

# TECH SOLUTIONS 215.0

## RESIDENTIAL APPLICATIONS USING FROTH-PAK™ FOAM INSULATION AND FROTH-PAK™ FOAM SEALANT KITS



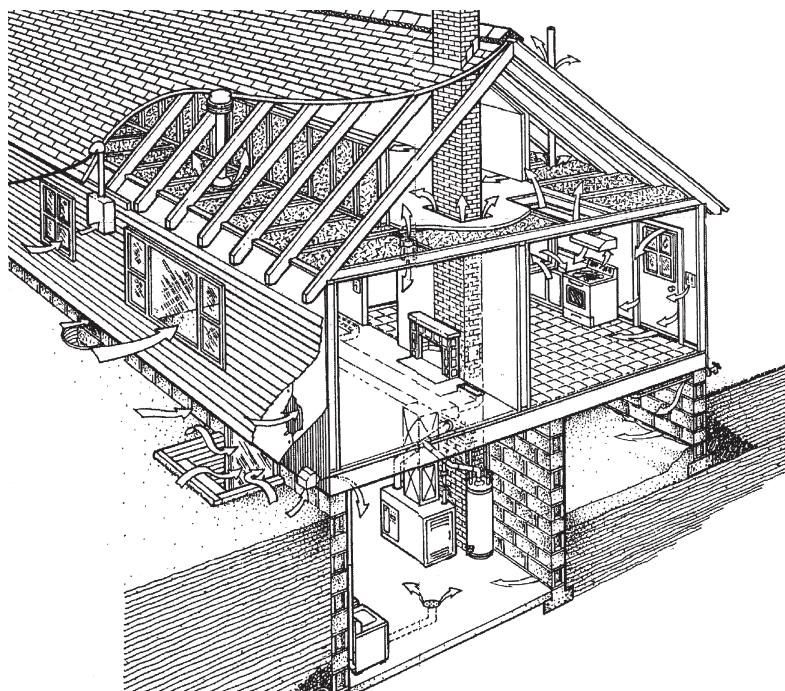
### INTRODUCTION

FROTH-PAK™ Foam Insulation\* and FROTH-PAK™ Foam Sealant kits are easy-to-apply, portable solutions to help reduce drafts and moisture intrusion – major causes of a home's energy loss (Figure 1). The products also help minimize compromised indoor air quality and structural damage that can result from trapped moisture.

FROTH-PAK™ products are two-component, quick-cure polyurethane foams that expand when applied to fill interior/exterior cavities, penetrations and gaps 3" (75 mm) or greater.\*\* FROTH-PAK™ Foam Sealant is used primarily as an air sealant at openings around vents, pipes, ducts, cables and wires at ceiling and floor level.† FROTH-PAK™ Foam Insulation may be used as an air sealant, but with a flame spread index of 25 or less, it is more commonly used to insulate along sill plate, rim and band joist areas, as well as wall cavities.

FROTH-PAK™ products are offered in a wide selection of kits with theoretical yields from 12 to 560 board feet (.03 to 1.32 cubic meters).

Figure 1: According to the Air Barrier Association of America (ABAA), a typical 2,500 ft<sup>2</sup> home has over 1/2 mile of cracks and crevices. For a closer look at these problem areas and how FROTH-PAK™ products can close the gap, see pages 2-4.



