



**TECNOFOAM G-2015 - SPRAY POLYURETHANE FOAM (SPF) SYSTEM FOR THERMAL AND ACOUSTIC INSULATION (APPLIED DENSITY  $\pm 15$  KG/M<sup>3</sup>)**

It is a water-borne spray polyurethane open-cell foam system (SPF) for and thermal and acoustic insulation, is specifically formulated to apply low-density foam ( $14\sim 16$  kg/m<sup>3</sup>). Its application must be carried out by the specific equipment by mixing Tecnofoam G-2015 (polyol side) and Tecnofoam G-2049.I (isocyanate side). The blowing agent is water.



## USES

For application in the following situations:


- Thermal insulation systems in residential buildings, businesses or industries
- Indoor applications ceilings, interior chambers facade, internal side of roofs, made with wood structure, or other material (see compatibility)

**NOTE:** call our technical department about the application to other supports or situations

Applied density	$\pm 15$ kg/m <sup>3</sup>
Thermal conductivity	0.034 W/m·K
Cream/stirring time	2~6 secs
Gel time	6~10 secs
Tack-free time	10~14 secs
Close-cell content	<20% (CCC1)
Application	Spray equipment



## COLORS

	Yellow
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## GENERAL SPECIFICATIONS

- It is an open-cell spray polyurethane foam (SPF), for thermal and acoustic insulation, easy to apply and to protect all the internal surfaces of the building
- The application and training is done by our spray equipment TC2049 ([spray-equipment.tecnopolgroup.com](http://spray-equipment.tecnopolgroup.com)) or similar
- It is regulated under the European standard EN 14315-1: 2013 "Thermal insulating products for applications in buildings, rigid polyurethane foam (PUR) products", for which it has CE marking based on a DoP Declaration of Performance.
- The blowing agent is water. It is free from harmful to the ozone layer, so do not promote the greenhouse effect (NOT contain HFCs, HCFCs, VOCs, etc ...); it does not emit any substance to the environment once installed. The applied system is 100% recyclable by mechanical means friendly to the environment. No gas collection for recycling and/or destruction is required
- The properties of the polyurethane foam system allow it to adhere to any surface such as concrete, ceramic, metal, polyurethane foam, wood, acrylic paints (checking the situation of areas recommended).
- It forms a continuous coat without joints preventing the formation of "heat bridges" and providing an optimum thermal insulation surface with high thermal insulation parameters
- Foam applied without allowing for cooling may result in excess heat build-up and result in fire or the generation of offensive odors that may not dissipate with time.
- The thermal conductivity coefficient remains unchanged from the application and along with the product life.
- It is free from harmful to the ozone layer, so do not promote the greenhouse effect (NOT contain HFCs, HCFCs, VOCs, etc ...); it does not emit any substance to the environment once installed. It is a system 100% recyclable by mechanical means friendly to the environment, and no gas collection for recycling and/or destruction is required.
- Contractors and applicators must comply with all applicable and appropriate guidelines for processing, handling guidelines and local rules and norms.

## YIELD

The performance is around 1.5kg/sqm at 5 cms of thickness.

## PACKAGING

Metal drums of 215 kg for the polyol, and 250 kg for the isocyanate.

## STORAGE AND SHELF LIFE

Store the drums in original containers in a dry environment at a temperature between 5-35 °C (41-95°F). Keep away from direct sunlight, extreme heat, cold or moisture otherwise they may be affected its reactivity and performance. Prior to application, B side must be thoroughly mixed with a drum mixer before inserting the transfer pumps and use. This step is very important, please consult your representative for recommendations. Low ambient temperature increase the viscosity of the polyol, which makes it difficult to mix and apply, and can generate crystallization in the isocyanate, which can cause its mixing ratio to vary and the consequent internal problems in the mixing and application equipment. Very high temperatures can modify polyols, causing loss of the blowing agent, increasing consumption, and producing the swelling of the metallic drum. To avoid these last situations, it is recommended to let the drums for a while before use, in a cool and ventilated place. These are the shelf life times for both components:

- POLYOL COMPOUND: 4 months (stirr before use and also during the application)
- ISOCYANATE COMPOUND: 6 months



