



**TEST REPORT**

**Report No.:** F8399.01-109-44

**Rendered to:**

FAIRFIELD METAL, LLC  
Fairfield, New Jersey

**PRODUCT TYPE:** ACP Panel System (Dry Seal)  
**SERIES/MODEL:** Dry Econect-RS

<b>Title</b>	<b>Summary of Results</b>
Design Pressure	±3600 Pa (±75.19 psf)
Air Infiltration at 1.57 psf	0.1 L/s/m <sup>2</sup> (0.01 cfm/ft <sup>2</sup> )
Air Infiltration at 6.27 psf	0.1 L/s/m <sup>2</sup> (0.02 cfm/ft <sup>2</sup> )
Water Penetration Resistance Test Pressure	580 Pa (12.11 psf)
Uniform Load Structural Test Pressure	+5400 Pa (+112.78 psf)
Uniform Load Structural Test Pressure	-3960 Pa (-82.71 psf)

Reference must be made to Report No. F8399.01-109-44, dated 08/17/16 for complete test specimen description and detailed test results.

**1.0 Report Issued To:** Fairfield Metal, LLC  
9 Audrey Place  
Fairfield, New Jersey 07004

**2.0 Test Laboratory:** Architectural Testing, Inc., an Intertek company ("Intertek-ATI")  
130 Derry Court  
York, Pennsylvania 17406-8405  
717-764-7700

### 3.0 Project Summary:

**3.1 Product Type:** ACP Panel System (Dry Seal)

**3.2 Series/Model:** Dry Econect-RS

**3.3 Compliance Statement:** Results obtained are tested values and were secured by using the designated test method(s). Test specimen description and results are reported herein.

**3.4 Test Date(s):** 06/02/16

**3.5 Test Record Retention End Date:** All test records for this report will be retained until June 2, 2020.

**3.6 Test Location:** Intertek-ATI test facility in York, Pennsylvania.

**3.7 Test Specimen Source:** The test specimen(s) was provided by the client. Representative samples of the test specimen(s) will be retained by Intertek-ATI for a minimum of two years from the test completion date.

**3.8 Drawing Reference:** The test specimen drawings have been reviewed by Intertek-ATI and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek-ATI per the drawings located in Appendix C. Any deviations are documented herein or on the drawings.

### 3.9 List of Official Observers:

<u>Name</u>	<u>Company</u>
Kalven Arriaga	Fairfield Metal, LLC
Timothy J. McGill	Intertek-ATI
Scott Gill	Intertek-ATI

#### 4.0 Test Method(s):

ASTM E283-04 (2012), *Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen*

ASTM E330/E330M-14, *Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference*

ASTM E331-00 (2009), *Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference*

AAMA 501.1-05, *Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors using Dynamic Pressure*

#### 5.0 Test Specimen Description:

##### 5.1 Product Sizes:

Overall Area: 5.9 m <sup>2</sup> (64.0 ft <sup>2</sup> )	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	2438	96	2438	96
Top left Panel	1207	47-1/2	1207	47-1/2
Top right panel	1207	47-1/2	1207	47-1/2
Bottom panel	2426	95-1/2	1207	47-1/2

**5.2 Base Wall Construction:** The test wall was fabricated with 18 gauge, 6" galvanized steel studs, spaced 16" on center. The steel studs were secured at each end to the top and bottom 18 gauge steel track using #12 x 3/4" hex head self-tapping screws. The stud wall was reinforced by running a 4-1/2" wide by 0.023" thick steel strap that runs diagonally corner to corner and was secured using #12 x 3/4" hex head self-tapping screws. The stud wall was sheathed with 5/8" thick DensGlass™ which was secured to the studs with #10 x 1-1/2" flat head self-tapping screws. The DensGlass™ was covered with a rubberized peel-and-stick air-water barrier. The wall utilized a nominal 2x8 Spruce-Pine-Fir wood wrap around the perimeter, secured to the steel studs with 1/4" x 3" flat head self-tapping screws, 3" from each end and spaced 16" on center.

