

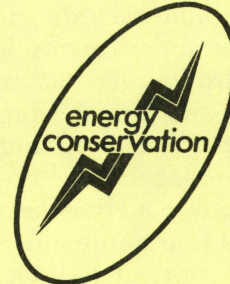


University of Idaho
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Weatherizing Your Mobile Home



The cost of operating your mobile home affects your budget, and the comfort level affects your health. These are major considerations as you look for ways to save energy in heating and cooling.

Weather Stripping and Caulking

Put weather stripping around all windows and outside doors, filling in the cracks. Double check the threshold portion of outside doors. Don't leave a crack between the bottom of the door and the threshold. Wear sometimes causes a crack to develop.

Caulking requires detective work. Air leaks and cracks increase the cost of heating and cooling and let in damaging moisture. Check carefully around moldings, joints, nails, screws (especially in the siding panels), splash panels, windows, top seams, doors, roof vents and wheel housings. Seal all openings each year with a quality caulking compound. You can buy caulking in a variety of colors to match exterior colors. Use roofing cement on roof seams and around roof vent stacks.

Storm Windows

You can add an extra layer of protection to windows simply by taping a layer of 4 to 6 mil polyethylene over them. This is transparent "builders' plastic." Use pressure sensitive masking or duct tape and place it along the entire clean edge on all four sides. This extra layer is useful even with storm windows; it adds the effect of triple glazing.

Skirting

If you have never gotten around to skirting or underpinning your home, do that, too. Skirting cuts drafts, helps insulation and keeps high winds from producing an uplift effect on the home that can be damaging and dangerous. You can use corrugated metal or plastic as well as concrete blocks or brick.

Temporary skirting with hay bales or bagged leaves causes problems, for they may shift accidentally and close up necessary vent spaces. They are also a fire hazard since they ignite easily. It is better to use a more permanent, noncombustible material. If the home has an underfloor burner for heating air or water, be sure that adequate openings are left in the skirting to supply fresh air for combustion.

About six 8- by 16-inch vents should be placed in the skirting to allow ventilation. One on each end, two along the front and two along the back sides will probably do an adequate job. A panel should be built to maintain equipment underneath the mobile home. Vents should be placed no closer than 4 or 5 feet from a water line, but one vent should be placed as near as possible to the air intake of the furnace. Exposed water pipes — especially hot water pipes — should be wrapped with pipe insulation that is fitted and taped carefully over the full length of the exposed area. Insulate all heating ducts beneath the floor. Use a minimum R-4 special duct insulating blanket, and tape it in place.

The Thermostat

Reducing thermostat settings can save as much as 3 percent of fuel costs per degree Fahrenheit. In the heating season, set the thermostat from 65° to 68°F. Adjust downward 5° to 10°F at night. During the cooling season, set the thermostat 10°F below the outside temperature but no lower than 78°F.

In winter, try for a 50 percent humidity level. Keep the humidity low enough to avoid window condensation problems. A little moisture can be added in the winter by carefully placing pans of water throughout the house for evaporation, but a furnace humidifier gives the most satisfactory results.

Look for the Label

If your home was manufactured before mid-1976, check the main places where heat is lost. If the manufacturing date was after 1976, look for an indication (a label permanently attached on an interior wall) that it was built according to *Mobile Home Construction and Safety Standards* issued by the U.S. Department of Housing and Urban Development (HUD), effective June 15, 1976.

A mobile home built according to the HUD standards meets basic requirements for condensation control, air infiltration and thermal insulation (in the ceiling, walls and floors). Some homes exceed minimum HUD performance standards for thermal protection and are labeled as "Energy Conserving Homes." They receive a HUD heating and cooling certificate. If you find nothing to indicate thermal protection, then retrofit (winterize) the mobile home yourself.

Using Placement Effectively

How your home is placed (oriented) on its site will determine its comfort and safety (Fig. 1). First, locate your home to protect it from strong winds. Second, take advantage of the sun's warmth in cold climates or of shade in hot zones. Come as close as you can to these suggested ideals:

1. If wind safety permits, locate the long sides of the home to face north and south. Otherwise, the home will be warmed unevenly, and light coming through west windows will be a problem.
2. Face the kitchen to the east, or at least not to the west.
3. Use windbreaks along north and west sides. Use something like:
 - a semi-enclosed carport
 - large evergreen shrubs
 - evergreen trees that hold their lower limbs
 - a tall fence
4. Shade the south side in summer with awnings or porches.
5. Plant deciduous trees (trees that lose their leaves in the fall) on the east, west and south sides.

With the home properly sited and placed on a firm foundation, tie it down carefully. Use the straps the manufacturer supplies, or secure the home with the correct number of over-the-top straps. Anchoring specifications are readily available from dealers, installers or the Cooperative Extension Service in your county. Shortcutting this step endangers the lives of family members and leaves the home vulnerable to being wrecked by windstorms.

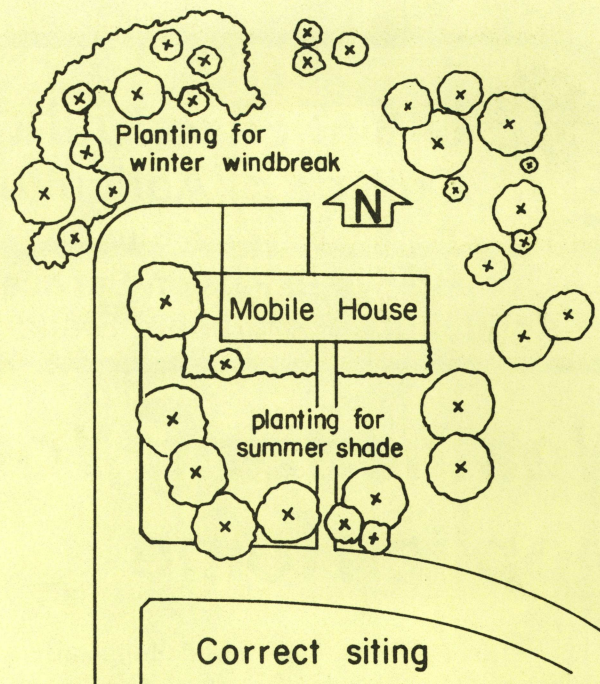


Fig. 1. Site location is an important consideration for mobile homes.

Insulation

First, insulate overhead where the greatest heat loss occurs. A urethane foam material 3 or more inches in thickness may be sprayed (on the roof only) and then topcoated with a protective liquid glass sealer to prevent discoloration and deterioration.

Cooling comfort can be increased through the use of a cool seal reflective roof coating. This thick, fibrous substance contains aluminum particles that move to the surface as the coating dries. A good, thick coating is needed.

Before you start, check the original coating material on your roof. Foam insulation will not stick to some coatings, and an insulated false roof will have to be constructed in those instances.

Second, install fiberglass batts beneath the floor. Buy batts with a vapor barrier, and place the vapor barrier toward the inside of the home. Keep the batts in place by attaching chicken wire to the joists. Use the R-values of insulation recommended by your power company or the Cooperative Extension Service in your county.

*Adapted from U.S.D.A. Fact Sheet 2-3-6. Recommended to Idaho residents by Shirley Nilsson, Extension housing and equipment specialist, and Roy Taylor, Extension agricultural engineer, both at the University of Idaho, Moscow.