



Water Management Consultants & Testing, Inc.

Deco Flash Testing

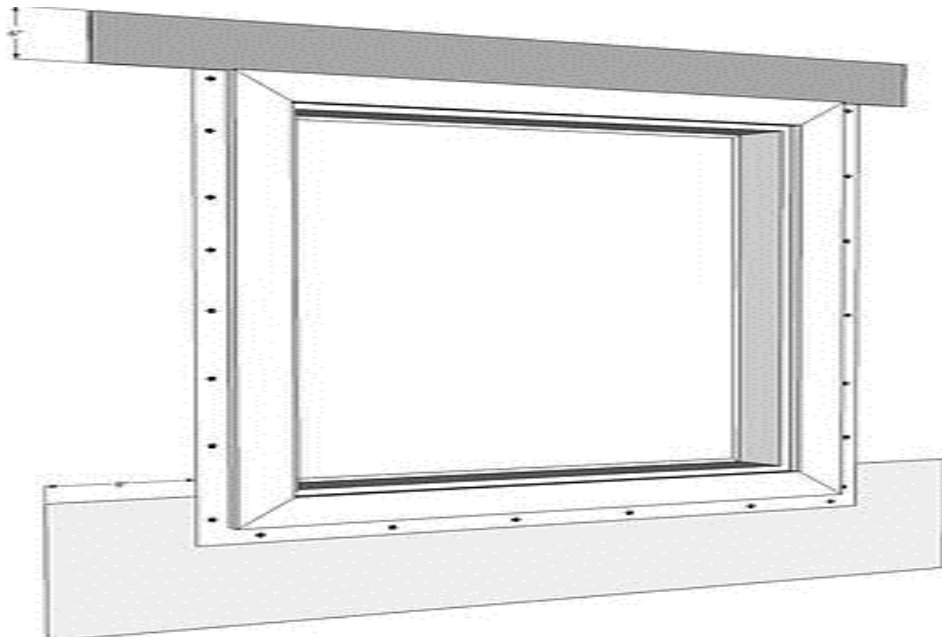
**295 Azalea Drive
Destin, Florida 32541**

Water Intrusion Test Report

February 21, 2014

**Ordered By: Chris Rosende
Deco Flash**

DECOFLASH
ALL-IN-ONE DECORATIVE TRIM & FLASHING FOR WINDOWS & DOORS



Office: (850) 837-1336

295 Azalea Drive, Suite 2
Destin, Florida 32541
Stopwater4u@watermc.net

Fax: (850) 269-1108

Water Management Consultants & Testing, Inc.

February 21, 2014

Chris Rosende
Deco Flash
1607 N. 22nd Street
Tampa, FL 33605
Phone: (813)-397-2827
CR@DECO-FLASH.COM

Re: "Sample Testing"
Deco Flashing Sample Testing
295 Azalea Drive
Destin, FL 32541

Mr. Rosende,

Water Management Consultants & Testing, Inc. has recently completed a comprehensive Quality Control Sample Testing of the rigid PVC Deco Flash assembly at the Water Management Consultants & Testing Corporate Headquarters in Destin, Florida. This report will serve to document and summarize the results of our testing and general observations/hypotheses of the specimen tested.

Respectfully Submitted,
Water Management Consultants & Testing, Inc.



Christopher Leach
Division Director / Technical Service Manager- ISO 17025 Quality Control System

Water Management Consultants & Testing, Inc. appreciates the opportunity to provide our professional services. If you have any questions, please contact our office at (850) 837-1336.

WATER TEST REPORT

Date: February 21, 2014
Time of Test: 11:04 A.M.
Date of Report: 02/27/2014

Client: Chris Rosende

Project Name: Deco Flash Test Sample

Address: 295 Azalea Drive. Destin, Florida

Unit No.: Testing Bay

Building Elevation: N/A

Test No.: 1-4

Specimen Tested: Rigid PVC Deco Flashing

Field Tester: David Nichols

Test Methods for Field Performance: AAMA 502-02 & 08 “Voluntary Specification for Field Testing of Windows and Sliding Glass Doors” or AAMA 503-03 “Voluntary Specifications for Field Testing Of Storefronts, Curtain Walls, and Sloped Glazing Systems” with ASTM E 1105-00 “Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Curtain Walls and Doors by Uniform or Cyclic Static Air Pressure Difference.” Where troubleshooting is required, WMC&T will use methods outlined in AAMA 511-08 “Voluntary Guideline for Forensic Water Penetration Testing of Fenestration Products” and ASTM E 2128-01a “Standard Guide for Evaluating Water Leakage of Building Walls.”

