

PETERSEN ALUMINUM CORPORATION TEST REPORT

SCOPE OF WORK

TAS 125 UPLIFT RESISTANCE TESTING OF 24 GA STEEL PAC150 MECHANICAL SEAM OVER STEEL B-DECK

REPORT NUMBER

S9866.03-450-18 R0

TEST DATE(S)

03/04/26 – 03/18/26

ISSUE DATE

04/09/26

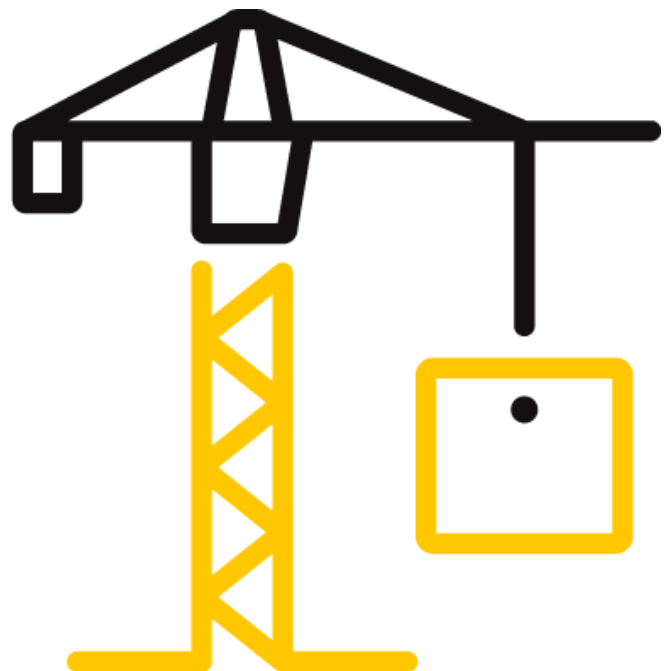
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TEST REPORT FOR PETERSEN ALUMINUM CORPORATION

Report No.: S9866.03-450-18 R0

Date: 04/09/26

REPORT ISSUED TO

PETERSEN ALUMINUM CORPORATION

102 Northpoint Parkway

Building 106

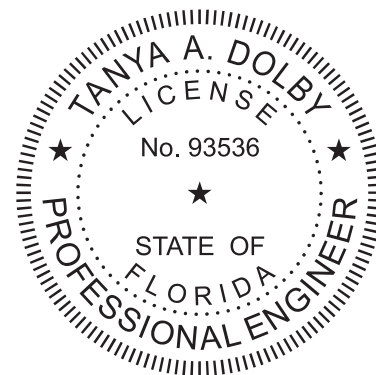
Acworth, GA 30102

SECTION 1

SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by Petersen Aluminum Corporation to perform testing in accordance with TAS 125, *Standard Requirements for Metal Roofing Systems*, on their 24 GA Steel PAC 150 Mechanical Seam over Steel B-Deck. Results obtained are tested values and were secured by using the designated test method(s). Uplift testing was conducted at the Intertek B&C test facility in West Palm Beach, FL. Tensile testing was conducted at Intertek B&C test facility in Lithia Springs, GA.

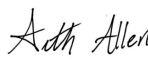
This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Intertek B&C will service this report for the entire test record retention period. The test record retention period ends ten years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period.



For INTERTEK B&C:

COMPLETED BY: Seth Allen

TITLE: Project Lead

SIGNATURE: 
Digitally Signed by: Seth Allen

DATE: 04/09/26

REVIEWED BY: Tanya A. Dolby, P.E.

TITLE: Engineering Services-
Engineering Manager

SIGNATURE: 
Digitally Signed by: Tanya Dolby

DATE: 04/09/26

Date:
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SECTION 2**SUMMARY OF TEST RESULTS****Product Type:** Metal Roof Panels**Series/Model:** PAC 150 Steel Mechanical Seam**Specimen 1 - Ultimate Test Load Achieved:** -277 psf**Specimen 2 - Ultimate Test Load Achieved:** -262 psf**Specimen 3 - Ultimate Test Load Achieved:** -322 psf**SECTION 3****TEST METHOD(S)**

The specimens were evaluated in accordance with the following:

TAS 125-03, *Standard Requirements for Metal Roofing Systems***SECTION 4****MATERIAL SOURCE/INSTALLATION**

Test specimens were provided by the client.

