



TECHNICAL BULLETIN: DUCT TESTING PREPARATION AND TIPS

An energy efficient home requires an adequately sealed duct system. A duct system that is well-designed and properly sealed can make homes more comfortable, energy efficient, and safer. Leaky ducts can reduce heating and cooling system efficiency by as much as 20%.

When duct leakage results are high, or if the duct system cannot be pressurized, HERS raters can use the following methods to improve testing results. Builders can also use the table below to prepare for testing.

HERS Rater	Builder
Check setup <ul style="list-style-type: none">Most of the time, simple mistakes such as a loose tube connection or open supplies and returns are the culprit	
Ensure all supply boots and returns are sealed to the drywall with caulk	Seal duct boots to the drywall with caulk
Check all accessible parts of the HVAC system to ensure seams are sealed with mastic and the filter door is shut correctly	Seal HVAC system seams with mastic or aluminum foil tape and be sure to properly flatten tape to ductwork
Ensure the HVAC company properly sealed any framed panned beam <ul style="list-style-type: none">Framed panned returns are returns constructed out of floor joists. These are notorious sources of air leakage	Ensure the HVAC company properly sealed any framed panned beam
Ensure all ducts have a register by inspecting the attic and supply/return layouts in the ceiling <ul style="list-style-type: none">Sometimes supplies or returns can be drywalled over by accident, or ducts can be left unconnected	Ensure all ducts have a register



Figure 1 Duct blaster test set-up and connected to furnace

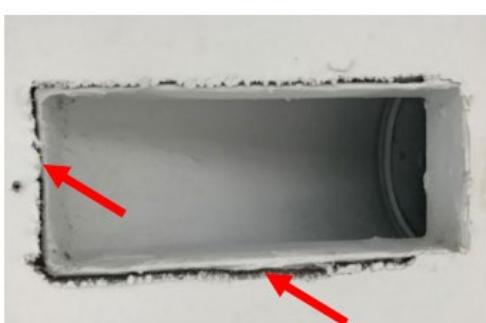


Figure 2 Examples of an unsealed supply and return



Figure 3 Examples of unconnected ducts in the attic and garage space at rough inspection



It is recommended that HERS raters conduct a visual inspection before setting up the duct testing equipment. Notify the on-site builder personnel if an issue is visually confirmed ASAP. If testing at rough inspection and ducts are still failing desired thresholds, we recommend pressurizing the duct system and utilizing 90 second smoke emitters or a smoke machine to troubleshoot and pinpoint the area.