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SUPERB METALS
TEST REPORT

SCOPE OF WORK
UL 580 UPLIFT RESISTANCE TESTING OF 26GA STEEL 1" MECHANICAL SEAM ROOF PANEL

REPORT NUMBER
S4763.01-450-18 R0

TEST DATE(S)
06/11/25

ISSUE DATE
08/21/25

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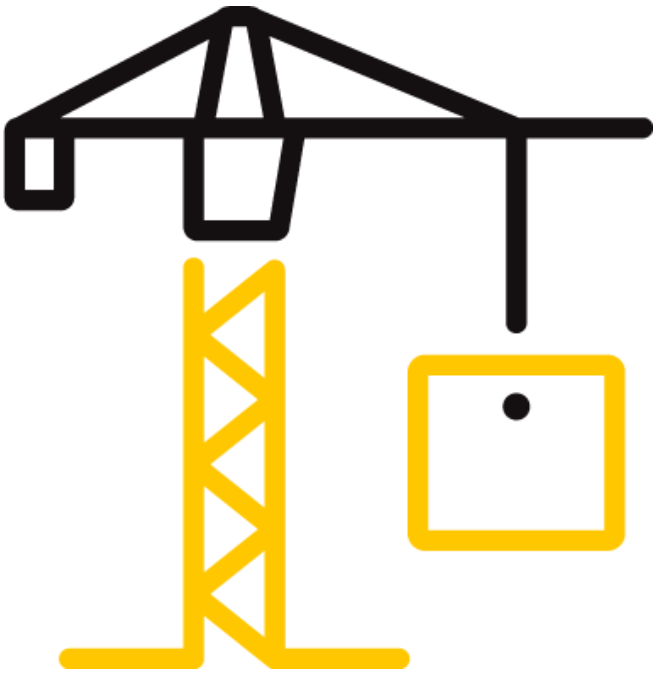

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Report No.: S4763.01-450-18 R0
Date: 08/21/25

TANYA A. DOLBY LICENSE No. 93536 STATE OF FLORIDA PROFESSIONAL ENGINEER

2025.08.22 13:37:28 -04'00'

REPORT ISSUED TO
SUPERB METALS
902 Jan Mar Ct. Sutie A
Minneola, FL 34715

SECTION 1
SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by Superb Metals to perform testing in accordance with UL 580, *Standard for Safety, Tests for Uplift Resistance of Roof Assemblies*, on their 26GA Steel 1" Mechanical Seam Roof Panels. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at 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. Intertek B&C will service this report for the entire test record retention period. The test record retention period ends four 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. 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.

SECTION 2
SUMMARY OF TEST RESULTS

Product Type: Metal Roof Panel
Series/Model: 26GA Steel 1" Mechanical Seam
Specimen 1 - Ultimate Test Load Achieved: 247 psf

For INTERTEK B&C:

COMPLETED BY:	Seth Allen	**REVIEWED BY:**	Tanya A. Dolby, P.E.
TITLE:	Project Lead Laboratory Testing	**TITLE:**	Engineering Services Engineering Manager
SIGNATURE:	Seth Allen Digitally Signed by: Seth Allen	**SIGNATURE:**	Tanya A Dolby Digitally Signed by: Tanya Dolby
DATE:	08/21/25	**DATE:**	08/21/25

SA/TD:krf

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SECTION 3
TEST METHOD(S)

The specimens were evaluated in accordance with the following:

> **UL 580**, *Standard for Safety, Tests for Uplift Resistance of Roof Assemblies,* Underwriters Laboratories, Inc. (Fifth Edition November 2, 2006, revised through July 9, 2009).

The specimens were evaluated in general accordance with the following:

> **UL 1897**, *Uplift Tests for Roof Covering Systems,* Underwriters Laboratories, Inc. (Seventh Edition September 23, 2015).