## 5.0 Test Specimen Description: (Continued)

**5.3 Panel Construction:** The test specimen was constructed of three aluminum composite panels that were 4 mm (0.157") thick. The panels were constructed with a 0.120" thick plastic core and two 0.020" thick aluminum interior and exterior skins, adhered to the plastic core. A 90° bend was utilized on all four sides of the panels, resulting in a 1" long return leg. The corners utilized a 1" wide, 2" by 2" aluminum angle to secure the corners, secured to each panel leg with two 1/8" diameter pop rivets. All panel edges utilized aluminum frame extrusions which were secured to the panels with #8-18 x 3/4" hex washer head TEK-2 screw, spaced 12" on center. The bottom edge of each panel utilized two 5/8" long by 3/16" wide weepslots with open-cell foam behind the weep opening, located 2" from each end.

**5.4 Reinforcement:** The panels utilized "I" shaped extruded aluminum reinforcement. The reinforcement was located at the midspan of each panel and was secured to the backside of the panel with structural sealant.

**5.5 Panel Installation:** The panels were installed in a bottom to top and left to right order. The panels were attached to the stud wall using the aluminum frame extrusions on each panel. The frame extrusions were secured to the joint clips by interlocking onto each clip. Joint clips were located 3" from each corner of the outside perimeter of each panel and at each joint end and spaced 16" on center. Each joint clip was secured to the stud wall using a #10 x 1-1/2" hex head self-drilling screw. All panel joints utilized an ACM reveal strip that was slid into the slots on the panel perimeter extrusions. The perimeter of the wall system was sealed to the wood buck with silicone sealant.

**6.0 Test Results:** The temperature during testing was 24°C (76°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
<b>Air Leakage,</b> per ASTM E283 at 75 Pa (1.57 psf)	0.1 L/s/m <sup>2</sup> (0.01 cfm/ft <sup>2</sup> )	N/A	1
<b>Air Leakage,</b> per ASTM E283 at 300 Pa (6.27 psf)	0.1 L/s/m <sup>2</sup> (0.02 cfm/ft <sup>2</sup> )	N/A	1
<b>Water Penetration,</b> per ASTM E331 at 580 Pa (12.11 psf)	Pass	No leakage	
<b>Dynamic Water Penetration</b> per AAMA 501.1 at 580 Pa (12.11 psf)	Pass	No leakage	
<b>Uniform Load Deflection,</b> per ASTM E330 Deflections taken at vertical joint +3600 Pa (+75.19 psf) -3600 Pa (-75.19 psf)	0.3 mm (0.01") 0.5 mm (0.02")	N/A	2, 3
<b>Uniform Load Deflection,</b> per ASTM E330 Deflections taken between studs +3600 Pa (+75.19 psf) -3600 Pa (-75.19 psf)	0.5 mm (0.02") 0.5 mm (0.02")	N/A	2, 3
<b>Uniform Load Structural,</b> per ASTM E330 Permanent sets taken at vertical joint +5400 Pa (+112.78 psf) -3960 Pa (-82.71 psf)	<0.3 mm (<0.01") 0.3 mm (0.01")	N/A	2, 3
<b>Uniform Load Structural,</b> per ASTM E330 Permanent sets taken between studs +5400 Pa (+112.78 psf) -3960 Pa (-82.71 psf)	<0.3 mm (<0.01") 0.3 mm (0.01")	N/A	2, 3

## 7.0 Test Results: (Continued)

**General Note:** *All testing was performed in accordance with the referenced standard(s).*

*Note 1: Test Date 06/02/16 / Time: 10:30 AM*

*Note 2: Loads were held for 10 seconds.*

*Note 3: Tape and film were not used to seal against air leakage during structural testing.*

Intertek-ATI will service this report for the entire test record retention period. Test records such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Intertek-ATI for the entire test record retention period.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Intertek-ATI.

For ARCHITECTURAL TESTING, INC.:

---

Scott Gill  
Lead Technician

---

Timothy J. McGill  
Manager – Product Testing

SG:asm/cmd

Attachments (pages): This report is complete only when all attachments listed are included.