Installation of the tested product was performed by the client.

SECTION 5**EQUIPMENT****Cycling and Static Load Mechanism:** Computer controlled centrifugal blowers with electronic pressure measuring device.**Deflection Measuring Device:** Linear Transducers**SECTION 6****LIST OF OFFICIAL OBSERVERS**

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

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SECTION 7

TEST PROCEDURE

This test evaluates the comparative resistance of roof assemblies to positive and negative pressures by simulating the effects of wind gusts by use of oscillating exterior pressure and constant interior pressures. Three assemblies were tested per TAS 125 at each class rating. (Reference Chart No. 1 for test pressures and load durations.) The measurements were taken via linear transducers.

		NEGATIVE PRESSURE		POSITIVE PRESSURE	
TEST PHASE	DURATION minutes	POUNDS PER SQUARE FOOT psf (kPa)	INCHES OF WATER inches (mm)	POUNDS PER SQUARE FOOT psf (kPa)	INCHES OF WATER inches (mm)
Class 30					
1	5	16.2 (0.79)	3.1 (79)	0.0 (0.00)	0.0 (0)
2	5	16.2 (0.79)	3.1 (79)	13.8 (0.66)	2.7 (69)
3	60	8.1 - 27.7 (0.39 - 1.33)	1.5 - 5.3 (38 - 135)	13.8 (0.66)	2.7 (69)
4	5	24.2 (1.16)	4.7 (119)	0.0 (0.00)	0.0 (0)
5	5	24.2 (1.16)	4.7 (119)	20.8 (1.00)	4.0 (102)
Class 60					
1	5	32.3 (1.55)	6.2 (157)	0.0 (0.00)	0.0 (0)
2	5	32.3 (1.55)	6.2 (157)	27.7 (1.33)	5.3 (135)
3	60	16.2 - 55.4 (0.79 - 2.66)	3.1 - 10.7 (79 - 272)	27.7 (1.33)	5.3 (135)
4	5	40.4 (1.94)	7.8 (198)	0.0 (0.00)	0.0 (0)
5	5	40.4 (1.94)	7.8 (198)	34.6 (1.66)	6.7 (170)
Class 90 (maximum combined uplift pressure of 105 psf)					
1	5	48.5 (2.33)	9.3 (236)	0.0 (0.00)	0.0 (0)
2	5	48.5 (2.33)	9.3 (236)	41.5 (1.99)	8.0 (203)
3	60	24.2 - 48.5 (1.16 - 2.33)	4.7 - 9.3 (119 - 236)	41.5 (1.99)	8.0 (203)
4	5	56.5 (2.71)	10.9 (277)	0.0 (0.00)	0.0 (0)
5	5	56.5 (2.71)	10.9 (277)	48.5 (2.33)	9.3 (236)

Chart No. 1
TAS 125 Load Table Test Pressures

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SECTION 8

TEST SPECIMEN DESCRIPTION

Product Type: Metal Roofing Panels

Series/Model: PAC 150 Steel Mechanical Seam

Product Size(s):

All Test Specimens

OVERALL AREA:	WIDTH		HEIGHT	
	millimeters	inches	millimeters	inches
9.3 m ² (100.0 ft ²)				
Overall Size	3048	120	3048	120
Panel Size	457	18	3048	120

The following description applies to all specimens.

Test Deck Construction:

The 10' 0" wide by 10' 0" long by 1' 3" deep test frame was fabricated from C15 by 33.9 steel channels. Two W6 x 12 steel purlin was located 32" from each end of the test frame (purlin spacing of 5' on center). The purlin was welded to the test frame at each end. Continuous 2" by 2" by 3/16" thick L-shaped steel angle was welded around the interior perimeter of the test frame. The deck was sheathed with 22-gauge 33ksi steel B-decking and secured with # 12 x 3" long hex head screws spaced 6" on center through the deck and into the purlins. 4" Iso foam was placed on top of the 22Ga decking becoming flush with the top of the test deck.