SECTION 4
MATERIAL SOURCE/INSTALLATION

Test specimen was 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
Joseph Lukas	Superb Metals
Bruce Johnson	Superb Metals
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. One assembly was tested per UL 580 at each class rating. (Reference Chart No. 1 for test pressures and load durations.) The measurements were taken via a transit and steel scales mounted to the roof panels. The initial measurements were "zero" point, not actual deflection. Actual deflection is Phase 1, 2, 3 minimum, 3 maximum, 4 or 5 reading less the initial (0.0 psf) reading. The final reading was taken after the completion of an entire class had been completed and became the initial reading for the following class test.

		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
UL 580 Load Table Test Pressures

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SECTION 8
TEST SPECIMEN DESCRIPTION

Product Type: Metal Roof Panel
Series/Model: 26GA Steel 1" Mechanical Seam

Product Size(s):

Test Specimen #1

OVERALL AREA:	**WIDTH**		**HEIGHT**	
9.3 m² (100.0 ft²)	**millimeters**	**inches**	**millimeters**	**inches**
Overall Size	3048	120	3048	120
Panel Size	432	17	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. The test frame utilized six joists constructed from Southern Yellow Pine 2 x 12 nominal lumber located on two sides of the test frame and spaced 24" on center. The joists were secured to the test frame using two 1/2" x 3" long bolts with washers and nuts through an 8" long, 2" by 4" by 1/8" steel angle with pre-drilled fastener locations. The steel angles were welded to the test frame 24" on center. Southern Yellow Pine 2 x 12 nominal lumber was utilized as cross members at the midspan of the joists. The cross members were secured to the joists using #8 x 3" long Torx Flat screws at each end. The deck was sheathed with 7/16" thick OSB. The OSB was secured using 8d coated ring shank nails spaced 6" on center.

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Specimen #1 Roof System:

COMPONENTS	DETAILS	ATTACHMENT METHOD
Peel & Stick Underlayment	A single layer of Peel & Stick was used with a 3" overlap between adjacent sheets.	Self-adhered.
Clip	The 2" long x 1-1/8" tall clips were constructed from 26Ga steel.	The clips were spaced at 12" on center and attached using two #12 x 1" panclip fasteners per clip.
1" 180° Mechanical Seam	The panels were constructed from 26GA Steel and had a 17" coverage width. Seven full panels were tested	The male leg of the panels were secured with clips spaced 12" on center. The female leg of the panels was placed over the male leg of the panel and mechanically seamed 180°. The perimeter was secured with #1**2** x 1" pan**clip** fasteners spaced 2" on center at the ends and 2" on center at the sides.

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SECTION 9
TEST RESULTS

The temperature during testing was 30°C (86°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 -247 psf	No visible damage to system	Reference Table No. 2	PASSED
Supplemental Loads -262 psf	Fastener Failure	Reference Table No. 2	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.

Supplemental loads per UL 1897 started at -112 psf total load.

SECTION 10
CONCLUSION

The product tested per UL 580 and UL 1897 achieved an ultimate test load of:
Specimen 1: 247 psf

