

CLIENT: Kimberly-Clark Corporation
1400 Holcomb Bridge Road
Roswell, GA 30076

Test Report No: RJ2750-11	Date: June 16, 2014
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SAMPLE ID: Kimberly-Clark BLOCK-IT* House Wrap.

SAMPLING DETAIL: Test samples were randomly selected by a QAI representative at the manufacturing facility on August 23, 2013. The manufacturing facility address is documented in QAI Test Report RJ2750-05. QAI documented the materials and manufacturing procedures in accordance with ICC-ES AC85, Section 3.1.

DATE OF RECEIPT: Samples were received on August 30, 2013.

TESTING PERIOD: November 19th through November 26th, 2013.

AUTHORIZATION: Signed QAI Test Proposal BB070313-4 dated July 3, 2013.

TEST PROCEDURE: Testing was performed in accordance with ASTM E 2178-03, *Standard Test Method for Air Permeance of Building Materials* for compliance with Section 3.4 of ICC ES Acceptance Criteria for Water-Resistive Barriers, AC38, Approved February, 2011.

See page 2 of this report for detailed test procedures.

TEST RESULTS: The average air permeance of the test samples was 0.00656 L/s·m². See page 2 of this report for more detailed test results.

CONCLUSION: The sampled Kimberly-Clark BLOCK-IT* House Wrap demonstrates compliance with Section 3.4 of ICC ES Acceptance Criteria for Water-Resistive Barriers, AC38, Approved February, 2011 and Table A of CCMC Technical Guide Master Format 07 27 09 02 when tested in accordance with ASTM E 2178-03, *Standard Test Method for Air Permeance of Building Materials*.

Prepared By



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Project Leader-Physical Testing

**Signed for and on behalf of
QAI Laboratories Inc.**



Chris Scoville
Operations Manager



AIR PERMEANCE TEST PER ASTM E 2178-03

Test Procedure

Testing was performed in accordance with ASTM E 2178-03, *Standard Test Method for Air Permeance of Building Materials*. Five test specimens measuring approximately 54" x 54" were cut from the sampled material and conditioned for a minimum of 7 days at $21 \pm 1^\circ\text{C}$ and $40 \pm 5\%$ relative humidity. The specimens were then individually mounted on a test chamber and the airflow through each specimen determined in accordance with ASTM E 2178-03. For testing purposes, the specimens were supported on a 1-inch steel grid and the perimeter sealed as outlined in ASTM E 2178-03 for flexible specimens.

Test Requirements

- 1) Per Section 3.4 of ICC ES AC38, each specimen shall have an air permeance less than or equal to $0.02 \text{ L}/(\text{s}\cdot\text{m}^2)$ at 75 Pa ($0.004 \text{ cfm}/\text{ft}^2$).
- 2) Per Table A of CCMC Technical Guide Master Format 07 27 09 02, the air leakage rate at 75 Pa ΔP (based on linear regression of 30 data points) shall be $\leq 0.02 \text{ L}/(\text{s}\cdot\text{m}^2)$.

Test Results

Material Thickness (in): 0.018

Material Basis Weight (lb/1,000 sqft): 22.3

**AIR PERMEANCE TEST PER ASTM E 2178-03 (CONT.)****Test Results (Cont.)**

Test Pressure (Pa)	Air Permeance at Standard Conditions (L/s-m ²)					
	Specimen #1	Specimen #2	Specimen #3	Specimen #4	Specimen #5	Average
25	0.00175	0.00261	0.00234	0.00245	0.00239	0.00231
50	0.00322	0.00475	0.00470	0.00496	0.00504	0.00453
75	0.00471	0.00661	0.00691	0.00726	0.00731	0.00656
100	0.00620	0.00859	0.00929	0.00963	0.00973	0.00869
150	0.00920	0.01235	0.01355	0.01422	0.01434	0.01273
300	0.01792	0.02377	0.02703	0.02844	0.02837	0.02510

Test Pressure (Pa)	Air Permeance at Standard Conditions After Re-measurement (L/s-m ²)					
	Specimen #1	Specimen #2	Specimen #3	Specimen #4	Specimen #5	Average
100	0.00624	0.00858	0.00932	0.00967	0.00977	0.00869
75	0.00474	0.00666	0.00695	0.00730	0.00735	0.00656
50	0.00321	0.00479	0.00469	0.00500	0.00505	0.00453

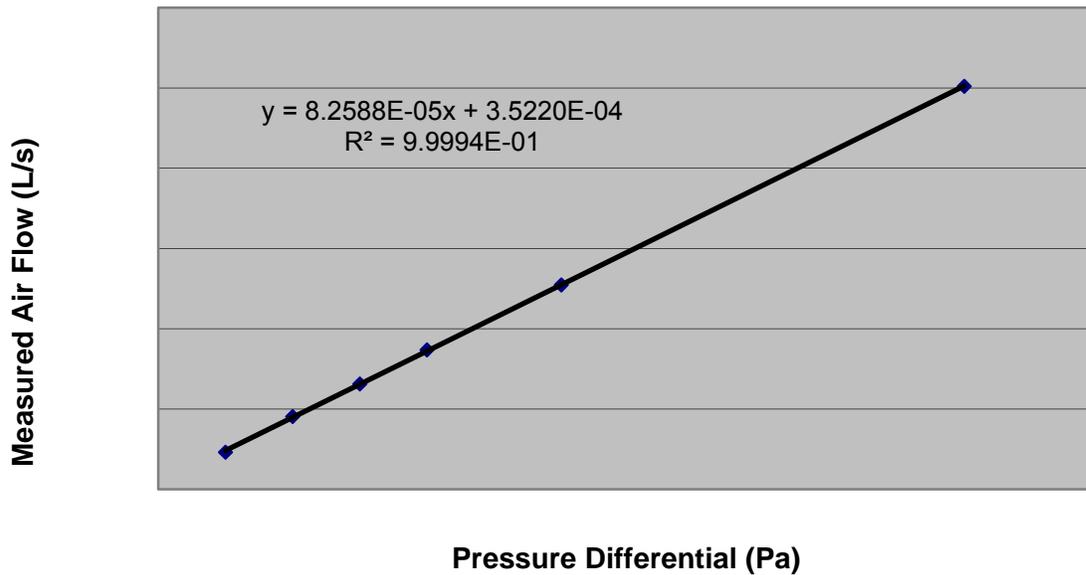
Test Pressure (Pa)	Percent Difference After Re-measurement					
	Specimen #1	Specimen #2	Specimen #3	Specimen #4	Specimen #5	Average
100	0.64	0.12	0.32	0.41	0.41	0.38
75	0.63	0.75	0.58	0.55	0.54	0.61
50	0.31	0.84	0.21	0.80	0.20	0.47

Percent difference for verification is within 10% of initial values, as specified by Sect. 8.2.8 of ASTM E 2178.

AIR PERMEANCE TEST PER ASTM E 2178-03 (CONT.)

The R² value (regression line), as presented on the graph below, exceeds the minimum of 0.99.

Air Flow at Various Pressures



Error Analysis

As required in ASTM E 2178-03, an error analysis was performed to correct for variability in the test procedure. Readings were corrected for temperature and atmospheric pressure per ASTM E 283. The recorded values were averaged, and plotted on a straight line graph of Air Flow vs. Pressure, and the equation of the line of the graph was fit to the formula $Q = C A (\Delta P)^n$, where:

- Q = Flow rate (L/s)
- C = Air pressure coefficient
- n = Air pressure exponent
- ΔP = Pressure differential at a given reading

******End of Report******