### SAFETY AND CONDITIONS OF USE

- Read the instructions and Material Safety Data Sheets carefully before use.
- FROTH-PAK™ Polyurethane Spray Foam contains isocyanate, hydrofluorocarbon blowing agent and polyol. Do not breathe vapor or mist. Use only in well-ventilated areas or with proper respiratory protection. Supplied air or an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter may be required to maintain exposure levels below ACGIH, OSHA, WEEL or other applicable limits. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure, air-supplying respirator (air line or self-contained breathing apparatus).
- Isocyanate is irritating to the eyes, skin and respiratory system, and may cause sensitization by inhalation or skin contact.
- FROTH-PAK™ Foam will adhere to most surfaces and skin. Do not get foam on skin. Wear gloves, goggles or safety glasses, and protective clothing. Cured foam must be mechanically removed or allowed to wear off in time.
- The contents are under pressure.
- FROTH-PAK™ products should not be used around heaters, furnaces, fireplaces, recessed lighting fixtures or other applications where the foam may come in contact with heat-conducting surfaces. FROTH-PAK™ foam will burn if exposed to open flame or sparks from high-energy sources, and it will start to thermally degrade if exposed to temperatures above 240°F (116°C) for long periods of time.

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\*FROTH-PAK™ Foam Insulation is available in the United States only.

†For exterior applications, a coating must be applied for ultraviolet (UV) protection.

‡Check with your local code official. FROTH-PAK™ is not an approved fireblock.

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**ADVANTAGES**

FROTH-PAK™ Foam Insulation and FROTH-PAK™ Foam Sealant can effectively protect against air infiltration, which accounts for up to 25-40 percent of a home's energy loss.<sup>††</sup> FROTH-PAK™ products also help seal out moisture, dust, smoke, outside noise and insects.

**FROTH-PAK™ FILLS THE VOID**

FROTH-PAK™ Foam Sealant and FROTH-PAK™ Foam Insulation help to quickly put an end to air leakage paths that lead to energy loss and accompanying moisture problems.

See Figures 2, 3, 4, 5, 6 and 9 for examples of air-sealing applications where either FROTH-PAK™ Foam Sealant or FROTH-PAK™ Foam Insulation may be used.

FROTH-PAK™ Foam Insulation can be used as both an insulation and an air sealant, helping reduce energy loss in both of these ways. See Figures 7, 8 and 10 for examples of FROTH-PAK™ Foam Insulation applications.

**TIP**

Make sure the area being foamed is free from dust and debris. Set up the FROTH-PAK™ kit as directed in the supplied instructions. For best results, spray foam in a side-to-side motion in even thicknesses.

**KEY**

- S** FROTH-PAK™ Foam Sealant
- I** FROTH-PAK™ Foam Insulation

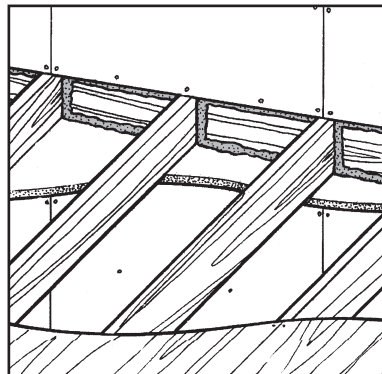
Using FROTH-PAK™ Foam Sealant in the ceiling and attic helps prevent air escape and entry from these areas:

- Wall-ceiling joints (Figure 2)
- Attic hatch (Figure 3)
- Attic perimeter, penetrations and ductwork
- Vent pipes through roof and dryer vent
- Interior partitions
- FROTH-PAK™ is not an approved fireblock

**TIP**

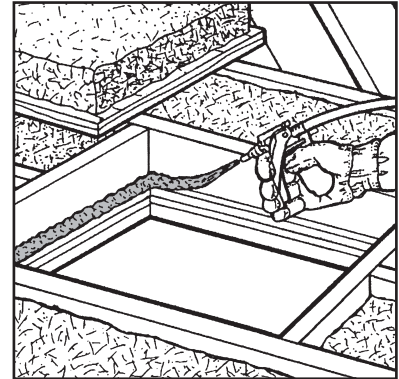
For maximum value and to enhance performance of batt/blown-in insulation, spray FROTH-PAK™ Foam Sealant around exterior wall penetrations to block air leakage, moisture and outside allergens. Add insulation to achieve desired R-value (RSI).<sup>§</sup>

