



TECNOFOAM G-2040 - SPRAY POLYURETHANE FOAM (SPF) SYSTEM FOR THERMAL INSULATION (APPLIED DENSITY ± 40 KG/M³)

TECNOFOAM G-2040, spray polyurethane foam system (SPF) for thermal insulation is specifically formulated to apply foam with applied density around (38~45 kg/m³). Its application must be carried out by the specific reactor equipment by mixing Tecnofoam G-2040 (polyol side) and Tecnofoam G-2049.I (isocyanate side). The blowing agent is water.

It has CE marking on the basis of a statement made DoP Declaration of Performance (DoP) under the European Norm EN-14315-1:2031.



USES

The spray polyurethane foam system TECNOFOAM G-2040 can be used in these situations:

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

NOTE: For other applications/situations, please, consult our technical department

Applied density	38~45 kg/m ³
Thermal conductivity	0,030 W/m·K
Stirring time	3 ~ 5 secs
Gel time	9 ~ 12 secs
Tack-free time	12 ~ 15 secs
Fire reaction	Euroclass E
Closed-cell content	<80%(CCC2)
Mix ratio (in volume)	100/100
Application method	Spray equipment



COLORS

	Salmon
	Green



GENERAL FEATURES

- TECNOFOAM G-2040 is a product with high insulating capacity, easy to apply to cover all surfaces using our spray equipment TC2049 (spray-equipment.tecnopolgroup.com) or similar
- 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
- The blowing agent is water. The gas occluded in the internal cells of the product formed is CO₂, created from the reaction between the water contained in the polyol and the isocyanate.
- The properties of this spray 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 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.
- Applied total obtained density depends on the site ambience and substrate conditions during the application process as well as on the spraying technique. Increasing layer thickness, the density will decrease.
- The thermal conductivity (?) coefficient remains unchanged from the application and along with the product life.
- Contractors and applicators must comply with all applicable and appropriate guidelines for processing, handling guidelines.
- 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 (stir before the mixing)
- ISOCYANATE COMPOUND: 6 months

Stock the drums at a temperature within 5 °C ~ 30 °C, in a dry place, keep away from direct sunlight, extreme heat, cold, or moisture. Low temperatures increase the viscosity of the polyol which makes it difficult to mix and apply, and in isocyanate, they can generate crystallizations, which can vary its mixing ratio and causing internal problems in the mixing modifying the applied system properties.

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 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.
- The range of the surface temperatures is 5°C to 40°C
- In applications with high-temperature gradients, a vapor barrier is placed on the warm side of the insulation to prevent condensation
- In outside applications, is required to waterproof the polyurethane foam system
- 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

- The total applied thickness will be defined by the project specs. Applicator must respect the local regulations according to the use, taking into account the physical and chemical characteristics of the polyurethane foam system to be used

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:

- Heater isocyanate temperature: 40-45 °C
- Heater polyol temperature: 45-55°C
- Hose temperature: 45-50°C
- Pressure: 1.450-1.750 psi (100 to 120 bar)
- Mixing chamber (recommended): GU-07008-2

These temperature and pressure parameters have to be valued, ratified or be varied by the applicator, depending on the conditions of each climate zone, weather situation, or projection equipment specifications.

Anyway, these parameters for adjusting the projection equipment are approximate and may change depending on the weather conditions of the environment at the moment to apply, therefore, it is the responsibility of the applicator values in each case the option to choose.

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. Anyway, 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	320 ~ 420 mPa.s	210 mPa.s
Water content ISO 14897	3,1 ~ 3,3 %	----
NCO content ISO 14896	---	31 %
Specific weight at 22°C	1,15 g/cm ³	1,23 g/cm ³

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

APPLIED SYSTEM CHARACTERISTICS (REACTION)

CHARACTERISTIC	VALUE
Stirring time	2 ~5 secs
Gel time at	9 ~12 secs
Tack-free time	12 ~15 secs
Density free rise	32 ~37 kg/m ³
Applied density	38 ~45 kg/m ³
Closed-cell content	<80 %(CCC2)
Compressive strength	>200 KPa
Tensile strength perpendicular to face EN-1607:2013	100 kPa
Dimensional stability (-20°C/-%) EN-1604:2013	0,0 0,0 0,2 %
Dimensional stability (70°C/ 90%) EN-1604:2013	-2,8\ -2,6\ 1,4 %
Thermal conductivity value EN-12667 (none or diffusion open method)	0,030 W/mK
Fire reaction EN-13501	Euroclass E
Range of temperatures (substrate/ambiance)	5 ~ 40°C
Max. relative humidity	90%
Max. substrate humidity (dew point)	0

Results were performed in the laboratory at 20°C and 50% RH, under controllable conditions. These values may vary depending on the application, climatology, or substrate conditions.

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