

CITADEL ARCHITECTURAL PRODUCTS FLORIDA BUILDING CODE TEST REPORT

SCOPE OF WORK

TAS 202 AND TAS 203 TESTING ON MCD KEYHOLE METAL PANEL KIT ASSEMBLY

REPORT NUMBER

R6816.01-450-18 R0

TEST DATE(S)

12/4/24 – 12/9/24

ISSUE DATE

12/18/24

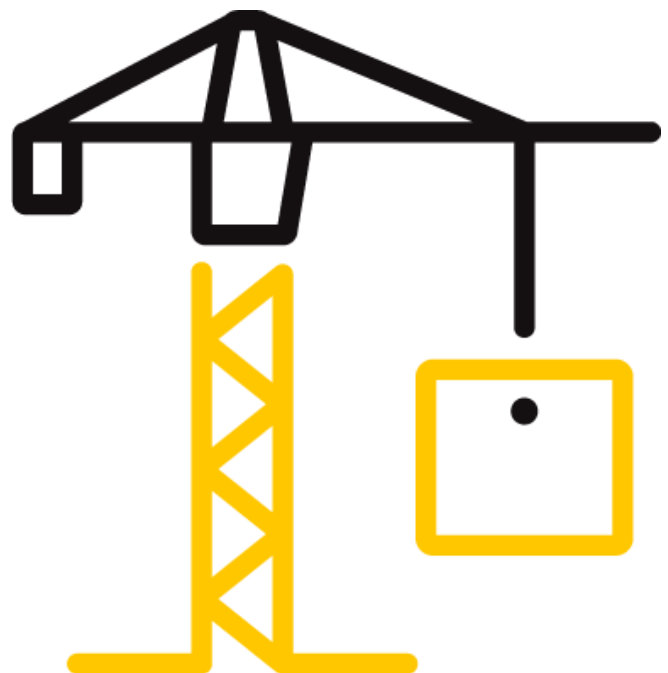
PAGES

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DOCUMENT CONTROL NUMBER

RT-R-AMER-Test-2816 (06/21/24)

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TEST REPORT FOR CITADEL ARCHITECTURAL PRODUCTS

Report No.: R6816.01-450-18 R0

Date: 12/18/24

REPORT ISSUED TO

CITADEL ARCHITECTURAL PRODUCTS

6198 W Airport Blvd
Greenfield, IN 46140

SECTION 1

SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by Citadel Architectural Products to perform TAS 202 and TAS 203 testing in accordance with Florida Building Code for High Velocity Hurricane Zone requirements on their McD Keyhole Metal Panel Kit Assembly. Results obtained are tested values and were secured by using the designated test method(s). TAS 202 and TAS 203 testing was conducted at the Intertek B&C test facility in West Palm Beach, FL. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

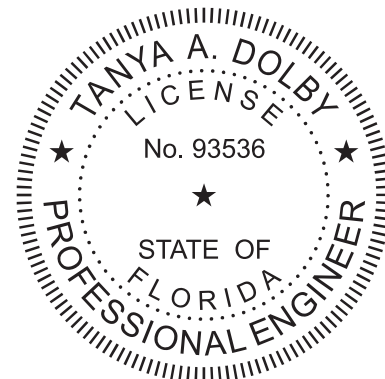
SECTION 2

SUMMARY OF TEST RESULTS

Product Type: Metal Panels

Series/Model: McD Keyhole Kit

SPEC.	TEST PROTOCOL	DESIGN PRESSURE
1	TAS 202 (Structural Loads Only) TAS 203 (Negative Only)	+60.0 / -45.0 psf -45.0 psf
2	TAS 203 (Negative Only)	-45.0 psf
3	TAS 202 (Structural Loads Only) TAS 203 (Negative Only)	+60.0 / -45.0 psf -45.0 psf



For INTERTEK B&C:

COMPLETED BY:	Melissa Nuttall
TITLE:	Senior Project Manager
SIGNATURE:	 Digitally Signed by: Melissa Nuttall
DATE:	12/18/24

MN:te

REVIEWED BY:	Tanya Dolby, P.E.
TITLE:	Engineering Manager – Engineering Services
SIGNATURE:	 Digitally Signed by: Tanya Dolby
DATE:	12/18/24

Date: 2024.12.18
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SECTION 3

TEST METHOD(S)

The specimens were evaluated in general accordance with the following:

TAS 202-94, *Criteria for Testing Impact & Non Impact Resistant Building Envelope Components Using Uniform Static Air Pressure Only* structural loads were performed.)

