



THERMO SOLUTIONS

Polynor - One Component Spray Polyurethane Foam
www.polynor.com



PU INSULATION FOAM INTRODUCTION

GUN FOAMS • STRAW FOAMS



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Basic information for one-component Polyurethane (PU) Insulation Foams

Polyurethane foam (PU foam) is a versatile chemical product used in many common construction applications which require adhesive bonding, filling, sealing, and insulation. Its high thermal and acoustic insulation properties makes it an excellent product for applications such as insulation of water pipes, boats, vehicles, bonding and sealing of roofs and walls, attics, can be applied to a wide range of materials and surfaces. It delivers multiple benefits in one application.



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ABOUT US

Our company is an established manufacturer, supplier, and distributor of high quality sealants, adhesives, and PU foams. We are owners of patented range of Polynor foams. Established in Moscow, in 2008, our company has since gained a reputation for quality, reliability and outstanding value. Our mission is to deliver a superior level of services and products to achieve life-long customer satisfaction and relationships. We pride ourselves on our product quality, customer service, and technical expertise and support. Our engaging and experienced sales team is always ready to assist with any sales or technical queries.



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ABOUT US

Rapid growth in sales and outstanding company's development as a leader of innovative products in aerosol package has led to setting up the new plant in Lithuania, EU.

The manufacturing plant has been constructed through the European Regional Development Fund and covers the 6,000 square meters facilities near Vilnius. It provides the full production cycle, four automatic lines, system house, R&D department, multi - level system for monitoring quality of raw materials, components and finished product.



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ABOUT US

We are owners of patented range of Polynor



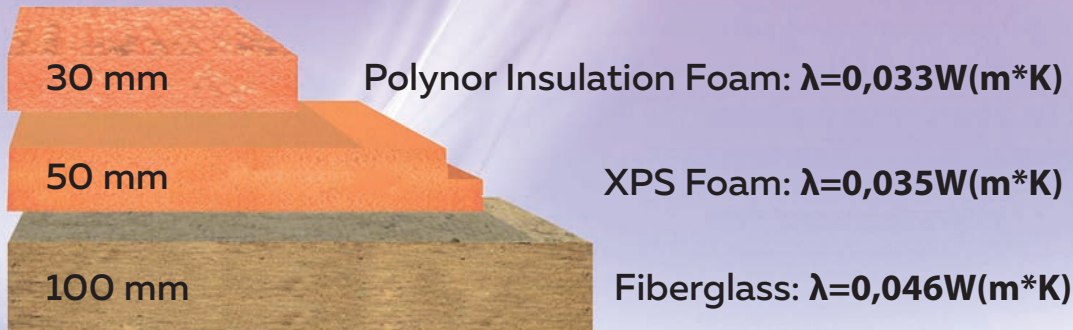
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Polynor PU Insulation Foams

Polynor PU Insulation foams are one-component, self-expanding foams in pressurized aerosol cans, and can be applied using either a straw, or a foam gun. The main cause of energy waste is air leakage due to inadequate or poor-performing insulation. Unlike traditional fiberglass and cellulose insulations, Polynor's remarkable formula, when applied properly, expands to create a seal protecting against air infiltration. Polynor won't sag or settle and provides a water-resistant barrier, shielding against moisture and mold. Polynor Insulation Foam increases energy efficiency and can lower heating and cooling costs. Our superior insulation solution protects against dust, pests, and sound, reinforces structures, increasing wind shear strength while reducing wall vibration and movement. Polynor Insulation Foam can dramatically lower your utility bills, so our product practically pays for itself! It simply performs for the lifetime of the building without needing service, maintenance or upgrade.

THERMAL CONDUCTIVITY COEFFICIENT



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Polynor PU Insulation Foams

Your investment in Polynor Insulation will reap long term returns in saved energy, comfort, control of indoor air quality, and health and safety for the life of your home. Because polyurethane foam is a closed cell insulation material delivering the highest R-value per inch, your heating and cooling equipment works more efficiently, uses less fuel and maintains consistent and uniform temperatures.

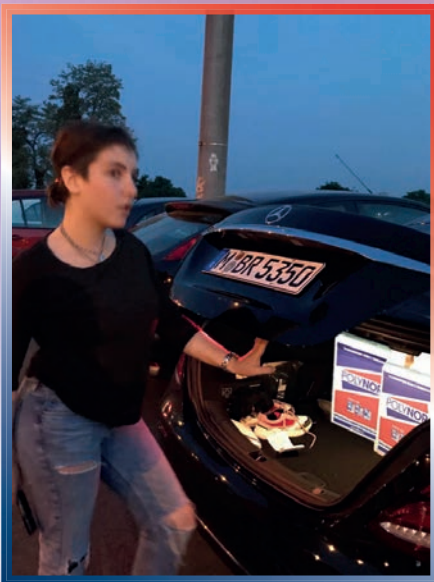
- Stops Air Infiltration
- Minimizes air flow
- Helps eliminate drafts
- Better humidity control
- High Insulation Value
- Insulation in a tighter space
- Performs in hot as well as cold temperatures
- Moisture Resistant
- Stops moisture driven elements due to its closed cell salability
- Dries with minimal insulation value loss
- Solid nature inhibits insect penetration
- Seals cracks from unwanted gas and odor penetration
- Forms semi-rigid structure with closed cells (>70%)
- Excellent adhesion on most common materials and between different materials
- Excellent filling capacities, expands to 65 times its original volume
- Strong bonding characteristics
- Excellent thermal and acoustic insulation

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ADVANTAGES OF USING POLYNOR INSULATION PU FOAM

- Ready to use – does not require any mixing – **Unique One—Component Formula**
- Easy to use – saves time and labour
- Easy to transport – no more carrying big bags of cement or fiberglass
- Convenient application – Using professional application tools creates less mess
- Excellent insulation properties – seamless insulation provides much better performance than alternative insulation materials.
- Movement capability – will not crack after time from building movement / material expansion



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GUN AND STRAW FOAMS

Polynor's foams are one-component foams which needs either a gun or a straw for application. These two types of foams are commonly known as "Gun foams" and "Straw foams". While both will achieve the same purpose and the same end product, there are some critical differences between the two.

