

MULTIFAMILY ENERGY EFFICIENCY PROGRAM

HVAC Checklist

FIELD SAFETY INSPECTIONS

Field inspections should verify the job's safety, sealing and potential for delivering energy savings. Use this checklist to ensure you've met all safety and quality issues.

Electrical

- Must have some form of disconnect within reach of the system
- All high voltage wire must be weather tight and connections secured
- Anything over six feet in length must also be supported/secured
- Low voltage must be weather tight at connections

Gas

- Piping must be secured so that weight is not supported by the fittings
- Maximum of 36 inches of flex with shut off (do not couple flex lines together with a shut off valve)
- Do not run flex line through the furnace/package unit panel; instead, terminate the flex outside of the unit and use piping

Flue Pipe

- Flue pipe must have 1/4-inch per foot rise
- Double wall must have one-inch clearance from any combustibile material; single wall must have six-inch clearance from any combustibile material
- Single wall must have three screws at the connections and all fittings must be male to female as the pipe elevates (including reducer couplings)
- No tape of any sort is permitted on flue pipe connections

Furnance/Air Handler

- Seal all start collars with mastic (either from the inside or outside)
- Seal the unit flanges on the plenums with mastic or caulking (tape is not allowed with the exception of mesh tape if a hole is greater than 1/2-inch)
- Seal the seams on the plenums, as well as the end caps, with mastic/caulking
- Seal the refrigerant line penetrations at the coil with cork tape, butyl, caulking or mastic
- Seal the condensate line penetrations at the coil with cork tape, butyl, caulking or mastic
- Seal the electrical/thermostat penetrations with cork tape, butyl, caulking or mastic

Package Units

- Seal unit flanges with mastic or caulking
- Seal elbow to jack connections (Spanish lock, slip joints) with mastic
- Seal throat of elbow with mastic or mesh tape if unit flange does not properly meet at unit (tape of any other kind is not allowed)
- Seal any air leaks with mastic/caulking

DUCT SEALING

All ducts must be sealed using the following checklist to meet standards.
You may also find these standards at <http://www.swbstc.org/rebate-programs>

N/A **Prep**

- 1. If gas, complete a combustion safety test and record the results.
- 2. Verify that a ventilation plan is established.
- 3. Put on all personal protection equipment (PPE).
- 4. Identify all worker and occupant safety hazards.
- 5. Identify all potential durability issues.
- 6. Address all combustion safety, worker safety, occupant safety and durability issues before starting work and notify the occupant. Do not complete work if a life safety hazard is identified.

N/A **Inside the Living Space**

- 7. Turn the HVAC on and feel for air flowing out of each supply with your hand. Note any lines not providing air. Turn fan off.
- 8. Remove all supply registers and return grills.
- 9. Fasten all supply boots to subfloor with screws.
- 10. Seal all duct inner liners to each supply boot.
- 11. Seal all seams of each supply boot.
- 12. Seal all gaps between the subfloor or ceiling and the supply boot.
- 13. Seal all seams of each return box.
- 14. Seal all gaps between the subfloor, wall/ceiling and the return box.

N/A **Outside the Living Space**

- 15. Tape the air handler cabinet panels and seal all penetrations.
- 16. Mechanically fasten and seal the connection between the air handler and the plenums.
- 17. Mechanically fasten and seal all supply seams and end caps.
- 18. Mechanically fasten and seal the connection between supply take-off collars and plenums.
- 19. Mechanically fasten and seal inner liner of all supply ducts to supply take-off collars.
- 20. Inspect all supply ducts for disconnects, tears and/or holes and pay attention to supply lines that were not providing air inside the house. Fix by reconnecting ducts and patching holes. If flex duct, remove section with hole and replace with a sealed spliced collar.
- 21. Fasten and seal all sectioned metal elbows to supply ducts and take-off collars.
- 22. Fasten and seal inner liner of all supply ducts to supply boots. Skip this step if sealed from inside the living space.
- 23. Seal all panned returns.
- 24. Inspect all return ducts for disconnects, tears or holes. Fix by reconnecting, patching or fastening ducts together, then sealing the connections. If flex duct, remove section with hole and replace with a sealed spliced collar sealing the connections. If flex duct, remove section with hole and replace with a sealed spliced collar.
- 25. Seal the connection between supply take-off collars and plenums.

N/A **Close Out**

- 26. Clean the work area.
- 27. If gas, complete a combustion safety test and record the results.
- 28. Educate occupants on the work completed.