26	TC #27	Target Wall Idow 10' Above Win TC #28		Wali Target V Attic TC #30	Vall
8.7	F)	(°F) 0 91	(°F) 9 9	(°F)	("F) 91	(°F) 91	(°F) 91	("F) 91	(°F) 90	(°F) 90	91
8.8	9				91	91	91	91	90	90	91
8.9	9	0 91	0 9	0	91	91	91	91	90	90	91
9	9				91	91	91	91	90	90	91
9.1 9.2	9				91 92	92 92	91 92	92 92	91 91	90 90	91 91
9.3	9				92	93	92	92	92	90	91
9.4	9				82	93	82	92	92	90	90
9.5 9.6	9				92 82	93 93	92 92	92 92	92 91	90 90	91 91
9.7	9				92	93	92	92	91	90	91
9.8	9	1 9	1 9	0	92	92	92	92	92	90	91
9.9	9				92	92	92	93	92	90	91
10	9			0	92 92	92 92	92 92	93 92	91 92	90 90	91 91
10.2	9				92	93	92	92	91	90	91
10.3	9				92	92	92	92	91	90	91
10.4	9				92 92	93 93	92 92	92 92	91 92	90 90	91 91
10.6	9				92	93	93	93	92	90	91
10.7	9	1 9	1 9	1	92	93	93	93	92	90	91
10.8 10.9	9				92 93	93 93	93 93	93 93	92 92	90 90	91 91
11	9				83	93	83	94	92	90	91
11.1	9	2 93	2 9	1	93	94	94	94	92	90	91
11.2 11.3	9				93 93	94 93	93 93	94 93	92 92	91 90	91 91
11.4	9			2	93	93	93	93	92	91	91
11.5	9	2 93	2 9	2	83	93	93	93	92	91	91
11.6	9				93 93	93	93	93 93	92	91	91
11.7	9				93	93 94	93 93	93	92 92	91 91	91 91
11.9	9		2 9	2	93	94	93	83	92	91	B1
12	9				93	95	94	94	92	91	91
12.1 12.2	9				93 93	94 94	94 94	94 95	93 93	91 91	91 91
12.3	9		2 9	2	93	94	84	95	93	91	81
12.4	9				93	94	94	95	93	91	B1
12.5 12.6	9				93 93	84 84	94 95	85 95	93 93	91 91	91 91
12.7	9				83	94	94	95	93	91	91
12.8	9	3 93	2 9	2	93	94	94	94	93	91	91
12.9 13	9				94 93	94 94	94 84	94 94	93 93	91 91	91 91
13.1	9				93	94	94	94	93	92	91
13.2	9	2 93	Z 9	2	94	94	94	94	93	92	91
13.3 13.4	9				94 94	94 95	94 94	94 94	93 93	92 92	91 91
13.4	9				95	95	94	94	93	92	91
13.6	9	3 93	3 9	3	95	95	94	94	93	92	91
13.7	9				95	95	94	95	93	92	91
13.8 13.9	9				95 95	95 95	94 95	95 95	93 93	92 92	91 91
14	9	3 93	3 9	4	95	95	95	95	93	92	91
14.1	9				85	95	95	95	93	92	91
14.2 14.3	9				95 95	95 95	94 94	94 94	93 93	92 92	91 91
14.4	9	3 93	3 9	3	94	94	94	94	93	92	91
14.5	9	3 93	3 9	3	94	94	94	94	93	92	91
14.6	9				94 94	94 94	94 94	94 94	93 93	92 92	91 91
14.8	9				94	94	94	95	94	92	91
14.9	9	4 94	4 9	4	85	85	84	85	94	92	81
15	9				95 95	85 95	95 95	95 95	94 94	92 92	91 91
15.1 15.2	9				96	96	96	96	94	92	91
15.3	9	5 9	5 9	5	96	97	96	95	94	92	91
15.4	9				97	97	96	96	95	93	91
15.5 15.6	9				97 97	97 97	97 97	96 96	94 95	93 93	91 92
15.7	9		B 9	7	87	98	87	97	95	93	92
15.8	10	1 10	1 10	3 1	03	121	132	149	165	102	92
15.9 16	10				11 27	135 158	180 200	219 234	250 328	124 151	92 94
16.1	13	e (e		3 1	38	156	182		320	167	96
16.2	14	6 14	B 16	8 1	46	154	174	223	335	182	87
16.3	15				56 66	159	163		329	190	99
16.4 16.5	16 15				65 63	169	166				100
16.6	15	9 16	3 18	3 1	52	163	153	208	303	221	103
16.7	16	1 16	5 18	4 1	59	165	154	189	279	222	104
16.8 16.9	18 15	3 16 1 16	7 18 5 19	8 1	60 57	167	152 152	193 230	322 345	224 227	105 107
17	15					171	155	272			109
17.1	15	1 16	5 19	0 1	59	170	156	257	375	248	110
17.2	14				50	159	150	227	345		110
17.3	15 15		7 17	8 1 6 1	53	160	149	199	310	246	110

me	Target Wil TC Left TC #21	ndow Target TC Cei TC #22	nter	Target Windo TC Right TC #23		ve Window	Target Wall 4' Above Winde TC #25	Target Wall w 6' Above Wi TC #26	ndow	Target Wall 8" Above Window TC #27	Target Wall 10° Above Window TC #28	TC #29	Target Wall Attic TC #30	
n in)	('F)	(°F)		(°F)	("F)		('F)	(°F)		(°F)	("F)	("F)	(°F)	
17		158	161		34	158		65	149	210	296		110	
17		170	167		38 33	165		76 78	167	272 260	383		110	
17		166	171		37	160		82	173	200	420		113	
17		170	179		13	173		87	177	294	401		115	
	18	168	178			171		83	174	280	383		115	
18		171	178		13	171		86	172	277	375		115	
18		173	180			169		89	208	408	482		118	
18		177	184		15 10	164		84 96	190	375	436		118	
18 18		180 183	188		13	170		96 05	199	395	507 578		120	
18		190	192		19	175		05	222	466	537		124	
18		205	195		36	185		13	248	514	539		128	
18	.8	208	194	2	15	186	2	24	311	529	590	383	132	
18		211	198		18	192		20	315	511	573		139	
	19	216	206		18	194		20	283	459	509		143	
19 19		215 206	208		18	190		15 21	254 364	460 529	540		147	
19		206	202		10	188		78	428	529	590			
19		230	200		13	193		42	347	511	559		153	
19		228	210		20	198		24	287	452	507			
19	6	226	209	2	21	196	2	21	300	478	514	423	159	
19		222	209		28	190		13	304	508	537		159	
19		232	212		26	190		11	302	501	541		163	
19		242	220		33	194		37	319	519	555		162	
20	20	248 254	223 229		34	194		36 29	388	524 520	579 571		165	
20		254	229		32	197		74	361	534	568		168	
20		250	222			209		35	449	570	595		167	
20		237	214		24	205		85	422	589	614		168	
20		232	215			208		65	387	537	573		172	
20		237	219		32	201		41	322	472	533		176	
20		247	220		36	198		36	345	504	568		177	
20 20		248 249	220		38 38	199		04 55	413 353	540 507	566 535		177	
	21	251	216		35	200		39	328	484	511		174	
21		253	215		32	198		26	299	507	560		177	
21		259	219		35	196		18	280	454	510		176	
21		247	215		30	198		51	365	506	542		173	
21		254	220		32	201		40	374	541	559		174	
21		257	222		35	198		24 15	336 308	487	528 478		177	
21		253 250	215		80 33	200		23	308	459	476			
21		259	224		12	199		24	350	504	526			
21		250	218		39	201		35	364	511	537		175	
	22	258	223		10	197		29	344	491	540		175	
22		243	224		17	198		27	325	480	521		177	
22		235	220		15	201		24	322	478	518		180	
22		227 231	214		12 35	198		96 72	359 393	458 525	479		181	
22		225	203		25	185		61	395	525	556		183	
22		221	195		17	177		59	371	507	536		184	
22		210	181		13	171		04	412	511	543			
22		206	176		32	164		00	387	482	529		185	
22		198	171		36	158		49	326	431	458		185	
	23	188	163		30	155		08	288	371	385		185	
23		177	158 159		76 74	148		21 39	301 294	402	431		184	
23	3	175	159		76	148		39 01	284	393	361		18/	
23		167	156		70	152		08	234	301	342		179	
23		168	157		18	149		02	241	319	357		177	
23		167	155		35	142		69	199	272	302		173	
23	.7	173	157	1	59	140	1	56	179	229	285	289	169	

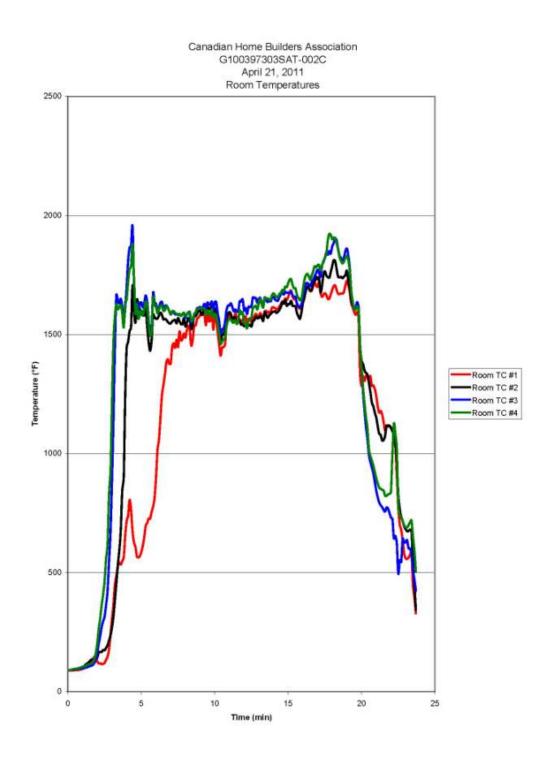
'ime min)	Behind Bottom Window TC #31 ("F)	Behind Top Window TC #32 ("F)	Heat Flux Top Window w/ Screen (kW/m <sup>2</sup> )	Heat Flux Top Window w/o Screen (kW/m <sup>2</sup> )	Heat Flux Center of Wall Face (kW/m <sup>3</sup> )	Heat Flux Bottom Window w/ Screen (kW/m <sup>2</sup> )	Heat Flux Bottom Window w/o Screen (kW/m <sup>2</sup> )
	0 87	7 6	0.22	0.17	0.02	0.02	0.14
	0.1 81		0.25			-0.02	0.12
	0.2 8		87 0.25 87 0.20				0.07
	0.3 81		37 0.20			-0.02	0.12
	0.5 87	7 8	0.25	0.15			0.05
	0.6 83	7 6	0.27	0.12	2 0.05	-0.07	0.05
	0.7 8		0.22				0.00
	0.8 8		17 0.25 17 0.25			-0.12	0.03
	1 8		0.22			-0.12	0.05
	1.1 83	7 6	0.25		-0.02	-0.07	-0.03
	1.2 87		0.22				0.05
	1.3 81 1.4 81		16 0.20 16 0.20				0.05
	1.5 81		37 0.20				0.00
	1.6 81		0.20			-0.12	-0.02
	1.7 87		0.20			-0.14	0.05
	1.8 8		0.17				0.01
	19 8		16 0.20 37 0.22			-0.07	-8.02
	2.1 8		16 0.20				-0.02
	2.2 83	7 8	0.22	0.12	-0.07	-0.14	0.03
	2.3 81		0.17				-0.02
	2.4 81 2.5 81		16 0.17 16 0.17			-0.12	0.00
	2.6 8		16 0.22	0.12			0.03
	2.7 87	7 8	8 0.20				-0.05
	2.8 8		0.20			-0.14	0.02
	2.9 8		16 0.17 16 0.20			-0.14 -0.16	0.00
	3.1 87		16 0.17				-0.02
	3.2 81		0.17				-0.02
	3.3 87	7 6	0.17	0.12	-0.10		-0.02
	3.4 8		0.20				-0.03
	3.5 8 3.6 8		17 0.20 16 0.20				0.00
	3.7 81		16 0.17				-0.03
	3.9 8.6	1 6	0.17				-0.05
	3.9 81		0.17				-0.02
	4 8 4.1 8		16 0.20 16 0.17				-0.05
	42 8		16 0.17				-0.08
	4.3 87		0.17				-0.02
	4.4 81		0.17				-0.07
	4.5 8		87 0.20 87 0.20			-0.19 -0.16	-0.19
	4.7 81		0.22				-0.05 D.02
	4.8 88		0.22				-0.07
	4.9 81		0.20			-0.12	-0.02
	5 80 5.1 88		0.22 0.22				0.00
	5.2 88		0.25				-0.02
	5.3 88		0.20			-0.07	-0.02
	5.4 88	3 6	0.27	0.15	5 0.00	-0.12	-0.05
	55 88		18 0.27				-0.02
	5.6 88 5.7 80		18 0.30 18 0.30				0.02
	5.8 88		0.35				-0.02
	5.9 88	8 6	0.32	0.22	2 0.12	-0.07	D.07
	6 88 61 88		18 0.32 19 0.42				0.09
	6.1 88 6.2 89		19 0.42 19 0.40			-0.02	0.13
	6.3 85		19 0.37			0.02	0.09
	6.4 89	3 6	0.45	0.32	2 0.17	0.05	0.12
	6.5 85 6.6 85		19 0.42 19 0.45				0.14
	6.7 89		19 0.45 19 0.45				0.14
	6.8 85		0.45			0.07	0.13
	6.9 85	3 6	0.45	0.43	2 0.36	0.12	0.16
	7 89		0.47			0.12	0.19
	7.1 90 7.2 90		19 0.55 10 0.52			0.16	0.19
	7.3 85		0 0.52				0.21
	7.4 85	3 8	9 0.55	0.45	0.48	0.21	0.28
	7.5 90	3 8	9 0.55	0.52	2 0.48	0.21	0.28
	7.6 90		19 0.65 19 0.62		0.50 0.57		0.30
	7.8 91		19 0.65 31 0.65				0.20
	7.9 9:		0.65				0.33
	8 93	2 8	0.65	0.62	2 0.84	0.28	0.35
	8.1 93	2 9	0.67	0.63	2 0.62	0.33	0.31
	8 2 93 8 3 93		0 0.70				0.43
	84 93		10 0.72 19 0.74	0.72			0.39
	8.5 94		0.77				0.42
	0.0						0.42

