

ENERGY AUDITOR FIELD GUIDE - 2024 PILOT

(INSERT HYPERLINK) Standards of Reference: Section X of the Energy Auditor Scheme Handbook

11/7/2024

Exterior Evaluation

1. **GATED ITEM** Candidate prepared combustible gas and carbon monoxide (CO) measurement instruments per manufacturer's instructions
2. Candidate determined building orientation **and** discussed its impact on the building
3. Candidate identified the cladding materials for siding, foundation, and roofing
4. Candidate assessed and discussed potential lead-based paint hazards
5. Candidate assessed possible components or issues that could affect the structural integrity of the building
If no issues are identified, candidate discussed components or issues that could affect the structural integrity of the building
6. Candidate identified **one** exterior combustion appliance venting termination or **one** mechanical penetration

Interior Evaluation

1. **GATED ITEM** Candidate tested indoor ambient carbon monoxide levels (CO), verbally stated the readings **and** took appropriate action according to the current standard of reference
2. Candidate tested indoor ambient air for combustible fuel gases on each floor, verbally stated the readings **and** took appropriate action according to the current standard of reference
3. Candidate determined the presence and condition of smoke and carbon monoxide detectors
4. Candidate identified and assessed potential air leakage locations
5. Candidate identified or discussed presence and placement of vapor retarders
6. Candidate assessed and identified moisture issues
If no issues are identified, candidate discussed potential moisture issues
7. Candidate assessed and identified potential electrical hazards
If no issues are identified, candidate discussed potential electrical hazards
8. Candidate assessed and identified evidence of pest/vermin infestations
If no issues are identified, candidate discussed potential evidence of pest/vermin infestations
9. Candidate assessed the building for evidence of structural damage or water damage
If no issues are identified, candidate discussed potential evidence of structural damage or water damage
10. Candidate verified that clothes dryer is properly vented to the exterior **and** determined if venting materials are appropriate to the appliance type
If venting is inaccessible, candidate discussed proper venting conditions and venting materials appropriate for the appliance type

Interior Evaluation (cont.)

11. Candidate assessed the building for conditions that would interfere with or prevent blower door testing
If no issues are identified, candidate discussed conditions that would interfere with or prevent blower door testing
12. Candidate assessed the building for hidden or inaccessible spaces
If none are identified, candidate discussed commonly found hidden or inaccessible spaces
13. Candidate conducted combustion gas leak testing according to current version of ANSI/BPI-1200 for 1-2 minutes **and** on at least 3 fittings.
14. Candidate recommended leak detection solution to verify positive reading from detector
15. Candidate identified or discussed possible deficiencies in the fuel supply lines

Doors and Windows

1. Candidate assessed **one** exterior door, including type **and** material
2. Candidate assessed condition of **one** exterior door, including evaluation of hardware, door sweep, seals, and operation
3. Candidate accurately measured **one** window or **one** door
4. Candidate assessed **one** exterior window type
5. Candidate assessed **one** exterior window frame material
6. Candidate assessed **one** exterior window glazing type
7. Candidate assessed condition of **one** exterior window, including evaluation of hardware, seals, and operation
8. Candidate assessed **one** type of existing interior shading **and one** type of existing exterior shading
If no shading exists, candidate discussed **one** type of interior **and one** type of exterior shading
9. Candidate assessed thermal characteristics of **one** exterior window **and one** exterior door

Walls

1. Candidate assessed wall types, including structure, interior **and** exterior finishes
2. Candidate assessed wall thickness and/or cavity depths
3. Candidate assessed presence **and** type of wall insulation
If wall insulation is not accessible, candidate described how to safely determine insulation type

Attic

1. Candidate assessed attic insulation type **and** depth
2. Candidate assessed attic insulation condition **and** coverage
3. Candidate identified and assessed location of existing thermal boundary and alignment with pressure boundary

Mechanical Ventilation

1. Candidate identified existing mechanical ventilation type(s) **and** controls
2. Candidate verified that exhaust fans are properly vented to the exterior (or discussed if not accessible)
3. Candidate assessed the condition of the ventilation ductwork (or discussed if not accessible)
4. Candidate accurately measured existing flow rate of **one** ventilation fan

Appliance and Base Load

1. Candidate collected manufacturer's data plate information from **one** electric appliance
2. Candidate assessed lighting and identified bulb type, wattage, fixture, and usage for **one** lamp/luminaire
3. Candidate correctly identified the amperage rating of the main electrical panel (or discussed if main electrical panel is not accessible)
4. Candidate identified or discussed additional base-load appliances that use energy
5. Candidate measured or discussed how to measure the flow rate of a showerhead or faucet

