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MNC CONSTRUCTION INC.
TEST REPORT

TEST REPORT ISSUED TO
MNC Construction Inc.
85 Tuscarora Ht NW
Calgary, AB T3L 2H2
Canada

SPECIFICATION
ASTM E330/E330M-14

PRODUCT EVALUATED
8’ x 8’ wall system – 24” x 48” EPS Panels with acrylic finish

REPORT NUMBER
103859999COQ-001A

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01-May-2019

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TEST REPORT FOR: MNC CONSTRUCTION INC.

Report No.: 103859999COQ-001A
Date: 01-May-2019

CONCLUSION

The 8' x 8' wall system – 24" x 48" EPS Panels with acrylic finish, submitted by MNC Construction Inc., tested in accordance with ASTM E330/E330M-14 "*Standard Test Method for Structural Performance of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference*". The product results are presented in Section 7 of this report.

For INTERTEK B&C:

COMPLETED BY:	Jason Komorski	**REVIEWED BY:**	David Park
TITLE:	Technician – Building & Construction	**TITLE:**	Reviewer – Building & Construction
SIGNATURE:		**SIGNATURE:**	
DATE:	05/01/19	**DATE:**	05/01/19

SECTION 1
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SECTION 2
OBJECTIVE

Intertek Testing Services NA Ltd. (Intertek) has conducted testing for **MNC Construction Inc.** (MNC) on the 8' x 8' wall system – 24" x 48" EPS Panels with acrylic finish. Testing was conducted in accordance with ASTM E330/E330M-14 "*Standard Test Method for Structural Performance of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference*".

This evaluation was started on April 25, 2019 and completed on the same day.

SECTION 3
SAMPLE SELECTION

The client submitted the samples to the Evaluation Center on April 25, 2019. Samples were not independently selected for testing. The system/specimen was provided by MNC Construction Inc. located at 85 Tuscarora Ht NW, Calgary, AB, Canada, T3L 2H2

The specimen was installed and as provided by the client. Intertek has not verified the composition, manufacturing techniques, or quality assurance procedures, and accepts no responsibility for any inaccuracies therein.

SECTION 4
SAMPLE ASSEMBLY AND DESCRIPTION

The product was identified as the 8' x 8' wall system – 24" x 48" EPS Panels with acrylic finish. The assembly measured 2445 mm x 2438 mm (96.3" x 96.0"). Each 603 mm (23.7") x 1215 mm (47.8") panel was constructed of EPS, with a cement base coat over a fiberglass mesh and an acrylic finish. The panels were constructed as a tongue and groove system. 20 gauge galvanized steel profiles were used to secure the panels to the wall assembly. A starter strip track is secured to the bottom and left side of the assembly with #10 x 1-1/2" self-tapping wafer head screws, spaced 406 mm (16") o.c. going in to each stud. 6x additional horizontal Z-tracks were used, secured with #10 x 1-1/2" self-tapping wafer head screws, spaced 406 mm (16") o.c. going in to each stud. The top of the assembly has a head flashing/track profile, secured to the top of the wall assembly with #10 x 1-1/2" self-tapping wafer head screws , spaced approximately 152 mm (6") apart, staggered between the interior and exterior edge of the 2x6. Each panel, except the final 2x panels on the right side is secured along their right side with the use of 3x 102 mm (4") long sections of a Z-track profile, each secured to the intersecting horizontal Z-track with the use of 2x #8 x 1/2" self-tapping wafer head screws. The final right 2x panels are secured with a continuous length or the Z-track profile, secured at each intersection with the horizontals with 2x #8 x 1/2" self-tapping wafer head screws.

The wall assembly consisted of a 2540 mm (100") x 2438 mm (96") frame constructed from nominal 2x6 spf #2 or better wood studs, spaced 406 mm (16") o/c with 7/16" OSB sheathing, secured along each stud with #8 x 1-1/2" flat-head wood screws, with approximate 254 mm (10") spacing. A grid of 25 mm (1") diameter holes were drilled through the OSB sheathing, then polyethylene film was applied over top in order to apply a uniform load across the cladding system. In order to ensure the maximum load was transferred to the specimen and that the polyethylene film did not prevent movement or failure of the specimen, the polyethylene film was applied loosely with extra folds of material at each corner and at all offsets and recesses.

Drawings supplied by MNC are included in Appendix A.

