Home Performance Analyst (HPA)

Update on BPI/RESNET Dual Certification

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What is the HPA?

- A “dual” certification of BPI and RESNET
- The HPA certification will be based on a common standard that is now under development
- It will be administered by either organization
- The credential will be presented by both organizations

Why Have an HPA?

- Reduce confusion on terminologies
- Greater national coverage
- Stronger support to home performance contracting work
- Ability to offer independent, third-party QA on home performance contracting
- Verification for energy and environmental savings (e.g., for performance-based tax credits)

Opportunities for Building Analysts with the HPA

- Modeling and Simulation
- Rating of New Homes
- Assisting ENERGY STAR Builders Understand Health and Safety Issues

Opportunities for Raters with the HPA

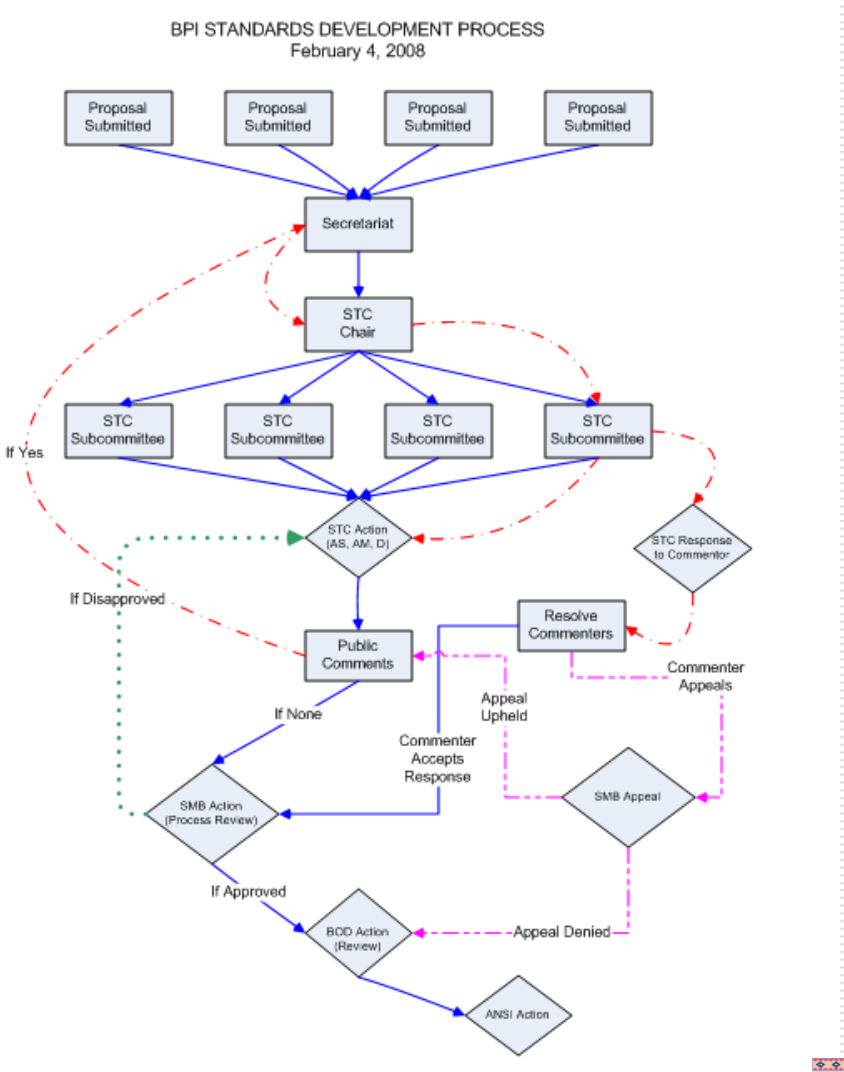
- Diagnostic testing relating to specific health and safety concerns
- Development of scopes of work relating to home performance jobs
- Opportunity to provide oversight on home performance work
- Participation in the BPI Quality Assurance Program as a QA Provider

How Does the Process Work?

- BA and Rater Standards Review (Done)
- Development of a Draft Common Standard (Done)
- Internal Board Level Review (Done)
- Draft Standard Out for Public Review (Pending)
- Alignment of Training and Testing to the New Standard (Pending)
- Implementation (Early Summer)

Standards Development

- ANSI Standards Development Organization (SDO)
- ANSI 17024 Accreditation for the HPA Certification



Testing In

Home Performance begins with a testing in procedure that is defined in the BPI Standards. The HPA helps clarify the front end testing process.

Testing In & Testing Out Requirements for BPI Accredited Contractors

Testing Requirements according to BPI Building Analyst Standards (v: 2/28/05 mda)

Testing Required*	When Required	Ref Pg	Additional Information	Ref Pg
Pre and post blower door tests (included in workscope)	When air sealing, enclosed cavity insulation representing 15% or more of the total building shell area, or sealing of the ducts outside the thermal envelope are recommended	3	A blower door test must be completed before and after installation of any of the following measures: Attic insulation, in order to quantify improvements to the air barrier between the attic and the living space. Enclosed cavity insulation representing an area greater than 15% of the total building shell area. Air sealing. Sealing of ductwork located outside the building envelope or significant duct modifications within the building envelope.	6
Pre and post safety inspection of all combustion appliances (Oven, Worst Case, spillage, draft, CO)	Whenever changes to the building envelope and/or heating system are part of the work scope	3, 17	A preliminary and post-installation safety inspection of all combustion appliances must be completed whenever changes to the building envelope and/or heating system are part of the work scope. This inspection includes all of the following tests: carbon monoxide (CO) measurement at each appliance, draft measurement and spillage evaluation for atmospherically vented appliances, and worst-case negative pressure measurement for each combustion appliance zone (CAZ).	17
Gas leak detection	In homes with natural gas/propane service	3	The entire gas/propane line must be examined and all leaks repaired. Particular care should be made in the immediate vicinity of the appliances and at the joints, shutoff valves, and pilot lines. Identify leaks using a gas leak detector and accurately locate the source of the leak using a soap bubble solution.	11
Pre and post duct leakage testing	When duct sealing is recommended	17	When duct sealing is recommended, the work scope must include pre and post-installation duct leakage and system airflow testing.	17
Minimum airflow calculation	Whenever changes to the building shell requiring a blower door test are part of the work scope	4		

* "Testing Required" refers only to diagnostic testing with test equipment, and not to any form of visual inspection

Testing In & Testing Out Requirements for BPI Accredited Contractors

Testing Requirements according to BPI Shell Specialist Standards (v: 2/05/03 mda)

Testing Required	When Required	Ref Pg	Additional Information	Ref Pg
Pre and post blower door tests (included in workscope)	When air sealing, enclosed cavity insulation representing 15% or more of the total building shell area, or sealing of the ducts outside the thermal envelope are recommended	3	Blower door tests must be performed before and after the installation of any of the following measures: Attic insulation, in order to quantify improvements to the air barrier between the attic and the living space. Enclosed cavity insulation representing an area greater than 15% of the total building shell area. Air sealing. Sealing of ductwork located outside the building envelope or significant duct modifications within the building envelope.	4
Pre and post safety inspection of all combustion appliances (Oven, worst-case, spillage, draft, CO)	When a mechanical ventilation system is installed in a building where combustion appliances are present	3	When a mechanical ventilation system is installed in a building where combustion appliances are present, a complete post-installation combustion safety diagnostic must be conducted and conditions must meet all minimum safety requirements for draft, spillage, and CAZ depressurization as established in the BPI Building Analyst I Standards.	4
Pressure diagnostics (series leakage, add-a-hole)	Before and after installation of attic insulation and/or ventilation to ensure an effective air barrier exists between the attic and living space	3	The effectiveness of the air barrier shall be determined using the following techniques: Pressure differential diagnosis, including: series leakage tests and/or "add a hole" method where applicable. (Refer to the blower door instruction manual for details on how to perform these tests.) Visual inspection of the attic. Visual indicators include all of the following: Inspect the attic floor underneath the insulation to locate thermal by-passes and cavities requiring air sealing. Inspect for areas where moisture migration into the attic is apparent and determine the source of the moisture. Insulation that has turned black is an indicator of air movement through the insulation.	5
Pre and post duct Leakage testing	When duct sealing is part of the workscope	7	Duct leakage must be quantified before and after duct sealing installations. These tests may be performed by the inspector or the installer. The results of these tests must be documented and used to verify the effectiveness of the installation.	7

