SPRAY POLYURETHANE FOAM (For Home)

There is no better home insulating material than spray polyurethane foam. It can seal your home from air and moisture intrusion, saves costly utility bills, strengthens your home, and protects your family health from dangerous mold and airborne pollutants.

INNOVATION BY USP FOR SPRAY POLYURETHANE FOAM AS INSULATION ENVELOPE FOR YOUR HOME:

USP - SPF spray-applied foam is sprayed vertically, directly on site, by using special equipments and trained, qualified staff working for spray-foam contractor.

Advantages:

1. *Insulation applied without joints (no thermal bridges)*
2. *All-over bonding to the base, thus preventing cold outside air getting in between the walls and the applied insulation.(chimney effect)*
3. *Excellent insulation effect*
   λ = 0.020 W/m x K measured value
   λR = 0.030 W/m x K calculated value (DIN 4108)
4. *Water vapour permeability μ = approx. 100*

We are specialized in Water proofing and Building Envelope System, our specialties are:

- **Torched applied membrane : 3 mm, 4 mm**
- **EPDM Envelope System**
- **Cementitious Water proofing for + and – sides**
- **PU Asphalt base, PU Resin base high elastic coating for commercial & residential projects**
- **Crystalline Surface Coating**

URETHANE SYSTEMS & PRODUCTS CORPORATION PAKISTAN

(A Member of the Product Group of Companies)

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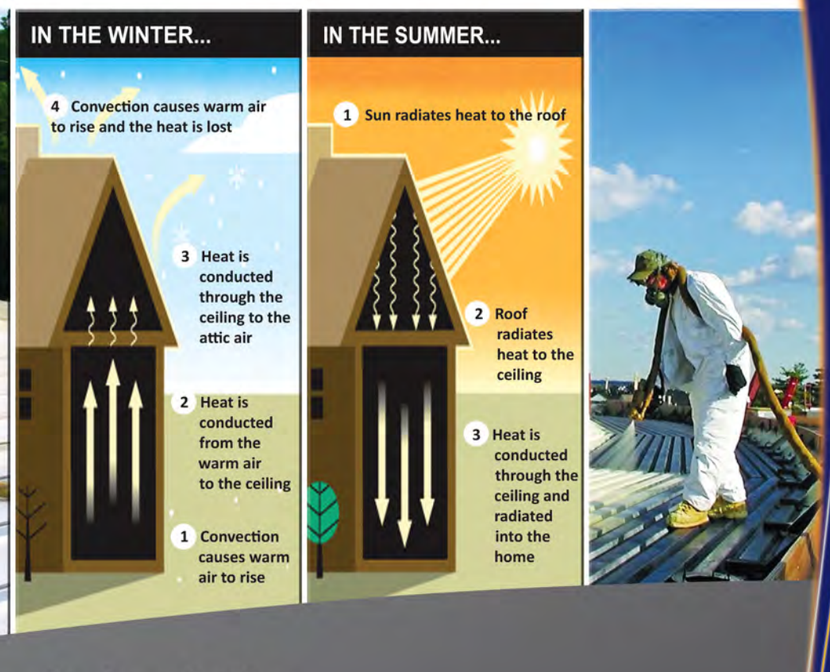
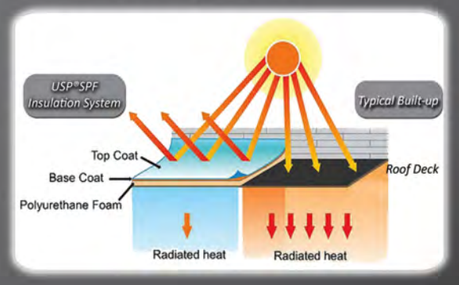


Innovation in Insulation

Use of USP-SPF for roof and wall insulation in the industrial and commercial building, and residential housing sector is a rapidly growing market due to many energy saving and air/moisture barrier advantages over traditional fiberglass and other insulation materials or systems.



SUSTAINABLE BUILDING ENVELOPE

ELIMINATES AIR INFILTRATION

ELECTRIC ENERGY SAVINGS

REDUCES ENERGY CONSUMPTION

ENVIRONMENTALLY FRIENDLY

WATER SAVINGS

HEALTHIER LIVING ENVIRONMENT

WHY USP SPRAY POLYURETHANE FOAM?

- LOW THERMAL CONDUCTIVITY
- TEMPERATURE & WEATHER RESISTANT
- INSULATION APPLIED WITHOUT JOINTS (NO THERMAL BRIDGES)
- FINISHED FOAM IS NON-SHRINKING
- AVOIDANCE OF CONDENSATION
- HEAT, FROST AND ROT-RESISTANT
- CONFORMS TO BUILDING REGULATIONS
- EXCELLENT AGAINST AIR-BORNE NOISE
- LONG LIFE

Benefits of USP Spray Polyurethane Foam (SPF)

(USP - SPF from Urethane Systems & Products Corporation, Pakistan).