Test Procedure: A calibrated water spray grid was provided to uniformly deliver water against the exterior surface of the test specimen at a minimum rate of 5.0 gph/ft². This water spray was also delivered against all joints, cracks or openings between the window assembly and adjacent wall construction. The wooden chamber was installed against the exterior/interior wall construction in such a manner as to create a pressure differential across the window system or the entire window and adjacent wall system (including sub-frame/receptor and/or panning and perimeter seals) depending on which test method is requested. During delivery of the water spray, the test chamber was pressurized with air to create a pressure differential across the selected test for a duration of seventeen (17) minutes for the cyclic test and/or fifteen (15) minutes for the uniform static test depending on the product tested. The specific test methods used and test area will be listed in the test parameter section.

Water Penetration: Water penetration shall be defined as 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. Any such water penetration shall constitute failure of the water penetration resistance test. It shall also constitute failure if water penetrates through the perimeter frame of the test specimen. Water contained within drained flashing, gutters, and sills shall not be considered failure.

Water Management Consultants & Testing, Inc.

Specimen Description

Operational Window: Sliding Glass Door: Curtain Wall: Fixed Glass:

1. Manufacturer: **Eurocraft Industries**
2. Model : **Eco-Star**
3. Operation Type: (fixed or sliding) **Fixed**
4. Materials (wood, aluminum, etc.) **Steel Reinforced UPVC**
5. Location: **Mock-Up**
6. Dimensions: **19' 1/8" X 19' 3/4"**
7. Physical Condition of Test Specimen: (New/Years installed) **New**
8. Description of any modifications made to the test specimen: **Deco Flashing was installed around the perimeter of the window system.**
9. Performance Class:
 - A. Residential: (R)
 - B. Light Commercial: (LC)
 - B. Commercial: (C)
 - C. Heavy Commercial: (HC)
 - D. Architectural: (AW)
10. Test Specimen Positive/Negative Design Pressure (PSF) **+80/-80**
11. Architectural Specification for Water Intrusion Lab: (PSF) **N/A**
12. Architectural Specification for Water Intrusion Field: (PSF) **N/A**
13. Building Maximum Positive/Negative Design Pressure Flat Walls/Cladding: (PSF) **N/A**
14. Building Maximum Positive/Negative Design Pressure Corner Zone Walls/Cladding: (PSF) **N/A**
15. Building Corner Zone Distance: (Feet) **N/A**
16. Lab Water Intrusion Test Pressure: (PSF) **12**

Water Management Consultants & Testing, Inc.

Test Parameters

1. Chamber was affixed to the:

- A. Exterior of Building:
B. Interior of Building:

2. Static Pressure Differential:

- A. PSF: **6.24**
B. IN" (H2O): **1.20**
C. Wind Load: **49.37**(MPH)
D. Atmospheric Temp interior: **66.7°**
E. Atmospheric Temp exterior: **66.7°**
F. Relative Humidity interior: **41.9%**
G. Relative Humidity exterior: **41.9%**
H. Atmospheric Pressure: **30.11 in Hg**
I. Wind Speed & Direction: **0 MPH**
J. Water Pressure (Testing): **15 psi**
K. Method of Testing: A or B and Uniform , Cyclic , or Both

3. Test Areas:

- A. Entire System (including the window frame, corners, panning, sub-frame/receptor system, and adjacent substrate including the perimeter seals)
B. Assembly Only:

4. Test Procedures & Results:

- A. E 783 (Air Infiltration)
B. AAMA 502-02 and ASTM E 1105-00 (Water Infiltration)
C. AAMA 502-08 and ASTM E 1105-00 (Water Infiltration)
D. AAMA 503-03 and ASTM E 1105-00 (Water Infiltration)
E. AAMA 511-08 and ASTM E 2128-01a (Water Infiltration)

5. Test Results:

- A. Passed: See field water testing form
B. Failed: See field water testing form

Water Management Consultants & Testing, Inc.

Individuals Performing Test

Name:

- | | |
|-------------------|-------|
| 1. David Nichols | WMC&T |
| 2. Shawn Robinson | WMC&T |
| 3. Chris Morris | WMC&T |

Witness Log: (All or Partial)

- | | |
|--------------------|------------|
| 1. Chris Rosende | Deco Flash |
| 2. Jason Holsopple | Deco Flash |

A copy of this report will be retained by WMC&T. for a period of four (4) years. The results obtained apply only to the specific specimens tested.