Heating, Cooling and DHW Equipment

1. Candidate identified heating/cooling system type(s) **and** fuel type
2. Candidate collected manufacturer's data plate information from **one** of the following: heating, ventilation, air conditioning, or water-heating appliance
3. Candidate identified location, type, and appliance(s) served by **one** thermostat
4. Candidate identified safety features related to **one** HVAC appliance
5. Candidate identified existing heating/cooling system health and safety concerns
If none are present, candidate discussed potential heating/cooling system health and safety concerns
6. Candidate assessed general condition of combustion appliances **and** assessed the condition, configuration, material and pitch of the venting
7. Candidate evaluated the distribution system integrity
8. Candidate assessed opportunities for distribution system insulation
9. Candidate identified water heating appliance type **and** fuel type
10. Candidate identified existing water-heating appliance health and safety concerns
If none are present, candidate discussed potential water-heating appliance health and safety concerns
11. Candidate identified safety features related to water-heating appliance

Combustion Appliance Zone (CAZ) Testing

1. Candidate identified combustion appliance zone(s) (CAZ)
2. Candidate properly set up home for CAZ testing
3. Candidate correctly set up manometer and tubing

Combustion Appliance Zone (CAZ) Testing (cont.)

4. Candidate correctly measured initial pressure (baseline) differential in the CAZ with reference to outside
5. Candidate turned on all exhaust appliances and recorded or verbally stated the reading
6. Candidate checked the impact of the HVAC air handler in the CAZ and recorded or verbally stated the reading
If the air handler cannot run independently, candidate must discuss potential impact of air handler operation within the CAZ
7. Candidate configured **all** interior doors, including CAZ door, to create greatest CAZ depressurization **and** recorded or verbally stated the reading
8. Candidate identified conditions causing greatest CAZ depressurization
9. Candidate checked for spillage in **one** appliance under greatest CAZ depressurization **and** stated time limits for spillage testing based on current version of ANSI/BPI-1200
10. Candidate determined if the appliance passes the spillage test
11. Candidate made appropriate recommendations for the CAZ according to current version of ANSI/BPI-1200

Combustion Safety and Efficiency Testing, Oven and Stovetop Testing

1. **GATED ITEM** Candidate tested indoor air levels for carbon monoxide throughout combustion safety and efficiency testing **and** took appropriate action according to current standard of reference. Candidate verbally stated the readings
2. Candidate accurately measured CO in the flue gases of **one** natural draft vented appliance at the time interval specified in current version of ANSI/BPI-1200
3. Candidate applied correct action level based on test results for CO in the flue of the appliance, referencing current version of ANSI/BPI-1200
4. Candidate accurately measured **and** evaluated Steady State Efficiency of heating system
5. Candidate accurately measured temperature rise in heating system **and** compared result to manufacturer's specified range
6. Candidate checked for items, excessive debris inside oven
7. Candidate used appropriate sampling location for the oven test and obtained accurate CO measurement at the time interval specified in current version of ANSI/BPI-1200
8. Candidate applied correct action levels in current version of ANSI/BPI-1200 based on test results for CO in oven
9. Candidate visually inspected stovetop burners for flame quality

Blower Door Testing

1. **GATED ITEM** Candidate ensured that combustion appliances cannot fire during blower door testing
2. Candidate verified solid fuel appliances are in the appropriate condition to allow for blower door testing to be performed
If solid fuel combustion appliances are not present, candidate discussed appropriate conditions for blower door testing
3. Candidate correctly set up the blower door frame/shroud/fan
4. Candidate correctly set up house in accordance with one of the approved methods listed in current version of ANSI/BPI-1200
5. Candidate correctly set up the manometer and tubing

Blower Door Testing (cont.)

6. Candidate correctly measured baseline pressure differential
7. Candidate conducted test to obtain an accurate CFM50 reading
8. Candidate correctly interpreted the blower door reading **and** discussed recommendations
9. Candidate correctly performed single point zonal pressure differential of one zone **and** interpreted results
10. Candidate correctly performed pressure pan test on **one** duct register **and** interpreted results
11. Candidate determined **two** points of infiltration/exfiltration with blower door running

Duct Pressurization Testing

1. Candidate demonstrated how to connect duct tester fan to distribution system correctly (do not turn on fan)
2. Candidate correctly set up manometer, tubing, and probe for duct testing
3. Candidate demonstrated how to temporarily seal **one** duct register
4. Candidate discussed procedure for conducting full duct pressurization test
5. Candidate discussed applicable standard(s) for interpreting duct tester diagnostic results
6. Candidate discussed how to prioritize repairs