

ResCaz Written Exam Reference Material

Standard Explanations

Combustion safety is a complex procedure that is constantly evolving. Below are expanded explanations of six points of the CAZ and Work Scope protocols. Important: these explanations are not a replacement of the standards. Consult the standards in conjunction with these explanations. Note: section numbers refer to Chapter 8 in the RESNET standards (revision date August 3, 2011).

Worst Case Depressurization

1. (807.5) For baseline setup, close all interior and exterior doors in the house. This baseline measurement protocol isolates the CAZ and assesses the impact of ambient factors such as wind, stack effect and temperature on the CAZ alone without interference from the rest of the house. Record the baseline CAZ pressure with respect to outside. Best practice recommends using the hose conduit on the blower door to access outside. Alternative methods such as cracking open windows or doors can impinge hoses, create faulty seals and affect pressure.
2. (807.8) Turn on all exhaust drivers within the house. To determine the worst case position of interior doors, measure the pressure of the room with respect to the main body of the house. Start with rooms/doors furthest away from the CAZ; test the CAZ door, if present, last. Close doors if they make the CAZ more positive or are the same pressure as the CAZ (0 Pa difference between the room and the rest of the house that is connected with the CAZ). Record the worst case pressure of the CAZ with respect to outside and note the door positions.
3. (807.9) An air handler (i.e. furnace fan) can significantly impact individual room pressures as well as the entire house. If an air handler is present, turn it on and re-determine the worst case position of interior doors for each room. Measure the pressure of the CAZ with respect to outside and compare this result to the worst case measurement without the air handler. For worst case, select the pressure that is more negative.
4. If more than one CAZ is present, repeat procedures for each zone separately. Remember to account for the impact of the combustion appliances on each other.

Carbon Monoxide (CO)

1. (808.4) Ambient Carbon Monoxide (CO) levels must be measured throughout testing, especially during Worst Case Appliance Testing. The largest source of ambient CO in a home is often the oven, a typically unvented combustion appliance. Once the oven has reached steady state, remember to measure ambient CO levels in common living areas such as the kitchen, family and dining rooms.

Work Scope

1. The result of combustion safety testing can lead to a variety of different work scope recommendations. The chart on the following page helps to organize those recommendations depending upon the combustion safety testing results.

Combustion Appliance Safety Work Scope Recommendation Table for Naturally Drafting Appliances (Category 1 or 2 according to NFPA standard 54)

Test Condition	Test Results				Work Scope Recommendation
	Worst Case		Natural Conditions		
	CO	Spillage	CO	Spillage	
1	PASS	PASS	N/A	N/A	No action required. Recommend replacement of atmospheric-vented combustion appliances with high-efficiency sealed combustion, direct vent, or power vented appliances when feasible.
2	PASS	FAIL	PASS	PASS	Recommend building pressure remediation, as applicable, and or equipment repair/replacement.
3	PASS	FAIL	PASS	FAIL	Recommend building pressure remediation, as applicable, and or equipment repair/replacement.
4	FAIL	PASS	PASS	PASS	Notify homeowner and recommend immediate equipment remediation and/or replacement.
5	FAIL	PASS	FAIL	PASS	Notify homeowner and recommend immediate equipment remediation and/or replacement.
6	FAIL	FAIL	PASS	PASS	Notify homeowner. Recommend immediate equipment remediation and/or replacement. Recommend building pressure remediation, as applicable.
7	FAIL	FAIL	PASS	FAIL	Notify homeowner. Recommend immediate equipment remediation and/or replacement. Recommend building pressure remediation, as applicable.
8	FAIL	FAIL	FAIL	PASS	Notify homeowner. Recommend immediate equipment remediation and/or replacement. Recommend building pressure remediation, as applicable.
9	FAIL	FAIL	FAIL	FAIL	Notify homeowner and recommend immediate equipment remediation and/or replacement.