TAS 203-94, *Criteria for Testing Products Subject to Cyclic Wind Pressure Loading*

SECTION 4

MATERIAL SOURCE/INSTALLATION

Test specimens were provided by the client Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of four years from the test completion date.

The specimens were installed onto stud walls. Units 1 & 2 were installed on 2x4 southern yellow pine stud walls with studs at 16" on center. Unit 3 was installed on a 2x6 steel stud wall with studs at 16" on center. All walls were sheathed with 5/8" plywood secured with 8D ring shank nails spaced 6" on center. The exterior perimeter of the specimen(s) was sealed with sealant. Installation of the tested product was performed by the client.

SECTION 5

EQUIPMENT

Cycling Mechanism: Computer controlled centrifugal blower with electronic pressure measuring device

Deflection Measuring Device: Linear transducers

SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Seth Allen	Intertek B&C
Charlie Gilbert	Intertek B&C

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SECTION 7

TEST SPECIMEN DESCRIPTION

Product Type: Metal Panels

Series/Model: McD Keyhole Kit

Product Size(s):

OVERALL AREA:	WIDTH	HEIGHT
90 ft ²	inches	inches
Overall Size	180	72

Specimen Construction:

COMPONENT	MATERIAL	DESCRIPTION
Mounting Bracket	0.080 aluminum	Secured through the pre drilled holes with #10-13 x 1-1/2" screws, locations and spacing as noted on drawings.
Panel	0.024" Aluminum 0.105" Thermoset Phenolic Resin 0.010" Aluminum	The panels slide onto the mounting brackets.

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SECTION 8

TEST RESULTS

Protocol TAS 202-94, Static Air Pressure

Test Date(s): 12/4/24

The results are tabulated as follows:

Test Specimen #1: Preloads, Design Loads and Overloads per TAS 202

LOAD (psf)	INDICATOR LOCATION	NET DEFLECTION (in.)	NET PERMANENT SET (in.)
		MEASURED	MEASURED
+45.0 psf 50% of Test Pressure	1	0.24	0.09
	2	0.52	0.05
	3	0.25	0.12
	4	0.58	0.10
	5	1.13	0.11
	6	0.19	0.05
	7	0.38	0.07
+60.0 psf Design Pressure	1	0.31	0.12
	2	0.63	0.11
	3	0.30	0.15
	4	0.69	0.13
	5	1.30	0.14
	6	0.27	0.12
	7	0.39	0.11
+90.0 psf Test Pressure	1	0.43	0.14
	2	0.88	0.17
	3	0.38	0.19
	4	0.96	0.16
	5	1.68	0.18
	6	0.33	0.14
	7	0.39	0.13
-45.0 Design Pressure	1	0.65	0.24
	2	1.46	0.29
	3	0.74	0.30
	4	0.85	0.23
	5	2.28	0.29
	6	0.77	0.24
	7	0.75	0.22

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Test Specimen #1: Preloads, Design Loads and Overloads per TAS 202 (Continued)

LOAD (psf)	INDICATOR LOCATION	NET DEFLECTION (in.)	NET PERMANENT SET (in.)
		MEASURED	MEASURED
-60.0 Test Pressure	1	0.99	0.28
	2	2.05	0.39
	3	1.23	0.44
	4	1.26	0.35
	5	3.02	0.47
	6	1.22	0.45
	7	1.13	0.32

Test Specimen #3: Preload and Design Load per TAS 202

LOAD (psf)	INDICATOR LOCATION	NET DEFLECTION (in.)	NET PERMANENT SET (in.)
		MEASURED	MEASURED
+45.0 psf 50% of Test Pressure	1	0.16	0.06
	2	0.69	0.07
	3	0.06	0.01
	4	0.31	0.07
	5	0.97	0.10
	6	0.20	0.05
	7	0.20	0.06
+60.0 psf Design Pressure	1	0.22	0.09
	2	0.79	0.15
	3	0.12	0.02
	4	0.39	0.10
	5	1.17	0.12
	6	0.27	0.09
	7	0.27	0.08
+90.0 psf Test Pressure	1	0.37	0.12
	2	1.01	0.17
	3	0.21	0.04
	4	0.57	0.12
	5	1.51	0.18
	6	0.36	0.11
	7	0.43	0.13

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Test Specimen #3: Preload and Design Load per TAS 202 (Continued)

