

**ASTM C 1363-05 THERMAL PERFORMANCE
TEST REPORT**

Rendered to:

TBC (CANADA) INC.

PRODUCT: Concrete Wall with 1/2" Quik-Therm

Summary of Results	
Thermal Transmittance (Btu/hr·ft ² ·F), U-factor	0.261
Overall Thermal Resistance (hr·ft ² ·F/Btu), R-value(Ru)	3.83

Reference should be made to ATI Report No. 96381.01-201-46 for complete test specimen description and data.

ASTM C 1363-05 THERMAL PERFORMANCE TEST REPORT

Rendered to:

TBC (CANADA) INC.
45016 Rochon Road
Lasalle, Manitoba R0G 1B0

Report No: 96381.01-201-46
Test Date: 11/23/09
Expiration Date: 11/23/13
Revision 1 Date: 11/07/11

Test Sample Identification:

Series/Model: Concrete Wall with 1/2" Quik-Therm

Overall Size: 70" x 80"

Test Procedure: The thermal performance was determined in general accordance with ASTM C 1363-05, *Standard Test Method for the Thermal Performance of Building Assemblies by Means of Hot Box Apparatus*.

Test Results Summary:

Thermal Transmittance, U-factor (U):	0.261 Btu/hr·ft ² ·F
Overall Thermal Resistance(Air-to-Air), (R _u):	3.83 (hr·ft ² ·F)/Btu
Thermal Resistance(Surface-to-Surface), (R _c):	2.95 (hr·ft ² ·F)/Btu

Test Sample Description

Overall Size: 70" x 80"

Specimen Thickness: 4"

Construction: The specimen was comprised of (starting from the exterior side) 1/2" Quik-Therm adhered directly to 3-1/2" concrete.

Measured Test Data

Areas

1. Test Specimen Projected Area (A_s)	38.89 ft ²
2. Metering Box Opening Area (A_{mb})	52.80 ft ²
3. Metering Box Baffle Area (A_{b1})	45.30 ft ²

Heat Flows

1. Total Measured Input into Metering Box (Q_{total})	791.58 Btu/hr
2. Metering Box Wall Heat Flow (Q_{mb})	27.13 Btu/hr
3. EMF vs Heat Flow Equation (equivalent information)	0.0210*EMF + 25.18
4. Net Specimen Heat Loss (Q_s)	710.36 Btu/hr

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

A calibration of the ATI 'thermal test chamber' in St. Paul, Minnesota was conducted in October 2009.

Thermal Performance

Test Conditions

1. Average Metering Room Air Temperature (t_h)	69.80 F
2. Average Cold Side Air Temperature (t_c)	-0.09 F
3. Average Guard/Environmental Air Temperature	71.00 F
4. Metering Room Average Relative Humidity	49.12 %
5. Measured Cold Side Wind Velocity (Perpendicular Flow)	14.36 mph
6. Measured Static Pressure Difference Across Test Specimen	0.00" \pm 0.04"H ₂ O

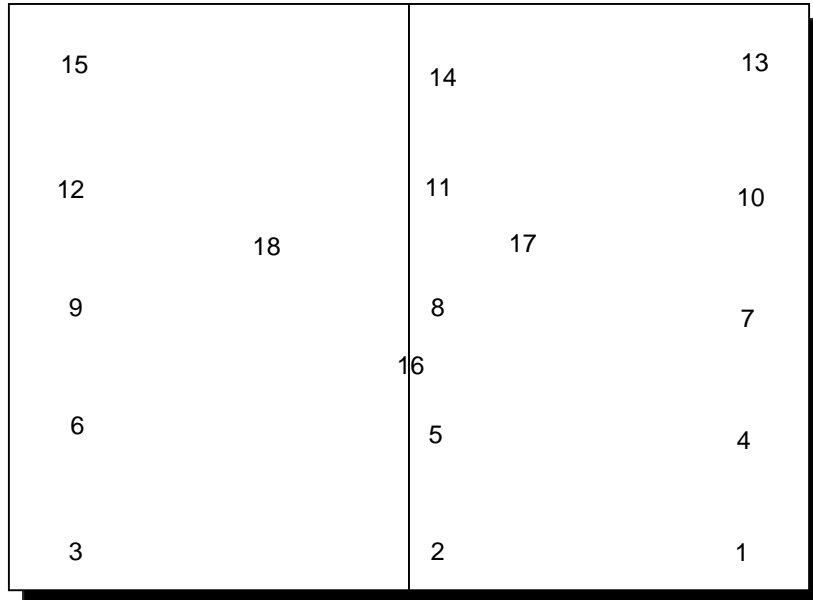
Results

1. Thermal Conductance (C)	0.339 Btu/hr·ft ² ·F
2. Thermal Resistance (R _c)	2.95 hr·ft ² ·F/Btu
3. Overall Thermal Resistance (R _u)	3.83 hr·ft ² ·F/Btu
4. Warm Side Surface Resistance (R _h)	0.70 hr·ft ² ·F/Btu
5. Cold Side Surface Resistance (R _c)	0.17 hr·ft ² ·F/Btu
6. Warm Side Surface Conductance (h _h)	1.42 Btu/hr·ft ² ·F
7. Cold Side Surface Conductance (h _c)	5.77 Btu/hr·ft ² ·F
8. Thermal Transmittance (U)	0.261 Btu/hr·ft ² ·F

Test Duration

1. The environmental systems were started at 14:20 hrs., 11/22/09
2. The test parameters were considered stable for two consecutive four hour test periods
04:42 hrs., 11/23/09 to 12:42 hrs., 11/23/09.
3. The thermal performance test results were derived from 08:42 hrs, 11/23/09 to 12:42 hrs,
11/23/09.

Surface Temperatures
 (as viewed from interior)



Individual Surface Temperature Measurements					
Thermocouple	Warm Side (F)	Cold Side (F)	Thermocouple	Warm Side (F)	Cold Side (F)
1	54.91	2.99	11	57.60	3.38
2	55.20	2.32	12	57.51	3.27
3	54.53	3.03	13	58.25	3.46
4	56.04	2.44	14	58.52	3.60
5	56.20	2.31	15	58.89	4.19
6	56.80	3.39	16	57.10	3.35
7	56.72	3.23	17	57.00	---
8	56.61	2.09	18	56.51	---
9	59.45	3.40			
10	57.05	2.75			

- 1. Average Warm Side Surface Temperature 56.94 F
- 2. Average Cold Side Surface Temperature 3.08 F

Representative samples of the test specimen and a copy of this report will be retained by ATI for a period of four years. This report is the exclusive property of the client so named herein and relates only to the fenestration product tested. This report may not be reproduced, except in full, without the approval of the laboratory. Results obtained are tested values and do not constitute an opinion or endorsement by this laboratory. This report does not constitute certification of this product, which may only be granted by an Independent Administrator.

For ARCHITECTURAL TESTING, INC.

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Attachments: None

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	04/29/10	All	Original Report Issue. Work requested by Ted Cullen of TBC (Canada) Inc.
1	11/07/11	All	Revised Report Issue. Report revised to update product name. Work requested by Ted Cullen of TBC (Canada) Inc.