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# CHAPTER 11 HVAC ADDITIONAL MEASURE CHANGES

The following are areas in Chapter 11 that need to be updated/corrected or amended – explanation/discussion is below the code:

## Table N1104.1(1)

**Ducted HVAC systems within conditioned space:**
All ducts and air handler are contained within building envelope
*This simply clarifies what "type" of HVAC systems this applies to – suggested by Mark Heizer, PE, BCD*

**Ductless ~~mini-split~~ heat pump:**
Replace electric resistance heating in at least the primary zone of dwelling with at least one ductless mini-split heat pump having a minimum HSPF of 8.5. Unit shall not have integrated backup resistance heat, and the unit (or units, if more than one is installed in the dwelling) shall be sized to have capacity to meet the entire dwelling design heat loss rate at outdoor design temperature conditions. Conventional electric resistance heating may be provided for any secondary zones in the dwelling. A packaged terminal heat pump (PTHP) with comparable efficiency ratings may be used when no supplemental zonal heaters are installed in the building and integrated backup resistant heat is allowed in a PTHP.

**Discussion:**
The term "ductless" in the current Additional Measure 4 was meant to apply to HVAC systems that had savings associated with having no duct losses. The way the current code is written, it assumed free-standing gas furnaces (not an attractive option) and mini-split heat pumps, but it did not limit to just these heating systems. Other ductless heating systems could be a sealed combustion gas fireplace that is controlled by a thermostat (ductless system), a PTAC (motel-type unit) or packaged terminal heat pump (a PTHP, similar in appearance to PTAC).

The proposal now specifies "ductless" "heat pumps" and I believe the proponent did not mean to leave out PTHP which is an efficiency improvement over PTAC (electric-resistance heat). In order for the PTHP to be equivalent to mini-split, it cannot have supplemental "zonal" heat (the PTHP does have resistance electric backup heat – same as most split-system heat pumps) and the efficiency (these are rated in COP not HSPF) can be converted and demonstrated to be equivalent to 8.5 HSPF.