LOAD (psf)	INDICATOR LOCATION	NET DEFLECTION (in.)	NET PERMANENT SET (in.)
		MEASURED	MEASURED
-33.75 psf 50% of Test Pressure	1	0.41	0.14
	2	1.19	0.16
	3	0.41	0.16
	4	0.52	0.11
	5	1.70	0.15
	6	0.53	0.15
	7	0.45	0.12
-45.0 psf Design Pressure	1	0.58	0.20
	2	1.49	0.22
	3	0.61	0.21
	4	0.69	0.16
	5	2.05	0.23
	6	0.72	0.21
	7	0.61	0.16
-90.0 psf Test Pressure	1	0.88	0.28
	2	1.76	0.20
	3	0.81	0.12
	4	1.00	0.26
	5	2.55	0.22
	6	0.73	0.12
	7	0.99	0.22

Note 1: Positive and negative uniform static load test loads were held for 30 seconds.

Note 2: Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

Note 3: See Sketch #1 for indicator locations.

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Protocol TAS 203-94, Cyclic Wind Pressure Loading

Test Date(s): 12/5/24 through 12/9/24

The results are tabulated as follows:

Test Specimen #1: Cyclic Test Spectrum and Average Cycle Time per TAS 203

DESIGN PRESSURE	STAGE		
-45.0 psf	1	2	3
NEGATIVE PRESSURE RANGE (psf)	0 – 22.5	0 – 27	0 – 57.5
AVERAGE CYCLE TIME (sec.)	3.2	3.4	1.0
NUMBER OF CYCLES	600	70	1

Test Specimen #1: Negative Cyclic Load per TAS 203

SPAN	NET MAXIMUM DEFLECTION (in.)	NET PERMANENT SET (in.)
1	0.96	0.63
2	1.85	0.71
3	1.04	0.64
4	1.08	0.47
5	2.73	0.52
6	0.86	0.40
7	1.09	0.56

Test Specimen #2: Cyclic Test Spectrum and Average Cycle Time per TAS 203

DESIGN PRESSURE	STAGE		
-45.0 psf	1	2	3
NEGATIVE PRESSURE RANGE (psf)	0 – 225	0 – 27	0 – 58.5
AVERAGE CYCLE TIME (sec.)	3.3	3.6	1.0
NUMBER OF CYCLES	600	70	1

Test Specimen #2: Negative Cyclic Load per TAS 203

INDICATOR LOCATION	NET MAXIMUM DEFLECTION (in.)	NET PERMANENT SET (in.)
1	1.07	0.55
2	20.8	0.79
3	1.03	0.68
4	1.13	0.44
5	2.87	0.56
6	0.92	0.52
7	1.09	0.42

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Test Specimen #3: Cyclic Test Spectrum and Average Cycle Time per TAS 203

DESIGN PRESSURE	STAGE		
-45.0 psf	1	2	3
NEGATIVE PRESSURE RANGE (psf)	0 – 22.5	0 – 27	0 – 58.5
AVERAGE CYCLE TIME (sec.)	3.0	3.5	1.0
NUMBER OF CYCLES	600	70	1

Test Specimen #3: Negative Cyclic Load per TAS 203

SPAN	NET MAXIMUM DEFLECTION (in.)	NET PERMANENT SET (in.)
1	0.79	0.18
2	1.63	0.14
3	0.67	0.06
4	0.79	0.08
5	2.32	0.04
6	0.59	0.04
7	0.80	0.06

Note 4: See Sketch #1 for indicator locations.

SECTION 9

CONCLUSIONS

No signs of failure were observed in any area of the test specimen during the TAS 202 testing; as such, the test specimen satisfies the requirements of TAS 202. Upon completion of testing, specimens tested for TAS 202-94 met the requirements of Section 1620 of the Florida Building Code, Building.

No signs of failure were observed in any area of the test specimens during the cyclic load test; as such, the test specimens satisfy the cyclic load requirements of TAS 203. Upon completion of testing, specimens tested for TAS 203-94 met the requirements of Section 1625 of the Florida Building Code, Building.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule, also called "Shared Risk approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

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SECTION 10

SKETCH(ES)



Sketch No. 1
Indicator Locations



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2658 Electronics Way
West Palm Beach, Florida 33407

