DO YOU RECOGNIZE ANY OF THESE ISSUES?

- **Odors**
  - Mold, mildew, musty

- **Moisture**
  - Ice dams
  - Hot spots/cold spots
  - Condensation

- **Air Leakage**
  - Rigid insulation and air sealant

- **Insulation**
  - Insulate and air seal

- **Windows and Doors**
  - Replace with Energy Star-certified windows

- **Building Envelope**
  - Reduce load on HVAC equipment

- **Energy Efficiency**
  - Lower energy bills

---

**Problems:**

- High energy bills
- Unprotected gaps, drafts, drafts, and drafty doors
- Excessive noise

**Solutions:**

- Insulate windows
- Install weatherstripping
- Add insulation and/or air sealing

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**LEARN MORE AT WWW.INSULATEYOURHOME.COM.**

---

**RETROFIT WITH EXTERIOR INSULATION**

If renovation of an older home includes re-siding, it’s the perfect time for adding significant insulation to existing walls. Rigid insulation and air sealant installed today will be well protected where exterior walls are exposed or even existing below.

- **Benefits:**
  - Cost-efficient renovation
  - Improved energy efficiency
  - Potential for additional savings

---

**THERMACORE™ Brand Rigid Foam Insulation**

- **Leaders in the Industry**
- **Finest Quality**
- **Long-Term Value**
- **Easy Installation**

---

** conflict to $$ \text{Cost to home owner:} $$ $1,500$$ \text{per year on average.}^{(3)}$$

**Conflict to $$ \text{Cost to environment:} $$ $8,000$$ \text{per year on average.}^{(2)}$$

---

**Do You Recognize Any of These Issues?**

- Does your home have any of these issues? Luckily, these issues can likely be addressed with the simple solutions below.

---

**RIGID FOAM INSULATION**

- **High**: Higher energy bills
- **Middle**: All but and visible in home
- **Low**: Low energy bills

---

**Comfort by Dow.**

---

**Costs to homeowner:**

- **Estimated cost:**
  - $743
  - $60
  - $60
  - $55

---

**Estimated life expectancy:**

- **Lifetime:**
  - 50 years
  - 25 years
  - 10 years

---

**Energy Retrofit Options**

- **Water-resistant barrier (WRB):**
- **WRB when installed according to the installation instructions developed for “installation of foam sheathing as a weather-resistive barrier”:**
- **When air sealing buildings, ensure that combustion appliances, such as furnaces, water heaters, wood burning stoves, gas stoves, and gas dryers, are properly vented to the outside.”**

---

**Savings to owner:**

- **Estimated savings:**
  - $9,900
  - $9,900
  - $6,800

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**Printed in U.S.A.**
Air leaks and moisture intrusion can happen on every level of the home to compromise homeowners’ comfort, increase energy loss and even potentially damage the structure. For new construction and renovation projects, the solution is to insulate and seal air leaks, creating an airtight, moisture-resistant shell from attic to basement/crawl space. Dow’s portfolio of integrated systems and solutions is designed with the whole house – and homeowner – in mind. Dow insulation, sealants, adhesives, flashings and accessories work together to help provide long-term:

- Comfort
- Energy efficiency
- Indoor air quality
- Durability, protecting home value
- Protection from entry of dirt, allergens and pests

**Whole-House Solutions**

**Sources of Energy Loss**

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basement Floor</td>
<td>38%</td>
</tr>
<tr>
<td>Basement Walls</td>
<td>17%</td>
</tr>
<tr>
<td>Frame Walls</td>
<td>17%</td>
</tr>
<tr>
<td>Windows/Doors</td>
<td>17%</td>
</tr>
<tr>
<td>Ceiling</td>
<td>5%</td>
</tr>
</tbody>
</table>

*Sources of Energy Loss*
Good News
“In 2008, Americans saved more than $19 billion and avoided greenhouse gas emissions equivalent to those of 29 million cars through choices they made with energy-saving measures and energy-efficient homes.”

www.energy.gov

Energy Prices, 2000-2008
Average Prices by Sector

$ per Million BTU

30

20

10

0


Year

Transportation
Commercial
Industrial
Residential

UNDER-INSULATED HOMES
Since 2008, energy prices have steadily increased in every sector, especially residential and transportation, according to the U.S. Department of Energy. A house with inadequate insulation and unsealed gaps and cracks can send the homeowner’s utility bills through the roof...and exterior walls, windows, doors, foundation, etc.

