



TECNOFOAM G-2040 FR - SPRAY POLYURETHANE FOAM (SPF) SYSTEM FOR THERMAL INSULATION(APPLIED DENSITY 38-45 KG/M³). FIRE REACTION M1.

It is a water-based polyurethane foam system (SPF) for thermal insulation is specifically formulated to apply foam with applied density around (38~45kg/m³), and M1 fire reaction(according to UNE 23271:1990). Its application must be carried out by the specific reactor equipment by mixing Tecnofoam G-2040FR (polyol side) and Tecnofoam G-2049.I (isocyanate side). The blowing agent is water.



USES

For application in the following situations:

- thermal insulation in construction, industrial, farming or agricultural facilities.
- In applications where flat roofs, (protection required against water using waterproofing systems)

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

Applied density	38~45 kg/m ³
Thermal conductivity	0.033 W/m·K
Cream/stirring time	3 ~ 5 secs
Gel time	9 ~ 12 secs
Tack-free time	12 ~ 15 secs
Fire reaction	M1
Close-cell content	<80%(CCC2)
Application method	Spray equipment



COLORS

	Salmon
	Green



GENERAL SPECIFICATIONS

- It is a spray polyurethane foam (SPF), for thermal 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) or similar
- 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.
- 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.

PACKAGING

Metal drums of 230 kg for the polyol, and 250 kg for the isocyanate.

SHELF LIFE

- POLYOL COMPOUND: 3 months (stirring before use)
- ISOCYANATE COMPOUND: 6 months

Always store the drums before use at a temperature between 5 and 35 °C (41 to 95 °F), always in dry areas, without the possibility of moisture entering, and without direct contact with the sun or heat sources, otherwise they may be affected its reactivity and performance. 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.



APPLICATION METHOD

In general, you should take the following factors:

- The application of this polyurethane foam system should be performed under the 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.
- In outside applications, is required to waterproof the polyurethane foam sytem
- Performs successive layers of a thickness of 2~3 cm each until getting the total planned thickness. Wait to apply the second layer, until the minimum temperature on the first layer was 40-50°C
- 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
- The ideal drum temperature for processing Tecnofoam (Polyol and Isocyanate) is 20 to 30°C. (68 F to 86°F)
- To achieve optimum parameters, you must mix, before use, the polyol minimum 10 minutes or more depending on the age of the material using a mechanical stirrer running at low/medium speed but not fast enough to cause frothing and get not homogeneous liquid polyol.
- The total applied thickness will be defined by the project specs. The applicator must comply with local regulations according to his specific use, taking into account the physical and chemical characteristics of the polyurethane foam system to be used.
- In case of existence of expansion joints, they must be covered with a non adhesive plastic tape to avoid breaks in the SPF due to the movement of the support.

APPLICATION REQUIREMENTS (SPRAY EQUIPMENT)

For the formation, it is necessary to mix the two initial liquid components, isocyanates and polyols with our spray equipment TC2049 (spray-equipment.tecnopolgroup.com) or similar (proper maintenance and cleaning it is recommended). The general parameters for this material will be the following:

- Isocyanate heater temperature: 40-45 °C (104°F to 113°F)
- Polyol heater temperature: 45-55°C (113°F to 131°F)
- Hose temperature: 45-50°C (113°F to 122°F)
- Working pressure: 1.450-1.750 psi (100 to 120 bar)
- Mixing chamber (recommended): GU-07008-2

These temperature 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 Tecnopool 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).

HEALTH AND SAFETY

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.

- 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.

Consult the material and safety data sheet of the products of the system.

COMPOUND CHARACTERISTICS

Characteristic	POLYOL	ISOCYANATE(MDI)
N° OH DIN 53240-2	180 ~ 220 mgKOH/g	----
Viscosity at 25°C BROOKFIELD VISCOSIMETER	<600 mPa.s	210 mPa.s
NCO content ISO 14896	---	31 %
Specific weight	1.07 g/cm ³	1.23 g/cm ³

Results performed in the laboratory at 22°C (72°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	2 ~5 seg
Gel time	5 ~12 seg
Tack-free time	12 ~15 seg
Free-rise density	30 ~35 kg/m ³
Applied density	38 ~45 kg/m ³
Closed-cell content	<80 %(CCC2)
Thermal conductivity value t a20°C EN-12667	0.033 W/mK
Fire reaction UNE 23271:1990	M1
Transmisión de vapor de agua EN-12086	μ=31
Absorción de agua a corto plazo por inmersión parcial EN-1609	0.07 kg/sqm
Estabilidad dimensional (-20°C/ 70°C,90%HR) EN-1604	DS(TH)3 / DS(TH)3
Resistencia a tracción perpendicular a las caras EN-1607	202 kPa
Resistencia a compresión EN-826	294 kPa
Application temperature range (substrate and ambient)	5 ~ 40°C (41to 104°F)
Max. relative humidity	90%
Max. substrate humidity (dew point)	0

Results were performed in the laboratory at 20°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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