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Qualified Envelope Diagnostics, Inc.

AAMA ACCREDITED LAB & FIELD TESTING AGENCY

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PROJECT STATUS REPORT: 2043 18TH AND MADISON **DATE: JUNE 21, 2011**

REPORT SUBMITTED TO:

Mr. Mark Floren
2FL, Inc.

JOBSITE ADDRESS:

East Madison St & 18th Street
Seattle, WA

THIS REPORT DISTRIBUTED TO:

#	RECIPIENT'S NAME:	FIRM:	PHONE:	EMAIL:
1.	Mr. Mark Floren	2FL	206-420-8626	mark@2-f-l.com

SUMMARY OF TEST RESULTS:

On June 16, 2011, QEDLAB technicians returned to the Madison on Eighteenth Condominiums to perform the final round of ASTM E 1105 / AAMA 502-11 field water penetration resistance testing. Testing was performed to comply with industry standards as outlined in RCW 64.55.050.

"Scope of Inspection – Definition:
(1) Any inspection required by this chapter shall include, at a minimum, the following:
(a) Water penetration resistance testing of a representative sample of windows and window installations. Such tests shall be conducted according to industry standards. Where appropriate, tests shall be conducted with an induced air pressure difference across the window and the window installation. "

During the three visits, one EPW horizontal slider/fixed combination window and two similar VPI windows and their installations were tested. After the first round of testing, a decision was made to substitute VPI windows for the EPW windows due to performance issues. Although the EPW window failed the initial testing, its installation received a pass.

In the next round of testing, one VPI window and its installation were assessed. Both showed no instances of water penetration and received a full pass.

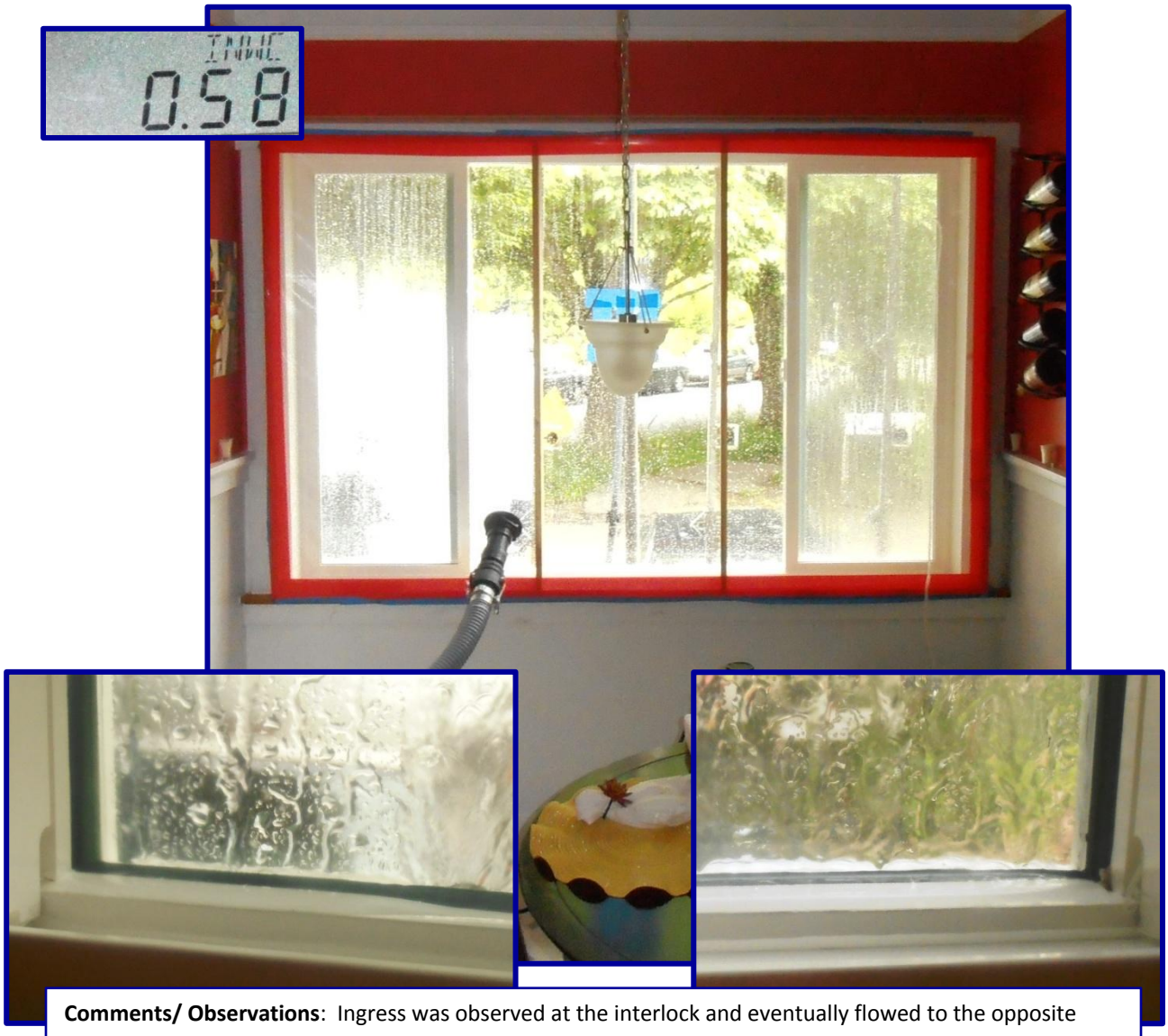
The latest visit tested an additional VPI window and its installation. Ingress was observed at the interlock during testing. However failure did not occur as the water evacuated during the one-minute rest periods and did not migrate to adjacent surfaces. The window received a technical pass and the installation a full pass.