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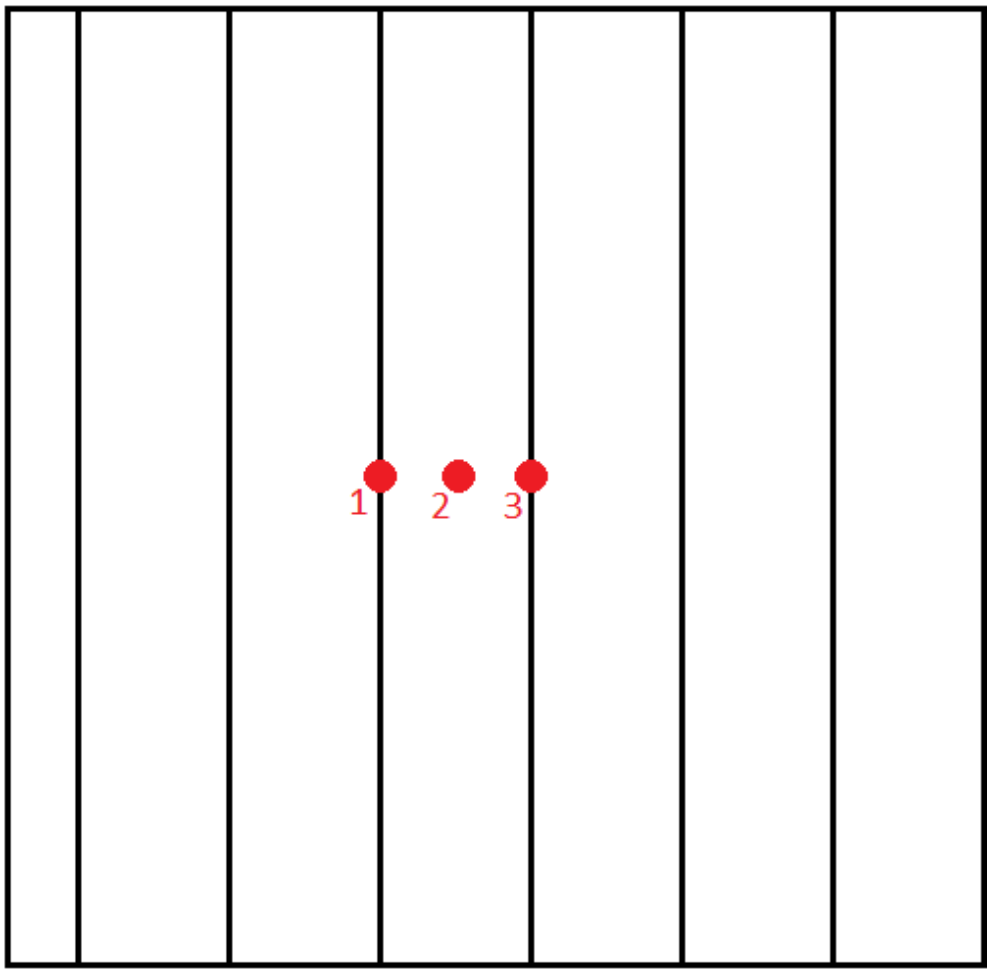
SECTION 11
SKETCH(ES)



Sketch No. 1
Deflection Measurement Device Locations

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SECTION 12
TABLES

CLASS	PHASE	DEFLECTION MEASUREMENTS (inches) INDICATOR #1	#2	#3
30	1	**0.03**	**0.51**	**0.02**
	2	**0.03**	**0.98**	**0.02**
	3 Minimum	**0.04**	**1.01**	**0.01**
	3 Maximum	**0.06**	**1.07**	**0.03**
	4	**0.04**	**1.09**	**0.02**
	5	**0.07**	**1.30**	**0.04**
	Final (0.0 psf)	**0.02**	**0.70**	**0.01**
60	1	**0.05**	**1.22**	**0.02**
	2	**0.13**	**1.50**	**0.06**
	3 Minimum	**0.16**	**1.59**	**0.05**
	3 Maximum	**0.22**	**1.72**	**0.10**
	4	**0.13**	**1.79**	**0.05**
	5	**0.21**	**2.04**	**0.11**
	Final (0.0 psf)	**0.08**	**0.48**	**0.01**
90	1	**0.15**	**1.76**	**0.06**
	2	**0.26**	**2.22**	**0.14**
	3 Minimum	**0.22**	**2.19**	**0.11**
	3 Maximum	**0.26**	**2.26**	**0.14**
	4	**0.21**	**2.20**	**0.14**
	5	**0.36**	**2.68**	**0.24**
	Final (0.0 psf)	**0.12**	**1.01**	**0.07**