ime		Behind Bottom Window TC #31	Behind Top Window TC #32	Heat Flux Top Window Screen	wi	Heat Flux Top Window w/o Screen	Cen Fac		Heat Flux Bottom Window w/ Screen	w/o Screen
n in)	8.7	(°F) 94	("F)	(kW/m <sup>2</sup> ) 89	0.77	(kW/m <sup>2</sup> )	(kW		(kW/m <sup>2</sup> ) 0.40	(kW/m <sup>2</sup> )
	8.8	9-		89	0.77	0		0.86	0.40	0.44
	8.9	93		89	0.79			0.88	0.42	
	9	9		89	0.82	0.	82	0.93	0.49	0.49
	9.1	9		89	0.84	0.1		1.03	0.44	B.46
	9.2	90		90 90	0.89			1.00	0.49	0.49
	9.4	90		90	0.94	01		1.05	0.49	0.60
	9.5	90	)	90	0.94	0.1	94	1.07	0.54	0.58
	9.6	9		91	0.99	1.		1.10	0.54	0.58
	9.7 9.8	9		90 90	0.99	1.		1.12	0.58	0.60
	9.9	9		90	1.02	1.		1.17	0.58	
	10	9		90	1.02			1.19	0.58	0.63
	10.1	9		90	1.02	1.		1.22	0.61	0.60
	10.2	9		90 91	1.09			1.29	0.68	0.67
	10.3	9		90	1.09	1.		1.31	0.68	0.60
	10.5	93	1	91	1.17	1.		1,41	0.65	0.67
	10.6	9		91	1.22	1.	21	1.41	0.63	0.77
	10.7	9		91 91	1.17	1.		1.36	0.75	0.74
	10.8	8.		91	1.29			1.46	0.77	
	11	93	2	92	1.34	13	38	1.53	0.84	0.81
	11.1	9		91	1.29	1.	34	1.58	0.82	0.81
	11.2	9		91 91	1.32			1.62	0.84	0.88
	11.4	8.		91	1.34			1.62	0.89	0.86
	11.5	9		91	1.39	1.	41	1.87	0.91	0.84
	11.6	9		91	1.44	1.		1.72	0.96	0.91
	11.7 11.8	93		92 92	1.48	12		1.79	0.94	0.91
	11.9	93		92	1.51	1		1.86	0.96	1.02
	12	93		92	1.54	1.		1.89	1.01	1.02
	12.1	93		92	1.56			1.91	1.05	1.02
	12.2 12.3	93		92 92	1.61	1.		1.96	1.10	1.09
	12.4	93		92	1.69			2.01	1.12	
	12.5	9:		92	1.74	1.		2.05	1.08	
	12.6	93		93	1.61	12		2.09	1.17	1.12
	12.7	93		93 93	1.69	1)		2.13	1.17	1.10
	12.9	93		93	1.71	11		2.17	1.24	1.25
	13	93	3	92	1.79	11	93	2.13	1.24	1.18
	13.1	93		92	1.76			2.20	1.33	
	13.2 13.3	93		92 92	1.79			2.22 2.22	1.26	
	13.4	93		92	1.81	13		2.29	1.31	1.21
	13.5	93		92	1.89			2.05	1.29	1.30
	13.6	93		92 92	1.89			2.32	1.33	1.30
	13.8	93		93	1.94	2.	10	2.41	1.40	1.37
	13.9	93		93	1.94	13		2.46	1.36	1.37
	14	93		93	2.06	2.		2.44	1.38	
	14.1	93		93 93	2.04	2:		2.46	1.45	1.42
	14.2	93		93	2.09			2.48	1.43	
	14.4	93	1	93	2.08	2:	23	2.53	1.43	1.44
	14.5	93		93	2.09	2:	25	2.46	1.47	1.42
	14.6 14.7	93		93 93	2.11	2:		2.53	1.57	1.49
	14.8	93		93	2.14	2:		2.60	1.64	1.39
	14.9	93	I.	94	2.19	23		2.70	1.66	
	15	93		93	2.21	2:		2.75	1.40	1.70
	15.1 15.2	93		93 93	2 26 2 23			2.82	1.71	1.56
	15.3	93		93	2.23			2.77	1.68	
	15.4	94	1	93	2.28	23	50	2.91	1.73	1.65
	15.5	94		93	2.31	2:		2.82	1.71	1.49
	15.6	94		93 93	2.36	2:		2.96	1.71	1.77
	15.8	94		94	2.33	21		5.28	1.78	
	15.9	94	1	94	2.43	2 :	55	7.45	1.85	1.72
	16	94		94	2.41	21		7.31	2.01	1.84
	16.1	94		94 94	2.48			8.36 7.28		
	16.3	96		95	2.41			11.82		2.14
	16.4	96	5	95	2.73	23	82	11.58	2.15	2.10
	16.5	96		96	2.63	2.	79	8.33	2.32	
	16.6	91		97 96	2.66			10.15	2.43 2.55	
	16.7 16.8	96		96	2.81	21	92	9.98	2.55	2.44
	16.9	98	5	96	2.88	23	92	10.94	2.57	2.56
	17	98	8	97	2.78	2	75	10.22	2.69	2.62
	17.1	96		97 97	2.76	23	97 14	9.43 8.50	2.78 2.76	2.65 2.81
	17.2	96		97	2.91	3.	19	8.24	2.85	

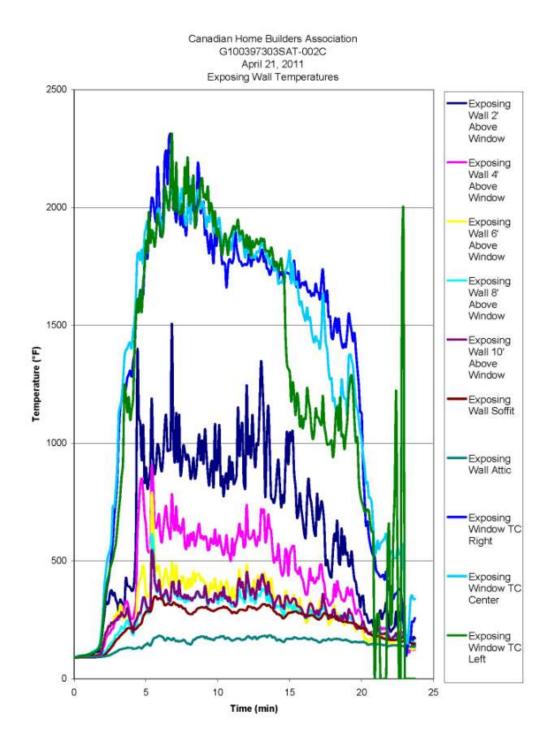
1003973	03SAT-0028				Ganadian Ho	ome Builders Associa	aon	
Time (min)	Behind Bottom Window TC #31 (°F)	Behind Top Window TC #32 ('F)			Heat Flux Top Window w/o Screen (kW/m <sup>3</sup> )	Heat Flux Center of Wall Face (kW/m <sup>3</sup> )	Heat Flux Bottom Window w/ Screen (kW/m <sup>2</sup> )	Heat Flux Bottom Window w/o Screen (kW/m <sup>2</sup> )
17.5	102		98	3.25			3.04	2.97
17.6			100	3.25			3.18	3 28
17.7			100	3.03			3.27	3.14
17.8			100	3.05			3.25	3.16
17.9			100	3.03			3.27	3.21
18			100	3.05			3.32	3.25
18.1			99	3.08			3.44	3.39
18.2			99	3.10			3.46	3 35
			100					3.35
18.3			100	3.05			3.53	
18.4				3.18			3.49	3.65
18.5			101	3.33			3.67	3 65
18.6			101	3.25	3.71		3.79	3.72
18.7			101	3.30			3.84	3.81
18.8			100	3.33			3.81	3.81
18.9			102	3.45			4.05	3.90
19			102	3.38			4.02	4.00
19.1			101	3.43			4.07	4.04
18.2			102	3.48			4.16	4.11
19.3			102	3.53			4.19	4.20
19.4			102	3.60			4.30	4.23
19.5			102	3.38			4.37	4.39
19.6	109		102	3.50			4.42	4.48
19.7	111		103	3.60	4.11	12.92	4.54	4.44
19.8	109		102	3.63	4.15	13.18	4.58	4.60
19.9	107		103	3.60	4.30	13.21	4.79	4.62
20	110		103	3.58	4.18	14.47	4.77	4.74
20.1			104	3.63	4.03	13.66	4.84	4.90
20.2			105	3.63	4.33	14.21	4.89	4.88
20.3			105	3.55			4.89	4.88
20.4			104	3.67	4.28		5.12	4.97
20.5			108	3.72	4.53		5.12	5.18
20.6			106	3.50			5.22	4 97
20.7			105	4.00			5.19	5.16
20.8			104	3.87	4 28		5.24	5.32
20.9			105	3.97	4.48		5.24	5.25
20.0			105	4.05	4.53		5.31	5.37
21.1			105	3.92			5.47	5.32
21.2			105	3.97	4.55		5.45	5.44
21.2			105	4 07	4.60		5.40	5 58
21.3			105	4 25			5.45	5.60
21.5			105	4.00			5.45	5.64
21.5			105	4.00			5.61	5.85
21.0			105	4.07			5.73	5.85
21.8			105	4.17			5.80	5.69
21.8			105	4.17			5.80	5.88
21.9			106	4.17			5.82	5.88
22.1			105	4.17			5.85	5.97
22.2			105	4.10			5.94	5 97
22.3			105	4.39			6.03	6.02
22.4			105	4.25			6.03	6.06
22.5			106	4.25			6.03	6.09
22.6			106	4.32			6.06	6.09
22.7			106	4.35			6.03	6.06
22.8			105	4 35			6.01	6.13
22.9			105	4 27			6.10	6.13
23			105	4.30			6.10	6.13
23.1			105	4.37			6.08	6.11
23.2			105	4.35			6.17	6.09
23.3			105	4 37	5 07		6.06	5.83
23.4	104		104	4.44			5.94	6.23
23.5	i 104		104	4.47	5.04		6.10	6.13
23.6	104		103	4.32	5.04	7.47	5.96	6.09

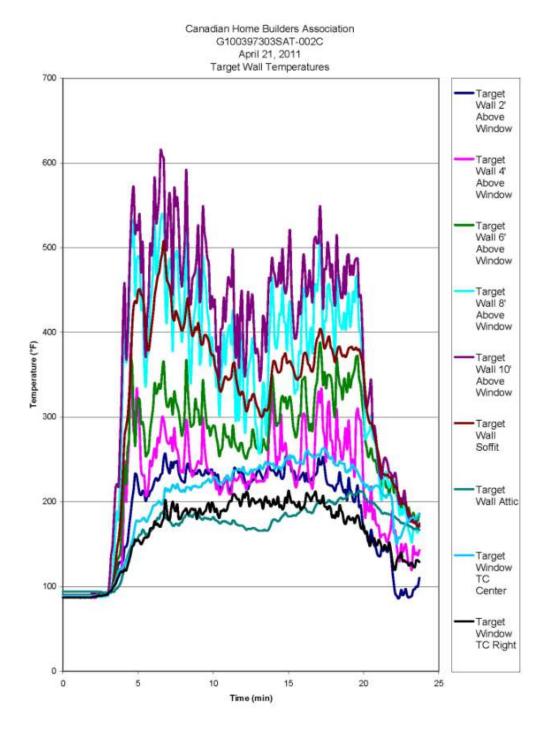
## APPENDIX F Test C Data



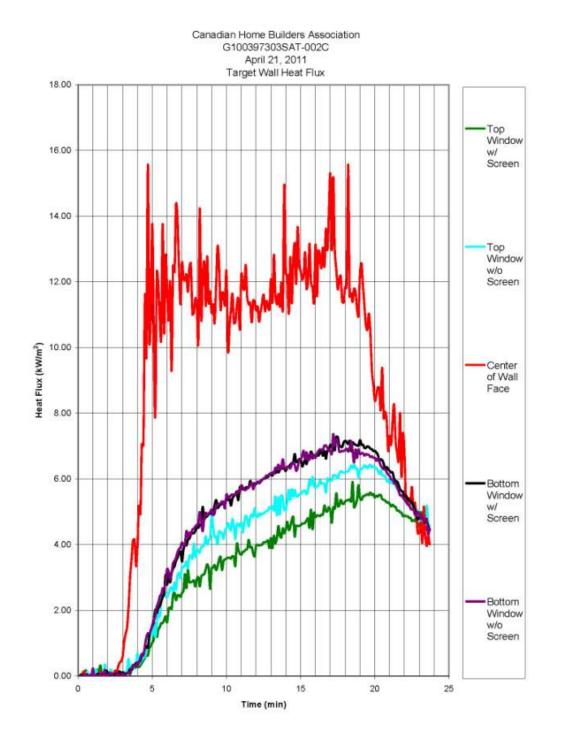


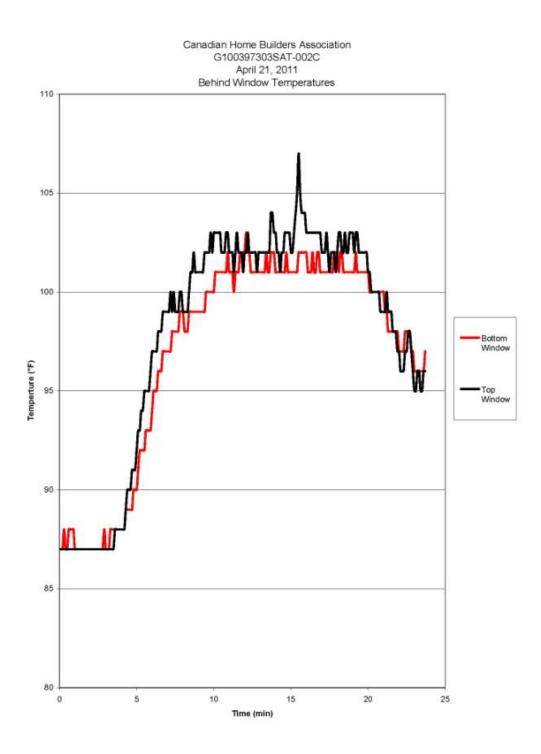












Intertek

G 1003973035AT-002C

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Time (min)		Room TC #1 (°F)	Room TC #2 (°F)	Room TC#3 (°F)	Room TC#4 (°F)
	0.1	89	90 90	90	
	0.2	89	90	90	91
	0.4	90	92	93	
	0.6	91 91	97 98	98	
	0.8	92 94	99	98	100
	1	96			105
	1.1 1.2 1.3	102		101	108
	1.4	111			
	1.6	124	135	105	119
	1.8	148		121	137
	19 2 2.1	127	143	162	
	22	120	167	234	310
	2.4	117	175 174	298 311	409
	2.8	134 148	184	385	559
	2.8	177	215 237	546	830
	3.1	304 365	270	881	
	3.2	449	385	1443	1577
	3.4	527 541	532 594		1606
	3.6	534 549	680 846		
	3.8	563	901	1551 1613	1530
	4.1	717 739	1445 1469	1702	1647
	42	805 764	1532	1865	1787
	4.4	674 627	1706 1605	1715	1741
	4.6	608 567	1646	1632	1626
	4.8 4.9	570		1601 1631	1588
	5 5.1	613	1580	1614	1581
	5.2 5.3		1612	1634 1664	1640
	5.4	727	1468	1635	1546
	5.7	755	1476	1532	1511
	5.8 5.9	815	1573	1637	1625
	6 6.1	1014	1567	1600	1589
	6.2	1149	1592	1633	1619
	8.4 6.5	1286	1564	1615	1600
	6.6 6.7 6.8	1381	1582	1618 1822 1813	1617
	6.9	1377	1547	1598	1598
	7 71 72	1378 1447 1463	1547	1584 1595 1593	1598
	73	1444	1561	158	1591
	7.5	1478	1569	1584	1582
	7.7	1476	1544		1578
	7.9		1568 1534	1586	1592
	8.1 8.2	1487	1550	1595	1585
	8.2 8.3 8.4	1520		1584	1595
	8.5 8.6	1454	1523	1559	1557
	0.0	1001	1970	1000	1999



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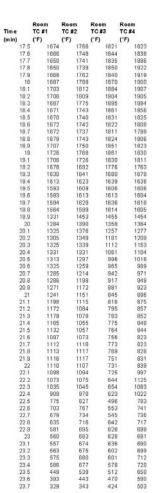
Canadian Home Builders Association

Time		Room TC #1	Room TC #2	Room TC#3	Room TC #4
(min)	8.7	(°F) 1538	(°F) 1577	(°F) 1594	(°F) 1593
	8.8		1588	1611	1607
	8.9	1572	1597	1610	1608
	0.0		1601	1818	1610
	9.1	1592	1582	1607	1611
	9.2				
	93	1582	1614	1678	
	9.4			1809	
	9.5	1598	1616		
	9.6			1625	1592
	9.7				
	9.8	1614	1612	1626	
	9.9	1521	1572	1638	1571
	10	1521			1587
	10.1	1588	1604		1587
	10.1				
	10.3	1457	1530	1556	
	10.4	1411	1477	1501	1461
	10.4		1497	1501	1401
			1501	1522	1479
	10.6			1525	
	10.7	1459		1552	1487
			1569		
	10.9	1572	1584	1621	1657
	11.1	1565			
	11.2	1557	1587	1815	1552
	11.3	1563	1572	1597	1550
	11.4	1588	1571	1805	1580
	11.5		1545		
	11.6		1558		1555
	11.7	1563			
	11.8	1554	1541	1638	1586
	11.9	1562		1648	1594
	12		1535		1547
	12.1	1576	1541	1611	1547
	12.2	1547	1535		
	12.3		1537	1617	1564
	12.4 12.5 12.6	1568		1815	1566
	12.5	1551			
	12.6	1570			
	12.7	1575		1654	
	12.8	1587	1575	1853	1621
	12.9	1575			
	13		1570	1849	
	13.1	1590			
	13.2	1579	1569		
	13.3	1567	1557	1821	1614
	13.4	1597	1594	1656	
	13.5	1599	1583	1646	
	13.6				
	13.7	1596			
	13.8	1591	1586	1639	1645
	13.9	1613			
	14	1614	1595	1857	1673
	14.1 14.2	1611		1847	1666
	14.2	1606			1657
	14.3	1609		1842	1857
	14.4	1618			1670
	14.5		1616	1669	1675
	14.6	1639			
	14.7	1635			
	14.8	1651	1646		
	14.9		1621	1675	
	15	1657	1628	1677	1715
	15.1	1679	1628		1730
	15.2 15.3	1685		1680	
	15.3	1659		1665	
	15.4	1648			
	15.5	1652	1618	1857	1694
	15.6	1626	1590	1631	1666
	15.7	1614			
	15.8	1609		1614	
	15.9	1823	1592	1825	1649
	16			1659	1687
	16.1	1689		1686	1726
	16.2	1704			1748
	16.3	1713			
	16.4	1695	1695	1710	1745
	16.5		1685	1703	1730
	16.6		1688		1748
	16.7	1703	1712 1721	1730 1745	1764
	16.8		1721	1745	
	16.9				1782
	17	1700	1732	1772	1791
	17.1	1720	1739	1761	1792
	17.2	1678		1742	1769
	11.00	100.000			
	17 1 17 2 17 3 17 4	1658		1786	1791



