

FOAM

EDUCATION ABOUT SPRAY FOAM **BOOK 1**

BOOK

INSIDE: WHY SPRAY FOAM? • SPF & HEAT TRANSFER • SPF & MOLD GROWTH

Bayseal™ Spray foam provides a continuous, protective air barrier that practically eliminates air leakage, the leading cause of building energy waste.

Spray Foam Insulation:

- Offers a High Insulation R-value
- Provides a Seamless Air Barrier
- Restricts Moisture Transmission
- Adds Structural Strength
- Minimizes Sound Transmission
- Does Not Shrink or Settle
- Promotes Better Indoor Air Quality



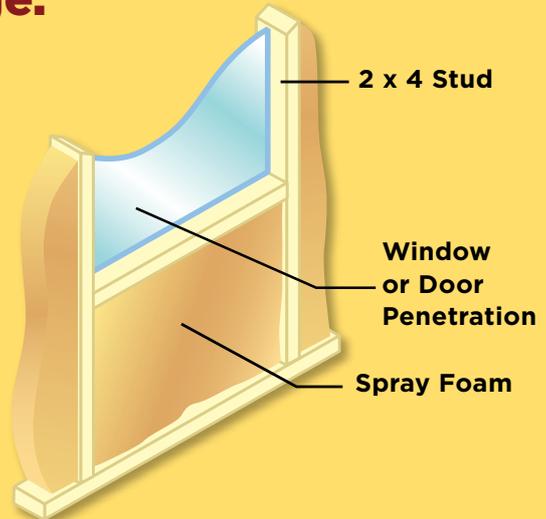
SPRAY FOAM ELIMINATES AIR LEAKS

Air leakage can contribute to problems with moisture, noise, dust, pollutants, insects, and rodents.

Small voids of 1-2% at the end of fiberglass batt insulation can result in a 25-40% reduction of R-value due to air leakage.

Air leakage can account for 30% of a home's annual heating and cooling costs.

Spray polyurethane foam seals the building envelope to create an optimal energy-efficient environment.



Only closed-cell spray foam is classified as an “acceptable flood resistant material” by FEMA.

“Flood-resistant Material” is defined as any building material capable of withstanding direct and prolonged contact with floodwater without sustaining significant damage.

Closed-cell foam is the only wall and ceiling insulation material classified as “acceptable.”

Fiberglass batt and blanket insulation are classified “UNACCEPTABLE.”



Unvented attic with closed-cell spray foam resists roof uplift during high wind events.

“During high wind events, vented soffit collapse leads to building pressurization and window blowout and roof loss due to increased uplift. Unvented roofs - principally due to the robustness of their soffit construction - outperform vented roofs during hurricanes - they are safer.”

**Lstiburek, “Understanding Attic Ventilation,”
Building Science Corporation, 2003**

Spray polyurethane foam is self-flashing and offers 100% adhesion without fasteners. Fasteners are a common point of failure in other systems. And spray polyurethane foam grips the building walls, thereby holding tight in the face of high winds.

Bayseal™ spray polyurethane foam contributes to healthy buildings by reducing air leakage thereby preventing condensation within the envelope.

Mold and mildew growth cannot occur in the absence of water. Spray foam prevents water vapor transported by air leakage from entering the building envelope thereby helping prevent mold growth.

Thermal bridging is a significant cause of energy loss. With no fasteners, joints or gaps, spray foam eliminates thermal bridging.

Spray polyurethane foam improves indoor air quality by reducing the transport of dust and pollen from outside.

Spray polyurethane foam reduces drafts and air movement.

R-value alone is NOT the answer!

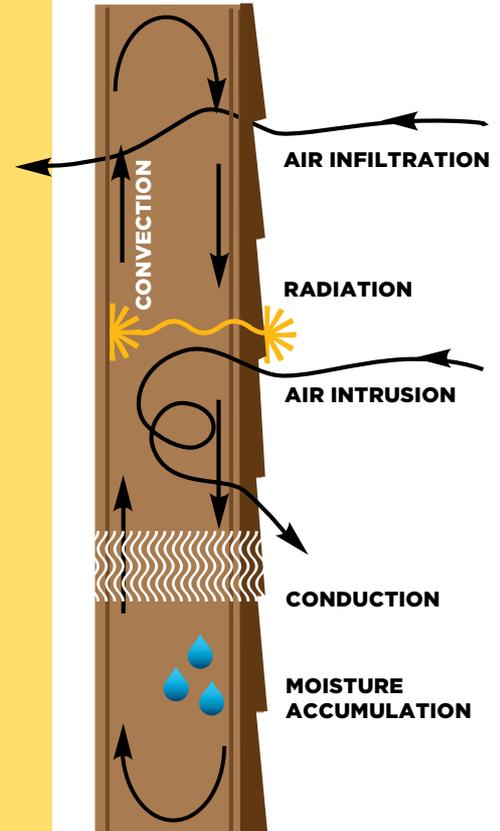
Heat loss or gain can occur through any element of the building envelope (wall, floor, or roof/ceiling) by three primary mechanisms:

1. CONDUCTION
2. CONVECTION
3. RADIATION

In addition, three secondary mechanisms can influence the heat loss/gain by affecting insulation effectiveness:

4. AIR INFILTRATION
5. AIR INTRUSION
6. MOISTURE ACCUMULATION

R-value, the traditional measure of an insulation's effectiveness, measures only ONE of these six mechanisms. Spray polyurethane foam effectively prevents or blocks all six heat transfer methods.



MECHANISMS OF HEAT TRANSFER