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Method of Statement Huntsman EMA Kimya

Spray Guide Application Huntsman EMA SP Grades

Introduction

Spray foam roof systems are produced by mixing / spraying a two-component liquid that forms the base of an adhered roof system.

This mixture expands 20 to 30 times its original liquid volume to form a closed-cell foam. The foam insulation becomes fully adhered to an acceptable substrate and exhibits a degree of water resistance.

Spray polyurethane foam may be applied over various types of substrates including wood, concrete, metal, rigid insulation and some existing roof membranes. Primers sometimes are recommended to facilitate adhesion to various substrates.

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A-Safety

Kindly check our Polyol and MDI material safety data sheet (MSDS).

B-Prior Application

B.1 Weather Condition

In order to achieve the required physical properties of the final product, the following instructions must be followed:

- Ambient and substrate temperatures should not exceed 45°C otherwise, machine temperature set up must be adjusted accordingly.
- Relative humidity has to be lower than 85% during the application of the foam.
- Surface moisture content should not be higher than 20% for porous substrate such as concrete.
- Spray foam must not be applied over moist substrates or where rain or inclement weather is imminent.
- Wind speeds of more than 20 km/h is not recommended. Otherwise, application of foam over overspray areas may create blisters in the top pass. However, windscreens and enclosures may extent this limitation..

B.2-Machine Setup

Machine Conditions		
Mixing Ratio of Components:	1:1 (volume)	
Component Temperatures:	30 – 50 °C	Depends on weather condition
Component Pressure:	50 – 80 Bar	
Recommended measuring devices: <ul style="list-style-type: none">• Substrate Hygrometer.• Surface Thermometer.• Anemometer.• Foam thickness measuring device.		



B.3-Surface / Substrate Condition

Substrate must be dry, tight, clean and free of contaminants

Surface preparation and priming requirements will vary with the type of substrate, substrate temperature, and the ambient temperature.

Concrete:

-The surface moisture should be lower than 20% (Check TDS)

-When applying over very smooth concrete surfaces, an adhesion test is highly recommended.

Steel

-Substrate must be dry, tight, clean and free of contaminants

-Steel tanks should be primed.

Polyurethane foam (Previously applied)

-When spraying over aged polyurethane foam, the surface must be clean by wire brush

Bituminous membrane

-The membrane must be adhered to the substrate.

B.4-Primer

Primers are an initial layer of coating or paint applied to a surface to improve the adhesion of subsequently applied materials

If needed, coating can be applied as a primer or a flash coat / layer (1-2 mm) of the spray polyurethane foam can be considered as a primer to improve the adhesion to the substrate.



C-During Application

C.1-Pass / layer-thickness:

The materials is sprayed in layers, each layer should not exceed 20 mm.

The final required thickness is achieved by spraying several layers. And each layer thickness is specified in the technical data sheet of each system.

Exceeding the recommended layer thicknesses will produce lower density foam and vice versa, thin spray passes will increase the density and chemical consumption.

It is important to make keep a gap of 10 minutes between the layers. Otherwise, the exothermic reaction will generate an excess amount of heat which will lead to high tensions inside the foam during cooling and accordingly foam shrinkage.

The distance between the gun and the surface can vary, but it is recommended to be around 60-80cm.

C.2-Protective Costing:

The spray foam must be coated by a UV protective coating within 7-10 days.

D-After Application / Trouble shooting

Blisters / Bubbles:

Caused by:

- Applying the last layer thinner than specified. (*Avoid cosmetics layer*)
- Presence of moisture
- Off-ration application



Excessive shrinkage or deformation of the foam

Caused by:

- Applying thick layers (*Refer to material TDS*)
- Presence of moisture (*Drums must be sealed properly*)

Foam delamination

Caused by:

- Very cold surface or/and Contaminated Surface
- Presence of moisture
- Short curing time between the layers

Slow reactivity

Caused by:

- Cold surface
- Temperature wrongly regulated (*Increase hoses temperature*)
- Expired product (*Check with Huntsman Technical Department*)

The gun gets dirty frequently

Caused by:

- High temperature

Very rough finish

Caused by:

- Low pressure or/and improper temperature setup (*Refer to material TDS*)

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- High wind speed (*Avoid spraying under high wind conditions or use wind*)



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