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Canadian Home Builders Association



				and the second second			이슬 아직 전 바람이 가 가 가 다 다 나 다 나 다 나 다 나 다 나 다 나 다 나 다 나		ALCONTRACTORY ON THE OWNER	
ne	TC Left TC #5	TC Center TC #6	TC #7	2' Above Window TC #8	4' Above Window TC #9	TC #10	r8' Above Window TC #11	10' Above Window TC #12	TC #13	Attic TC #14
in)	("F) 1 Bi	(°F) 3 91		(°F) 90	(°F)	(°F) 2 90	("F)		("F) 81	(*F)
0.1	91	9 9	1 90	90		2 90	92	90	91	9
0.3				91 93	93			90 91	91 91	9
0.4				95				92	91	9
0.0				96	93	3 91			81	9
0.0				97 97					91 91	9
0.8	3 10	) 10	1 101	97	94	4 94	92	93	91	9
0.9	10:			98 100				93 94	91 91	9
1.1				99	94			94	91	9
1.2				100					91	9
13				99 107	94			94 96	92 92	
1.	5 11	12:	2 121	109	98	5 103	93	99	92	9
1.6				114				100 103	93 93	
1.8	3 13!	9 15-	4 145	121	100	106	95	104	93	9
15				155	104			109	94 97	
2.1	30	7 39	0 297	273	14	5 181		165	101	9
2:	2 361	3 441	8 344	327 317	170	190	119	185 204	106	9
2.				317	193			204	120	
2 5	5 465	54	6 473	365	19	7 220	145	223	127	10
28				376 354	21			239 234	135	
2.8	541	5 73	0 693	365	23	5 267	172	245	153	11
25				336 322	25			248 251	162	
3.				287				266	174	
3.2				336				263	182	
3.3				327 317					188	
3.	5 124	5 136	6 1213	312	301	3 256	i 214	283	199	12
3.6				426	326			276	206	13
3.6				393				272	216	
3.9				388 374				245 223	215	
4.1				374				197	215	
4.3	1394	151	7 1386	428	286	8 225	208	237	210	12
43				610 1386	323			248 262	212	
4.5	5 155	8 180	8 1603	1112	724	4 404	279	281	226	13
48				1087				279	231 239	13
4.8	168	176	2 1629	1077	79	5 483	338	344	264	13
4.5				837	695			344	275	
5.1				898 807					286	
5 3	198	193		B41					288	
5:				904 1190	541			291 544	285 300	
5.5	5 188:	2 188	8 2029	929	828	8 685	584	519	335	16
5.6				868	661			415	349 349	
5.8	1974	198	9 2169	994	663	477	367	373	337	17
5.5				975	698			419 372	342 341	
6.	1874	1933	2 1929	882	575	386	336	338	337	17
6.3				949 1069				354 363	331 313	17
6.	205	208	8 2241	1118	73:	463	389	378	314	16
6.5	5 201	5 202	2100	967	65	7 423			319	17
6.6				970 973				331 332	318 314	
6.6	3 231-	207	1 2207	1507	78:	3 493	395	408	314	16
6.9				1024	684			411 364	324 321	17
7	219	201	9 1938	1129	73	2 483	383	371	315	16
73				920	63			353 416	315 306	
7.4			6 1926	866				356	306	
7.5	2011	208	1 2016	909	63	7 436	340	350	305	16
7.6				990 965					298 289	
7.8	3 206	1920	5 1885	930	55	1 383	328	339	287	15
7 9				952 923				355 340	280 276	
8.1				823					276 275	
8.3	2023	3 211	8 2055	875	590	395	i 336	332	275	15
83				938 851					282	

	Exposing TC Left	Window Exposing TC Center	Window Exposi TC Rig	ng Window	Exposing Wall	Exposing Wall	Exposing Wall	Exposing Wall	Exposing Wall 10' Above Window	Exposing Wall	Exposing Wal Attic
me	TC #5	TC #6	TC #7	inc.	TC #8	TC #9	TC #10	TC #11			TC #14
1 in)	('F)	(°F)	(°F)	0105	(°F)	(°F)	(°F) 444	('F)	(°F)	(°F)	(°F)
	8.7 8.8	2024 2101	2058 1995	2135 1979	1037				360 348	301 303	17
	8.9	2124	2026	2010						304	18
	9	2044	2011	2024	913					303	18
	9.1 9.2	2056 2035	1970 1916	1886	1059				394 359	302 306	17
	9.3	2089	1963	1850	870					297	17
	9.4	1975	1940	1808	821				336	296	17
	9.5	2019	1966	1888	904					291	16
	9.6 9.7	1994 1922	1964 1892	1830	923				330 326	289	16
	9.8	1984	1953	1905	1081	634	421	350	363	291	17
	9.9	1882	1911	1838	889					294	17
1	10	1908 1887	1935 1955	1910	923					298 299	17
	0.2	1841	1892	1833						302	18
	0.3	1799	1833	1761	860					302	17
	0.4	1854 1890	1835 1853	1768	775				390 343	307 302	18
	0.6	1857	1846	1661	872				349	304	17
	0.7	1799	1857	1747	807		384	334		298	17
	8.0	1866	1860	1780	944				347	293	17
1	0.9	1881 1904	1821 1851	1770	846				324 322	287 279	16
1	1.1	1922	1895	1791	828					284	16
	1.2	1906	1902	1911	838					282	16
	13	1920 1948	1916 1925	1833	869					279 286	17
	1.5	1888	1825	1773	948					293	17
	1.6	1888	1864	1770	1038			345	388	294	16
	1.7	1901	1885	1753	1082					294	16
	1.8	1860 1830	1832	1757	836				362 342	292 290	16
	12	1884	1850	1756	1244					293	17
	2.1	1826	1808	1771	960					307	18
	2.2	1874	1848	1876	1030					306	17
	23	1795 1858	1787	1754	939					306	17
	2.5	1832	1793	1778	982				371	303	17
	2.6	1846	1786	1787	898				338	298	17
	2.7	1866 1845	1813	1789	1000				377	294	16
	2.9	1851	1819	1781	1150				379	302	17
	13	1870	1856	1806	1346	715	423	388	424	310	17
	3.1	1857	1842	1820						316	18
	3.2	1866 1822	1831 1814	1770	1074	717				317 316	18
	3.4	1815	1785	1743	1029					310	17
1	3.5	1816	1797	1739	1159	697	421	370	411	314	18
	3.6	1794	1762	1715	986					311	18
	3.7 3.8	1831 1807	1759	1729	769					303	16
	3.9	1754	1733	1774	747				302	288	17
	14	1758	1738	1742	780					284	17
	4.1	1768 1734	1741 1677	1758	868				338 353	276 275	16
	4.3	1758	1684	1726	830					275	16
1	4.4	1784	1682	1715	729	453	331	292	309	268	16
	4.5	1732	1692	1728	781					258	15
	4.6 4.7	1714 1469	1676 1731	1676	750				288 349	258 265	15
	4.8	1334	1744	1724	1049				352	272	17
1	4.9	1316	1780	1721	911					280	17
	15 5.1	1300	1813 1679	1717	1043					280 283	16
	5.2	1258	1785	1715	1049				340	283	17
1	5.3	1207	1690	1775	879	563	356	315	340	285	13
	5.4	1120	1672	1685	810				335	286	17
	5.5 5.8	1211 1176	1685 1633	1662	685 706				311 308	284 279	13
	5.7	1072	1586	1662	788				305	278	13
	5.8	1116	1602	1674	721	433	303		299	277	17
1	5.9	1063	1563	1682	676		2 290		283	274	17
1	16 6.1	1106 1103	1538 1521	1671 1686	618					273 271	17
	6.2	1233	1576	1656						268	17
1	6.3	1181	1525	1641	850	401	259	272	301	268	16
	6.4	1144	1534	1647	776					260	16
	6.5 6.6	1065	1483 1447	1625						271 269	17
	6.7	1048	1428	1628	624					266	16
1	8.8	1147	1454	1677	808	411	290	266	278	258	16
	6.9	1113	1436	1643	785					255	16
	17	1107 1088	1432 1402	1638	679				271 292	252 255	15
	72	1078	1486	1691	703					261	1.
1	7.3	1201	1634	1737	724	428	301	304	360	272	16
1	7.4	1079	1539	1642	644	401	300	293	324	279	1

0039730	035AT-002C					Canad	ian Home	Builders A	ssociation						April 2	1,20
	Europies M	indau	Evenesing Wind	eur Euro	sin a Windows	Exposing Wall	Evansi	ing Wall	Exposin	a Wall	Exposing Wall	Exposing	W-11	Exposing Wal		
	TC Left		TC Center	TCR							8' Above Window				Attic	17.4
	TC #5		TC #6	TC#		TC #8	TC #9	re mindon	TC #10		TC#11	TC #12	THINK	TC #13	TC #14	
in)	("F)		(°F)	(°F)		(°F)	(°F)		(°F)		(*F)	(°F)		(*F)	(*F)	
17.5	(.,	1038		28	1601			344	(.)	269			298			16
17.6		995	13		1646			337		263			273			18
17.7		995		12	1536			314		230			254	27		17
17.8		1002	12		1538			312		239	28		271	28		11
17.9		1012	12		1452			323		249	26		260			11
18		941	11		1442			333		254	26		291	26		18
18.1		998	11		1503			401		311	27.		284	26		1
18.2		1123		42	1530			349		252	251		255	25		1
18.3		1152		58	1469			414		280	26-		267	25		1
18.4		1054		60	1529			379		251	25		247	25		1
18.5		1194		28	1472			366		272	26		259	24		1
18.6		1030	12		1427			340		254	28		287	24		1
18.7		1036		15	1405			335		245	25		252			1
18.8		975		89	1422			330		228	26		279			1
18.9		1036	11		1422			351		252	25		285	24		1
19		1100	11		1409			387		261	24		205	24		1
19.1		1213	13		1550			361		267	26		295			1
19.2		1266		78	1511			356		257	25		285	23		1
19.3		1288		53	1475			380		254	25		275			1
19.4		1217	13		1475			343		234	24		254	23		1
		1095		42 42	1433			343		237	23		233			1
19.5		1095		42 59	1467			276		205			233			1
19.6																
19.7		1024		48	1318			291		219			213			1
19.8		846	10		1243			292		218	221	1	217	22		1
19.9		784		49	1135			282		220			215			1
20		754		14	1125			258		214			229			1
20.1		737		49	894			231		196	23		245			1
20.2		709		00	770			200		169	21:		223			1
20.3		710		30	650			213		172	201		212			1
20.4		719		34	668			197		161	20		198			1
20.5		710		70	606			191		158	19		190			1
20.6		856		68	570			190		166			195			1
20.7		625		44	542			200		171	19		186			1
20.8		622		45	524			183		166	19:		185			1
	BAD TC			31	520			168		157	18		181	18		1
21		235		41	463			157		165	18		188			1
21.1		276		86	452			185		186			213			1
21.2		275		51	442			190		181	19		204	18		1
21.3		14		74	433			218		181	19		195	17		1
21.4		-160		81	436			210		180	19		190			1
	BAD TC			89	441			216		179			192			1
	BAD TC			97	421			212		174			191	17		1
	BAD TC	2220-		15	455			218		172	18		195	16		1
21.8		521		57	409			206		168	19		189			1
21.9		654		93	378			184		158	18		177	16		1
22		230		36	395			171		153	17		166			1
22.1		241		43	358			174		152	17:		168			1
22.2		617		18	339			168		149	17		178			1
22.3		796		12	35B			164		151	17		183			1
22.4		1217		17	362			170		142	17		194	16		1
22.5		442	5	55	372			167		136			175			1
	BAD TC			29	381			196		157	17:		174	16		1
22.7		-67		34	377			191		166			174	16		1
22.8		1875		65	326			199		174	17:		174	15		1
22.9		1973		87	248			192		178	17-		182			1
	BAD TC		2	48	157	21-	4	165		152	16	В	179	15	9	1
23.1	BAD TC		1	73	98		0	158		139	16-	4	170	18	0	1
	BAD TC		1	52	147	13	8	151		132	183	3	175	15	8	1
	BAD TC		2	39	160		5	113		130	16:	2	163	15	6	1
	BAD TC		3	41	168	13	4	130		128	15	7	153	15	3	1
	BAD TC			55	242			133		130	15		150			1
	BAD TC			38	242			123		125	15		148			1
	BADITC			39	258			127		130			142			1



me in)	Target Window TC Left TC #21 ("F)	/ Target Window TC Center TC #22 (°F)	TC Right TC #23	Target Wall 2' A bove Window TC #24 ('F)	Target Wall v 4' Above Win TC #25 ('F)	Target Wall dow 6' Above Wir TC #26 (°F)	ndow	Target Wall 8" Above Window TC #27 ("F)	Target Wall 10° Above Wind TC #28 ("F)		9	Target Wall Attic TC #30 (°F)	
	0 BAD TC	89	87	87		87	88	87		88	90	94	
	0.1 BAD TC	89	87	87		87	89	88		88	90	94	
	0.2 BAD TC	89	87	87		87	88	87		88	90	94	
	0.3 BAD TC	89	87	87		87	88	87		88	90	94	
	0.4 BAD TC	89	87 87	87		87 87	88 88	87 87		88	90 90	94 94	
	0.5 BAD TC 0.6 BAD TC	89	87	87		87	88	87		88 88	90	94	
	0.7 BAD TC	89	87	87		87	88	87		88	90	94	
	0.8 BAD TC	88	87	87		87	88	87		88	90	84	
	0.9 BAD TC	89	87	87		87	88	87		89	90	94	
	1 BAD TC	89	87	87		87	88	87		89	90	94	
	1.1 BAD TC	89	87	87		87	88	87		89	90	94	
	1.2 BAD TC	89	87	87		87	88	87		89	90	94	
	1.3 BAD TC	89	87	88		87	88	87		89	90	84	
	1.4 BAD TC 1.5 BAD TC	89	87 87	87		87 87	88	87		89 89	90 90	94	
	1.6 BAD TC	89	87	87		87	88	87		89	90	94	
	1.7 BAD TC	89	87	87		87	88	87		89	90	94	
	1.8 BAD TC	89	87	87		87	88	88		90	90	94	
	1.9 BAD TC	89	87	87		87	88	89		91	90	94	
	2 BAD TC	89	88	87	r	87	88	90		94	90	94	
	2.1 BAD TC	89	88	87		87	88	89		92	90	94	
	2.2 BAD TC	89	88	88		87	88	89		91	90	94	
	2.3 BAD TC 2.4 BAD TC	90	89	88		88	89 89	88		91 90	91 91	94	
	2.5 BAD TC	80	89	89		88	89	88		90	91	93	
	2.8 BAD TC	90	89	89		88	89	88		90	91	94	
	2.7 BAD TC	90	90	89		88	89	88		90	91	93	
	2.8 BAD TC	91	90	90		89	90	88		90	91	93	
	2.9 BAD TC	92	91	92		90	91	89		90	92	93	
	3 BAD TC	93	92	92		91	92	89		91	92	93	
	3.1 BAD TC	94	94	95		83	93	95		07	94	93	
	3.2 BAD TC 3.3 BAD TC	97	95 98	98 102		95 99	96 99	98 106		35 50	97 102	93 94	
	3.4 BAD TC	103	101	102		103	103	139		84	112	94	
	3.5 BAD TC	103	103	114		109	113	170		16	127	97	
	3.6 BAD TC	113	108	121		115	131	189		21	145	98	
	3.7 BAD TC	118	112	127		119	134	179		18	155	100	
	3.8 BAD TC	121	116	129		117	139	222		73	174	103	
	3.9 BAD TC	121	118	129		122	164	288		28	203	109	
	4 BAD TC	123	117	131		167	202	365		17	239	118	
	4.1 BAD TC 4.2 BAD TC	127 128	120	148		248 200	242 221	429 366		57 70	278 288	126 130	
	4.3 BAD TC	133	125	153		244	263	386		97	300	136	
	4.4 BAD TC	137	131	170		276	276	425		60	325	141	
	4.5 BAD TC	141	138	188		386	369	516		18	360	148	
	4.6 BAD TC	152	147	202		326	361	501		55	405	153	
	4.7 BAD TC	161	149	215		284	306	531		71	431	157	
	4.8 BAD TC	172	155	233		281	266	444		17	437	154	
	4.9 BAD TC	178	154	231		333	307	484		27	435	154	
	5 BAD TC 5.1 BAD TC	177	155	220		313 284	322 320	490		21	449	158 161	
	5.2 BAD TC	178	150	208		237	292	408		71	445	162	
	5.3 BAD TC	180	153	213		231	284	450		08	442	167	
	5.4 BAD TC	181	157	211		231	282	365	4	14	430	185	
	5.5 BAD TC	177	158	201		207	254	336		71	402	181	
	5.6 BAD TC	177	158	208		209	256	372		17	385	182	
	5.7 BAD TC	182	160	207		221	261	379		42	379	163	
	5.8 BAD TC 5.9 BAD TC	185	168	212		248	284	430		04 91	391 40B	165	
	6 BAD TC	190	169	219		253	313	449		26	400	171	
	6.1 BAD TC	196	177	225		263	340	537		83	443	173	
	6.2 BAD TC	197	173	228		252	328	470		30	455	177	
	6.3 BAD TC	199	174	225	5	275	332	483	5	42	466	181	
	6.4 BAD TC	201	171	227		270	339	508		63	471	180	
	6.5 BAD TC	198	171	232		284	334	532		15	484	186	
	6.6 BAD TC	197	177	234		300	354	540		08	494	187	
	6.7 BAD TC 6.8 BAD TC	204 216	181	251 257		296 285	365	537		05	508 492	189	
	6.9 BAD TC	218	202	245		273	333	447		97	492	184	
	7 BAD TC	213	179	245		269	312	470		40	458	180	
	7.1 BAD TC	210	179	236		269	320	487		64	450	177	
	7.2 BAD TC	215	192	247		276	322	471		16	440	175	
	7.3 BAD TC	220	200	240	1	260	303	378	4	45	418	172	
	7.4 BAD TC	218	192	247		287	330	484	5	69	414	172	
	7.5 BAD TC	216	189	246		266	319	492		49	425	174	
	7.6 BAD TC	221	197	248		261	313	496		59	421	174	
	7.7 BAD TC	216	180	235		252	306	454		26	415	172	
	7.8 BAD TC 7.9 BAD TC	213	180	229		235 237	292	425		79 54	408	175	
	8 BAD TC	212	184	224		235	286	412		77	402	180	
	8.1 BAD TC	212	190	223		263	308	451		10	413	182	
	8.2 BAD TC	217	192	238		296	367	538		92	429	185	
	8.3 BAD TC	217	186	245	5	284	333	457	5	10	440	185	
		017	1.0.7	0.00	1	650	0.02	070		4.0	40.4	100	
	8.4 BAD TC 8.5 BAD TC	217 214	187	239 235		256 239	307 289	370 340		43 33	424 407	183 184	

