Why did the home Inspector say I needed to call in another expert?

When performed correctly, it is assumed that if no problem is found during the Combustion Appliance Zone (CAZ) testing that no combustion or venting related problems are present. However, the negative pressure can be the result of any combination of one or more of the following:

- wind direction and vent/chimney location
- kitchen/bathroom exhaust fans
- clothes dryers
- radon mitigation fans

When a CAZ test indicates the potential for combustion problems: building performance inspectors will generally recommend bringing in a professional HVAC contractor. Trained HVAC technicians can diagnose and repair most combustion related problems.

Why did the home performance expert do a CAZ test?

Many older homes may have preexisting combustion related problems that were never noticed because of the leakage of outside air into the home through cracks, old windows, doors etc. The CAZ test is done to evaluate how the sealing done when your home was tightened up will affect your HVAC system and other combustion appliances. Every combustion appliance requires make up air for the combustion process. Your home needs to be designed to provide the air needed for safe combustion. The weatherization and building performance industry uses CAZ testing methods as an indicator of when the conditions for improper combustion or venting could be present.

How is a CAZ test done?

Most CAZ tests are based on one or more of the procedures listed in a document called: Standard Guide for Assessing Depressurization-Induced Backdrafting and Spillage from Vented Combustion Appliances (ASTME 1998-02(2007). Basically, the house has various doors closed, exhaust fans turned on the pressure differential between the area around the combustion appliance and other areas is then evaluated. If the CAZ area is negative that could mean there is a greater likelihood of combustion problems like brackdrafting and spillage.

What are backdrafting and combustion spillage and Why does negative pressures cause combustion problems?

Combustion spillage happens when the unwanted combustion gas is not fully vented from your home. And will result in combustion gases like carbon monoxide entering into your home. Backdraft is primarily a re- verse movement of air through a combustion appliance. In a worst case, backdrafting can pull the flame outside of the burner assembly. When this happens it is called Flame rollout.

How are combustion problems fixed?

To burn properly all appliances, require the correct mixture of fuel and air and an ignition source. Technicians who work for professional HVAC contractors have the tools and training needed to isolate and resolve combustion related problems. For example, spillage and backdraft are both caused by a lack of available combustion air so a technician might be able to simply adjust the amount of combustion air, or clean out the furnace heat exchanger and the vent system to get your system operating properly again. HVAC technicians have the test equipment needed to identify the source or sources of combustion related problems. Often the actual problem is caused by other appliances that are not properly installed such as gas ovens, hot water heaters, and dryers.

How do I get the other appliances to work properly?

If the problem is with the operation of another appliance an additional repair technician certified on that appliance may need to be called in. In your home, the proper airflow to all of the combustion appliances must be present when they are operating and they must all be operating properly. Failure to allow for the proper amount of air to meet the cumulative appliance and occupant needs can cause unsafe conditions in your home. So it is strongly recommended that you call back the HVAC professional contractor to check your HVAC system and the entire home after any additional repairs are made by appliance repair technicians. Your professional HVAC contractor can then reevaluate the combustion needs and offer you solutions that will address them.

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