Appendix A: Location of air seal (1)

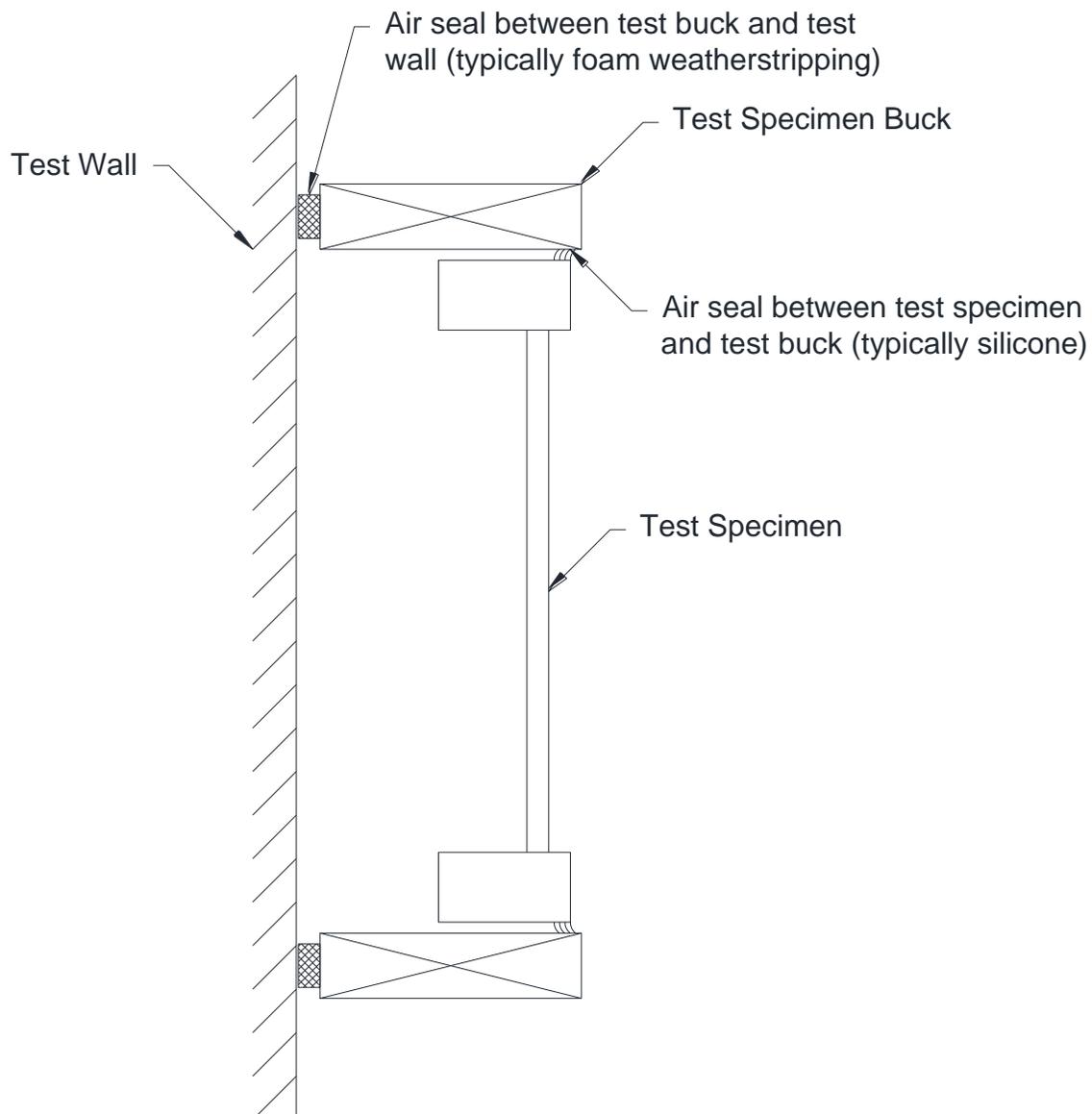
Appendix B: Photograph(s) (1)

Appendix C: Drawing(s) (4)