	Target Window	w Target Window	Target Window	Target Wall	Target Wall	Target Wall		Target Wall	Target Wall			Target Wall	
me	TC Left TC #21	TC Center TC #22	TC Right TC #23	2" A bove Window TC #24	4' Above Win TC #25	dow 6' Above Wi TC #26		8" Above Window TC #27	10° Above Win TC #28	dow Soft		Attic TC #30	
in)	("F)	(°F)	(°F)	("F)	("F)	(°F)		(°F)	("F)	("F)		(°F)	
	8.7 BAD TC	218	190	232		235	293	417		467	399	185	
	8.8 BAD TC 8.9 BAD TC	219		234		238	321 310	430		473	406	187	
	9 BAD TC	218		233		243	308	472		525	403	185	
	9.1 BAD TC	218		237		246	291	363		437	398	182	
	9.2 BAD TC	218		232		245	284	374		460	386	180	
	9.3 BAD TC	222		231		299	343	488		547	386	179	
	9.4 BAD TC 9.5 BAD TC	222		233		270	322	469		520	396	181	
	9.6 BAD TC	224 225		238 234		250 240	302 287	457 425		507 488	397 394	181	
	9.7 BAD TC	227				237	289	412		481	389	180	
	9.8 BAD TC	223				236	278	361		429	379	179	
	9.9 BAD TC	224				235	286 290	394 372		443	373 373	180	
	10 BAD TC 10.1 BAD TC	229 229		231 234		230 226	289	372		430 438	361	182	
	0.2 BAD TC	228				215	277	336		378	355	178	
1	0.3 BAD TC	223	185	232		222	268	358		383	349	177	
	0.4 BAD TC	221	181	219		209	254	302		345	334	175	
	0.5 BAD TC 0.6 BAD TC	223 223		214 218		211 216	260 265	343 364		403 405	330 335	175	
	0.7 BAD TC	223		218		225	205	398		441	343		
	0.8 BAD TC	227	189	227		228	281	362		413	348	177	
Ľ.	8.9 BAD TC	231		225		223	276	389		445	348	178	
	11 BAD TC	230		217		212 209	277 268	404 408		465	344 345	175	
	1.2 BAD TC	225		211		210	265	386		454	345	174	
	1.3 BAD TC	235	208	228		228	290	425		497	362	178	
	1.4 BAD TC	237		240		228	273	352		409	364	177	
	1.5 BAD TC	237		238		225	266	295		370	348	174	
	1.6 BAD TC 1.7 BAD TC	238		238		226	263	356		421 358	337 329	173	
	1.8 BAD TC	237		238		232	269	352		427	326	172	
	1.9 BAD TC	238		234		227	269	398		448	330	172	
	12 BAD TC	241		232		222	259	328		379	327	171	
	2.1 BAD TC 2.2 BAD TC	234				221 215	253	282		348 376	315	169	
	2.3 BAD TC	232				224	258	353		447	311	169	
	2.4 BAD TC	234	195			221	263	363		415	320	168	
	2.5 BAD TC	238		223		225	265	373		431	320	168	
	2.6 BAD TC 2.7 BAD TC	236 238		225		234 231	285 280	392 343		444	326 327	169	
	2.8 BAD TC	238		229		227	266	294		376	319	168	
	2.9 BAD TC	238				223	263	286		381	313	167	
	13 BAD TC	240		239		225	262	260		372	309	168	
	3.1 BAD TC	243				224	258	257		343	303	166	
	3.2 BAD TC 3.3 BAD TC	240 239				225 224	259 274	277		359 419	300 302	166	
	3.4 BAD TC	244				225	269	335		415	309	167	
	3.5 BAD TC	247	206	234		231	263	279		377	308	166	
	3.6 BAD TC	244				229	261	314		416	308	166	
	3.7 BAD TC 3.8 BAD TC	246 245		242 238		278 296	294 313	387 418		464	316 335	168	
	3.9 BAD TC	244				331	349	465		488	354	177	
	14 BAD TC	245		237		305	334	431		473	366	179	
	4.1 BAD TC	238		234		269	308	387		487	365	179	
	4.2 BAD TC 4.3 BAD TC	241	198	231 235		243 253	290 293	381		454 457	358 353	178 177	
	4 4 BAD TC	241	194	239		250	293	422		482	353	178	
	4.5 BAD TC	238	196	229		303	319	421		458	356	181	
	4.6 BAD TC	241	191	227		260	325	453		499	369	183	
	4.7 BAD TC 4.8 BAD TC	245 258		232		263 269	318	414		457	372 375	185	
	4.9 BAD TC	250		253		253	310	379		446	364	18/	
	15 BAD TC	250	213	244		244	319	422		490	365	183	
	5.1 BAD TC	255				249	324	436		520	366	183	
	5.2 BAD TC	252				241	312	391		452	362	183	
	5.3 BAD TC 5.4 BAD TC	254 251	200	237 235		234 224	292 282	366 328		419 393	358 351	184	
	5.5 BAD TC	246				217	276	332		393	346	184	
	5.6 BAD TC	246	194	230		224	285	333		408	344	188	
	5.7 BAD TC	247		228		237	302	377		436	347	187	
	5.9 BAD TC 5.9 BAD TC	247		229 232		247 294	302 343	375		422 462	348 359	189	
	16 BAD TC	245				304	345	451		492	373	194	
	6.1 BAD TC	255	199	224		302	347	452		473	376	193	
	6.2 BAD TC	260		234		268	317	396		443	373	190	
	6.3 BAD TC	260		224		236	296	366		449	363	188	
	6.4 BAD TC 6.5 BAD TC	256 256		227 225		224 221	284 282	390 405		473 461	361 355	188	
	6.6 BAD TC	256				216	282	376		451	355	187	
	6.7 BAD TC	253	208	230		239	314	438		507	363	191	
2	6.8 BAD TC	253	212	232		287	335	457		513	383	195	
	6.9 BAD TC	255				310	343	449		505	392	198	
	17 BAD TC 7.1 BAD TC	258 254		251 244		330 317	370 388	467		508 549	396	199 202	
	7.2 BAD TC	254				333	388	487		549	404	202	
	7.3 BAD TC	263				286	338	388		428	390		

10039	7303SAT-002C				Canadian Home	Builders Assoc	abor					April 21
lme	Target Window TC Left TC #21	Target Window TC Center TC #22			Target Wall 4' Above Window TC #25	Target Wall 6' Above Wir TC #26	ndow	8' Above Window	Target Wall 10° Above Window TC #28		Target Wall Attic TC #30	
min)	("F)	(°F)	(°F)	("F)	('F)	("F)			("F)		(°F)	
	7.5 BAD TC	259	194	227	248		334	414	475	385	199	
	7.6 BAD TC	258	191	221	309		349		506		200	
	7.7 BAD TC	250	195	220	318		350		492		202	
	7.8 BAD TC	251	192	219	273		348		465			
	7.9 BAD TC	253	182	219	272		337	433	480	380		
42	18 BAD TC	248	184	216	246		310		460			
4	B.1 BAD TC	246	181	213	240		301	375	433	365	197	
	8.2 BAD TC	244	188	213	309		368	464	514	374	199	
	8.3 BAD TC	243	183	220	276		353	439	473	382	202	
	8.4 BAD TC	243	196	235	270		339	439	457	383	202	
	8.5 BAD TC	246	190	233	253		334	406	441	376		
		246	190	218	253		321	400	441	370	203	
	8.6 BAD TC 8.7 BAD TC	245	186	216	250		321 345	404	441	372	203	
		245	176	211 214	267		345	423	478		204	
	B.8 BAD TC		174		287		337		445		204	
1	8.9 BAD TC	235 238	180	202			330	426	489		208	
	19 BAD TC		183	228	296							
	9.1 BAD TC	237		215	265		335		468		211	
	9.2 BAD TC	244	179	211	241		344 350	424 448	479		210	
	9.3 BAD TC	243		202	250				468		208	
	9.4 BAD TC	239	175	200	231		357	436	483			
	9.5 BAD TC	238	181	209	300		371	466	487	382		
	3.6 BAD TC	235		219	310		372		487	379		
	9.7 BAD TC	231	160	194	298		346		442		213	
	9.8 BAD TC	227	170	198	296		338		444	374	212	
	9.9 BAD TC	223	168	180	263		317		408		212	
	20 BAD TC	223		167	210		300		358	351	211	
	0.1 BAD TC	217	163	164	181		273		317	331	205	
	0.2 BAD TC	220		162	203		264	278	310		202	
	0.3 BAD TC	218		153	190		253		320	289	200	
	0.4 BAD TC	213		155	189		257	285	330	293	200	
	0.5 BAD TC	216		167	218		263	302	343			
	0.6 BAD TC	216		158	180		252	276	287	287	199	
	0.7 BAD TC	218		149	191		248		290		198	
	0.8 BAD TC	219		146	176		249		279		196	
	0.9 BAD TC	219		139	172		237	253	260		194	
	21 BAD TC	218		136	172		233		243			
	1.1 BAD TC	215		138	158		229		230			
	1.2 BAD TC	210		145	161		218		228			
	1.3 BAD TC	208	144	142	161		222	222	245		186	
	1.4 BAD TC	207	149	147	162		225		252		187	
	1.5 BAD TC	205	144	143	154		217	235	250		186	
	1.8 BAD TC	209	145	141	153		218		244		188	
	1.7 BAD TC	208	152	148	161		209		235	229	185	
2	1.8 BAD TC	208	143	141	169		221	223	234	228	185	
2	1.9 BAD TC	200	131	121	189		231	224	229		183	
	22 BAD TC	169	122	104	164		211	219	230	220	183	
	2.1 BAD TC	159	120	92	166		217	223	234	218	182	
2	2.2 BAD TC	150	130	89	147		206	207	222	215	180	
	2.3 BAD TC	158	135	86	136		206		204	210		
	2.4 BAD TC	157	134	88	130		193		197	203	177	
	2.5 BAD TC	160	140	96	150		204	191	204	199	175	
	2.6 BAD TC	165	130	90	141		191	185	200	198	175	
2	2.7 BAD TC	170	131	82	145		193	196	213	198	174	
2	2.8 BAD TC	174	129	97	150		200	188	200	196	174	
2	2.9 BAD TC	176	129	89	137		188	178	188	192	173	
	23 BAD TC	177	125	87	125		193	166	182	189	172	
	3.1 BAD TC	180	128	88	128		182	160	177	184	171	
	3.2 BAD TC	181	128	89	120		179		177	180	170	
	3.3 BAD TC	182	124	96	147		187	167	181	176		
	3.4 BAD TC	180	123	97	138		180		180			
	3.5 BAD TC	180	131	100	140		176		174		168	
	3.6 BAD TC	184	131	100	137		178		170		168	
	3.7 BAD TC	185	129	110	143		186		174		167	

G1003	97303	SAT-	00	2C

lme nin)	Behind Bottom Window TC #31 ('F)	Behind Top Window TC #32 (°F)	Heat Flux Top Window w/ Screen (kW/m <sup>2</sup> )	Heat Flux Top Window w/o Screen (kW/m <sup>2</sup> )	Heat Flux Center of Wall Face (kW/m <sup>2</sup> )	Heat Flux Bottom Window w/ Screen (kW/m²)	Heat Flux Bottom Window w/o Screen (kW/m <sup>2</sup> )
0.	) 87 87	8	7 0.00 7 0.00	0.00	0.00	0.00	D.01 -0.0
0.3	87	8	7 0.02	0.05	0.05	0.02	0.0
0.0		8		0.10		0.02	-0.0
0.		8		0.02	0.00	0.02	0.03
0.0	3 88 7 88		7 0.02	0.12	0.00	0.05	0.0
0.0	8 88 9 88		7 0.02 7 0.05	0.05	0.00	0.00	B.03 0.00
	87	8	7 0.02	0.05	0.02	-0.16	0.23
1.	87	8		0.00	0.02	0.02	-0.0
1.3	8 87	8	7 0.20	0.05	0.02	0.07	-0.05
1.		8		-0.05		0.05	0.0
1.		8		0.05	0.02	0.07	0.0
1.		8		-0.10	0.05	0.07	0.0
1.1	87	8	-0.05	0.07	0.10	0.16	B.0
2		8		0.05	0.07	0.02	0.0
23	2 87	8	7 0.05	0.20	0.10	-0.26	0.0
2.	87	8		0.10		0.07	0.0
2 :	5 87	8	7 0.10	0.05	0.17	0.07	-0.0 0.0
2.	87	8		-0.22	0.12	0.07	0.0
2.1		8		0.10	0.41	0.14	0.0
4		8				0.05	0.0
3.		8		0.12	1.03	0.07	0.0
3.	89	8	7 0.12	0.15	1.48	0.09	0.0
3.	98 5 88	0 8	7 0.15	0.52	2.10 2.96	0.12	0.1
3.	88	8	8 0.20	0.22	3.53	0.19	0.2
3.	7 88 9 89	81	8 0.35 9 0.25	0.20	4.13 4.16	0.28	0.21
3.	9 88	81	8 0.27	0.32	3.34	0.40	0.20
4				0.69	3.96	0.35	0.43
4.	2 88	81	0.32	0.42	4.94	0.47	0.5
41				0.49	7.07	0.63	0.6
4.				0.59	11.58	0.84	0.93
41	3 89 7 89			0.79	9.77 15.57	0.91	1.11
4.			1 0.84	1.04		1.24	1.3
4.	5 90	93	2 1.02	1.26	11.00 13.75	1.40 1.52	1.3
5. 5.	91	93	3 1.12 3 1.61	1.66	10.46 7.90	1.66	1.7
5 :	3 92	94	1.19	1.61	12.30	1.92	2.1
5.				1.93	11.92	2.09	2.2
5.	93	9	5 1.61	2 28	10.24	2.27	2.41
5.				2 57 2 57	13.75	2.41	2.6
5.	93	90	6 1.81	2.42	12.80	3.09	2.8
6.			7 1.84 7 2.06	2 40 2 52	11.75	2.78 3.16	3.2
6.	2 95	9	7 2.09	2.67	11.99	2.85 3.13	2.9
6. 6.	96	91	3 2.48	2.70 2.60	12.49	3.13	3.44
6.				2.84	12.30 14.35	3.34 3.51	3.5
6.		91	2.46	3.07	13.95	3.60	3.7
6.1 6.1		91		3.14	12.47	3.74	3.8
	7 97	91	2.53	3.31	12.58	3.49	4.0
7.7	97	91		3.31 3.39	12.08	3.86	3.9
7.	3 98	95	2.68	3.49	12.23	3.98	4.4
7.5	98			3 29	11.70	4.14 4.19	4.2
7.8	5 98	91	9 2.86	3.66	12.56	4.30	4.30
7.				3.59		4.35 4.35	4.4
7.9	99	10	2.73	3.84	11.51	4.42	4.5
8.				3.81	11.30	4.51 4.51	4 B 4 B
8.	88	91	9 2.73	3.76	14.23	4.61	4.99
8.				3.93	10.87 12.20	4.63 5.15	4.61
8.					12.61	4.79	4.8

