

STEP TO A "ZERO ENERGY READY HOME"

How Habitat for Humanity of Summit and Wasatch Counties
is building homes of the future today!

STEP #2: INSULATION & AIR SEALING



1

INSULATE WELL

A good "building envelope" is critical to maintaining comfort, reducing heating and cooling needs, and cutting energy costs. Insulate underneath the concrete slab and around the slab edge. Consider insulating 2x6 exterior walls with 5.5" of R-20 fiberglass batt insulation. Use extra care when installing fiberglass batt insulation to achieve a "Grade 1" installation by avoiding compressions and gaps. In the attic, use "raised heel" trusses, also known as "energy trusses", that allow the full depth of the insulation to extend all the way to the edge of the roof. Install 2" of R-5 rigid foam insulation on the outside of the home underneath the siding to eliminate thermal bridging through the exterior walls.



2

BLOWER DOOR TESTS

Air sealing a home is an essential strategy to reduce energy needed for heating and cooling. Use a "blower door" to measure the air tightness of the home. "Air changes per hour" (ACH) is the standard way to measure a home's air tightness at 50 pascals of pressure. A blower door test can measure the leakiness throughout the construction and identify areas in need of sealing. A Zero Energy Ready Home should have an air tightness between 0.6 to 2 ACH. Work with a HERS Rater or other air sealing professional to identify the right timing for pre- and post-air sealing blower door tests.



3

LOCK DOWN AIR LEAKS

Lay a solid bead of construction adhesive around a home's exterior plywood and then another bead below bottom plates before walls are tipped up. Seal gaps where drywall touches the top plate of the wall framing, and seal around holes cut into the drywall. To avoid other air-loss culprits, use only airtight recessed lighting and eliminate bathroom exhaust fans by utilizing the energy recovery ventilation system. In addition, choose a ductless heat pump to avoid air leaks from ductwork. Place electrical wiring and plumbing in interior walls or exterior double-stud walls in the interior set of studs. Once electric boxes and wiring is installed, seal the electrical boxes with spray foam. Don't forget about window and door frames which should be sealed with caulk or foam depending on the size of the gap. An airtight gasket should also be installed on the crawl space door.



4

AEROSOLIZED AIR SEALING

An alternative to manual air sealing is to use an aerosolized air sealing material, such as AeroBarrier. Through this approach, air sealing material is sprayed into the air inside of the home while a blower door creates a negative pressure within the home, forcing tiny particles of air sealing material through all air leaks throughout the home.