Water Management Consultants & Testing, Inc.

FIELD WATER TESTING FORM

Project Name: Deco Flash Sample Testing

Unit No.: Testing Bay

Date: February 21, 2014

Location: Destin, Florida

OBSERVATIONS

The first mock-up wall tested was assembled on a wood framed construction with plywood sheathing. The window assembly was installed into the opening with a ridged PVC Deco Flashing encasement. The flashing and window assembly was fastened and leveled into the opening following Deco Flashing installation instructions. A weather resistive barrier was installed on the exterior of the sheathing integrating the Deco Flash into the envelope. The system will be tested without cladding to intentionally place bulk water on the exterior surface of the weather resistive barrier (WRB). Once the WRB becomes fully saturated, a slight wicking will occur promoting water on the surface of the sheathing. This test will demonstrate Deco Flashes ability to prevent water from entering through the opening and onto the interior wood framing under a typical water infiltration simulation in which water bypasses the cladding.

START	STOP	STATIC TEST PRESSURE	PASSED/ FAILED	RESULTS
11:04 AM	11:19 AM	6.24 PSF	PASSED	Test 1: Uniform Static Test-
				The test began by applying water to the exterior surface of the specimen. Once the spray grid achieved a pressure of 15 psi on the exterior surface of the specimen, a differential pressure was applied to the interior of the specimen. The amount of pressure (6.24 PSF) was agreed upon by all parties. This is the minimum required pressure for a fenestration product of this type. This test simulates a 49 MPH wind driven rain event on the specimen for a period of 15 minutes to test its resistance to water infiltration under typical weather events.
				Comments/Concerns:
				From a moisture penetration perspective, Deco Flashing performed as intended. The system did not show evidence of water infiltration. When water was allowed to bypass the weather resistive barrier and cascade onto the sheathing, the opening and interior wood framing remained free from saturation throughout the 15 minute static pressure test.
				Recommendations:
				None at this time

Water Management Consultants & Testing, Inc.

Photo #1.

A view showing the wooden spray rack and attached spray manifold leveled and squared to the test specimen.



Photo #2.

The spray nozzles were placed 18" from the test specimen as per ASTM E 1105 requirements to deliver the equivalent of an eight inch per hour rain fall on the exterior of the specimen.



Photo #3.

A water pressure of 15 psi was applied to the spray grid which was attached to a frame assembly that delivers the minimum required coverage of 5 GPH per square foot. This is equivalent to an eight inch per hour rainfall.



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Photo #4.

A view showing the interior of the test specimen. The wooden chamber was placed on the interior portion of the specimen to apply a differential negative pressure on the specimen.

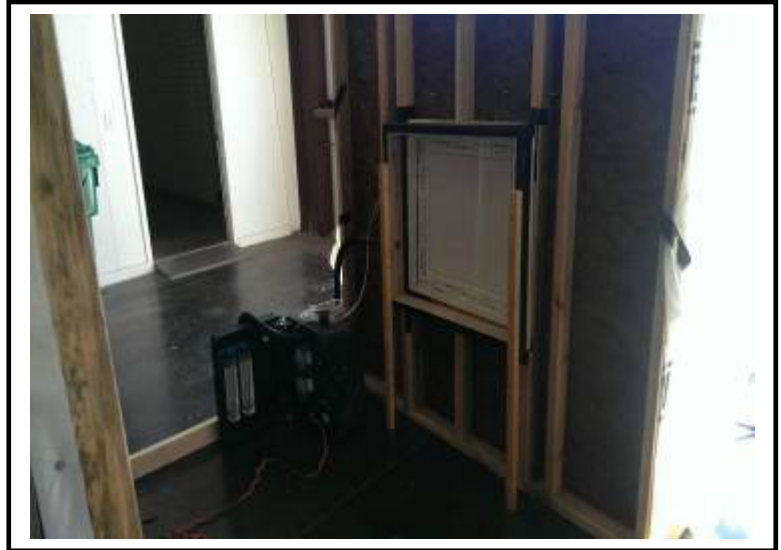


Photo #5.

A view showing the Dwyer Magnehelic gauge reading an interior differential pressure of 1.20 PSF. This is equivalent to 6.24 PSF. This is the minimum required pressure for a fenestration product of this type. The test was run for a duration of 15 minutes. No visual signs of water infiltration were observed throughout the allotted time.



Water Management Consultants & Testing, Inc.