Telephone: 561-881-0020
Facsimile: 717-764-4129
www.intertek.com/building

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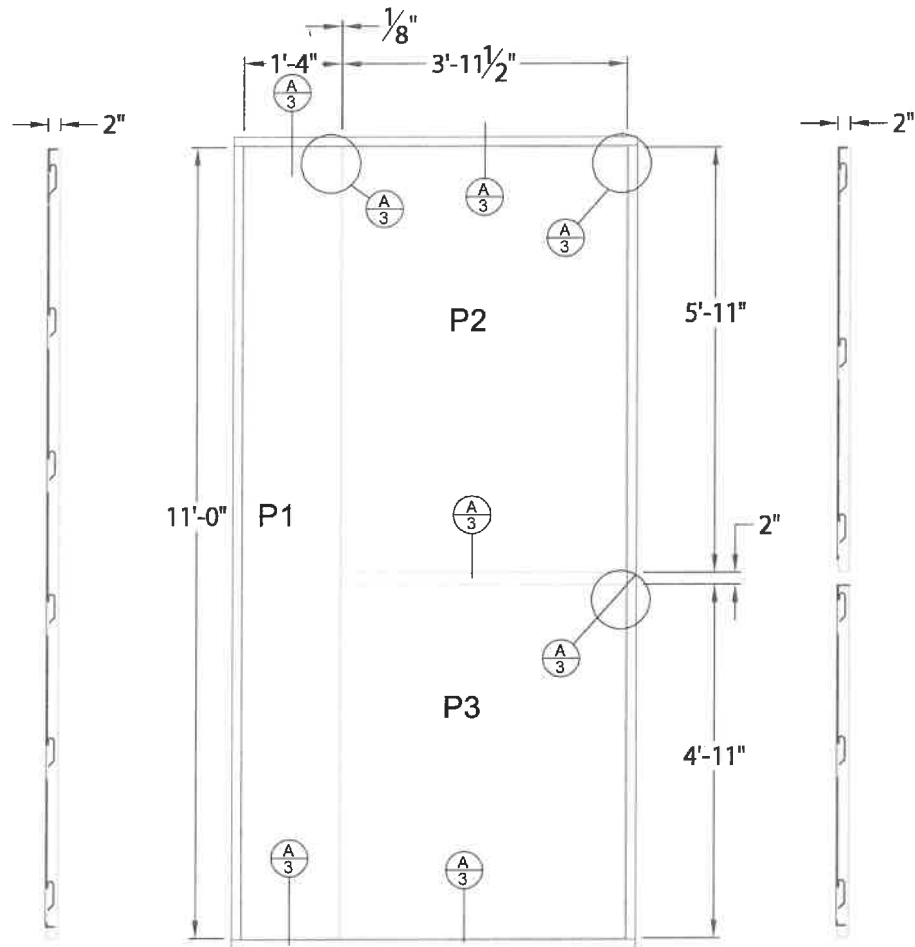
SECTION 11

DRAWINGS

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

Envelope 2000
KEYHOLE SYSTEM

MOCK-UP FOR FP TESTING
ELEVATIONS



LEFT SIDE ELEVATION
PANELS

FRONT ELEVATION
PANELS

RIGHT SIDE ELEVATION
PANELS

NOTES:

- PANELS ARE E2000 MCM LAMINATED PANEL MANUFACTURED BY CITADEL ARCHITECTURAL PRODUCTS
- KEYHOLE MOUNTING SYSTEM / NO SEALANT REQUIRED

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Date: 12/16/24

Verified by: *[Signature]*



CITADEL

Phone: 800-446-8828
Fax: 800-247-2636
www.citadelap.com

DATE: 11/15/24

DRN BY: JEL

CKD BY: CPL

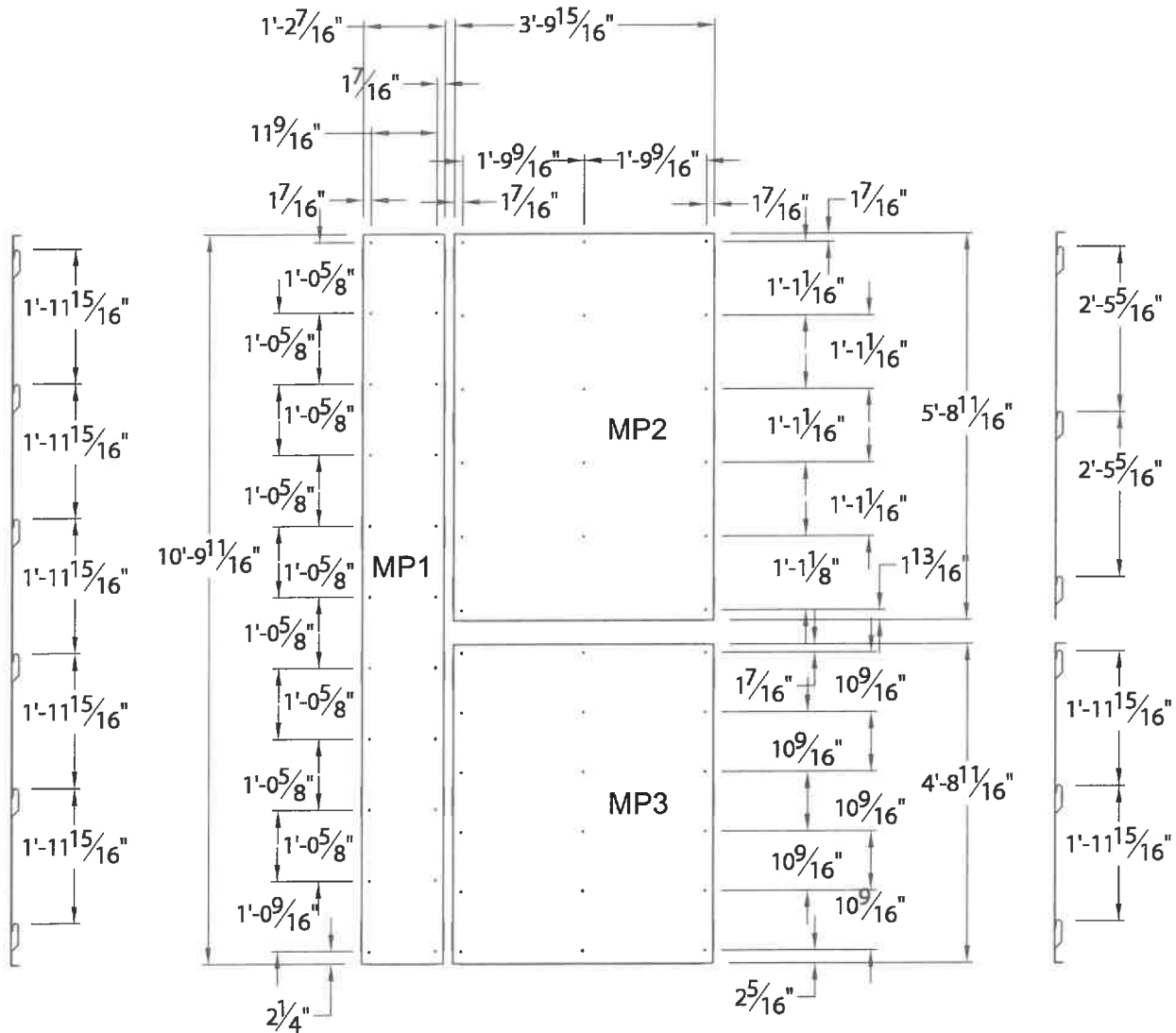
SHT.# 1 OF 3

DWG# E2K-MCDRV24

B

Envelope 2000
KEYHOLE SYSTEM

MOCK-UP FOR FP TESTING
ELEVATIONS



LEFT SIDE ELEVATION
MOUNTING PLATE

FRONT ELEVATION
MOUNTING PLATE

RIGHT SIDE ELEVATION
MOUNTING PLATE

NOTES:

- ALL MOUNTING HOLES PRE-DRILLED 1/4" DIA. SPACING AS DEFINED ABOVE
- MOUNTING PLATES ARE 080 MILL FINISH ALUMINUM
- MOUNTING PLATE ANCHORS: #10-13 X 1" GP TRI-SEAL COATED CARBON STEEL CONCEALOR FASTENER

