



PRI Construction Materials Technologies LLC

6412 Badger Drive
Tampa, FL 33610
813.621.5777
<https://www.pri-group.com/>

Laboratory Test Report

Report for: Jason Shumate
Petersen Aluminum
1234 Gardiner Lane
Louisville, KY 40213

Product Name(s): 24ga. steel 7.2 Rib Panel

Project No.: 2651A0001

Date(s) Tested: Apr. 4, 2024

Test Methods: ASTM E1886-19
ASTM E1996-20 & -23

Results Summary: Passes Level D missile impact at 6ft span

Purpose: Evaluate the impact resistance of the roof system utilizing Missile Level D in accordance with ASTM E1996 *Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes* and ASTM E1886 *Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials*. Per the client request, only missile impact performance was evaluated. Exposure to cycle pressure differentials was not conducted.

Test Methods: Missile impact testing was conducted in accordance with ASTM E1886-19 *Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protection Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials* using a Level D missile and impact locations as required by ASTM E1996-20 & -23 *Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes*. Missile level D is defined as 9±0.25lb, No. 2 SYP or DF 2x4 dimensional lumber with an impact speed of 50±1ft/s. Impact locations were defined as center of span and specimen over the panel side lap and corner of specimen, with the center of impact location 6in. from supporting members. The roof panel was installed with three panel side laps over a single 6ft span.

Sampling: The following materials were received by PRI.

<u>Product</u>	<u>Source</u>	<u>Date</u>	<u>Sampling</u>
7.2 Rib Panel	Elg Grove, Village,	Dec. 4, 2023	Carlisle Architectural Metals
#1/4-14x1-1/2" Self-Driller w/ washer	Elg Grove, Village,	Dec. 4, 2023	Carlisle Architectural Metals
#1/4-14x7/8" Stitch screw	Elg Grove, Village,	Dec. 4, 2023	Carlisle Architectural Metals

2651A0001.1

The laboratory test results presented in this report are based on the material(s) supplied and tested. The results, and by extension any statements of conformity, opinions, or interpretations, apply the "simple acceptance" decision rule for measurement uncertainty accounting. This report is for the exclusive use of stated client. Only the client is authorized to permit copying or distribution of this report and then only in its entirety. PRI Construction Materials Technologies LLC assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.

Conditioning: Samples were conditioned at 75±5°F prior to testing.

Test Specimen Details: Drawings provided in Appendix B. Tensile properties metal roof panel provided in Appendix C.

Component	Product	Installation Detail
Structural Supports	¼" thick ASTM A36 steel	Single 6ft span
Metal Roof Panel	24ga. steel 7.2 Rib Panel; 36" width, 7/8" corrugated	Fastened at each flute with one (1) #1/4-14x1-1/2" self-driller w/ washer; Fastened 18" o.c. along panel lap with one (1) #1/4-14x7/8" stitch screw

Results:

Test Results: Conditions at the beginning of testing were 23°C (73°F) with 50% Rh.

Impact ¹	Missile Weight	Missile Length	Missile Velocity	Location of Impact ²	Observation ³
1	9.1 lbs	96"	50.2 fps (34.2 mph)	Center of Panel, at seam	Pass
2	9.1 lbs	96"	50.0 fps (34.1 mph)	Corner of Panel	Pass

1. The end of the cannon barrel was located 3.7 m (12') from the exterior surface of the test specimen.
2. Missile impact was within 5° of horizontal. See Appendix A sketch for impact locations.
3. Upon completion of testing a 3" sphere could not pass through any opening formed.


2651A0001.1

The laboratory test results presented in this report are based on the material(s) supplied and tested. The results, and by extension any statements of conformity, opinions, or interpretations, apply the "simple acceptance" decision rule for measurement uncertainty accounting. This report is for the exclusive use of stated client. Only the client is authorized to permit copying or distribution of this report and then only in its entirety. PRI Construction Materials Technologies LLC assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.

Statement of Compliance:

The laboratory test results presented in this report are representative of the material supplied and test specimens constructed. Testing was conducted utilizing Missile Level D in accordance with ASTM E1996 *Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes* and ASTM E1886 *Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials*. Per the client request, only missile impact performance was evaluated. Exposure to cycle pressure differentials was not conducted.