Gun Foam:

Application / Delivery – This gun can be reused as long as it is taken care of properly. Guns are a separate cost.

Storage after use – After application, guns must be cleaned with cleaner, or left attached on the can with its screw control fully tightened.

Yield – Gun foams have typically much higher yield.

Density – Gun foams are of lower density (which allows it to attain higher yield). Note, that density has effects on many properties, but generally, lower density is considered better.

Expansion / Control – A user can have better control of the application of a gun foam, as foams are sprayed in an expanded state. Once it's sprayed the foam usually expands 30% to 80%, so it is easier to estimate and dose the correct thickness of insulation.





GUN AND STRAW FOAMS

Straw Foam:

Application / Delivery - Each can of straw foam comes with a straw with a nozzle already mounted and ready to use. No additional cost.

Storage after use - Once a can is finished, the straw may be disposed together with the can. If a can is used halfway, straw foams cannot store properly, it is single time application.

Yield - Polynor Straw foams have high yield, but less than gun's one .

Density - Straw foams are of medium density.

Expansion / Control - Straw foams are sprayed in smaller beads, hence must expand more, between 70% to 150%. This makes it little bit harder to estimate how much foam is needed to dose.

As a general rule, Polynor Gun Foams are more suitable for users or applications requiring a large number of foam . This will maximize the value to the user due to better yield, control, and storage. On the other hand, Polynor Straw Foams are more suitable for small users only using a few cans each time.



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PU FOAM YIELD PER CAN

Polynor's PU Insulation foam products are filled to a standard 750 ml, with strict quality checks during the manufacturing process that ensures each can has enough volume. While 750 ml sounds very little theoretically, it is important to note that these foams expand through reactions with the propellant during spraying from the can, and reactions with the environment moisture after spraying. The final product of foam may be up to 65 times the original polymer mixture inside the can itself. This is achieved through two expansion processes:

- 1) When the foam is sprayed from the can, the propellant gases act as a frothing agent to mix the PU pre-polymers with moisture, as well as the propellant gases themselves, creating a frothy, foamy mixture.
- 2) After the product has been sprayed from the can and is left to react with the environmental humidity and gases, it continues expanding as it cures. During this stage, it can expand between 30% to 150%.

3 m ²	insulation	layer 20 mm
2 m ²	insulation	layer 30 mm
1,2 m ²	insulation	layer 50 mm
1 m ²	insulation	layer 60 mm



Personal Protective Equipment

Always wear respirator, protective eyewear, impervious gloves, suitable work clothes or Tyvek suit, during use. You do not want the foam to get on your skin. It is helpful to apply a moisturizing lotion to face prior to spraying, as the lotion will help keep the foam from sticking to any exposed skin the goggles and respirator won't cover.



APPLICATION AREAS



- ① external insulation
- ② internal and external roof insulation
- ③ abutment wall insulation to the roof
- ④ drywall and wall tiles insulation
- ⑤ floor insulation
- ⑥ thermal floor insulation
- ⑦ floor insulation relative to the ground or basement
- ⑧ thermal insulation of the outer walls of the cellars
- ⑨ utility corridors insulation



Product Expansion to Poland

We continued on our successful growth trajectory with Leroy Merlin in August, 2017 by presenting Polynor PU Insulation Foam in Poland, at 6 stores .
A very pleasing development of sales in the first quarter of the year 2017 has resulted in increased cooperation and enhanced product presence in all Leroy Merlin ' shops around Poland .



So, the actual sales for the reporting period (August, 2017 - December, 2018) recorded 90.000 cans of Polynor.

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Main reasons why your customer will buy Polynor Insulation Foam

- INSULATING 1 m² within 2 min
- ONE CAN COVERS 1 m² with 5 cm thickness
- COOL IN SUMMER WARM IN WINTER - SAVE UP TO 40 % ON YOUR UTILITY BILLS
- VARIABLE THICKNESS OF INSULATION LAYERS FROM 5 mm up to 50 mm
- DOESN'T REQUIRE INSULATING FILM, CLIPS, FRAME, MEMBRANES, SPECIAL FASTENERS
- EASY TO USE FOR GEOMETRIC SURFACES AND HARD-TO-REACH PLACES
- OUTSTANDING ADHESION TO ALL KINDS OF BUILDING MATERIALS
- DIY
- LOW LOGISTIC COST
- NO NEED IN BIG STORAGE FACILITIES
- REDUCED ENVIRONMENTAL IMPACT.
- 12 MONTHS SHELF LIFE
- FIRE- RATED

POLYNOR INSULATION FOAMS DELIVERS MULTIPLE BENEFITS
IN ONE APPLICATION FOR BOTH DIY AND TRADE CUSTOMERS



Exposition in shops , Retail Sales and Merchandiser Support

Our sales team is engaged in employee training , marketing promotion, product-placement and place signature to help the retailer maximize sales and increase sales volume. We carry out assistance in participation in exhibitions and promotional events all over Europe.

YOU CAN FOLLOW OUR ACCOUNTS ON YOUTUBE, INSTAGRAM AND LINKEDINN





Vibrant, yet mellow Polynor Living Coral embraces us with warmth and nourishment to provide comfort in our continually shifting environment.





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