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Specimen #1 & 2 Roof System:

COMPONENTS	DETAILS	ATTACHMENT METHOD
Peel & Stick Underlayment	A single layer was used with a 3" overlap between adjacent sheets.	Self-adhered.
Clip	The 2" long clips were constructed from 24Ga galvanized steel.	The clips were spaced at 24" on center and attached using two #12 x 7" pan head fasteners per clip.
1.5" 90° Mechanical Seam	The panels were constructed from 24 Ga Steel and had a 18" coverage width. Six full and two partial width panels were tested.	The male leg of the panels were secured with clips spaced 24" on center. The female leg of the panels was placed over the male leg of the panel and mechanically seamed 90°. The perimeter was secured with #12 x 7" pan head fasteners spaced 2" on center at the ends and 2" on center at the sides.

Specimen #3 Roof System:

COMPONENTS	DETAILS	ATTACHMENT METHOD
Peel & Stick Underlayment	A single layer was used with a 3" overlap between adjacent sheets.	Self-adhered.
Clip	The 2" long clips were constructed from 24Ga galvanized steel.	The clips were spaced at 6" on center and attached using two #12 x 7" pan head fasteners per clip.
1.5" 90° Mechanical Seam	The panels were constructed from 24 Ga Steel and had a 18" coverage width. Six full and two partial width panels were tested.	The male leg of the panels were secured with clips spaced 6" on center. The female leg of the panels was placed over the male leg of the panel and mechanically seamed 90°. The perimeter was secured with #12 x 7" pan head fasteners spaced 2" on center at the ends and 2" on center at the sides.

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SECTION 9

UPLIFT TEST RESULTS

The temperature during testing was 23°C (75°F). The results are tabulated as follows.

Test Specimen #1

TEST TITLE	OBSERVATIONS	DEFLECTION MEASUREMENTS	RESULTS
Class 30, Phases 1-5	No visible damage to system	Reference Table No. 1	PASSED
Class 60, Phases 1-5	No visible damage to system	Reference Table No. 1	PASSED
Class 90, Phases 1-5	No visible damage to system	Reference Table No. 1	PASSED
Supplemental Loads -112 psf to -277 psf	No visible damage to system	Reference Table No. 2	PASSED
Supplemental Loads - 292 psf	Fastener Failure	Reference Table No. 2	FAILED

Test Specimen #2

TEST TITLE	OBSERVATIONS	DEFLECTION MEASUREMENTS	RESULTS
Class 30, Phases 1-5	No visible damage to system	Reference Table No. 3	PASSED
Class 60, Phases 1-5	No visible damage to system	Reference Table No. 3	PASSED
Class 90, Phases 1-5	No visible damage to system	Reference Table No. 3	PASSED
Supplemental Loads -112 psf to -262 psf	No visible damage to system	Reference Table No. 4	PASSED
Supplemental Loads -277 psf	Fastener Failure	Reference Table No. 4	FAILED

Test Specimen #3

TEST TITLE	OBSERVATIONS	DEFLECTION MEASUREMENTS	RESULTS
Class 30, Phases 1-5	No visible damage to system	Reference Table No. 5	PASSED
Class 60, Phases 1-5	No visible damage to system	Reference Table No. 5	PASSED
Class 90, Phases 1-5	No visible damage to system	Reference Table No. 5	PASSED
Supplemental Loads -112 psf to -322 psf	No visible damage to system	Reference Table No. 6	PASSED
Supplemental Loads -337 psf	Fastener Failure	Reference Table No. 6	FAILED

Notes:

Reference Chart No. 1 for test pressures and load durations.

Reference Sketch No. 1 for location of deflection measurement devices.

A loose fitting, pleated 4-mil plastic film was utilized to assist in obtaining uniform pressure on the roof system. The plastic film was located between the moisture barrier and the roof panels to facilitate testing. In our opinion, this did not influence test results.