Test Parameters

1. Chamber was affixed to the:

- A. Exterior of Building:
B. Interior of Building:

2. Static Pressure Differential:

- A. PSF: **15**
B. IN" (H2O): **2.91**
C. Wind Load: **76.54**(MPH)
D. Atmospheric Temp interior: **66.7°**
E. Atmospheric Temp exterior: **66.7°**
F. Relative Humidity interior: **41.9%**
G. Relative Humidity exterior: **41.9%**
H. Atmospheric Pressure: **30.11 in Hg**
I. Wind Speed & Direction: **0 MPH**
J. Water Pressure (Testing): **15 psi**
K. Method of Testing: A or B and Uniform, Cyclic, or Both

3. Test Areas:

- A. Entire System (including the window frame, corners, panning, sub-frame/receptor system, and adjacent substrate including the perimeter seals)
B. Assembly Only:

4. Test Procedures & Results:

- A. E 783 (Air Infiltration)
B. AAMA 502-02 and ASTM E 1105-00 (Water Infiltration)
C. AAMA 502-08 and ASTM E 1105-00 (Water Infiltration)
D. AAMA 503-03 and ASTM E 1105-00 (Water Infiltration)
E. AAMA 511-08 and ASTM E 2128-01a (Water Infiltration)

5. Test Results:

- A. Passed: See field water testing form
B. Failed: See field water testing form

Water Management Consultants & Testing, Inc.

FIELD WATER TESTING FORM

Project Name: Deco Flash Sample Testing

Unit No.: Testing Bay

Date: February 21, 2014

Location: Destin, Florida

OBSERVATIONS

The first mock-up wall tested was assembled on a wood framed construction with plywood sheathing. The window assembly was installed into the opening with a ridged PVC Deco Flashing encasement. The flashing and window assembly was fastened and leveled into the opening following Deco Flashing installation instructions. A weather resistive barrier was installed on the exterior of the sheathing integrating the Deco Flash into the envelope. The system will be tested with cladding to intentionally place bulk water on the exterior surface of the weather resistive barrier (WRB). Once the WRB becomes fully saturated a slight wicking will occur, promoting water on the surface of the sheathing. This test will demonstrate Deco Flashes ability to prevent water from entering through the opening and onto the interior wood framing under a typical water infiltration simulation in which water bypasses the cladding.

START	STOP	STATIC TEST PRESSURE	PASSED/ FAILED	RESULTS
11:20 AM	11:35 AM	15 PSF	PASSED	Test 2: Uniform Static Test-
				The test began by applying water to the exterior surface of the specimen. Once the spray grid achieved a pressure of 15 psi on the exterior surface of the specimen a differential pressure was applied to the interior of the specimen. The amount of pressure (15 PSF) was agreed upon by all parties. This is the maximum required pressure for a fenestration product of this type. This test simulates a 76.54 MPH wind driven rain event on the specimen for a period of 15 minutes to test its resistance to water infiltration under typical weather events.
				Comments/Concerns:
				From a moisture penetration perspective Deco Flashing performed as intended. The system did not show evidence of water infiltration. When water was allowed to bypass the weather resistive barrier and cascade onto the sheathing, the opening and interior wood framing remained free from saturation throughout the 15 minute static pressure test.
				Recommendations:
				None at this time

Water Management Consultants & Testing, Inc.

Photo #6.

A view showing the wooden spray rack and attached spray manifold leveled and squared to the test specimen.



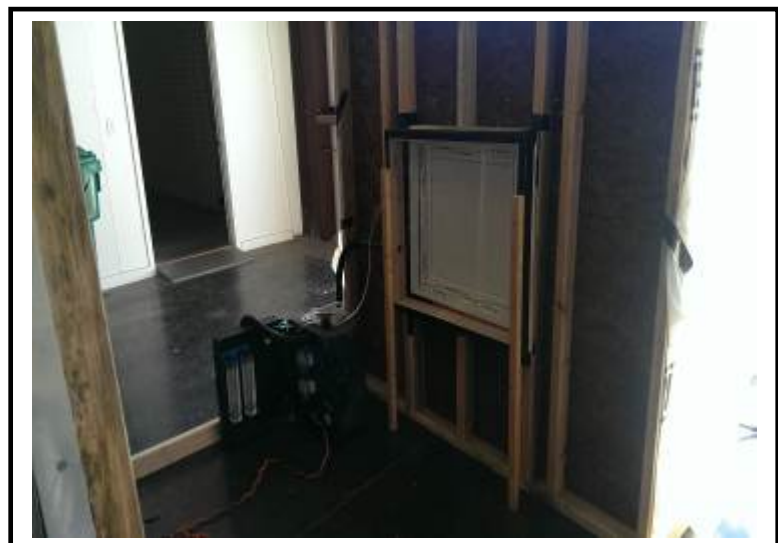
Photo #7.

