

## Preparation

Effective methods for insulating manufactured home floors, walls and roof cavities have been developed over the past 25 years. Insulation should not be installed if moisture problems found in wall and roof cavities cannot be corrected. Blowing a closed mobile-home roof cavity is similar to blowing a closed wall cavity, only the insulation does not have to be as dense. Fiberglass blow-in insulation is preferred. Cellulose should not be used due to moisture absorption, density and weight. For high elevations, colder climates, or conditions where the existing roofing needs extensive repairs, rigid insulation on top of the bowed or flat roof deck is highly recommended.

- Inspect all ceiling and roof penetrations for leaks, water damage or physical damage. Repair as needed before insulating ceiling cavities.
  - Address any ponding/standing water issues on the roof.
- If the ceiling cavity contains a non-ducted return-air system, seal the opening to the attic and provide return air to a central location in the home.
- For vented roof cavities, comply with all applicable requirements for Single-family attic prep.
- Determine if edge fill, gable fill, interior fill or top fill with continuous insulation is most appropriate.



**Connect with the local  
serving utility to confirm pre- and  
post-condition requirements.**

<b>PRE-CONDITION:</b>	<b>POST-CONDITION:</b>
R-0 to R-17	R-22 or maximum possible R-30 or maximum possible

## SPECIFICATION CHECKLIST

For details on all BPA requirements for this measure, please refer to the [BPA Residential Weatherization Specifications and Best Practices Guide](#).

- For flat or bowed roofs to include exterior insulation, insulate to at least R-7 with rigid insulation and cover the roof insulation with EPDM, TPO or new roofing product/membrane.
- Insulate attics under pitched roofs to at least R-22 and ventilate the attic to comply with Single-family attic insulation requirements.
- Confirm all roof materials, drains, gutters, penetrations and seams are reinstalled properly to avoid negative effects in the future.
- Insulate ceiling cavities under flat or crowned metal roofs by completely filling them with blown-in fiberglass insulation. Seal all existing attic ventilation except existing roof jacks.
  - Blown-in cavity insulation shall be installed so it completely fills the cavity, with adequate density per the manufacturer's specifications to ensure no settling.
  - Fiberglass blown fill ~0.8 to 1.6 lb/ft<sup>3</sup>.

## RECOMMENDED

- If the manufactured home has a gas, propane or wood-burning space heater, fireplace, stove or other combustion device, install a hardwired carbon monoxide detector.
- Ensure any existing gutter and downspouts are returned to original or better condition.

## Installation Examples



### ROOF PENETRATION PROPERLY SEALED

Courtesy of Oregon Housing and Community Services and Oregon Energy Coordinators Association



### PENETRATIONS SHOULD BE SEALED FROM THE OUTSIDE

Courtesy of Pennsylvania College of Technology



### INSULATED MANUFACTURED HOME ROOF THROUGH EDGE

Courtesy of Santa Fe Community College



### UNINSULATED MANUFACTURED HOME ROOF

Courtesy of Santa Fe Community College



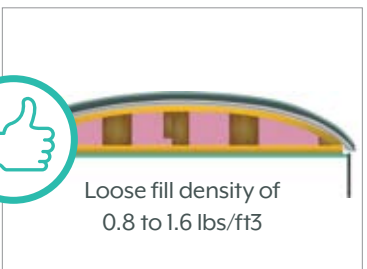
### INSULATING BELLY FROM EDGE FILL METHOD

Courtesy of Santa Fe Community College



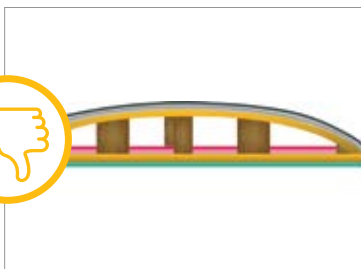
### GUTTER NOT PROPERLY ATTACHED, POTENTIAL LEAKS AT ROOF EDGE

Courtesy of Santa Fe Community College



Loose fill density of 0.8 to 1.6 lbs/ft<sup>3</sup>

### FULLY INSULATED BOWED ROOF TO CONSISTENT DENSITY



### UNINSULATED ROOF CAVITY

## MINIMUM REQUIRED DOCUMENTATION

Contact the serving [utility](#) for specifics on required documentation.

- Description of home (Single-family, Multifamily or manufactured).
- Number and square footage of windows or patio doors replaced.
- Pre-condition (frame type, i.e., wood, metal, single- or double-paned).
- Primary heating type.
- Invoice showing order or purchase date, cost, post-condition U-value (NFRC stickers or other verification).
- Documentation that the measure requirements have been met (e.g., manufacturer, model number, type, size and quantity of equipment or product installed or used).

## PAIRS WELL WITH

- Attic, Floor, Wall Insulation.
- Whole-House Air Sealing.
- HVAC Upgrades.