SECTION 5
TESTING AND EVALUATION METHODS

UNIFORM LOAD

The Uniform Load Deflection test was conducted in accordance with ASTM E330/E330M-14 *"Standard Test Method for Structural Performance of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference"* (ASTM E330), Procedure A. The test was performed in the negative wind load direction only. After a 10 second preload at 240 Pa (5 psf), followed by 1 minute with the pressure released, the full test load was applied for 10 seconds and then released. The test loads had started at 720 Pa (15 psf) and continued upwards in 240 Pa (5 psf) increments until 3360 Pa (70 psf), then 480 Pa (10 psf) increments until the test systems limits of 5040 Pa (105 psf).

Deflection readings were recorded in order to establish deformation about the wall system. 7x gauges were set on the test specimen. 3x gauges were placed in a vertical line, along the left edge of the top panel, right of the horizontal mid-point. The span between the end gauges was 1112 mm (43.75"). Gauge 4 was placed on the same panel, at the mid-point of the bottom horizontal edge. Gauge 5 was placed at the center point of the same panel. Gauges 6 and 7 were on a bottom panel, left of the horizontal mid-point, 6 at the top right corner and 7 at the center point. See pictures in appendix B.

DEVIATION FROM STANDARD METHOD

There were no noted deviations from the test standards used in the evaluation reported herein.

SECTION 6
TEST EQUIPMENT

Equipment used during testing is listed as follows:

Test	Equipment	Intertek ID#
Uniform Load	Fenestration Testing Control Unit	60650
	20" Line Gauge	60673
		64928
		64926
		64923
		64920
		64924

SECTION 7
RESULTS AND OBSERVATIONS

The results for the 8' x 8' wall system – 24" x 48" EPS Panels with acrylic finish evaluated in this report are outlined in Table 1 below.

Table 1. Test Results

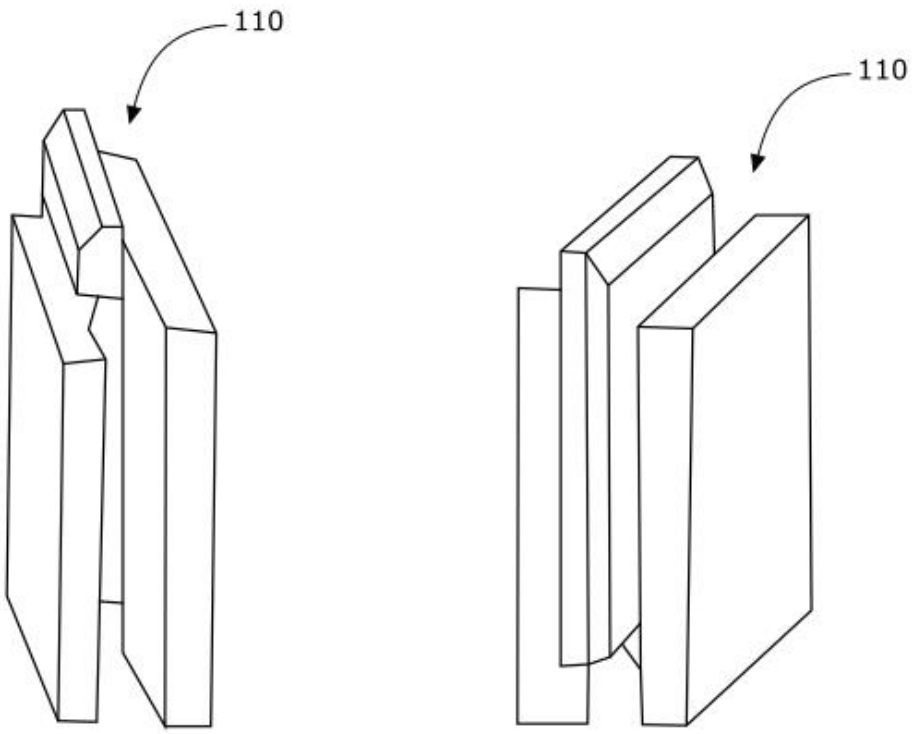
	Gauges (mm)						
Load (psf)	**1**	**2**	**3**	**4**	**5**	**6**	**7**
5 -Preload	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.76	2.56	2.24	2.34	2.56	2.5	2.69
0	0.10	0.20	0.20	0.10	0.30	0.05	0.15
20	1.31	3.83	3.06	3.54	3.93	3.30	3.87
0	0.10	0.50	0.20	0.30	0.40	0.20	0.35
25	1.66	4.87	4.15	4.36	5.12	4.25	4.99
0	0.15	0.50	0.25	0.40	0.50	0.25	0.50
30	2.16	6.75	5.44	5.82	7.09	5.82	7.18
0	0.35	0.80	0.40	0.60	0.65	0.50	0.90
35	2.61	8.25	6.44	6.87	8.48	6.89	8.70
0	0.50	0.90	0.45	0.60	0.85	0.50	1.10
40	3.27	9.94	7.17	7.99	10.17	7.97	10.19
0	0.60	1.20	0.75	0.85	1.15	0.60	1.40
45	3.94	11.83	8.56	9.57	12.18	9.31	12.48
0	0.50	1.50	0.90	1.15	1.60	0.80	1.80
50	4.60	13.76	10.06	10.82	14.20	10.93	14.62
0	0.60	1.80	1.05	1.25	1.65	1.10	2.20
55	5.13	15.87	11.19	12.51	16.34	12.52	17.49
0	0.65	2.05	1.30	1.40	2.00	1.50	2.70
60	5.87	18.71	12.88	14.19	18.97	14.30	20.04
0	0.80	2.60	1.70	1.80	2.45	1.85	3.20
65	6.48	21.12	14.36	15.59	21.26	16.05	22.68
0	1.10	3.05	1.95	2.05	2.70	2.20	3.80
70	7.21	23.40	15.75	17.03	23.52	17.64	25.33
0	1.20	3.40	2.25	2.40	3.20	2.60	4.20
80	8.70	29.65	19.25	20.54	29.16	21.47	30.53
0	1.40	4.17	2.85	3.10	3.90	3.30	5.00
90	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-
100	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-
Ultimate Load	**103.5 psf**						
Mode of Failure	Fasteners for the horizontal tracks pulled out at the top right corner of the assembly.						

