Dr. Fixit Foamshield

SPRAY APPLIED POLYURETHANE FOAM FOR THERMAL INSULATION

Description

Dr Fixit Foamshield is a two component CFC & HCFC Free, polymeric MDI based system for producing rigid polyurethane foam with spray application for Thermal Insulation.

Standard complies:

IS 12432 – Part 3 for Application.

Areas of Application

- Roof
- Cold Storages
- Tank Insulation

Features & Benefits

- Low thermal conductivity, High Thermal Resistance
- Light Weight with high compressive strength
- Jointless Insulation, less heat ingress
- Fully bonded, no lateral water migration and high wind uplift resistance.
- Easy and faster to spray.
- CFC & HCFC Free, Green Compliance

Method of Application

1 SURFACE PREPARATION:

- Clean the surface by using grinding machine and ensure the surface is free from laitance, loose or friable materials, debris etc.
- Ensure the substrate has properly cured and the concrete is profile free, no ridges or troughs. All contaminants should be removed by mechanical vacuum assisted preparation equipment such as grinder/shot-blasting/hand grinder to achieve preferred surface profile of CSP 2 or CSP 3.
- At Raft-Wall junction Angle Fillets/Vata/Coving must provide at size of 50 x 50 mm with cement sand Polymer modified mortar all around the periphery.

2 WATERPROOFING LAYER:

- The Waterproofing layer must be applied to the mother concrete substrate. The following products can be used: Dr Fixit Wonderproof 100, Dr Fixit Superseal 4500 PUH & Dr Fixit Superseal 500 GC.
- The Waterproofing layer to be properly cured before spray PU Foam activity is carried out.
- Before Spraying of the Foam surface must be properly cleaned to ensure proper bonding of the Foam

3 MACHINE AND EQUIPMENTS FOR SPRAY:

- Graco and Jaguar make machines are recommended. Pidilite Application Team Expert to suggest the latest machine configuration.
- Transfer pumps are recommended for material transfer from container to proportioner. The plural component proportioner must be able to supply each component within ± 2% of the desired mixing ratio by volume.
- Heated Hose to be set to deliver the material between a temperature range of +40°C to +45°C to the spray gun. These are especially recommended during the winters. Length of the hose also to be sufficient enough so that the temperature loss in transit is not more than 2 °C.
- Optimum hose pressure and temperature to vary with equipment manufacturer, type, substrate temperature, ambient temperature & specific application.
- Applicator to interpret the machine details, product details & surrounding details to arrive at acceptable gun chamber size, material pressure and proportioner output.

- Selecting the proper chamber size and proportioner's pre-heaters is critical.
- Mechanical purge spray guns (specifically direct impingement type or DI type) are recommended for highest foam quality.
- Compressor to delivery dry air to the mixing chamber, air dryer to be added to

4 APPLICATION DETAILS

- Application must be carried out by certified trained sprayer.
- Ambient air temperature, wind velocity, substrate temperature & substrate moisture are critical determinants of Foam quality.
- Optimum results are obtained when the spray application is carried out when ambient air temperature and substrate temperature falls between +20°C and +48°C. Higher the temperature better in terms of yield.
- Wind speeds less than 20 kmph are preferred for spraying as this results in reducing the wastages. If the Wind Speeds are very high Wind Shield to be provided.
- Variation in the ambient air and substrate temperature will influence the chemical reaction. This will directly affect the foam expansion rate amount of rise, yield, adhesion and physical properties.
- Small size sample: 600X600 mm to be sprayed before start of each work. This will ensure foam quality and machine settings.
- Polyurethane Foam is formed when the two components are sprayed (base and activator) to form a monolithic seamless layer of rigid foam. Each spray to give a rise in the range of 10 -15mm.
- The Foam achieves its 90% strength within four hours after spraying.
- As the product adheres to the vertical or horizontal surfaces a monolithic surface is achieved.
- Foam needs to be protected with a waterproof system and must not be allowed to keep exposed for more than 24 hours. This will lead to discoloration.
- As per the IS 12432 – Part 3 Code the Spray Foam to be continued on the vertical surface upto 500mm minimum with a multiplication factor of 1.2 considering the rebound losses.
- Regular test samples at various stages of project execution on which tests can be carried out for compliance of specifications.

Precautions & limitations

- Material should be stored in shaded and covered place. Store drums at +20°C to +25°C for a minimum of at least 48 hours before use.
- Machine must be thoroughly cleaned before usage and mixing of our products with any other suppliers product is not recommended.
- Moisture in the form of rain, fog, frost, dew or high humidity (> 85%RH) will react chemically with the mixed components, adversely effecting the foam formation, dimension stability and physical properties of the finished product.
- Wind velocities in the excess of 20kmph may result in excessive loss of exotherm and interfere with the mixing efficiency and affecting the foam surface, curing & physical properties.
- Refer to the latest Method Statement/SOP for a detailed application procedure

Technical Information

PROPERTY	UNIT	VALUE	TEST METHOD
Density	kg/m^3	45 - 50	ASTM D1622
Compressive Strength	kPa	> 300	ASTM D1621
Tensile Strength	kPa	> 400	ASTM 1623
Thermal Conductivity @ 24 degC	W/m K	0.023	ASTM C518

Water Absorption(vol)	%	< 1.5	ASTM D2842
Closed Cel Content	%	> 95	IS 11239 Part5/ ASTM D6226
Dimensional Stability (7days , +70degC) Dimensional Stability (7days,-15degC)	%	< 1.5	ASTM D2126
Fire behaviour classification		B2	DIN 4102
REACTION CHARACTERISTICS			
Cream Time	sec	5 - 10	PITM
Tack Free Time	sec	15 - 20	PITM
Free Rise Density	kg/m^3	33 - 35	PITM

* Technical Information are typical values derived from testing under lab conditions and controlled atmosphere. Test values from field samples may vary depending on the site conditions
PITM – Pidilite Internal Test Method.

Packaging : Drums

- Part A (Activator): 250 kg Drum
- Part B (Base) : 210 kg Drum

Shelf Life

- Shelf Life: Part A (Activator) – 12 months from the date of manufacturing.
- Part B (Base)– 09 months from the date of manufacturing.
- Drums should be stored in shaded and covered place. Protect from moisture and moisture vapor, as it will react with the activator to form crystals in the material.

Health and Safety

- MDI is classified as a dangerous substance and requires hazard warning label and must be handled with care.
- Safety goggles, impermeable protective gloves and overalls should be worn during handling & application.
- Contaminated clothes should be removed immediately to prevent skin contact.
- Person handling or spraying this product must go through the related literature and training &be well aware of the Safety Procedure and experience enough to handle this product.

Other Products Categories available

Dr. Fixit brings you the widest range of Construction Chemicals

Pidilite Industries Limited
Construction Chemicals Division
Ramkrishna Mandir Road, Post Box No. 17411
Andheri (E) Mumbai 400059 INDIA
Tel +91-22-2835 7000 • Fax +91-22-2835 7008
www.drfixit.co.in • info.drfixit@pidilite.com
Dr. Fixit Advice Centre (Toll Free No.) 1800 209 5504

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