Applications:

Sprayed Polyurethane Foam, better known as the acronym, "SPF", has its many applications in markets. The major application of USP - SPF, manufactured by Urethane System & Product Corporation, is in the construction industry as part of the commercial roofing system and also as a perimeter wall insulation material. Rigid polyurethane foams are primarily used as insulation in buildings, on roofs, water heaters, refrigerated transport, commercial and residential refrigeration where their insulation value, high strength, moisture resistance and durability are required. Polyurethane foams are also used for flotation, packaging, furniture, adhesives, architectural design, and cavity filling.

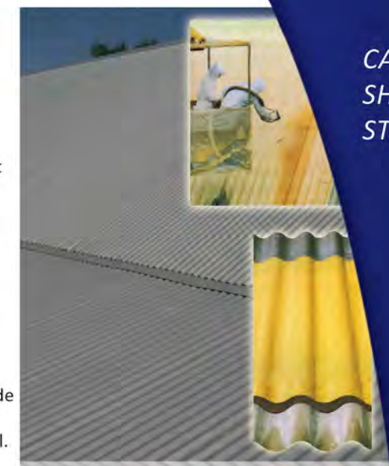
Studies have shown that 40% of a building's energy loss is due to heat loss, or gain through walls, roofs and windows. Spray Polyurethane Foam (SPF) insulation saves on energy costs and lowers the utility bills. SPF is used to seal the entire "building envelope" of your home to prevent air and moisture infiltration. This air infiltrates the home in the form of drafts through walls sockets, windows and doorways.

(More .... See last page)

Thermal Properties of SPF:

SPF is an incredible material for roofing systems and thermal insulation with its excellent water resistance and ability to air-seal your home or building with R-values ranging from 6.5 to 7.0 per inch. Spray Polyurethane Foam is so efficient and lightweight as an insulating material that even NASA has used it to insulate the main rocket booster on the space shuttle. **USP-SPF** has an aged R-value of approximately 6.0 per 1 inch thickness (depending on the particular formulation and application, higher values have been achieved), enabling it to provide more thermal resistance with less material than any other type of commercial insulation material. This efficiency contributes to significant energy savings throughout the life of a building and benefits the owner allowing the use of smaller capacity cooling and heating equipment.

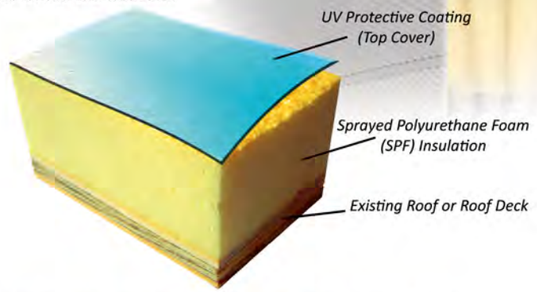
USP-SPF also reduces airborne sound making the home acoustically tighter and somewhat quiter inside the house....



CAVITY FILLING OF BOATS & SHIPS e.g. HULLS & COLD STORAGE COMPARTMENTS

Insulate with Profit

USP Spray Polyurethane Foam



SUSTAINABLE ROOFING

Architects, builders, and owners have created a revolution in the way new buildings are planned and constructed. This revolution has generated awareness of energy matters. Conventional ideas on energy saving must be revised and replaced by better solution. The use of polyurethane foam is the correct and forward-looking alternative. It supports energy conservation, and warrants the confidence of the building owner, engineer and architect. USP Spray Polyurethane Foam (SPF) Insulation Roofing System, manufactured by Urethane Systems & Product Corporation is a rigid, closed-cell chemical reactant emerging from a combination of two liquid components. These roofs provide high compressive strengths that increase durability, endure foot traffic, and resist impact and storm damage.

WHY SHOULD YOU CHOOSE THE USP - SPF (Spray Polyurethane Foam Insulation.)?

We have the expertise and experience to provide the best insulation systems.

An Economical Solution:

By application of USP-SPF system for insulation and air-sealing there is less energy required for heating and cooling and also, at the same time there is reduction in the environmental emissions.

The cost of an USP-SPF insulation system can often be recovered in less than 5 years, simply through energy savings alone.

Comparison & Properties of different insulation materials available in Pakistan.

Material	Thermal Conductivity W/M°K	Density kg/m^3	Monolithic (i.e., bonded with Roof)	Seamless (i.e., without joints)
Spray PU Foam	**0.020**	**32**	**Yes**	**Yes**
Polystyrene	0.037	30	No	No
Glass wool	0.041	65~160	No	No
P.E foam sheet	0.0348	32~38	No	No