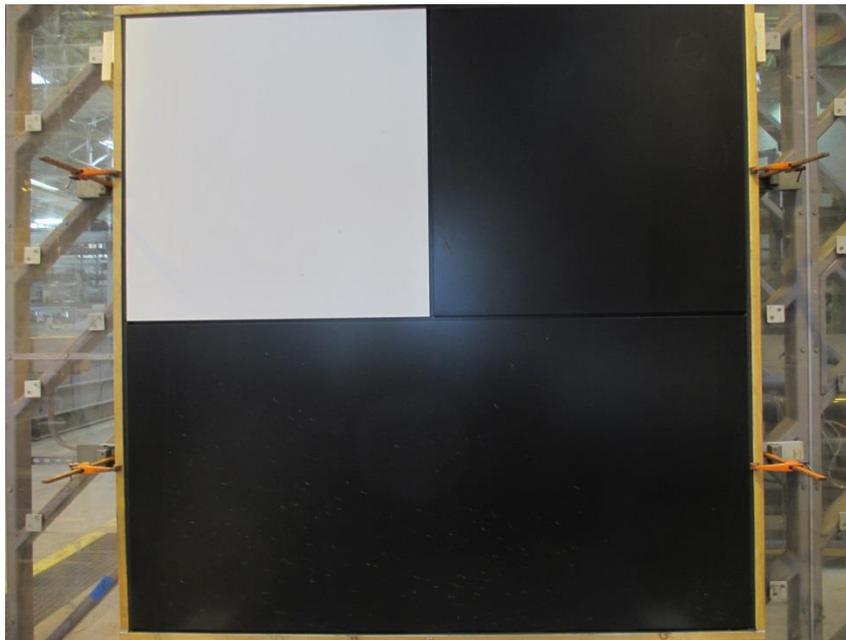
This report produced from controlled document template ATI 00479, revised 06/19/15.

