



PU FOAM INSULATOR (POLYOL + ISOCYANATE)

2K SPRAY APPLIED SEAMLESS POLYURETHANE FOAM SYSTEM

SmartCare PU Foam Insulator is a two component system. SC PU Foam Insulator Polyol and SC PU Foam Insulator Isocyanate are used in combination to produce spray foam insulation in multi layers for roofing, wall & basements. It contains all the raw materials and auxiliaries necessary for the production of rigid polyurethane spray foam with density of 40 - 48 Kg/m³. It gives good thermal insulation.

CHARACTERISTICS / ADVANTAGES

- Good Bonding to all building materials - concrete, metal, wood etc.
- Self-flashing and provides seamless protection of roof surface
- Fast Drying - work completion in lesser time
- Light weight - no extra load on structures
- Touch Free drying in seconds
- 100% solids, VOC-free, Solvent free

USES

- Roof Spraying application - Roofs made of Metal, Concrete, Wood etc.
- Works as heat Insulation systems
- Flooring & Wall Insulation
- Storage tank insulation
- Acts as Air Barrier - Low Air Permeance
- Acts as Moisture Barrier - Prevention of moisture penetration
- Also acts as Sound Barrier - Air seals to absorb sound of varying frequencies

TECHNICAL DETAILS

TYPICAL COMPONENT PROPERTIES

COMPONENT PROPERTIES	UNITS	SC PU FOAM INSULATOR POLYOL	SC PU FOAM INSULATOR ISOCYANATE	TEST METHOD
Hydroxyl No. (Theoretical)	mgKOH/g	330 - 370	-	ASTM D 4274
NCO Content	%	-	30 - 32	ASTM D 5155
Viscosity (25°C)*	mPa.s	280 - 320	160 - 240	ASTM D 445
Density *	g/cm ³	1.23 ± 0.02 @ 20°C	1.16 ± 0.02 @ 25°C	ASTM D 891

* These values provide general information and are not part of product specification

COMPONENT PROPERTIES	UNITS	LIMITS
SC PU FOAM INSULATOR POLYOL	pbv	100
SC PU FOAM INSULATOR ISOCYANATE	pbv	100

TYPICAL REACTION CHARACTERISTICS – Foaming data by the hand mixing method at 21°C

COMPONENT PROPERTIES	UNITS	TYPICAL VALUES
Cream Time	sec	3 - 6
Tack Free Time	Sec	9 - 12
Free Rise Density	Kg/m ³	23 - 30

TYPICAL POLYMER CHARACTERISTICS

COMPONENT PROPERTIES	UNITS	TYPICAL VALUES	TEST METHOD
Working ratio Polyol / Isocyanate	pbv	100 / 100	-
Overall Core Density	Kg/m ³	40 - 48	ASTM D 1622
Initial thermal conductivity	W/mK	≤ 0.022	ASTM C 518
Compressive Strength	KPa	> 100	UNI 6350
Fire rating		B3	DIN 4102

These values are given only as a guide and must be verified in each individual case on finished parts manufactured under the processor's production conditions.

ADDITIONAL INFORMATION

PRE APPLICATION STEPS

SURFACE PREPARATION

- > The surface of application must be thoroughly prepared by mechanical means, to remove all loose particles, laitance, etc.
- > Oil & grease, if any, must be de-greased with suitable solvents.
- > Any surface undulations, cracks and crevices must be duly filled or repaired with polymer modified cement sand mortar mixed with SC Repair Polymer

ENVIRONMENTAL CONSIDERATION AND SUBSTRATE TEMPERATURES

- > Applicators must recognize and anticipate climatic conditions prior to application. Ambient air & substrate temperatures, moisture, & wind velocity are all critical determinants of product quality & selection of the appropriate reactivity formulation.
- > Variations in ambient air and substrate temperature will influence the chemical reaction of the two components, directly affecting the expansion rate, amount of rise, yield, adhesion and the resultant physical properties.
- > To obtain optimum results, the PUF system should only be spray-applied to substrates when ambient air and surface temperatures fall within the range of 12°C and 45°C.
- > All substrates to be sprayed must be dry at the time of application.
- > Moisture in the form of rain, fog, frost, dew, or high humidity (>85%R.H.), will react chemically with the mixed components, adversely affecting the polyurethane barrier formation, dimensional stability and physical properties of the finished product.
- > Wind velocities in excess of 20 miles per hour may result in excessive loss of exotherm and interfere with the mixing efficiency, affecting foam surface, cure, & physical properties.