SECTION 8
CONCLUSION

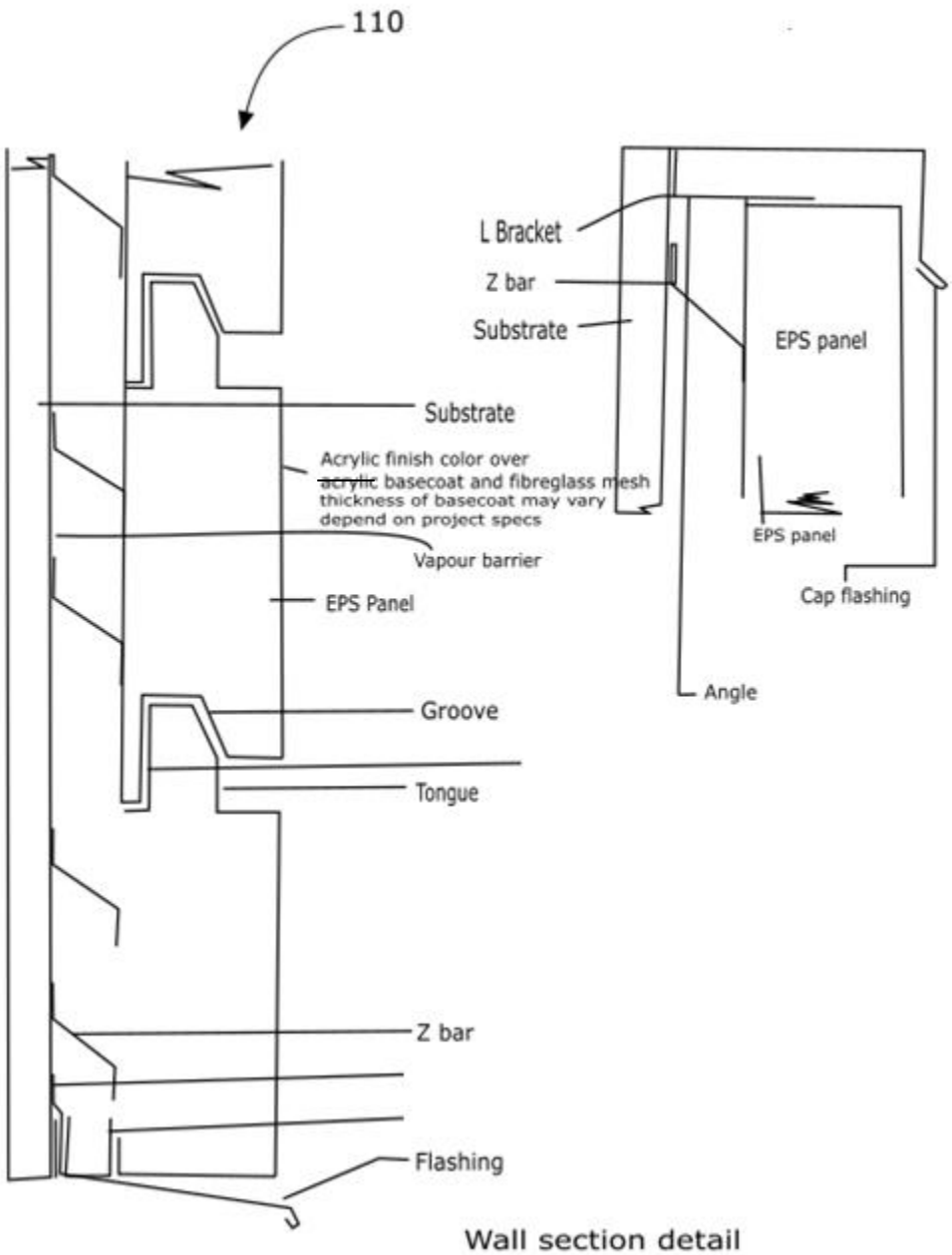
The 8' x 8' wall system – 24" x 48" EPS Panels with acrylic finish, submitted by MNC Construction Inc., tested in accordance with ASTM E330/E330M-14 "*Standard Test Method for Structural Performance of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference*". The product results are presented in Section 7 of this report.

