

**Report By:**

National TAB  
1329 E. KEMPER ROAD  
SUITE 4210  
CINCINNATI, OH 45246



**Report: BET Report**

**Function: Building Envelope Test (BET)**

**Date: 08/25/2025**

**Completed By:**

**PROJECT**  
**Cosmo Burger**

1813, 1815, 1817, 1819 Locust Street

Kansas City, MO 64108

**Client**

Chief Heating & Cooling Inc.

# National TAB

Project: Cosmo Burger

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Cosmo Burger

**PROJECT TEAM MEMBERS**

**Architect/Engineer/Consultant:** Alinea Architects

**Building Envelope Test (BET):** National TAB Intelligence - Kansas City  
1126 Swift St  
North Kansas City, MO, 64116



# CERTIFICATION



**PROJECT:** Cosmo Burger Development

The data represented in this report is a record of the whole building air leakage test that has been obtained in accordance with the current edition of the NEBB Procedural Standard for Building Enclosure Testing. Any exceptions are noted within the Executive Summary of this report.

**NEBB TAB FIRM:** National TAB - Kansas City

**REGISTRATION NO:** 3768

**CERTIFIED BY:** Will Turnbough

**DATE:** 8/25/2025

### Submitted and Certified by:

**NEBB TAB FIRM:** National TAB - Kansas City

**TAB PROFESSIONAL:** Will Turnbough

**REGISTRATION NO:** CP-24289

**CERTIFICATION EXP:** 12/31/2025





# National TAB

## Building Enclosure Testing Equipment



Function		Range	Minimum Accuracy	Instrument Information	Calibration Date	Date Due
AIR	AIR PRESSURE	0 in wg to 10 in wg	2% +/- 0.001 in wg	Evergreen S-PVF-1 24D-00281	3/14/2025	3/14/2026
	AIR VELOCITY INSTRUMENT	50 fpm to 3900 fpm	+/- .5 % +/- 7 fpm	Evergreen S-PVF-1 24D-00281	3/14/2025	3/14/2026
TEMPERATURE	AIR METER	-20 F to 240 F	+/- .5 % 2 F	Evergreen S-PVF-1 24D-00281	3/14/2025	3/14/2026
	AIR PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/18/2024	9/18/2025
	IMMERSION METER	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/18/2024	9/18/2025
	IMMERSION PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/18/2024	9/18/2025
	CONTACT METER	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/18/2024	9/18/2025
	CONTACT PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/18/2024	9/18/2025
TEMP DOCUMENTATION	THERMAL CAMERA	-4 F to 450 F	+/-2% of reading	FLIR E8 Pro S/N 13316880	12/9/2024	12/9/2025
DIGITAL PRESSURE FLOW MEASUREMENT SYSTEM	DIGITAL PRESSURE FLOW MEASUREMENT SYSTEM	Not applicable	+/-4% of reading	Retrotec DM32X 10A S/N 503154	11/21/2024	11/21/2025

## Test Results Summary

$P_{ref}$ : 0.30" (75Pa)	Allowable Leakage Rate: 0.40 CFM/ft <sup>2</sup>	Allowable Leakage: 13140 CFM
	Actual Leakage Rate: 0.39 CFM/ft <sup>2</sup>	Actual Leakage: 12883 CFM

## Executive Summary

A building enclosure test was performed at the 1813 Locust Development Building. The building consists of Cosmo as well as an empty tenant on the north side. Per the architect, these spaces form their own air barrier separate from the rest of the building. North of the empty tenant space is another empty tenant space that appears to be in disrepair. The test was performed per the 2021 International Energy Code using the ASTM E1827 methodology and NEBB Procedural Standard.

Prior to the test, the architect provided the enclosure square footage which was 32851 ft<sup>2</sup> and was used in the calculations.

Two Retrotec model 3000SR fans were used to test the air barrier and were installed in Room 100 (Vestibule).

