

Better Home, Better Planet™

As the world's leading chemical company, BASF plays a leadership role in shaping a sustainable future. We are committed to developing products that make homes more energy efficient, durable and affordable to own. Through innovation, consumer education and professional training, we are changing the way homes are built around the world.

BASF is an ENERGY STAR® partner and a member of the U.S. Green Building Council.



At BASF, innovation comes in all shapes and sizes. What shape will yours take?

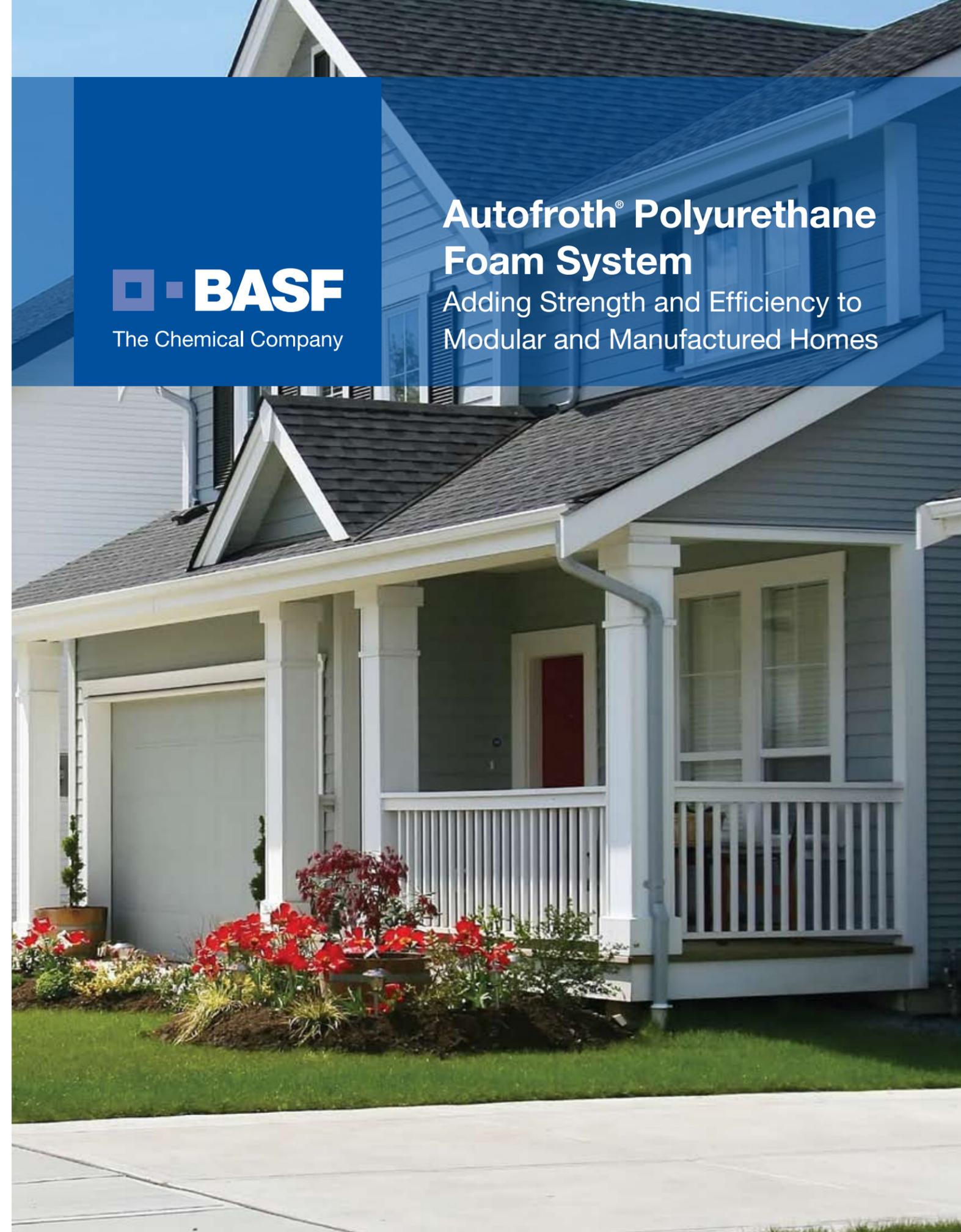
BASF Corporation
1609 Biddle Avenue
Wyandotte, Michigan 48192
www.basf.com/pur
purconstruction@basf.com

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Autofroth® Polyurethane Foam System

Adding Strength and Efficiency to
Modular and Manufactured Homes





Autofroth® Polyurethane Foam System

A Keystone to Good Home Construction

Insulation is a key component in a building's performance. It is part of the building envelope, which separates the interior living space from the exterior elements. The right kind of insulation should provide optimal energy efficiency; create a healthier, more comfortable interior; and resist the effects of moisture, making a home's construction more durable. Currently, there are a variety of insulation products on the market, from the most popular, fiberglass, to the most effective – closed-cell spray polyurethane foam (ccSPF).

BASF's complete Autofroth® ccSPF system offers modular and manufactured home builders a more effective and efficient way to insulate compared to other insulation products. It requires a low capital investment and has proven field performance.

Choose Spray Polyurethane Foam and Profit from Performance

Keeps Good Air In and Moisture Out

Air leakage accounts for 25 to 40 percent of the energy used for heating and cooling in a typical home! Autofroth® ccSPF can help eliminate the leakage by creating a single, continuous, insulating air barrier from the floor to the wall and across the roof. By controlling air leakage and improving thermal performance in a factory-built home, builders can save by specifying smaller, more efficient HVAC system components.

Autofroth® ccSPF insulation also minimizes moisture movement and is considered semi-impermeable to water vapor (< 1 perm) at a one-inch thickness. In addition, it helps reduce wood decay, rot and mold growth. Closed-cell foams, like Autofroth®, are the only cavity insulations classified by FEMA as flood-resistant².

Stronger and More Durable

Studies show that ccSPF insulation, like Autofroth®, significantly increases rack and shear resistance, making a home two to three times stronger than traditional construction.³ The foam also bonds well to other construction materials and is stiffer and stronger than conventional insulation. In a factory built environment, this can mean a reduction in framing material, increased durability and fewer cracks during transportation.

Homeowners benefit from Autofroth® ccSPF insulation because it:

- Improves energy efficiency, reducing energy bills
- Helps maintain consistently comfortable interior temperatures
- Improves indoor air quality
- Helps reduce mold growth
- Provides greater structural integrity
- Is environmentally friendly
- Helps homeowners qualify for Energy Efficient Mortgages as well as consumer tax credits and rebates

Autofroth® closed-cell SPF insulation helps builders meet Energy Star, and other high-performance and green building program requirements.

1. www.energystar.gov

2. Flood resistant materials requirements for buildings located in special flood hazard areas in accordance with the national flood insurance program, FEMA technical bulletin 2-93.

3. Studies performed by the National Association of Home Builders (NAHB).



What is SPF?

Spray applied Polyurethane Foam (SPF), like Autofroth®, is the sprayed application of a liquid, two-component, non-fibrous product. When applied, the two components create a foam, which bonds to the substrate and dries, cures and hardens in seconds.



The Autofroth® equipment is easy to handle and operate. Drill shown for scale.

Autofroth® Closed-cell SPF vs. Other Insulation Products

Autofroth® ccSPF provides builders with superior performance over conventional insulation and can act as an insulation, air barrier¹ and vapor retarder.²

Feature	Autofroth® Closed-cell Spray Polyurethane Foam	Open-cell Spray Polyurethane Foam	Fiberglass	Blown Cellulose
Per inch R-value ³	6.0	3.5 - 4.0	3.0 - 3.5	3.0 - 3.5
Approved air barrier	✓ at 1.5" thickness	✓ at 5.5" thickness	✗	✗
Seamless construction	✓	✓	✗	✗
Rigid	✓	✗	✗	✗
Fully adheres	✓	✓	✗	✗
Adds structural strength	✓	✗	✗	✗
Long service life	✓	✓	✗	✗
Fills difficult spaces	✓	✓	✗	✗
Low water absorption ⁴	✓ < 4% v/v	✗ > 40% v/v	✗	✗

1. At a 1.5-inch thickness
 2. At a one-inch thickness
 3. R means resistance to heat flow. The higher the R-value, the greater the insulating power.
 4. v/v is volume of water per volume of insulation.

Table source: ASHRAE 2005 Handbook, Chapter 25, Table 4-Thermal Properties.

This brochure complies with the Federal Trade Commission labeling and advertising of home insulation rules and regulations, Federal Register, 16 CFR 460 Labeling and Advertising of Home Insulation: Trade Regulation Rule; Final Rule, Tuesday, May 31, 2005.

Autofroth® Closed-cell SPF is the Better Solution

Not Your Typical SPF Insulation

The Autofroth® SPF system is a closed-cell foam packaged in pressurized cylinders and applied with BASF dispensing equipment. Unlike other SPF systems, Autofroth® is applied at low-pressure, which makes spraying the foam safer and more economical to use in a plant environment.

Easy Setup, Less Cost

The simple configuration of Autofroth®'s equipment goes a long way to reduce setup costs. The polyurethane components are contained in portable, returnable pressurized containers, which eliminate the cost associated with drum disposal. And with the complete Autofroth® system, you get dependable BASF support, including local field technical service for quick response and next-day spare parts service.

Making You Feel Right at Home

Both Autofroth® equipment and BASF's high-performance spray polyurethane foams have been successfully and reliably field-tested. At the plant level, we provide the expertise for Autofroth setup, layout and design, as well as polyurethane and equipment training, in-plant demonstrations, and ecology, health and safety support.

Working with BASF also gives you the support you'd expect from the world's leading chemical company. We can help you communicate the value of our ccSPF insulation to your dealers and to consumers. From concept through development, testing, manufacturing and to market, we're there with you.



Improved Technology Bolsters Your Bottom Line

Easy and Flexible Autofroth® Foam Dispensing Equipment:

- Can be portable or fixed
- Provides spray or pour options
- Has a low setup cost
- Setup can be customized to individual plants to work with production process
- Uses 110V electrical, so no additional wiring is needed
- Readily available and quickly set up
- Offers options such as programmable timers to monitor foam weights and foam quality

Safely Used Indoors

Autofroth® dispensing equipment is designed to mix the polyurethane components at significantly lower temperatures and pressures compared to traditional spray equipment. The low-pressure spray helps reduce the amount of personal protection equipment (PPE) requirements for both the operator and surrounding workers. Typical recommended PPE for an operator includes gloves, long sleeves and a half-mask respirator.

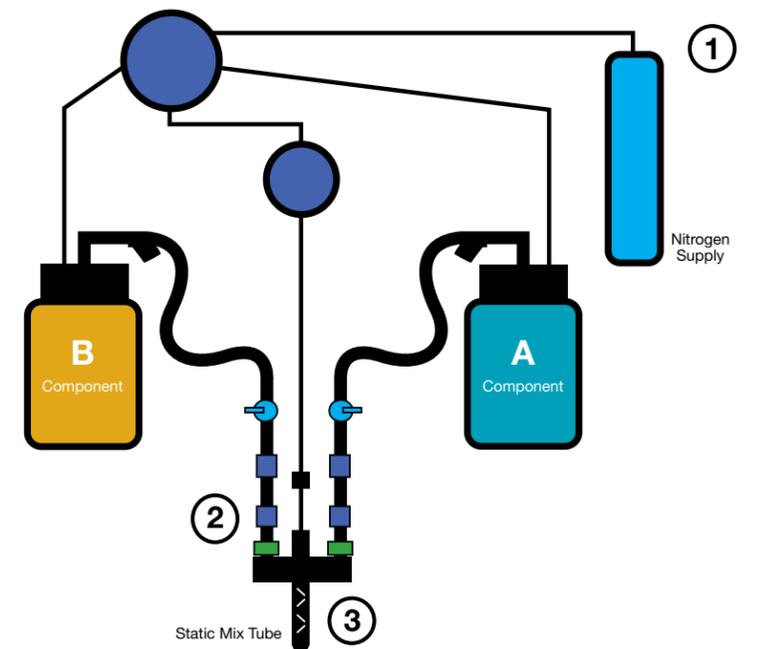
Using Autofroth® dispensing equipment and the proper ventilation, surrounding workers can build as usual. Ask how BASF can tailor the Autofroth® dispensing equipment to your plant requirements as well as perform monitoring on a plant-by-plant basis.



The Straight Shooter

The Autofroth® ccSPF system is a low-pressure spray that is easy to use and operate.

- ① It uses nitrogen pressure to “pump” two polyurethane components through the gun.
- ② The flow controller dispenses equal volumes of the two components.
- ③ The streams combine in a static mixer. The mixer helps maintain the foam’s consistent texture and pattern.



Each Autofroth® system is comprised of a dispensing unit and cylinders containing Autofroth® components.