Poliuretan® Spray RF-352-D

Isocianato H

DESCRIPTION

Poliuretan® Spray RF 352-D is a two-component polyurethane system (polyol and isocyanate) containing HFC's and formulated to obtain closed-cell rigid foams to be sprayed-in-place for thermal insulation.

CE

CERTIFICATIONS

AENOR
Producto Certificado
Aislante Térmico

Poliuretan® Spray RF 352-D system has been awarded with the **AENOR N Certificate** to product quality for thermal insulation materials and their use in building and reaction to fire EuroClass **Ds3d0.** Contract number: 020/000186.

Poliuretan Spray RF-352-D system is subjected to technical BBA approvals with certificate number 15/5243.

AENOR
Producto Certificado
Aislante Térmico

COMPONENTS

COMPONENT A: **Poliuretan Spray RF-352-D**
Mixture of polyols containing catalysts, flame-retardants and foaming agents

COMPONENT B: **ISOCIANATO H**
MDI polymeric (Methane diphenyl diisocyanate)

USES

Poliuretan® Spray RF-352-D system is applied by spraying with a high pressure equipment fitted with heating, with a mixing ration of 1:1 in volume. The main applications are the thermal insulation of building closings, houses (partitioning), industrial buildings, roofs, farms, ships, tanks, cool stores, etc.:

Advantages in Application:

- Total suppression of thermal bridges. The insulation presents neither joints nor cracks, since it is a continuous insulation.
- Good adherence to the substrate. No glues or adhesives are needed for the installation.
- Possibility of insulation and waterproofing in a single process. This characteristic is due to its closed-cell and watertight structure, as well as its continuous application, which means that no joints are formed.
- Mobility. It is possible to get to any site quickly without having to transport or store bulky products such as other insulating material.

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CONDITIONS OF USES

For the preparation and application of **Poliuretan® Spray RF-352-D** system, the ATEPA Rules on the Application of Insulating Material, should be taken into consideration. (www.aisla.org).

The surfaces must be clean, dry and free of dust and grease to ensure good adherence of the foam to the substrate; if the substrate is metallic it must also be free of oxide and rust. However, a suitable primer could be needed to guarantee good adherence on metal substrates.

The foam performance is influenced by a great number of factors which are listed below:

- Weather conditions: temperature and humidity of the atmosphere and the substrate surface, as well as other environmental factors (wind, etc.)
- Adjustment of the machinery, a proper ratio.
- Application type: vertical, horizontal, roofs.
- Application process: coat thickness, varnish application.

GENERAL INSTRUCTIONS

Coat thickness is perfectly controllable and can be modified by varying the speed of application and/or the gun mixing chamber; thickness should be between 10 and 20mm.

It must be taken into account that the foam performance is greater the lower the number of coats applied for the same thickness. Nevertheless, it is not convenient to apply thicknesses above 20 mm, in order problems that may take place due a high exothermic reaction. To avoid the horizontal growth of foam in the implementation of this system, it is advisable to project a thin (5 mm) after the coat of primer, then project normally.

On cold surfaces, the first coat takes longer to react and growth is not usually 100%. Whereby, in these cases, the first coat should be a varnish for a heat development, which should heat the substrate providing a proper foaming of the second coat.

The recommended temperature in hoses is 30 to 50ºC, depending on the weather conditions. The minimum recommended substrate temperature during spraying is 5ºC.

In certain unfavourable atmospheric conditions (cold substrates, low temperature, high humidity, etc.) it is advisable and approved the addition of about 0.5% to 1% of **Activator RF-352-D** in the polyol, in this case the drum must be mechanically agitated to provide an appropriate homogenisation (varying the cream time **-tc-** and gel time **-tg-** according to the % of activator added, see attached graphic).

The addition of any type of catalyst other than the catalyst approved by **Synthesia Internacional S.L.U.** is neither recommended nor authorised since it may affect the characteristics of the foam and produce unevenness in the process.

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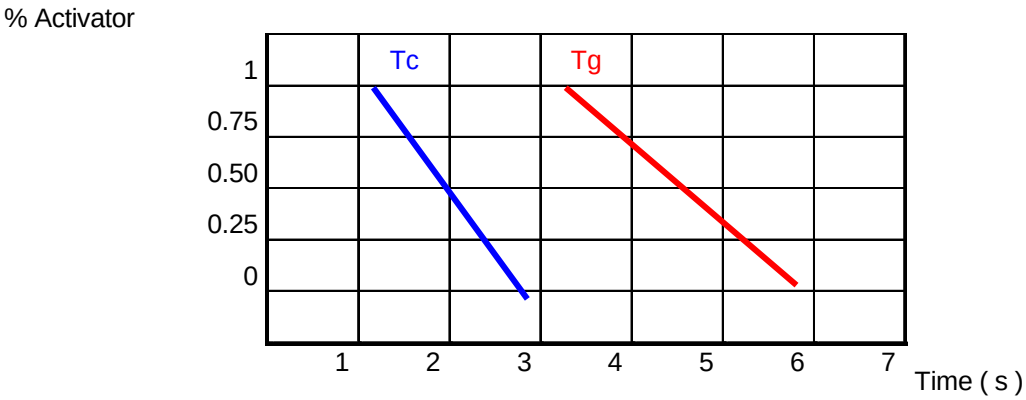