**Figure 2: Sealing wall-ceiling joints**



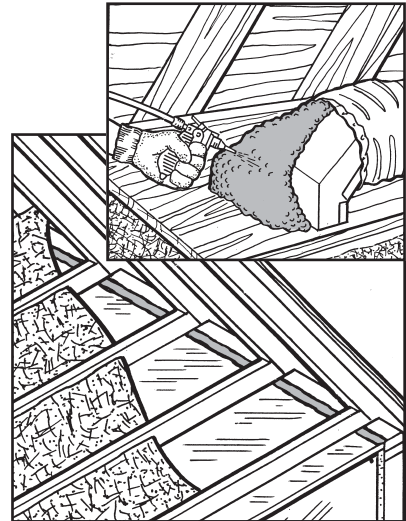
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**Figure 3: Sealing around attic hatch**



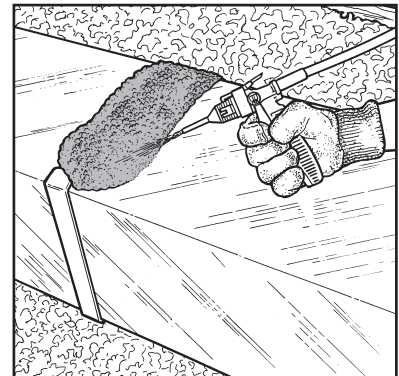
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**Figure 4: Insulating around attic perimeter/penetrations/ductwork before adding fiberglass batt or blown-in insulation (ignition barrier required)**



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**Figure 5: Duct joint sealing (ignition barrier required)**



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<sup>††</sup>Source: www.energystar.gov

<sup>§</sup>R means resistance to heat flow. The higher the R-value or RSI, the greater the insulating power. RSI (R-Value Système International) is the metric equivalent of R-value.

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**TIP**

FROTH-PAK™ Foam Insulation is approved at 2" (50 mm) thickness for full coverage applications.

**WALLS**

To simply air seal cracks, crevices and penetrations within cavities, use FROTH-PAK™ Foam Sealant. As a best practice, spray FROTH-PAK™ Foam Sealant in a "picture frame" fashion in the wall cavity before installing batt insulation to block out drafts and enhance insulation performance (Figure 6). Use FROTH-PAK™ Foam Sealant to air seal wall-ceiling joints. See Figure 2.

Flash and batt (1/2"-1" foam thickness) is another effective technique to insulate and seal the wall with FROTH-PAK™ Foam Insulation. See Figure 7.

FROTH-PAK™ Foam Insulation is an effective insulation and air sealant for stud wall cavities (Figures 7 and 8). A thermal barrier is required to separate FROTH-PAK™ Foam Insulation from the interior.

Figure 6: Sealing stud wall cavities ("picture framing")

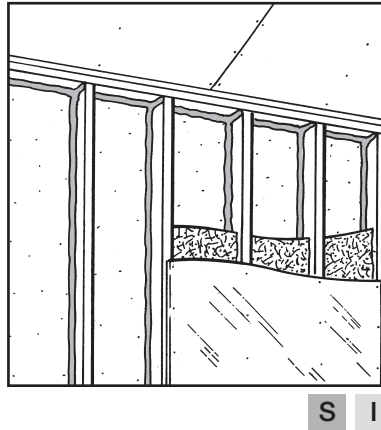


Figure 7: Flash and batt (1/2"-1" thickness)

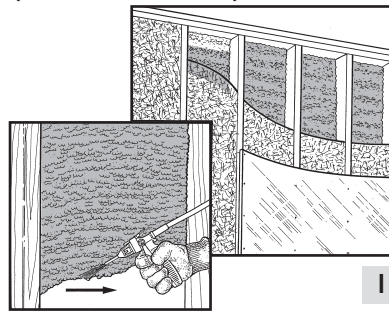
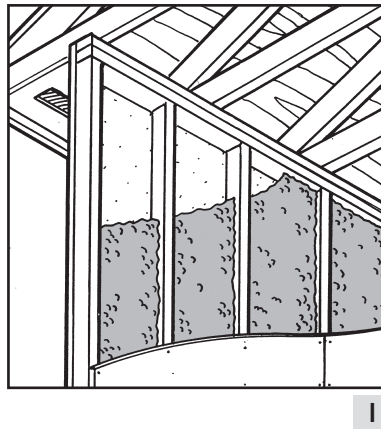