BAD NEWS

Beware of Moisture
Trapped moisture can lead to mold, mildew and wood rot, which can degrade indoor air quality and structural integrity. Dow solutions help keep moisture out of the home.

THERMAL BRIDGING
Studs account for 25% of the wall surface. If continuous insulation is not used, that’s like leaving one wall uninsulated. The wood framing allows significant energy loss known as thermal bridging. Dow rigid foam insulation on exterior walls helps eliminate thermal bridging, reducing potential for condensation and making the home more energy efficient.

THE A LIST
Air seal for the fastest energy savings. Check out these common applications for GREAT STUFF PRO™ and FROTH-PAK™ insulating foam sealants.**

Attic
- Top of exposed stud cavities
- Plumbing stacks and shafts
- Gas line penetrations
- HVAC duct joints and penetrations
- Attic perimeter

Basement
- Sill plate
- Rim joist
- Headers
- Gas line penetrations
- PVC pipe penetrations
- HVAC duct joints and penetrations
- Central vacuum system piping
- Floor-wall junction

Living Space
- Under baseboards
- Gas line penetrations
- Perimeter of electrical boxes (not inside box)
- Plumbing penetrations
- Perimeter of covered wire and electrical conduit penetrations on exterior walls
- Air/heating vents
- Central vacuum system piping

House Exterior
- Electric, gas, cable and A/C penetrations
- Vent hoods
- Exterior garage walls
- Outside water faucet
- Dryer vent
- Cooling lines from A/C condenser and heat pump penetration into house
- Exterior of bay window/cantilever

Seal Air Leaks Throughout the Home
Sealing unwanted air leaks is one of the easiest – and often overlooked – ways to increase a home’s energy efficiency and help protect against moisture intrusion. Insulating foam sealants from Dow are inexpensive and simple to apply for contractors and homeowners alike.

See How Easy(1)

Kits or Refillables?
The choice is yours. FROTH-PAK™ Foam Insulation and FROTH-PAK™ Foam Sealant products are available in portable, disposable kits or returnable, refillable cylinders. Both types benefit from the INSTA-FLO™ dispensing spray gun and hose assembly with distinct anti-crossover nozzles to help eliminate plugged hoses.

(1) Potential energy savings were estimated using REM Home Energy Analysis Software. Results vary based on construction, style, year built, and other distinct home characteristics.

3rd Trademark of The Dow Chemical Company (“Dow”) or an affiliated company of Dow
* Based on heat loss assessment for Climate Zone 5 using ASHRAE calculation methods and U-values.
** Consult the labels/instructions and Material Safety Data Sheets carefully before use.
**Start from the Top**

**Attic Penetrations**
- FROTH-PAK™ Foam Insulation and FROTH-PAK™ Foam Sealant (disposable kits or refillable systems)
- GREAT STUFF PRO™ Gaps & Cracks Insulating Foam Sealant or ENERFOAM™ Professional Foam Adhesive & Sealant
- STYROFOAM™ Brand Spray Polyurethane Foam (SPF) Insulation (MX Series)*

**Can Lights**
Box in can lights with THERMAX™ Sheathing and then seal joint between floor and box with GREAT STUFF PRO™ Gaps & Cracks Insulating Foam Sealant or FROTH-PAK™ Foam Sealant.

**Rooftop**
Securely bond concrete or clay roof tiles with TILE BOND™ Roof Tile Adhesive even in regions with hurricanes and temperature extremes.