## Appendix A

**Location of Air Seal:** The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping and creating a seal.



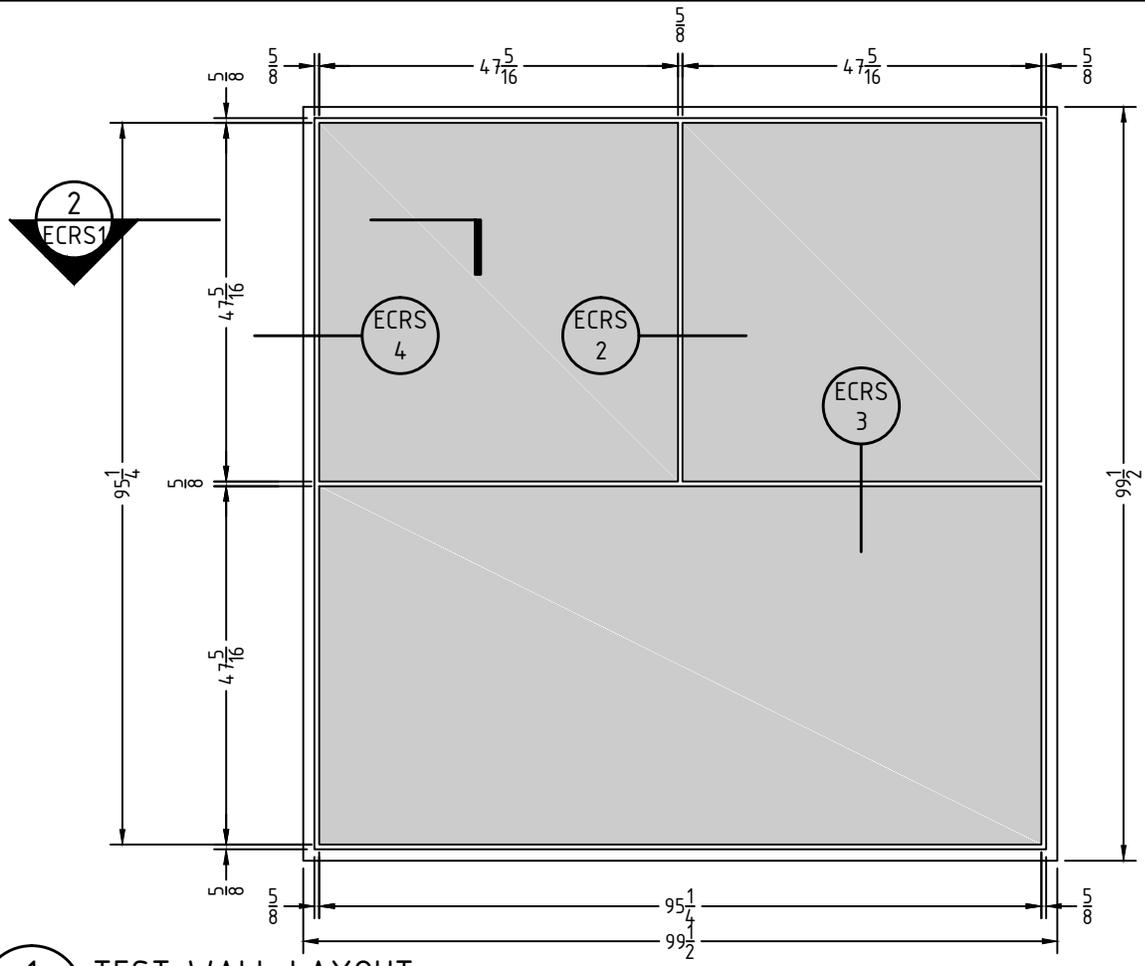
**Appendix B**  
**Photograph(s)**



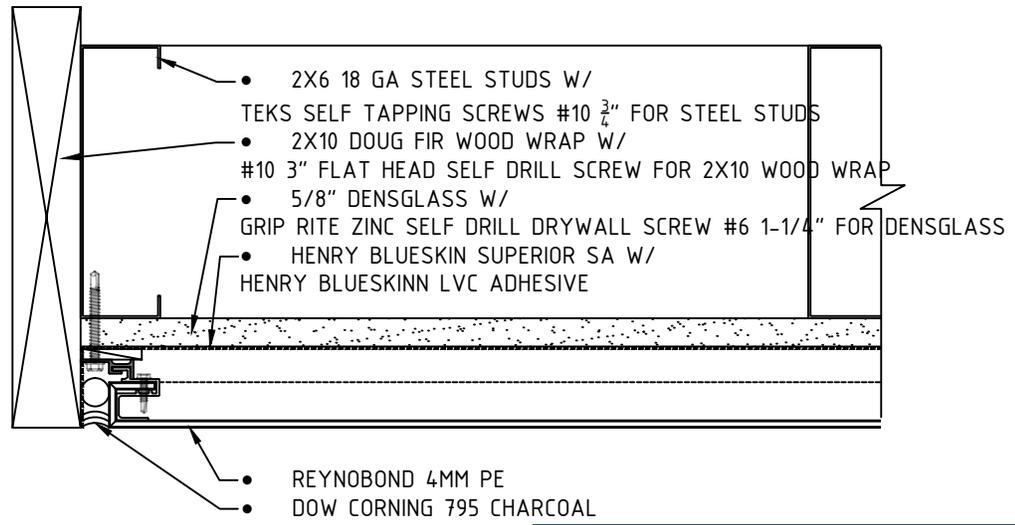
**Photo No. 1**  
**View of Tested Specimen**

