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Insulate Your Unfinished Attic

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Cooperative Extension Service
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4 pages

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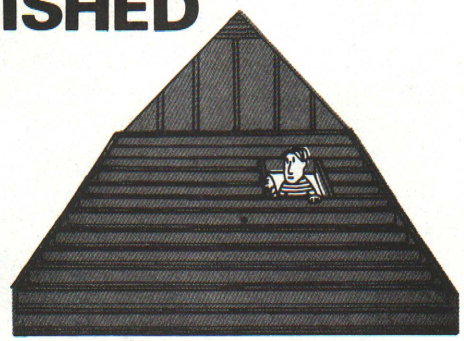
INSULATE YOUR UNFINISHED ATTIC



AN EASY DO-IT-YOURSELF PROJECT

Install batts or blankets between the joists or trusses in your attic

OR

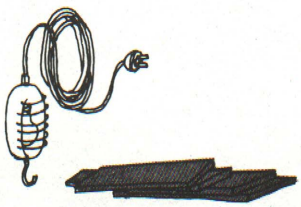
Pour in loose fill between the joists or trusses

OR

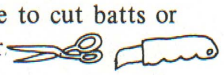
Lay in batts or pour in loose fill over existing insulation if you've decided you don't have enough already. *Don't* add a vapor barrier if you're installing additional insulation.

NOTE: If your attic has trusses in it, this section still applies — the insulation goes in the same place, but job is more difficult.

Tools



1. Temporary lighting
2. Temporary flooring
3. Duct or masking tape (2" wide)
4. Heavy duty staple gun and staples, or hammer and tacks
5. Heavy duty shears or linoleum knife to cut batts or blankets and plastic for vapor barrier



Safety

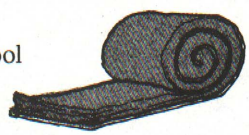
1. Provide good lighting
2. Lay boards or plywood sheets down over the tops of the joists or trusses to form a walkway (the ceiling below won't support your weight).
3. Be careful of roofing nails protruding through roof sheathing.
4. If you use glass fiber or mineral wool, wear gloves and breathing mask, and keep the material wrapped until you're ready to put it in place.

Materials

What you'll need

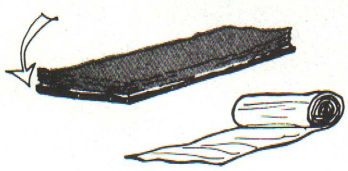
Batts, glass fiber or rock wool

Blankets, glass fiber or rock wool



Loose fill, rock wool, cellulosic fiber, or vermiculite

Vapor barriers



How much

(a) Accurately determine your attic area.

If necessary, divide it into rectangles and sum the areas.

_____ X _____ = _____

_____ X _____ = _____

_____ X _____ = _____

Total = _____

(b) Insulation area **= (.9) X (total) =** _____

(c) Vapor barrier area (see if you need one – page 4).

1. Batts or blankets with vapor barrier backing – use insulation area.
2. Polyethylene (for use with loose fill, or if backed batts or blankets are not available) –use insulation area, but plan on waste since the polyethylene will be installed in strips between the joists or trusses, and you may not be able to cut an even number of strips out of a roll.

(d) Insulation thickness — If your plan calls for R-30 or more, you may be adding two layers of insulation. Lay the first layer between the joists, and the second layer across the joists. (This is very difficult with trusses — lay the second layer parallel to the trusses, or even better, — use loose fill.) Figure attic area for the second layer.

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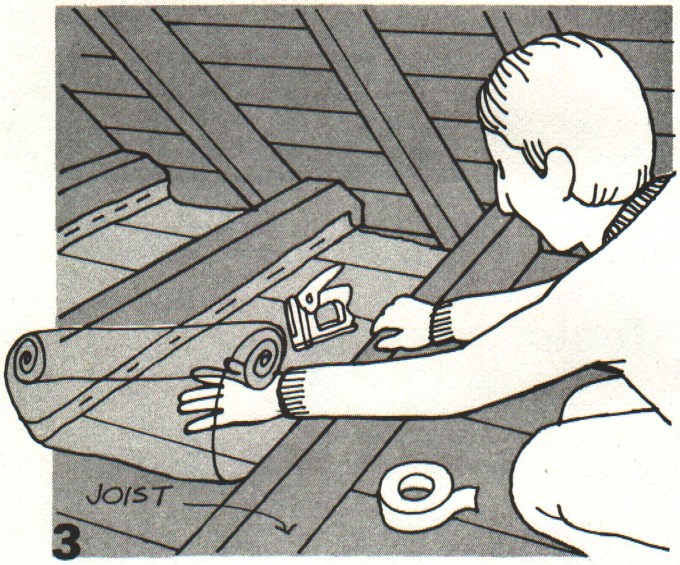
Installation

Preparation

Put in temporary lighting and flooring, check for leaks and check need for ventilation and vapor barrier (see page 4). Seal all places where pipes or wires penetrate the attic floor. **NOTE:** Some manufacturers may recommend using polyethylene in a continuous sheet across the joists or trusses. If you aren't adding insulation that covers the tops of these framing members with at least 3½" of insulation, laying a continuous sheet may cause condensation along them; lay strips as shown instead.

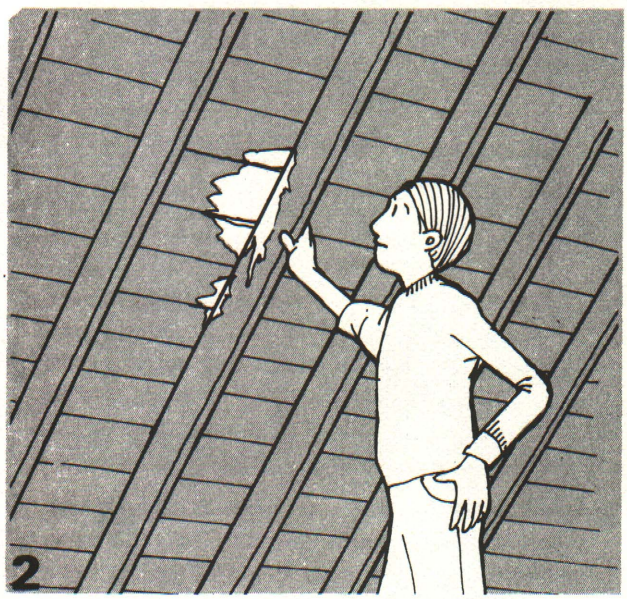
1

Install temporary flooring and lights. Keep insulation in wrappers until you are ready to install. It comes wrapped in a compressed state and expands when the wrappers are removed.



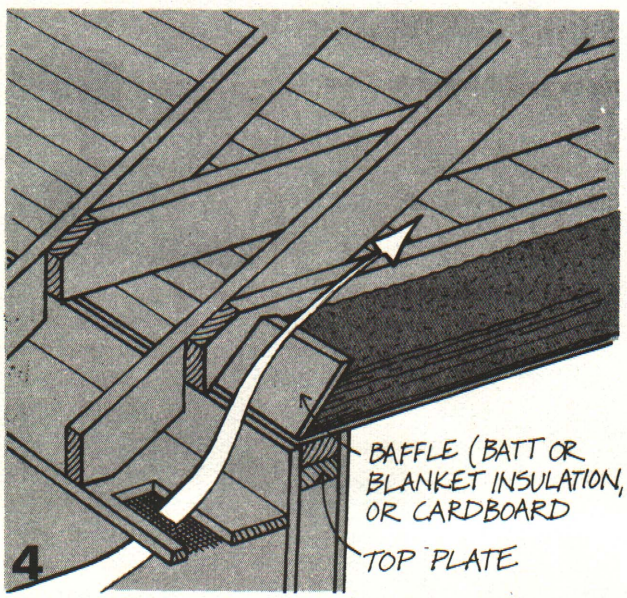
3

Install separate vapor barrier if needed (see page 4). Lay in polyethylene strips between joists or trusses. Staple or tack in place. Seal seams and holes with tape. (Seams may be overlapped 6" instead.)



2

Check for roof leaks, looking for water stains or marks. If you find leakage, make repairs before you insulate. Wet insulation is ineffective and can damage the structure of your home.



4

If you're using loose fill, install baffles at the inside of the eave vents so that the insulation won't block the flow of air from the vents into the attic. Be sure that insulation extends out far enough to cover the top plate.

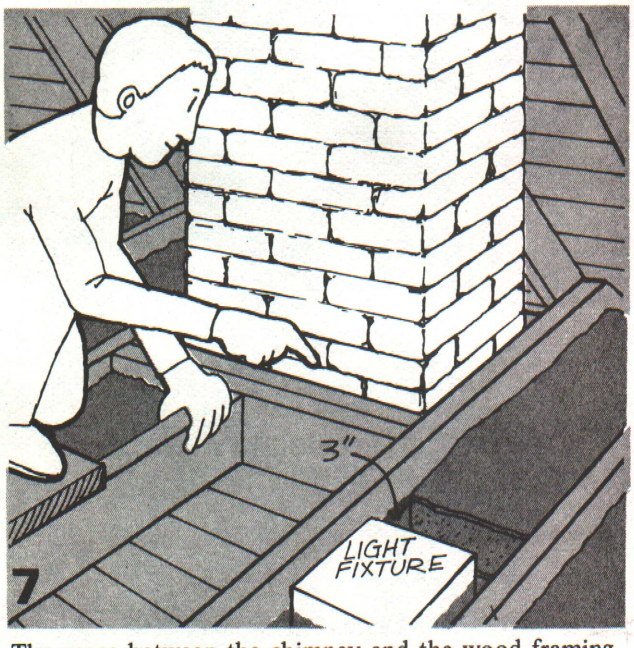
Installing the insulation

Either lay in batts or blankets between the joists or pour in loose fill. If you're using batts or blankets with a vapor barrier, place the barrier on the side toward the living area.

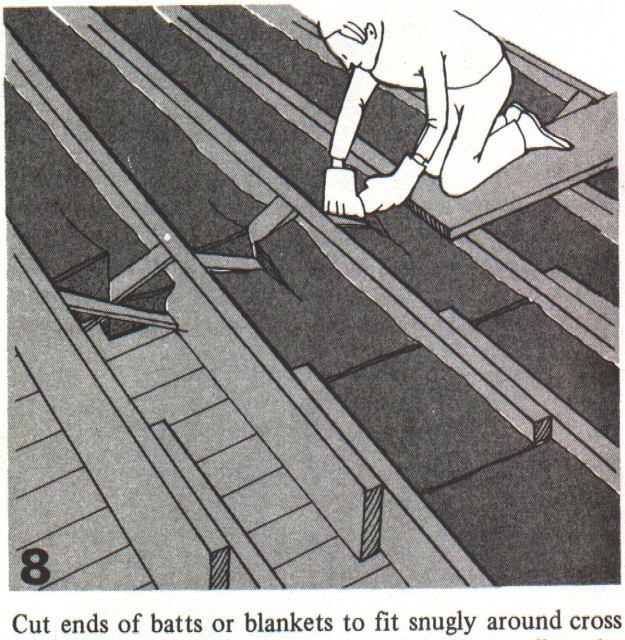
Lay in blankets or batts between joists or trusses. (Note: batts and blankets are slightly wider than joist spacing so they'll fit snugly). If blankets are used, cut long runs first to conserve material, using leftovers for shorter spaces. Slide insulation under wiring wherever possible.

OR

Pour in loose fill insulation between the joists up to the top of the joists. Use a board or garden rake to level it. Fill all the nooks and crannies but don't cover recessed light fixtures or exhaust fans.

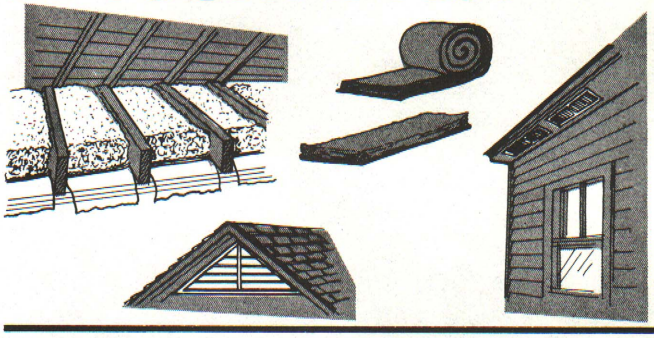


The space between the chimney and the wood framing should be filled with *non-combustible* material, preferably unfaced batts or blankets. Also, the National Electric Code requires that insulation be kept 3" away from light fixtures.