APPLICATION EQUIPMENT

- > 2:1 transfer pumps are recommended for material transfer from container to the proportioner.
- > The plural component proportioner must be capable of supplying each component within $\pm 2\%$ of the desired 1:1 mixing ratio by volume.
- > Hose heaters should be set to deliver 50°C to 55°C materials to the spray gun. These settings will ensure thorough mixing in the spray gun mix chamber in typical applications.
- > Optimum hose pressure and temperature will vary with equipment type and condition, ambient and substrate conditions, and the specific application. It is the responsibility of the applicator to properly interpret equipment technical literature, particularly information that relates to the acceptable combinations of gun chamber size, proportioner output, and material pressures.
- > The relationship between proper chamber size and the capacity of the proportioner's pre-heater is critical.
- > Mechanical purge spray guns are recommended for highest foam quality.

APPLICATION Concrete & Metal Roofs

- > **Step 1 Concrete Roof** : Priming is recommended for porous concrete surface - Apply 1 or 2 coats of Apcoflor HFP 120 primer on the surface as per recommended process in Product Information Sheet. Consult manufacturer's representative.
- > **Metal Roof** - Steel surface needs to be rust free before application. Priming is not required on Galvanized steel.
- > **Step 2** - SC PU Foam Insulator is sprayed onto the prepared roof surface in two components (a polyol and an isocyanate) that when mixed expand their volume to form a seamless layer. Within minutes this foam can be walked on and cures to 90 percent of its full strength in about four hours. It is better to apply in two or multiple layers to achieve desired thickness. Because polyurethane layer adheres to most surfaces, horizontal or vertical, it creates a fully-adhered, self-flashing, monolithic roof surface, with none of the critical failure points of most roof systems.
- > **Step 3** - PU Foam should not be left exposed and must be covered with any waterproofing coating system.
- > **Step 4 Cement** - Sand screed or M20 grade Cement concrete is required to protect the insulation foam from degradation. The screed must have the panel joints to take the movements & the joints to be sealed with SC UNYVERSEAL PU sealant.

SAFETY AND HANDLING

- > Store the container with the lid tightly closed in an upright position, in a cool, dry place
- > All applicators of Smartcare PU Foam Insulator should be trained and approved by the manufacturer.
- > Spray applicators should wear appropriate PPE including approved breathing equipment, eye wear, Nyllex or similar light weight spray suit and appropriate covered footwear.
- > Avoid breathing in vapors during spraying or when handling chemicals.
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PACKAGING & SHELF LIFE

200 Litre steel drums

SC PU Foam Insulator Polyol - 220 Kg - Shelf Life 6 months

SC PU Foam Insulator Isocyanate - 250 Kg - Shelf Life 9 months

Kindly note that the above Shelf life is from date of manufacture in original tightly closed containers away from direct sunlight and excessive heat.

VALUE BASE

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control and different test methods.

HEALTH AND SAFETY INFORMATION

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet.

DISCLAIMER

The information provided on this data sheet is not intended to be complete and is provided as general advice only. It is the responsibility of the user to ensure that the product is suitable for the purpose for which he wishes to use it. As we have no control over the treatment of the product, the standard of surface preparation of the substrate, or other factors affecting the use of this product, we are not responsible for its performance nor would we accept any liability whatsoever or howsoever arising from the use of this product unless specifically agreed to in writing by us. The information contained in this data sheet may be modified by us from time to time, and without notice, in the light of our experience and continuous product development.