**Appendix C**

**Drawing(s)**



**1 TEST WALL LAYOUT**  
 SCALE: 1/2"=1'-0" (1:24)  
 ARCH REF:



**2 TEST WALL DETAIL**  
 SCALE: 3"=1'-0" (1:4)  
 ARCH REF:

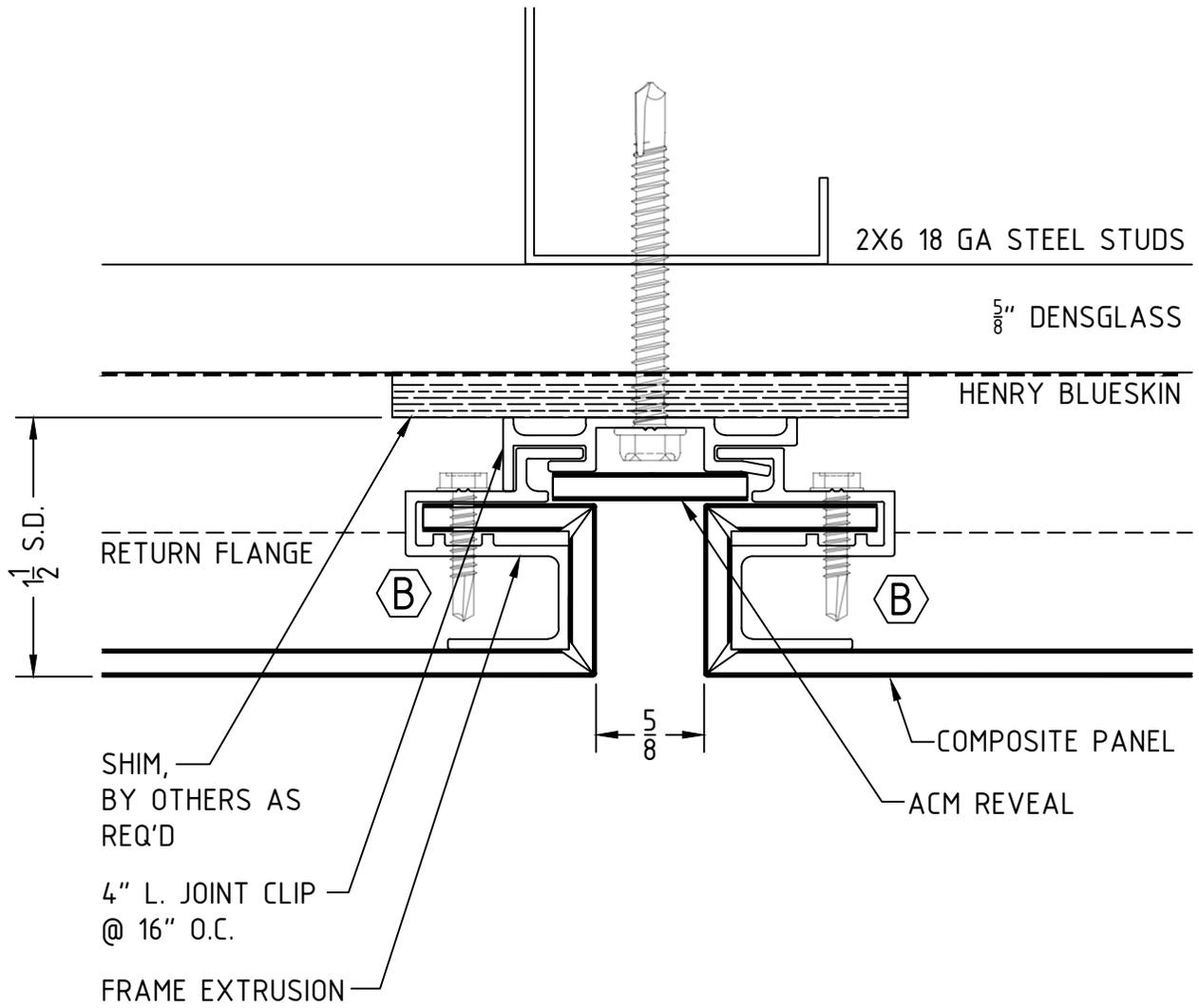
Intertek	Report #:	F8399.01-109-44
	Date:	06/07/16
	Verified by:	<i>Scott Hill</i>



**Fairfield Metal**  
 9 Audrey Place, Fairfield, NJ 07004  
 Phone: 973-276-8440  
 www.fairfieldmetal.com

Project Name: TEST WALL DETAIL FOR ECRS  
 Drawn By: MD    Scale: AS NOTED    Date: 06.06.2016

Drawing No. ECRS-1



# PANEL FASTENERS

**B** #8-18X3/4" HWH TEK-2 

	Report #:	F8399.01-109-44
	Date:	06/07/16
	Verified by:	<i>Scott Hill</i>



## Fairfield Metal

9 Audrey Place, Fairfield, NJ 07004  
 Phone: 973-276-8440  
 www.fairfieldmetal.com

Project Name:

VERTICAL JOINT DETAIL

Drawing No.

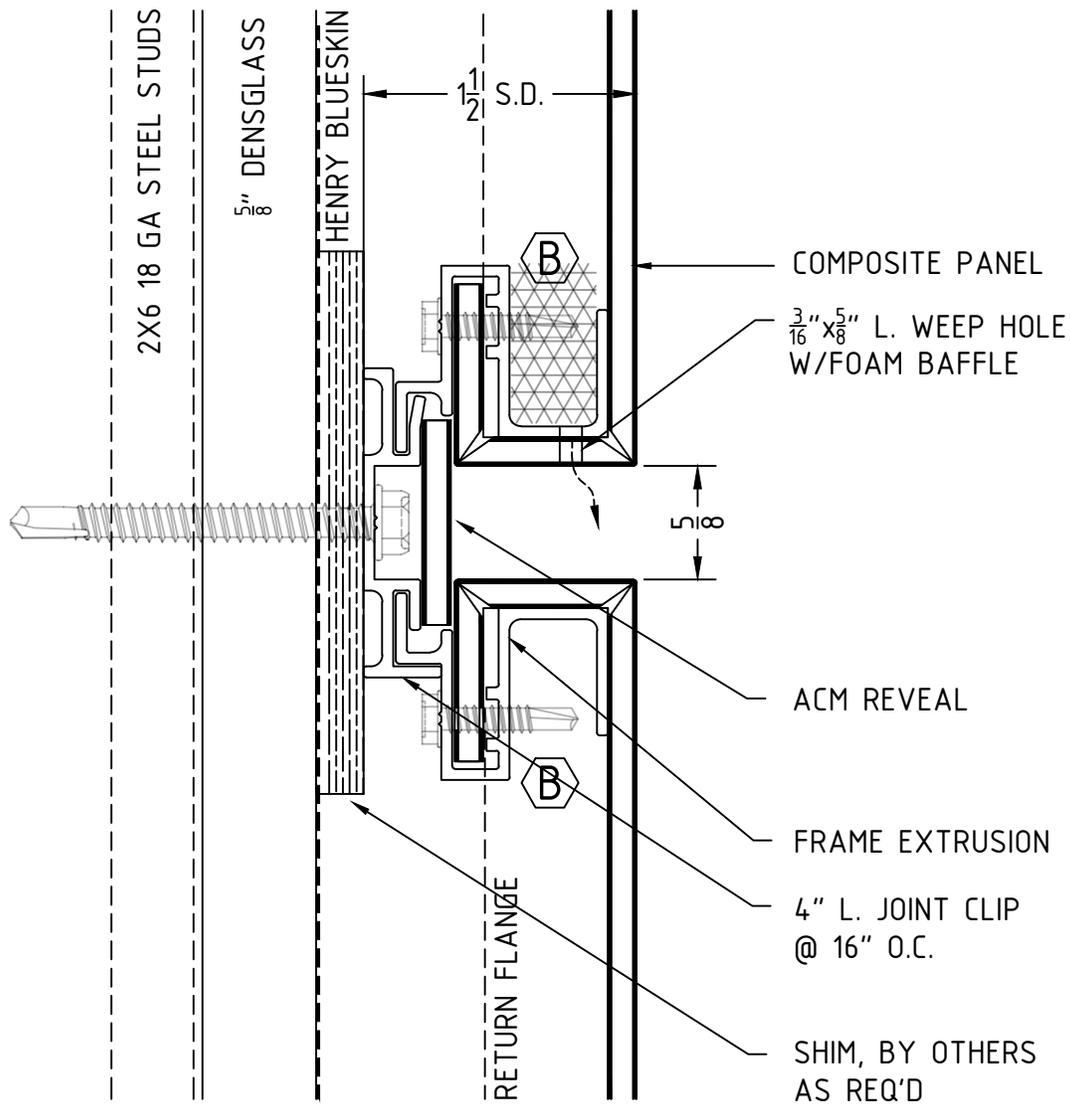
ECRS-2

Drawn By: MD

Scale: 1:1

Date:

06.06.2016



### PANEL FASTENERS

**B** #8-18X3/4" HWH TEK-2 

	Report #:	F8399.01-109-44
	Date:	06/07/16
	Verified by:	<i>Scott Hill</i>



### Fairfield Metal

9 Audrey Place, Fairfield, NJ 07004  
 Phone: 973-276-8440  
 www.fairfieldmetal.com

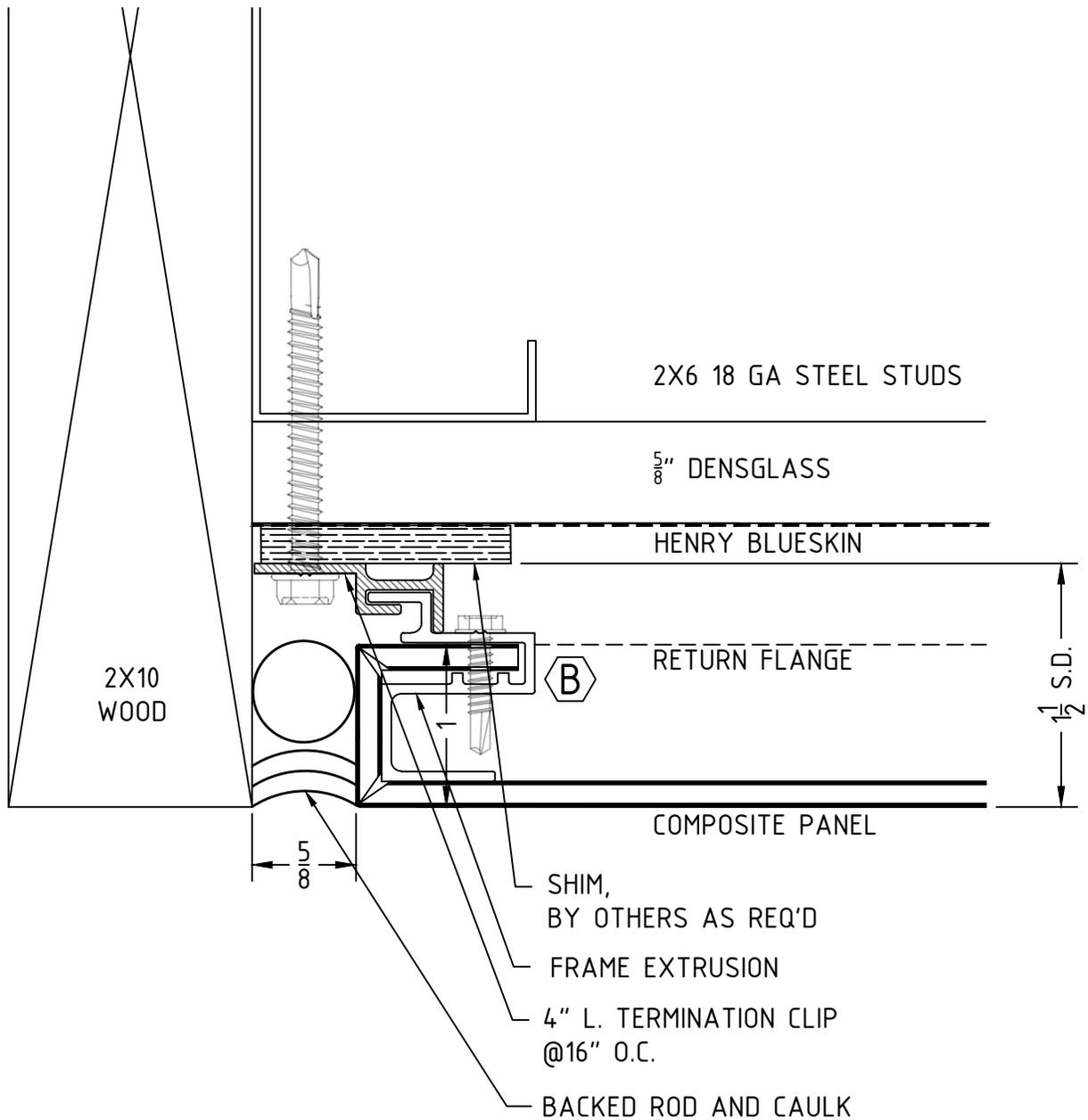
Project Name:  
 HORIZONTAL JOINT DETAIL

Drawing No.  
 ECRS-3

Drawn By: MD

Scale: 1:1

Date: 06.06.2016



**PANEL FASTENERS**

**B** #8-18X3/4" HWH TEK-2 

	Report #:	F8399.01-109-44
	Date:	06/07/16
	Verified by:	<i>Scott Hill</i>



**Fairfield Metal**

9 Audrey Place, Fairfield, NJ 07004  
 Phone: 973-276-8440  
 www.fairfieldmetal.com

Project Name:

HORIZONTAL JOINT DETAIL

Drawing No.

ECRS-4

Drawn By: MD

Scale: 1:1

Date: 06.06.2016