**Fill Gaps, Cracks and Penetrations**

**Penetrations**
Quickly fill and insulate gaps less than 3" with GREAT STUFF PRO™ Gaps & Cracks Insulating Foam Sealant or ENERFOAM™ Professional Foam Adhesive & Sealant.

**Energy Efficiency and Moisture Resistance Down Under**

**Crawl Space Walls**
Cover unvented crawl space walls with:
- STYROFOAM™ Brand WALLMATE™ Insulation
- Foil-faced THERMAX™ Sheathing
- STYROFOAM™ Brand Spray Polyurethane Foam (SPF) Insulation (MX Series)
- FROTH-PAK™ Foam Insulation and FROTH-PAK™ Foam Sealant (disposable kits or refillable systems)

**Interior Basement Walls**
Options for the interior basement wall include:
- STYROFOAM™ Brand Extruded Polystyrene Foam Insulation
- Foil-faced THERMAX™ Sheathing
- THERMAX™ White Finish Insulation for a finished appearance, eliminating need for drywall

**Exterior Basement Walls**
STYROFOAM™ Brand PERIMATE™ Insulation
- Enhances drainage
- Insulates, reducing potential for condensation on interior
- Protects waterproofing membrane

**Frost-Protected Shallow Foundation**
Use of STYROFOAM™ Brand Extruded Polystyrene Foam Insulation allows construction of a much shallower foundation.

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*STYROFOAM™ Brand Spray Polyurethane Foam should be installed by a trained SPF applicator wearing protective clothing (including long sleeves), gloves, goggles and proper respiratory protection. Consult the instructions and Material Safety Data Sheets carefully before use.

**R** means resistance to heat flow. The higher the R-value, the greater the insulating power.
**Cavity Insulation and Non-Insulating Oriented Strand Board (OSB) Aren’t Enough**

Rigid foam insulation on exterior walls provides thermal protection across the entire wall, including wood framing. Eliminate air leaks through wall studs by covering the exterior wall with insulation boards from Dow that feature:

- High, long-term R-value**
- Exceptional moisture resistance
- Excellent compressive strength
- Durability

---

**Insulate for energy-efficient comfort**

**Exterior Walls**

Thicker means more thermal protection, so exceed the building code whenever possible with:

- STYROFOAM™ Brand Extruded Polystyrene Foam Insulation
  - STYROFOAM™ Brand Tongue and Groove
  - STYROFOAM™ Brand Residing Board

Seal seams with WEATHERMATE™ Construction Tape.

**Interior Wall Cavities**

Two-component, spray-applied foam insulation creates a monolithic barrier for protection against water and air infiltration. Dow solutions include:

- STYROFOAM™ Brand Spray Polyurethane Foam Insulation (MX Series)
- FROTH-PAK™ Foam Insulation and FROTH-PAK™ Foam Sealant (disposable kits or refillable systems)

**Seal Windows and Doors**

**Window Sills**

WEATHERMATE™ Sill Pan, with integrated corners, conforms to window openings for protection against water seepage.

**Window/Door Openings**

Use WEATHERMATE™ Flashings with butyl rubber adhesive for a durable, water-resistant seal at window and door openings.

**Interior Window Framing**

Insulate and seal windows/doors with minimal-expanding polyurethane foam proven not to bow window and door frames when applied properly.

**Rim Joists**

Options to air seal or air seal and insulate rim joists:

- Use GREAT STUFF PRO™ Gaps & Cracks Insulating Foam Sealant or ENERFOAM™ Professional Foam Adhesive & Sealant to picture-frame or outline where the edges meet the wood studs and sill plate.
- Install cut-to-fit pieces of Dow rigid foam insulation and use GREAT STUFF PRO™ Gaps & Cracks Insulating Foam Sealant or ENERFOAM™ Professional Foam Adhesive & Sealant to picture-frame or outline where the edges meet the wood studs and sill plate.
- Fill in the rim joist cavities with FROTH-PAK™ Foam Insulation
- Apply STYROFOAM™ Brand Spray Polyurethane Foam (SPF) Insulation (MX Series).

**Sill Plate**

Flexible STYROFOAM™ Brand SILL SEAL Foam Gasket reduces air infiltration between concrete foundation and sill plate.

---

Concrete is a poor insulator.
A 7” thick slab of poured concrete has the same R-value as a pane of glass (r-1.5).
Tools and Cleanup

PRO Series Dispensing Guns
Choose from four excellent foam dispensing guns for GREAT STUFF PRO™ products. Restartable, pinpoint control and no post-dispensing foam drip for less foam waste.

Gun Cleaner
Keep both the inside and outside of dispensing guns clean and in top condition with GREAT STUFF PRO™ Gun Cleaner with gun adapter or red spray nozzle attachments.

INSTA-FLO™ Dispensing Gun and Nozzles
The INSTA-FLO™ dispensing spray gun features anti-crossover nozzles specially designed to help eliminate chemical crossover in FROTH-PAK™ systems, making an accurate and economical application of spray foam easier. These nozzles, an industry favorite, feature:

- Patented nozzle design – helps eliminate plugged hoses
- Several nozzle types – offer a variety of outputs and spray patterns
- Side wing design – provides quick gun attachment
- Clear dispensing tips – easily identify used nozzles
- Tapered design – improves mixing for enhanced foam quality

<table>
<thead>
<tr>
<th>Nozzle Type</th>
<th>Output</th>
<th>Coverage Area</th>
<th>Description</th>
</tr>
</thead>
</table>
| Caulking          | Low    | Controlled bead size | • Designed for precisely controlled output  
|                   |        |               | • Use for tight areas  
|                   |        |               | • Minimizes overspray and waste                        |
| NS Cone/Spray     | Medium | Small         | • Cylindrical spray pattern  
|                   |        |               | • FILS voids and cavities                              |
| Fan/Spray         | Medium | Wide area     | • Designed for flat applications – walls, roofs and ceilings  
|                   |        |               | • Use to smooth out orange peel or textured finish      |
| Pour              | High   | Large volume  | • Designed for filling large cavities (slow rise formulation recommended)  
|                   |        |               | • Use in hidden cavity applications                     |

Adhere Subfloor and Drywall
Bond subfloors, drywall, paneling and foam panels with GREAT STUFF PRO™ Wall & Floor Adhesive or ENERBOND™ Professional Foam Adhesive for a fast-grab tack and high-strength bond. For easy application, use the PRO Series 14XL foam dispensing gun with a 40” long barrel and guide tip for added accuracy.

Air Sealing Around the Home
For smaller or application-specific uses, try GREAT STUFF™ Insulating Foam Sealants with straw dispensers.

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Do You Recognize Any of These Issues? Sometimes some of the signs that a home isn’t functioning efficiently, which can adversely impact the occupants’ comfort level. Do you recognize any of these issues? Luckily, these issues can likely be addressed with the simple solutions below.

### Problem | Solution
--- | ---
High energy bills | All and visible for home
Unperforated gaps, drafty corners, and loose-fitting windows | Seal with an air sealant and insulate with rigid foam
Unusable space, such as a basement or attic | Right insulation and air sealing
Visible space, such as a basement or attic | Right insulation and air sealing

---

**PROTECT YOUR INVESTMENT LONG TERM**

**Whether it’s new construction or a renovation project, a well-insulated and sealed home is better able to maintain structural integrity and indoor air quality.**

**Homeowners also enjoy:***
- Cost-saving energy efficiency
- Comfort, free from air drafts
- Peace of mind
- Less work for the HVAC system, possibly even requiring a smaller unit
- Contribution to reducing carbon footprint or sustainability

According to a recent survey, 81% state that owning a home is the best long-term investment to make.

---

**THICKER PAYS QUICKER**

**THE PROBLEM:**

If you’re adding significant insulation to existing walls, consider adding high R-value rigid foam insulation. This can significantly reduce the potential for isocyanate exposure, however, supplied air or an approved air-purifying respirator equipped with an organic vapor sorbent and a particulate filter may still be required to maintain exposure levels below ACGIH.