A water pressure of 15 psi was applied to the spray grid which was attached to a frame assembly that delivers the minimum required coverage of 5 GPH per square foot. This is equivalent to an eight inch per hour rainfall.



Photo #8.

A view showing the interior of the test specimen. The wooden chamber was placed on the interior portion of the specimen to apply a differential negative pressure on the specimen.



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Photo #9.

A view showing the Dwyer Magnahelic gauge reading an interior differential pressure of 2.91 PSF. This is equivalent to 15 PSF. This is the minimum required pressure for a fenestration product of this type. The test was run for a duration of 15 minutes. No visual signs of water infiltration were observed throughout the allotted time.



Water Management Consultants & Testing, Inc.

Test Parameters

1. Chamber was affixed to the:

- A. Exterior of Building:
B. Interior of Building:

2. Static Pressure Differential:

- A. PSF: **6.24**
B. IN" (H2O): **1.20**
C. Wind Load: **49.37**(MPH)
D. Atmospheric Temp interior: **66.7°**
E. Atmospheric Temp exterior: **66.7°**
F. Relative Humidity interior: **41.9%**
G. Relative Humidity exterior: **41.9%**
H. Atmospheric Pressure: **30.11 in Hg**
I. Wind Speed & Direction: **0 MPH**
J. Water Pressure (Testing): **15 psi**
K. Method of Testing: A or B and Uniform, Cyclic, or Both

3. Test Areas:

- A. Entire System (including the window frame, corners, panning, sub-frame/receptor system, and adjacent substrate including the perimeter seals)
B. Assembly Only:

4. Test Procedures & Results:

- A. E 783 (Air Infiltration)
B. AAMA 502-02 and ASTM E 1105-00 (Water Infiltration)
C. AAMA 502-08 and ASTM E 1105-00 (Water Infiltration)
D. AAMA 503-03 and ASTM E 1105-00 (Water Infiltration)
E. AAMA 511-08 and ASTM E 2128-01a (Water Infiltration)

5. Test Results:

- A. Passed: See field water testing form
B. Failed: See field water testing form

Water Management Consultants & Testing, Inc.

FIELD WATER TESTING FORM

Project Name: Deco Flash Sample Testing

Unit No.: Testing Bay

Date: February 21, 2014

Location: Destin, Florida

OBSERVATIONS

The first mock up wall tested was assembled on a wood framed construction with plywood sheathing. The window assembly was installed into the opening with a ridged PVC Deco Flashing encasement. The flashing and window assembly was fastened and leveled into the opening following Deco Flashing installation instructions. A weather resistive barrier was installed on the exterior of the sheathing integrating the Deco Flash into the envelope. The system will be tested with cladding to demonstrate Deco Flashes ability to prevent water from entering through the opening and onto the interior wood framing under a typical water infiltration simulation in which water bypasses the cladding.

START	STOP	STATIC TEST PRESSURE	PASSED/ FAILED	RESULTS
11:45 AM	12:00 PM	6.24 PSF	PASSED	Test 3: Uniform Static Test-
				The test began by applying water to the exterior surface of the specimen. Once the spray grid achieved a pressure of 15 psi on the exterior surface of the specimen a differential pressure was applied to the interior of the specimen. The amount of pressure (6.24 PSF) was agreed upon by all parties. This is the minimum required pressure for a fenestration product of this type. This test simulates a 49 MPH wind driven rain event on the specimen for a period of 15 minutes to test its resistance to water infiltration under typical weather events.
				Comments/Concerns:
				From a moisture penetration perspective Deco Flashing performed as intended. The system did not show evidence of water infiltration. When water was allowed to bypass the weather resistive barrier and cascade onto the sheathing, the opening and interior wood framing remained free from saturation throughout the 15 minute static pressure test.
				Recommendations:
				None at this time

Water Management Consultants & Testing, Inc.

Photo #10.

A view showing the wooden spray rack and attached spray manifold leveled and squared to the test specimen.



Photo #11.

A water pressure of 15 psi was applied to the spray grid which was attached to a frame assembly that delivers the minimum required coverage of 5 GPH per square foot. This is equivalent to an eight inch per hour rainfall.



Photo #12.

