Envelope Field Guide

2	**Health and Safety**
Identified existing moisture-related problems	
	Appropriate identification of foundation/basement moisture issues
	Appropriate identification of living space moisture issues
Identified any existing indoor air contaminant sources	
Identified existing fire hazards	
Accurately identified structural problems in relationship to retrofitting insulation and/or performing air sealing	
3	**Combustion Safety Tests**
Correctly identified heating / cooling system types	
	e.g., Atmospheric, sealed combustion, power vented, etc
Correctly identified basic heating / cooling system operating components	
	e.g., burner, valves, supply, return, etc
Visual inspection of venting system for problems	
	Determined condition accurately
Indentified existing heating/cooling system components safety concerns	
	e.g. P&T valve, blow off discharge, fire hazards, exposed wires
Set up for natural conditions	
	Proper manometer setup
Correctly measured baseline pressure differential	
Correctly setup home in worst case condition	
	All exhaust appliances running
	Correct door closures - measured quantitatively or qualitatively
	Air handler operation impact checked
Correctly measured worst-case CAZ depressurization	
Took into account baseline pressure differential	
Calculated minimum draft pressure based on existing weather conditions	
Checked for worst case spillage in heating system	
	method used_e.g., mirror, smoke, etc
Checked for worst case spillage in DHW	
	method used_e.g., mirror, smoke, etc
Correctly identified time limits for spillage based on BPI Standards – Ask candidate	
Correctly determined if the appliance passes the spillage test	
What steps should be taken if it does not pass	
Performed worst case draft test on heating system	
	Proper probe placement
Performed worst case draft test on DHW	
	Proper probe placement
Candidate performed testing under natural conditions (use sections above to assess)	
	(only necessary if spillage detected under worst case)
Made appropriate recommendations according to BPI standards (using right table)	
Compared diagnostic results to appropriate table in the standards	

Identified the need for further evaluation when other combustion sources exist (fireplace, space heater, etc)	

3	**CO Testing**
Tested ambient CO outdoors	
Properly interpreted measurements	
Tested ambient CO indoors	
Properly interpreted measurements	
Measured heating system flue gas CO during combustion safety testing	
- Proper probe placement, before mixing with ambient air, appropriate to venting type	
Measured DHW flue gas CO during combustion safety testing	
- Proper probe placement, before mixing with ambient air	
Appropriate application of BPI action levels based on test results for CO in flue	
Correctly identified Action Levels based on worst case CO results – Ask candidate	
Monitored ambient CO levels in the CAZ during entire combustion safety tests	
Tested for CO in oven	
Checked for items, excessive debris inside oven	
Oven test sampling location appropriate	
Appropriate application of BPI action levels based on test results for CO in oven	

3	**Infiltration Evaluation**
Combustion appliances set to pilot or disabled	
Proper set-up of the blower door frame/shroud/fan	
Proper set-up of the manometer	
Proper house set-up for testing	
Correctly measured baseline pressure differential	
Accurate CFM50 measurement	
Measured existing ventilation fan flow	
Discussed ventilation needs in relation to existing fans	
Conducted sample room by room inspection with blower door running	
Recommended air sealing appropriately	
Mentioned: Top plates and penetration through top and bottom floor	
Recommended mechanical ventilation appropriately	
Mentioned need for further pressure differential testing as appropriate	
Properly identified significant cellar/crawl space leakage locations - Onsite	
Described proper method on sealing a specific location	
Described proper material for sealing a specific location	
Properly identified significant attic leakage locations - Onsite	
Described proper method on sealing a specific location	
Described proper material for sealing a specific location	
Properly identified significant exterior wall leakage locations - Onsite	
Described proper method on sealing a specific location	
Described proper material for sealing a specific location	
Properly identified significant leakage locations with attached garages- Onsite	
Described proper method on sealing a specific location	
Described proper material for sealing a specific location	
Zonal pressure differential testing performed	
Manometer set up correct	
Correctly interpreted results	

5	**Insulation**
Identified opportunities for adding insulation	

	Cost-effective	
	Appropriate material selection	
	Appropriate technique described	
Specifically noted area benefiting from using dense-pack technique or foam		
Indicated areas where baffling may be required to prevent wind washing		
Indicated areas where baffling may be required for fire protection		
Demonstrated understanding of air/thermal barrier alignment		
	Showed example of alignment	
Identified need for additional attic ventilation based on BPI Standards		
5	**Duct Sealing**	
Demonstrated ability to perform duct leakage diagnostics with pressure pan		
	Appropriate manometer set up	
	Appropriate interpretation of test result	
	Appropriate recommendation for repair	
Demonstrated ability to identify duct leakage locations		
	Demonstrated ability to prioritize repairs	
	Appropriate materials selected for repairs	
	Appropriate method selected for repair.	
2	**Test Out**	
Candidate identified need for blower door testing after changes to building shell		
Candidate identified need for CAZ testing after any retrofit work		
Candidate identified need for other diagnostic testing needs after any retrofit work		

Notes: