

Poliuretán® Spray Foamseal Spray Foam

Isocyanate H

DESCRIPTION

Poliuretán® Spray Foams are two-component polyurethane systems (polyol and isocyanate) formulated to obtain closed-cell rigid foams to be sprayed-in-place for thermal insulation.

Poliuretán® Spray Foam systems contain approved ecological foaming agents (HFCs) that have zero ODP (Ozone Depletion Potential) and are mainly used to obtain excellent thermal insulation.

BBA and AENOR N CERTIFICATION



Poliuretán® Spray systems, composed of **S-303E-W**, **S-353E-W**, and **RF352D**, have been awarded the Foamseal BBA Certificate 10/4777 for the insulation of pitched and flat roofs, timber frame walls and timber and concrete ground floors

Poliuretán® Spray systems, include **S-303E-W**, **S-353E-W**, **S-403E-W** and **S-503E-W**, have been awarded with the **AENOR N Certificate** to product quality for thermal insulation materials and their use in building, according to the certificate numbers: 020/003139, 020/003077, 020/003079 and 020/003081 valid until 29/09/2014.



COMPONENTS

COMPONENT A: **S-303E-W, S-353E-W, S-403E-W, S-503E-W..**
Mixture of polyols containing catalysts, flame-retardants and foaming agents.

COMPONENT B: **Isocyanate H**
MDI (Methane diphenyl diisocyanate).

USES

Poliuretán® Spray systems are applied by spraying with high pressure equipment fitted with heating, with a mixing ration of 1:1 in volume. Their main applications are the thermal insulation of pitched and flat roofs, timber frame walls and timber and concrete ground floors, industrial buildings, farms, ships, tanks, cool stores, etc:

| Applied Density (g/l) | System | Application type |
|-----------------------|----------|--|
| 33 – 37 | S-303E-W | Agricultural and Commercial Buildings, Farms, etc. |
| 38 – 48 | S-353E-W | Roofs, Walls, Floors |

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|---------|----------|-----------------------|
| 43 – 50 | S-403E-W | Roofs, Flooring, etc. |
| 50 – 60 | S-503E-W | Roofs, Flooring, etc. |

Advantages in Application:

- Excellent thermal conductivity
- Total elimination of air leakage and thermal bridging.
- Enhances sound attenuation. Cavity-sealing for sound insulation – absorption
- Good adhesion to the substrate.
- Fast and cost effective to install
- Eliminates condensation – creates its own vapour control layer.
- Mobility. It is possible to get to any site quickly without having to transport or store bulky products such as other insulating material.
- Increase of the living area compared with other insulating material.

CONDITIONS OF USE

For the preparation and application of Poliuretán® Spray systems the BBA Certificate Foamseal 10/4777 (www.bbacerts.co.uk) and the ATEPA Rules on the Application of Insulating Material should be taken into consideration. (www.atepa.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. A suitable primer is recommended to guarantee good adhesion on metal substrates.

The foam performance is influenced by a 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.

GENERAL INSTRUCTIONS

Coating thickness is perfectly controllable and can be modified by varying the speed of application and/or the gun mixing chamber; thickness is built up in layers of not more than 20mm. On cold surfaces, the first coat takes longer to react and will not fully expand.

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

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FOAM SPECIFICATION

| Characteristics | Units | S-303E-W | S-353E-W | S-403E-W | S-503E-W |
|---|--------------------------|--------------|--------------|--------------|--------------|
| Applied average density UNE-EN 1602 (Annex C) | Kg/m ³ | 33 - 37 | 38 - 48 | 43 - 50 | 50 - 60 |
| Compressive Strength* UNE-EN 826:1996 | KPa | ND | ND | 324 | 432 |
| Flexural Strength UNE 53204 Arrow | Kg/cm ² mm | 2.5 15 | 3.5 15 | 4 15 | 5 15 |
| Water absorption DIN 53428 (1 week) | % Vol. | < 5 | < 5 | < 5 | < 5 |
| Dimensional Stab. -30°C 24 hours 60°C | % Vol. | < 1 < 5 | < 1 < 3 | < 1 < 2 | < 1 < 2 |
| Results of impermeability to water** UNE-EN 1928:2000 | ----- | satisfactory | satisfactory | satisfactory | satisfactory |
| Water vapour diffusion transmission*** UNE-EN 12086 | μ | 96.4 | 116 | 137 | 131 |

*Certificate issued by CEIS Laboratory included in file reference: LAT0071/11.

**Certificate issued by CIDEMCO Laboratory included in file reference Num: 12.462.

***Certificate issued by CEIS laboratory included in file reference: LAT0071/11.

THERMAL CONDUCTIVITY

| Characteristics | Unit | S-303E-W | S-353E-W | S-403E-W | S-503E-W |
|--|-------|----------|----------|----------|----------|
| Closed cell content ISO-4590 | % | >90 | >90 | >90 | >90 |
| Thermal Conductivity coefficient of calculation | W/m°C | 0.028 | 0.028 | 0.028 | 0.028 |
| * Thermal Conductivity UNE-12667:2002 | W/m°C | 0.021 | 0.021 | 0.020 | 0.021 |

*Certificate issued by CEIS Laboratory included in file references: LAT0047/10-1

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FIRE REACTION TEST

| Characteristics | Unit | S-303E-W | S-353E-W | S-403E-W | S-503E-W |
|---|-----------|----------------------------------|----------|----------|----------|
| FIRE reaction UNE 23727 | Class | M3 | M3 | M3 | M3 |
| | Thickness | 60 mm with 7 mm naturvex support | | | |
| *FIRE reaction UNE EN ISO 13501- 1:2002 | Euroclass | E | E | E | E |
| | Thickness | Valid for any thickness | | | |

*Certificates issued by GAIKER included in report references: P-10-12138 and Applus nº 10/101130-1604.

SAFETY RECOMMENDATIONS

Poliuretán® 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).

STORAGE RECOMEMNDATIONS

VERY IMPORTANT: Poliuretán® 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 +25°C.** Lower temperatures considerably increase the polyol viscosity, rendering it difficult to apply, and 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, as well as uncontrolled foaming when the pump nozzle is placed into the drum. In order to avoid the latter, it is recommended to have the drums set-down for a certain period in a ventilated and fresh place before using them.

In case the drums are supplied with white plastic caps, special care should be taken during the handling of these caps as they are more fragile than the metallic ones and could be deformed.

To maintain the aforementioned characteristics of the systems, the drums should be hermetically sealed when not in use.

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

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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. |
| Blistering. | Coatings thickness higher than 20mm. | Apply thinner coatings. |