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	**0.41**	**2.78**	**0.26**
-78.5	-48.5	-127.0	**0.48**	**2.98**	**0.30**
-93.5	-48.5	-142.0	**0.54**	**3.08**	**0.35**
-108.5	-48.5	-157.0	**0.61**	**3.19**	**0.40**
-123.5	-48.5	-172.0	**0.70**	**3.32**	**0.46**
-138.5	-48.5	-187.0	**0.78**	**3.44**	**0.51**
-153.5	-48.5	-202.0	**0.85**	**3.55**	**0.58**
-168.5	-48.5	-217.0	**0.90**	**3.59**	**0.60**
-183.5	-48.5	-232.0	**1.00**	**3.70**	**0.64**
-198.5	-48.5	-247.0	**1.24**	**3.98**	**0.71**
-213.5	-48.5	-262.0	**Failure**		

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

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SECTION 13
PHOTOGRAPHS

Photo No. 1
OSB Test Deck After Testing

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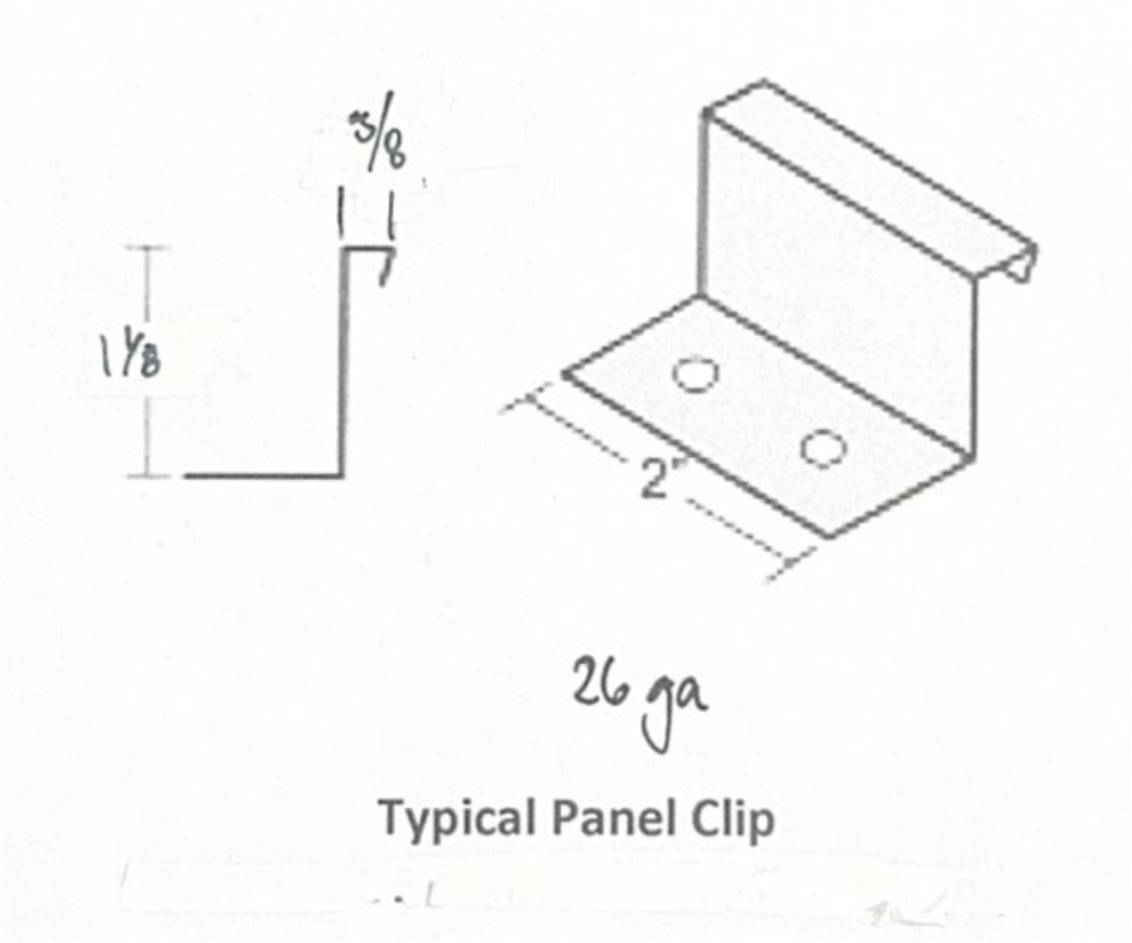
SECTION 14
DRAWINGS

