



PRI Construction Materials Technologies LLC

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Laboratory Test Report

Report for: Matt Ashley
A&E Metal Roofing Supply South & Echols Metal LLC
230 Lee Road 430
Smith Station, AL 36877

Product Name: APEX

Project No.: 2264T0002

Dates Tested: Mar. 23rd – Apr. 15th, 2020

Test Methods: UL 2218 (2010)

Results Summary: Compliant: UL 2218 Impact Resistance – Class 4

Purpose: Determine the impact resistance of the identified product in accordance with **UL 2218 (2010) Standard for Impact Resistance of Prepared Roof Covering Materials.**

Test Methods: Testing was conducted in accordance with standard test methods.

<u>Test Method</u>	<u>Title</u>	<u>Year</u>
UL 2218	Standard for Impact Resistance of Prepared Roof Covering Materials.	2010

Sampling: The following materials were received by PRI.

<u>Product</u>	<u>Source</u>	<u>Date</u>	<u>Sampling</u>
29ga. APEX panel	Smith Station, AL	Mar. 6, 2020	A&E Metal
#10-16 x 1.5" HWH screws	Smith Station, AL	Mar. 6, 2020	A&E Metal

Product Description: APEX: 29 ga., ASTM A 792 AZ55, Grade 80 steel, through fastened rib panel; 3/4" rib; 36" coverage; Panel drawing shown in Appendix A.

#10-16 x 1.5" HWH: #10-16 x 1" HWH wood screws with 0.5" O.D. sealing washers

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Specimen Description: APEX: 29ga. APEX panel attached with #10-16 x1.5" HWH with sealing washers installed 24" o.c. using a 2.5"-9.5"-12"-12" screw pattern across the width of the panel. The perimeter of the deck was attached using the a 2.5"-9.5"-2.5"-9.5"-2.5"-9.5" pattern at each of the panel ends, and 6" o.c. along the panel length. See Appendix A for fastening pattern.

Underlayment: ASTM D 226 Type II felt installed with minimum 4" side-lap and 6" end-laps and fastened using 12 ga., 1-1/4" ring shank nails and 32 ga., 1-5/8" tin caps spaced 6" o.c. along the laps and two staggered rows 12" o.c. in the field of the roll.

Deck: CAT 15/32 PS 1-09, APA span rated CDX plywood sheathing installed over No. 2 lumber supports spaced 24" o.c. Decking attached with 0.113" x 2-3/8" ring shank nails spaced 6" o.c. along the perimeter and intermediate supports.

Results:

Physical Properties	Test Method	Results		Requirement
		Depression (in)	Result [Pass/Fail]	
Hail Impact Resistance [Pass/Fail] 2 specimens; 29ga. APEX; 3ft x 3ft test deck Class 4; 2.00±0.01in steel ball ø 1.15±0.04lb steel ball mass 20.0ft steel ball drop 23.71ft-lb impact kinetic energy 2 drops per impact location 6 impact locations	UL 2218 Class 4			Report
	Mid-span, rib	0.2048	Pass	
	Mid pan	0.0495	Pass	
	Adjacent to fastener	0.0375	Pass	
	Mid sidelap	0.1250	Pass	
	Mid-span of plywood	0.0643	Pass	
	Over framing	0.0295	Pass	
	Over fastener	0.0140	Pass	

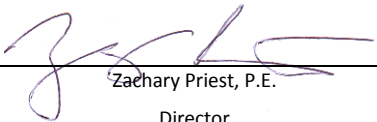
Notes: None

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Statement of Attestation:

The results of testing were determined in accordance with and UL 2218 (2010) *Standard for Impact Resistance of Prepared Roof Covering Materials*. The laboratory test results presented in this report are representative of the material supplied.

Signed: 

Zachary Priest, P.E.
Director

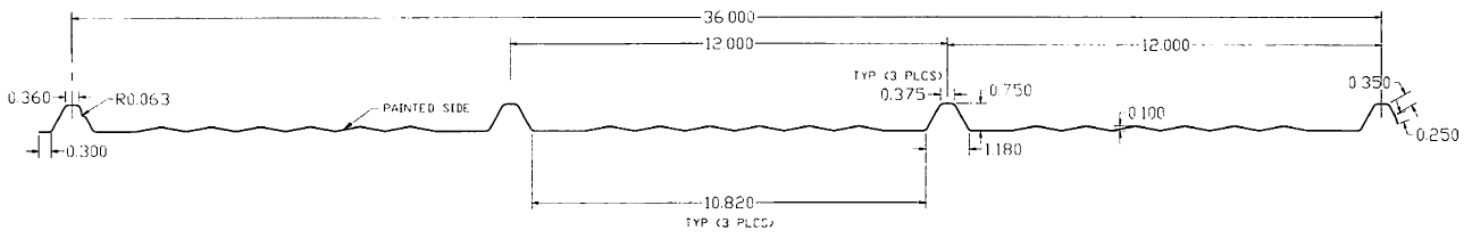
Report Issue History:

Issue #	Date	Pages	Revision Description (if applicable)
Original	05/01/2020	4	NA

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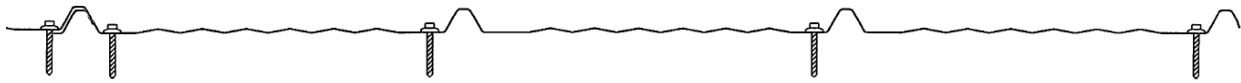
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APEX – Dimensions

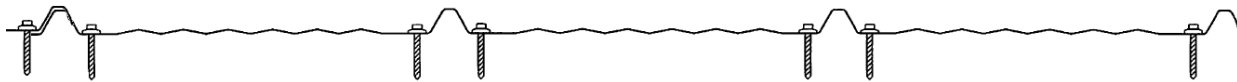


APEX – Fastening Pattern

(2.5"-9.5"-12"-12")



(2.5"-9.5"-2.5"-9.5"-2.5"-9.5")



END OF REPORT

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