



**RIDGE VENT AIR EXFILTRATION
PERFORMANCE TEST REPORT**

Rendered to:

VENTCO, INC.

Report No.: 55265.01-122-32
Test Date: 01/27/05
Report Date: 02/02/05
Expiration Date: 01/27/09



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115 Lismore Avenue
Glenside, Pennsylvania 19038

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Project Summary: Architectural Testing, Inc. (ATI) was contracted by Ventco, Inc., to conduct ridge vent exfiltration performance testing. Testing was conducted on Hibco, MWI, Marco and Ventco ridge vents for metal roof systems. Results are used to determine net free ventilation area (NFVA) of several metal roof ridge vents.

Test Apparatus: The metal roof panels and ridge vents were installed to a 3' wide by 4' long roof deck with a 2:12 pitch and a ridge in the middle. The opening in the ridge was 2" wide by 45-1/8" long. The deck was constructed of 1/2" thick plywood over 2x4 Spruce-Pine-Fir rafters placed at 24" spacing. The test chamber was mounted on a 3' wide by 4' long steel wrap constructed of 12" C-channel. A port was placed in the C-channel to facilitate airflow to the chamber. Airflow entering the chamber was measured with a large-capacity laminar flow meter and the pressure differential between the interior and exterior of the chamber was measured with Magnehelic pressure sensors (See Photos No. 1 through No. 3 for Test Setup).

Instrumentation		
Instrument	ATI Control Number	Calibration
Laminar Flow #1	000867	---
Magnehelic Pressure Sensor (0.25" WC)	000023	05/31/05

Test Specimen Description: All tests incorporated the same metal roof panels and metal ridge cap. Four ridge vent products: Hibco, MWI, Marco and Ventco were installed onto the ridge vent in accordance with the manufacturers' installation instructions and tested. All specimens were purchased by Ventco, Inc. and supplied to Architectural Testing, Inc. for testing.

Test Procedure: The tests were performed in accordance with the following parameters:

Test	Description	Photo No.
1	Hibco Ridge Vent for Metal Roof	Photo No. 4
2	MWI Ridge Vent for Metal Roof	Photo No. 5
3	Marco Ridge Vent for Metal Roof	Photo No. 6
4	Ventco Ridge Vent for Metal Roof	Photo No. 7

The formula used to calculate the Net Free Ventilation Area (NFVA) is as follows:

$$NFVA = \frac{Q/60}{\alpha \times \sqrt{\frac{2(\Delta p)g}{\rho}}} \quad (\text{Equation 1})$$

Where:

- Q = average air flow for the vent component, cfm
- α = 0.6
- Δp = average pressure differential for the tested vent component, psf
- g = acceleration due to gravity, 32.2 ft/s²
- ρ = mass density of air, 0.0765 lbm/ft³

Test Results: The following results were recorded:

Hibco Ridge Vent

	Air Flow (cfm)	
	0.05" WC (0.26 psf)	0.10" WC (0.52 psf)
1	49	82
2	50	80
3	48	79
Average	49.0	80.3
NFVA (in ²)	4.19	4.86

MWI Ridge Vent

	Air Flow (cfm)	
	0.05" WC (0.26 psf)	0.10" WC (0.52 psf)
1	44	67
2	46	68
3	46	67
Average	45.3	67.3
NFVA (in ²)	3.54	4.07

Marco Ridge Vent

	Air Flow (cfm)	
	0.05" WC (0.26 psf)	0.10" WC (0.52 psf)
1	78	116
2	77	117
3	77	118
Average	77.3	117.0
NFVA (in ²)	6.61	7.07

Test Results: (Continued)

Ventco Ridge Vent

	Air Flow (cfm)	
	0.05" WC (0.26 psf)	0.10" WC (0.52 psf)
1	119	182
2	116	181
3	118	181
Average	117.7	181.3
NFVA (in ²)	10.06	10.96

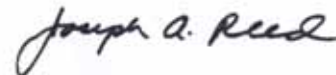
A copy of this report will be retained by ATI for a period of four years from the original test date. This report is the exclusive property of the client so named herein and is applicable to the sample tested. Results obtained are tested values and do not constitute an opinion or endorsement by this laboratory. This report may not be reproduced, except in whole, without the express written permission of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.:



Digitally Signed by: Michael D. Stremmel

Michael D. Stremmel



Digitally Signed by: Joseph A. Reed

Joseph A. Reed, P.E.
Director - Engineering and Product Testing

MDS:jld

Attachments (pages):
Appendix-A: Photographs (4)