2005 ACCEPTANCE REQUIREMENTS FOR CODE COMPLIANCE MECH-5-A

NJ.5.1Air Distribution Acceptance Document Part 1 of 3

PROJECT NAME	DATE	TELEPHONE
PROJECT ADDRESS		
TESTING AUTHORITY		
AIR DISTRIBUTOR NAME / DESIGNATION	PERMIT NUMBER	_____ Checked by/Date Enforcement Agency Use

Intent:	New single zone supply ductwork shall not exceed a 6% leakage rate per §144(k) or §149D i, existing single zone ductwork shall not exceed 15% leakage or other compliance path per §149D ii or §149E.

Construction Inspection

1 Scope of test – New Buildings – this test required on New Buildings only if all checkboxes 1(a) through 1(c) are checked

Existing Buildings – this test required if 1(a) through 1(d) are checked

Ductwork conforms to the following (note if any of these are not checked, then this test is not required):

☐	1a) Connected to a constant volume, single zone air conditioners, heat pumps, or furnaces
☐	1b) Serves less than 5000 square feet of floor area
☐	1c) Has more than 25% duct surface area located in one or more of the following spaces
	- Outdoors
	- A space directly under a roof where the U-factor of the roof is greater than U-factor of the ceiling
	- A space directly under a roof with fixed vents or openings to the outside or unconditioned spaces
	- An unconditioned crawlspace
☐	- Other unconditioned spaces 1d) A duct is extended or any of the following replaced: air handler, outdoor condensing unit of a split system, cooling or heating coil, or the furnace heat exchanger.

2 Instrumentation to perform test includes:

a. Duct Blaster

3 Material and Installation. Complying new duct systems shall have a checked box for all of the following categories a through f.

a. Choice of drawbands (check one of the following)

☐	Stainless steel worm-drive hose clamps
☐	UV-resistant nylon duct ties

☐	b. Flexible ducts are not constricted in any way
☐	c. Duct leakage tests performed before access to ductwork and connections are blocked
☐	d. Joints and seams are not sealed with cloth back rubber adhesive tape unless used in combination with Mastic and drawbands
☐	e. Duct R-values are verified R-8 per 124(a)
☐	f. Ductwork located outdoors has insulation that is protected from damage and suitable for outdoor service

Certification Statement

I certify that all statements are true on this MECH-5-A form including the PASS/FAIL Evaluation. I affirm I am eligible to sign this form under the provisions described in the Statement of Acceptance on form MECH-1-A

Name:		
Company:		
Signature:		Date:

INSTALLER CERTIFICATION Part 2 of 3 MECH-5-A

PROJECT NAME	DATE
SITE ADDRESS	PERMIT NUMBER

COPY TO: Building Department, Builder, Building Owner at Occupancy, HERS Provider

VERIFIED DUCT TIGHTNESS BY INSTALLER

The installing contractor must pressure test every new HVAC systems that meet the requirements of Section 144(k) and every retrofit to existing HVAC systems that meet the requirements of section 149 D or E (see Scope of Test under Construction Inspection)

RATED FAN FLOW (applies to all systems)		Measured Values	
1	Cooling capacity or for heating only units heating capacity		
	a) Cooling capacity (for all units but heating only units) in tons		
	b) Heating capacity (for heating only units) kBtu/h		
2	Fan flow calculation a) Cooling capacity in tons [_____(**Line # 1a**) x 400 cfm/ton] b) Heating only cap. kBtu/h [_____(**Line # 1b**) x (21.7 cfm/kBtu/h)]		
3	**Total calculated supply fan flow 2(a) or 2(b) cfm**		

NEW CONSTRUCTION OR ENTIRE NEW DUCT SYSTEM ALTERATION:			
	Duct Pressurization Test Results (CFM @ 25 Pa)		
4	Enter Tested Leakage Flow in CFM:		✓ ✓
5	Pass if Leakage Percentage ≤ 6%: [_____(**Line # 4**) /_____(**Line # 3**)] x 100	%	☐ Pass ☐ Fail
ALTERATIONS: Pre-existing Duct System with Duct Alteration and/or HVAC Equipment Change-Out			
6	Enter Tested Leakage Flow in CFM: **Pre-Test** of Existing Duct System Prior to Duct System Alteration and/or Equipment Change-Out.		
7	Enter Tested Leakage Flow in CFM: **Final Test** of New Duct System or Altered Duct System for Duct System Alteration and/or Equipment Change-Out.		
TEST OR VERIFICATION STANDARDS: For Altered Duct System and/or HVAC Equipment Change-Out Use one of the following Three Tests or Verification Standards for compliance:			
			✓ ✓
8	Pass if Leakage Percentage ≤ 15% [_____**(Line # 7)** / _____**(Line # 3)**] x 100	% %	☐ Pass ☐ Fail
9	Pass if Leakage Reduction Percentage ≥ 60% Leakage reduction = [1 - [_____**(Line#7)** / _____**(Line#6)**]} x 100	% %	☐ Pass ☐ Fail
10	Pass if all Accessible Leaks are sealed as confirmed by Visual Inspection and Verification by HERS rater (sampling rate 100%)		☐ Pass ☐ Fail
	Pass if One of Lines #8 through # 10 pass		☐ Pass ☐ Fail

