

## Test Results Summary

$P_{ref}$ : 0.30" (75Pa)	Allowable Leakage Rate: 0.40 CFM/ft <sup>2</sup>	Allowable Leakage: 5,286 CFM
Depressurization	Actual Leakage Rate: 1.16 CFM/ft <sup>2</sup>	Actual Leakage: 15,393 CFM
Pressurization	Actual Leakage Rate: 0.99 CFM/ft <sup>2</sup>	Actual Leakage: 13,064 CFM
Combined	Actual Leakage Rate: 1.08 CFM/ft <sup>2</sup>	Actual Leakage: 14,229 CFM

## Executive Summary

### Background

A building enclosure test was performed at the Culver's in Wilson, NC on the evening 1/13/2026. This is an existing building that has been having ongoing issues with humidity during the summer months. The test was diagnostic in nature to determine leakage rates and any areas of concern. The test was performed per the 2015 International Energy Code (which is the applicable code for the building) and using the NEBB Building Air Movement Procedure methodology.

### Test Set up

The air barrier is not specifically shown on the plans and no air barrier square footage is given. The air barrier area was estimated using the dimensions on the plans. If the architect can provide more accurate calculations, then the leakage rate in the report can be updated.

Both pressurization and depressurization tests were performed. For pressurization, to determine P2, both outside air dampers on the RTU's were fully opened. The barometric relief dampers were sealed closed. The openings for all exhaust fans on the roof were blanked off at the curb. To determine P1, the outside air dampers were until a pressure approximately one third of P2 was achieved.

For depressurization, the outside air dampers were closed on both RTU's. To first determine P1, both the opening at the curb for the restroom exhaust fan and the grill hood exhaust fan and the was blanked off with plastic/cardboard. Only the fryer hood was running during this test. Then to determine P2, the fryer hood blank was removed and the fan was turned on.

At the completion of the test, all equipment was turned back on and the original balance setpoints were reset.

## Findings

### Pressurization

The acceptable leakage rate is 0.40 CFM/ft<sup>2</sup> at 0.3" wc (75 Pa) according to the 2015 IECC. During pressurization, the maximum pressure that was achieved was 0.21" average with 10,266 CFM of leakage. At 0.3", this equates to leakage of 13,064 CFM which is a leakage rate of 0.99 CFM/ ft<sup>2</sup>. This rate exceeds the acceptable leakage rate.

Infrared pictures were taken on the outside of the building and the roof. Leakage was primarily noted on the exterior soffit at the top of the building. This soffit was accessible in a few places and there was noticeable air leakage felt. The parapet itself was ballooning out in places. The thermal images of the parapet on the roof were noticeably warmer than the roof itself and there were patterns of air movement. Masonry work is being redone, and air leakage was felt in one area at the West corner.

**Depressurization**

The acceptable leakage rate is 0.40 CFM/ft<sup>2</sup> at 0.3" wc (75 Pa) according to the 2015 IECC. During pressurization, the maximum pressure that was achieved was 0.02" average and 2708 CFM of leakage. At 0.3", this equates to leakage of 15,393 CFM which is a leakage rate of 1.16 CFM/ ft<sup>2</sup>. This rate exceeds the actual leakage rate.

Leakage was primarily observed with a thermal camera along the exterior walls where the roof deck meets the framing. This pattern was observed along all walls and air could be felt at these locations.

Some leakage was seen at wiring penetrations into the roof and should be sealed. However, this seemed relatively minor in comparison to the leaks around the exterior walls. Insulation on exterior walls is damaged or falling off in places and should be resecured.