## APPLICATION METHOD

The application of this spray polyurethane foam system should be performed under non-presence of moisture or water from the support stand on which to apply either at the time of application as a posteriori. The substrate must be clean and free of dust, oils or greases. Do not apply on terraces, balconies, roofs, or in situations of exposure to the outside. In applications with high-temperature gradients a vapor barrier is placed on the warm side of the insulation to prevent condensation. Metal surfaces should be protected with an anti-corrosive primer before being coated with foam. On smooth surfaces without pores, galvanized steel, polypropylene, etc ... a secure grip primer should be applied. To apply in one direction to achieve the expansion which is about 4-6 cm. per coat. If necessary, and once fully expanded, apply a second layer on the already initially applied. Wait for the temperature of the first layer to drop to 35-40°C (95°F-104°F) before applying the second layer. Total thickness will be defined by the project specifications under the Local Rules. Its great expansion causes sometimes have to cut the excess with the help of a saw. The ideal drum temperature for processing Tecnofoam (Polyol and isocyanate) is 20 – 30°C. To achieve optimum parameters, you must mix, before use, the polyol minimum 10 minutes or more depending on the age of the material. Is highly recommended to keep mixing the polyol drum, during the application process to maintain a uniform blend and an optimum consumption. Mechanical stirrer should be run at low/medium speed but not fast enough to cause frothing and get not homogeneous liquid polyol. Applicator must comply with local regulations according to use, taking into account the physical and chemical characteristics of the polyurethane foam system to be used.

## APPLICATION REQUIREMENTS (PROPORTIONER)

It is necessary to mix the two initial liquid components using a high-pressure plural component proportioner; isocyanates and polyols must be mixed 1:1 in volume using our spray equipment TC2049 ([spray-equipment.tecnopolgroup.com](http://spray-equipment.tecnopolgroup.com)) or similar (proper maintenance and cleaning it is recommended). The general parameters for material area as follows:

- Isocyanate heater temperature: 40-55° (104°F to 113°F)
- Polyol heater temperature: 40-55°C (104°F to 113°F)
- Hose temperature: 40-50°C (104°F to 122°F)
- Working pressure: 1.200-1.750 psi (80 -120 bar)

These temperatures and pressure parameters must be valued, ratified or slightly varied by the applicator, depending on the conditions of each climatic zone, weather situation or according to the specifications of the projection equipment. It is the responsibility of the owner / applicator of the equipment to keep it in perfect condition in order to maintain the correct mixing ratio of the two components that Tecnofoam delivers separately, by periodically updating its maintenance controls. During the execution of the application, it may be necessary to correct these parameters according to changing external conditions, as well as to verify the correct operation of the machine (pressure and temperature). The part B must be thoroughly mixed with a mechanical mixer before inserting transfer pumps. Isocyanate are sensitive to moisture, ensure the drums and spray equipment are protected from moisture during storage and application. Store and clean proportioner by manufacturer's suggested guidelines.

## HEALTH AND SAFETY

Respiratory Protection: When handling or spraying use an air-purifying respirator. Skin protection: Use rubber gloves, remove immediately after contamination. Wear clean body-covering. Wash thoroughly with soap and water after work and before eating, drinking, or smoking. Eye / Face: Wear safety goggles to prevent splashing and exposure to particles in the air. Waste: Waste generation should be avoided or minimized. Incinerate under controlled conditions in accordance with local laws and national regulations. Re-occupancy of the work site without respiratory equipment is minimum 24 hours providing the correct ventilation for the area sprayed. Contractors and applicators must comply with all applicable and appropriate guidelines for storage and safety guidelines. These safety recommendations for handling, are necessary for the implementation process as well as in the pre and post, on exposure to the loading machinery. Dispose waste in accordance with star or/and local regulations.



## COMPOUND CHARACTERISTICS

Characteristic	POLYOL	ISOCYANATE(MDI)
Viscosity	300 mPa.s	210 mPa.s
NCO content ISO 14896	---	31 %
Specific weight	1.10 g/cm <sup>3</sup>	1.23 g/cm <sup>3</sup>
Mix ratio by volume	100	100
Mix ratio by weight	100	110

Results performed in the laboratory at 25°C (77°F) and 50% RH, under controllable conditions. These values may vary depending on the application, climatology, or substrate conditions.

## APPLIED SYSTEM CHARACTERISTICS (REACTION)

CHARACTERISTIC	VALUE
Cream / Stirring time EN-14315-1	2~6 secs
Gel time / Tack-free time EN-14315-1	6~10 secs / 10~14 secs
Free rise density / Applied density	11~12 kg/m <sup>3</sup> / ±15 kg/m <sup>3</sup>
Closed-cell content ISO-4590	<20% (CCC1)
Thermal conductivity value EN-12667	0.034 W/mK
Reaction to fire EN-13501-1	Euroclass F
Water absorption by partial immersion EN-1609	<0,50 kg/sqm
Water vapor transmission EN-12086	μ ≥3
Dimensional stability (-20°C/-% , 70°C/ 90%) EN-1604:2013	DS (TH)3 / DS (TH)4
Compressive strength (internal test)	±20 KPa
Range of temperatures (substrate/ambiance)	5~40°C (41 to 104°F)
Max. relative humidity	90%
Max. substrate humidity (dew point)	0

Results performed in the laboratory at 23°C (68°F) and 50% RH, under controllable conditions. These values may vary depending on the application, climatology, or substrate conditions.

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