A view showing the interior of the test specimen. The wooden chamber was placed on the interior portion of the specimen to apply a differential negative pressure on the specimen.



Water Management Consultants & Testing, Inc.

Photo #13.

A view showing the Dwyer Magnahelic gauge reading an interior differential pressure of 1.20 PSF. This is equivalent to 6.24 PSF. This is the minimum required pressure for a fenestration product of this type. The test was run for a duration of 15 minutes. No visual signs of water infiltration were observed throughout the allotted time.



Water Management Consultants & Testing, Inc.

Test Parameters

1. Chamber was affixed to the:

- A. Exterior of Building:
B. Interior of Building:

2. Static Pressure Differential:

- A. PSF: **15**
B. IN" (H2O): **2.91**
C. Wind Load: **76.54**(MPH)
D. Atmospheric Temp interior: **66.7°**
E. Atmospheric Temp exterior: **66.7°**
F. Relative Humidity interior: **41.9%**
G. Relative Humidity exterior: **41.9%**
H. Atmospheric Pressure: **30.11 in Hg**
I. Wind Speed & Direction: **0 MPH**
J. Water Pressure (Testing): **15 psi**
K. Method of Testing: A or B and Uniform, Cyclic, or Both

3. Test Areas:

- A. Entire System (including the window frame, corners, panning, sub-frame/receptor system, and adjacent substrate including the perimeter seals)
B. Assembly Only:

4. Test Procedures & Results:

- A. E 783 (Air Infiltration)
B. AAMA 502-02 and ASTM E 1105-00 (Water Infiltration)
C. AAMA 502-08 and ASTM E 1105-00 (Water Infiltration)
D. AAMA 503-03 and ASTM E 1105-00 (Water Infiltration)
E. AAMA 511-08 and ASTM E 2128-01a (Water Infiltration)

5. Test Results:

- A. Passed: See field water testing form
B. Failed: See field water testing form

Water Management Consultants & Testing, Inc.

FIELD WATER TESTING FORM

Project Name: Deco Flash Sample Testing

Unit No.: Testing Bay

Date: February 21, 2014

Location: Destin, Florida

OBSERVATIONS

The first mock up wall tested was assembled on a wood framed construction with plywood sheathing. The window assembly was installed into the opening with a ridged PVC Deco Flashing encasement. The flashing and window assembly was fastened and leveled into the opening following Deco Flashing installation instructions. A weather resistive barrier was installed on the exterior of the sheathing integrating the Deco Flash into the envelope. The system will be tested with cladding to demonstrate Deco Flashes ability to prevent water from entering through the opening and onto the interior wood framing under a typical water infiltration simulation in which water bypasses the cladding.

START	STOP	STATIC TEST PRESSURE	PASSED/ FAILED	RESULTS
12:05 PM	12:20 PM	15 PSF	PASSED	Test 4: Uniform Static Test-
				The test began by applying water to the exterior surface of the specimen. Once the spray grid achieved a pressure of 15 psi on the exterior surface of the specimen a differential pressure was applied to the interior of the specimen. The amount of pressure (15 PSF) was agreed upon by all parties. This is the maximum allowed pressure for a fenestration product of this type. This test simulates a 76.59 MPH wind driven rain event on the specimen for a period of 15 minutes to test its resistance to water infiltration under typical weather events.
				Comments/Concerns:
				From a moisture penetration perspective, Deco Flashing performed as intended. The system did not show evidence of water infiltration. When water was allowed to bypass the weather resistive barrier and cascade onto the sheathing, the opening and interior wood framing remained free from saturation throughout the 15 minute static pressure test at a pressure of 15 PSF.
				Recommendations:
				None at this time

Water Management Consultants & Testing, Inc.

Photo #14.

A view showing the wooden spray rack and attached spray manifold leveled and squared to the test specimen.



Photo #15.

A water pressure of 15 psi was applied to the spray grid, which was attached to a frame assembly that delivers the minimum required coverage of 5 GPH per square foot. This is equivalent to an eight inch per hour rainfall.



Photo #16.

A view showing the interior of the test specimen. The wooden chamber was placed on the interior portion of the specimen to apply a differential negative pressure on the specimen.



Water Management Consultants & Testing, Inc.

Photo #17.

A view showing the Dwyer Magnahelic gauge reading an interior differential pressure of 2.91 inches of water. This is equivalent to 15 PSF. This is the maximum allowed pressure for a fenestration product of this type. The test was run for a duration of 15 minutes. No visual signs of water infiltration were observed throughout the allotted time.