Canadian Home Builders Association

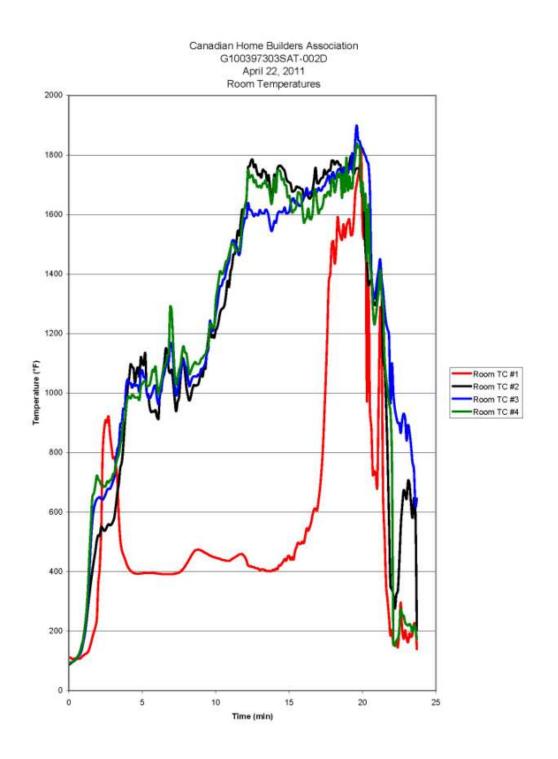
îme		Behind Bottom Window TC #31	Behind Top Window TC #32		Heat Flux Top Window w/ Screen	Heat Flux Top Window w/o Screen	Heat Flux Center of Wall Face	Heat Flux Bottom Window w/ Screen	w/o Screen
n in)	8.7	(°F) 99	("F)	102	(k₩/m²) 3.40	(kW/m <sup>2</sup> )	(kW/m <sup>2</sup> )	(kW/m <sup>2</sup> ) 4.87	(kW/m <sup>2</sup> ) 4.90
	8.8	99		101	3 28	4.13		4.84	4.90
	8.9	99		101	2.66	4.20			4.99
	9	99		101	3.28	4.87		4,98	5.06
	9.1	99		101	3.30	4.58			4.90
	9.2	99		101	3.38	4.23		5.19	4.95
	9.3	99		101	3.23 3.35	4.25		5.36 5.12	5.20 5.20
	9.5	100		102	3.55	4.4			5.20
	9.6	100		102	3.63	4.38		5.22	5 25
	9.7	100		102	3.23	4.35		5.24	5.32
	9.8	100		103	3.50	4.18		5.31	5 30
	9.9 10	100		102	3.55 3.58	4.43		5.26 5.38	5.11 5.53
1	10.1	101		103	3.60	4.85		5.36	5.41
	10.2	101		103	3.60	4.53		5.40	5.48
	10.3	101		103	3.58	4.45			5.51
	10.4	101		103	3.65	4.71			5.53
	10.5	101		102 102	3.63 3.35	4.55			5.53 5.53
	10.6	101		102	3.35	4,11		5.52 5.61	5.53
	10.8	101		103	3.85	4.63		5.36	5.64
	10.9	102		103	3.72	4.55	10.55	5.75	5.62
	11	101		102	3.70	4.87		5.73	5.81
	11.1	101		102	3.77	4.3		5.69	5.74
	11.2	101		102 101	3.80 3.85	4.6		5.71 5.73	5.67 5.67
	11.4	101		102	3.87	4.71	11.53		5.71
1	11.5	101		103	4.15	4.55	11.32	5.73	5.74
	11.6	101		102	3.92	4.83		5.94	5.81
	11.7	102		102	3.92 3.72	4.93		5.82 5.85	5.88 5.69
	11.9	102		101	3.65	4.85		5.85	5.83
	12	102		102	3.97	4.87		5.85	5 88
1	12.1	103		102	4.00	4.85		5.92	5.90
	12.2	102		103	3.97	4.95			5.88
	12.3	102		102	4.00	4.90		5.92	5.95
	12.4	101		102	4.00	4.95		5.96	5.97
	12.5	101		102 102	4.07	4.95		6.01 6.01	6.02 6.04
	12.7	101		102	4.10	5.03		6.06	6.11
	12.8	101		101	4.12	5.04		6.06	6.11
1	12.9	101		102	3.90	5.14		6.15	6.13
	13	101		102	4.20	5.08			6.18
	13.1	101		102	3.90	5.17		6.10	6.18
	13.2	101		102	4.27	5.04		6.22 6.17	6.16 6.34
	13.4	102		102	4.22	4.90			6.30
	13.5	101		102	4.57	5.44		6.20	6.43
	13.6	101		102	4.27	4.93		6.27	6.30
	13.7	102		104	4.22	5.45		6.34	6.37
	13.8	102 102		104 103	4.49 4.35	5.41 5.01			6.60 6.34
	14	102		103	4.35	5.04			6.34
10	14.1	101		102	4.69	5.33	12.20		6 37
1	14.2	101		102	4.44	5.68	11.03	6.39	6.37
	14.3	101		101	4.54	5.37		6.43	6.32
	14.4	101		102	4 74	5.89		6.48 6.50	6.43
	14.5	101		102	4.84	5.4		6.50	6.50 6.43
	4.0	101		103	4.57	5.49		6.53	6.25
	14.8	101		103	4.57	5.47	13.66	8.53	6.34
1	14.9	101		103	4.57	5.54		6.60	6.55
	15	101		102	4.59	5.54		6.60	5.60
	15.1	101		102	4.64	5.59		6.39	6.71
	15.2	101		103	4 64 4 67	5.84 5.64		6.48 6.57	6 85 6 60
	15.4	101		104	4.07	5.54		6.46	6.60
	15.5	102		107	4.79	5.88	12.04	8.71	8.57
1	15.8	102		105	4.52	5.96	13.16	6.69	6.60
	15.7	102		104	5.07	5.81		6.83	8.76
	15.8	102		104 104	4.47	6.08		6.74 6.67	6.62 6.74
3	16	102		104	4 97	5.74			6.64
	16.1	102		103	4.89	5.79			6.78
	16.2	101		103	4.89	5.75		6.71	6.85
	16.3	101		103	4.87	5.96		6,78	6.90
	16.4	102		103	4.92	5.88		6.85	6.90
	16.5	101		103	4.92	5.86	13.04		5.88
	16.6	101		103	5.19 5.02	5.84 5.59	12.47		7.02
	16.8	102		103	5.02	6.01		6.85	6.95
	16.9	101		103	5.14	5.94			6.85
	17	101		102	5.04	5.98	15.28	7.04	6.85
	17.1	101		102	4.67	5.96			6.76
	17.2	101		102	5.14	6.11			7 36
1	17.3	101		103	5.09	6.11	13.01	6.88	7.02

1003973	035AT-002C		Canadian Home Builders Association								
fime (min)	Behind Bottom Window TC #31 (°F)	Behind Top Window TC #32 ("F)	Heat Flu Top Win Screen (kW/m <sup>2</sup> )		Heat Flux Top Window w/o Screen (kW/m <sup>3</sup> )	Heat Flux Center of Wall Face (kW/m <sup>3</sup> )	Heat Flux Bottom Window w/ Screen (kW/m <sup>2</sup> )	Heat Flux Bottom Window w/o Screen (kW/m <sup>2</sup> )			
17.5	101	(7)	101	5.18	(KWM) 6.01	(Key)m ) 11.77	(KeV/m ) 7.27	(Keeling) 7.13			
17.6			101	5.19		12.08	7.02	6.83			
17.5			102	5.19		12.08		6.83			
17.8			102	5.36		12.18	6.99	6.83			
			102	5.26		11.41	7.11				
17.9			102	5.31	6.18 6.21	11.84		6.85 6.88			
18			102	5.34	6.23	11.82		6.92			
18.2			103	5 36		15.57	7.06	6.82			
18.2			103	5.36		11.56		6.95			
18.4			102	5.30	6.41	11.65		7.15			
				5.91	6.33						
18.5			103		6.33	11.39		6.88 6.50			
18.6				5.14				6.50			
18.7			102 103	5.21 5.36	6.33 6.31	11.70		6.64			
18.9			103	5.38	6.08	11.18		6.64			
18.9			103	5.41	6.28	12.27		6.90			
19.1			103	5.36	6.31	12.27		6.78			
19.1			102	5.38		12.56	7.04	6.78			
19.2			103	5.48	6.41	11.87	7.04	6.78			
19.4			103	5.51	6.38	10.67	6.95	6.76			
19.5			102	5.54	6.33	10.53		6.74			
19.6			102	5.51	6.38	11.03		6.74			
19.7			102	5.59		10.48		6.67			
19.8			102	5.51	6.38	9.29		6.69			
19.9			102	5.54	6.38	8.86		6.64			
20			101	5.44	6.36	8.38		6.64			
20.1			101	5.49	6.33	8.55		6.55			
20.2			100	5.48		8.79		B 62			
20.3			100	5.51	6.16	8.76		6.53			
20.4			100	5.51	6 26	8.10		6.41			
20.5			100	5.39	6.11	9.38	6.57	6.34			
20.6			100	5 36	6.11	7.86	6.46	6 30			
20.7			100	5.34	6.08	8.05	6.29	6.30			
20.8			99	5.29	5.96	7.76	6.36	6.20			
20.9			99	5.29	5.91	6.85	6.29	6.13			
21			99	5.24	5.95	7.31	6.25	6.09			
21.1			99	5.16	5.89	7.04	6.20	5.99			
21.2			100	5.21	5.86	7.74	6.20	5.97			
21.3			99	5.16		8 28		5 88			
21.4			99	5.14	5.81	7.14		5.85			
21.5			99	5.04	5.71	6.81	5.92	5.74			
21.8			98	5 84	5.61	6.54		5 64			
21.7			98	4.99	5.51	8.00		5.51			
21.8			98	4.97	5.49	6.07	5.64	5 51			
21.9			97	4.87	5.44	7.38	5.59	5.44			
22			97	4.89		6.78		5.37			
22.1			98	4.87		5.40		5.32			
22.2	97		96	4.87	5.34	5.30	5.40	5.23			
22.3			96	4.82		5.42		5.20			
22.4			97	4.82		5.25		5.11			
22.5			97	4.72		5.76		5.06			
22.8			99	4.74		5.13		5.09			
22.7			98	4.72	5.02	5.28	5.05	4.92			
22.8	97		97	4.82	4.97	4.87	4.91	4 88			
22.9			96	4.57	5.04	4.35	4,77	4.99			
23	96		95	4.57	4.90	4.37	4.84	4.92			
23.1	96		95	4.99		4.68	4.89	4.79			
23.2	96		96	4.47	4.72	4.06		4.88			
23.3	96		96	4.54	4.87	5.16	4.75	4.74			
23.4			95	4.47	4.72	4.27	4.68	4.76			
23.5			95	4.49		3.96	4.72	4.79			
23.6	96		96	4.54		4.27		4.32			
			96	4.57	4.58	4.01	4.44	4.48			