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SECTION 10

TENSILE TEST RESULTS

Tensile tests were conducted on three coupons. The test specimens were evaluated in accordance with the most recent revision of ASTM E8, *Standard Test Methods for Tensile Testing of Metallic Materials*. The tensile coupons were machined from the metal members to the dimensions of the sheet-type 0.5" wide specimen given in Figure 1 of ASTM E8. Elongation was measured after fracture.

Test Method:	ASTM E8-XX			
Orientation:	Longitudinal			
Specimen No.	Yield Strength @ 0.2% Offset (psi)	Yield Point Elongation (%)	Tensile Strength (psi)	Elongation in 2" (%)
1	59317.97	6.72	59335.24	36.00
2	58866.36	6.42	50798.37	32.00
3	61724.58	5.01	61755.74	20.00
Average	59969.64	6.05	57296.45	29.33

SECTION 11

CONCLUSION

The PAC 150 Steel Mechanical Seam tested per TAS 125 achieved an ultimate test load of:

Specimen 1: -277 psf

Specimen 2: -262 psf

Specimen 3: -322 psf

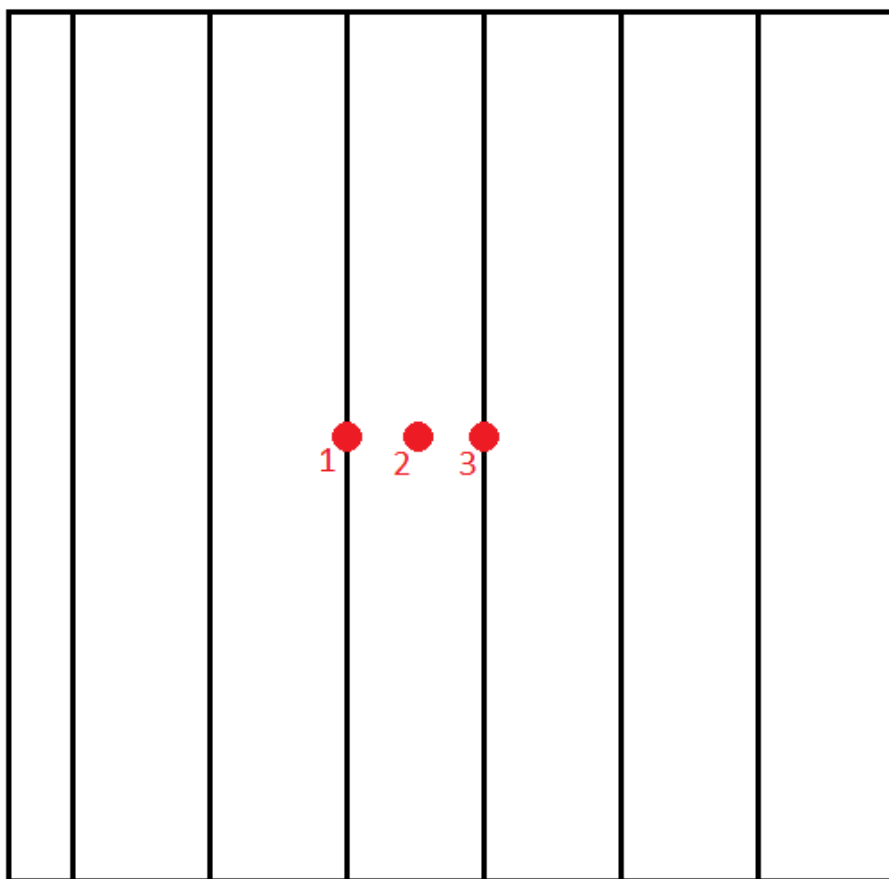
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SECTION 12