To date the Madison on Eighteenth project has a 100% pass rate for the installations and a 100% pass rate for the VPI windows.

TEST OBSERVATION: JUNE 16, 2011					
#	ATTENDEE'S NAME:	FIRM:	#	ATTENDEE'S NAME:	FIRM:
1.	Mr. Mark Floren	2FL	3.	Todd Burton	QEDLAB
2.	Kenny Blomberg	QEDLAB	4.		

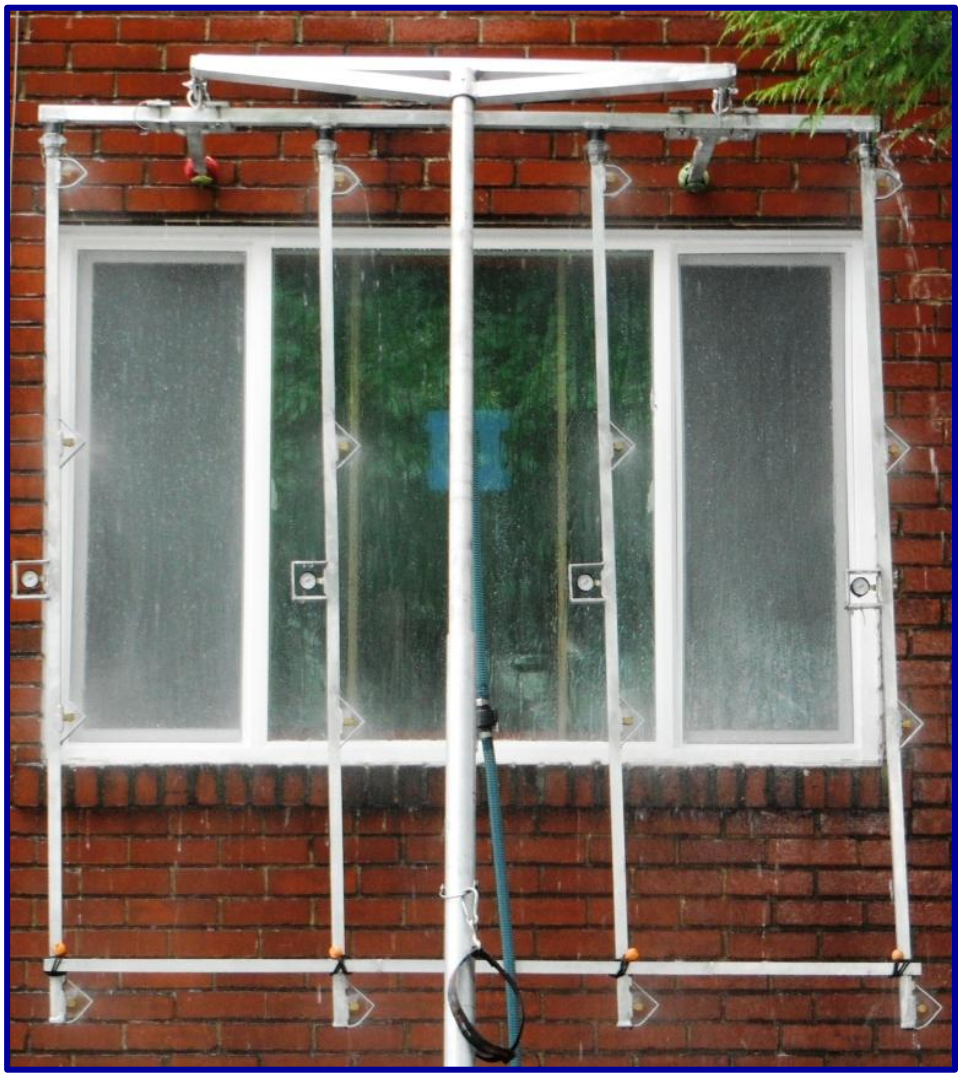
Project ID: # 2043 **Ref: Madison on Eighteenth** **Date: June 21, 2011**