Signed: _____



Zachary Priest, P.E.
Director

Report Issue History:

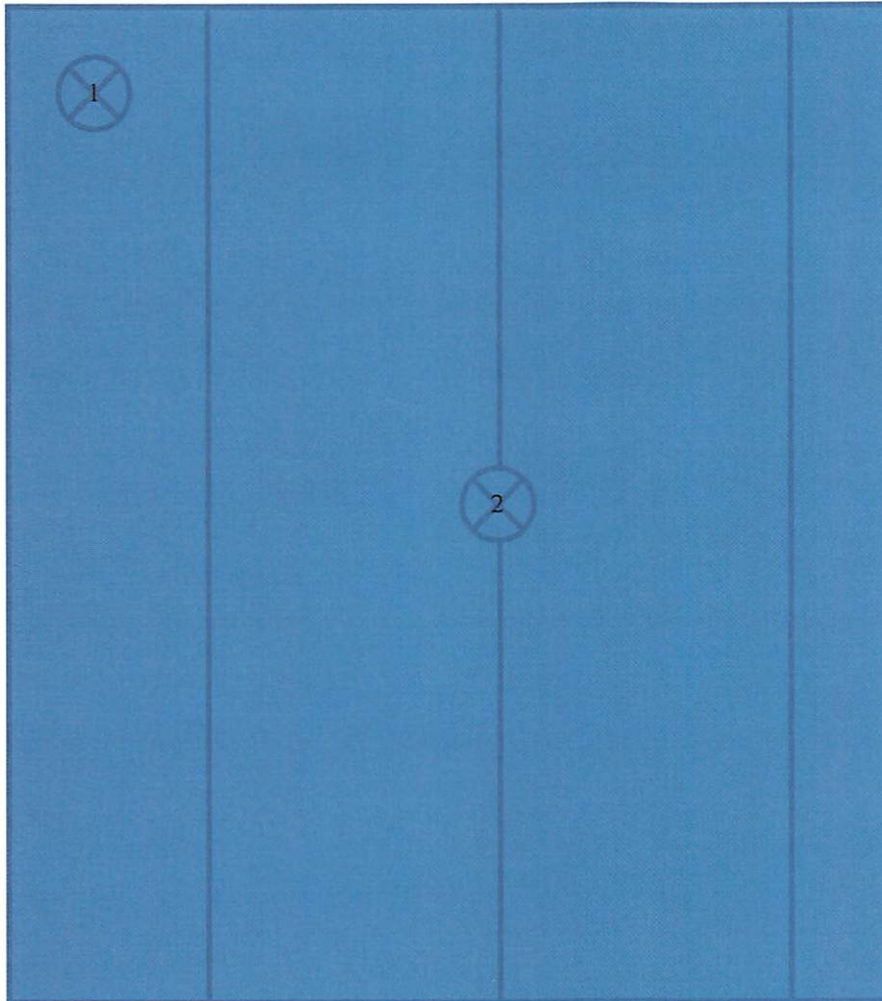
Issue #	Date	Pages	Revision Description (if applicable)
Original	04/04/2024	6	NA
Rev 1	04/08/2024	6	Added ASTM E1996-20

2651A0001.1

The laboratory test results presented in this report are based on the material(s) supplied and tested. The results, and by extension any statements of conformity, opinions, or interpretations, apply the "simple acceptance" decision rule for measurement uncertainty accounting. This report is for the exclusive use of stated client. Only the client is authorized to permit copying or distribution of this report and then only in its entirety. PRI Construction Materials Technologies LLC assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.