SKETCH



Sketch No.1
Deflection Measurement Device Locations

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SECTION 13
TABLES

CLASS	PHASE	DEFLECTION MEASUREMENTS (inches)		
		INDICATOR		
		#1	#2	#3
30	1	0.06	0.34	0.07
	2	0.12	0.56	0.13
	3 Minimum	0.11	0.60	0.13
	3 Maximum	0.16	0.66	0.18
	4	0.14	0.61	0.16
	5	0.21	0.82	0.24
	Final (0.0 psf)	0.08	0.25	0.08
60	1	0.17	0.82	0.20
	2	0.28	1.05	0.32
	3 Minimum	0.27	1.14	0.32
	3 Maximum	0.38	1.28	0.45
	4	0.26	1.07	0.32
	5	0.37	1.31	0.45
	Final (0.0 psf)	0.14	0.24	0.17
90	1	0.28	1.28	0.35
	2	0.44	1.41	0.53
	3 Minimum	0.38	1.29	0.47
	3 Maximum	0.44	1.37	0.53
	4	0.34	1.33	0.43
	5	0.52	1.59	0.65
	Final (0.0 psf)	0.17	0.30	0.23

Table No. 1
Deflection Measurements – Test Specimen #1

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VACUUM (psf)	UPLIFT (psf)	LOAD (psf)	SUPPLEMENTAL DEFLECTION MEASUREMENTS (inches)		
			INDICATOR		
			#1	#2	#3
-63.5	-48.5	-112.0	0.54	1.61	0.69
-78.5	-48.5	-127.0	0.59	1.78	0.75
-93.5	-48.5	-142.0	0.65	1.91	0.83
-108.5	-48.5	-157.0	0.72	2.04	0.92
-123.5	-48.5	-172.0	0.77	2.17	0.99
-138.5	-48.5	-187.0	0.84	2.39	1.09
-153.5	-48.5	-202.0	0.93	2.53	1.18
-168.5	-48.5	-217.0	1.01	2.67	1.28
-183.5	-48.5	-232.0	1.13	3.10	1.57
-198.5	-48.5	-247.0	1.40	3.46	1.86
-213.5	-48.5	-262.0	1.67	3.64	2.17
-228.5	-48.5	-277.0	1.78	3.67	2.33
-243.5	-48.5	-292.0	Failure		

Table No. 2
Supplemental Deflection Measurements – Test Specimen #1

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CLASS	PHASE	DEFLECTION MEASUREMENTS (inches)		
		INDICATOR		
		#1	#2	#3
30	1	0.14	0.76	0.07
	2	0.24	1.12	0.14
	3 Minimum	0.22	1.03	0.14
	3 Maximum	0.30	1.27	0.19
	4	0.24	1.07	0.16
	5	0.36	1.44	0.24
	Final (0.0 psf)	0.04	0.09	0.06
60	1	0.29	1.24	0.20
	2	0.47	1.70	0.31
	3 Minimum	0.44	1.69	0.29
	3 Maximum	0.61	2.03	0.42
	4	0.49	1.55	0.27
	5	0.59	1.99	0.41
	Final (0.0 psf)	0.08	0.20	0.10
90	1	0.44	1.68	0.31
	2	0.67	2.16	0.47
	3 Minimum	0.60	2.02	0.42
	3 Maximum	0.67	2.16	0.48
	4	0.52	1.87	0.39
	5	0.76	2.32	0.56
	Final (0.0 psf)	0.10	0.27	0.16

Table No. 3
Deflection Measurements – Test Specimen #2

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VACUUM (psf)	UPLIFT (psf)	LOAD (psf)	SUPPLEMENTAL DEFLECTION MEASUREMENTS (inches)		
			INDICATOR		
			#1	#2	#3
-63.5	-48.5	-112.0	0.80	2.39	0.58
-78.5	-48.5	-127.0	0.87	2.54	0.63
-93.5	-48.5	-142.0	0.93	2.68	0.69
-108.5	-48.5	-157.0	1.03	2.86	0.75
-123.5	-48.5	-172.0	2.33	3.03	1.15
-138.5	-48.5	-187.0	2.57	3.88	1.25
-153.5	-48.5	-202.0	2.62	3.88	1.32
-168.5	-48.5	-217.0	2.64	3.88	1.32
-183.5	-48.5	-232.0	2.61	3.80	1.30
-198.5	-48.5	-247.0	2.59	3.80	1.30
-213.5	-48.5	-262.0	2.58	3.80	1.31
-228.5	-48.5	-277.0	Failure		