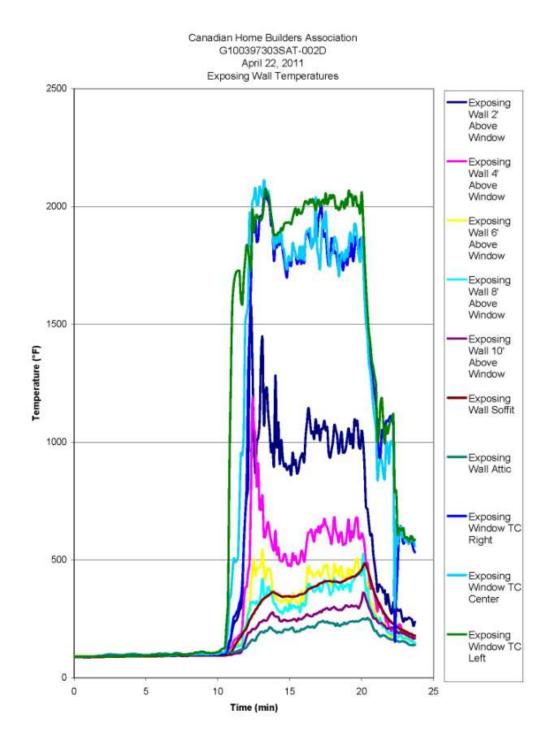
April 21, 2011

## APPENDIX G Test D Data

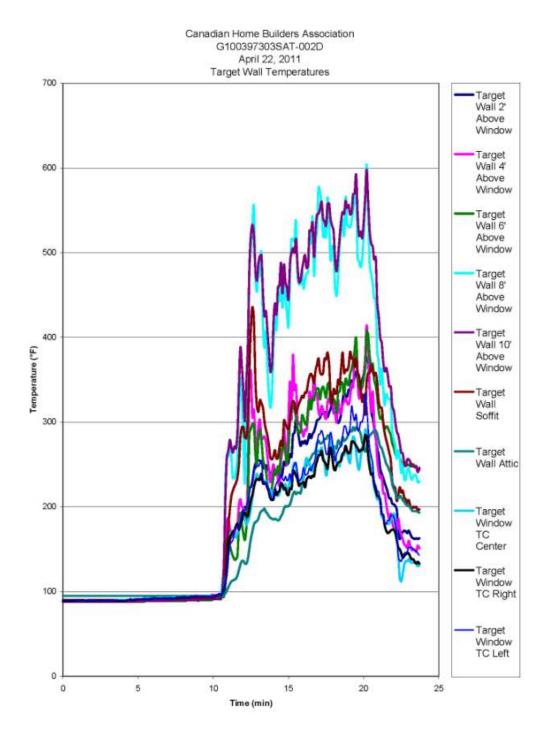




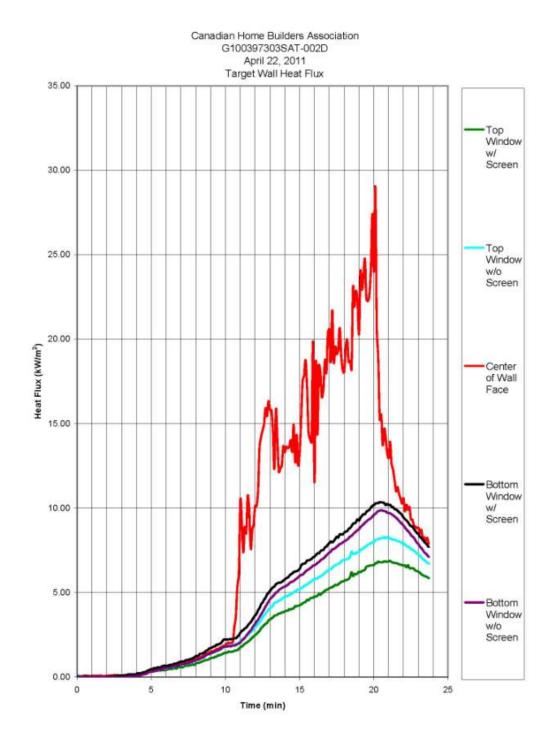




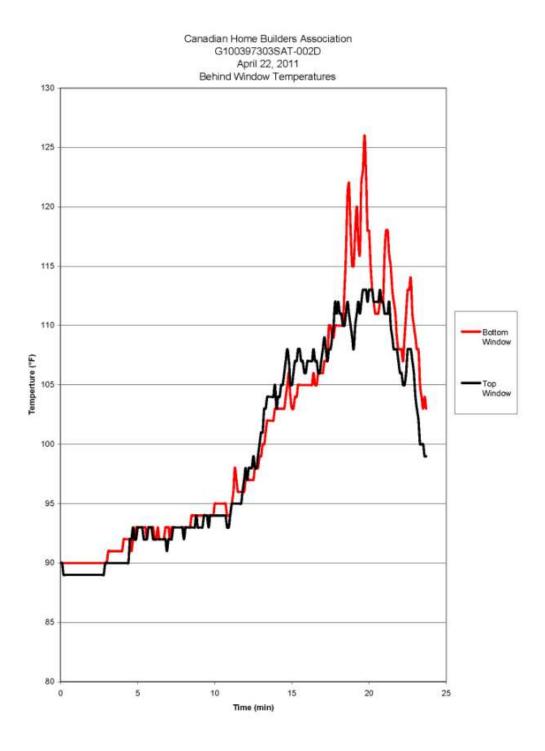








Intertek





G 100397303SAT-002D

Canadian Home Builders Association

Time (min)		Room TC #1 ("F)	1	Room FC #2 (*F)		Room TC #3 (°F)		Room TC#4 (°F)	
	0	11	2		88		92		9
	0.1	11			91 95		93 95		9 0
	0.2	10			99		98		9
	0.4	10			03		101		10
	0.5	10			09		107		10
	0.6	10	17	1	15		111		11
	0.7	10			24 38		119		12
	0.9	11			58		143		15
	1	11		1	69		170		18
	1.1	12			96		208		22
	1.2	12	25	2	36 83		255		27
	1.4	14		3	25		405		46
	1.5	16	0	3	66		502		55
	1.6	17	'g	4	04		574		65
	1.7	19			38 68		611 632		68
	1.9	24			00		643		72
	2	36			22		648		71
	2.1	41	5		21		850		70
	2.2	54	8		50 46		644 642		89 69
	2.3				37		642 849		68
	2.5	90		5	41		660		68
	2.8	90			52		874		70
	2.7	92	1		59		679		69
	2.8	86			56 59		678 689		70
	3	78	11		68		704		72
	3.1	78			84		719		73
	3.2	75			23		778		76
	3.4	70			66 97		812 826		78
	3.5	50			49		896		82
	3.6	47	'3		67		899		85
	3.7	46			20		948		90
	3.8 3.9	44			94 51		946 022		91
	4	41	7		15		046		98
	4.1	40	19		49		034		98
	42 43	40			96		034		98
	4.3	39			88 82		018		99
	4.5	30		10	34		024		98
	4.6	39		10	71	1	027		98
	4.7	39			86	1	024		98
	4.8	39			55 20		007		97
	4.9			11	01		075	1	02
	5.1	39		10	95	1	053	1	03
	5.2	39		11	32		052		04
	5.3	39			01 95		000		02
	5.5	39			53		985		02
	5.8	39			36		991		05
	5.7	39			39		005		07
	5.8 5.9	39			37	1	022		07
	5.9	35			42		981		03
	6.1	39	13	9	13		963		99
	6.2	39	33	9	98		992		01
	6.3 6.4	39			08 69		017		04
	6.5	39			69		049		07
	6.6	39			50		094		09
	8.7	39		11	38		099	1	12
	6.8 6.9	39			78	1	107		13
	6.9 7	38			67 78	1	167	8 S	28
	7.1	39	12	10	34	1	110	8 - S <b>t</b>	18
	7172	39			81	1	034	1	06
	7.3	39		9	39		992	1	02
	7.4	39			70		010		05
	7.6	40			47		038		09
	7.7	40	15	11	18	1	095	1	13
	7.8				13		110		15
	7.9 8	41	7	10	70 20		095	1	13
	8.1	42			20		080		13
	8.2	44	2	9	75		023	1	08
	8.3	45			88		036		07
	8.4 8.5	45			12		051		08
					27		056		



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Canadian Home Builders Association

Time		Room TC #1		Room	Room TC#3		Room	
(min)		("F)		("F)	(°F)		(°F)	
	8.7		73	1026		1055		098
	8.8		174	1029		1062		097
	8.9	1	73	1047		1061		1100
	9.1		69	1055		1082		1118
	9.2		65	1083	6 B	1089	2 3	1126
	9.3		63	1082		1103		131
	9.4		157	1148		1133		148
	9.6	6 4	154	1230	i 11	1242	8 8	1230
	9.7		152	1186		1210		234
	98		150	1194		1209	1 1	218
	10		47	1210		1267		311
1	0.1		45	1220	i n	1294	1.1	345
1	0.2		144	1242		1333		380
	0.4		40	1283		1360		400
1	0.5		139	1286		1380	8 - H	402
	0.6		38	1297		1384 1406	1 1	423
	0.8		36	1330		1406		446
	0.9		38	1357	6 8	1443	8	485
	11		38	1408		1481		1486
	1.1		42	1424		1508		1502
1	1.2		48	1468		1507		488
1	1.4		151	1504		1497		1478
	1.5		154	1548 1530		1474 1464		1479 1479
	1.7		158	1530		1464		516
1	1.8		159	1616		1542		575
1	1.9		154	1615		1568		605
4	12	1	48	1626		1588 1589		631 659
1	2.2		121	1758	6 1	1638	1	747
1	2.3		18	1763	6	1616	i (1	1724
1	2.4		18	1779		1815		1730 1731
1	2.6		15	1759		1594	8	708
	2.7		12	1768		1602		716
1	2.8		111	1744		1599 1598		696 692
	13		105	1736		1598		1692
1	3.1	· 2	107	1724		1606	8 8	690
1	32	4	108	1750		1604	1 1	704
	3.3	1	108	1745		1804 1616		1704
1	3.5	2	101	1714	6 0	1611	8 B	692
	3.6		103	1732		1595		697
	3.7		101	1680		1563 1544		1665 1635
	3.9	2	108	1686		1557	3 4	670
	14	- 4	105	1735	e - 0	1578	8 B	1724
1	4.1		10	1692		1572		1674
	4.2		20	1763		1600		747
1	4.4	2	21	1764	6 3	1609		743
	4.5		27	1759		1607		1717
	4.6		134	1753		1612	1	720
1	4.8		137	1721	8 8	1603		697
1	4.9		150	1711		1605		658
	15 5.1		153 140	1708		1609		1663
	5.2		48	1677		1849		1607
-1	5.3		41	1678	Ĕ - 1	1654		613
	5.4		68	1682		1638		617
	5.5		83	1694		1636		1631 1674
	5.7		193	1691		1629		1672
1	5.8		194	1686		1630		663
3	15.9 16		01 196	1684		1843 1857		1620 1573
1	6.1		520	1665		1670		1583
1	6.2		545	1671		1689		590
	6.3		38	1659		1668		620
	6.5		666	1661		1677		1587
1	6.6	1	92	1684	6 11	1679	8 8	607
1	6.7		809	1718	5 8	1876		1675 1685
	6.9		312 508	1757		1889		1685
	17		39	1704	i 3	1689	1	603
1	71	6	880	1715	£ 2	1681		617
1	72	1 1	37	1723		1681 1693		620 635
-	7.4		332	1750		1696		665



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Canadian Home Builders Association

Time	Room TC #1	Room TC #2	Room TC#3	Room TC#4
(min)	("F)	("F)	(°F)	(°F)
17.5	1059	1735	1708	
17.6	1202	1741	1722	1673
17.7	1376	1749	1730	1676
17.8		1748	1704	1664
17.9	1500	1780		172
18	1510	1781	1742	
18.1	1435	1768	1720	
18.2		1777	1731	169
18.3		1778	1747	1731
18.4	1551	1767	1753	
18.5	1527	1766	1748	
18.8		1716	1708	
18.7	1567	1757	1755	
18.8		1752	1726	
18.9	1523	1763		
19		1752	1737	
19.1	1583	1770	1761	172
19.2		1794	1754	168
19.3		1751	1806	
19.4	1582	1735	1744	175
19.5	1669	1749	1847	1793
19.6		1755	1899	
19.7	1731	1755	1851	182
19.8		1753	1848	
19.9		1684	1827	
20		1875	1821	170
20.1	1518	1603	1806	
20.2		1478	1798	
20.3		1439	1779	
20.4	1376	1363	1769	
20.5	947	1373	1681	144
20.6	882	1379	1411	139
20.7		1317	1342	
20.8	738	1297	1318	
20.9		1297	1344	
21	683	1334	1383	
21.1	997	1387	1415	
21.2		1415	1449	
21.3	1154	1348	1382	1333
21.4	652	1114		
21.5	522	1085	1281	1111
21.8	358	962		1053
21.7		796		1013
21.8		574	1196	
21.9	186	351	966	
22		340	1100	
22.1	154	320	998	
22.2		276	947	
22.3	165	323	919	
22.4	146	336	899	
22.5	204	429	899	
22.6		548	866	
22.7		621	910	
22.8		673	931	25:
22.9		663	915	
23		645	840	
23.1	163	708	892	211
23.2	192	693		
23.3	180	628	823	
23.4	189	581	767	198
23.5	224	647	742	
23.8 23.7	227 140	601 204	820 645	



					an Home Builders /					April 22, 2
im e	TC Left TC #5	TC Center TC #6	TC #7	2' Above Window TC #8	4' Above Window TC #9	w 6' Above Windo TC #10	TC #11	Exposing Wall w 10' Above Windov TC #12	TC #13	Attic TC #14
n in)	('F)	(°F)		(°F)	(°F)	(°F)	(*F)	(°F)	(*F)	(*F)
0.	0 91 1 91			91			2 9			
0.3	2 91	91	1 91	91	9	1 9	2 9	0 88	8 89	1 5
0.0				91			2 9			
0.	5 91	91	1 91	91	9	1 9	2 9	0 88	8 89	
0.0		91		91 91	9		2 9			
0.0	8 91	91	1 91	91	9	1 9	2 9	0 88	8 89	8
0.9				91 91			11 9 11 9			
1	1 91	91	1 91	91	9	1 9	11 9	0 87	7 89	
13				91 91			2 9			
1.				91 91			2 9			
11				91			12 9			
1.				91			2 9			
1.1	9 91	91	1 91	91	91	2 9	2 9	0 94	1 89	1 5
2	2 91			91			2 9			
23	2 81	91	1 91	91	9	1 9	2 9	0 93	2 90	) (
23				91			11 9 11 9			
2 :	5 90	90	91	91	9	1 9	1 9	0 93	3 90	10
21				91 91			11 9 11 9			
2.5	8 91	91	1 91	91	9	t 9	11 9	0 95	5 90	) 5
21				91	9		2 9			
3.	1 91	91	1 91	91	91	2 9	2 9	0 94	90	) 6
3.		91		91	93		2 9			
3.	4 91	91	1 91	91	93	2 9	2 9	1 98	5 90	) (
3.				92			2 9			
3.	7 9:	2 92	2 92	92	9	2 9	2 9	2 95	5 81	10
3.1				92			2 9			
	4 93	2 92	2 92	92	93	2 9	2 9	1 98	8 92	10
4		2 92	2 92 2 92	92	93	2 9	2 9			
4.1	3 93	2 92	2 93	92	93	2 9	3 9	1 96	92	2 10
44				92 92			3 9 3 9			
4.1	6 91	93	3 94	.92	91	2 9	3 9	2 93	3 92	1 1
4.				93			13 9 13 9			
4.	9 94 5 94			93			13 9 14 9			
5.			4 94	93	94		14 9			2 6
5			4 94 4 94	93 93	1 94 1 93		14 9 14 9			
5.	4 95	5 95	5 95	93	94	9 9	14 9	3 94	1 92	10
51				93 93			14 9 14 9			
5	7 94	94	4 95	93	94	4 9	14 9	3 98	92	10
51				93 94	94		4 9 15 9	3 98 3 96		
	6 96	95	5 95	94			15 9	4 94	4 92	10
6. 6.			5 95 4 94	94			15 9 14 9			10
6. 6.				93 93			14 9 14 9			
6.				93			4 9			
6.				93			14 9 14 9			
6.	8 91	7 98	8 95	94	9	4 9	5 9	3 91	7 93	1 5
6.				94 94			4 9 5 9			
7	1 99	39 98	8 95	94	94	4 9	15 9	3 91	94	10
7 :				94 94			5 9 5 9			
7.	4 98	97	7 97	94	9	5 9	5 9	4 98	94	10
7.5				94 95			16 9 16 9			
7.	7 99	9 97	7 97	94	95	5 9	6 9	5 98	93	8 10
71	8 BS 9 100			95			6 9 5 9	5 98	8 83 7 93	1 10
1	8 100	98	96 96	94	94	4 9	15 9	4 98	3 94	10
8. 8.				94			15 9 16 9			
8.	3 103	3 100	98	95	9	5 9	6 9	5 99	94	10
8.				95 95			16 9 17 9			
8.			1 99	95	91	a 0	6 9	5 91	95	10

1	Exposing Window TC Left	Exposing Window TC Center	Exposing Window TC Right	Exposing Wall 2' Above Window	Exposing Wall 4' Above Window	Exposing Wall 6' Above Window	Exposing Wall 8' Above Window	Exposing Wall 10' Above Window	Exposing Wall Soffit	Exposing Wa
e '	TC #5	TC #6	TC #7	TC #8	TC #9	TC #10	TC #11	TC #12	TC #13	TC #14
n) (	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)	('F)	(°F)	(*F)	(°F)
8.7 8.8	108	101	99	95 95				97 97	95 95	
8.9	111	101	99	95				98	95	
9	111	101	99	95				98	94	
9.1	108	100		95				97	94	
9.2	106	99		95 95				97	84	
9.3 9.4	107	99	98	85				98 98	94 94	
9.5	105	101	98	96				97	94	
9.6	105	101	98	96				96	94	
9.7	107	102	98	95				97	94	
9.8 9.9	107	102	98 98	95 85				97 97	94	
10	110	102		95				98	94	
10.1	112	105	100	96	96	97	95	97	84	11
10.2	118			97				97	95	
10.3	123			97 97				97 97	94 95	
10.5	130			97				97	95	
10.6	225	157	111	103	101	100	98	97	96	1
10.7	330	200	129	117	108			97	97	
10.8	862 1265			145				98	100	
10.9	1265	350		185				98	107	11
11.1	1668	506		229				102	128	
11.2	1706	492	263	239	163	135	i 130	103	139	1
11.3	1723	498		248				105	149	
11.4 11.5	1728	514		261 288				104	158	
11.6	1607	953		298				108	175	
11.7	1585	944	405	360	212	158	148	120	186	13
11.8	1697	1045		560				137	197	
11.9 12	1773	1503 1544		687 768				155 174	202 213	
12.1	1813			814				191	228	
12.2	1773	1968		1389				192	244	
12.3	1732	1904		1581	772			198	254	
12.4	1984	2018		134B		444		207	267	
12.5 12.6	1897	2035 2079		1045	1074	504 434		208 208	274 287	1
12.7	1965	2008		998				215	294	
12.8	1948	2005	1860	1020	910	468	312	224	305	11
12.9	1952	2082		1087	717			235	312	
13 13.1	1942 1960	2061 2043	1961	1382	713			237 241	323 331	
13.1	2011	2043		1076				241	331	
13.3	2074	2084	2058	1212				243	341	
13.4	2059	2061		1232				244	345	
13.5	2047	2065		1119				254	349	
13.6 13.7	2019 1965	2023		1045				265 272	355 360	
13.8	1923	1923		993				278	364	
13.9	1878	1822	1770	905	542	338	315	266	364	21
14	1881	1871	1846	1283				261	359	
14.1 14.2	1879 1890	1844	1827	982 1094				259 258	357 353	
14.3	1891	1849		909		327		256	353	
14.4	1908	1894	1887	1009	498	320	281	240	346	11
14.5	1900	1830		939				242	344	
14.6 14.7	1924 1932	1815		898			290 300	247 245	345 346	
14.8	1932	1734		883				245	340	
14.9	1933	1789	1773	892	476	311	285	242	346	21
15	1931	1771	1754	899	484	332	313	243	346	21
15.1	1926	1772		862			i 293 305	244 247	344 344	
15.2	1953 1975	1844	1837 1820	955	528 499			247	344 346	
15.4	1992	1798		924		330		246	346	
15.5	1964	1782		868		322		241	347	
15.8	1989	1778		881	483			252	351	11
15.7 15.8	1973 1970	1831 1778	1825 1757	923 943				249	354 355	
15.8	1984	1832		952				249 253	355	
16	2011	1772	1761	916	494			258	358	21
16.1	2024	1876		1025				264	363	
16.2	2017	1899		1087				270	370	
16.3 16.4	2010 2030			1145				265 263	376	
16.5	2030			1038			387	263	379	
16.6	2032	1863	1843	1045	595	434	372	263	384	2
16.7	2008			1015	580	429		271	387	
16.8	1985	2040		1097				270	389	
16.9 17	2015 2029	1827		1039				274 277	392 397	
17.1	2029	1736		1008				282	401	
17.2	2019	1870		1057				279	402	

