



# HEATING Field Guide

## Health and Safety

Identified existing moisture-related problems  
     Appropriate identification of foundation/basement moisture issues  
     Appropriate identification of living space moisture issues  
 Identified existing any indoor air contaminant sources  
 Identified existing fire hazards  
 Comprehension of interaction of building envelope conditions with duct leakage  
 Comprehension of interaction of building envelope conditions with combustion appliance performance

## Diagnostic Tests and Inspections

Properly conducted combustion gas leakage testing  
     Appropriate speed for testing  
     Complete 360 degrees for any unions  
     Recommended soapy solution to verify positives

## 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

3

## Combustion Safety Tests

Correctly identified heating / cooling system types  
 Visual inspection of venting system for problems - NON-SCORABLE  
     Determined condition accurately  
 Correctly set up for natural conditions  
 Correctly recorded pressure differential in the CAZ prior to turning on exhaust appliances  
 Correctly setup home in worst case condition - NON-SCORABLE  
     All exhaust appliances running  
     Correct door closures - measured quantitatively or qualitatively  
     Air handler operation impact checked  
 Correctly checked for worst case spillage in heating system  
 Correctly determined if the appliance passes the spillage test  
 Correctly checked for worst case spillage in the domestic water heater  
 Correctly determined if the appliance passes the spillage test

3

## CO Testing

Correctly prepared CO monitor for use while outside of the building  
 Correctly tested ambient CO indoors  
 Correctly measured heating system flue gas CO during combustion safety testing

Correctly measured DHW flue gas CO during combustion safety testing  
Appropriately applied BPI action levels based on test results for CO in the flue (choose DHW or heating system)  
Correctly monitored ambient CO levels in the CAZ during entire combustion safety tests  
Tested for CO in oven - NON-SCORABLE  
Correctly checked for items, excessive debris inside oven  
Oven test sampling location appropriate

#### **Ducted Systems**

Duct Blaster set up appropriately  
    Manometer set-up appropriate  
    Supply tap appropriate  
    Return tap appropriate  
    Accurate measurement  
Made Appropriate Duct Sealing Recommendations - Onsite  
    Demonstrated ability to prioritize repairs  
    Appropriate materials selected for repairs  
    Appropriate method selected for repair.  
Accurately Measured Heat Rise Delta T  
Made Appropriate Heat Rise Correction Recommendations  
Performed Appropriate System Balancing Diagnostic Testing  
Made Appropriate System Balancing Recommendations - Onsite  
Properly conducted Heat Exchanger Inspection  
Recommended Replacement of Heat Exchanger as appropriate  
Inspected Fan on/off Settings  
Made Appropriate Fan Setting Correction Recommendations  
Conducted Steady State Efficiency test

#### **Hydronic Systems**

Evaluated basic system controls  
Evaluated basic system safety devices  
Properly Assessed Zone Configuration  
Assessed Conservation Opportunities  
Assessed performance enhancements  
Identified pipe insulation needs  
Accurately assessed distribution problems  
Conducted Steady State Efficiency test

#### **Heat Loss / Load Calculation**

Discussed heat loss calculation / savings estimates and understands implications  
Accurately identified conservation measures that could impact sizing  
Identified distribution system issues relating to these calculations  
Understands relationship between calculations, current usage and proposed savings

#### **Domestic Hot Water**

Properly evaluated safety devices  
Properly evaluated system efficiency  
    Proper probe placement if measured with analyzer  
Made appropriate recommendation for system improvement or replacement - Onsite  
Made appropriate recommendations for conservation measures - Onsite