SECTION 9

APPENDIX A: DRAWINGS
(3 Pages)

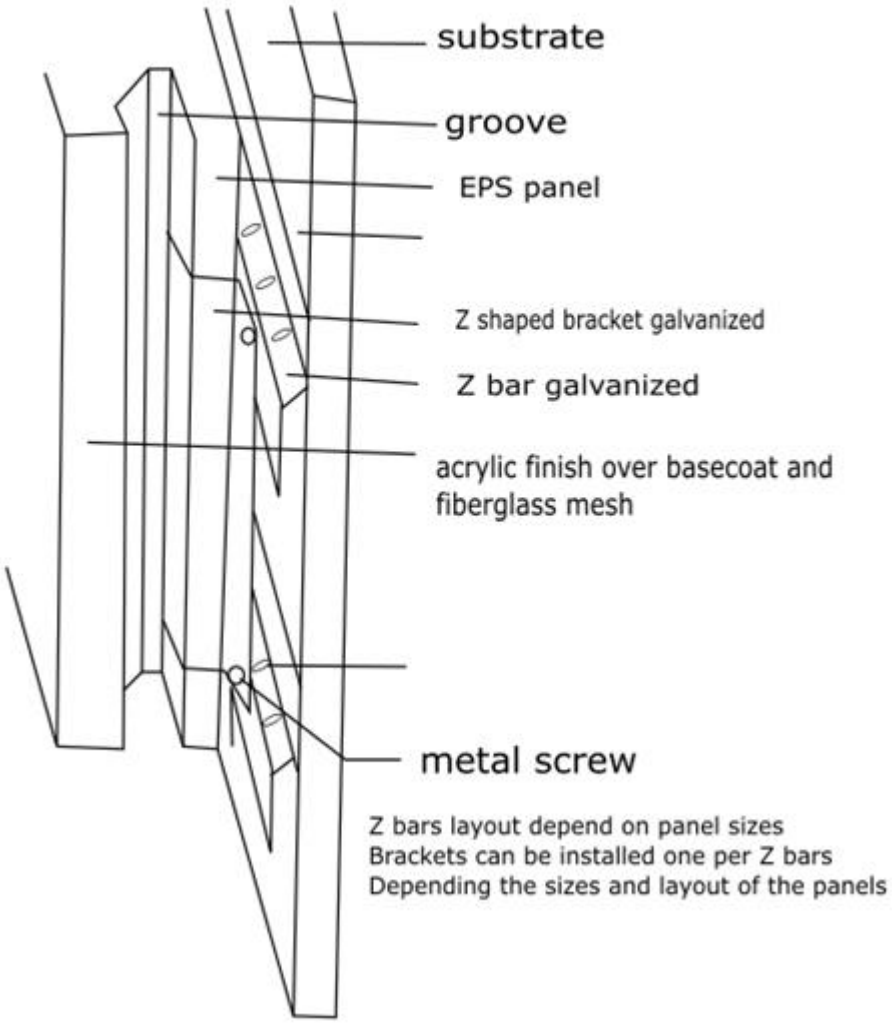


EPS insulation panel covered on reinforcing fibre glass mesh, basecoat and acrylic finish color or exterior paint
Panel can be in different sizes or shapes, it can be glue on or installed over metal tracks with brackets on the exterior building wall substrate