The acceptable leakage rate is 0.40 CFM/ft<sup>2</sup> at 0.3" wc (75 Pa). During depressurization the actual leakage rate was measured as 0.39 CFM/ft<sup>2</sup> which is within tolerance. The pressurization test was performed however the results are inconclusive because the restaurant portion of the building was open for business and their operations were affecting a successful test. The pressurization tests and depressurization tests should have similar leakage rates.

Infrared images are provided below for reference of areas with noticeable leakage. Since the depressurization results passed, no action is required.



Figure 1. North side of the empty tenant space



Figure 2. North side of the empty tenant space



Figure 3. Near garage door on East side



Figure 4. Near garage door on East side

Required Values Needed Prior to Running Calculations	
13140.4	Allowable Leakage (CFM/ft2) @ Reference pressure (inH2O)
32851	Building Enclosure (ft <sup>2</sup> )
0.4	Acceptable Leakage Rate (CFM/ft <sup>2</sup> )
13140	Acceptable CFM
902	E = Altitude Above Sea Level (Ft)

Required Field Measurements	
73	T <sub>in</sub> = Inside Temperature (F)
77	T <sub>out</sub> = Outside Temperature (F)
0.0012	P <sub>baseline1</sub> (Average of pre-test baseline readings)
0.0015	P <sub>baseline2</sub> (Average of post-test baseline readings)

Air Density	
0.0721	ρ <sub>in</sub> - Inside (lbm/ft <sup>3</sup> )
0.0716	ρ <sub>out</sub> - Outside (lbm/ft <sup>3</sup> )

Air Dynamic Viscosity	
0.0442	μ <sub>in</sub> (lbm/ft*hr)
0.0444	μ <sub>out</sub> (lbm/ft*hr)

Constants	
0.07517	ρ <sub>e</sub> (Standard Air Density) lbm/ft <sup>3</sup>
0.002629	b (lbm/(ft*hr)*F*0.5)
198.7	s (F)
0.04359	μ <sub>e</sub> (Reference air viscosity)
1Pa = 0.00401" H2O	
1" H2O = 249 Pa	

Depressurization - Fan 1						
Reading #	Pressure	P <sub>avg</sub>	P <sub>enc</sub>	Airflow (CFM)	Q <sub>avg</sub>	Q <sub>enc</sub>
1	0.1000	0.0993	0.0980	3520	3371	3396
2	0.0982			3380		
3	0.1011			3335		
4	0.0990			3320		
5	0.0982			3300		
1	0.2987	0.2993	0.2980	6520	6389	6341
2	0.3003			6360		
3	0.2995			6285		
4	0.2991			6500		
5	0.2987			6280		
n = 0.56						
0.45 ≤ n ≤ 0.80						
C (Flow Coefficient)	12266					
P <sub>ref</sub>	0.3					
Eff Leakage Area	409.73275					
Uncertainty Q <sub>ref</sub>	1.8%					
Bias of Q <sub>ref</sub>	2.1%					

Depressurization - Fan 2						
Reading #	Pressure	P <sub>avg</sub>	P <sub>enc</sub>	Airflow (CFM)	Q <sub>avg</sub>	Q <sub>enc</sub>
1	0.0918	0.0985	0.0971	3245	3303	3328
2	0.1015			3280		
3	0.1015			3315		
4	0.0974			3410		
5	0.1003			3265		
1	0.2995	0.2996	0.2983	6615	6591	6542
2	0.3016			6635		
3	0.2999			6590		
4	0.2991			6505		
5	0.2979			6610		
n = 0.60						
0.45 ≤ n ≤ 0.80						
C (Flow Coefficient)	13333					
P <sub>ref</sub>	0.3					
Eff Leakage Area	423.84409					
Uncertainty Q <sub>ref</sub>	0.9%					
Bias of Q <sub>ref</sub>	2.1%					

Depressurization - Combined		
Reading #	Q <sub>avg</sub>	Q <sub>enc</sub>
1	6674	6724
2		
3		
4		
5		
1	12980	12883
2		
3		
4		
5		