Figure 8: Insulating stud wall cavities (maximum 2" [50 mm] thickness)



**RIM/BAND JOISTS**

The rim joist application is documented in the 2006 International Residential Code (IRC), Section R314.5.11. Foam plastic spray applied to a sill plate and header in residential construction is subject to all of the following:

*The maximum thickness of the foam plastic shall be 3-1/4 inches.*

*The density of the foam plastic shall be in the range of 1.5 to 2.0 pcf.*

*The foam plastic shall have a flame spread index of 25 or less and an accompanying smoke developed index of 450 or less when tested in accordance with ASTM E84.*

FROTH-PAK™ Foam Insulation is UL Classified as a foam plastic – UL File R7813, tested at 2" (50 mm) thickness full coverage. With a flame spread index of 25 and a smoke developed index of 350, FROTH-PAK™ Foam Insulation up to 2" thick can be left exposed without a thermal barrier on sill plates and rim joist headers (Figures 9 and 10).

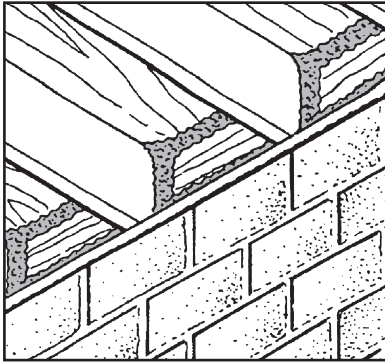
**TIP**

To meet fire code (ASTM E84), limit the width of the FROTH-PAK™ Foam Sealant to 4" (100 mm) and thickness to 2" (50 mm).



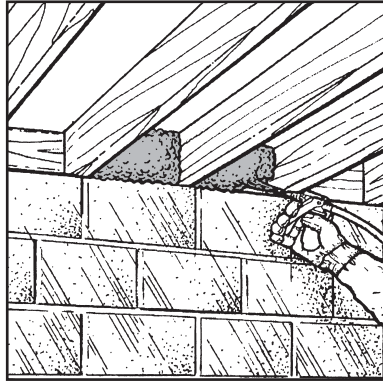
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Figure 9: Sealing sill plate/rim joists (maximum 2" [50 mm] thickness)



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Figure 10: Insulating sill plate/rim joists (maximum 2" [50 mm] thickness)



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### FLOORS ABOVE GARAGES

Floors that have an unconditioned (not heated or cooled) space below provide the following areas for sealing with FROTH-PAK™ Foam Sealant:

- Wall-ceiling joints (Figure 2)
- Rim joists/sill plate (Figure 9)

Additional sealant opportunities include support posts and columns, ductwork and plumbing passes (to minimize vibration noise).

#### IN THE U.S. AND CANADA:

For Technical Information: 1-866-583-BLUE (2583) (English) 1-800-363-6210 (French)

For Sales Information: 1-800-232-2436 (English) 1-800-565-1255 (French)

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**COMBUSTIBLE:** FROTH-PAK™ Polyurethane Spray Foam is combustible and may constitute a fire hazard. Do not expose foam to flame or temperatures above 240°F (116°C). For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada.

FROTH-PAK™ Polyurethane Spray Foam contains isocyanate, hydrofluorocarbon blowing agent and polyol. Read the instructions and Material Safety Data Sheets carefully before use. Wear protective clothing, gloves, goggles or safety glasses, and proper respiratory protection. Supplied air or an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter may be required to maintain exposure levels below ACGIH, OSHA, WEEL or other applicable limits. Provide adequate ventilation. Contents under pressure.

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including Dow can give assurance that mold will not develop in any specific system.

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