Cut ends of batts or blankets to fit snugly around cross bracing. Cut the next batt in a similar way to allow the ends to butt tightly together. If page 42 calls for an R-Value that requires a second layer, place it **at right angles** to the joists.

DO YOU NEED A VAPOR BARRIER OR MORE VENTILATION IN YOUR ATTIC?



CONTRACTOR INSTALLED OR DO-IT-YOURSELF

Whenever you add insulation to your house, you should consider the need for a vapor barrier or more ventilation where you're doing the work.

A vapor barrier will prevent water vapor from condensing and collecting in your new insulation or on the beams and rafters of your house.

Added ventilation will remove water vapor before it gets a chance to condense and will also increase summer comfort by cooling off your attic.

What you need

If you're insulating your attic and:

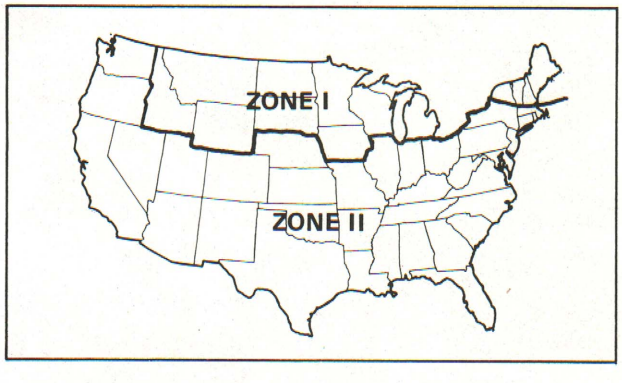
. . . you live in Zone I

1. Install a vapor barrier (unless you are blowing insulation into a finished attic)
2. Add ventilation area equal to 1/300 your attic floor area if:

   Signs of condensation occur after one heating season

   OR

   You can't install a vapor barrier with your insulation



. . . if you live in Zone II and don't have air conditioning

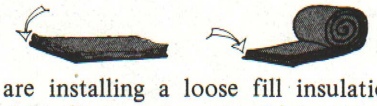
1. Install a vapor barrier toward the living space if you are insulating a finished attic (with other attics a vapor barrier is optional).
2. Add ventilation area equal to 1/300 your attic floor area if signs of condensation occur after one heating season.

. . . you live in Zone II and have air conditioning

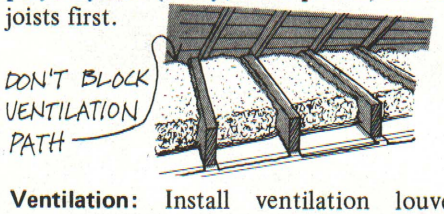
1. Install a vapor barrier toward the living space if you are insulating a finished attic (with other attics a vapor barrier is optional).
2. Add ventilation area equal to 1/150 your attic floor area.

What should be installed

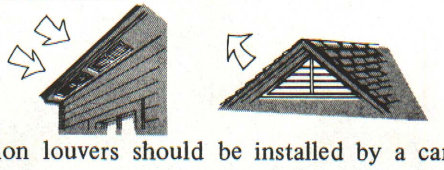
Vapor barriers: If you are installing batt or blanket insulation, and you need a vapor barrier, buy the batts or blankets with the vapor barrier attached. Install them with the vapor barrier side toward the living space.



If you are installing a loose fill insulation, lay down polyethylene (heavy, clear plastic) in strips between the joists first.



Ventilation: Install ventilation louvers (round or rectangular) in the eaves and gables (ridge vents are also available but are more difficult and costly to install in your house). The total open area of these louvers should be either 1/300 or 1/150 of your attic area (see "What You Need" above), and evenly divided between the gables and the eaves.



Ventilation louvers should be installed by a carpenter unless you are an experienced handyman.

Don't Block Ventilation Path with Insulation.

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James S. Boyd, Agricultural Engineering and Human Environment and Design Department.

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