

# SMOC Green Jobs Academy

## Crew Leader: Home Inspection & Worst-Case Combustion Safety MASSAVE: see ANSI/BPI Technical Standards for Building Analyst

- ALWAYS CALIBRATE TEST EQUIPMENT OUTSIDE THE HOUSE**
  - Calibrate CO Monitor, Combustible Gas Detector, Combustion Analyzer [VERIFY].
  - Inspect outside fuel sources and distribution: Natural Gas meter and pipes, Oil/Kerosene tank and fill/vent pipes, Propane tank and supply lines.
  
- INSIDE THE HOUSE – IS IT SAFE? Check AMBIENT CO and GAS (15 sec/room)**
  - 35 ppm CO Notify, open windows & doors. Check sources, advise service.
  - **Inspect indoor fuel sources and distribution:**
    - OIL:** Tank, lines, safety shut-offs, burner.
    - GAS and Propane:** If you smell gas, notify homeowner to call the gas company.
  - If required, check all gas lines with gas leak detector, use bubble solution to verify leaks.
  
- **SET HOUSE in NATURAL CONDITIONS**

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  - CLOSE:** All exterior doors & windows.
  - Shut off and seal window AC units.
  - FIREPLACE & WOOD STOVE:** Extinguish, close dampers, cover ashes w/wet paper.
  - OPEN:** Interior doors to rooms with returns, exhaust fans, dryer.
  - TURN OFF** Dryer and Exhaust Fans (bathroom, kitchen, etc.), Central Vacuum.
  - Turn off and leave off: whole-house fans, attic fans, Air Conditioning.
  - DRYER:** Clean filter and check the exterior vent to verify it's not clogged.
  - CLOSE** All other doors.
  - CLOSE** door(s) to Combustion Appliance Zone (CAZ).
  - IN THE CAZ:** Close supply vents, but leave open any dedicated make-up air.
  - TURN to PILOT or TURN OFF:** All vented heaters, domestic hot water.
  - FURNACE FILTER:** Replace, or remove if dirty.
  - MANOMETER:** put the REF hose to Outside and the INPUT (hose) to CAZ,

**FIND WORST-CASE CAZ PRESSURE**

	Natural Conditions	TURN ON Dryer & Exhaust Fans	TURN ON Air Handler
CAZ DOOR CLOSED	1. <input type="checkbox"/> pa	2. <input type="checkbox"/> pa	3. <input type="checkbox"/> pa
CAZ DOOR OPEN			4. <input type="checkbox"/> pa

KEEP THE HOUSE IN WORST-CASE: the *most-negative* pressure.

➤ **SPILLAGE, DRAFT AND CO in COMBUSTION APPLIANCES:**

Minimum Acceptable DRAFT: Outside Temp: \_\_\_\_\_ °F /40 = \_\_\_\_\_ - 2.75 = \_\_\_\_\_ pascals.

<i>Use a Timer</i>	SPILL	DRAFT	CO @ 5 min
<b>MASSAVE LIMIT:</b>	1 min	Minimum	100 ppm
<input type="checkbox"/> 1. TURN ON SMALLEST unit (Input BTU): DHW Tank? Keep all systems running during tests.	pass/fail	pa	ppm
<input type="checkbox"/> 2. TURN ON OTHER units on shared flue: Heaters If Air Handler should be on, wait for it to restart.	pass/fail	pa	ppm
<input type="checkbox"/> 3. RETEST SMALLEST unit for Draft and Spillage.	pass/fail	pa	
<input type="checkbox"/> 4. Test ALL OTHER units if any, for Spillage, Draft, CO	pass/fail	pa	ppm

➤ If Spillage fails, retest in natural conditions.

Turn off all exhaust fans and the air handler and close the CAZ door.

➤ WHEN FINISHED, RESET all appliances, thermostats, dampers, water heater!!, etc.

➤ **STOVETOP BURNERS:** Check flame color for incomplete combustion.

➤ **OVEN:** Empty, remove debris and foil. Turn on exhaust fan or open a window.

TURN ON to 500F, start a **TIMER** to test CO at 5 minutes.

Stay nearby to monitor the Ambient CO.

At 5 MIN, TEST OVEN CO: \_\_\_\_\_ Passes if < 100 ppm.

If 100 – 300 ppm Install CO alarm

If over 300 ppm Add kitchen exhaust - either 100 cfm (switch) or 25 cfm continuous.

➤ **DRYER CO Safety Test:** From outside: \_\_\_\_\_ < 100 ppm as measured passes

If any tests fail, advise homeowner to have serviced by a qualified professional.