Table No. 4
Supplemental Deflection Measurements – Test Specimen #2

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CLASS	PHASE	DEFLECTION MEASUREMENTS (inches)		
		INDICATOR		
		#1	#2	#3
30	1	0.18	1.08	0.27
	2	0.22	1.47	0.33
	3 Minimum	0.22	1.42	0.32
	3 Maximum	0.26	1.70	0.37
	4	0.22	1.45	0.34
	5	0.28	1.88	0.41
	Final (0.0 psf)	0.16	0.38	0.25
60	1	0.25	1.64	0.36
	2	0.34	2.13	0.47
	3 Minimum	0.23	2.22	0.44
	3 Maximum	0.42	2.49	0.56
	4	0.30	2.14	0.43
	5	0.41	2.50	0.55
	Final (0.0 psf)	0.17	0.68	0.27
90	1	0.32	2.25	0.46
	2	0.45	2.63	0.61
	3 Minimum	0.41	2.57	0.55
	3 Maximum	0.46	2.64	0.61
	4	0.36	2.41	0.51
	5	0.51	2.82	0.68
	Final (0.0 psf)	0.17	0.81	0.27

Table No. 5
Deflection Measurements – Test Specimen #3

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VACUUM (psf)	UPLIFT (psf)	LOAD (psf)	SUPPLEMENTAL DEFLECTION MEASUREMENTS (inches)		
			INDICATOR		
			#1	#2	#3
-63.5	-48.5	-112.0	0.54	2.90	0.71
-78.5	-48.5	-127.0	0.58	3.05	0.77
-93.5	-48.5	-142.0	0.63	3.20	0.83
-108.5	-48.5	-157.0	0.69	3.32	0.87
-123.5	-48.5	-172.0	0.73	3.44	0.92
-138.5	-48.5	-187.0	0.78	3.57	0.99
-153.5	-48.5	-202.0	0.98	3.81	1.11
-168.5	-48.5	-217.0	1.13	3.97	1.25
-183.5	-48.5	-232.0	1.22	4.11	1.43
-198.5	-48.5	-247.0	1.49	4.17	1.56
-213.5	-48.5	-262.0	1.70	4.19	1.74
-228.5	-48.5	-277.0	1.90	4.19	1.90
-243.5	-48.5	-292.0	2.01	4.19	2.00
-258.5	-48.5	-307.0	2.09	4.19	2.09
-273.5	-48.5	-322.0	2.20	4.19	2.21
-288.5	-48.5	-337.0	Failure		

Table No. 6
Supplemental Deflection Measurements – Test Specimen #3

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SECTION 14

PHOTOGRAPHS



Photo No. 1
Steel Deck After Testing

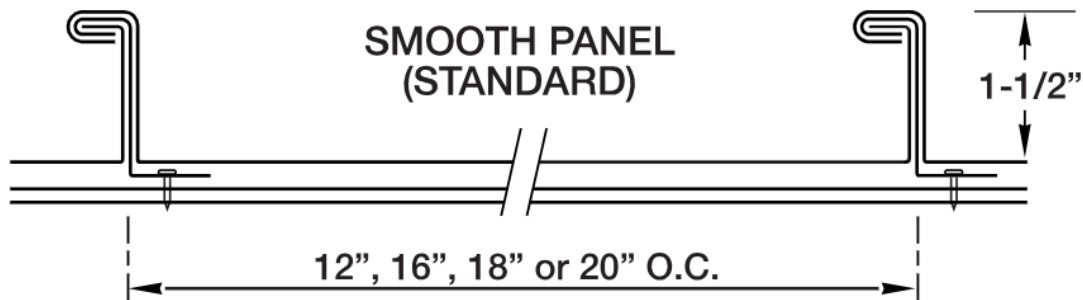
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SECTION 15**DRAWINGS**

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.



Drawing No. 1
Panel Detail



Total Quality. Assured.

2658 Electronics Way
West Palm Beach, Florida 33407

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Facsimile: 717-764-4129
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SECTION 16

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	04/09/26	N/A	Original Report Issue