Daily Test:	1	Master Test:	4						
Test Date:	6-16-11	**Formal Test Pressure:**		**Cycle #**	**Start Time**	**End Time**	**# Ingress**	**# Leaks**	**Pass / Fail**
Week Day:	Thursday	**Pressure in psf:**	3.0 psf	**1**	10:07	10:12	1	Ø	T. Pass
Specimen ID:	3	**Equivalent Pa:**	144 Pa	**2**	10:13	10:18	1	Ø	T. Pass
Level:	1	**Equivalent "WC:**	0.58"WC	**3**	10:20	10:28	1	Ø	T. Pass
Unit #:	1	**Velocity Pressure:**	34 mph	**4**	10:26	10:31	1	Ø	T. Pass
Elevation:	North	**(+/-) Pressure:**	(-)	Negative	**FINAL TEST RESULT: PASS**				
Location:	Dining Rm	**Procedure (B):**	Cyclic	Static					
Documented Instances of Formal Leakage:			No	Ø					



Comments/ Observations: Ingress was observed at the interlock and eventually flowed to the opposite corner. Failure did not occur however as the water evacuated during the rest periods in between test cycles. Specimen 3 was awarded a technical pass.

MASTER TEST 4 CONTINUED:



Specimen 3 is a VPI window that measures 50" X 32". It has an AAMA performance grade rating of LC 30.



AAMA ACCREDITED LABORATORY TEST REPORTING COMPLIANCE:

1. QEDLAB was formally contracted by 2FL, Inc. on December 3, 2010.
2. ASTM E 1105 testing was performed at the Madison on Eighteenth Condominiums in Seattle, WA.
3. The project site was located at: East Madison & 18th Street
4. Testing was performed on the following dates: June 16, 2011
5. QEDLAB performed ASTM E 1105 water penetration tests on one (1) VPI horizontal slider/fixed combination window product and corresponding installation.
6. Formal test observation was made by: QEDLAB / 2FL
7. Testing was performed to the following standardized criteria: ASTM E 1105 / AAMA 502-08
8. The performance requirements were based on the product performance grade rating and AAMA 502-08.
9. QEDLAB performed testing per the ASTM E 1105 method: Procedure B – Cyclic Static Pressure

   ASTM E 1105–00: *(Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference)*. The ASTM E 1105 is a water penetration test performed by applying water to the outdoor face and exposed edges of the specimen while simultaneously inducing a static differential air pressure that is higher at the outdoor face than the pressure at the indoor face. Procedure B utilizes cyclic static pressure in five-minute intervals with a one-minute rest period in between test cycles. Four test cycles were performed in accordance with AAMA 502-08.

10. The following industry standardized testing guidelines were given consideration: AAMA 502-08
11. Formal criteria for pass/fail determination were made by AAMA 502-08.