Wall section detail

Detail of panel installation



SECTION 10

APPENDIX B: PHOTOGRAPHS
(8 Pages)

Gauge locations

8’ x 8’ wall assembly – E330 Setup

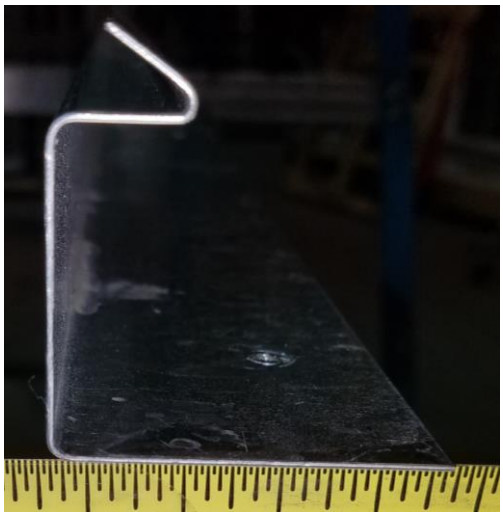
Continuous Z-track on right side of assembly

Horizontal Z-tracks

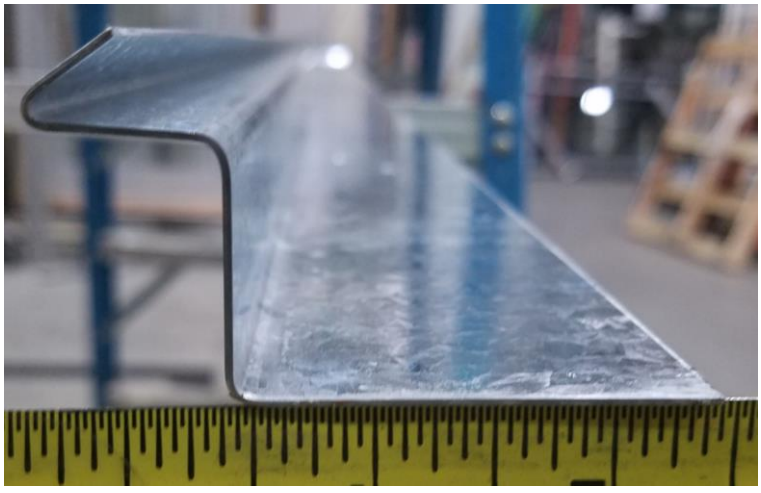
Screw spacing for horizontal tracks

Screw spacing for left vertical track

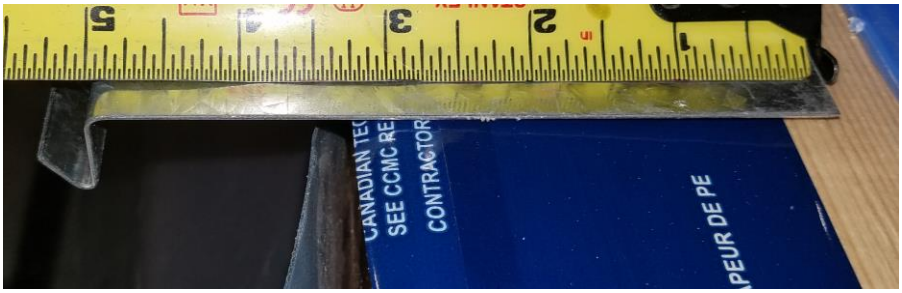
Horizontal Z-track profile



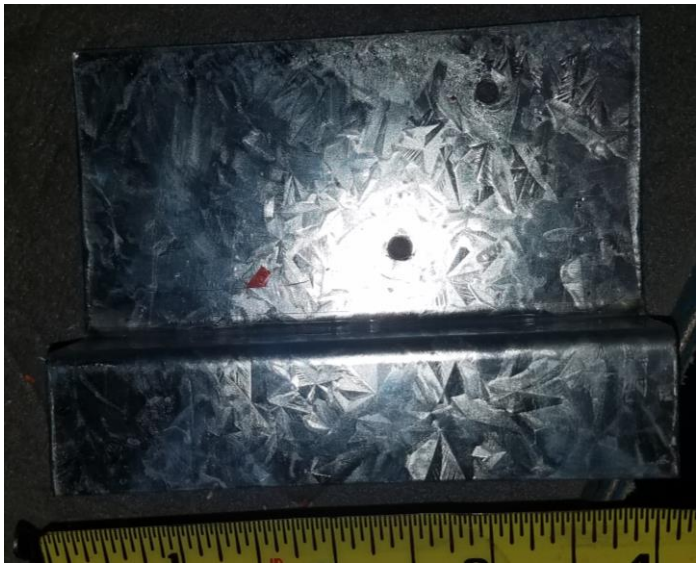
Vertical starter track profile, along left side of assembly



