BALTIMORE GAS AND ELECTRIC COMPANY (BGE)

Residential HVAC Quality Installation (a BGE Smart Energy Savers Program℠)

2009 Performance Worksheet

BGE We're on it.℠

This Performance Worksheet must be uploaded as a supporting document to the Rebate Application.

I. Contractor Information

Company Name:	Telephone Number:
Technician Name:	Service Date:

II. Customer Information

Customer Name:	BGE Account Number:
Address:	City/State/ZIP:

III. Design

Check all that apply:	☐ A/C	☐ Heat Pump	☐ Gas Furnace
Area of zone covered by unit: _____ Sq. Ft.	Number of systems in home: _____		
Heat Gain/Heat Loss Calculation Method:	☐ ACCA Manual J (Version 7)	☐ ACCA Manual J (Version 8)	☐ Other (indicate type): _____
Note: For existing residential buildings, without contractor modification of the existing duct system, only block load heat gain/heat loss load calculations are required.			
Duct Design Method:	☐ ACCA Manual D	☐ None	☐ Other (indicate type): _____
Equipment Specification Method:	☐ ACCA Manual S	☐ OEM Recommendation	☐ Other (indicate type): _____

IV. Installed Central A/C or Heat Pump Equipment

Type of Installation: ☐ Replacement – Failed Unit ☐ Replacement – Operating Unit ☐ New System – Existing Home

Condenser/Outdoor Unit:	Manufacturer:	Tonnage:
	Model Number:	SEER:
	Serial Number:	EER:
	Cooling Capacity (Btuh):	HSPF:
	Heating Capacity (Btuh) @ 47 °F:	AHRI Number:
	Cooling and Heating Capacity (Btuh) should match the information on the AHRI Certificate	
Coil/Indoor Unit:	Manufacturer:	
	Model Number:	Serial Number:

V. Installed Gas Furnace Equipment

Gas Furnace:	Manufacturer:	AFUE:
	Model Number:	Serial Number:
	Input Btuh:	Output Btuh:
	ECM or ICM: ☐ Yes ☐ No	Indicate Type: ECM ☐ or ICM ☐
	AHRI/GAMA Ref. Number: _____	

VI. Gas Combustion Test

Return air: _____ °F DB	Supply air: _____ °F DB	
Orifice size:	Manifold pressure: _____ IWC	Gas meter dial size:
Gas meter seconds for one revolution of meter:	Low:	High:

VII. Gas Meter Test Calculations

Indicate high fire gas rate (from meter lookup tables):			
Indicate actual high fire rate:			
Indicate temperature rise at high fire rate:			
O2:	CO:	Stack temperature: _____ °F	Draft pressure: _____ PSI

VIII. Combustion Venting System

Vent system sizing per one of the following: ☐ OEM instructions ☐ National Fuel Gas Code (NFGC, NFPA 54) ☐ International Fuel Gas Code (IFGC) ☐ Local building code requirements

IX. Combustion Appliance Zone (CAZ) Safety Check

CO detector in mechanical room? ☐ Yes ☐ No	CAZ with regard to outside: _____ PA	Ambient CO in CAZ: _____ PPM	
Pre-test Natural Conditions:	CO in flue Domestic Hot Water: _____ PPM	Heat: _____ PPM	Pass Spillage Test: ☐ Yes ☐ No
Pre-test Worst Case Conditions (all exhaust fans and dryer on):	CO in flue Domestic Hot Water: _____ PPM	Heat: _____ PPM	Pass Spillage Test: ☐ Yes ☐ No
Post-test Natural Conditions (after duct sealing):	CO in flue Domestic Hot Water: _____ PPM	Heat: _____ PPM	Pass Spillage Test: ☐ Yes ☐ No
Post-test Worst Case Conditions (after duct sealing):	CO in flue Domestic Hot Water: _____ PPM	Heat: _____ PPM	Pass Spillage Test: ☐ Yes ☐ No

In the event the Combustion Appliance Zone (CAZ) spillage test fails then corrective action is required.

X. Air Flow Tests

Measured air volume at evaporator: _____ CFM	Indicate whether the test was performed in cooling or heating mode: ☐ Heating ☐ Cooling	
Static Pressure:	Return: _____ IWC	Measurement location:
	Supply: _____ IWC	Measurement location:
Measurement Method:	☐ Pressure Matching Method ☐ Anemometer ☐ Flow Grid ☐ Fan Curve ☐ TESP/Blower Table Method ☐ Temperature Rise Method (Heating only) ☐ Other Equivalent (indicate method): _____	

XI. Refrigerant Tests

Outdoor ambient temperature (at condenser): _____ °F DB

Air temperatures are measured in the ductwork near the evaporator and not in conditioned space

Cooling Mode:	Return: _____ °F DB	_____ °F WB
	Supply: _____ °F DB	_____ °F WB
Heading Mode:	Return: _____ °F DB	
	Supply: _____ °F DB	
Refrigerant Calculations:	Liquid line pressure: _____ PSI	Liquid line temperature: _____ °F DB
	Suction line pressure: _____ PSI	Suction line temperature: _____ °F DB
	Subcooling (condensing temperature minus liquid line temperature):	_____ °F DB
	Superheat (suction line temperature minus evaporating temperature):	_____ °F DB
For TXV – Must be +/- 3 °F of goal	OEM subcooling goal: _____ °F DB	
	Subcooling deviation (subcooling minus subcooling goal): _____ °F DB	
For Fixed Orifice – Must be +/- 5 °F of goal	Superheat goal: _____ °F DB (from superheat lookup tables, based on outdoor ambient and return air wet bulb temperatures)	

XII. Duct Leakage

(A) Measured airflow (from Air Flow Tests section above): _____ CFM

(B) Existing system duct leakage: _____ CFM Leakage % reduction [(B minus C)÷B] X 100: _____ CFM

(C) Post installation duct leakage: _____ CFM Total % leakage (C÷A) X 100: _____ CFM

XIII. Electrical Measurements

	Volts	Amps	Watts
Blower Motor			
Compressor & Condenser Fan (indicate total of both units)			
Total System			

Meets ACCA Quality Installation Section 4.3? ☐ Yes

The contractor shall provide evidence of the following:

a) LINE and LOW VOLTAGES per equipment (single and three-phase) rating plate – the percentage (or amount) below or above nameplate values are within OEM specifications and/or code requirements

b) AMPERAGES per equipment (single and three-phase) rating plate – the percentage (or amount) below or above nameplate values are within OEM specifications and/or code requirements

c) LINE and LOW-VOLTAGE wiring sizes per NEC (National Electric Code) or equivalent

d) GROUNDING/BONDING per NEC or equivalent

XIV. System Controls

Meets ACCA Quality Installation Section 4.6? ☐ Yes

The contractor shall provide evidence of the following:

a) Operating controls and safety controls are compatible with the system type and application, and the selected controls are consistent with OEM recommendations and industry practices, and

b) Operating controls and safety controls lead to proper sequencing of equipment functions, with all controls and safeties functioning per OEM or customer design specifications

Note: Examples of operating controls include thermostats, humidistats, economizer controls, etc. Examples of safety controls include temperature limit switch, airflow switch, condensate overflow switch, furnace limit switch, boiler limit switch, etc.

XV. System Documentation & Owner Education

A copy of this report and OEM manuals were left with owner.

A system operation was demonstrated for the owner.

For additional assistance regarding this form, please contact ResidentialHVAC@BGESmartEnergy.com or call 410.290.1214.

For more information about the program, go to BGESmartEnergy.com

This program supports the EmPOWER Maryland Energy Efficiency Act.

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