003973	035AT-002C					Canadi	an Home Bi	uilders As	sociation					April 22,
		Nindow	Exposing Windo				Exposing		Exposing Wa		Exposing Wall	Exposing Wall	Exposing Wall	
me	TC Left TC #5		TC Center TC #6	TC RI	nt	TC #8	TC #9		C#10		8' Above Window TC #11	TC #12	TC#13	Attic TC#14
in)	('F)	0050	(°F) 19	(°F)	1005	(°F)	(°F)	0.54	"F)	100	("F)	(°F) 294	(*F)	(°F)
17.5		2056			1885	1051		651		469	405			
17.6		2011	186		1798			639		480	402	29		
17.		2025	17		1751	959 934		617		432	388	29		
17.8		2049	174		1760			598			353	28		
17.1		2034	180		1864			569		390	361	29		
1		2049 2040	180		1864	1004		626 682		414 485	371	29		
18.					1804					400				
18.1		1994	18:		1806			628 609		462	391 384	28/		
18.		1986	18.		1772	953		575		402	384	28		
18.		1986	17		1727	999		613		469	393	28		
18.		2022	1/3		1795	1043		613		469	393	29		
		2022 2016	170			1043		565		4/1 424	407	28		
18.					1730									
18.		1992	17		1774			568		429	391	30		
18.		2033 2008	18		1779	975		572		420 445	387 397	30		
15			170		1752	1020		628						
19.		2067	183		1805			671		463	395	30		
19.1		2044	185		1788	993		581		419	366	30		
19.3		2051	18		1847	1035		622		459	402	30		
19.		2003	18		1769			596		445	411	30		
19		2043	193		1812			635		460	421	30		
19.6		2041	19		1873			678		495	438	30		
19		2001	18		1847	1090		678		506	438	30		
19.1		2006	175		1792	987		594		460	437	29		
19.		1971	176		1859			590		457	438	31		
21		2060	18		1866			613		458	438	321		
20		1946	17		1816			597		454	528	36		
20.3		1786	18		1727	891		582		428	438	35		
20.3		1663	15		1644			489		387	371	33		
20.4		1555	145		1528			488		407	379	31		
20.4		1470	133		1434			439		355	328	29		
20.8		1419	129		1398			379		321	301	28		
20		1349	123		1302			381		312	287	27:		
20.0		1317	11:		1247	529		381		313	272	25		
20.1		1280	110		1210			350		290	266	25		
2		1236	104		1155	430		317		263	256	25		
21.		1004	84		1070			282		241	240	23		
21.		1039	90		943			318		259	242	23		
21.3		1157	93		931	387		308		250	252	23		
21.4		1187	93		1051	383		294		225	225	23		
21.		1089	88		1038	362		272		221	214	22		
211		995	84		1000			271		230	222	22		
21.		1070	100		1090			239		208	206	21-		
21.1		1037			1089	355		242		201	193	201		
21.1		1067	90		1097	320		215		185	194	21		
2		1094	100		1111	285		205		177	186	21		
22		1097	100		1098	274		199		170	184	21		
22 :		1118	93		1068			212		176	190	214		
22.		788	30		172	320		214		178	177	20		
22.5		609	50		465	289		214		182	171	19:		
22.1		634	61		610 644	284		227 223		195 203	176	19		
		631												
221		826	55		602	257		197		179 168	172	19		
22.		835	6		571	238 253		188			165	18		
2		595	50		579			193		171	169	19		
23		598	5		595	248		195		173	168	18:		
23.		593	58		584	252		188		168	165	18		
23		579	5		569	256		187		166	162	17		
23.4		600	58		586	250		186		162	155	17:		
23 .		599	58		572	246		187		160	157	17		
23.0		583	51		546	221		170		153	147	16		
23.	r	587	58	50	533	237		180		150	150	16	8 178	3 1



		w Target Windo			Target Wall	Target Wall	Target Wall	Target Wall	Target W	all Target W	all
e	TC Left TC #21	TC Center TC #22	TC Right TC #23		4' Above Windo TC #25	w 6' Above Wind TC #26	low 8' Above Wind TC #27		dow Soffit TC #29	Attic TC #30	
1)	('F)	(°F)	(°F)	("F)	('F)	(°F)	(°F)	("F)	(*F)	(°F)	
(		io 8	9 8	9 89	8	0	88	89	88	90	85
0.1		0 8						89			95
0.3	. 9	80 8	9 8	9 89	8	9	88	89	88	90	95
0.4		80 8						89 89			95 95
0.0		8 8						89			85
0.6		8 0				9		89			95
0.0		90 91 10 8						89 90			95 95
0.9	6	9 8	9 8	9 89	8	9	88	90	88	90	95
. 1		19 8						90			95
13		19 8 19 8						89 89			95 95
1.2	8	89 8	9 8	9 89	8	9	88	89	88	90	95
14		19 8						89			95
12		10 9 10 9		9 89 9 89				89 89			95 95
1.7	9	8 0	9 8	9 89	8	9	88	89	88	90	95
1.8		19 8 10 8						89 90			95 95
15	. 8	89 8	9 8	9 89	B	9	88	89	88	90	95
2.1		8						89			95
21		19 8 19 8						89			95 95
2.4	8	8 8	9 8	9 89	8	9	88	89	88	90	95
25	6	8 8	9 6	9 89	8	9	88	89	88	90	95 95
2.8		19 8 19 8						89 89			85 85
2.8	9	8 01	9 8	9 89	8	9	88	89	88	90	95
2.5		19 8 19 8						89 89			95 95
3.		19 8						80			95
3.2		90 8						90			95
3.		9 8						90 90			95 95
3.	9	90 9	0 8	9 89			88	90	88	90	85
3.6		8						90			85
3.0		10 9 10 9		9 89 9 89				90 90			95 95
3.9	9	90 9	0 8	9 89	9	0	88	90	88	90	95
		9 9						90			95
41		90 9 10 9						90 90			95 95
4.3	9	90 9	0 9	0 89	9	0	88	90	88	90	95
44		9						90			95
48		90 9 90 9						90 90			95 95
4.1	9	91 9	1 9	0 90	9	0	88	91	88	91	85
4.8		)1 9 )1 9						91 91			95 95
4.0		91 9						91			95
5.1		91 9						91		91	85
51		91 9 91 9		1 90 1 90				91			95 95
5.4	9	91 9	1 9	1 91	9	2	88	91	89	91	95
5.5								92			95
5.6		1 9 1 9						92 92			95 95
5.8	6	92 9	2 9	1 91	9	2	89	92	89	92	95
5.9		12 9 12 9		1 91 2 91	9	2		93 93	89 89		95 95
6.	9	92 9	2 9	2 92	9	2		83	89	92	85
6.3	9	92 9	2 9	2 92	9	2	89	93	89	92	95
63		92 9						92 92			95 95
6.5	9	92 9	2 9	2 91	9	2	89	92	89	92	95
6.6	i 9	92 9	2 9	2 91	9	2	89	92	89	92	85
67		12 9 12 9						93 93			95 95
6.9	1 9	92 9	2 9	2 82	9	3	89	93	90	92	95
1	9	92 B	2 9	2 92	9	3	89	93	89	92	95
7 1		12 9 13 9	2 9					93 93	90 90		95 95
7.3	8	92 9	3 9	2 92 2 92	9	3	89	93	90	92	85
7.4	9	92 9	3 9	2 92	9	3	89	94	90	92	95
7.5	9	13 9 13 9	3 9	2 92 3 92	9	4	89 89	94 93			95 95
7.3	9	3 9	4 9	3 92 3 82 3 83 3 93 3 93 3 92 3 92 3 92 3 92	9	4	89	93	90	92	85
7.8	9	93 9	4 9	3 93	9	4	89	84	90	92	85
7.9	9	13 9 13 9	3 9	3 93 3 92	9	4	89 89	93 93	90 90	93 93	95 95
8.1	9	93 9	3 9	3 92	9	4	89	94	90	93	95
8.		13 9	3 9	3 92	9	4	89	94		93	95 95 95
82	9	13 9 14 9	4 9 4 9	3 92 3 92	9	5	90 90	94 94	90 90	93 93	85 85
8.5	i 9	94 9	4 9	4 93	9	4	90	94	90	93	95
8.8		94 9	4	4 92	9		90	94	90	93	95

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TC Left TC #21	Window Target Windo TC Center TC #22	TC Right TC #23	2' A bove Window TC #24	TC #25	TC #26	ndow		TC #28	low Soffit TC #29	Wali Target Attic TC #30	
(°F) 8.7	(°F) 94 9	(°F)	(°F) 92	("F)	(°F)	90	(°F) 94	("F)	(°F) 90	(°F) 93	95
8.8		4 94	92		95	90	84		90	93	95
8.9		14 94	93		95	90	95		90	93	95
9		4 94	93		95	89	95		90	93	95
9.1		14 94 14 94	93 93		95 95	90	95		90	93 93	95 95
9.3		4 94	93		95	90	95		91	93	85
9.4	94 5		83		95	80	95		91	93	95
9.5	94 5	14 94	93		85	80	95		91	93	95
9.6	94 9		93		85	80	95		91	93	95
9.7 9.8		15 94 15 94	94 93		95 95	90 90	95 95		91 91	93 93	95 95
9.9		13 54	83		96	90	85		91	83	85
10	94 5	14 94	93		96	91	95		91	94	95
10.1		15 95	93		95	91	95		91	94	95
10.2		5 95	94 94		96	91	95		91	94	95 95
10.3 10.4		6 96 7 97	94		96 96	91 91	95 95		91 92	94 94	95
10.4		7 96	95		96	91	96		92	94	95
10.6	98 9	99	96		97	84	111	1	00	95	95
10.7	102 10		98		101	94	132		134	103	96
10.8	111 11		110		112	108	224			119	98
10.9	120 12 141 14		123		183	160	261 260		258 266	149 177	101
11.1	155 16	7 165	161		175	154	278	1	279	197	109
11.2	158 17	0 167	165		166	147	258	2	270	213	112
11.3	161 17 170 16		167		167	142	234			219	113
11.4	170 18		170		168 176	138	234 240		271 269	224 228	114
11.6	177 16		177		177	142	262			234	119
11.7	175 17	2 173	181		201	175	318		840	250	125
11.8	184 16		187		209	193	353			282	132
11.9 12	191 18 196 19		192		200	179	325 283		365 337	294 294	136
12.1	196 19		200		189	161	228			282	133
12.2	198 17		199		185	175	325	2	349	281	133
12.3	207 18		203		241	210	377		893	304	139
12.4	216 18		223		360	286	475			361 412	151
12.5 12.6	225 15 233 21		223 231		361 306	292 298	505 533		521 533	412 435	163
12.7	245 22		243		315	296	554			420	179
12.8	245 23		251		282	262	473		78	348	182
12.9	248 23		254		268	250	454			319	183
13	248 23		255		296	280	476			312	186
13.1	251 23 254 23		254 254		303 280	291 279	473 500			326 322	192
13.3	233 22		248		281	257	417			317	198
13.4	228 23	8 227	246		283	248	388	4	125	301	198
13.5	229 23		249		276	242	407			291	194
13.6 13.7	223 22 221 22		245 242		260 243	227 217	364 333		108	284 272	192 189
13.8	213 23		238		229	211	317			258	187
13.9	210 21		236		242	222	333		867	256	186
14	211 21	2 209	238		250	236	391	4	17	260	185
14.1	222 21		238		242	244	422		40	267	188
14.2	228 21 231 21		243 237		243 233	239 248	409 450			257 258	185
14.5	233 21		237		226	240	450		162	270	185
14.5	238 23	7 228	235		254	268	467	4	188	278	189
14.6	233 22		240		267	267	435		52	272	192
14.7 14.8	231 22 236 22		253 249		292 271	277 282	475 446		186	302 298	198 201
14.8	230 22		249		250	251	446		159	293	200
15	233 23	0 214	252		305	266	413	4	145	292	201
15.1	239 23		262		348	304	472			302	203
15.2	230 23 244 24		259		303 379	314	518			319	209
15.3	244 24 250 25		285		379	319 315	516 514		505 500	325 322	215
15.5	252 24	8 237	303		344	305	537		518	311	215
15.6	240 23	5 232	292		302	293	474	4	185	318	217
15.7	231 23		281		289	287	463		185	322	217
15.8	232 23		272		295	289	463			326	216
15.9 16	237 22 246 23		277 275		290 283	308 305	480 458		480 490	331 329	225 235
16.1	238 25		278		283	298	458		197	335	235
16.2	238 25	8 232	274		290	297	475	4	82	335	249
16.3	240 25	0 235	279		309	316	477	4	185	346	251
16.4	246 25		286		336	326	519			354	255
16.5 16.6	243 24		281		317	315	511		526	357	258
16.6 16.7	249 24 252 24		286		333 354	328 326	542 473			353 346	262 263
16.8	260 25	1 248	285		336	336	513		528	361	268
16.9	274 28	6 254	302		333	340	528	6	545	368	275
17	285 26		303		312	339	577		548	375	278
17.1	286 26 290 27		305 310		308 319	327 338	571 558		552 560	359 356	275
31.4		0 266	310		319	338	519			358	275
17.3											

	Taxaat We		a at Wind	Target Window	Target Wall	Target Wall	Target Wall		Target Wall	Target Wall	Target Wall	Tarnet Writ	
me	TC Left TC #21	TC	Genter #22	TC Right TC #23	2' A bove Window TC #24			ndow	8' Above Window	10' Above Windov TC #28		Attic TC #30	
n in)	('F)	(°F)		(°F)	("F)	("F)	(°F)			("F)	(*F)	(°F)	
17		263	237	250				329	519	532		280	
17		262	245					344	565	557		284	
17		276	260 280			326		346	535 491	558		284	
17		279	260					329	508	532		265	
	18	266	271			313		327	503	525		271	
18		254	263	243	310	310		324	459	491	334	271	
18	2	262	252					311	449	476		269	
18		266	252					335	471	498		278	
18		270	248					336	509	517		276	
18		272	260					347	528	538		272	
18 18		283 295	263	262 265				346	539 520	548 548		282 278	
18		295	269			329		351	520	561			
18		285	265					346	533	553		270	
	19	285	256					344	531	558		288	
19		295	252					357	530	545		290	
19		319	273		349			363	538	548		289	
19		308	283		345			372	551	569		294	
19 19		302 309	280					385	562 579	570		290 294	
19		290	205					399	492	544		299	
19		281	240		338			340	490	520		290	
19		300	258		344			340	483	525		288	
19		300	271	267				342	492	517		276	
	20	309	270					353	519	536		272	
20		334	291	285				363	559	565		285	
20		320	290					407	604	598		270	
20		292	278					403	548	561		200	
20 20		269 260	255 247					377 367	487 475	525		284 286	
20		251	237					369	464	507		288	
20		231	223		284			350	446	492		290	
20	8	225	216	220	281	283		343	444	495		290	
20		219	209					329	386	442		286	
	21	217	210			241		313	371	425		278	
21		206	204					304	344	395		271	
21		195 189	189					306	363 340	394 371		269 263	
21		189	187					292	340	360		263	
21		180	180					285	333	364		251	
21		184	180					294	329	356		248	
21		184	180					289	327	342		243	
21		189	185					285	327	342		238	
21		190	187		204			275	290	319		227	
22	1	188	192			175		270 283	280	314		221	
22		170	162		197	170		263	213	285		217	
22		141	145			186		261	267	285		210	
22		137	116					258	258	276		213	
22		136	112					252	240	264		211	
22		141	121					251	251	263		208	
22		145	132					253	232	251		206	
22		146	136			154		250	232	246		203	
22	.9 23	147 152	138 138					249 250	244 245	25E 25E		202 201	
23		152	138			154		250	245	250		199	
23		152	135	138		149		250	230	248		196	
23		150	134	138				250	236	248		195	
23	.4	148	134	135	162	149		247	238	247	199	195	
23		148	133					246	236	248		195	
23		145	130					243	229	241		194	
23	3	143	131	133	163	151		244	230	246	197	193	