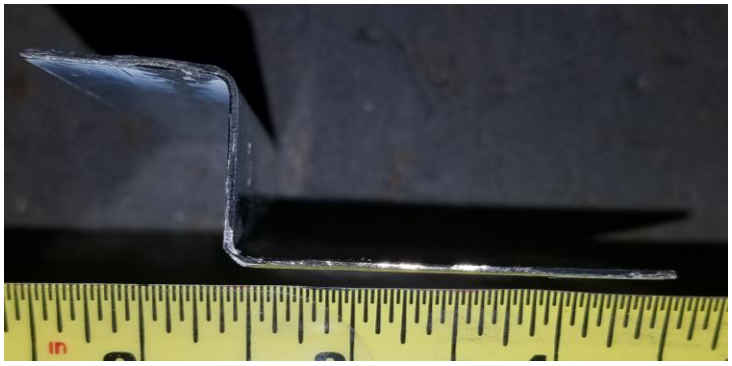
Horizontal starter track profile, along bottom of assembly



Head track profile, along the top of assembly



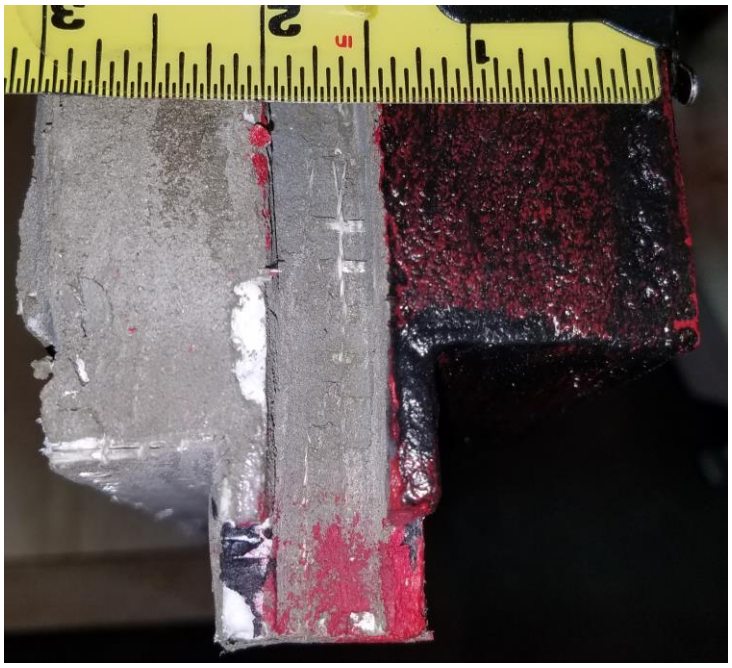
Short Z-track, secured to horizontal tracks, to secure each panel



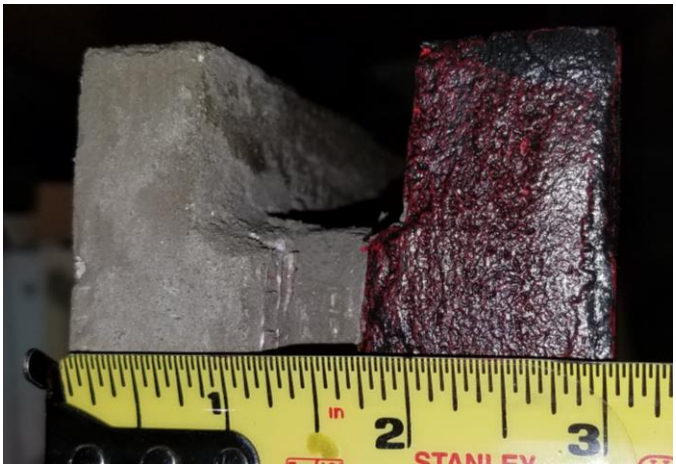
Short Z-track profile

Fastener sizes

Panel



Panel, tongue side



Panel, groove side

SECTION 11

APPENDIX C: REVISION TABLE
(1 Page)

Revision Table				
Date	Section	Description	Technician	Reviewer
01-May-2019	---	Original Issue Date	---	---