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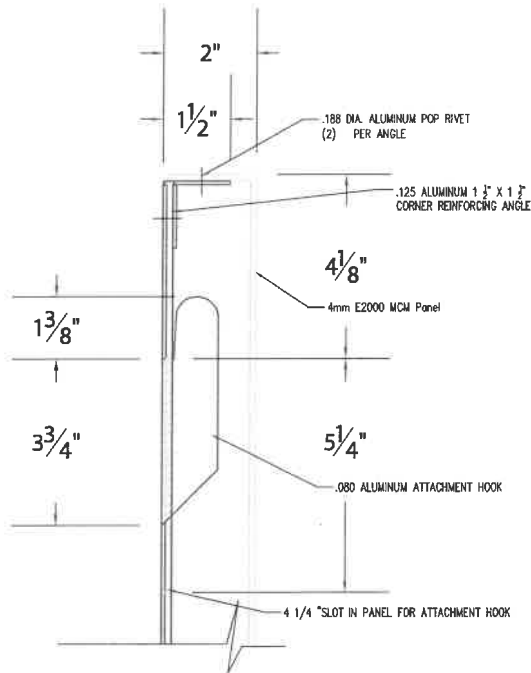
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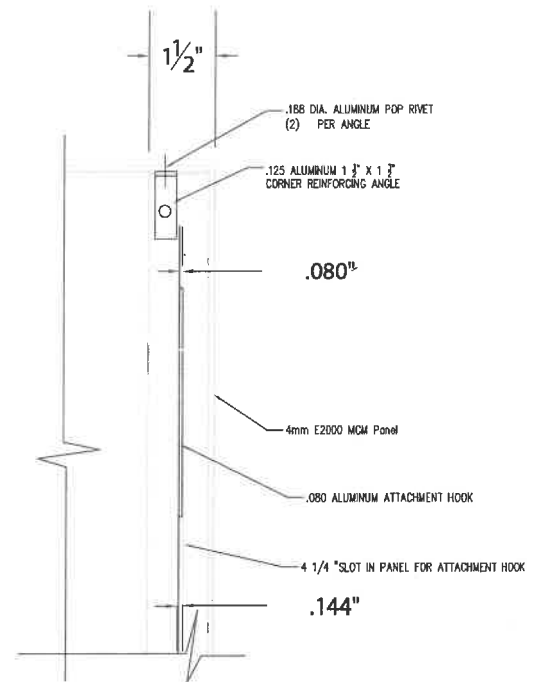
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Envelope 2000 KEYHOLE SYSTEM

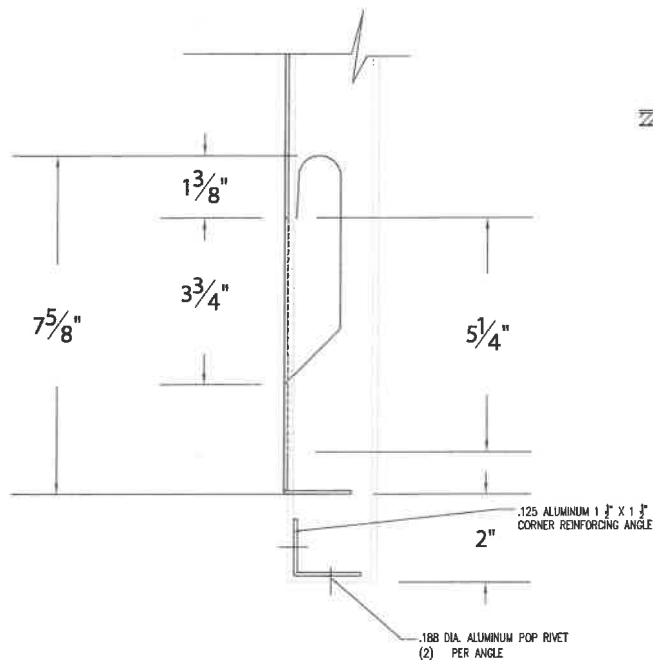
MOCK-UP FOR FP TESTING DETAILS



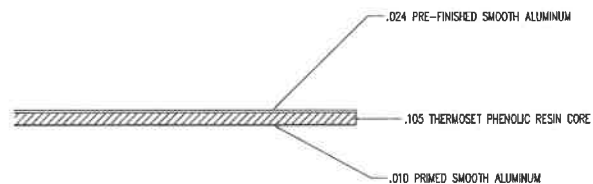
A TOP OF PANEL SECTION



B TOP OF PANEL FRONT

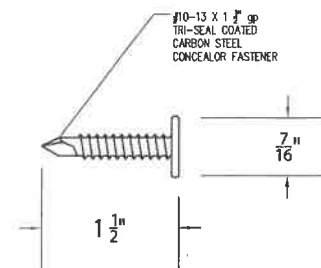


C BOTTOM OF PANEL SECTION



D ENVELOPE 2000 MCM PANEL

intertek Total Quality Assured.	Report #:	R6816.01-450-18
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	Verified by:	<i>Mark A. Tisdell</i> Intertek Testing for Materials & Co.



E CONSEALOR FASTENER



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SECTION 12

REVISION LOG

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