Test Specimen Schematic

Sampe schematic for single 6ft span

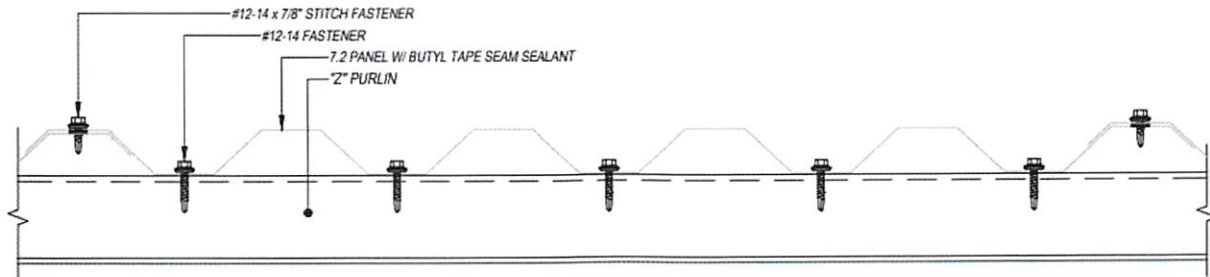


Impact Locations:

- 1) At corner within 6" from supports
- 2) Center of panel, at seam

2651A0001.1

The laboratory test results presented in this report are based on the material(s) supplied and tested. The results, and by extension any statements of conformity, opinions, or interpretations, apply the "simple acceptance" decision rule for measurement uncertainty accounting. This report is for the exclusive use of stated client. Only the client is authorized to permit copying or distribution of this report and then only in its entirety. PRI Construction Materials Technologies LLC assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.



7.2 Rib Panel installation

2651A0001.1

The laboratory test results presented in this report are based on the material(s) supplied and tested. The results, and by extension any statements of conformity, opinions, or interpretations, apply the "simple acceptance" decision rule for measurement uncertainty accounting. This report is for the exclusive use of stated client. Only the client is authorized to permit copying or distribution of this report and then only in its entirety. PRI Construction Materials Technologies LLC assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.

Mill Cert for 7.2 Rib Panel



Steel Dynamics Sales North America, Inc.
 4500 County Rd 59
 Butler, IN 46721 United States
 Telephone (260) 868-8000

Metallurgical Certification



Cert # 4328267 - Cert/Ship Date : 02/27/2024 10:48

Ship To	Petersen Aluminum Corporation - T - GA 102 Northpoint Parkway Acworth, GA 30102 United States	Contact Acworth RECEIVING P: 800-272-4482			
	Drexel Metals, Inc. 1234 Gardiner Lane Louisville, KY 40213 United States	Contact Chris Rodriguez Purchasing P: 502-716-7143 EXT 307			
Length	1,990 ft	Width	48.0000 in	Chem Treat	No
Weight (A)	7,450 lb	Gauge	0.0235 in Nom	Oiled	No

Coil #	24M129273E	Coil Alias	
Order #	781146	Heat #	12401680
Line Item #	1	PO #	10851905 - 1
Part #	254149		
Alt Part #			
Material Spec.	ASTM A 792 SS GRADE 40 - 23		
Product Desc.	Prime Prepainted Galvalume CR (Jville) AZ50		
Cert Comment			
Surface Treatment			

Ladle Chemical Analysis (%)

C	Mn	P	S	Si	Al	Cu	Ni	Cr	Mo	Sn	N	V	Nb	Ti	B	Ca	Pb	Zr
0.03	0.17	0.009	0.004	0.05	0.043	0.11	0.04	0.05	0.02	0.006	0.007	0.000	0.001	0.001	0.0003	0.002	0.000	0.0000

Mechanical Properties (if applicable)

Sample 1	English	Metric
Yield Strength	53.2 KSI	366 MPa
Tensile Strength	60.7 KSI	418 MPa
Percent Elongation	26 %	


 Nikhil Kulkarni
 Metallurgist

Shipped from Jeffersonville, IN, USA

Melted, thin slab cast and rolled by proud Americans in Butler, IN, USA.

SDI does not weld or repair Prime Prepainted Galvalume CR (Jville) products.

All tests were performed according to applicable standards and are correct as contained in the records of the company.

2651A0001.1

The laboratory test results presented in this report are based on the material(s) supplied and tested. The results, and by extension any statements of conformity, opinions, or interpretations, apply the "simple acceptance" decision rule for measurement uncertainty accounting. This report is for the exclusive use of stated client. Only the client is authorized to permit copying or distribution of this report and then only in its entirety. PRI Construction Materials Technologies LLC assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.