PROTECTION OF THE FOAM

Rigid PUR foams applied outdoors are darkened and brittle by the action of UV radiation. Thus, all foams that are to be used in these conditions must be protected with a suitable coating (acrylics, butyl rubber, vinyl, asphalt, mono and bi-component polyurethanes, etc.) Synthesia Internacional, S.L.U., supplies an acrylic coating (AQ 3300), a urethane mono-component (MU 7950) and urethane bi-components URESPRAY F-75.
The ideal coating is one which meets the following requirements:

a.- Physical properties:
- Resistance to atmospheric and chemical agents.
- Good tensile strength.
- Good foam adherence.
- Good adhesion to foam.

b.- Regarding the application:
- Fast drying.
- Possibility of spray gun application.
- Minimum thickness 0,5-1,0 mm

COMPONENTS CHARACTERISTICS

Characteristics	Units	H	RF-352-D
Specific weight 25ºC	g/cm^3	1,23	1,30
Viscosity 25º C	mPa.s	230	250
NCO content	%	31	-

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SYSTEM SPECIFICATIONS

Measurement carried out in a test recipient at 22ºC and at the mix ratio indicated within the company's standard method (MAN - S01).

Mix Ratio A / B: 100/100 in weight

Characteristics	Units	RF-352-D
Cream time	s	3 ± 1
Gel time	s	6 ± 2
Tack free time	s	8 ± 3
Free density	g / l	35 ± 3

FOAM SPECIFICATIONS

Characteristics		Units	RF-352-D
Apparent Core Density	EN 1602	kg/m^3	37 - 45
Closed Cell Content	ISO-4590	%	≥90
Bending Strenght Deflection	UNE 53204	Kg/cm^2 mm	2,2 15
Thermal resistance and termal conductivity	EN 12667 EN 12939		See performance chart
Compressive strength	EN 826	KPa	≥200
Reaction to fire	EN 13501-1	Euroclass	D-s3d0(1)
Water absorption (W_p)	EN 1609	Kg/m^2	≤0,2
Water vapour resistance factor (μ)	EN 12086	-	≥60

(1) Result of valid test for any applied thickness (60 mm of thickness)

Performance chart

Sprayed insulation foam product CCC4 system. Diffusion open faces.

e_p	25	30	35	40	45	50	55	60
λ_D	0,027	0,027	0,027	0,027	0,027	0,027	0,027	0,027
R_D	0,90	1,10	1,25	1,45	1,65	1,85	2,00	2,20

e_p Thickness; mm
λ_D Declared aged thermal conductivity; (W/mK)
R_D Thermal resistance level; (m^2K/W)

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FIRE REACTION TEST

Characteristics		Units	RF-352-D
* FIRE reaction (55 mm with 7 mm naturvex support)	UNE 23727	Class	M2

* Certificates issued by GAIKER report references: P-0911053

STORAGE RECOMEMNDATIONS

VERY IMPORTANT: Poliuretan ® RF Spray system components are sensitive to humidity and must be stored in hermetically sealed drums or containers. The storage temperature must be kept between +15 and +25ºC.

Lower temperatures may build up crystallizations in the isocyanate. Higher temperatures may cause alterations in the polyol, loss of blowing agent, greater consumption and swelling of the drum.

Properly stored, the self life is 3 months for A-Component (polyol) and 9 months for B-Component (isocyanate).

SAFETY RECOMMENDATIONS

Poliuretan ® RF Spray system does not represent significant risks if handled properly. Avoid contact with eyes and skin. The instruction given in the Safety Data Sheet must be followed during the manufacturing and handling of the system.

SUPPLY

Normally, the product is supplied in non-returnable steel drums of 220 litres (blue for Component A and black for Component B).

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ANNEX: APPLICATION TROUBLESHOOTING

Our Technical and Commercial service will provide you with guidance in any queries you may have on the preparation of this product. Nevertheless, some problems that may appear during the process are outlined below.

Problem	Possible cause	Solution
Uneven atomisation.	Gun needle wrongly adjusted or dirt in the mixing chamber.	Adjust the position. Clean the chamber.
Atomisation with colour streaks.	Bad mixing due to obstruction of components or differences in viscosity.	Check pressures, fix obstruction. Adjust and increase temperatures.
Poor and closed atomisation.	High component viscosities. Cold atmosphere.	Increase temperatures and pressures.
Atomisation too open and forming mist.	Too much air in gun tip. Excessive mixing pressure.	Reduce air passage. Reduce the pressure a little.
The material takes too long to react, it falls off.	Cold surface.	Increase hose heating.
Material too fast, uneven finishing with mist.	Pressure excess.	Reduce air pressure in the gun and mixture.
The material is granulated as it gets on the surface and it is obstructing the gun.	Temperature excess.	Reduce hose heating.

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