Testing In & Testing Out Requirements for BPI Accredited Contractors

Testing Requirements according to BPI Heating Specialist Standards (v: 11/20/07 mda)

Testing Required	When Required	Ref Pg	Additional Information	Ref Pg
Gas leak detection	In homes with natural gas/propane service	3	The entire gas line must be examined and all leaks repaired. Particular care should be made in the immediate vicinity of the appliances and at the joints, shutoff valves, and pilot lines. Identify leaks using a gas leak detector and accurately locate the source of the leak using a soap bubble solution.	8
Duct leakage testing	New installations; quantifying leakage, before work is done on a heating plant or ductwork	4	New installations of ducted distribution systems must be tested for leakage using a duct leakage testing device and duct tightness must meet or exceed the requirements set forth in the EPA standards for Energy Star Ducts. The sum of the supply and return leakage to outside, measured in cfm25, divided by the fan flow shall be no more than 10%. When quantifying duct leakage, an appropriate type of measurement system shall be used, which includes a metered and calibrated duct pressurization device.	4, 9, 10
Safety inspection of combustion appliances (Worst-case, spillage, draft, CO)	Heating plant replacement	5	Water heaters may not be left venting alone into a previously shared chimney without ensuring the chimney meets appropriate NFPA requirements under the new condition and the water heater has been tested and passed all required combustion safety tests (spillage, draft, CAZ depressurization).	5
Blower door test	Heating plant replacement	5	When atmospherically vented combustion appliances are replaced with sealed combustion units, an exhaust appliance has been removed from the home. To ensure that the building will have adequate air exchange after this retrofit, a blower door test must be completed and mechanical ventilation installed as needed to provide ventilation levels compliant with ASHRAE Standard 62-89. This procedure must be followed even if no alterations to the building shell are anticipated as part of the work scope.	5
Combustion gas analysis	For all heating plants	5	A combustion gas analysis is required on oil-fired and gas-fired furnaces and boilers, any time replacement or repair is not part of the intended work scope.	5
Temperature rise	Before and after work is performed	9	Forced air furnaces must be tested using a heat rise measurement.	9

Testing In & Testing Out Requirements for BPI Accredited Contractors

Testing Requirements according to BPI A/C, Heat-Pump Specialist Standards (v 1.1: February 2003, ckm)

Testing Required	When Required	Ref Pg	Additional Information	Ref Pg
Electrical test	During related inspection	17	Existing wiring systems must be inspected for safe installation and compliance with applicable codes. This inspection should include, but is not limited to: Checking for obvious loose connections; visual inspection of contactor contacts to verify good condition (no pitting, etc.); properly sized wire gauge as required by the circuit amp draw.	17
Electrical test	During related inspection	17	Voltage drop across contacts and relays may not occur. If a voltage drop is measured, the source must be located and corrected.	17
Duct airflow testing	During related inspection	17	System airflow may be measured using a metered and calibrated pressurization device, a metered and calibrated flow plate, or a flow capture hood designed for the flow range anticipated.	17
Duct leakage testing	When duct sealing is part of the work scope	17, 18	Pre- and post-installation duct leakage shall be measured any time that duct sealing is part of the work scope to verify the success of the installation. When quantifying duct leakage, a measurement system that includes a metered and calibrated duct pressurization device shall be used.	17, 18
Refrigerant charge	During related inspection	18	Refrigerant charge may be measured using the following methods: Use sub-cooling method for TXV-equipped systems, Use superheat method for non-TXV-equipped systems, (Alternative manufacturer-specific procedures may be allowable. Submit alternative procedures to BPI for review and approval.), If airflow is changed, the refrigerant charge must be retested.	18

What Happens to the BPI Standards?

- Building Analyst designation will continue (standards will be updated)
- Other BPI Standards remain in effect (e.g., shell/envelope, heating, and ac/heat pump)
- RESNET presumably will continue to maintain standards for the energy rater

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