G 10039	7303SAT-002D			Canadian H	ome Builders Associa	tion	
Time (min)	Behind Bottom Window TC #31 ("F)	Behind Top Window TC #32 ("F)	Heat Flux Top Window w/ Screen (kW/m <sup>2</sup> )	Heat Flux Top Window w/o Screen (kW/m <sup>2</sup> )	Heat Flux Center of Wall Face (kW/m <sup>2</sup> )	Heat Flux Bottom Window w/ Screen (kW/m <sup>2</sup> )	Heat Flux Bottom Window w/o Screen (kW/m <sup>2</sup> )
		90	90 0.0			0.00	0.00
		90 90	90. 0.0 89 0.0			0.05	0.00
	0.3	90	89 0.0	5 0.02	0.02	0.00	0.02
		90 90	89 0.0 89 0.0			0.00	0.02
		90	89 0.0			0.07	0.00
		90 90	89 0.0 89 0.0			-0.02	0.00
	0.9	90	89 0.0	5 0.00	0.05	0.02	0.00
		90	89 0.0 89 0.0			0.05	0.02
	1.2	90	89 0.0	7 0.02	0.05	0.05	0.05
		90 90	89 0.0 89 0.0			0.05	0.00
	1.5	90	89 0.0	7 0.05		0.05	0.02
		90 90	89 0.0 89 0.0			0.02	0.05
	1.8	90	89 0.0	7 0.07	0.05	-0.05	0.00
		90 90	89 0.0 89 0.0			-0.05	B.00 D.00
	2.1	90	89 0.0	7 0.02	0.07	0.00	0.00
		90 90	89 0.1 89 0.1			0.05	0.00
	2.4	90	89 0.1	0.10	0.10	0.05	0.00
		90 90	89 0.1 89 0.0			0.05	0.00 0.00
	2.7	90	89 0.1	2 0.10	0.12	0.05	0.00
		90 90	89 0.1 90 0.1			0.07	0.00
		90	90 0.1			0.09	0.00
		91 91	90 0.0 90 0.1			0.09	0.00
	3.3	91	90 0.1	2 0.10	0.12	0.12	0.00
		91 91	90 0.1 90 0.1			0.14	0.02
		91	90 0.1	2 0.10	0.14	0.16	0.05
		91	90 0.1 90 0.1			0.12	0.05
		91 91	90 0.1 90 0.1			0.16	0.05
	4	91	90 0.1	5 0.15	0.14	0.19	0.05
		92 92	90 02 90 02			0.23	0.09
	4.3	92	90 0.2		0.24	0.23	0.12
		92 92	90 0.2 92 0.2			0.26	0.14
	4.6	91	92 0.2	2 0.22	0.24	0.30	0.19
		92 92	93 0.2 92 0.2			0.35	0.21
	4.9	93	92 0.3	0.32	0.36	0.42	0.30
		93 93	93 0.3 93 0.3			0.47	0.33
		93	93 0.3			0.54	0.35
		93 93	93 0.3 92 0.3			0.49	0.37
	5 5	93	92 0.4	0 0.42	0.48	0.56	0,44
		92 93	92 0.4 93 0.4			0.56	0.42
	5.8	93	93 0.4	2 0.49	0.53	0.65	0.49
		93 93	93 0.4 92 0.4			0.68	0.53
		92	92 0.4			0.68	0.56
		92 93	92 0.4 92 0.5			0.70	0.56
	6.4	92	92 0.4	7 0.57	0.84	0.73	0.60
		92 92	92 0.5 92 0.5			0.77	0.65
		92	92 0.5			0.80	0.65
		93 93	92 0.5 91 0.6			0.84	0.67
		93	92 0.6			0.89	0.72
	7.1	92	92 0.5	7 0.72	0.79	0.94	0.77
	73	93 93	92 0.6 93 0.6			0.94	0.79
	7.4	93	93 0.6	7 0.79	0.86	1.01	0.81
		93 93	93 0.6 93 0.7	7 0.82 0 0.84		1.03	0.84 0.86
	7.7	93	93 0.7	2 0.89	0.98	1.08	0.88
		93 93	93 0.7 93 0.7			1.12	0.93
	8	93	92 0.7	9 1.01	1.05	1.24	1.00
		93 93	93 0.9 93 0.8			1.24	1.02
	8.3	93	93 0.8	7 1.06	1.15	1.38	1.12
	D 4	93					
		94	93 0.9 93 0.9	2 1.11 4 1.16		1.38	1.14

Time	- 21	Behind Bottom Window TC #31	Behind Top Window TC #32	Heat Flux Top Window Screen	wi	Heat Flux Top Window w/o Screen	Heat Flux Center of Wall Face	Heat Flux Bottom Window w/ Screen	w/o Screen			
(min)	. 1	(°F)	("F)	(kW/m <sup>2</sup> )		(kW/m <sup>2</sup> )	(kW/m <sup>2</sup> )	(kW/m <sup>2</sup> )	(kW/m <sup>2</sup> )			
	8.7 8.8	94 94		93 94	1.02	1.29		1.57	1.30			
	8.9	94		93	1.02	1.34			1.35			
	9	94		93	1.12	1.41		1.71	1.39			
	9.1	94		93	1.14	1.41		1.75	1.44			
	9.2	94		93	1.14	1.43		1.80	1.49			
	9.3	94		94	1.19			1.82	1.51			
	9.4	94		94	1.22	1.53		1.92	1.58			
	9.5	94		94	1.29			1.92	1.58			
	9.6 9.7	94		93 94	1.29	1.61		1.96	1.63			
	9.8	94		94	1.37	1.71		2.13	1.77			
	9.9	94		94	1.42	1.78		2.22	1.79			
	10	95		94	1.44	1.81	1.91	2.22	1.81			
	10.1	95		94	1.44	1.81		2.22	1.81			
	10.2	95		94	1.51	1.85		2.22	1.84			
	10.3	95		94	1.49			2.25	1.84			
	10.4	95 95		94 94	1.49	1.85		2.25 2.25	1.84			
	10.6	95		94	1.54	1.9		2.25	1.86			
	10.7	95		94	1.59	1.90		2.28	1.90			
	10.8	94		93	1.59	1.95		2.39	1.95			
1	10.9	94		93	1.66			2.48	2.00			
	11	94		94	1.78			2.62	2.04			
	11.1	95 96		95 95	1.81	2.20	9.19	2.74	2.16			
	11.2	98		95	1.96		8.88	2.88	2.32			
	11.4	97		85	2.01	2.43	8.53	2.83	2.44			
1	11.5	96		95	2.09	2.50	10.72	3.04	2.56			
	11.6	96		95	2.14			3.16	2.67			
	11.7	98		95	2.23	2.65	7.59	3.25	2.78			
	11.8	96		96	2.33			3.39	2.90			
	11.9	96 97		97 98	2.41	2.81		3.53	3.04			
1	12.1	97		97	2.56			3.00	3.30			
	12.2	97		99	2.66			3.95	3.39			
1	12.3	97		98	2.73	3.24		4.09	3.55			
	12.4	97		98	2.88	3.34		4.30	3.69			
	12.5	97		99	2.98	3.54		4.42	3.86			
	12.6	98		98	3.08			4.58	4.02			
	12.7	98		99 99	3.15			4.70	4.18 4.32			
1	12.8	99		99	3.20			4,89	4 32			
- 1	13	99		01	3.40	4.08	15.83	5.10	4 60			
	13.1	100	1	01	3.48	4.13	15.78	5.22	4.69			
	13.2	100		103	3.53	4.23	14.61	5.31	4.79			
	13.3	101		103	3.83	4 38		5.36	4.88			
	13.4	102		04	3.65	4.43		5.50	4.99 5.04			
	13.6	102		104	3.75			5.59	5.16			
	13.7	102		104	3.77	4.55		5.59	5.20			
1	8.61	102	1	104	3.82	4.65	12.51	5.64	5.27			
1	13.9	103		05	3.85			5.71	5.32			
	14	103		103	3.87	4.75			5.34			
	14.1	103		04	3.92 3.92	4.71		5.85 5.89	5.41 5.46			
	14.3	103		05	4.02	4.80		5.99	5.55			
	14.4	103		105	4.00	4.90		6.08	5.62			
	14.5	103		08	4 0 5			6.13	5.64			
	14.6	104		107	4.07	5.03		6.22	5.69			
	4.7	105		08	4.20			6.25	5.76			
	14.8	106		07	4.20	5.14		6.27 6.32	5.83 5.90			
	15	103		105	4.25				5.99			
1	15.1	103		06	4.30			6.60	6.04			
	15.2	104	1	107	4.37	5.33	17.53	6.89	6.06			
	15.3	104		07	4.42	6.39		6.71	6.16			
	15.4	105		08	4.44			6.76	6.25			
	15.5 15.6	105		08	4.57	5 49 5 54		6.90 6.90	6.32 6.37			
	15.7	105		107	4.64	5.61		6.95	6.43			
	15.8	105		06	4.69			6.99	6.50			
	15.9	105	1	08	4.89	5.78	19.84	7.09	8.60			
1.2	16	105		07	4.77	5.76		7.13	6.62			
	16.1	105		07	4.77			7.23	6.67			
	16.2	105		107 107	4.82				6.76			
	16.4	105		108	4.92			7.32	6.81 6.90			
	16.5	105		107	4.97	6.01		7.51	6.97			
	16.6	105		07	5.02			7.53	7.02			
1	16.7	108	1	06	5.11	6.16	18.77	7,67	7.11			
	16.8	106		80	5.18			7.72	7.20			
	16.9	106		07	5.19			7.84	7.29			
	17	106		08	5 28 5 29			7.93	7.36			
	17.2	107		108	5.28			7.98	7.65			
	17.3	107		07	5.36			8.05	7.57			
				08	5.46							

100397303SAT-002D			Canadian Home Builders Association					
fime (min)	Behind Bottom Window TC #31 ("F)	Behind Top Window TC #32 ("F)	T	leat Flux 'op Window w/ icreen kW/m <sup>2</sup> )	Heat Flux Top Window w/o Screen (kW/m <sup>3</sup> )	Heat Flux Center of Wall Face (kW/m <sup>2</sup> )	Heat Flux Bottom Window w/ Screen (kW/m <sup>2</sup> )	Heat Flux Bottom Window w/o Screen (kWim <sup>2</sup> )
17.5	110		108	5 44	6.65	19.10	8.30	7.71
17.6	109		109	5 49	6.70		8.26	7.78
17.7	109		110	5 56	6.75	20.66	8.44	7.87
17.8	110		112	5.84	6.83	19.10	8.44	7.90
17.9	110		111	5.66	6.92	18.20	8.44	7.97
18	110		112	5.69	6.92	18.03	8.54	8.01
18.1	110		111	5.74	6.95	19.37	8.61	8.08
18.2	110		111	5.78	6 97	19.96	8.63	B.13
18.3	110		110	5.81	7.02	18.65	8.77	8.22
18.4	113		110	5.93	7.12	18.72	8.82	8.32
18.5	116		111	6.21	7.42	18.22	8.93	8.36
18.6	121		112	5.98	7.30	23.04	9.08	8.46
18.7	122		111	6.11	7 30	21.92	9.10	8.55
18.8	118		110	6.08	7.32	22.85	9.17	8.62
18.9	115		109	6.13	7 39	22.35	9.33	8.69
19	115		108	6.23	7.42	20.30	9.26	8.76
19.1	118		110	6.21	7.52	24.00	9.43	8.87
19.2	120		111	6.28	7.57	22.92	9.54	8.97
19.3	117		112	6.31	7.62	23.71	9.64	9.04
19.4	116		111	6.36	7.72	24.74	9.64	9.13
19.5	122		112	6.53	7.74	22.38	9.78	9.20
19.6	123		113	6.56	7.84	22.26	9.85	9.29
19.7	128		113	6.60	7.88	22.59	9.89	9.34
19.8	123		113	6.60	7.91	24.28	10.03	8.41
19.9	118		112	6.63	7.99	27.41	10.13	9.50
20	118		113	6.63	7.99	24.00	10.17	8.59
20.1	115		113	6.73	8.11	29.01	10.27	9.66
20.2	113		113	8.75	B.14	20.68	10.29	9.76
20.3	112		112	6.83	8.19	18.91	10.29	9.83
20.4	111		112	6.80	8.19	15.24	10.36	9.85
20.5	111		112	6.80	8.24	15.55	10.34	9 87
20.6	111		112	6.80	8.24	13.73	10.34	9.85
20.7	112		113	6.85	8.28	14.71	10.29	9.83
20.8	112		112	6.83	8.21	14.18	10.17	9.80
20.9	112		112	6.83	8.28	13.28	10.24	9.73
21	116		111	6.85	8.24	12.97	10.17	9.71
21.1	118		111	6.88	8.21	13.92	10.20	8.69
21.2	118		111	6.80	8.16	12.61	10.08	9.64
21.3	116		112	6.78	8.14	12.27	10.06	8.57
21.4	115		110	6.75	8.14	11.61	9.94	9.50
21.5	113		109	6.75	8.09	10.98	9.92	9.43
21.8	112		108	6.70	8.04	11.25	9.85	9.34
21.7	111		108	6.68	8.04	10.84	9.75	9.25
21.8	109		108	6.65	7.99	10.58	9.68	9.15
21.9	108		107	6.63	7.91	10.27	9.59 9.45	9.06
22	108		106	6.60	7.91	10.58	9.45	8.97
22.1	108		108	6.60	7.84	10.20	9.36	8.85 8.73
22.2	107		105	6.51 6.63	7.72	10.20	9.26	8.73
22.4	111		105	6.46	7.69	10.05	9.03	8.55
22.5	113		108	6.43	7.68	9.34	9.93	8.55
22.5	113		108	6.46	7.54	9.34	8.91	8.32
22.0	114		108	6.41	7.47	8.98	8.77	8 25
22.8	111		107	6.31	7.42	8.91	8.65	8.11
22.8	110		106	6 28	7.32	8.81	8.54	7.97
22.8	109		104	6.23	7 25	8.84	8.47	7.87
23.1	108		103	6.18	7.20	8.50	8.30	7.74
23.2	108		102	6.08	7.10		8,23	7.64
23.3	105		100	6.03	7.00		8.12	7.53
23.4	103		100	5.98	6.92		8.00	7.39
23.5	103		100	5.96	6.85	8.07	7.93	7.33
23.6	104		99	5.91	6.78		7.81	7 22
23.7	103		99	5.86	6.73	7.90	7.70	



## APPENDIX H Photographs



**TEST A** 









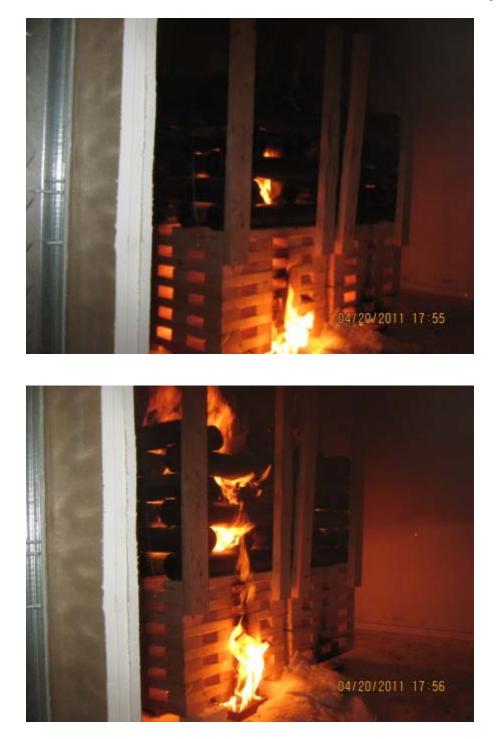




































































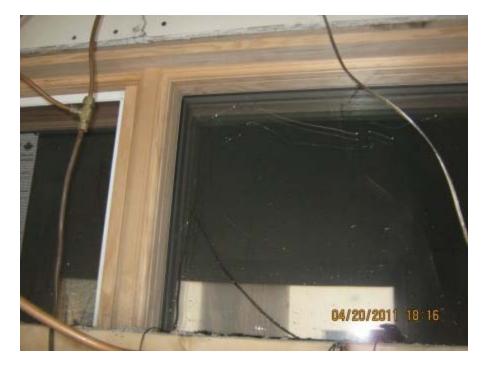










































Test B





































































































































































































































Test D





























































































































Description	Serial No.	Calibration Due Date
Data Acquisition Unit	99LE004	7/10/11
Stopwatch	101884097	8/16/12
Gardon Gauge	171621	4/14/12
Gardon Gauge	171622	4/14/12
Gardon Gauge	171623	4/14/12
Gardon Gauge	171624	4/14/12
Gardon Gauge	171625	4/14/12
1000ml Graduated Cylinder	10FR012	8/30/11

## List of Calibrated Instrumentation Used for Testing



## **Referenced Report**

Full-Scale Fire Study of Spatial Separtion

Research Report: IRC-RR-195

Dated: May 19, 2005

Authored by: Joseph Z. Su and Bruce C. Taber

Published by: Institute for Research In Construction and National Research Council Canada, Ottawa, Canada K1A 0R6



## **REVISION SUMMARY**

DATE	SUMMARY	
April 28, 2011	Original Issue Date	

