

Dr. Fixit Foamshield



SPRAY APPLIED POLYURETHANE FOAM SYSTEM

Description

Dr. Fixit Foamshield is a two component, hydro-flouro-carbon (CFC free) blown, polymeric M.D.I. based system for producing rigid urethane foam with a nominal core density of 50 kg/ cu.m. by a spray process.

Grades, adjusted in reactivity, are available for both cold and hot condition.

Standard complies: Confirms IS 12432 Part 3 For Application

Areas of Application

- Roofing & wall systems
- Tank Insulation
- Cold storages
- Air Barrier Systems

Features & Benefits

Dr. Fixit Foamshield system is self flashing and provides seamless protection by sealing cracks, crevices and holes while insulating decks from temperature extremes. Dr. Fixit Foamshield offers:

- A high R-value and can reduce condensation when applied correctly
- Enhancing energy efficiency
- Lowering lifecycle costs by reducing the operating costs.
- Improves thermal comfort.
- Stops Leaks
- Adheres well to concrete, masonry and variety of other substrate.
- Light Weight
- Does not attract rodent and harbour mold growth.

Method of Application

1 SURFACE PREPARATION

- The surface of application must be thoroughly prepared by mechanical means, to remove all loose particles, laitance, etc.
- Oil and grease, if any, must be de-greased with suitable solvents.
- Any surface undulations, cracks and crevices must be duly filled or repaired with cement sand mortar mixed with latex polymers such as Dr. Fixit Pidicrete URP / Dr. Fixit Pidicrete MPB.

2 ENVIRONMENTAL CONSIDERATION AND SUBSTRATE TEMPERATURES

- Applicators must recognize and anticipate climatic conditions prior to application to ensure the highest quality foam and to maximize yield. Ambient air and substrate temperatures, moisture, and wind velocity are all critical determinants of foam quality and 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 of the foam insulation.
- To obtain optimum results, the Dr. Fixit Foamshield system should only be spray-applied to substrates when ambient air and surface temperatures fall within the range of 10°C and 48°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 foam formation, dimensional stability and physical properties of the finished product.



- Wind velocities in excess of 12 miles per hour may result in excessive loss of exotherm and interfere with the mixing efficiency, affecting foam surface, cure, and physical properties.

3. 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 (specifically direct impingement or DI type) are recommended for highest foam quality.

4. APPLICATION

- Polyurethane foam 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 of rigid foam. Within minutes this foam can be walked on and cures to 90 percent of its full strength in about four hours.
- Because polyurethane foam 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 (seams and penetrating fasteners).
- With an insulation value of R 6.4 per inch, polyurethane foam is the most efficient form of thermal insulation available on the market. The energy savings usually cover the cost of the roof system in a few years and by placing the insulation on the outside of the envelope, the foam reduces building expansion and contraction.

Precautions & Limitations

- If components are below suggested temperatures, the increased viscosity of the components may cause pump cavitation resulting in unacceptable SPF application. If components are above suggested temperatures, there may be loss of blowing agent resulting in diminished yield.
- Extreme care must be taken when removing and reinstalling drum transfer pumps so as NOT to reverse the "A" and "B" components.
- Store drums at 20°C to 25°C for a minimum of 48 hours before use.
- Materials in containers should be maintained at 20°C to 25°C while in use. Material temperature should be confirmed with a thermometer or an infrared gun.
- Do not configure equipment to recirculate Dr. Fixit Foamshield components from proportioner back into drum. Do not recirculate or mix other suppliers' "A" or "B" component into Dr. Fixit Foamshield system containers.

Technical Information

PROPERTIES	VALUES	Test Method
Core density(kg/m ³)	45-50	ASTM D-1622
Compressive strength (kg/cm²) With rise	4.2	ASTM D-1621/94
Tensile strength,Kg/cm² with rise	5.1	ASTM-D 1623/78
Thermal conductivity@25°C,W/M K	0.023	ASTM C-518/91
Closed cell content, apparent vol,%	96-98	ASTM D-2856
Water Vapour Transmission,perm-inch All cut surfaces With skin retained	2 1	ASTM C-518/91
Water absorption,per cm² (gm/cc) Without protective coating With protective coating	0.0087 0.0019	ASTM C-272
Dimensional Stability (linear Change) 7 days @ -15°C 7 days @ 100°C 7 days @ 70°C	< 1.0 2 2.5	ASTM D-2126
Fire resistance	Conforming to Class - B2	DIN 4102
Thickness for application (in min.)	30 min 50 min	N.A.

* Note: Adhesion should not be tested within one hour of application

Shelf Life

- Store at room temperature in sealed drums. Moisture will react with this component to produce a surface skin of polymerized material. Protect from moisture and moisture vapour. Close all drums after use.
- Maximum permissible storage time is 12 months. The ideal storage temperature is between +20°C and +25°C.
- MDI may undergo partial crystallization at temperature below 0°C. The product can, however, be brought back into the liquid state by placing the container in a heating cabinet and carefully warming the entire contents for a short time to a maximum of 70°C.
- The Polyol Component is a low viscosity blend of polyols, hydro fluorocarbon blowing agent, catalysts and surfactant. Store at room temperature (below 25°C.) in sealed drums. Close all drums after use to prevent loss of blowing agent and absorption of moisture.

Health & Safety Precautions

- Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling materials used to produce foam from the Dr. Fixit Foamshield system. Before working with this product, you must read and become familiar with the available information on its risks, proper use and handling.
- MDI is classified as a dangerous substance and requires a hazard warning label. It must be handled with care.
- Safety goggles, impermeable protective gloves and overalls should always be worn when handling this product.
- Contaminated clothing should be removed immediately to prevent further skin contact.



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