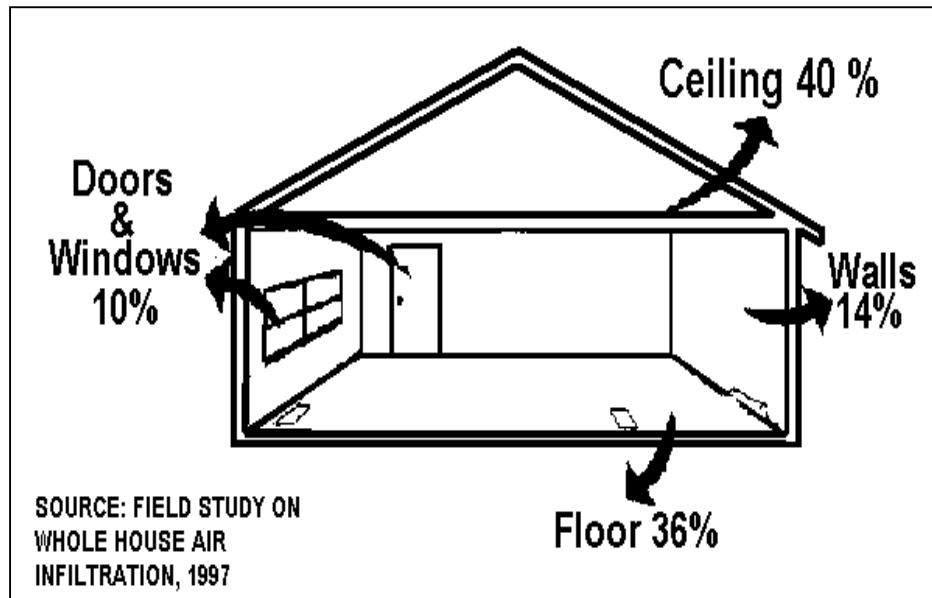


## Questions & Answers

"With the best insulating value per inch, along with its soundproofing and strength benefits, foamed-in-place polyurethane insulation is an attractive alternative for residential wall construction." *Dik McGlaughlin*

### **Q: Where does air leakage occur in a house?**

A: Infiltration/Exfiltration



### **Q: How long has spray foam insulation been around?**

A: For nearly two decades, SPF insulation has built a solid performance record in commercial and industrial applications. It has also been used to fill sofa cushions and car dashboards, and its insulating properties have made it ideal for refrigerator walls, tanks, refrigerated tractor trailers, and the home building envelope.

### **Q: Why the renewed interest in this type of insulation?**

A: Recently, savvy homebuyers have become aware of the advantages, payback times, and investment value of home energy efficiency measures, especially those improving the efficiency of the building envelope. In addition, the spray foam industry has made significant advances in the chemical composition and durability of the foam. These improvements in spray foam application technology have decreased installation costs, bringing this type of insulation system within the reach of the residential homeowner.

### **Q: How is foamed-in-place insulation made?**

A: The installer fabricates the foam on-site according to manufacturer's instructions. He or she brings the application equipment and the foam's chemical components to the home-building site, where framing, electrical, and plumbing are complete, and exterior siding encloses the home. A controlled reaction among a number of mixed chemicals, a blowing agent, and some other additives produces a wet foam mass.

Using a specially designed sprayer, the installer sprays or injects the mass onto or between wall surfaces foaming into a hardened cellular plastic material containing a low thermal conductivity. The exposed surfaces of the rigid foam resemble a hard tan colored shaving cream.

**Q: What are the insulation's thermal advantages?**

A: Spray foam insulation boasts high insulation value with the best R-value per inch of any readily available insulation. It allows for more insulation in a tighter space than conventional bat insulations, and performs well in controlling hot or cold temperatures. The spray foam performs well at keeping heat out as well as in; giving homeowners a break on their air conditioning bills along with their heating bills.

Spray foam also reduces drafts by preventing convection looping. Temperature differences between the outside and inside walls cause warm air to rise and cold air to sink in the cavity between the studs. This action initiates a convection current flowing up and down the walls; especially with fiber bat insulation. Spray foam insulation applied to the interior walls reduces the temperature differences of the air current activity.

Spray foam insulates hard-to-reach areas and provides a seamless layer of insulation.

**Q: What are spray foams air filtration and vapor barrier advantages?**

A: It reduces air infiltration by conforming to cavity shapes and sealing around wall features. In the presence of air leakage, fiberglass bats can act more as a filter than as insulation. Since bat does not fully conform to all cavity shapes in corners and walls, especially at the top and bottom plates, cold spots may appear in these areas.

Air leakage can also occur around outlets, window and door trim. Spray foam insulation adheres and seals tightly in the cavity and reduces air leakage caused by irregularities in surfaces.

Spray foam resists moisture due to its closed cell seal ability.

**Q: How does spray foam insulation affect a homes structural integrity?**

A: Spray foam insulation remains rigid and **DOES NOT** settle or sag. This means it adds structural strength to a house while adding very little weight. Its solid nature provides soundproofing, insect resistant, and seals cracks from unwanted gas and odor penetration.

**Q: What about building codes and fire safety?**

A: Spray foam insulation meets building code requirements and is accepted nationwide. It is code listed and contains no urea formaldehyde.

**Q: How thick should insulation be?**

A: A minimum of one inch of spray urethane insulation must be installed to control air infiltration and reduce energy costs. Additional thickness may be required to seal voids, cracks and other building envelope imperfections. The specific thickness of insulation depends on local code, house location and construction type. Spray foam thickness can be varied, if necessary, to complement other insulation in achieving the proper R-value.

**Q: How are best results achieved?**

A: The ultimate integrity and performance of the spray foam insulation system depends on the expertise of the installer. Proper structural design, specification review, material selection and compatibility and positioning of structural components are all factors which an experienced installer will consider for each installation.