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 # 1
Clip Dimensions

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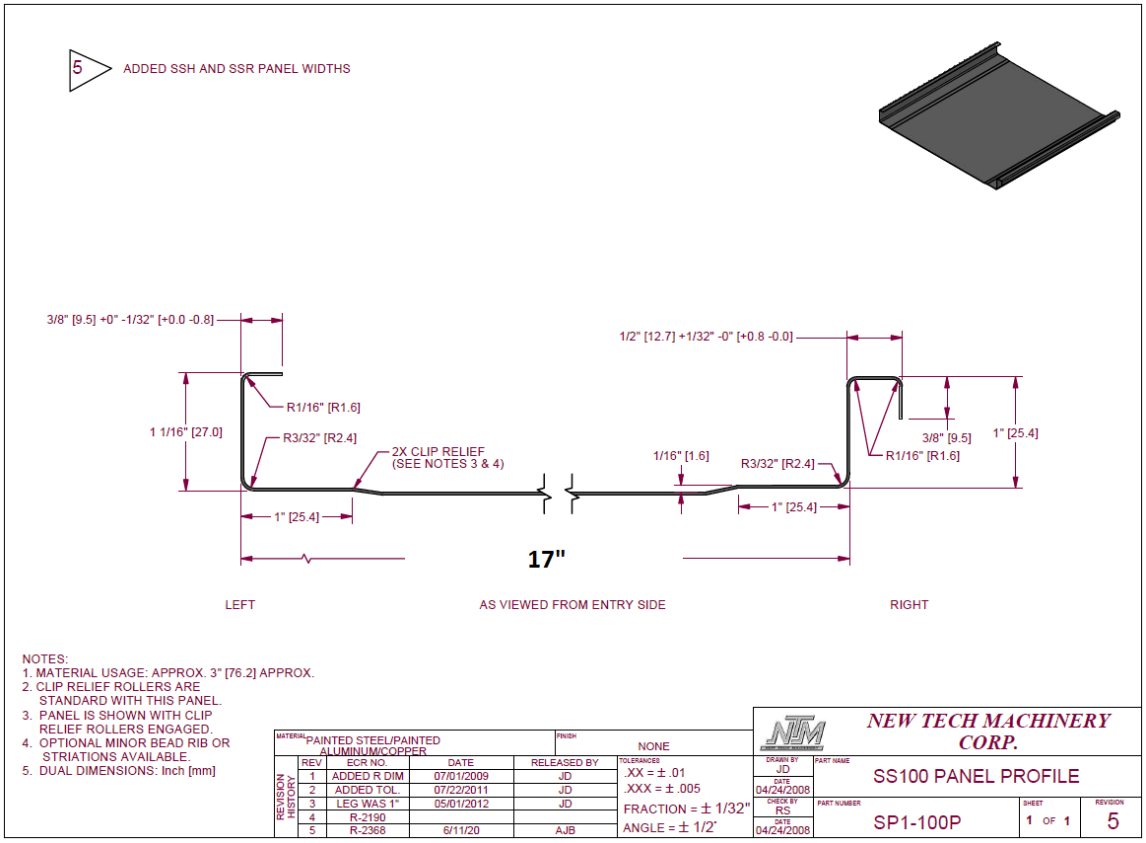

Drawing # 2
Panel Dimensions

SECTION 15
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	08/21/25	N/A	Original Report Issue