INSTALLER COMPLIANCE STATEMENT

The building was: ✓ ☐ Tested at Final ☐ Tested at Rough-in

✓ ☐ I, the undersigned, verify that the above diagnostic test results and the work I performed associated with the test(s) is in conformance with the requirements for compliance credit. I, the undersigned, also certify that the newly installed or retrofit Air-Distribution System Ducts, Plenums and Fans comply with Mandatory requirements specified in Section 124 of the 2005 Building Energy Efficiency Standards.

Name:		
Company:		
Signature:		Date:

INSTALLER CERTIFICATION Part 3 of 3 MECH-5-A

HERS Rater: Telephone:	Sample Group Number:
Certifying Signature:	Sample building Number:
Firm:	HERS Provider:
Copies to: Builder, Building Owner at Occupancy, Building Department (wet signature), HERS Provider	

For new buildings the HERS rater must test and field verify the first individual single zone package space conditioning equipment unit of each building. After the first unit passes the builder shall identify a group of up to seven package units in the building from which one sample will be selected for testing. If this first sampled unit fails the HERS rater must pick another package unit from the group for testing. If the second unit in the group does not pass the HERS rater must test all package units in the group.

For existing buildings the HERS rater must pressure test one out of every seven units a contractor changes. Same rules apply for sampling above.

This page must be filled out by the HERS rater for all tested and sampled buildings. If the installer has not tested every system and provided a MECH-5-A to the HERS rater sampling must not occur.

The unit was: ✓ ☐ Tested ✓ ☐ Approved as part of sample testing but was not tested

As the HERS rater providing diagnostic testing and field verification, I certify that the building identified on this form complies with the diagnostic tested compliance requirements as checked ✓ on this form. The HERS rater must verify the distribution system on every new TESTED system to make sure that it is fully ducted and correct tape is used before a MECH-5-A may be released.

☐ The installer has provided a completed MECH-5-A for every system in the group
☐ New distribution systems are fully ducted (i.e., does not use building cavities as plenums or platform returns in lieu of ducts).
☐ In new duct systems, where cloth backed, rubber adhesive duct tape is installed, mastic and draw bands are used in combination with cloth backed, rubber adhesive duct tape to seal leaks at duct connections.

	RATED FAN FLOW (applies to all systems)	Measured Values	
1	Cooling capacity or for heating only units heating capacity		
	a) Cooling capacity (for all units but heating only units) [_____ tons x 400 cfm/ton]		
	b) Heating capacity (for heating only units) [_____ kBtuh x 21.7 cfm/kBtuh]		
2	**Total calculated supply fan flow 1(a) or 1(b) cfm**		
	NEW CONSTRUCTION OR ENTIRE NEW DUCT SYSTEM ALTERATION:		
3	Duct Pressurization Test Results (CFM @ 25 Pa) Enter Tested Leakage Flow in CFM:		✓ ✓
4	Pass if Leakage Percentage ☐ 6%: [_____(**Line # 3**) / _____(**Line # 2**)] x 100	%	☐ Pass ☐ Fail
	ALTERATIONS: Pre-existing Duct System with Duct Alteration and/or HVAC Equipment Change-Out		
5	Enter Tested Leakage Flow in CFM: **Final Test** of New Duct System or Altered Duct System for Duct System Alteration and/or Equipment Change-Out.		
	TEST OR VERIFICATION STANDARDS: For Altered Duct System and/or HVAC Equipment Change-Out, Use one of the following Three Tests or Verification Standards for compliance:		
6	Pass if Leakage Percentage ☐ 15% [_____**(Line # 5)** / _____**(Line # 2)**] x 100	%	☐ Pass ☐ Fail
7	For systems certified by the installer as reducing leakage, pass if Leakage Reduction ☐ 60%. $\text{LeakageReduction} = 1 - \frac{\text{(Line \#5 HERS Tested Leakage)}}{\text{(Line \#6 Installer's Certified Pre-Test Leakage)}}$] x 100	%	☐ Pass ☐ Fail
8	Pass if all Accessible Leaks are sealed as confirmed by Visual Inspection and Verification by HERS rater (sampling rate 100%)		☐ Pass ☐ Fail
	Pass if One of Lines # 6 through # 8 pass		☐ Pass ☐ Fail