**THE SOLUTION:**

**INSULATING EXTERIOR WALLS**

| Problem | Solution |
--- | ---|
Cost to homeowner: | $1,400 per year on average. |
Savings to homeowner: | $920 per year on average. |
Cost to environment: | Actually, in the U.S., building sector accounts for about 40% of all energy consumption and greenhouse gas emissions. |
Savings to environment: | One square foot of insulation/siding installed 1" thick STYROFOAM™ Brand Rigid Foam Insulation can avert over one ton of CO2 emissions during the average life of a building.

---

**STYROFOAM™ Brand Spray Polyurethane Foam** contains isocyanate, hydrofluorocarbon blowing agent and polyol. Read the instructions and Material Safety Data Sheets carefully before use. Wear protective clothing (including long sleeves), gloves, or wear proper respiratory protection. Contents under pressure.

**Spraying large amounts of foam indoors may require the use of a positive pressure, air-supplying respirator.**

**Contents under pressure.**

**FOR TECHNICAL INFORMATION: 1-866-583-BLUE (2583)   •   FOR SALES INFORMATION: 1-800-232-2436**
Do You Recognize Any of These Issues?

- Unusable space, such as a basement or attic
- High energy bills
- Uncomfortable drafts, drafts cause and control issues, and uneven room temperature
- Moist, mildew, or mold
- Pet, dust, allergies
- Hot spots/cold spots
- Poor Sound Insulation
- Poor Air Seal
- Poor Air Quality

Fortunately, these issues are not functioning efficiently, which can severely impact the occupants’ comfort levels. Do you have any of these issues? Luckily, these issues can likely be addressed with the simple solutions below.

If renovation of an older home includes re-siding, consider adding significant insulation to existing walls.

Retrofit with Exterior Insulation

- Minimize entry of noise, dust, allergens and pests
- Mold, mildew and wood rot
- Increase energy efficiency
- Reduce energy costs
- Reduce noise
- Improve ventilation
- Reduce radon
- Save money

Increase energy efficiency up to 15% by adding insulation to existing exterior walls. This could amount to $2,531 in energy savings over 15 years. When insulating existing exterior walls, consider using Dow’s extruded polystyrene foam. Dow’s Extruded Polystyrene Foam has a long track record of being a high-performing product, allowing for more aggressive thermal and air leakage targets. Dow’s Extruded Polystyrene Foam is easy to install and is designed to be used in combination with a vapor retarder. It is also easy to shape and cut to fit, and it is a great choice for retrofitting existing exterior walls.

Heat Loss in the Home

- The Problem:
  - High energy bills
  - Uncomfortable drafts
  - Uneven room temperature

- The Solution:
  - Minimize entry of noise, dust, allergens and pests
  - Mold, mildew and wood rot
  - Increase energy efficiency
  - Reduce energy costs
  - Reduce noise
  - Improve ventilation
  - Reduce radon
  - Save money

Dow’s Extruded Polystyrene Foam is easy to install and is designed to be used in combination with a vapor retarder. It is also easy to shape and cut to fit, and it is a great choice for retrofitting existing exterior walls.

Long-term energy savings

- According to a recent survey, 81% state that owning a home is the best long-term investment to make.

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Thicker Pays Quicker

<table>
<thead>
<tr>
<th>Product</th>
<th>Estimated Payback</th>
<th>Estimated Energy Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1” STYROFOAM® Brand</td>
<td>$732</td>
<td>$450</td>
</tr>
<tr>
<td>1.5” STYROFOAM® Brand</td>
<td>$675</td>
<td>$600</td>
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<tr>
<td>2” STYROFOAM® Brand</td>
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<tr>
<td>3” STYROFOAM® Brand</td>
<td>$475</td>
<td>$660</td>
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</table>

LEARN MORE AT WWW.INSULATEYOURHOME.COM.

FOR TECHNICAL INFORMATION: 1-866-583-BLUE (2583) • FOR SALES INFORMATION: 1-800-232-2436

Dow Polyisocyanurate Insulation

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