

OPTIMAL BUILDING SYSTEMS

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Supplemental Heat for Homes with Mini-Splits

For extreme cold conditions, I recommend keeping a couple of portable electric heaters on hand that can be deployed as needed. The type that looks like a radiator and is filled with oil works best because the oil serves as thermal mass. This stabilizes the heat output as the element cycles on and off. This is especially important in a super insulated home.

<http://www.amazon.com/dp/B002PLQ4T8>

If there's a full-time home office located over a crawl space or slab, I recommend embedded resistance heat if the floor is tile. Output capacity needs to be greatly reduced in a high performance home. A floor mat heater would be an inexpensive alternative, and can be used with floor coverings other than tile (not sure about hardwood):

<http://www.amazon.com/gp/product/B000079896>

All regularly used bathrooms require some type of supplemental heat. Again, floor embedded resistance heat is ideal, just be careful with capacity. I recommend doubling the margins and inter-element spacing. A less expensive option would be to use toe-kick or baseboard heaters. Here's a resource list:

http://www.cadetco.com/show_product.php?prodid=1005

<http://tinyurl.com/3nb5oq6>

<http://broan.com/display/router.asp?ProductID=2238#>

http://www.cadetco.com/show_product.php?prodid=1004

<http://tinyurl.com/3rmzkqe>

Note that the efficiency of any electric heater is the same – 100%. The main difference is wattage and whether they have fans or thermal mass. Toe-kick heaters are permanently mounted and have small fans.

Permanently mounted heaters require a control. Some toe-kick and baseboard units have controls on the unit (a thermostat, but without referencing degrees). Other models require a wall timer or thermostat (must be line-voltage compatible, may be programmable). Intermatic makes a line of inexpensive wind-up timers:

<http://bit.ly/qbTNq0> (decora faceplate)

<http://bit.ly/q65rj1> (brushed aluminum faceplate)

Notes on permanently mounted baseboard and toe-kick heaters:

- 1) Use 120V models to save on electrical circuit, preferably rated at 1000 watts or less
- 2) Do not install a toe-kick heater on a sink base cabinet. Otherwise use a baseboard unit.
- 3) I do not normally recommend controlling permanently mounted electric heaters from the heat pump thermostat, especially in a bathroom.