

# Envelope Air Leakage Testing Procedure

Shaded boxes will autofill.

Name	
Address	
	m-d-y
	ft <sup>2</sup>
	ft <sup>2</sup>
	°F
	°F
	ft

Project Name & Address  
 Date of Testing  
 Test Participants  
 Building Conditioned Floor Area  
 Building Shell Area (SFBE)

**Testing should not be performed if:**  
 $\Delta$  Temp Difference X Height > 1180  
 Example, 30 °F x 40' = 1,200 (so do not test)  
**If Building Baseline Pressure exceeds +/- 5 Pa,**  
 then adjust pressure testing interval (\*see below)

Outdoor Temperature at Start	$\Delta$ Temperature Difference	Building Height	Okay to test?
Indoor Temperature at Start	°F	ft	
Elevation of project			

Use data collection forms to capture basic description of building (e.g., type of occupancy, number of stories, wall, roof and foundation assembly type, orientation, etc.)

All designated team members perform set-up as assigned. Apply masking to all Outside Air (OA), Make-Up Air (MUA), and Exhaust and Dryers (Exh) fans but do not seal flue penetrations.

	Pa
	cfm

Perform Pre Depressurization Baseline for 2 minutes (all fans covered)  
 Depressurize building to -75 Pa and record single point result. \*If Building Baseline pressure exceeds +/- 5 Pa, adjust range of test pressures. [Example, if Baseline is -10Pa, then test at -85Pa]

During single point testing, team should check for leaks in designated areas while BD's are operating. **Document discovered leaks** and/or building issues. Perform zone pressure testing, if applicable.

### USACE Depressurization Multipoint Test

Continue depressurization from -75 Pa to -20Pa, adjusting fans for every 5 Pa interval\*  
 \*If Building Baseline pressure exceeds +/- 5 Pa, adjust range of test pressures. [Example, if Baseline is -10Pa, then test from -85 to -30 Pa]

	Pa
	cfm75
	cfm50
	sq. ft.
	cfm75

After -20 Pa (last data point) is recorded, cover all fans and perform post-baseline for 120 seconds  
 Enter multipoint **Depressurization** curve fit value @ -75 Pa) - [Curve fit data shall have an R<sup>2</sup> > 0.98 for valid test]  
 Enter multipoint **Depressurization** curve fit value @ -50 Pa) - [Curve fit data shall have an R<sup>2</sup> > 0.98 for valid test]  
 Approximate s.f. of equivalent opening  
 Reverse fans and **add fan pressure reference tube(s)**.  
 Perform **Pressurization to single point @ +75 Pa**

**USACE Pressurization** - With fans covered, perform pre- pressurization baseline for 120 secs  
 During pressurization testing, **Fog machine leak identification** can be performed

	cfm75
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**USACE Pressurization** (enter multipoint curve fit value @ +75 Pa)  
 The building pressure will be ramped down every 5 Pa interval. After +20 Pa is recorded, cover all fans and perform post-baseline for 120 seconds.

	cfm75
	cfm75
	cfm75

With fans kept in pressurization mode, remove mask from OA (*and hood MUA, if applicable*). Record single point test value @ +75Pa  
 Turn fans around and setup for depressurization mode (OA+MUA unmasked). Record single point test value @ -75Pa  
 Keep fans in the same configuration (depressurization mode). Remove mask from exhaust fans. Record single point test value @ -75Pa

Cover all BD fans and keep all fans off. Remove mask from kitchen hood (if applicable).

			Pa
			Pa
			Pa
			Pa
			Pa

Record building baseline pressure for two 30 second periods  
 Turn on all air handlers. Record building pressure for two 30 second periods  
 With air handlers running, turn on all exhaust fans. Record building pressure for two 30 second periods  
*If a kitchen hood is present, turn it on. With air handlers + all exhaust fans + hood on, record building pressure for two 30 second periods*  
 Record building baseline pressure for two 30 second periods

	°F
	°F

Outdoor Temperature at Finish  
 Indoor Temperature at Finish  
 Description of weather conditions during testing

Miscellaneous Notes