



Duct Testing: Procedure, Results, and Discussion

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Duct Leakage Tests:

Is It Mandatory?

401.2 Compliance. Projects shall comply with Sections 401, 402.2.12, 402.4, 402.5, 402.6, **403** and 404.1 (referred to as the mandatory provisions)

Where do the duct blaster tests apply?

To only heating and cooling ducts when at least a portion of the system is in unconditioned space

These tests exclude (but are not limited too)

- Bath fan exhaust
- ERV and HRV ventilation piping
- Range hood exhaust

NYS Building Code Section 403.2.2 Sealing. Duct tightness shall be verified by **either** of the following: All register boots shall be taped or otherwise sealed during the test. (Just has to pass one test)

1. Post construction test:

- Leakage to outdoors: ≤ 8 cfm per 100 ft² of CFA (conditioned floor area)
- OR**
- Total leakage: ≤ 12 cfm per 100 ft² of CFA

Tested at 25 Pa across the entire system, including the manufacturer's air handler enclosure.

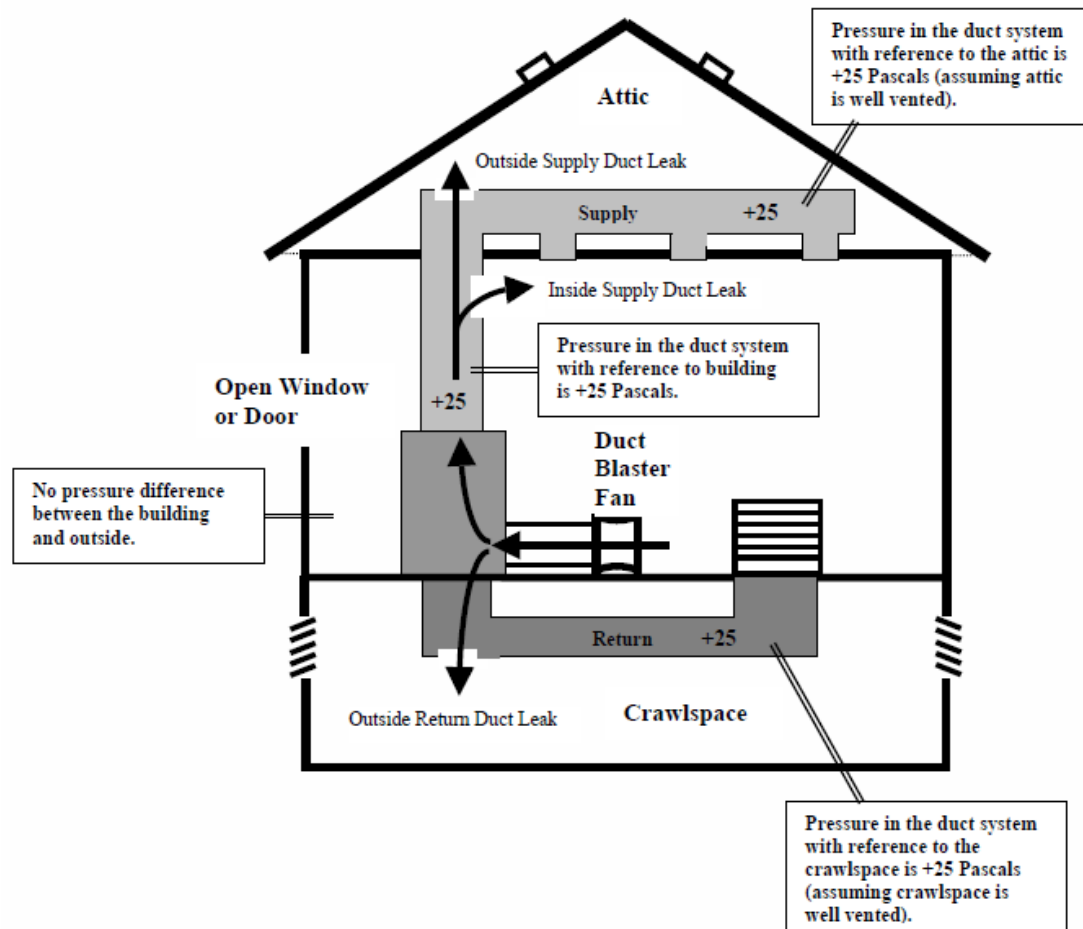
2. Rough-in test:

- Total leakage: ≤ 6 cfm per 100 ft² of CFA, including the manufacturer's air handler enclosure.
- OR**
- Total leakage: ≤ 4 cfm per 100 ft² of CFA, if manufacturer's air handler is not installed.

Tested at 25 Pa across the roughed in system.



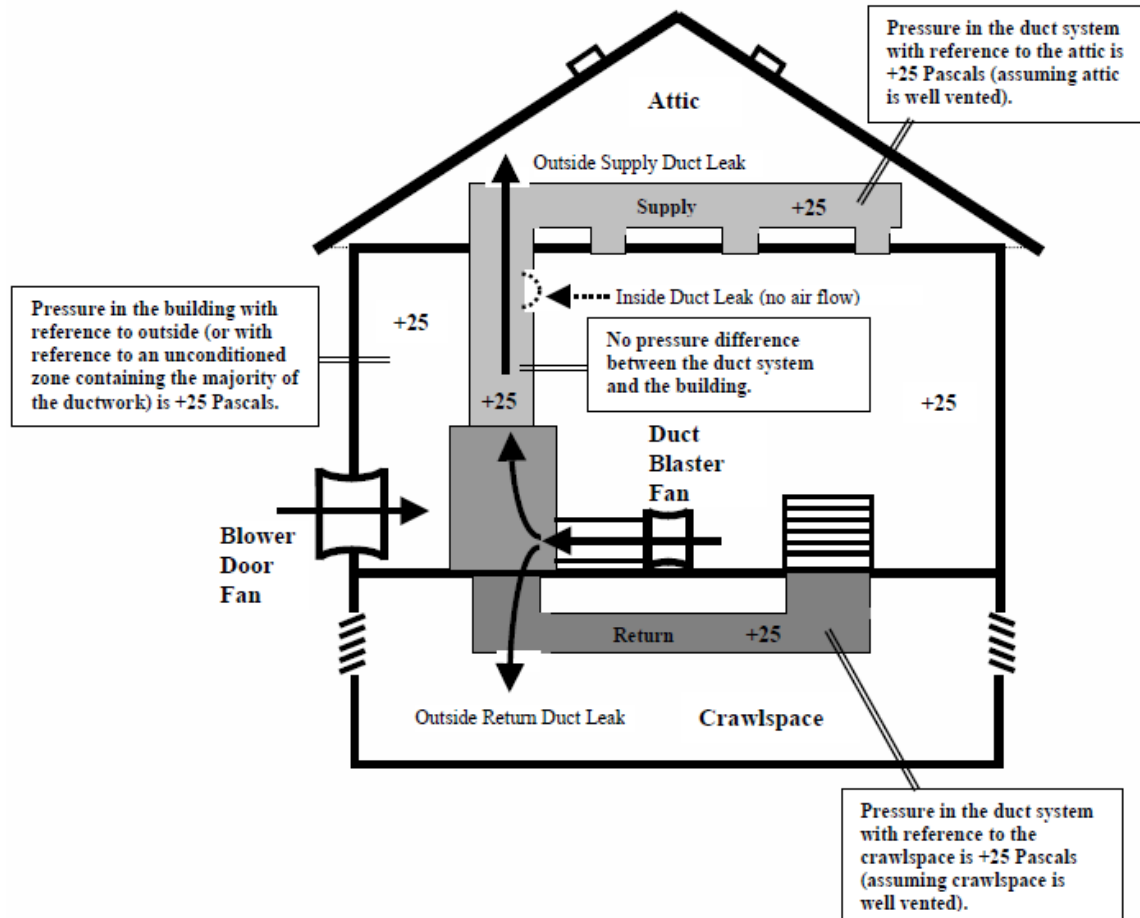
Total Leakage Test:



1. Connect the Duct Testing Fan to either:
 - a. The largest return grille
 - b. The blower access door
2. Turn off the air handler so that it does not come on during test.
3. Temporarily seal off all remaining supply and return registers using painters tape, Duct Mask or other temporary seal.
4. Turn off exhaust fans, dryers etc.
5. Remove all filters from the duct system.
6. Open a door or window between the house and outside (prevents changes in house pressure during the test), and interior doors.
7. Open access doors from unconditioned spaces (e.g. attics) containing ducts to outside.
8. Select a location to measure duct pressure.
 - a. Either in the supply plenum
 - b. Supply trunk line
 - c. At a supply register.
9. Connect tubes to monometer and set manometer to proper settings (PR/FL @25 Mode)
10. Run fan to 25 Pa and record CFM reading
11. Test can take from 30-60 minutes including set up and take down



Leakage to the Outside Test:



1. Connect the Duct Testing Fan to either:
 - a. The largest return grille
 - b. The blower access door
2. Turn off the air handler so that it does not come on during test.
3. Temporarily seal off all remaining supply and return registers using painters tape, Duct Mask or other temporary seal.
4. Turn off exhaust fans, dryers etc.
5. Remove all filters from the duct system.
6. Install Blower Door to pressurize the house to 25 Pa
7. Open access doors from unconditioned spaces (e.g. attics) containing ducts to outside.
8. Select a location to measure duct pressure.
 - a. Either in the supply plenum
 - b. Supply trunk line
 - c. At a supply register.
9. Connect tubes to monometer and set manometer to proper settings (PR/FL Mode)
10. Run fan to equalize ductwork pressure (0 Pa) and record CFM reading
11. Test can take an additional 15-25 minutes including set up and take down



Pro's and Con's

Total Leakage		Leakage to the Outside	
Pro	Con	Pro	Con
Rough in test available	More difficult to meet leakage requirement	Often easier to meet leakage requirement	Building envelope must completed
Shorter set up time			Longer Set-up time
Less equipment needed			More equipment needed

Things to look for:

1. Clean Air Filter; anyone who removes a dirty air filter to tests the ductwork and replaces it afterwards should not be doing the test.
2. Filter slot clean of dirt; the filter slot had to be at least wiped clean prior to sealing it with tape
3. Hole in supply plenum; unless the test was done in the supply grill there should be a small piece of foil tape covering a hole for the probe

Where Can I get more information?

Duct Blaster Manufacturer – The Energy Conservatory
<http://www.energyconservatory.com/products/products2.htm>



Duct Blaster Test Form

Customer Information:

Name: _____
Address: _____
City: _____
State/Zip: _____
Phone: _____
Email: _____

Test Conditions:

Date: _____
Time: _____
Indoor Temperature (F): _____
Outdoor Temperature (F): _____
Floor Area (ft²): _____
Primary Location of
Supply Ductwork _____
Primary Location of
Return Ductwork _____

Building Address: (if different from above)

Lot Number: _____
Address: _____
City: _____
State/Zip: _____

Comments:

Total Leakage Test Depress/Press

Test Pressure: _____ (Pa)
Baseline Duct Pressure (optional) _____ (Pa)

Duct Press.(Pa)	Flow Ring Installed	Fan Press (Pa)	Flow (cfm)
			Outside

Fan Model/SN: _____

Results:

Total Leakage (cfm): _____
Total Leakage per 100 sqft: _____

Outside Leakage Test Depress/Press

Test Pressure: _____ (Pa)

Duct Press.(Pa)	Flow Ring Installed	Fan Press (Pa)	Flow (cfm)

Fan Model/SN: _____

Results:

Outside Leakage (cfm): _____
Outside Leakage per 100 sqft: _____

Tester Information:

Name: _____
Phone: _____