    "… penetration of water beyond a plane parallel to the glazing (the vertical plane) intersecting the innermost projection of the test specimen, not including interior trim and hardware, under the specified conditions of air pressure difference across the specimen. For products with non-planer surfaces (domes, faults, pyramids, etc.) the plane defining water penetration is the plane defined by the innermost edges of the unit frame…. " **ASTM 1105-00, Section 3.2.3, Terminology, Page 1**

    …." unless otherwise specified, failure criteria of this test method shall be defined as water penetration in accordance with 3.2.3. Failure also occurs whenever water penetrates through the perimeter frame of the test specimen. Water contained within drain flashings, gutters, and sills is not considered failure…" **ASTM E 1105-00, Section 10.2 Information Required, Page 4.**

    "… water penetration attributable to the surrounding condition shall be defined as the presence of uncontrolled water which did not originate from the fenestration product or the joint between the fenestration product specimen and the wall/roof. Water penetration attributable to the fenestration product specimen shall be defined as the penetration of uncontrolled water beyond the plane parallel to the innermost edges of the product and that indisputably originates from the fenestration product. Water penetration attributable to the perimeter joint shall be defined as uncontrolled water that indisputably originates at the joint…" **AAMA 502-11, Section 5.3.4, Test Procedures, Page 6**

12. Testing was performed at the following test pressure(s): 3.00 psf
13. The test pressure(s) utilized have the following equivalencies:

Test Pressure	Pascals	Inches of Water Column	Wind Pressure Velocity
psf	Pa	"WC	mph
3.00	144	0.58	34

14. In situ performance deductions were given according to AAMA 502-11.
15. Reason for applying deduction:

    "…Specifier Note 4: when selecting static water test pressure to be tested at the job site, in no case shall the specified test pressure exceeds 2/3 of the tested or rated laboratory performance…" **AAMA 502-11, Section 4, Short Form Specification, Page 1.**

    " ... water penetration resistance test shall be conducted at a static test pressure equal to 2/3 of the tested and rated laboratory performance test pressure as indicated by the applicable product designation in AAMA/WDMA/CSA 101/I.S. 2/A440. For example, a product tested or rated as H-C50 shall be field tested at a pressure differential of 0.667 x 360 Pa (7.50 psf) = 240 Pa (5.0 psf)..." **AAMA 502-11, Section 5.3.2, Page 6.**

16. Testing was performed utilizing induced (-) negative pressure differentials.
17. The determination for pressure type was made per product type and performance grade.
18. Interior pressure induction was achieved by: 110v blower/vac with motor speed control.
19. Plenum construction included: 1 X 3 lumber and 10 mil icing glass.
20. Pressure measurement instrumentation utilized by QEDLAB meets or exceeds ASTM E 1105 requirements of: +/-2% or +/- 2.5 Pa or (0.01 in of water column) – whichever is greater **(ASTM E 1105, Section 6.2.3, Page 2)**
21. Pressure measurement devices included: (√) Dwyer Digital Hand Held Manometer
22. Pressure measurement device meets or exceeds ASTM E 1105 requirements and was last cross-checked on: 5-17-11
23. Exterior water delivery was achieved by: Spray Rack R1 V4
24. Spray Rack R1 V4 included four (4) down legs and sixteen (16) nozzles.
25. Spray rack(s) delivers water at required rate of ≥ 5 gph/ft^2 and ≤ 10 gph/ft^2 per **ASTM E 1105, Section 9, page 3**
26. Spray Rack R1 V4 was last calibrated on 5-10-11, utilizing **ASTM E 1105, Section 9, page 3, Collection Box Method.**
27. Isolation barrier materials were employed during the testing process.
28. The decision to not utilize isolation materials was made based upon the following:
29. To date, the following performance results have been harvested:

    Total number of products tested: 1

    Total number of tests performed: 1

    Number of products "cleared" to meet or exceed project specification requirements: 1

    To date: 2 VPI windows have passed testing

    3 installations have passed testing

CONTACT INFORMATION:

Comments, questions or requests for more information regarding this report should be directed to Mike Henry of Q.E.D. Inc. Our contact information is listed below.

This concludes QEDLAB's report of AAMA accredited testing at Madison on Eighteenth. We hope that Q.E.D's service has met or exceeded your expectations.

Regards,

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